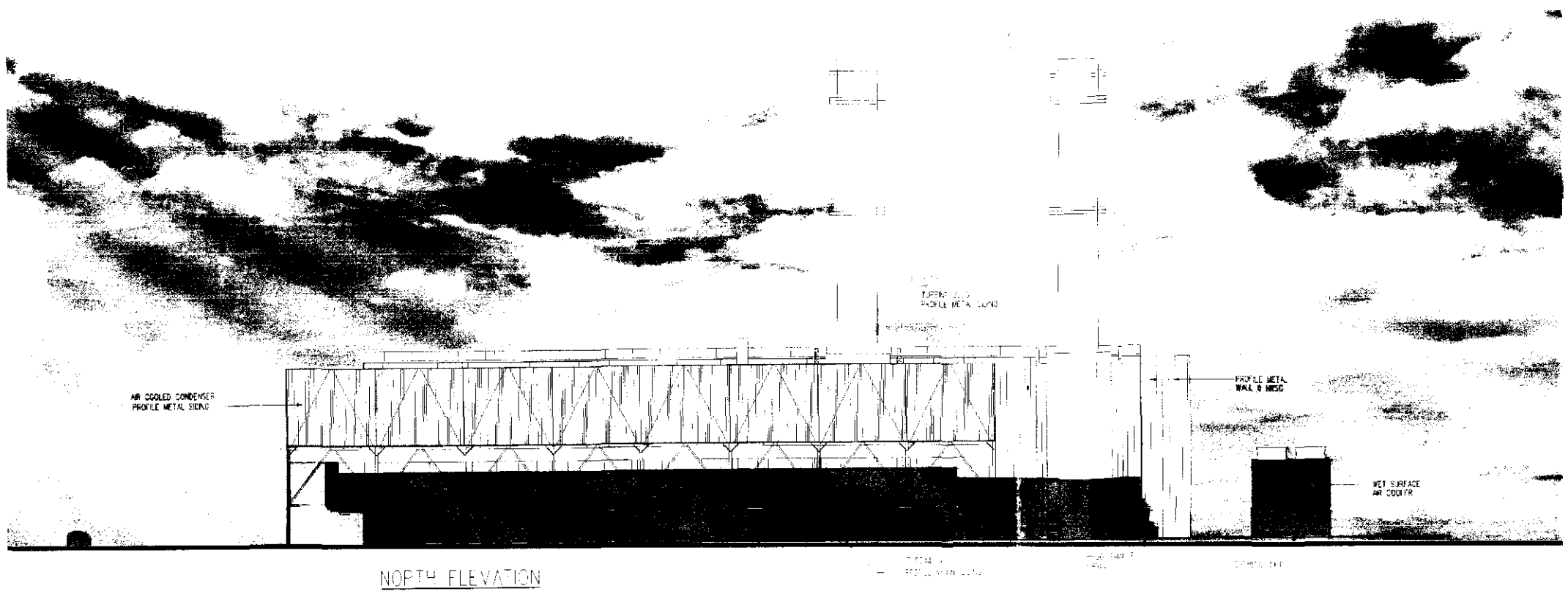
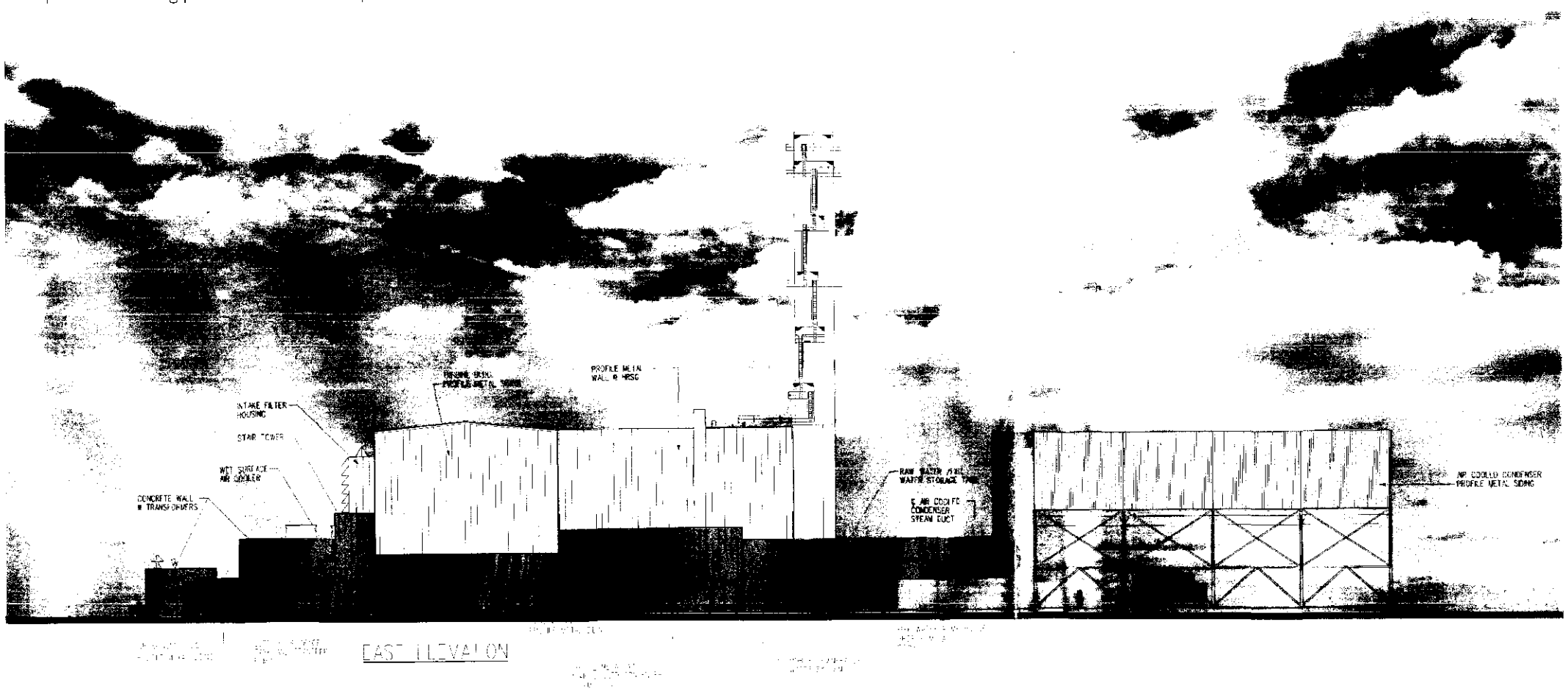


NORTH ELEVATION

Viewpoint 1 showing power station development.

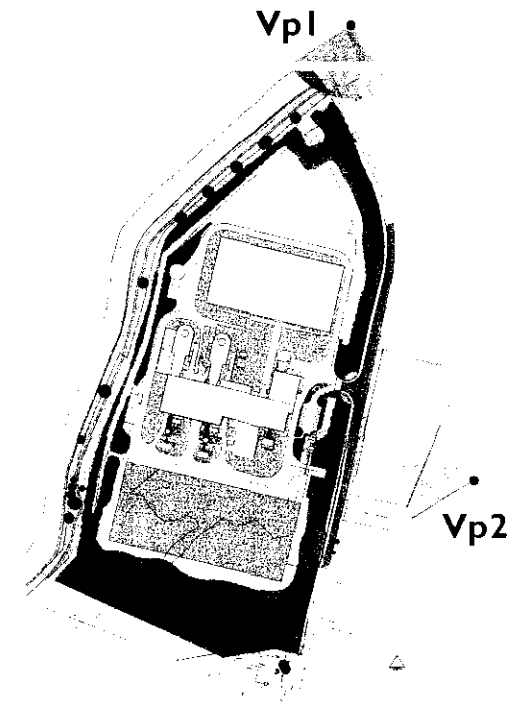


EAST ELEVATION

Viewpoint 2 showing power station development.

DEREK LOVEJOY PARTNERSHIP

LAND PLANNING AND DESIGN



Ivory	**RAL9002**
Wedgewood Blue	**18C37**

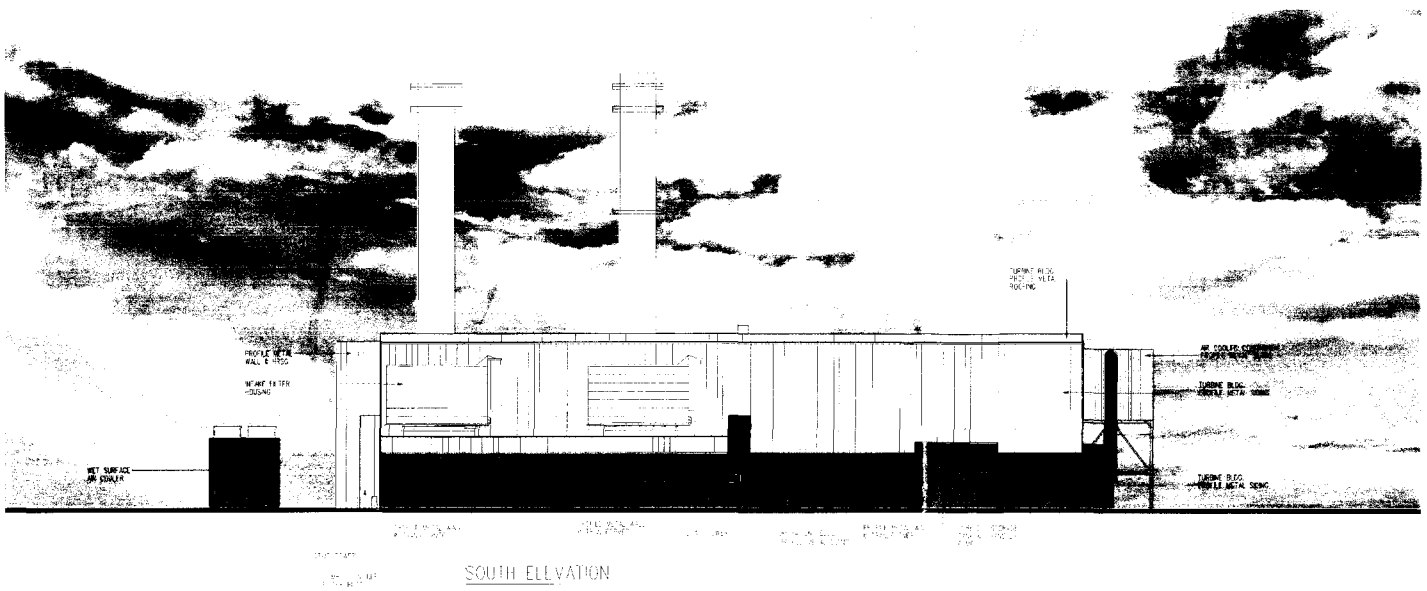
FOR INFO' ONLY

SOUTH HOLLAND DC
HOUSING & PLANNING
07 AUG 2001
Ref: 0944/01

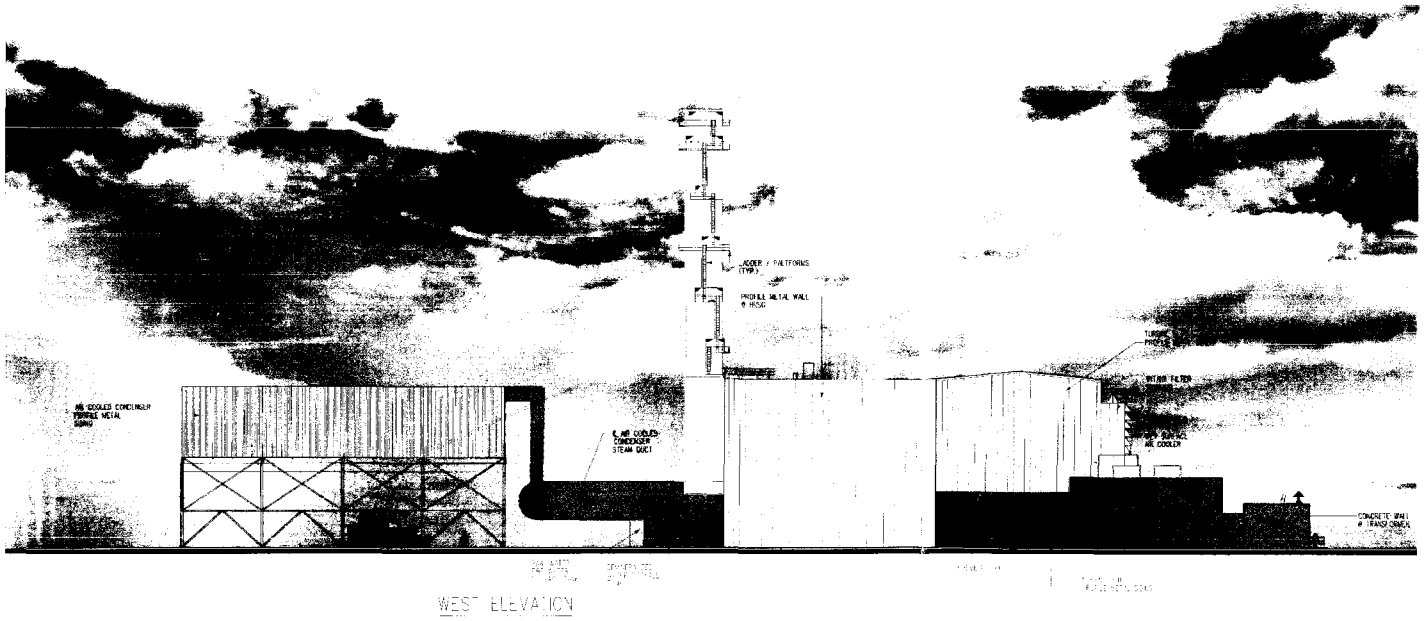
Dwg. No. 881/110 **August 2001**

Intergen (UK) Limited
Spalding Energy Project

Proposed Colouring Scheme



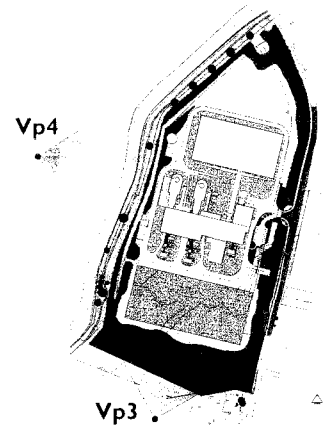
Viewpoint 3 showing power station development.



Viewpoint 4 showing power station development.

DEREK LOVEJOY PARTNERSHIP

LAND PLANNING AND DESIGN



Ivory	**RAL9002**
Wedgewood Blue	**18C37**

FOR INFO ONLY

Dwg. No. 881/110 **August 2001**

Intergen (UK) Limited Spalding Energy Project

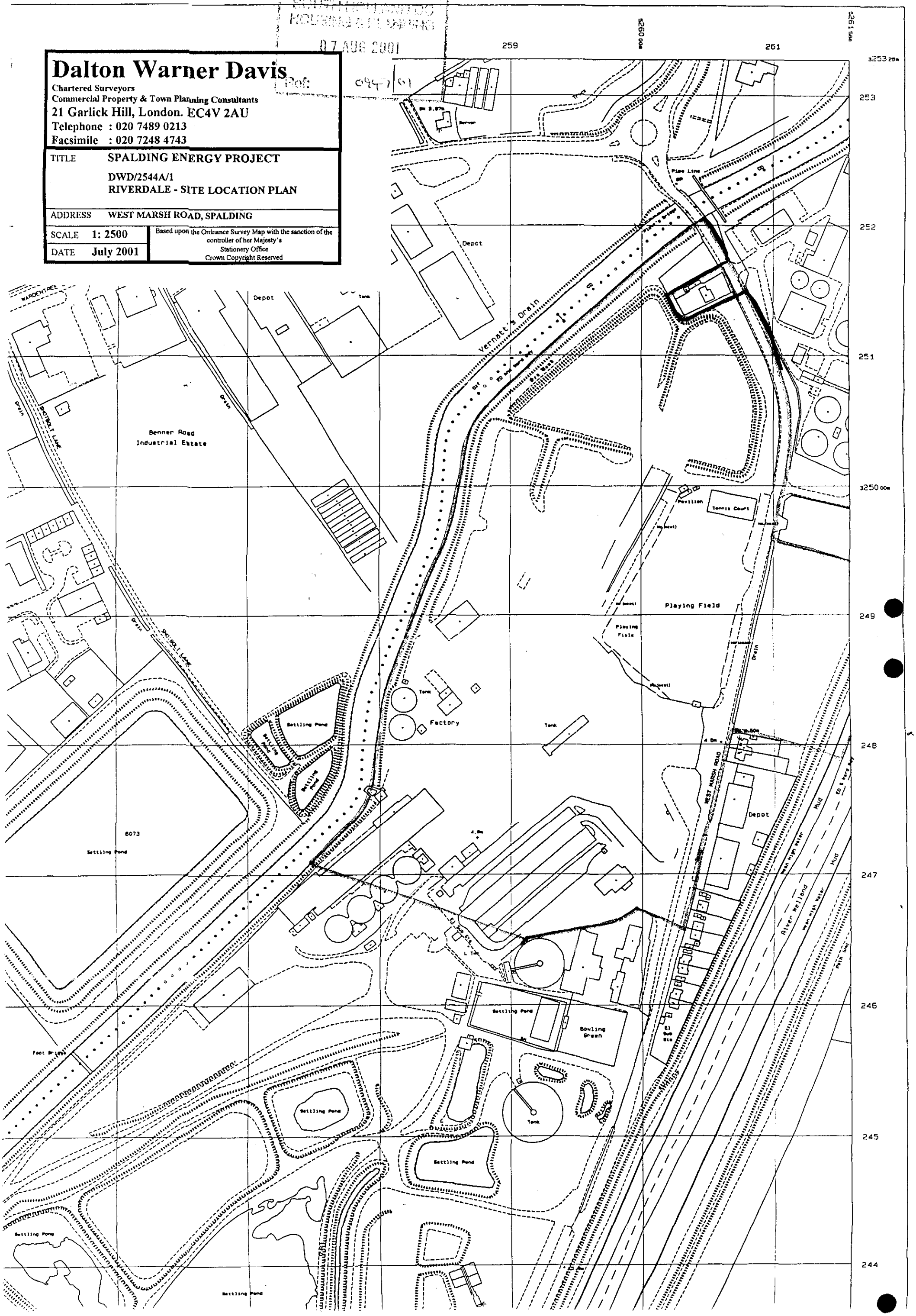
Proposed Colouring Scheme

Site-centred

SOUTH HOLLAND DISTRICT COUNCIL
HOUSING & PLANNING
07 AUG 2001
Ref: 0947/01

Dalton Warner Davis
Chartered Surveyors
Commercial Property & Town Planning Consultants
21 Garlick Hill, London. EC4V 2AU
Telephone : 020 7489 0213
Facsimile : 020 7248 4743

TITLE	**SPALDING ENERGY PROJECT** **DWD/2544A/1** **RIVERDALE - SITE LOCATION PLAN**
ADDRESS	**WEST MARSH ROAD, SPALDING**
SCALE **1: 2500**	Based upon the Ordnance Survey Map with the sanction of the controller of her Majesty's Stationery Office Crown Copyright Reserved
DATE **July 2001**	

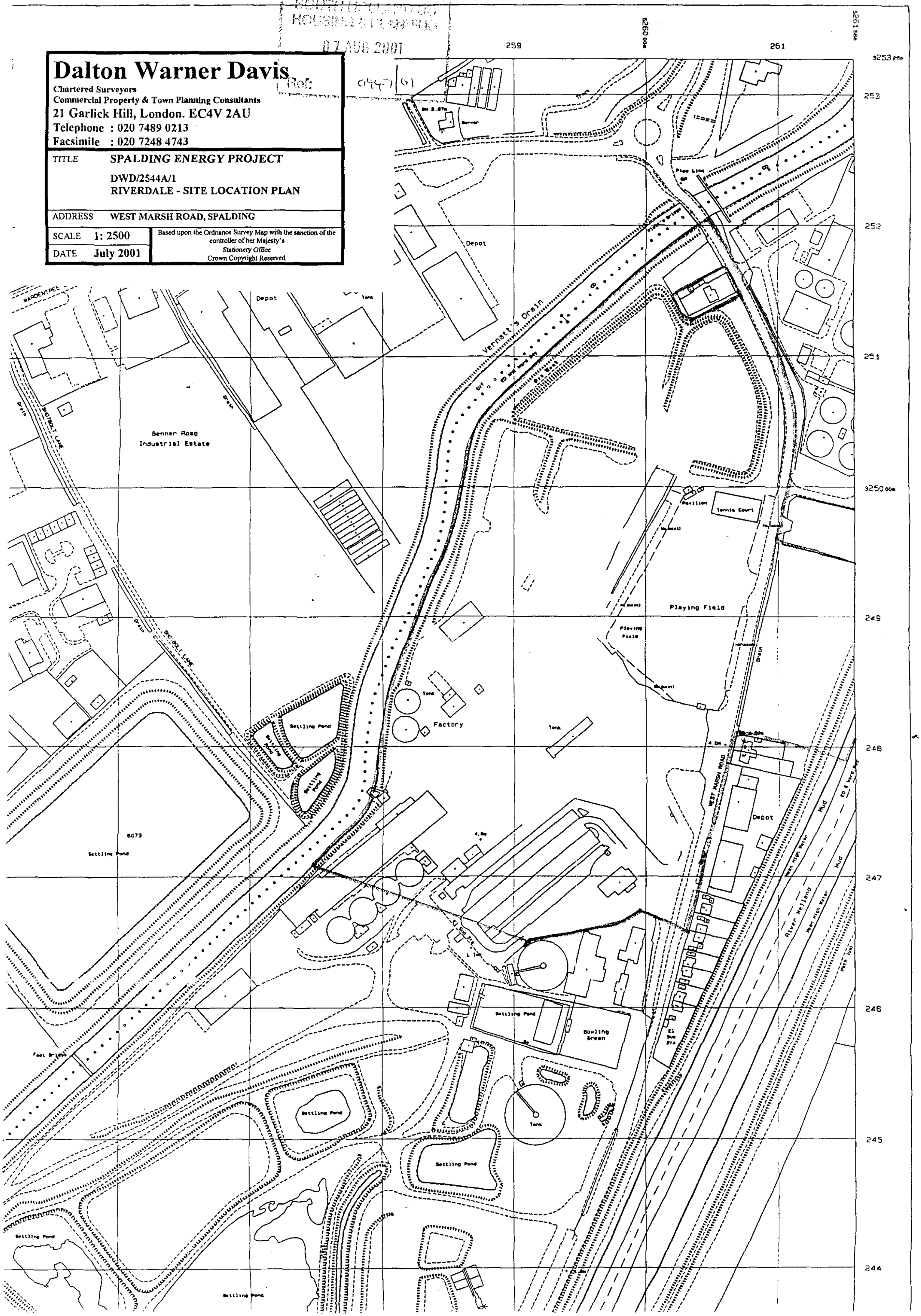


HOUSING & PLANNING
07 AUG 2001
Ref: 0947/01

Dalton Warner Davis

Chartered Surveyors
Commercial Property & Town Planning Consultants
21 Garlick Hill, London. EC4V 2AU
Telephone : 020 7489 0213
Facsimile : 020 7248 4743

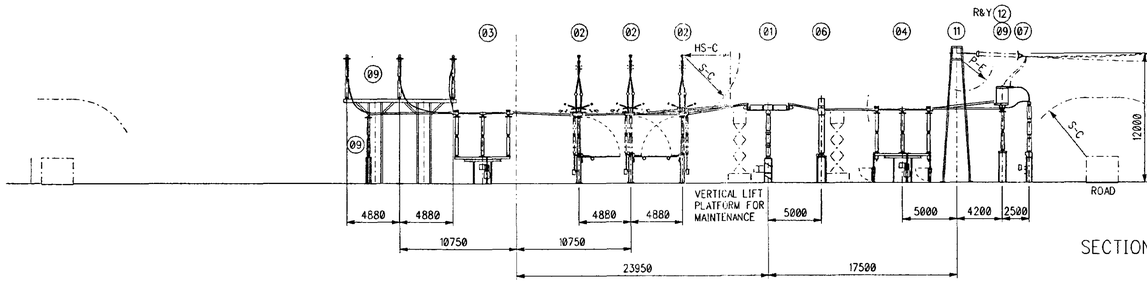
TITLE	SPALDING ENERGY PROJECT DWD/2544A/1 RIVERDALE - SITE LOCATION PLAN
ADDRESS	WEST MARSH ROAD, SPALDING
SCALE 1: 2500	Based upon the Ordnance Survey Map with the sanction of the controller of her Majesty's Stationery Office
DATE July 2001	Crown Copyright Reserved



EQUIPMENT LIST	
REF. No.	EQUIPMENT
01	400kV FEX2 TYPE CIRCUIT BREAKER.
02	400kV PANTOGRAPH TYPE DISCONNECTOR WITH EARTH SWITCH.
03	400kV RCP DISCONNECTOR.
04	400kV RCP DISCONNECTOR WITH TWO EARTH SWITCHES.
05	400kV SEPARATELY MOUNTED EARTH SWITCH.
06	400kV CURRENT TRANSFORMER TYPE CTH.
07	400kV CAPACITOR VOLTAGE TRANSFORMER TYPE CCV.
08	400kV CASCADE VOLTAGE TRANSFORMER.
09	400kV POST INSULATOR
10	400kV UNDERHUNG POST INSULATOR.
11	400kV LINE LANDING GANTRY.
12	400kV LINE TRAP
13	400kV SURGE ARRESTER

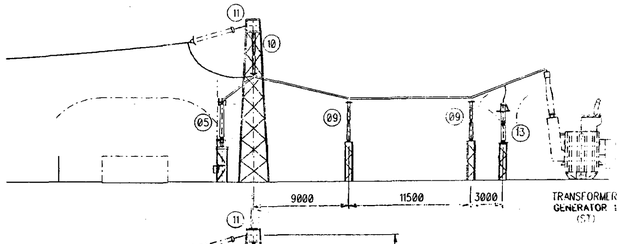
400kV SUBSTATION ELECTRICAL CLEARANCES AS TO NGTS 2.1		
P-E	PHASE TO EARTH	2800mm
P-P	PHASE TO PHASE	3600mm
S-C	SAFETY CLEARANCE (VERTICAL)	5500mm
HS-C	SAFETY CLEARANCE (HORIZONTAL)	4600mm
IN GENERAL THE VERTICAL DESIGN CLEARANCE SHOULD BE APPLIED IN ALL DIRECTIONS UNLESS OTHERWISE AGREED BY NGC.		

RESERVE BUSBAR 2 MAIN BUSBAR 1

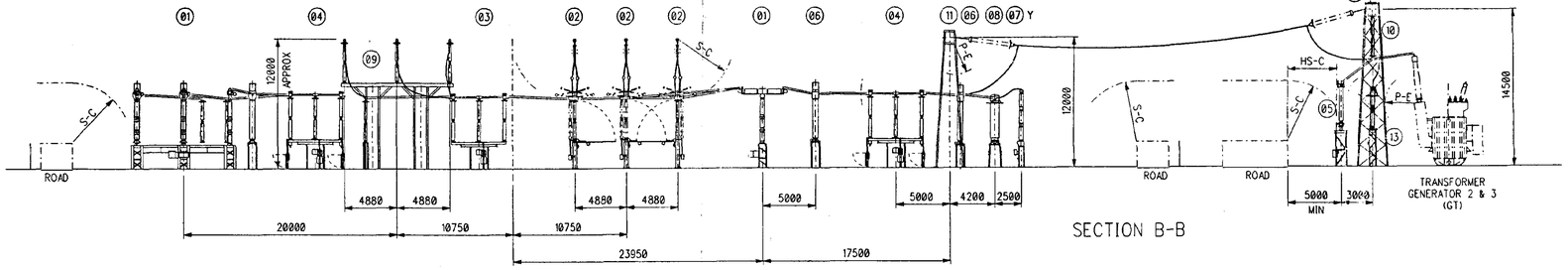


DOWNLEAD CONDUCTORS NOT IN ALSTOM SUPPLY

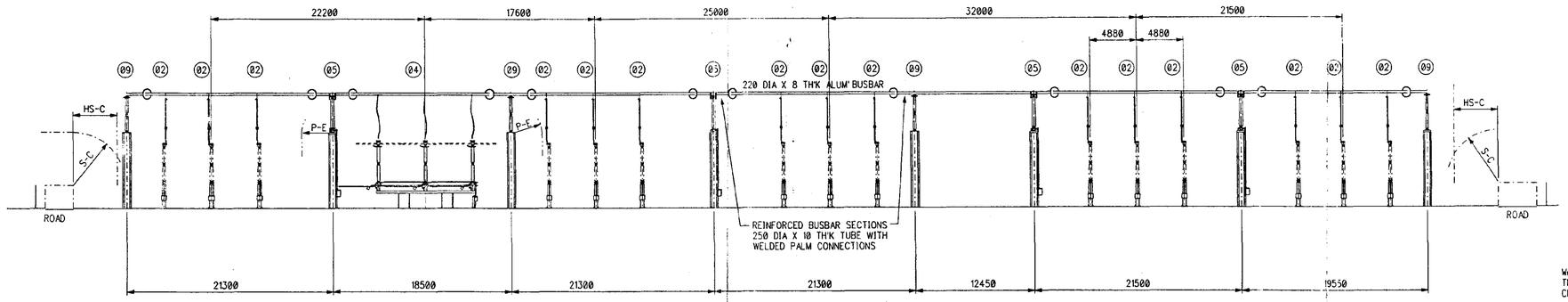
SECTION A-A



BUS COUPLER RESERVE BUSBAR 2 MAIN BUSBAR 1



SECTION B-B



SECTION C-C

DETERMINED PLAN

SOUTH ... D DC HOUSI... NING
-8 AUG 2001
Ref: H16/0941/01

Superseded by amended plans dated 13/12/01

WARNING - THIS MAY BE A REDUCED SIZE PRINT, CHECK SCALES BELOW

5 0 5 10 20
1:200

REVISIONS			
ORIG ISSUE	A	08 JAN 97	
BUSBARS 1 & 2 SPACING WIDENED BY : 20MM TO 17760MM IN LINE WITH CUSTOMERS REQUEST. EARTH MATS/FOUNDATIONS ADDED TO SUIT NEW BUSBAR LAYOUT. DIMENSIONS AND NOTES REVISED TO SUIT.	B	DRWN DMcS 08 JAN 97 APP'D DBH 08 JAN 97 DATE 08 JAN 97	
(GENERALLY REVISED INCLUDING INC SPACE AND TRANSFORMER BAYS)	C	DRWN DMcS APP'D DBH DATE 15 JUN 01	
BAY CENTRES MODIFIED TO REFLECT ACCESS ROAD TO GANTRY REINFORCEMENT ADDED	D	DRWN DMcS APP'D DBH DATE 8 JUL 01	

CAD DATA spin4 ...\spin4\spin4_p.prj\ecd\g spin4_A4_g.dgn 08 ... 30.4.ref

☐ 2DM	DATE	SIGNATURE
DRAWN	08 JAN 97	JJG452
CH'D	08 JAN 97	RDF442
APP'D	08 JAN 97	PC58
ISSUED BY	E&T ESD	
THIRD ANGLE PROJECTION	ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED	
	DRAWING TO BS 308 UNLESS OTHERWISE STATED	
IF IN DOUBT .. ASK		

SITE: SPALDING NORTH 400kV S/S

CIRCUIT: COMMON

CUST: NATIONAL GRID COMPANY

CUST. REF: C/SW022

TITLE: TENDER DRAWING
PROPOSED ELEVATIONS OF SUBSTATION.
(ALTERNATIVE LAYOUT)

ORG. No. PDH100129N04 ISSUE D

ORDER No. 226151 SCALE 1:200

TOR SUBSTATION ELEVATIONS

TENDER - NGC SPALDING NORTH 400kV S/S C/SW022

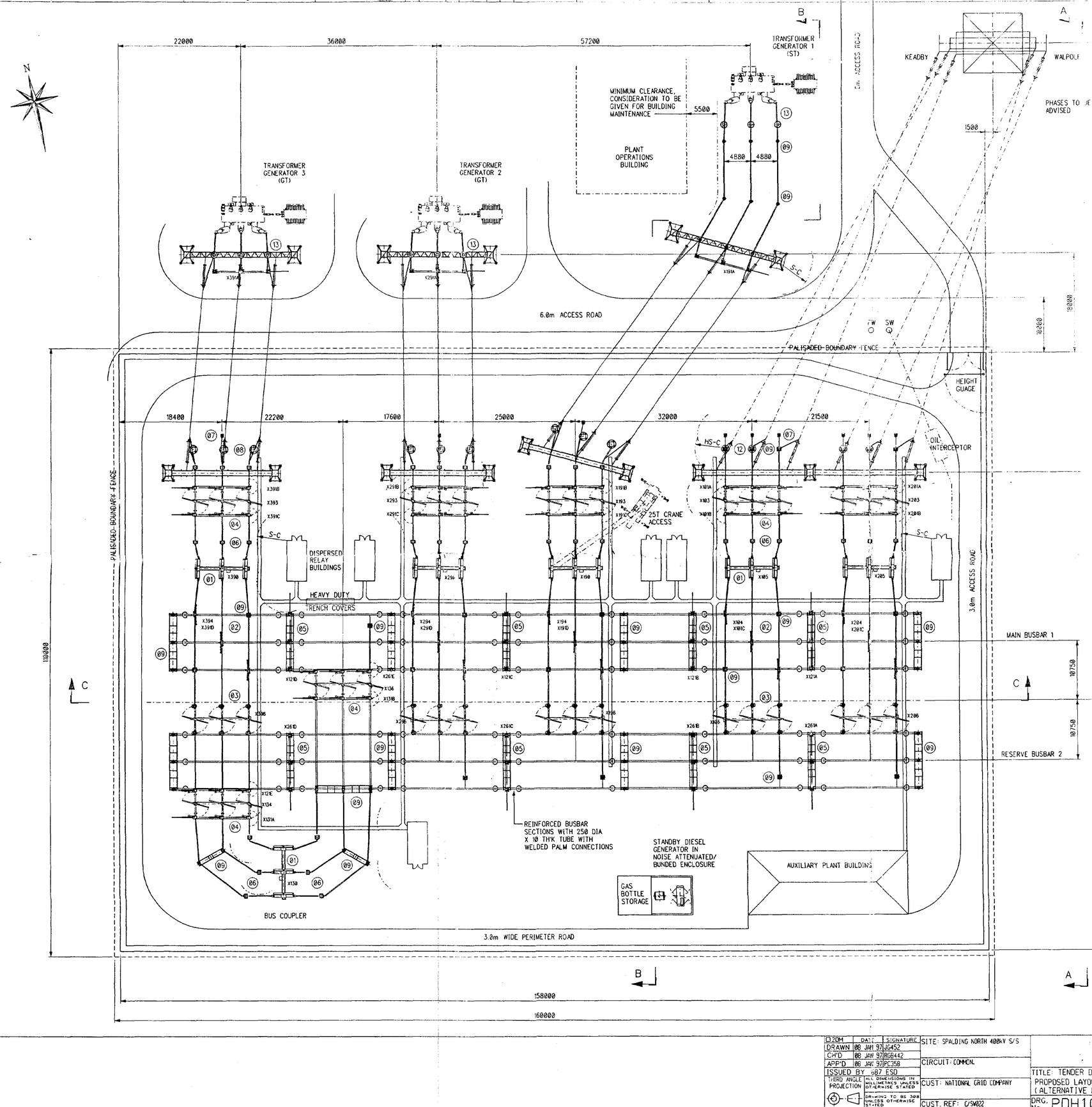
RECORDED ISSUE SUBJECT TO REVISION UPDATE.

EQUIPMENT LIST	
REF. No.	EQUIPMENT
01	400kV FEX2 TYPE CIRCUIT BREAKER.
02	400kV PANTOGRAPH TYPE DISCONNECTOR WITH EARTH SWITCH.
03	400kV RCP DISCONNECTOR.
04	400kV RCP DISCONNECTOR WITH TWO EARTH SWITCHES.
05	400kV SEPARATELY MOUNTED EARTH SWITCH.
06	400kV CURRENT TRANSFORMER TYPE CTH.
07	400kV CAPACITOR VOLTAGE TRANSFORMER TYPE CCV.
08	400kV CASCADE VOLTAGE TRANSFORMER.
09	400kV POST INSULATOR
10	400kV UNDERHUNG POST INSULATOR.
11	400kV LINE LANDING GANTRY.
12	400kV LINE T...
13	400kV SURGE ARRESTER

400kV SUBSTATION ELECTRICAL CLEARANCES AS TO NGTS 2.1		
P-E	PHASE TO EARTH	2800mm
P-P	PHASE TO PHASE	3600mm
S-C	SAFETY CLEARANCE (VERTICAL)	5500mm
HS-C	SAFETY CLEARANCE (HORIZONTAL)	4600mm
IN GENERAL THE VERTICAL DESIGN CLEARANCE SHOULD BE APPLIED IN ALL DIRECTIONS UNLESS OTHERWISE AGREED BY NGC.		

NOTE :- TOPOGRAPHICAL INFORMATION SCALED FROM NGC DRAWING - 29/29059

FOR SECTIONS AND ELEVATIONS SEE DRAWING - PDH100129N04



WARNING -
THIS MAY BE A REDUCED SIZE PRINT.
CHECK SCALES BELOW.

50 0 50 100 150 200 250

1:2500

ISSUE	DATE	REVISIONS	DRAWN	CHKD	APPD
A	08 JAN 97				
B	08 DEC 97	SITE BOUNDARY FENCE MODIFIED. WHS 180M X 128.28M, NOW 180M X 98.8M. BUSBARS 1 & 2 SPACING WIDENED BY 1500MM TO 3000MM IN LINE WITH CUSTOMERS REQUEST. EXTRA POST INSULATORS ADDED TO SUIT NEW BUSBAR LAYOUT. DIMENSIONS AND NOTES REVISED TO SUIT.	SS318		
C	08 JAN 98	GENERAL ARRANGEMENT REVISED INLINE WITH NGC SPEC AND DRAWING 29/29059	DMS		
D	08 JAN 99	BAY CENTRELINES MODIFIED TO MEET ACCESS REQ BUSBAR REINFORCEMENT ADDED	JB145		

	DATE	SIGNATURE
DRAWN	08 JAN 97	JD452
CHKD	08 JAN 97	RG442
APP'D	08 JAN 97	PC358
ISSUED BY	087 ESO	

THIRD ANGLE PROJECTION

ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED.

DRAWING TO BS 308 UNLESS OTHERWISE STATED

IF IN DOUBT _ ASK

SITE: SPALDING NORTH 400kV S/S

CIRCUIT: COMMON.

CUST: NATIONAL GRID COMPANY

CUST. REF: D/S022

TITLE: TENDER DRAWING
PROPOSED LAYOUT OF SUBSTATION.
(ALTERNATIVE LAYOUT)

DRG. No. PDH100129N03 ISSUE D

ORDER No. 229551 SCALE 1:250

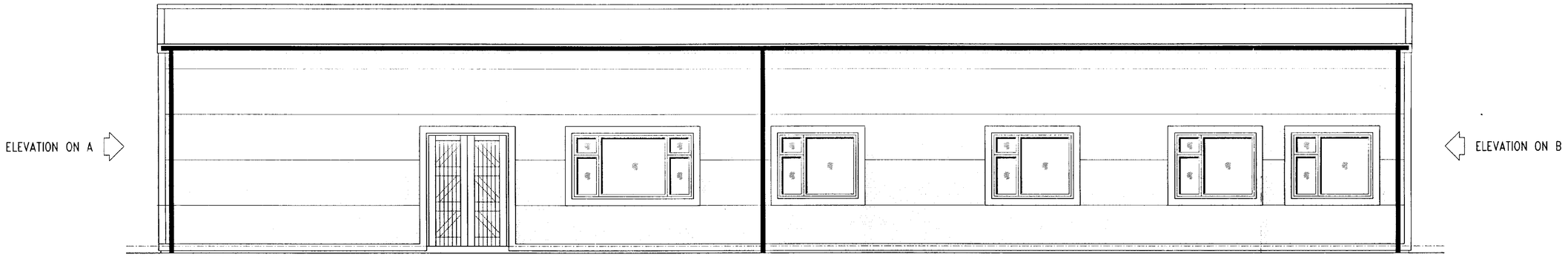
TENDER - NGC SPALDING NORTH 400kV S/S C/SW023

TDR SUBSTATION LAYOUT

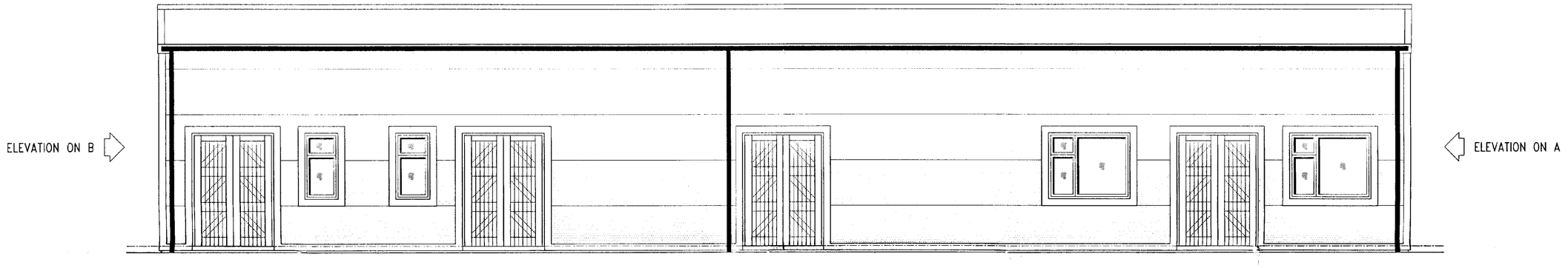
Superseded by amended plans dated 13/

DETERMINED PLAN

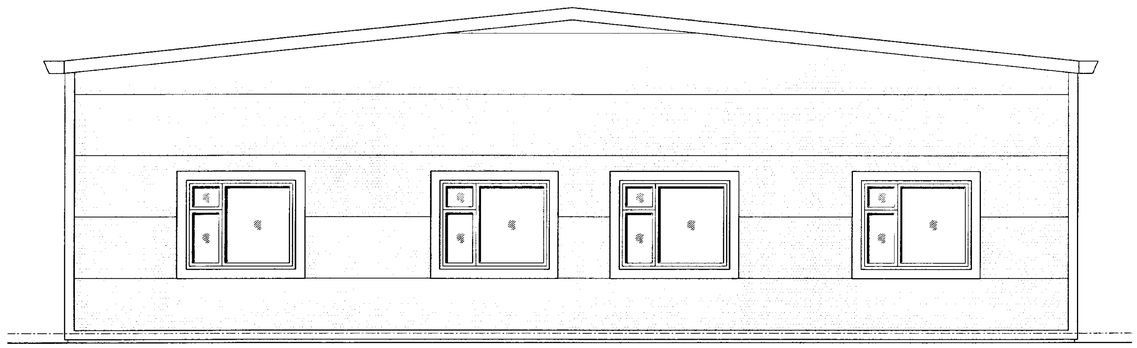
SOUTH ... AND DC HOUSING ... PLANNING
-8 AUG 2001
Ref: 0944/01



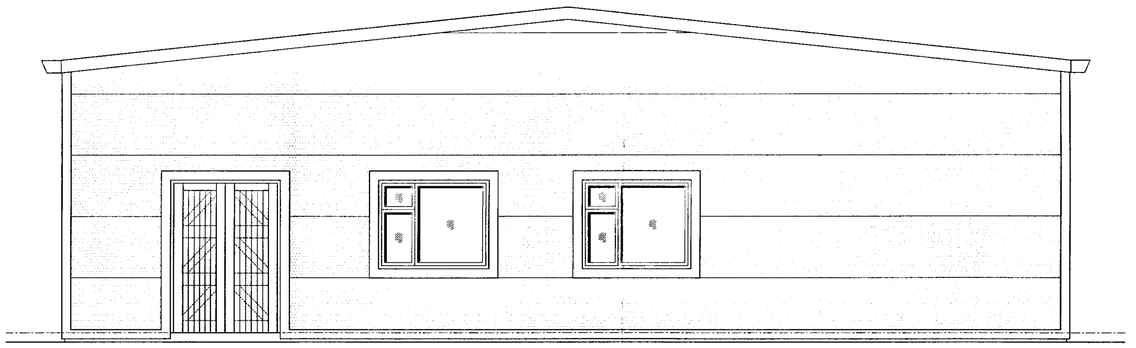
FRONT ELEVATION
SCALE 1:50



REAR ELEVATION
SCALE 1:50



ELEVATION ON A
SCALE 1:50



ELEVATION ON B
SCALE 1:50

DETERMINED PLAN

SOUTH HOLLAND DC
HOUSING & PLANNING
07 AUG 2001
Ref: 01HH01

NOTES

CLADDING TO ROOF : KINGSPAN KS1000 RW GOOSEWING GREY (VERGE FLASHINGS TO BE MERLIN GREY)
CLADDING TO WALLS : KINGSPAN KS1000 RW MERLIN GREY.

EXTERNAL DOORS : FRAMED, LEGGED & BRACED 'IROKO' HARDWOOD DOORS WITH WEATHERSTRIPS AND REBATED MEETING STYLES.

REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE
A	MK JULY 2001																
PRELIMINARY ISSUE FOR COMMENT / APPROVAL																	

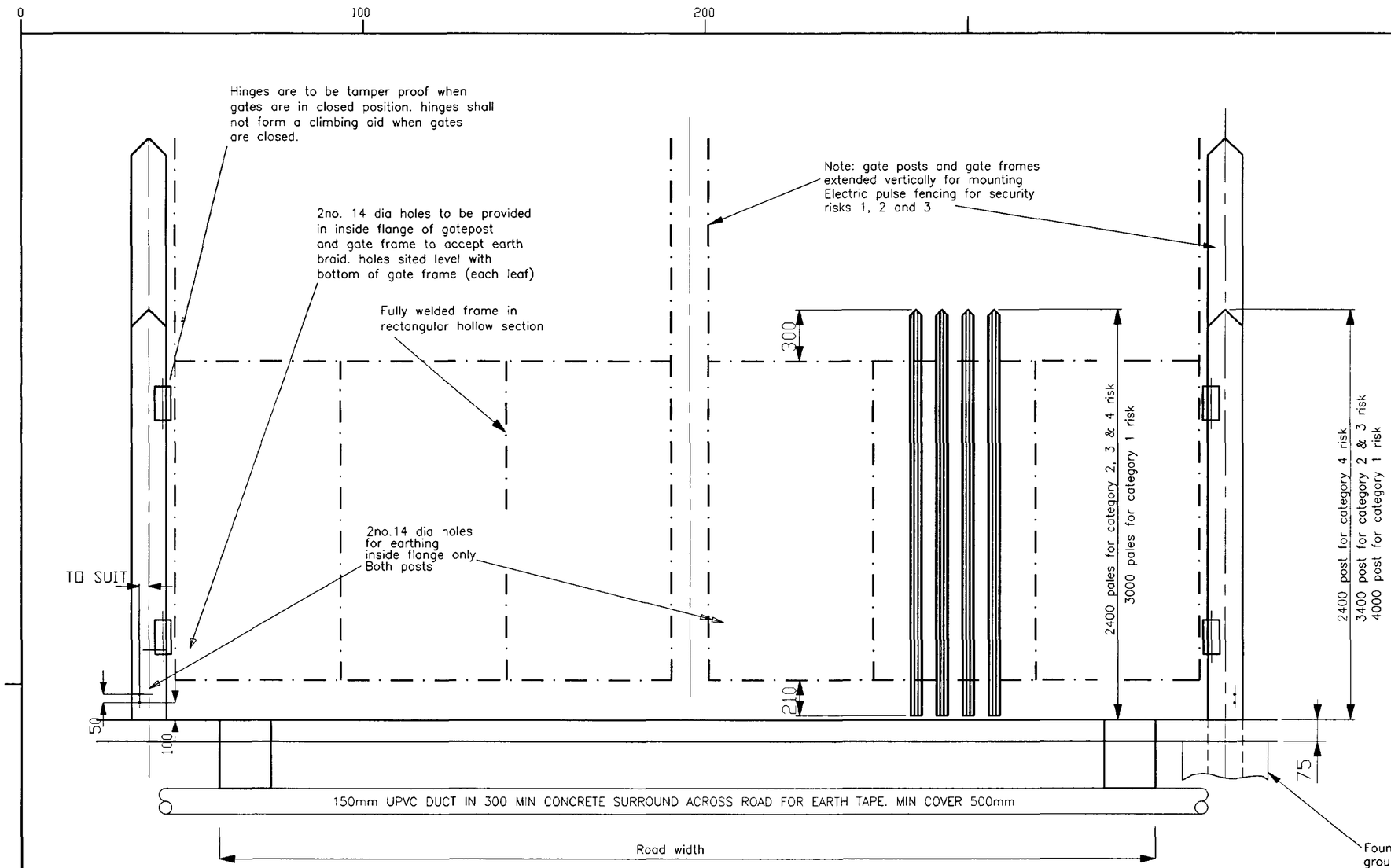
REVISIONS

DATE	DATE
JOB No.	JOBNO
DRAWN	DRAWN
CHECKED	CHECK
APPROVED	APPROVED

NATIONAL GRID DRG No. **NGDWGNO**

PROJECT:-

DRAWING No.	SHEET	REV	SCALE	CAD
DWGNO	**SHEET**	**REV**	SCALE	A1



TYPICAL ELEVATION ON DOUBLE LEAF GATES

NOTES

1 For general notes and fence details see Drg no 34/2855 – basic features of enhanced 2.4m high palisade fence

2 For details of locks/latches, see Drg no 34/2931 – details of locks/latches Of enhanced 2.4m high palisade fence

3 Protective treatment is to be undertaken after full fabrication of the elements (inclusive of all drilling necessary both for installation and to suit specfied NGC requirements) Galvanising is to be hot dip to BS EN ISO 1461 to give a minimum life to first maintenance of 15 years. (The Contractor is required to confirm, in writing that the above life to first maintenance will be achieved).

DETERMINED PLAN

SOUTH HOLLAND DC HOUSING & PLANNING 07 AUG 2001 Ref:

Sliding/Roller Gates

sliding/roller gates are to be fitted with the approved electric pulse fencing. fixing details are to be as agreed with the pulse fence manufacturer.
there shall be no aids to climbing accessible From the public side of the gate.

Hinged Gates

for risk categories that require the electric pulse fencing to be fitted to the gates, care shall be taken to ensure that insulators shall not clash with the gate posts when the gates are in the open position. in addition, any latches fitted to ensure that the gate is held open shall not interfere with the pulse fence wires, Insulators or fixings in any way

ISSUE			B		C		D		
DRAWN/DATE			JML	1/9/99	PHEL	5/5/00	DW	11/7/01	
CHECKED/DATE			SGA	1/9/99	**	**	FJA	27/7/01	
APPROVED/DATE			PFM	1/9/99	**	**	EAF	27/7/01	
RECORDED									
FILMED									

FIRST ISSUE | BOTTOM RAIL DELETED | DRAWING REVISED TO ACCORD WITH ISSUE 3 OF NGTS 2.22 | FOUNDATION DETAILS ADDED

PRELIMINARY FOR INFORMATION ONLY

NOT TO BE WORKED TO

National Grid Project Management

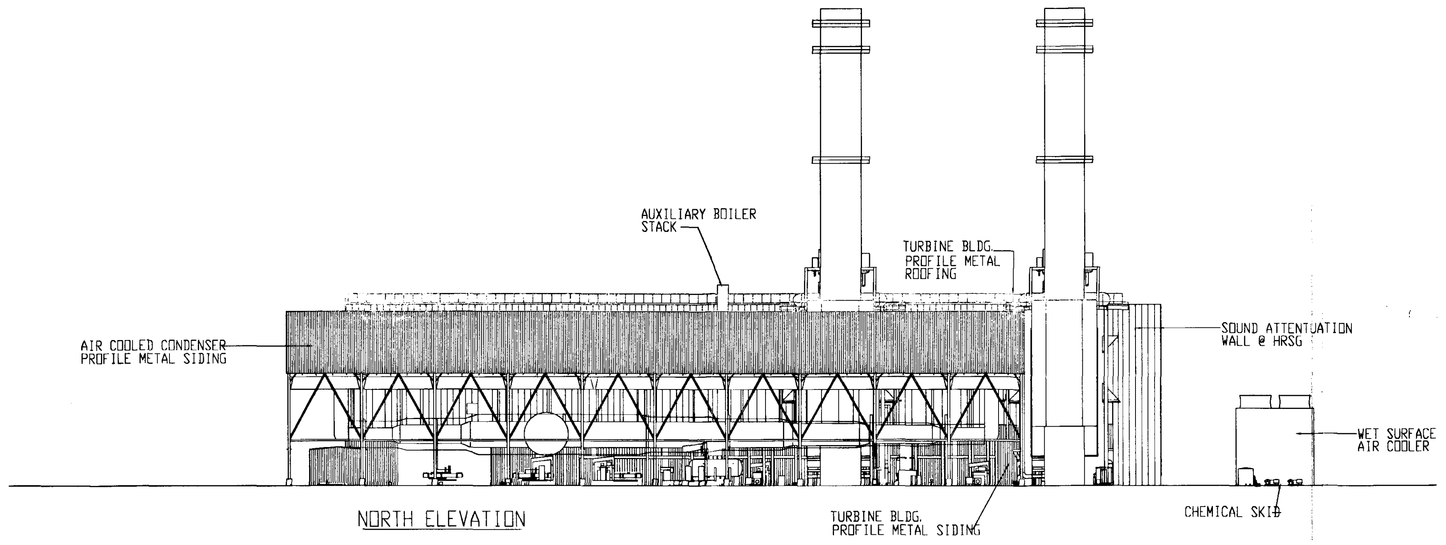
BASIC FEATURES OF THE ENHANCED 2.4m HIGH PALISADE GATES

Station: SUBSTATION PERIMETER FENCING		A2
Circuit:		CAD
Drawing number: 34/2856	Sheet No. 1 / No. of Sheets 1	ISSUE
SCALE:-	Work Ref	

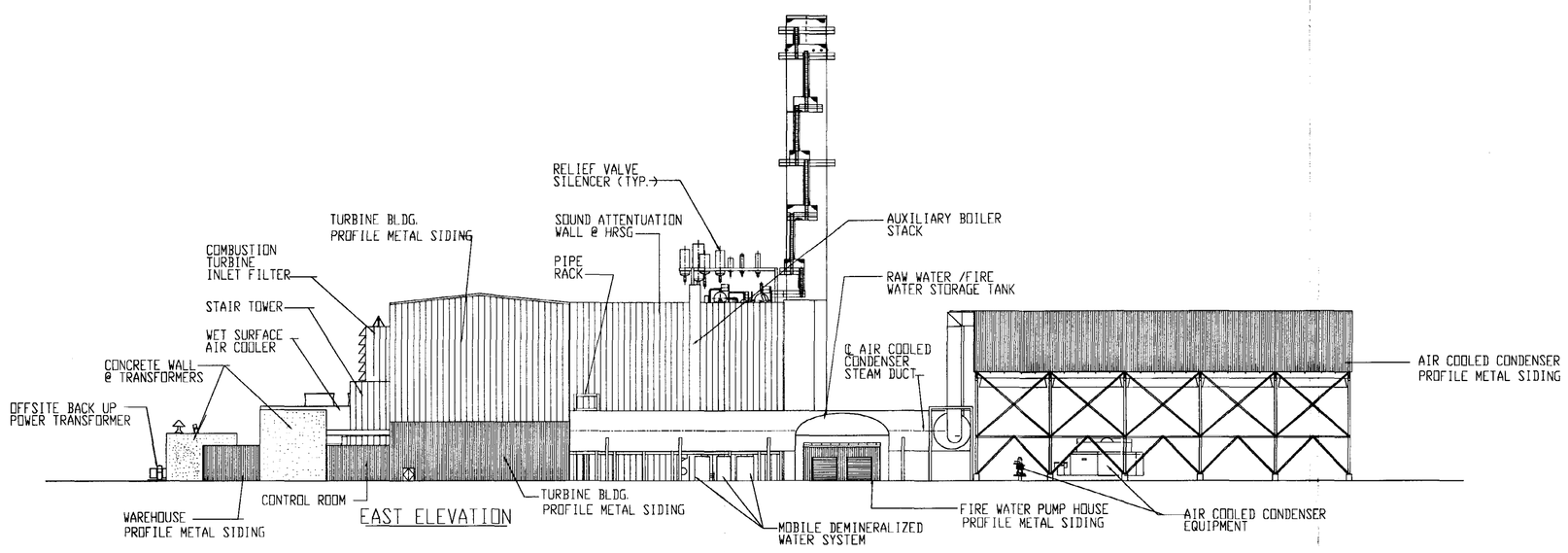
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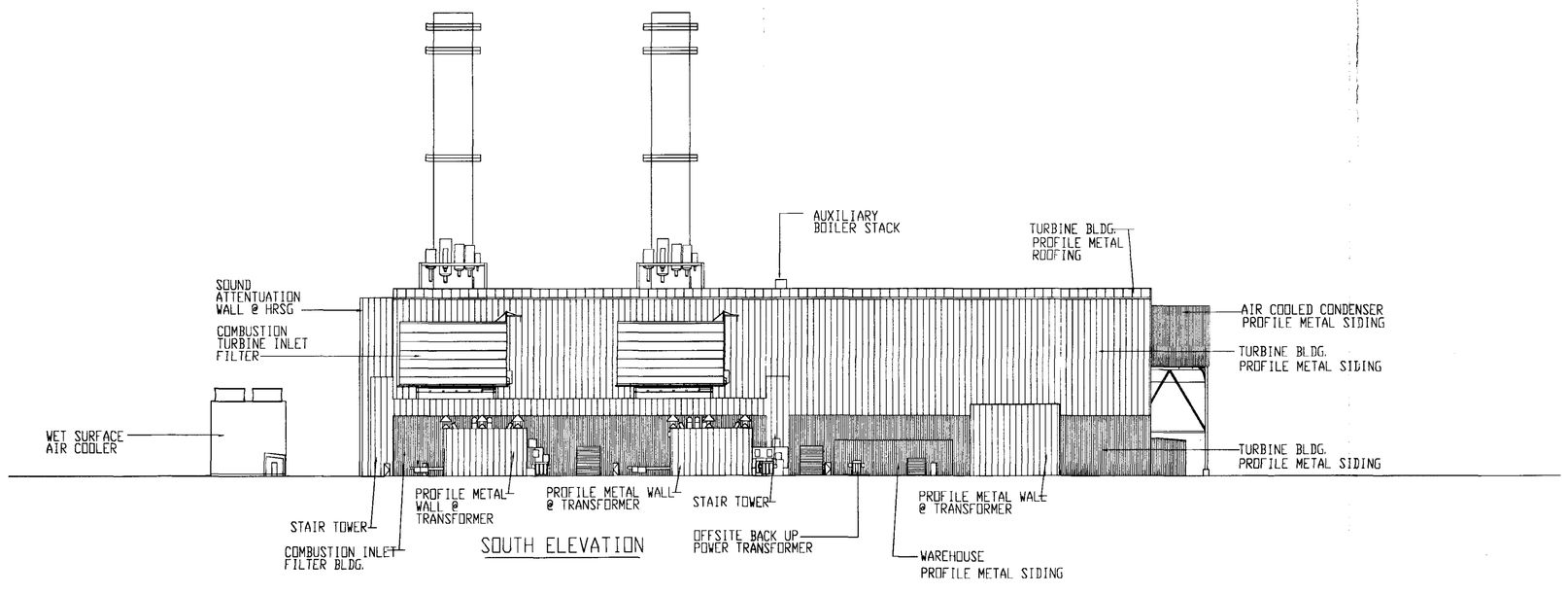
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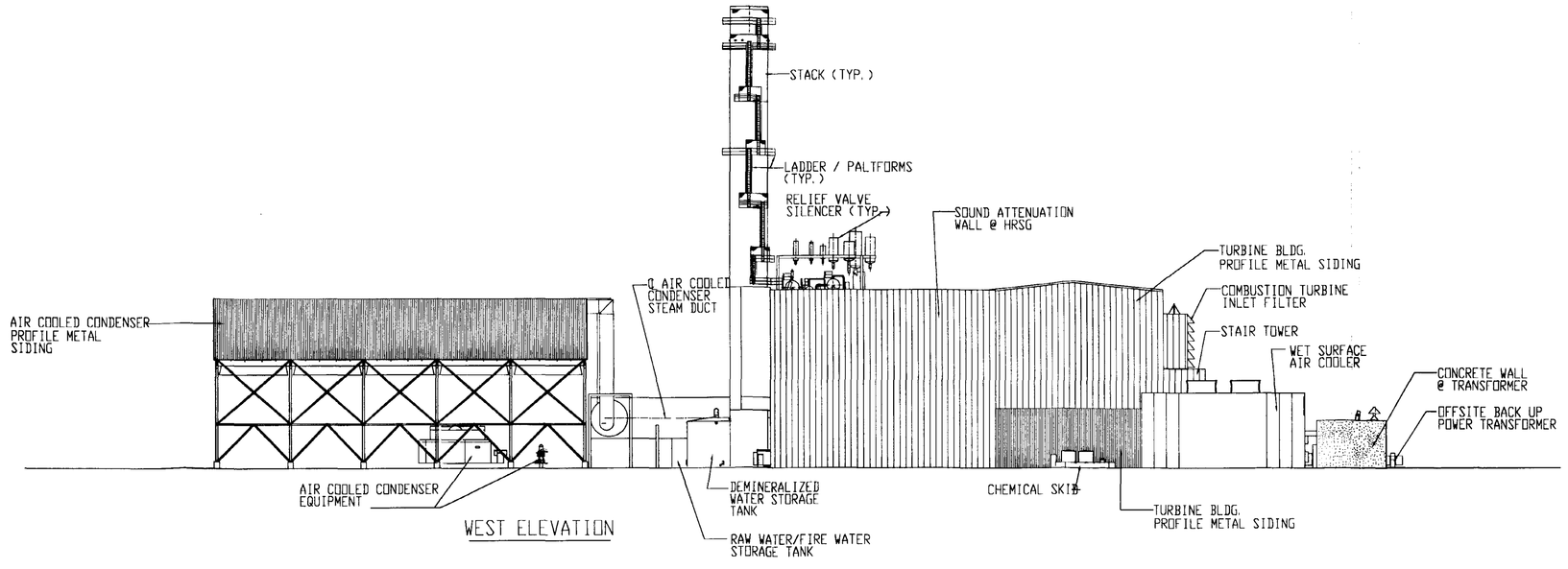
NORTH ELEVATION



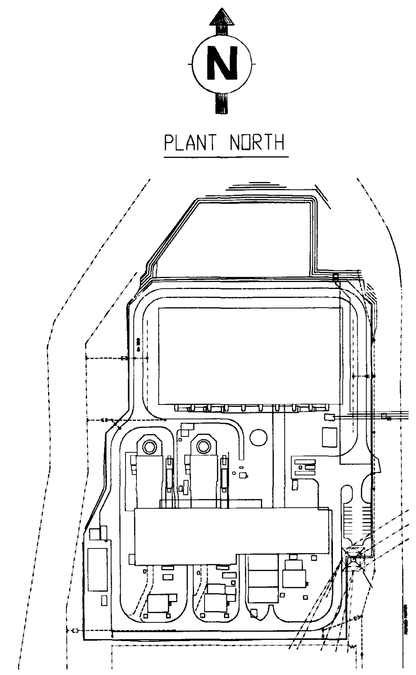
EAST ELEVATION



SOUTH ELEVATION



WEST ELEVATION



KEY PLAN

NOTES:

1. CONFIGURATION AND LOCATIONS OF BUILDINGS AND PLANT STRUCTURES SHOWN IS BASED ON THE MOST CURRENT INFORMATION AVAILABLE. THEY MAY BE SUBJECT TO CHANGE AS THE DESIGN IS DEVELOPED.

SOUTH HOLLAND DC HOUSING & PLANNING -7 NOV 2001 0941/01 Ref:

DETERMINED PLAN

NO.	DATE	REVISIONS	BY	CHK	DES SUPV.	ENGR	PROJ ENGR	APPR
F	10/29/01	ISSUED FOR INFORMATION	AT	KG	-	KG	RG	
E	10/24/01	ISSUED FOR INFORMATION	AT	KG	-	KG	RG	
D	9/14/01	ISSUED FOR INFORMATION	AT	KG	-	KG	RG	
C	9/10/01	ISSUED FOR INFORMATION	RDP	KG	-	KG	RG	
B	8/01/01	RE ISSUED FOR INFORMATION	AT	KG	-	KG	RG	
A	7/30/01	ISSUED FOR INFORMATION	AT	NS	-	KG	RG	

SCALE 1:500 | DATE 07/21/01 | DESIGNED AT | DRAWN AT | CHIEF ENGR.

BECHTEL LIMITED

SPALDING ENERGY PROJECT

SPALDING, ENGLAND

COMPOSITE VIEW OF PLANT NORTH, EAST, SOUTH & WEST ELEVATIONS

0 10 20 30 40 50M

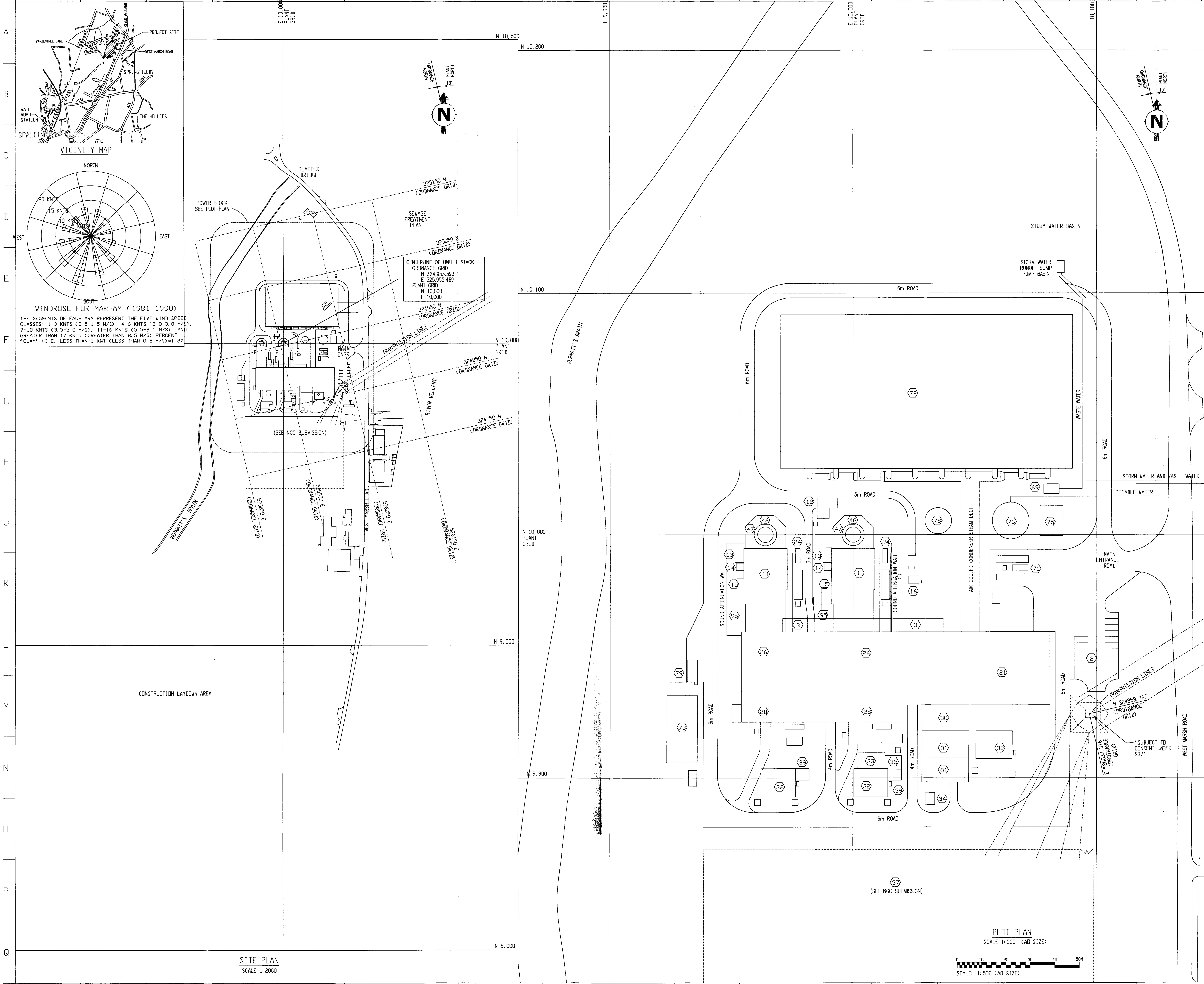
SCALE: 1:500 (A0 SIZE)

JOB NO.	DRAWING NO.	REV.
24628-000	A2-0000-00001	F

15 F:\PROJECTS\24628-000\A2-0000-00001.dgn

16 841 X 1189 ISO A1

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LEGEND

- (2) PARKING LOT
- (3) PIPE RACK
- (11) HEAT RECOVERY STEAM GENERATOR
- (12) HRSG CHEMICAL SKID
- (13) HRSG SAMPLE PANEL
- (14) HRSG BLOWDOWN TANK
- (15) BLOWDOWN SUMP & PUMPS
- (16) AUXILIARY BOILER
- (21) STEAM TURBINE AREA
- (24) BOILER FEEDWATER PUMP
- (26) COMBUSTION TURBINE AREA
- (28) COMBUSTION TURBINE INLET FILTER
- (30) CONTROL ROOM
- (31) ELECTRICAL ROOM
- (32) CTG MAIN TRANSFORMER
- (33) UNIT AUILIARY TRANSFORMER
- (34) OFFSITE BACK-UP POWER TRANSFORMER
- (35) ISOLATION TRANSFORMER
- (37) AIR-INSULATED SWITCHYARD (BY NGC)
- (38) STG MAIN TRANSFORMER
- (39) EXCITATION TRANSFORMER
- (46) STACK
- (47) CONTINUOUS EMISSIONS MONITORING
- (69) OILY WATER SEPARATOR (BELOW GROUND)
- (71) MOBILE DEMINERALIZED WATER SYSTEM
- (72) AIR COOLED CONDENSER
- (73) WET SURFACE AIR COOLER
- (75) FIREWATER PUMPHOUSE
- (76) RAW WATER/ FIREWATER STORAGE TANK
- (78) DEMINERALIZED WATER STORAGE TANK
- (79) WSAC CHEMICAL SKID
- (81) WAREHOUSE
- (95) FUEL GAS FILTER/SEPARATOR

NOTES:

1. GENERATION SITE EXCLUDES SWITCHYARD (ITEM 37).
2. THE FENCE LINE, BERMS AND FOOTPATH AND CYCLEWAY WILL BE SHOWN ON LANDSCAPE DRAWING AND BABTIE DRAWINGS.

SOUTH HOLLAND DC HOUSING & PLANNING
-7 NOV 2001
Ref. 0941/01

DETERMINED PLAN

NO.	DATE	REVISIONS	BY	CHK	DES SUPV.	ENGR.	PROJ ENGR	APPR
/	/							
E	11/01/01	ISSUED FOR PERMIT	JM	RW		ALD	GR	
D	10/29/01	ISSUED FOR PERMIT	JM	RW		ALD	GR	
C	10/26/01	ISSUED FOR PERMIT	JM	RW		ALD	GR	
B	10/23/01	ISSUED FOR PERMIT	JM	RW		ALD	GR	
A	6/19/01	ISSUED FOR PERMIT	RW	NM		NM	GR	

SCALE AS NOTED | DATE 2-28-97 | DESIGNED | DRAWN | CHIEF ENGR.

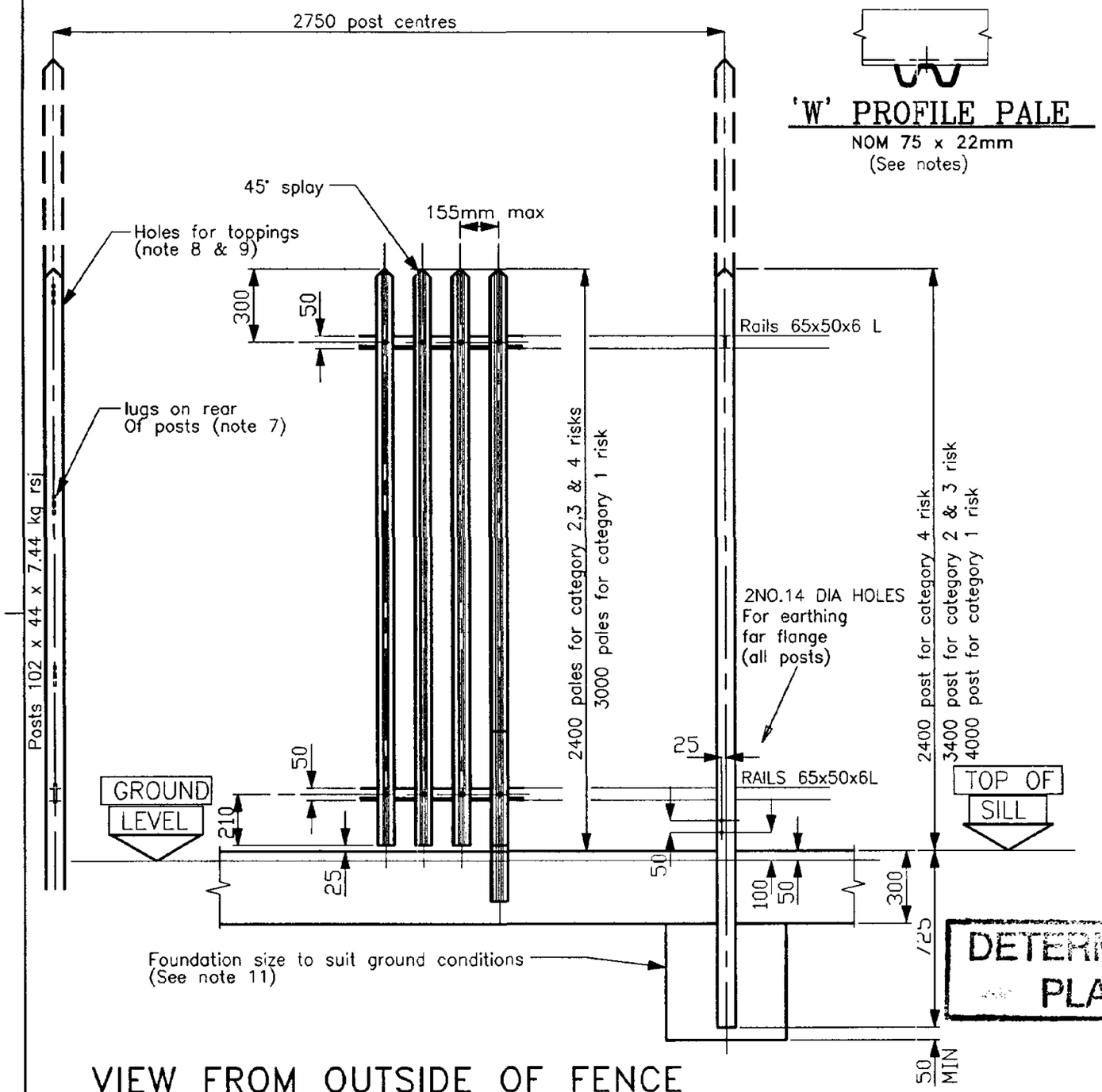
BECHTEL LIMITED

SPALDING ENERGY PROJECT
SPALDING, ENGLAND

SITE PLAN AND PLOT PLAN

JOB NO.	DRAWING NO.	REV.
24628-000	C2K-0000-001	E

SPA: [027002] XC200001.DGN 841 X 1189 "A0" S[illegible]



'W' PROFILE PALE
NOM 75 x 22mm
(See notes)

VIEW FROM OUTSIDE OF FENCE

GENERAL NOTES

1. This drawing and drg Nos 34/2856 and 34/2931 are to be read in conjunction with NGTS 2.22: 'Perimeter Security Fencing for New Substations and Extensions to Existing Substations'.
2. Fence and gates are to be in accordance with BS1722 Pt 12:1990 except where otherwise specified
3. Panel rails are to extend into the post between the post flanges such that the panels are captive laterally between the flanges, even if the panel bolts are removed . On the corners of fence lines it may be necessary to consider flange extensions to ensure lateral retention of the fence panels. The ends of the rails are to terminate no more than 7.5mm from the web of the posts. Fish plates are to be located in slots through the web of the posts
4. Poles are to be of a 'W' section in 3.0mm thick grade S275 steel to BS EN 10 025:1993. The section is to be the Godins Section by British Steel, ref:A3228 Rev1, or similar approved.
5. Pale to rail fixings are to be 8mm 'T' headed galvanised bolt with security nut to BS 4933 (grade 8.8)
6. An electric pulse fence is to be installed to the back of the fence and gates as part of the standard fence construction. The electric pulse fence shall be of an approved type (see later notes) and shall extend from ground level to 1.0m above the top of the fence poles. (For Security Risk Categories 1, 2 & 3)
7. At least 4No lugs of 4mm thickness are to be welded onto the back of the fence post (at fabrication stage, prior to galvanising) to facilitate the mounting of the electric pulse fence. Tops of lugs to be sloped at 50 degrees from the horizontal to hinder foot holds.
8. To allow for future provision of a barbed tape concertina, suitable holes shall be made in the fence posts (at fabrication stage, prior to galvanising) which will facilitate the pinning of 700mm long x 50 x 50 x 6mm steel angles (1 per post). The angles would support 3No strands of barbed wire, onto which the barbed tape would be mounted.
9. Suitable holes shall be made in the fence posts (at fabrication stage, prior to galvanising) which will facilitate the future provision of a rotating peeled aluminium topping of an approved type (see later notes).
10. Sill to be cast insitu following inspection/approval of the formation (by the Engineer) to the following dimensions:-
    Category 1 - 500 wide x 300 deep
    Category 2/3 - 400 wide x 300 deep
    Category 4 - 300 wide x 300 deep
    Category 1 - 3 should be provided with 1.0m x 125mm deep walkway as NGTS 2.10 Clause 071.074
    Sill is to be C30 concrete with B283 mesh reinforcement (50 cover). Top corners to have 25mm chamfers (except where adjacent to a footpath) and surface to fall at minimum 1:40 towards site with smooth float finish
11. Foundations/sills shall be designed to give a minimum factor of safety of 2.0 against overturning for the fence, for a wind load of 0.9kN/m² as specified in BS 1722 pt 12. (Calculations are to be submitted for inspection prior to installation)
12. Fence panels are to be anchored to the sill on the centre line with 2No pale extensions at 1/3 rd points of the panel lengths. These poles are to extend 250mm into the sills.
13. Protective treatment is to be undertaken after full fabrication of the elements (inclusive of all drilling necessary both for installation and to suit specified NGC requirements) Galvanising is to be hot dip to BS EN ISO 1461 to give a minimum life to first maintenance of 15 years. (The Contractor is required to confirm, in writing that the above life to first maintenance will be achieved)
14. Post foundations (below sill beam level) are to be of concrete grade C20 (min) and shall be in accordance with the NGTS 2.10. Where no sill beam is provided the post foundation concrete is to be C30 (min) and the surface (which would be 50 above ground level) would be finished as Note 10.
15. Gate posts, frames and fittings are to be as SP30 from BS1722 Pt 12. (vehicle and pedestrian)
16. Poles to be fitted to gate frame with the same method as specified/installed fence
17. Gate frames to be of a Vierendeel beam design.
18. The number of gates shall be as specified in the contract (if not specified then they shall be kept to a minimum)
19. Purpose-made removable fence panels are not required.
20. Unless otherwise stated all dimension to be in millimetres
21. Ducts to be provided across the fence as NGTS 2.01 Clause 071.075

APPROVED SYSTEMS
Electric pulse fence:-
'Power Fence' manufactured and installed in accordance with the Code of Practice of Gallagher Security (UK) Ltd, Coventry, Warwickshire.
Rotating peeled aluminium topping:-
400mm diameter, by Vandgard Ltd, Edenbridge, Kent.
Padlocks to be as specified by NGC Area.

OTHER RELATED DRAWINGS
Drg 34/2856 - Basic Features of the Enhanced 2.4m High Palisade Gates
Drg 34/2931 - Lock/Latch details of the Enhanced 2.4m High Palisade Gates

DETERMINED PLAN

SOUTH HOLLAND DC
HOUSING & PLANNING
07 AUG 2001
Ref: 9/H/01

ISSUE	A		CONTRACT ISSUE	B		BOTTOM RAIL DELETED	C		DRAWING REVISED TO ACCORD WITH ISSUE 3 OF NGTS 2.22	D		NOTES 10 AND 14 AMENDED
DRAWN/DATE	JDS	JULY '97		J.M.L	1.9.98		PHEL	5/5/00		DW	11/7/01	
CHECKED/DATE	SGA	7/97		S.G.A.	1.9.98		*	*		FJA	27/7/01	
APPROVED/DATE	PFM	17/7/97		P.F.M.	1.9.98		*	*		EAF	27/7/01	
APPROVED FOR CONSTRUCTION												

PRELIMINARY FOR INFORMATION ONLY
NOT TO BE WORKED TO

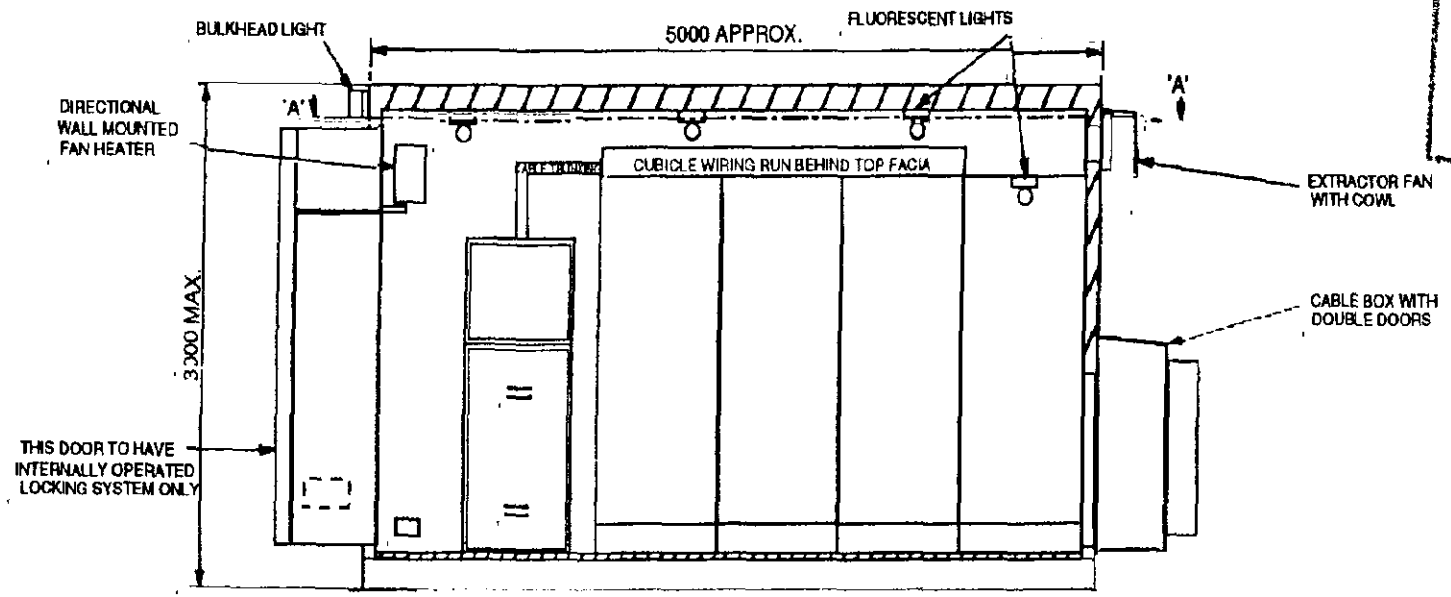
BASIC FEATURES OF THE ENHANCED 2.4m HIGH PALISADE FENCE

Station: SUBSTATION PERIMETER FENCING — ISSUE: D
Drg. No. 34/2855 — Sht No 1 — No of Shts 1
SCALE:- 1:20 — REF. 8799/CV02

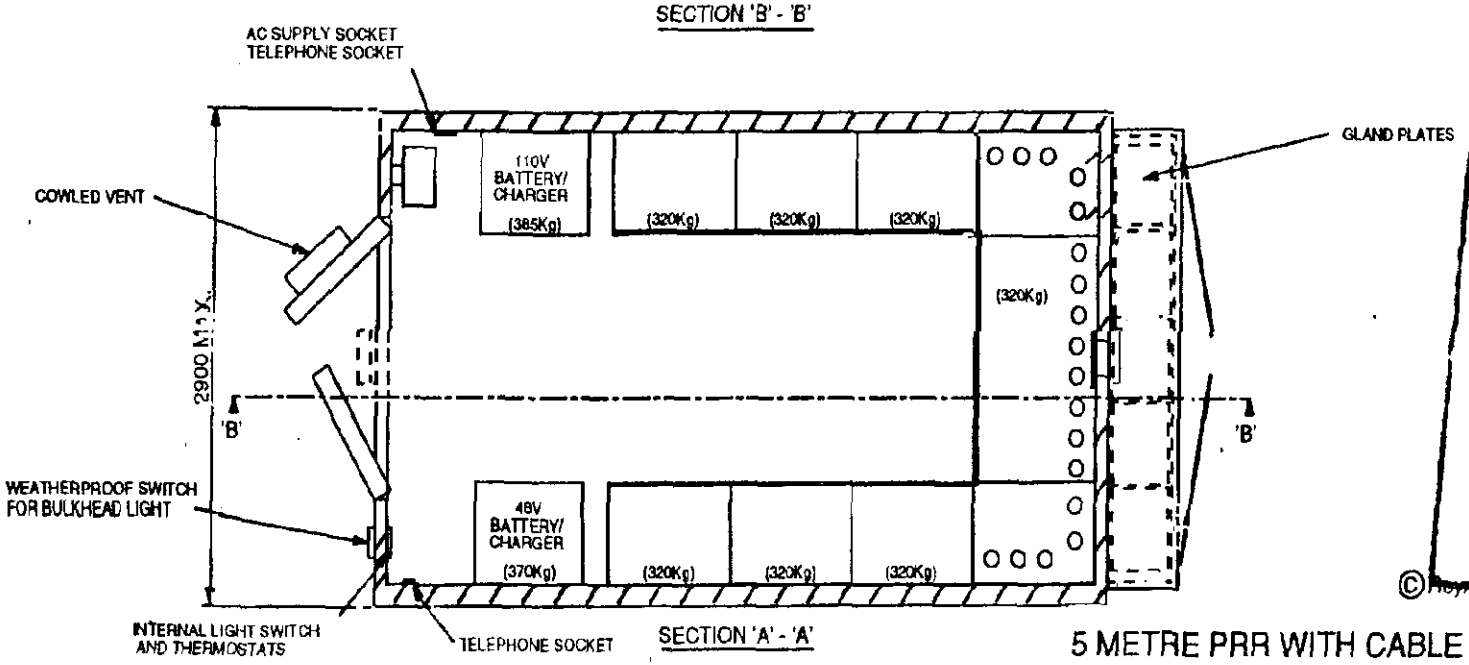
Application Design
Civil Design Group
Brookmead
Guildford Business Park
Guildford
Surrey GU2 8XQ
Tel 01483 463000
Fax 01483 463249

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MEDUSA TO AUTOCAD CONVERSION at Revision B on MON FEB 21 2000



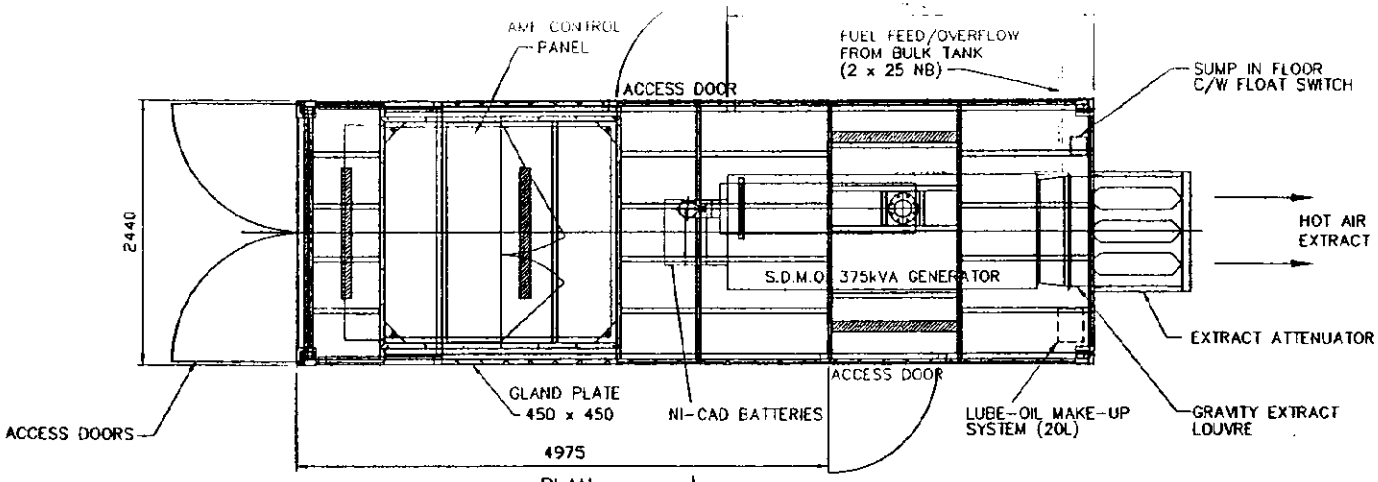
SECTION 'B' - 'B'



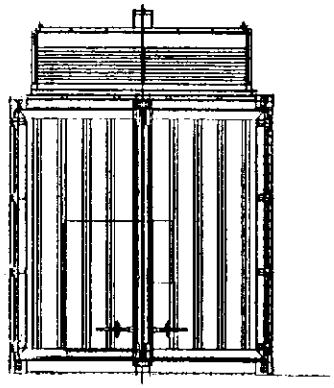
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5 METRE PRR WITH CABLE GLAND ENTRY

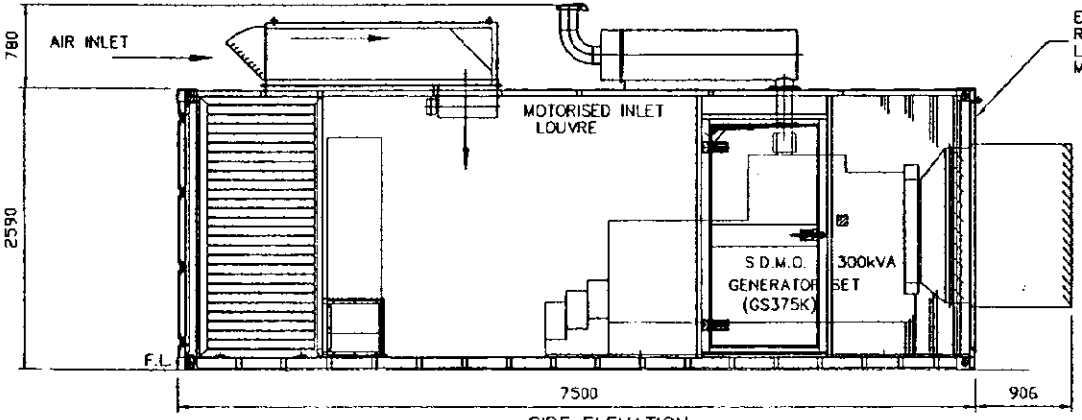
Ref: 941/01
AMENDED PLAN
Ref.
A1
© Reynolds Ltd 1997



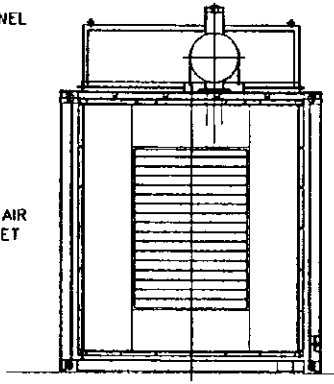
PLAN



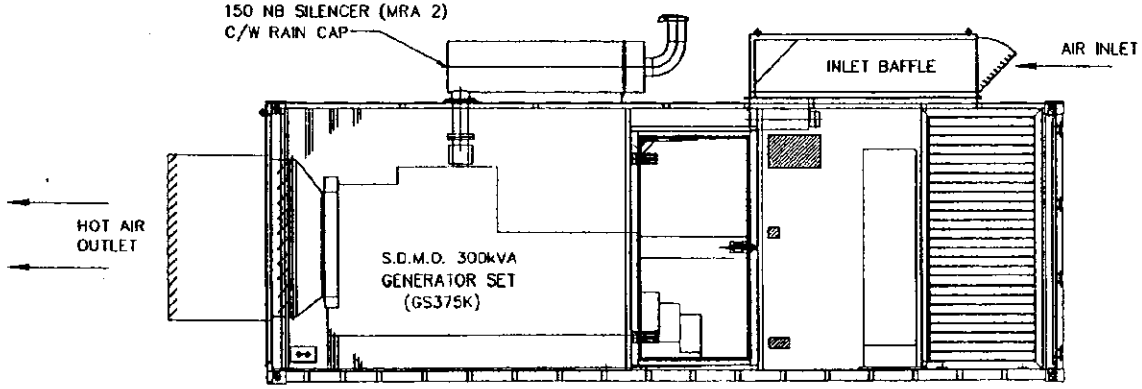
END ELEVATION



SIDE ELEVATION



END ELEVATION



SIDE ELEVATION (OPPOSITE)

TYPICAL ONLY

INLET BAFFLE ON END. NO COMPARTMENT
L 8596 x W 2438 x H 2590.

NOTES:-

1. ALL DIMENSIONS IN MILLIMETRES.

941/01

A1 Ltd CHEMBAY

ORIGINAL			
SIONS	DESCRIPTION	A.B. CHK'D	5/6/01 DATE

INGRAM INSTALLATIONS LTD.
NEW ZEALAND ROAD
STOCKPORT SK1 4AG
Tel No. 0161 480 8284

CLIENT:- V A TECH REYROLLE PROJECTS LTD.
HEBBURN
TYNE & WEAR NE31 1EJ.

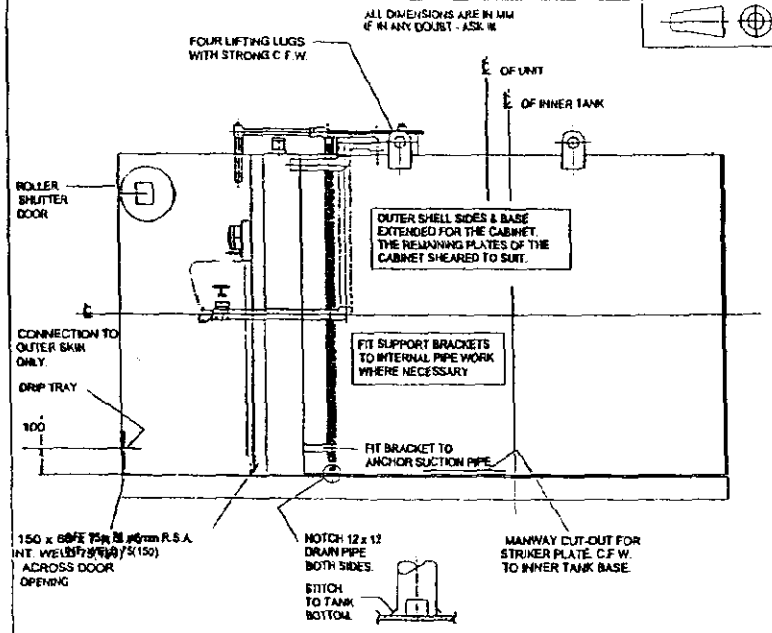
SPALDING NORTH 400KV SUBSTATION

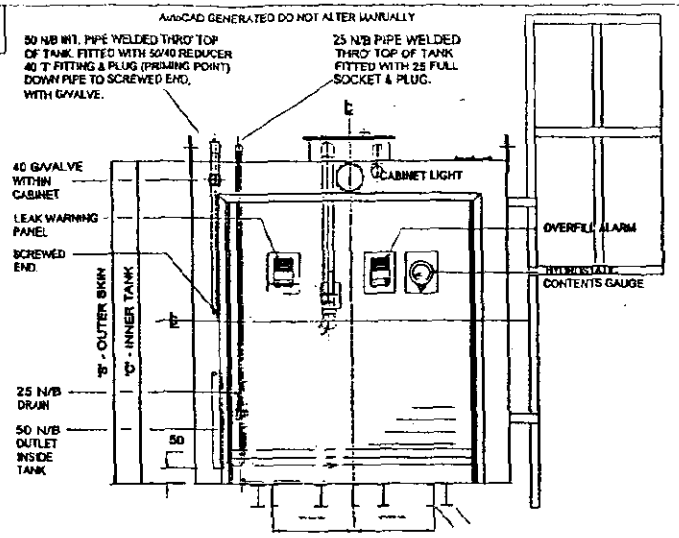
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GENERAL ARRANGEMENT OF CONTAINERISED 375kVA STANDBY GENERATOR AND ASSOCIATED EQUIPMENT.

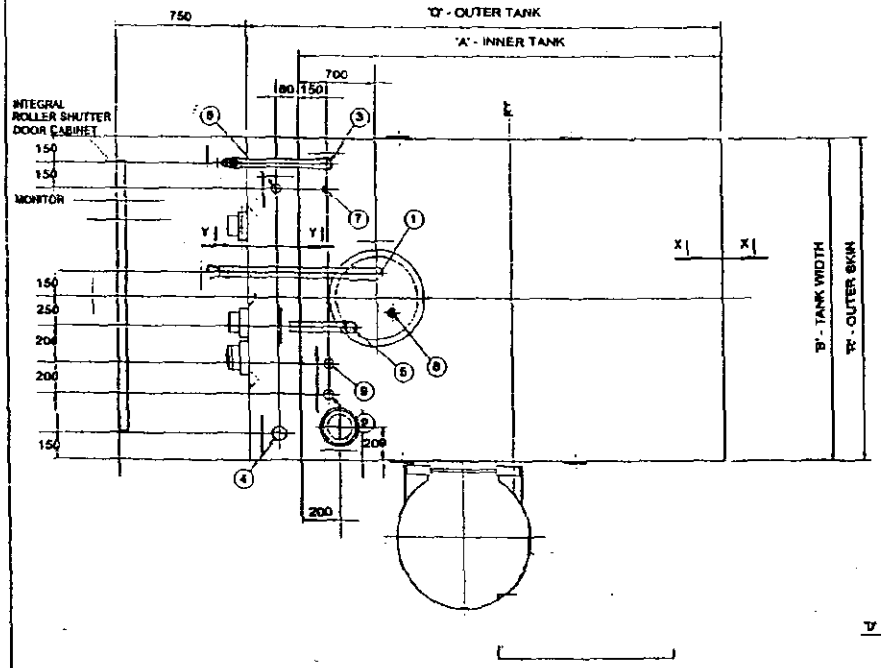
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A.B. 5.06.01		
DRG No. E/0247-BS		REVS A

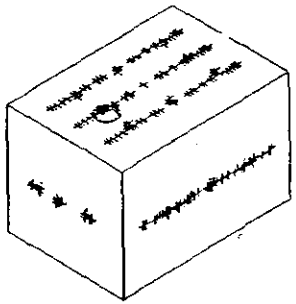
ALL DIMENSIONS ARE IN MM
IF IN ANY DOUBT - ASK !!

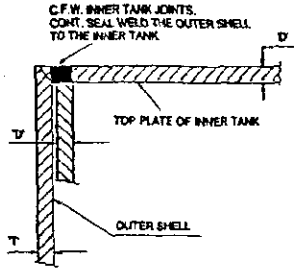
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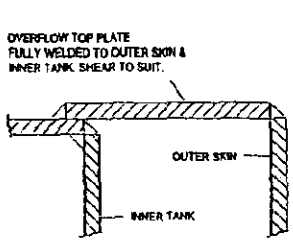












TANK DIMENSIONS

No. OFF:	ONE			CAPACITY:	
MANUFR'D:	BS 799: PART 5: 1987 (GEN.)			MANWAY/S:	
INNER TANK - AIR TESTED TO 0.21 BAR					
DIM	A	LENGTH		C	HEIGHT
	B	WIDTH		D	PLT. THK.

SHEARING

SHEAR mm PLATE — CUT 45 x 45 x 6 R.S.A.

No.	SIZE	POS	No.

OUTER SHELL - TESTED SOUND

DIMS	Q	LENGTH		T	PLT. THK.
	R	WIDTH			
	S	HEIGHT			

SHEARING

SHEAR mm PLATE — CUT 75 x 75 x 6 R.S.A.

No.	SIZE	POS	No.	SIZE
	x	SIDES		
	x	ENDS		
	x	BASE		
	x			
	x			
	x		No.	SIZE
	x			

PLATE JOINING: — No. OF STAYS:

CONNECTIONS — ALL GATE VALVES TO BE LOCKABLE

CODE	SIZE	TYPE	No	COMMENTS
1	65	PIPE S.B.E. - FILL	1	C/W BEND TO HIGH LEVEL, 1 EXC. G/VALVE, CAP & CHAIN
2			1	C/W BAL. CHAMBER, GAUGE & BRKT
3	50	PIPE S.O.E. - OUTLET	1	C/W T-FITTING PLUG & G/VALVE
4	65	H/S - OPEN VENT	1	C/W SHORT PIPE & VENT CAP
5	65	PIPE S.O.E. - VAPOUR TRANSFER	2	C/W BEND TO HIGH LEVEL
6	40	H/S 50/40 - LEAK DETECTION	1	C/W PROBE & LEAK WARNING PANEL
7	25	PIPE S.O.E. - DRAIN	1	C/W FULL SOCKET & PLUG
8	40	F/S 50/50 - SPARE	1	C/W STEEL PLUG - SPARE

FINISH: INTERNALLY CLEANED & LEFT SELF COLOUR

NOTES:
- WELD INSIDE & OUTSIDE EXCEPT TOP PLATE - OUTSIDE ONLY. OUTER SKIN CONTINUOUSLY WELDED OUTSIDE ONLY.
- PLUG WELD OUTER SKIN TO INNER TANK THROUGH 25mm DIA. HOLES AT STAY POSITIONS - GRIND SMOOTH.
- OUTER SKIN DESIGNED TO CONTAIN 110% OF THE INNER TANK VOLUME. THE OUTER SKIN BASE PLATE IS OVERSIZED TO PRODUCE A 15mm FLG.
- NO CONNECTIONS IN LOWER HALF OF INNER TANK.

SPECIAL MATERIAL PURCHASES

No.	ITEMS	REQ'D	No.	ITEMS	REQ'D

DRAWN: | DATE: | AUTHORISED:

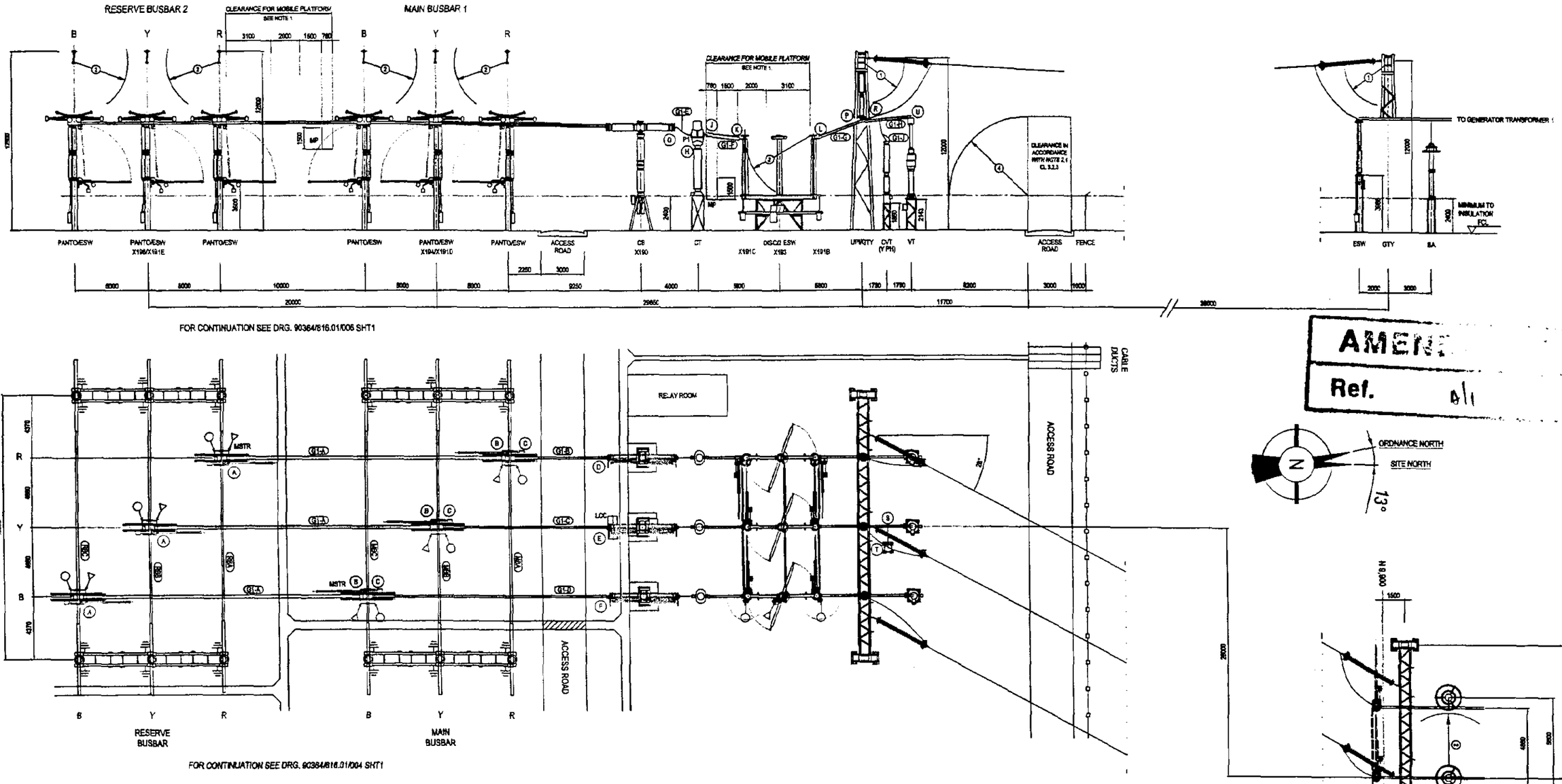
CODE	REVISIONS	DATE
	G A TYPICAL ONLY	

FILE No.:
CLIENT:
Ord. No.:
WK. EX. SALES:
WK. REQ'D:

TITLE

RECTANGULAR ENVIROTANK WITH INTEGRAL CABINET & ROLLER SHUTTER DOOR

DWG. No.:



AMENDMENT
Ref. 941/01

SUBSTATION ELECTRICAL CLEARANCES IN ACCORDANCE WITH NGTS 2.1		
NOMINAL SYSTEM VOLTAGE 400kV (rms)		
1	BASIC ELECTRICAL CLEARANCE (PHASE TO EARTH)	2.8m
2	PHASE-TO-PHASE CLEARANCE	3.8m
3	SAFETY CLEARANCE (HORIZONTAL)	4.6m
4	SAFETY CLEARANCE (VERTICAL)	5.5m
5	HEIGHT TO INSULATION	2.4m

WHERE EQUIPMENT CONFIGURATIONS HAVE NOT BEEN SUBJECT TO TYPE OR ROUTINE TESTS IN ACCORDANCE WITH IEC 60694 THE ELECTRICAL CLEARANCES GIVEN FOR REFS 1 AND 2 ABOVE SHALL APPLY. THEY APPLY UNDER CONDITIONS OF MAXIMUM SWING AND SAG.

WHEN DESIGNING ELECTRICAL CONNECTIONS THE FOLLOWING ALLOWANCES SHOULD BE MADE TO COVER TOLERANCES IN ELECTRICAL AND CIVIL WORK AND THE SETTLEMENT OF FOUNDATIONS.-

400kV - 150mm.

EQUIPMENT LEGEND		MANU./TYPE	DRG. No.
CB	CIRCUIT BREAKER		
CT	CURRENT TRANSFORMER		
CVT	CAPACITOR VOLTAGE TRANSFORMER		
DISC/ ESW	DISCONNECTOR WITH 2 EARTH SWITCHES		
GTY	GANTRY		
PANTO/ ESW	PANTOGRAPH DISCONNECTOR WITH EARTH SWITCH		
PI	POST INSULATOR		
3PH PI	3 PHASE POST INSULATOR		
UIP	UNDERSLUNG POST INSULATOR		
VT	VOLTAGE TRANSFORMER		

NOTES

- G1-A - BUSBAR REFERENCE
- (A) - CLAMP REFERENCE
- - EARTH SWITCH MECH BOX
- - DISCONNECTOR MECH BOX
- - PORTABLE MAINTENANCE EARTHING CONN. (D LOOP)
- FCL - FINISHED CONCRETE LEVEL
- FGL - FINISHED GROUND LEVEL
- FSL - FINISHED SUBSTATION LEVEL
- LCC - COMBINED LOCAL CONTROL CUBICLE/HYDRAULIC CONTROL CUBICLE
- MSTR - MASTER DRIVE LOCATION ON PANTOGRAPH DISCONNECTOR

* SAFETY CLEARANCE REQUIRED FOR WORK CARRIED OUT USING MOBILE PLATFORM - GENIE Z-45/22 - WORKING HEIGHT 15.54m MAX
PLATFORM HEIGHT 13.72m MAX
PLATFORM SIZE 1820 x 760mm
1100 - SAFETY DISTANCE FROM NGC SAFETY RULES
2000 - MANOPH
1600 - HORIZONTAL REACH

2. ON OPEN TERMINAL EQUIPMENT "D" LOOPS ARE INCLUDED ON BOTH SIDES OF THE BASE ON EACH PHASE TO ALLOW FOR THE CONNECTION OF FOUR PORTABLE EARTH CLAMPS TO EACH LOOP.

ASSOCIATED DRAWINGS

90364/816.01/001 SHT1 - SUBSTATION LAYOUT
90364/816.01/002 SHT1 - AUXILIARY BUILDING
90364/816.01/003 SHT1 - LAYOUT AND ELEVATIONS FOR WALPOLE FEEDER
90364/816.01/004 SHT1 - LAYOUT AND ELEVATIONS FOR KEADBY FEEDER
90364/816.01/005 SHT1 - LAYOUT AND ELEVATIONS FOR GENERATOR 1 CIRCUIT
90364/816.01/007 SHT1 - LAYOUT AND ELEVATIONS FOR GENERATOR 2 CIRCUIT
90364/816.01/008 SHT1 - LAYOUT AND ELEVATIONS FOR BUS COUPLER CIRCUIT

SCALE FOR USE WITH REDUCED PRINTS

0 1U 2M 3M 4M 5M 6M 7M 8M 9M 10M

SOUTH LAND DC
HOUSING PLANNING
13 DEC 2001
Ref: 941/01

REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE

REVISION

NGC DRAWING No.

VA TECH Reyrolle Transmission c 2001 (H)

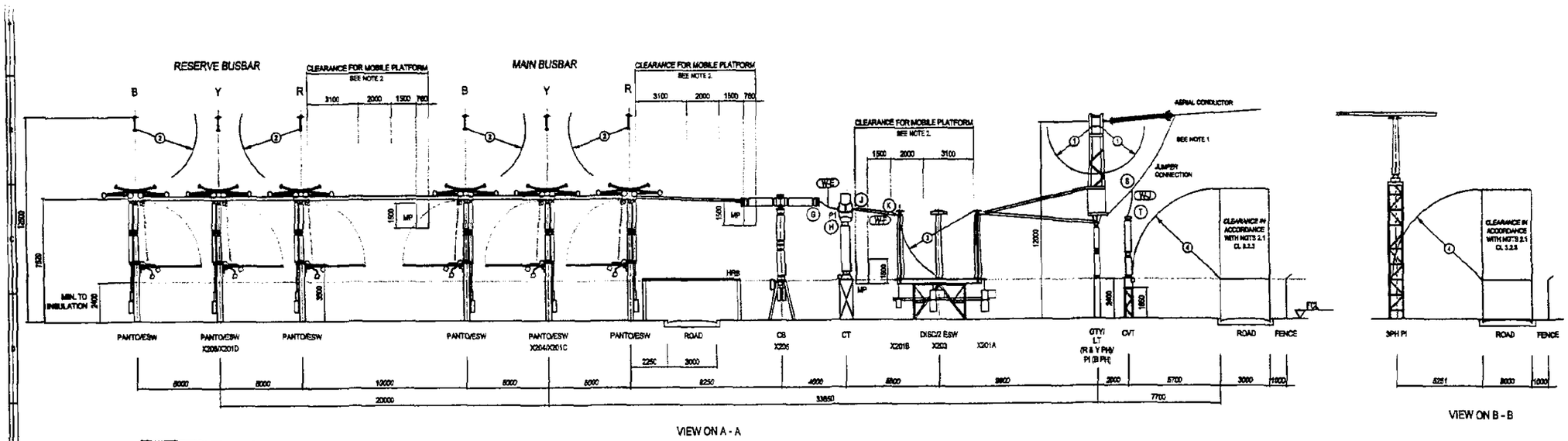
PROJECT:- SPALDING NORTH 400KV SUBSTATION

BAY LAYOUT AND ELEVATION

GENERATOR 1
SPALDING NORTH 400kV SUBSTATION

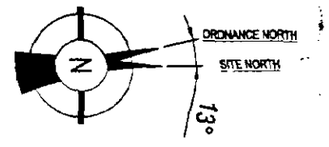
DATE	18/10/2001
JOB No.	90364
DRAWN	T.NAGY
CHECKED	T.NAGY
APPROVED	P.WILKINSON

DRAWING No.	SHEET	REV	SCALE	CAD
90364/816.01/005	1	0	1:100	AD



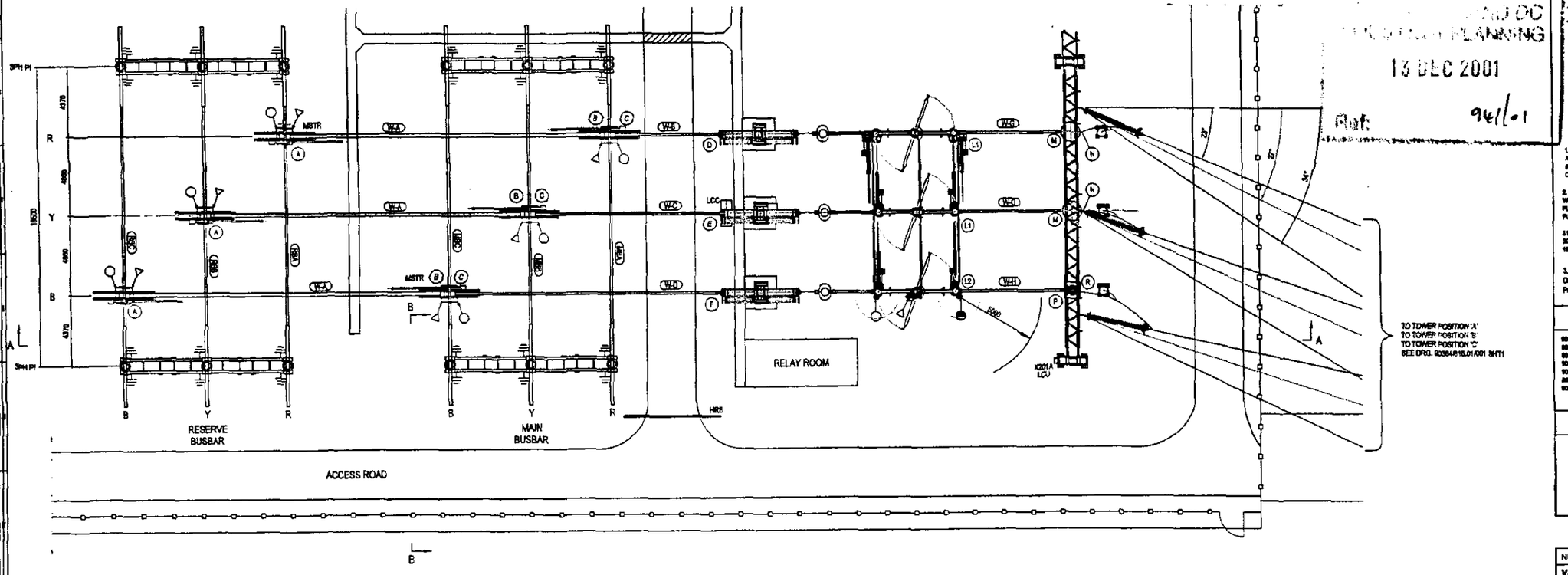
VIEW ON A - A

VIEW ON B - B



AMENDED PL
Ref. A/

FOR CONTINUATION SEE DRG. 90364/816.01/004 SHT1



NOTES:

NOMINAL SYSTEM VOLTAGE 400kV (rms)

1	BASIC ELECTRICAL CLEARANCE (PHASE TO EARTH)	2.6m
2	PHASE-TO-PHASE CLEARANCE	3.6m
3	SAFETY CLEARANCE (HORIZONTAL)	4.6m
4	SAFETY CLEARANCE (VERTICAL)	5.6m
5	HEIGHT TO INSULATION	2.4m

WHERE EQUIPMENT CONFIGURATIONS HAVE NOT BEEN SUBJECT TO TYPE OR ROUTINE TESTS IN ACCORDANCE WITH IEC 60864 THE ELECTRICAL CLEARANCES GIVEN FOR REFS 1 AND 2 ABOVE SHALL APPLY.
THEY APPLY UNDER CONDITIONS OF MAXIMUM SWING AND SAG.

WHEN DESIGNING ELECTRICAL CONNECTIONS THE FOLLOWING ALLOWANCES SHOULD BE MADE TO COVER TOLERANCES IN ELECTRICAL AND CIVIL WORK AND THE SETTLEMENT OF FOUNDATIONS:-

400kV - 150mm.

EQUIPMENT LEGEND		MAKE/TYPE	DRG. No.
CB	CIRCUIT BREAKER		
CT	CURRENT TRANSFORMER		
EVT	CAPACITOR VOLTAGE TRANSFORMER		
DISC/ ESW	DISCONNECTOR WITH 2 EARTH SWITCHES		
GTY	GANTRY		
LT	LINE TRAP		
PANTO/ ESW	PANTOGRAPH DISCONNECTOR WITH EARTH SWITCH		
PI	POST INSULATOR		
3PH PI	3 PHASE POST INSULATOR		

NOTES

- WA - BUSBAR REFERENCE
- (A) - CLAMP REFERENCE
- EARTH SWITCH MECH BOX (MANUAL)
- EARTH SWITCH MECH BOX (MOTORISED)
- DISCONNECTOR MECH BOX
- PORTABLE MAINTENANCE EARTHING COIL (3 LOOP)
- FCL - FINISHED CONCRETE LEVEL
- FGL - FINISHED GROUND LEVEL
- FSL - FINISHED SUBSTATION LEVEL
- HRB - HEIGHT RESTRICTING BARRIER (3.4 METRES)
- LCU - LOCAL CONTROL UNIT (ESW)
- LDC - COMBINED LOCAL CONTROL CUBICLE/HYDRAULIC CONTROL CUBICLE
- MSTR - MASTER DRIVE LOCATION ON PANTOGRAPH DISCONNECTOR

1. DOWN LEADS FROM THE TERMINAL TOWERS, INCLUDING INSULATOR ANCHORS, INSULATORS, AERIAL CONDUCTORS, EARTH CONNECTION ONTO LINE LANDING STRUCTURE, JUMPER CONNECTION INCLUDING LOWER END LINE TERMINATION FITTING BY OVERHEAD LINE CONTRACTOR. CLAMP FOR CONNECTING LINE TERMINATION FITTING TO POST INSULATOR BY REYROLLE.

2. SAFETY CLEARANCE REQUIRED FOR WORK CARRIED OUT USING MOBILE PLATFORM - GENIE Z-45/22 -
WORKING HEIGHT 16.54m MAX
PLATFORM HEIGHT 13.72m MAX
PLATFORM SIZE MIDI c 760mm

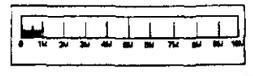
3100 - SAFETY DISTANCE FROM NGC SAFETY RULES
2000 - MARGIN
1500 - HORIZONTAL REACH

3. ON OPEN TERMINAL EQUIPMENT 'D' LOOPS ARE INCLUDED ON BOTH SIDES OF THE BASE ON EACH PHASE TO ALLOW FOR THE CONNECTION OF FOUR PORTABLE EARTH CLAMPS TO EACH LOOP.

ASSOCIATED DRAWINGS

90364/816.01/001 SHT1 - SUBSTATION LAYOUT
90364/816.01/002 SHT1 - AUXILIARY BUILDING
90364/816.01/004 SHT1 - LAYOUT AND ELEVATIONS FOR KEADBY FEEDER
90364/816.01/005 SHT1 - LAYOUT AND ELEVATIONS FOR GENERATOR 1 CIRCUIT
90364/816.01/006 SHT1 - LAYOUT AND ELEVATIONS FOR GENERATOR 2 CIRCUIT
90364/816.01/007 SHT1 - LAYOUT AND ELEVATIONS FOR GENERATOR 3 CIRCUIT
90364/816.01/008 SHT1 - LAYOUT AND ELEVATIONS FOR SUB DOUPLER CIRCUIT

SCALE FOR USE WITH REDUCED PRINTS



RECEIVED
PLANNING
13 DEC 2001
Ref: 94/1/1

REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE

REVISION

DATE	17/10/2001
JOB No.	90364
DRAWN	T.NAGY
CHECKED	T.NAGY
APPROVED	P.WILKINSON

NGC DRAWING No.

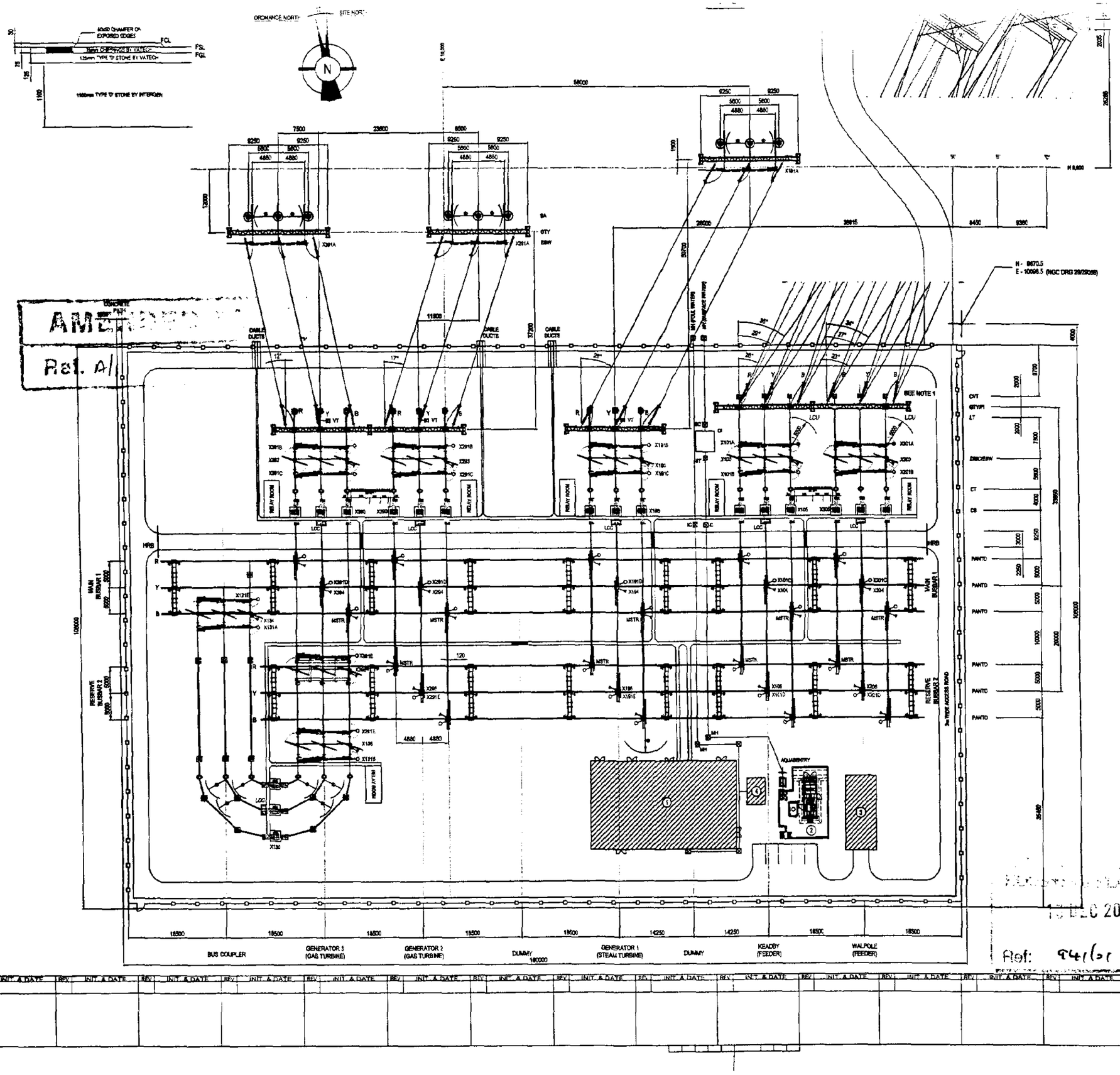
VA TECH Reyrolle Transmission c 2001 (M)

PROJECT:- SPALDING NORTH 400KV SUBSTATION

BAY LAYOUT AND ELEVATION

WALPOLE FEEDER
SPALDING NORTH 400KV SUBSTATION

DRAWING No.	SHEET	REV	SCALE	CAD
90364/816.01/003	1	0	1:100	AC



AMENDED
Ref. A/

NOMINAL SYSTEM VOLTAGE (rms):		400
1	BASIC ELECTRICAL CLEARANCE (PHASE TO EARTH)	2.8m
2	PHASE-TO-PHASE CLEARANCE	3.8m
3	SAFETY CLEARANCE (HORIZONTAL)	4.8m
4	SAFETY CLEARANCE (VERTICAL)	5.5m
5	HEIGHT TO INSULATION	2.4m

WHERE EQUIPMENT CONFIGURATIONS HAVE NOT BEEN SUBJECT TO TYPE OR ROUTINE TESTS IN ACCORDANCE WITH IEC 60694 THE ELECTRICAL CLEARANCES GIVEN FOR REFS 1 AND 2 ABOVE SHALL APPLY.
THEY APPLY UNDER CONDITIONS OF MAXIMUM SWING AND SAG.

WHEN DESIGNING ELECTRICAL CONNECTIONS THE FOLLOWING ALLOWANCES SHOULD BE MADE TO COVER TOLERANCES IN ELECTRICAL AND CIVIL WORK AND THE SETTLEMENT OF FOUNDATIONS:-

400kV - 150mm.

ASSOCIATED DRAWINGS

90364/816.01/002 SHT1 - AUXILIARY BUILDING
90364/816.01/003 SHT1 - BAY LAYOUT AND ELEVATION FOR WALPOLE FEEDER
90364/816.01/004 SHT1 - BAY LAYOUT AND ELEVATION FOR KEADBY FEEDER
90364/816.01/005 SHT1 - BAY LAYOUT AND ELEVATION FOR GENERATOR 1 CIRCUIT
90364/816.01/006 SHT1 - BAY LAYOUT AND ELEVATION FOR GENERATOR 2 CIRCUIT
90364/816.01/007 SHT1 - BAY LAYOUT AND ELEVATION FOR GENERATOR 3 CIRCUIT
90364/816.01/008 SHT1 - BAY LAYOUT AND ELEVATION FOR BUS COUPLER CIRCUIT

29/29305 - MAIN CONNECTION & PROTECTION DIAGRAM
29/29059 - OVERALL SITE PLAN

EQUIPMENT LEGEND		MANU./TYPE	DRG. No.
—○	EARTH SWITCH MECH BOX (MANUAL)	-	-
—●	EARTH SWITCH MECH BOX (MOTORISED)	-	-
—◁	DISCONNECTOR MECH BOX	-	-
—⫴	PORTABLE MAINTENANCE EARTHING CONN. (1) LOOP	-	-
(1)	AUXILIARY BUILDING	-	-
(2)	DIESEL GEN. EQUIP. & FUEL TANK	-	-
(3)	GARAGE 6.0 x 14.0m	-	-
(4)	HARDSTANDING AREA 3.5m x 5.5m	-	-
—	REYROLLE SCOPE	-	-
CB	CIRCUIT BREAKER	-	-
CT	CURRENT TRANSFORMER	-	-
CVT	CAPACITOR VOLTAGE TRANSFORMER	-	-
DISC/ESW	RDP DISCONNECTOR WITH 2 EARTH SWITCHES	-	-
ESW	FREE STANDING EARTH SWITCH	-	-
FCL	FINISHED CONCRETE LEVEL	-	-
FGL	FINISHED GROUND LEVEL	-	-
FSL	FINISHED SUBSTATION LEVEL	-	-
GTY	GANTRY	-	-
HRB	HEIGHT RESTRICTING BARRIER (2.4 METRES)	-	-
IC	INSPECTION CHAMBER	-	-
LCU	LOCAL CONTROL UNIT (ESW)	-	-
LCC	LOCAL CONTROL CUBICLE	-	-
LT	LINE TRAP	-	-
MH	MAN HOLE	-	-
MSTR	MASTER DRIVE LOCATION ON PANTOGRAPH DISCONNECTOR	-	-
OI	OIL INTERCEPTOR	-	-
PANTO	PANTOGRAPH DISCONNECTOR WITH EARTH SWITCH	-	-
PI	POST INSULATOR	-	-
SA	SURGE ARRESTER	-	-
SC	SAMPLERS CHAMBER	-	-
ST	SILT TRAP	-	-
VT	VOLTAGE TRANSFORMER	-	-
UPI	UNDERSLUNG POST INSULATOR	-	-

NOTES

1. DOWN LEADS FROM THE TERMINAL TOWERS, INCLUDING INSULATOR ANCHORS, INSULATORS, AERIAL CONDUCTORS, EARTH CONNECTION ONTO LINE LANDING STRUCTURE, JUMPER CONNECTION INCLUDING LOWER END LINE TERMINATION FITTING BY OVERHEAD LINE CONTRACTOR. CLAMP FOR CONNECTING LINE TERMINATION FITTING TO POST INSULATOR BY REYROLLE.

2. SAFETY CLEARANCE REQUIRED FOR WORK CARRIED OUT USING MOBILE PLATFORM - GENIE S-45/22 -
WORKING HEIGHT 18.34m MAX. PLATFORM HEIGHT 13.72m MAX. PLATFORM SIZE 1830 x 760mm.
3100 - SAFETY DISTANCE FROM NGC SAFETY RULES.
2000 - WINDOW
1486 - HORIZONTAL REACH

3. ON OPEN TERMINAL EQUIPMENT "D" LOOPS ARE INCLUDED ON BOTH SIDES OF THE BAYS ON EACH PHASE TO ALLOW FOR THE CONNECTION OF FOUR PORTABLE EARTH CLAMPS TO EACH LOOP.

ORDINATE CO-ORDINATES

TOWER POSITION 'A' - N 324444.767 - E 526211.117
TOWER POSITION 'B' - N 324457.743 - E 526051.128

SCALE FOR USE WITH REDUCED PRINTS

0 5M 10M 15M 20M 25M 30M

RECEIVED DC
PLANNING
12 DEC 2001
Ref: 94/01

REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE

REVISION

DATE	17/10/2001
JOB No	90364
DRAWN	T.NAGY
CHECKED	T.NAGY
APPROVED	P.WILKINSON

NGC DRAWING No.

VA TECH Reyrolle Transmission c 2001 (H)

PROJECT:- SPALDING NORTH 400KV SUBSTATION

EQUIPMENT LAYOUT FOR

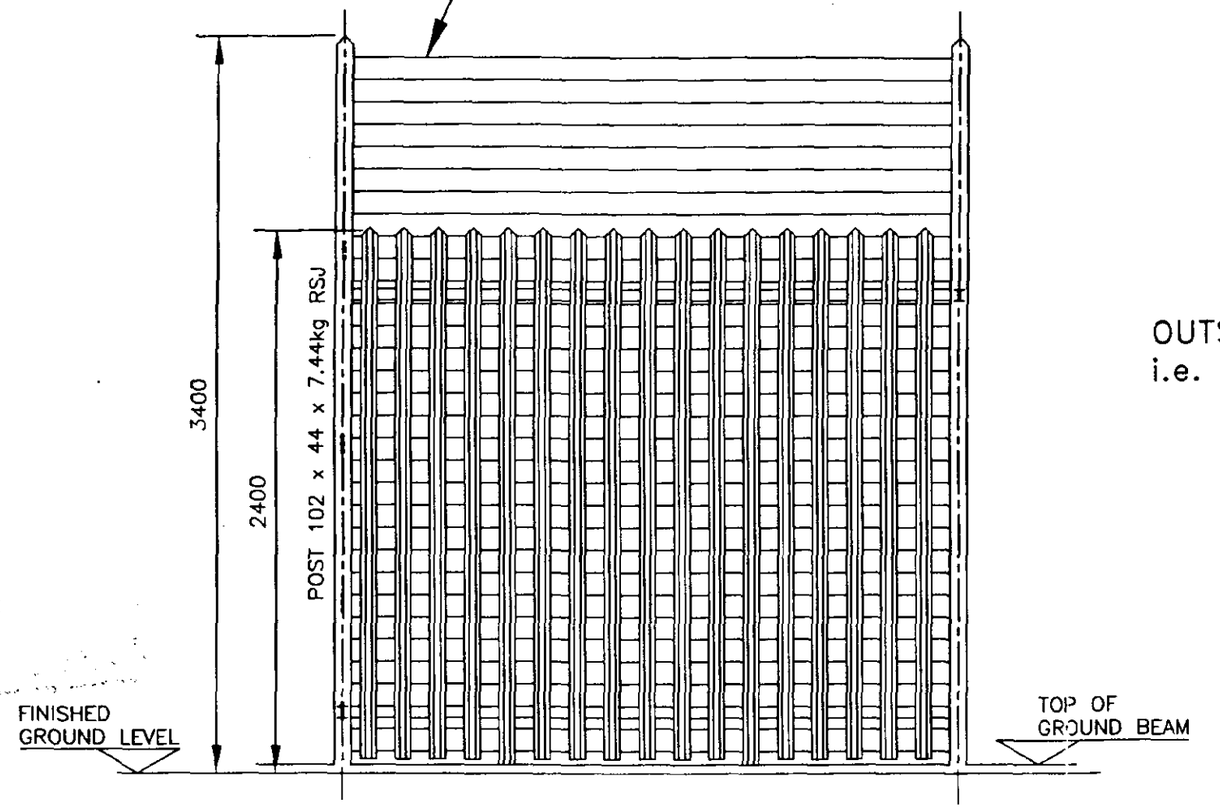
COMMON
SPALDING NORTH 400KV SUBSTATION

DRAWING No.	SHEET	REV	SCALE	CAD
90364/816.01/001	1	0	1:250	AD

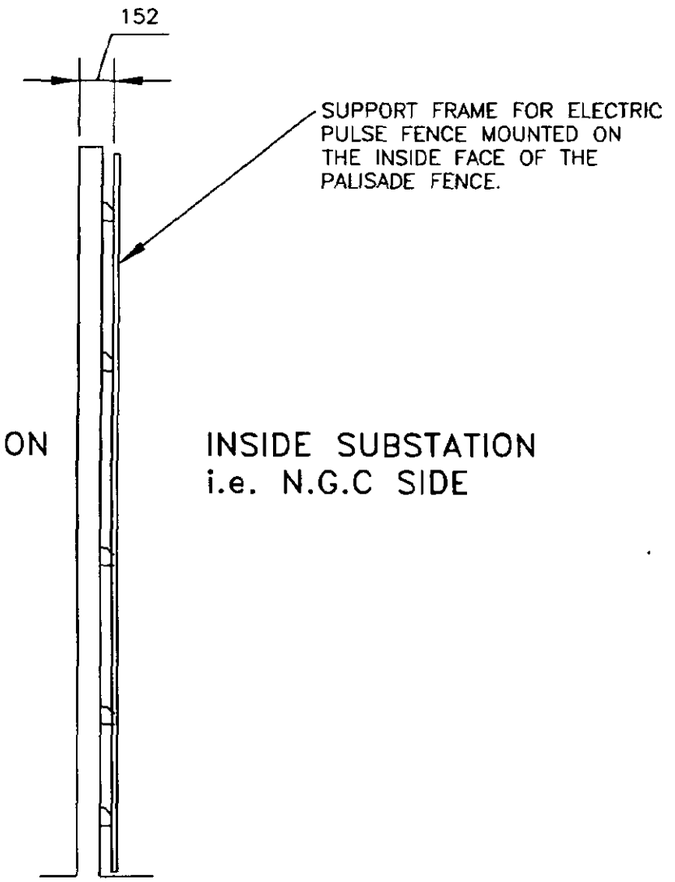
DETERMINED
PLAN

AMENDED PLAN
Ref. nil

ELECTRIC PULSE FENCE MOUNTED ON THE INSIDE FACE OF THE PALISADE FENCE.
THE ELECTRIC PULSE FENCE USED ON NATIONAL GRID SITES IS BEST DESCRIPED AS A CATTLE CONTROL TYPE FENCES.
THE ELECTRIC PULSE FENCE USED ON NATIONAL GRID SITES IS LINKED TO NATIONAL GRID CENTRAL CONTROL TO INDICATE A ALARM FOR INTRUDERS TO THE SITE SHOULD THE ELECTRIC PULSE FENCE BE TOUCHED.



VIEW FROM OUTSIDE OF FENCE



SECTION THROUGH PALISADE FENCE

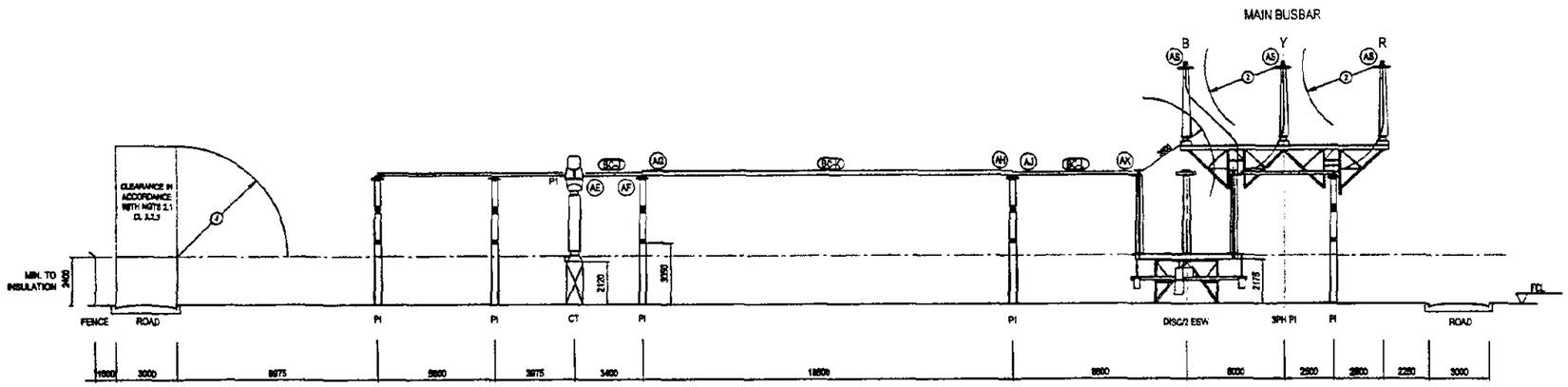
ISSUE	A		FIRST ISSUE
DRAWN	KEW	SEPT 01	
CHECKED			
APPR'D			
RECORDED			
FILMED			

TYPICAL NATIONAL GRID ELECTRIC PULSE FENCE DETAILS

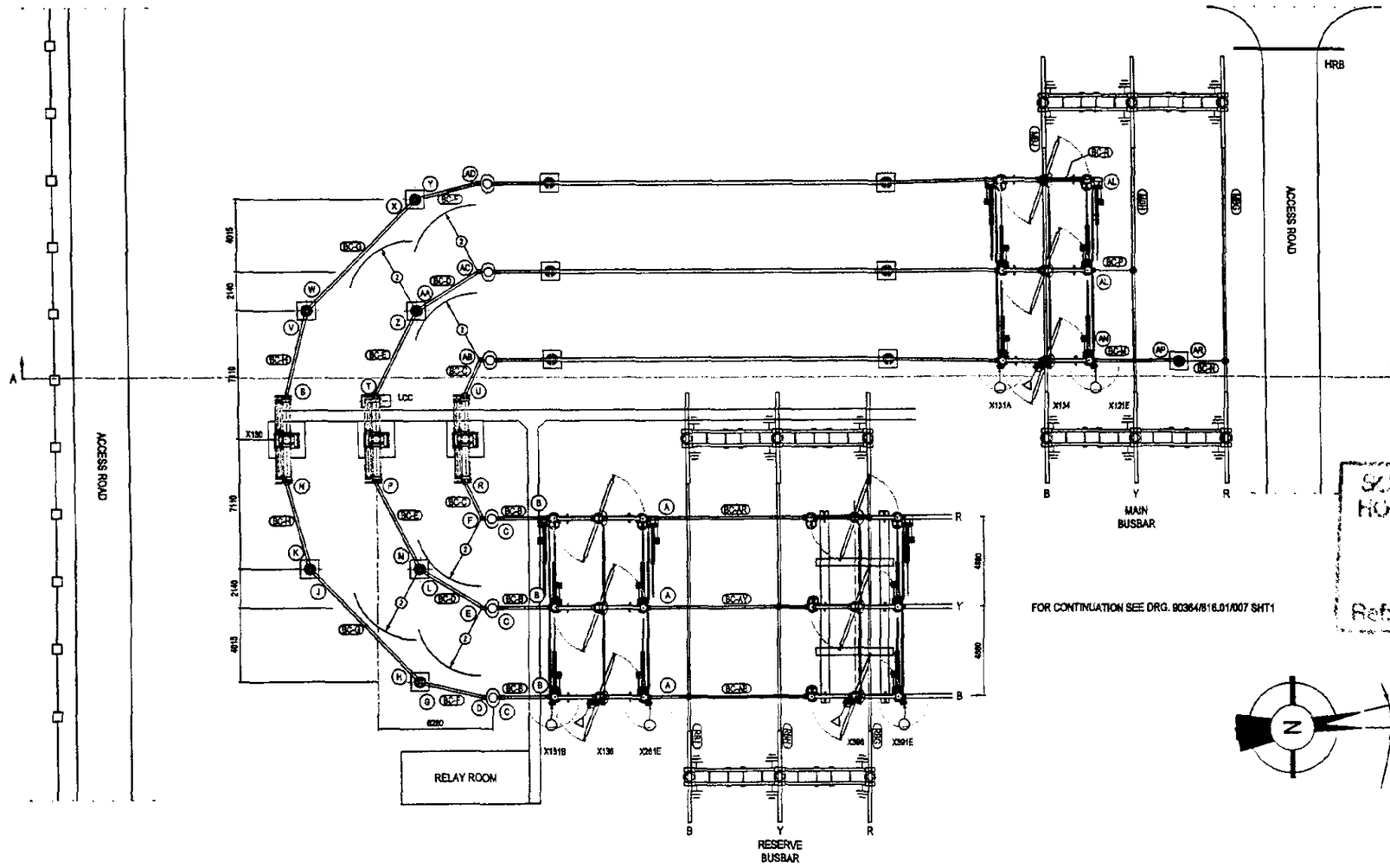
Station	SPALDING NORTH		ISSUE A
Circuit			
Drg. No.	SK 01	Sht No 1	No of Shts 1
SCALE:- 1:50	Work Ref	7612	

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National Grid House, Kirby Corner Road, Coventry CV4 8JY

SOUTH HOLLAND DC
HOUSING & PLANNING
25 SEP 2001
Ref:



VIEW ON A-A



FOR CONTINUATION SEE DRG. 90364/816.01/007 SHT1

SOUTH KESTEVEN DC
HOUSING & PLANNING
13 DEC 2001
Ref: 941/01

NOTE:

NOMINAL SYSTEM VOLTAGE 400KV Um

1	BASIC ELECTRICAL CLEARANCE (PHASE TO EARTH)	2.8m
2	PHASE-TO-PHASE CLEARANCE	3.6m
3	SAFETY CLEARANCE (HORIZONTAL)	4.8m
4	SAFETY CLEARANCE (VERTICAL)	5.5m
5	HEIGHT TO INSULATION	2.4m

WHERE EQUIPMENT CONFIGURATIONS HAVE NOT BEEN SUBJECT TO TYPE OR ROUTINE TESTS IN ACCORDANCE WITH IEC 60694 THE ELECTRICAL CLEARANCES GIVEN FOR REFS 1 AND 2 ABOVE SHALL APPLY.
THEY APPLY UNDER CONDITIONS OF MAXIMUM SWING AND SAG.

WHEN DESIGNING ELECTRICAL CONNECTIONS THE FOLLOWING ALLOWANCES SHOULD BE MADE TO COVER TOLERANCES IN ELECTRICAL AND CIVIL WORK AND THE SETTLEMENT OF FOUNDATIONS :-

400KV - 150mm

EQUIPMENT LEGEND		MAKE/TYPE	DRG. No.
CB	CIRCUIT BREAKER		
CT	CURRENT TRANSFORMER		
DISC/ ESW	DISCONNECTOR WITH 2 EARTH SWITCHES		
DISC/ ESW	DISCONNECTOR WITH 2 INTEGRAL EARTH SWITCHES		
PI	POST INSULATOR		
3PH PI	3 PHASE POST INSULATOR		

AMENDED PLAN
Ref: 941/01

NOTES

- (BC-A) - BUSBAR REFERENCE
- (A) - CLAMP REFERENCE
- - EARTH SWITCH MECH BOX
- - DISCONNECTOR MECH BOX
- - PORTABLE MAINTENANCE EARTHING CONN. (D LOOP)
- FCL - FINISHED CONCRETE LEVEL
- FGL - FINISHED GROUND LEVEL
- FSL - FINISHED SUBSTATION LEVEL
- HRB - HEIGHT RESTRICTING BARRIER (2.4 METRES)
- LCU - LOCAL CONTROL UNIT (ESW)
- LCC - COMBINED LOCAL CONTROL CUBICLE/HYDRAULIC CONTROL CUBICLE

1. DOWN LEADS FROM THE TERMINAL TOWERS, INCLUDING INSULATOR ANCHORS, INSULATORS, AERIAL CONDUCTORS, EARTH CONNECTION ONTO LINE LANDING STRUCTURE, JUMPER CONNECTION INCLUDING LOWER END LINE TERMINATION FITTING BY OVERHEAD LINE CONTRACTOR. CLAMP FOR CONNECTING LINE TERMINATION FITTING TO POST INSULATOR BY REYROLLE.

2. ON OPEN TERMINAL EQUIPMENT 'D' LOOPS ARE INCLUDED ON BOTH SIDES OF THE BAYS ON EACH PHASE TO ALLOW FOR THE CONNECTION OF FOUR PORTABLE EARTH CLAMPS TO EACH LOOP.

ASSOCIATED DRAWINGS

90364/816.01/001 SHT1 - SUBSTATION LAYOUT
90364/816.01/002 SHT1 - AUXILIARY BUILDING
90364/816.01/003 SHT1 - LAYOUT AND ELEVATIONS FOR WALPOLE FEEDER
90364/816.01/004 SHT1 - LAYOUT AND ELEVATIONS FOR KEADBY FEEDER
90364/816.01/005 SHT1 - LAYOUT AND ELEVATIONS FOR GENERATOR 1 CIRCUIT
90364/816.01/006 SHT1 - LAYOUT AND ELEVATIONS FOR GENERATOR 2 CIRCUIT
90364/816.01/007 SHT1 - LAYOUT AND ELEVATIONS FOR GENERATOR 3 CIRCUIT

SCALE FOR USE WITH REDUCED PRINTS

REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE

REVISION

DATE	19/10/2001
JOB No.	90364
DRAWN	T.NAGY
CHECKED	T.NAGY
APPROVED	P.WILKINSON

NGC DRAWING No.

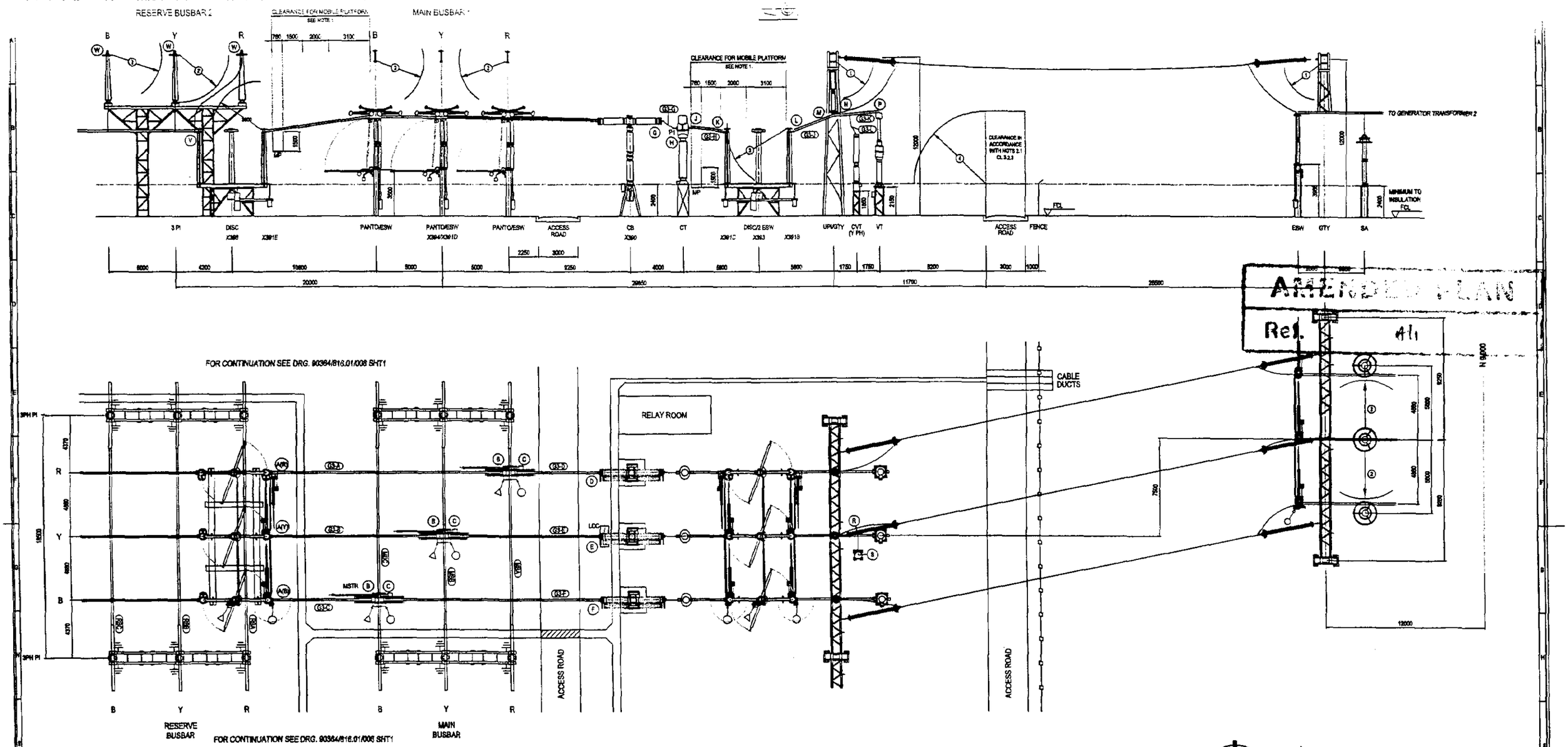
VA TECH Reyrolle Transmission c 2001 (H)

PROJECT:- SPALDING NORTH 400KV SUBSTATION

BAY LAYOUT AND ELEVATION

BUS COUPLER
SPALDING NORTH 400KV SUBSTATION

DRAWING No.	SHEET	REV	SCALE	CAD
90364/816.01/008	1	0	1:100	A0



AMENDED PLAN
Ref. 41

SUBSTATION ELECTRICAL CLEARANCES IN ACCORDANCE WITH NOTE 2.1		
NOMINAL SYSTEM VOLTAGE 400kV (rms)		
1	BASIC ELECTRICAL CLEARANCE (PHASE TO EARTH)	2.8m
2	PHASE-TO-PHASE CLEARANCE	3.8m
3	SAFETY CLEARANCE (HORIZONTAL)	4.8m
4	SAFETY CLEARANCE (VERTICAL)	5.5m
5	HEIGHT TO INSULATION	2.4m

WHERE EQUIPMENT CONFIGURATIONS HAVE NOT BEEN SUBJECT TO TYPE OR ROUTINE TESTS IN ACCORDANCE WITH IEC 60864 THE ELECTRICAL CLEARANCES GIVEN FOR REFS 1 AND 2 ABOVE SHALL APPLY.
THEY APPLY UNDER CONDITIONS OF MAXIMUM SWING AND SAG.

WHEN DESIGNING ELECTRICAL CONNECTIONS THE FOLLOWING ALLOWANCES SHOULD BE MADE TO COVER TOLERANCES IN ELECTRICAL AND CIVIL WORK AND THE SETTLEMENT OF FOUNDATIONS -

400kV - 150mm.

EQUIPMENT LEGEND		MAKE/TYPE	DRG. No.
CB	CIRCUIT BREAKER		
CT	CURRENT TRANSFORMER		
CVT	CAPACITOR VOLTAGE TRANSFORMER		
DISC/ ESW	DISCONNECTOR WITH 2 EARTH SWITCHES		
GTY	GANTRY		
PANTO/ ESW	PANTOGRAPH DISCONNECTOR WITH EARTH SWITCH		
PI	POST INSULATOR		
3PH PI	3 PHASE POST INSULATOR		
UPI	UNDERSLUNG POST INSULATOR		
VT	VOLTAGE TRANSFORMER		

NOTES

- Q1-A - BUSBAR REFERENCE
- (A) - CLAMP REFERENCE
- EARTH SWITCH MECH BOX
- DISCONNECTOR MECH BOX
- PORTABLE MAINTENANCE EARTHING CONN. (D LOOP)
- FCL - FINISHED CONCRETE LEVEL
- FGL - FINISHED GROUND LEVEL
- FBL - FINISHED SUBSTATION LEVEL
- LCC - COMBINED LOCAL CONTROL CUBICCLE/HYDRAULIC CONTROL CUBICLE
- MSTR - MASTER ERRVE LOCATION ON PANTOGRAPH DISCONNECTOR

1. SAFETY CLEARANCE REQUIRED FOR WORK CARRIED OUT USING MOBILE PLATFORM - GENIE Z-4522 -
WORKING HEIGHT 15.54m MAX.
PLATFORM HEIGHT 13.72m MAX.
PLATFORM SIZE 1830 x 760mm
2100 - SAFETY DISTANCE FROM NGC SAFETY RULES
3000 - MARGIN
1500 - HORIZONTAL REACH

2. ON OPEN TERMINAL EQUIPMENT "D" LOOPS ARE INCLUDED ON BOTH SIDES OF THE BAY ON EACH PHASE TO ALLOW FOR THE CONNECTION OF FOUR PORTABLE EARTH CLAMPS TO EACH LOOP.

ASSOCIATED DRAWINGS

90364/B16.01/001 SHT1 - SUBSTATION LAYOUT
90364/B16.01/002 SHT1 - AUXILIARY BUILDING
90364/B16.01/003 SHT1 - LAYOUT AND ELEVATIONS FOR WAILPOLE FEEDER
90364/B16.01/004 SHT1 - LAYOUT AND ELEVATIONS FOR KEADBY FEEDER
90364/B16.01/005 SHT1 - LAYOUT AND ELEVATIONS FOR GENERATOR 1 CIRCUIT
90364/B16.01/006 SHT1 - LAYOUT AND ELEVATIONS FOR GENERATOR 2 CIRCUIT
90364/B16.01/008 SHT1 - LAYTOU AND ELEVATIONS FOR BUS COUPLER CIRCUIT

SCALE FOR USE WITH REDUCED PRINTS

0 1M 2M 3M 4M 5M 6M 7M 8M 9M 10M

SOUTH NORFOLK DC
HOUSING & PLANNING
13 DEC 2001
Ref: 941/01

REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE

REVISION

NGC DRAWING No.

VA TECH Reyrolle Transmission c 2001 (H)

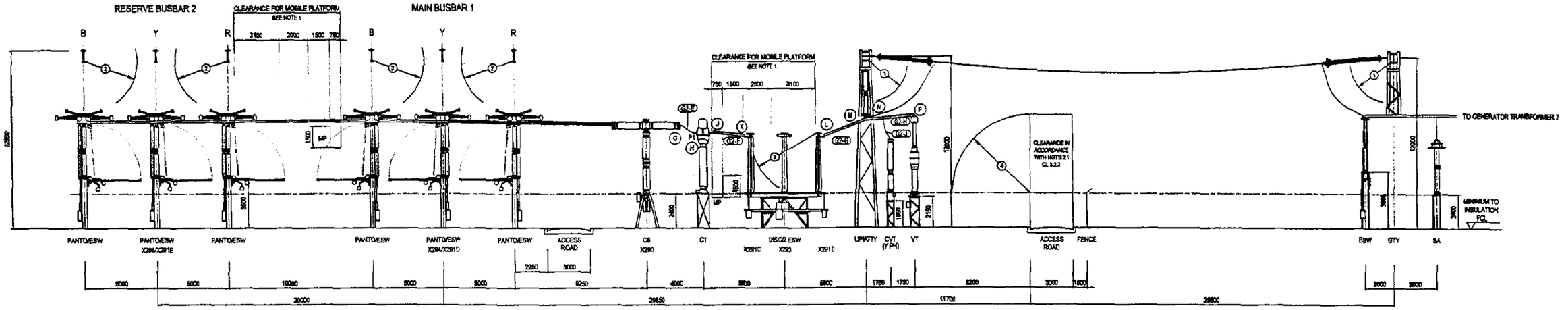
PROJECT:- SPALDING NORTH 400KV SUBSTATION

DATE	19/10/2001
JOB No.	90364
DRAWN	T.NAGY
CHECKED	T.NAGY
APPROVED	P.WILKINSON

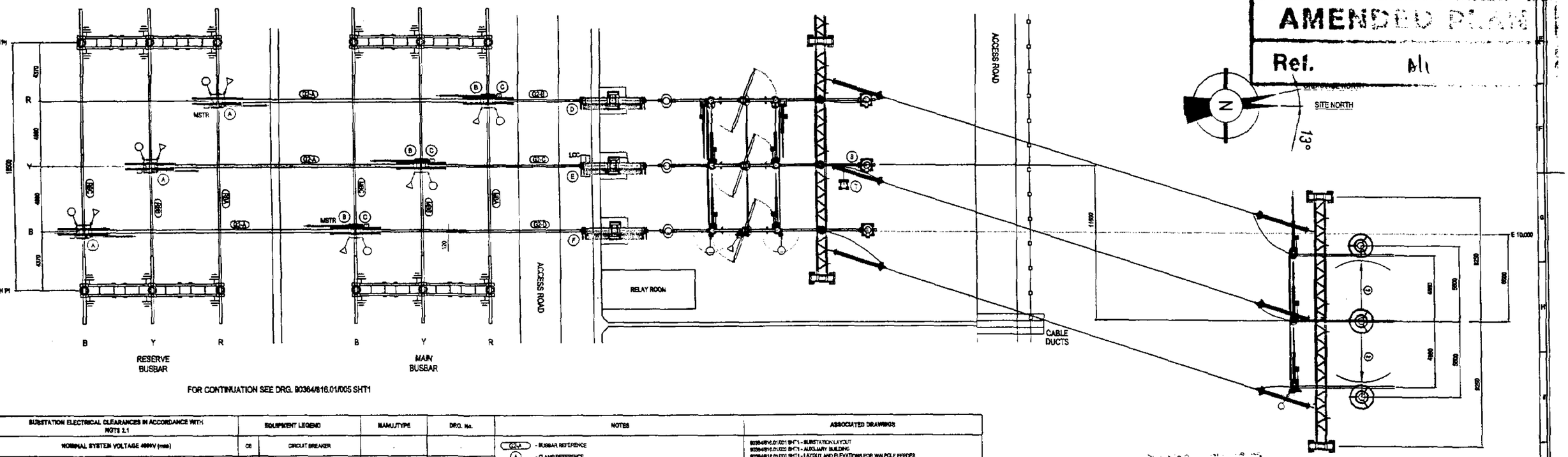
BAY LAYOUT AND ELEVATION

GENERATOR 3
SPALDING NORTH 400kV SUBSTATION

DRAWING No.	SHEET	REV	SCALE	CAD
90364/B16.01/007	1	0	1:100	A0



FOR CONTINUATION SEE DRG. 90364/816.01/007 SHT1



FOR CONTINUATION SEE DRG. 90364/816.01/005 SHT1

SUBSTATION ELECTRICAL CLEARANCES IN ACCORDANCE WITH NOTE 2.1		
NOMINAL SYSTEM VOLTAGE 400kV (rms)		
1	BASIC ELECTRICAL CLEARANCE (PHASE TO EARTH)	2.8m
2	PHASE-TO-PHASE CLEARANCE	3.5m
3	SAFETY CLEARANCE (HORIZONTAL)	4.8m
4	SAFETY CLEARANCE (VERTICAL)	5.5m
5	HEIGHT TO INSULATION	2.4m

WHERE EQUIPMENT CONFIGURATIONS HAVE NOT BEEN SUBJECT TO TYPE OR ROUTINE TESTS IN ACCORDANCE WITH IEC 60694 THE ELECTRICAL CLEARANCES GIVEN FOR REFS 1 AND 2 ABOVE SHALL APPLY, THEY APPLY UNDER CONDITIONS OF MAXIMUM SWING AND SAG.

WHEN DESIGNING ELECTRICAL CONNECTIONS THE FOLLOWING ALLOWANCES SHOULD BE MADE TO COVER TOLERANCES IN ELECTRICAL AND CIVIL WORK AND THE SETTLEMENT OF FOUNDATIONS:-

400kV - 150mm.

EQUIPMENT LEGEND		MAKE/TYPE	DRG. No.
CB	CIRCUIT BREAKER		
CT	CURRENT TRANSFORMER		
CVT	CAPACITOR VOLTAGE TRANSFORMER		
DISC/ ESW	DISCONNECTOR WITH 2 EARTH SWITCHES		
GTY	GANTRY		
PANTO/ ESW	PANTOGRAPH DISCONNECTOR WITH EARTH SWITCH		
PI	POST INSULATOR		
3PH PI	3 PHASE POST INSULATOR		
UPI	UNDERSLUNG POST INSULATOR		
VT	VOLTAGE TRANSFORMER		

NOTES

- (G2-A) - BUSBAR REFERENCE
- (A) - CLAMP REFERENCE
- - EARTH SWITCH MECH BOX
- - DISCONNECTOR MECH BOX
- - PORTABLE MAINTENANCE EARTHING CONN. (D LOOP)
- FCL - FINISHED CONCRETE LEVEL
- FGL - FINISHED GROUND LEVEL
- FSL - FINISHED SUBSTATION LEVEL
- LCC - COMBINED LOCAL CONTROL CUBICLE/HYDRAULIC CONTROL CUBICLE
- MSTR - MASTER DRIVE LOCATION ON PANTOGRAPH DISCONNECTOR

1. SAFETY CLEARANCE REQUIRED FOR WORK CARRIED OUT USING MOBILE PLATFORM - GENIE Z-4622 -
WORKING HEIGHT 15.54m MAX
PLATFORM HEIGHT 13.72m MAX
PLATFORM SIZE 1829 x 762mm
3100 - SAFETY DISTANCE FROM HSE SAFETY RULES
2000 - MARGIN
1500 - HORIZONTAL REACH

2. ON OPEN TERMINAL EQUIPMENT 'D' LOOPS ARE INCLUDED ON BOTH SIDES OF THE BASE ON EACH PHASE TO ALLOW FOR THE CONNECTION OF FOUR PORTABLE EARTH CLAMPS TO EACH LOOP.

ASSOCIATED DRAWINGS

90364/816.01/001 SHT1 - SUBSTATION LAYOUT
90364/816.01/002 SHT1 - AUXILIARY BUILDING
90364/816.01/003 SHT1 - LAYOUT AND ELEVATIONS FOR WALPOLE FEEDER
90364/816.01/004 SHT1 - LAYOUT AND ELEVATIONS FOR KEADBY FEEDER
90364/816.01/005 SHT1 - LAYOUT AND ELEVATIONS FOR GENERATOR 1 CIRCUIT
90364/816.01/007 SHT1 - LAYOUT AND ELEVATIONS FOR GENERATOR 3 CIRCUIT
90364/816.01/006 SHT1 - LAYOUT AND ELEVATIONS FOR BUS COUPLER CIRCUIT

SCALE FOR USE WITH REDUCED PRINTS

0 1M 2M 3M 4M 5M 6M 7M 8M 9M 10M

AMENDED PLAN
Ref. A11

SITE NORTH
13°

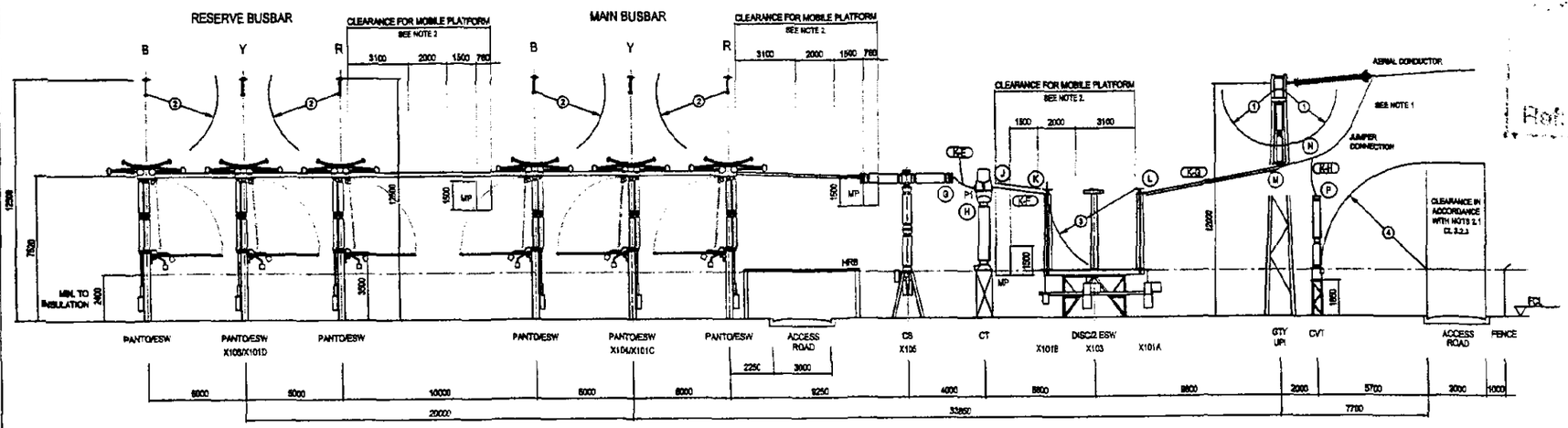
SPALDING DISTRICT COUNCIL
HOUSING & PLANNING
13 DEC 2001
Plot: 9416

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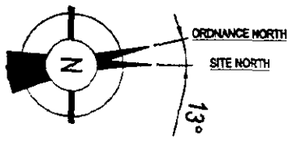
REVISION		
DATE	18/10/2001	
JOB No.	90364	
DRAWN	T.NAGY	
CHECKED	T.NAGY	
APPROVED	P.WILKINSON	

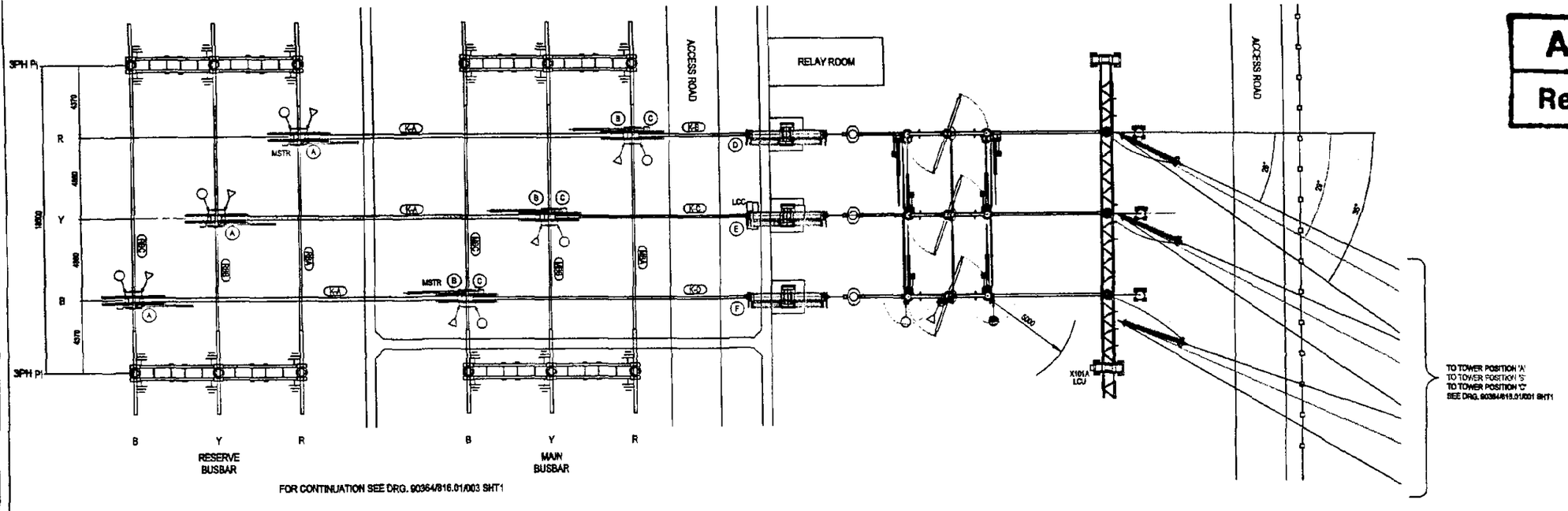
NGC DRAWING No.
VA TECH Reyrolle Transmission c 2001 (h)
PROJECT:- SPALDING NORTH 400KV SUBSTATION
BAY LAYOUT AND ELEVATION
GENERATOR 2
SPALDING NORTH 400KV SUBSTATION

DRAWING No.	SHEET	REV	SCALE	CAD
90364/816.01/006	1	0	1:100	A0



FOR CONTINUATION SEE DRG. 90364/816.01/005 SHT1





FOR CONTINUATION SEE DRG. 90364/816.01/003 SHT1

NOTES

NOMINAL SYSTEM VOLTAGE 400kV (rms

1	BASIC ELECTRICAL CLEARANCE (PHASE TO EARTH)	2.8m
2	PHASE-TO-PHASE CLEARANCE	3.6m
3	SAFETY CLEARANCE (HORIZONTAL)	4.6m
4	SAFETY CLEARANCE (VERTICAL)	5.6m
5	HEIGHT TO INSULATION	2.4m

WHERE EQUIPMENT CONFIGURATIONS HAVE NOT BEEN SUBJECT TO TYPE OR ROUTINE TESTS IN ACCORDANCE WITH I.E.C 60694 THE ELECTRICAL CLEARANCES GIVEN FOR REFS 1 AND 2 ABOVE SHALL APPLY.
THEY APPLY UNDER CONDITIONS OF MAXIMUM SWING AND SAG.

WHEN DESIGNING ELECTRICAL CONNECTIONS THE FOLLOWING ALLOWANCES SHOULD BE MADE TO COVER TOLERANCES IN ELECTRICAL AND CIVIL WORK AND THE SETTLEMENT OF FOUNDATIONS:-

400kV - 150mm.

EQUIPMENT LEGEND		MANU./TYPE	DRG. No.
CB	CIRCUIT BREAKER		
CT	CURRENT TRANSFORMER		
CVT	CAPACITOR VOLTAGE TRANSFORMER		
DISC/ ESW	DISCONNECTOR WITH 2 EARTH SWITCHES		
GTY	GANTRY		
LT	LINE TRAP		
PANTO/ ESW	PANTOGRAPH DISCONNECTOR WITH EARTH SWITCH		
PI	POST INSULATOR		
3PH PI	3 PHASE POST INSULATOR		
UPI	UNDERSLUNG POST INSULATOR		

NOTES

K-A - BUSBAR REFERENCE
(A) - CLAMP REFERENCE
- EARTH SWITCH MECH BOX (MANUAL)
- EARTH SWITCH MECH BOX (MOTORISED)
- DISCONNECTOR MECH BOX
- PORTABLE MAINTENANCE EARTHING CONN. (D LOOP)
- PROPOSED GROUND LEVEL
- PROPOSED SUBSTATION LEVEL
LCC - LOCAL CONTROL UNIT (ESW)
CCC - COMBINED LOCAL CONTROL CUBICLE/TOPOLOGIC CONTROL CUBICLE
MSTR - MASTER DRIVE LOCATION FOR PANTOGRAPH DISCONNECTOR

1. FROM LINE ENTRY TO TERMINAL TOWERS INCLUDING INSULATOR ANCHORS, BIRDGUARDS, AERIAL CONDUCTORS, EARTH CONNECTION ONTO LINE LANDING STRUCTURE, JUMPER CONNECTION INCLUDING LOWER END LINE TERMINATION FITTING BY OVERHEAD LINE CONTRACTOR, CLAMP FOR CONNECTING LINE TERMINATION FITTING TO POST INSULATOR BY REYROLLE.

2. SAFETY CLEARANCE REQUIRED FOR WORK CARRIED OUT USING MOBILE PLATFORM - GENIE Z-45/22 -
WORKING HEIGHT 15.54m MAX.
PLATFORM HEIGHT 13.72m MAX.
PLATFORM SIZE 1820 x 760mm

3100 - SAFETY DISTANCE FROM NGC SAFETY RULES
2000 - MARGIN
1500 - HORIZONTAL REACH

3. ON OPEN TERMINAL EQUIPMENT "D" LOOPS ARE INCLUDED ON BOTH SIDES OF THE BASE ON EACH PHASE TO ALLOW FOR THE CONNECTION OF FOUR PORTABLE EARTH CLAMPS TO EACH LOOP.

ASSOCIATED DRAWINGS

90364/816.01/001 SHT1 - SUBSTATION LAYOUT
90364/816.01/002 SHT1 - AUXILIARY BUILDING
90364/816.01/003 SHT1 - LAYOUT AND ELEVATIONS FOR WAUPOLE FEEDER
90364/816.01/005 SHT1 - LAYOUT AND ELEVATIONS FOR GENERATOR 1 CIRCUIT
90364/816.01/006 SHT1 - LAYOUT AND ELEVATIONS FOR GENERATOR 2 CIRCUIT
90364/816.01/007 SHT1 - LAYOUT AND ELEVATIONS FOR GENERATOR 3 CIRCUIT
90364/816.01/008 SHT1 - LAYOUT AND ELEVATIONS FOR BUS COUPLER CIRCUIT

SCALE FOR USE WITH REDUCED PRINTS

AMENDED PLANS
Ref. A11

REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE

REVISION

DATE	18/10/2001
JOB No.	90364
DRAWN	T.NAGY
CHECKED	T.NAGY
APPROVED	P.WILKINSON

NGC DRAWING No.

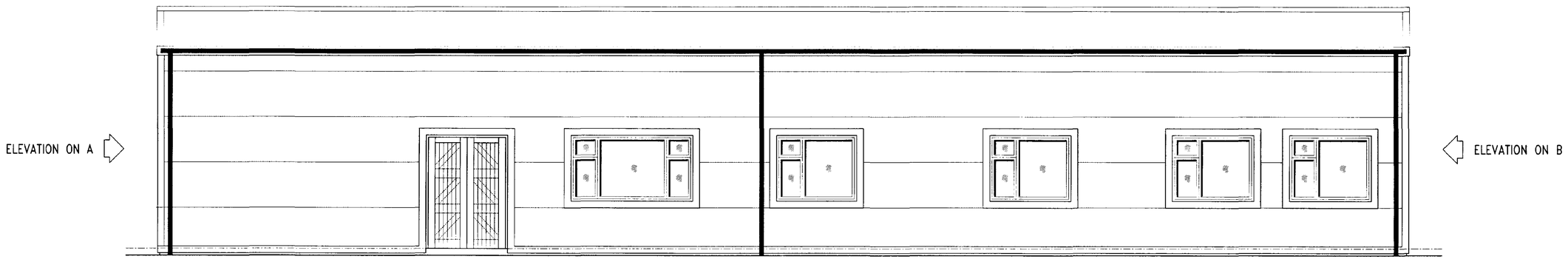
VA TECH Reyrolle Transmission c 2001 (M)

PROJECT:- SPALDING NORTH 400KV SUBSTATION

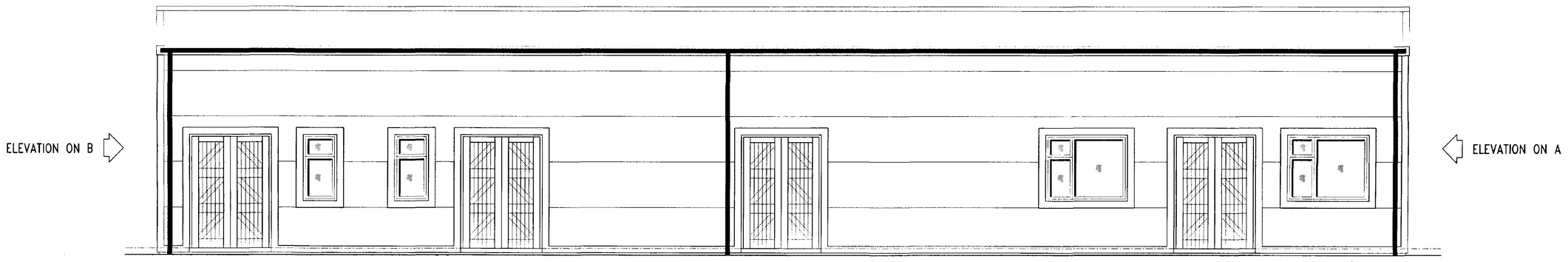
BAY LAYOUT AND ELEVATION

KEADBY FEEDER
SPALDING NORTH 400kV SUBSTATION

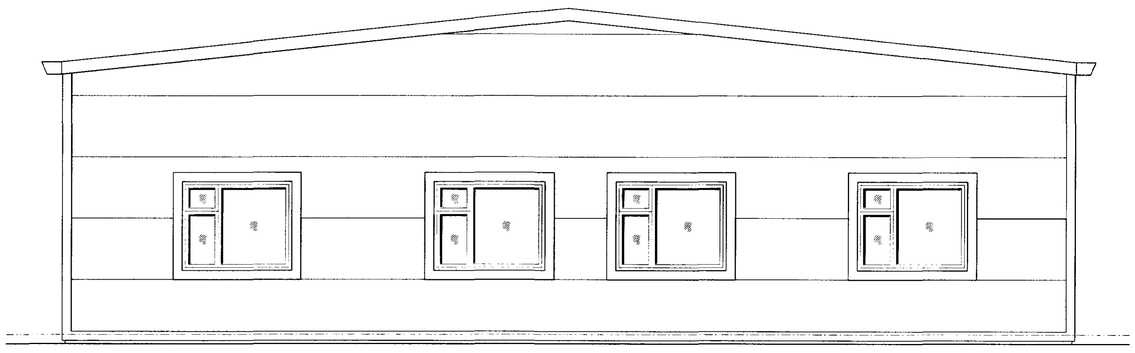
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90364/816.01/004	1	D	1:100	AD



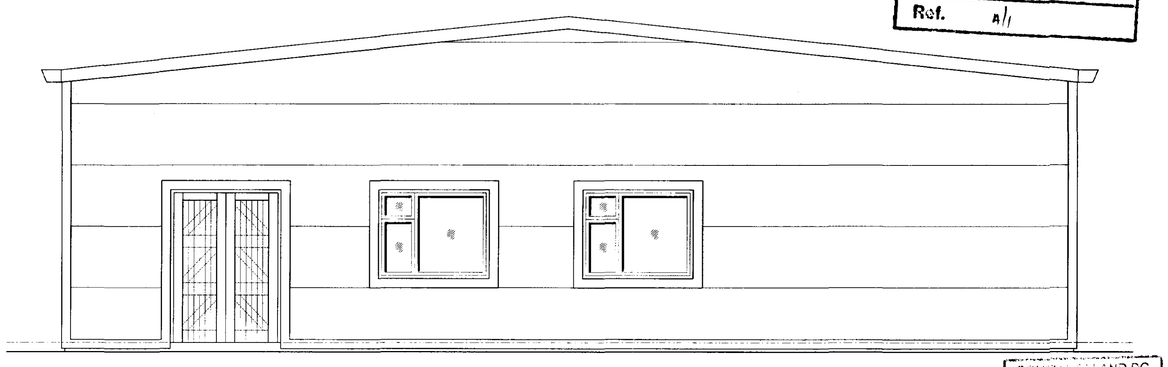
FRONT ELEVATION
SCALE 1:50



REAR ELEVATION
SCALE 1:50



ELEVATION ON A
SCALE 1:50



ELEVATION ON B
SCALE 1:50

AMENDED PLAN
Ref. A/1

SCOTTISH AND DC
FOR STRATEGIC PLANNING
15 DEC 2001
94/01
Ref:

NOTES

CLADDING TO ROOF : KINGSPAN KS1000 RW GOOSEWING GREY (VERGE FLASHINGS TO BE MERLIN GREY)
CLADDING TO WALLS : KINGSPAN KS1000 RW MERLIN GREY.

EXTERNAL DOORS : FRAMED, LEGGED & BRACED 'IROKO' HARDWOOD DOORS WITH WEATHERSTRIPS AND REBATED MEETING STYLES.

REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE
A	MK JULY 2001																		
PRELIMINARY ISSUE FOR COMMENT / APPROVAL																			

REVISIONS		
	DATE	JULY 2001
	JOB No.	PJ 2292
	DRAWN	MK
	CHECKED	RD
	APPROVED	RT

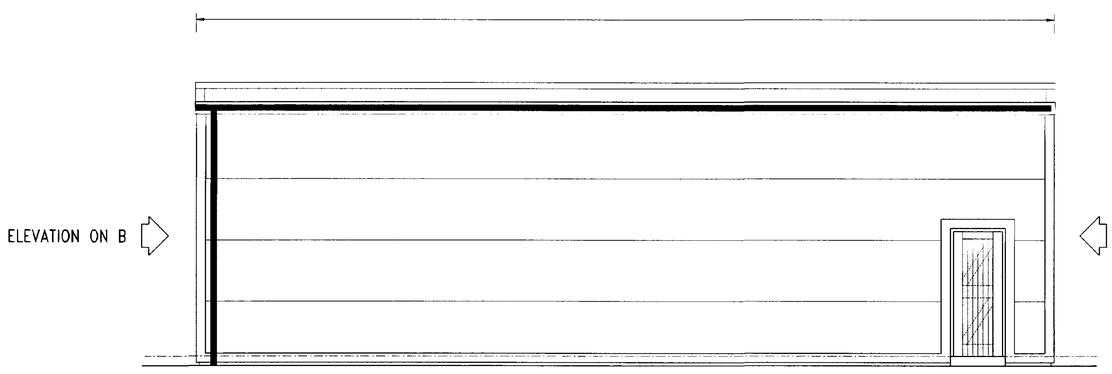
NATIONAL GRID DRG No.

WSP

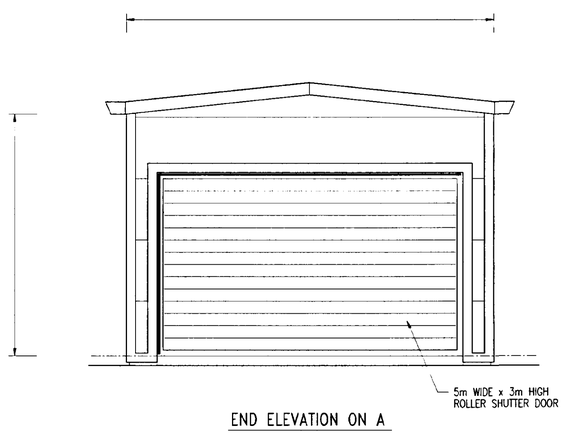
PROJECT:– **SPALDING SUB-STATION**

AUILLIARY BUILDING
PROPOSED ELEVATIONS

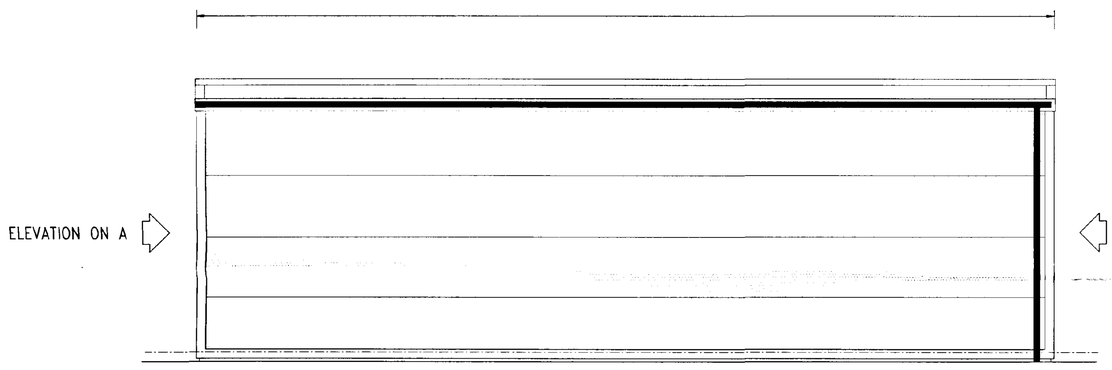
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PJ 2292 / 1000	**1**	**A**	1:100	A1



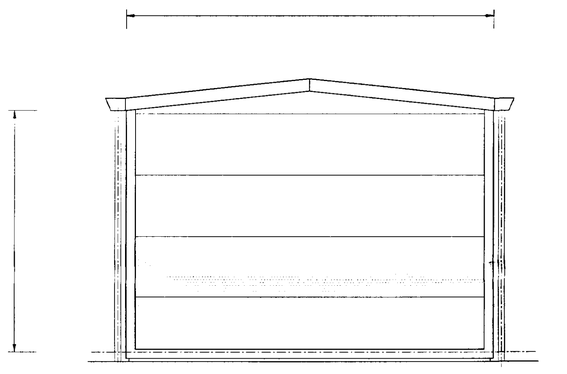
FRONT ELEVATION
SCALE 1:50



END ELEVATION ON A
SCALE 1:50



REAR ELEVATION
SCALE 1:50



END ELEVATION ON B
SCALE 1:50

APPROVED AS PER
Ref. 41

NOTES

CLADDING TO ROOF : KINGSPAN KS1000 RW GOOSEWING GREY (VERGE FLASHINGS TO BE MERLIN GREY)
CLADDING TO WALLS : KINGSPAN KS1000 RW MERLIN GREY.

EXTERNAL DOORS : FRAMED, LEGGED & BRACED 'IROKO' HARDWOOD DOORS WITH WEATHERSTRIPS AND REBATED MEETING STYLES.

SOUTH HOLLAND DC
NORTH AREA PLANNING
13 DEC 2001
Ref: 941/01

REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE	REV	INIT. & DATE
A	MK AUG. 2001																
PRELIMINARY ISSUE FOR COMMENT / APPROVAL																	

REVISIONS

DATE	AUGUST 2001
JOB No.	PJ 2292
DRAWN	MK
CHECKED	RD
APPROVED	RT

NATIONAL GRID DRG No.

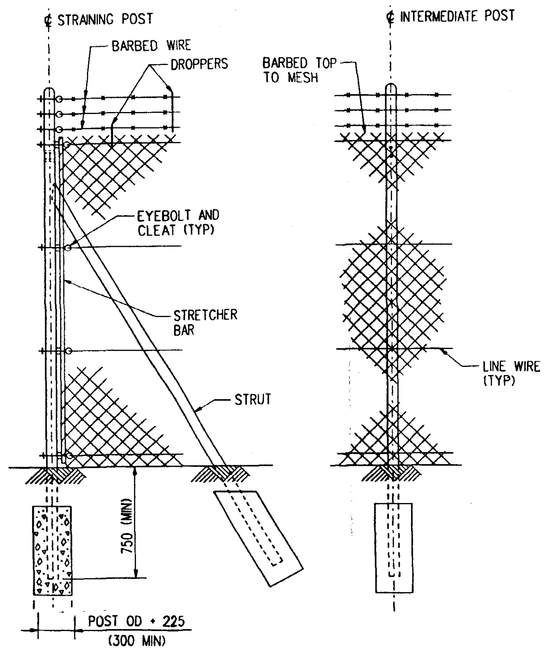
WSP

PROJECT:– **SPALDING SUB-STATION**

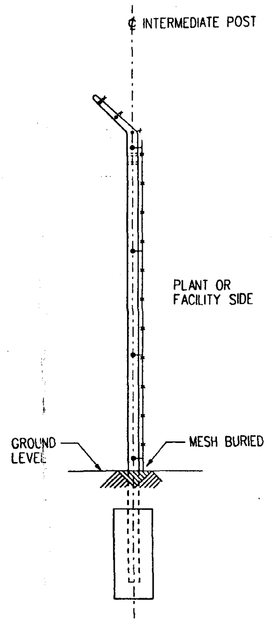
MOBILE ELEVATED WORKING PLATFORM GARAGE
PROPOSED ELEVATIONS

DRAWING No.	SHEET	REV	SCALE	CAD
PJ 2292 / 1001	1	A	1:100	A1

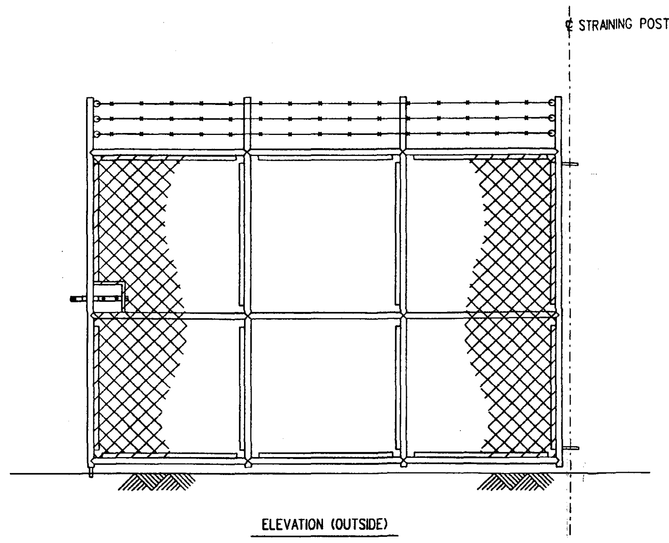
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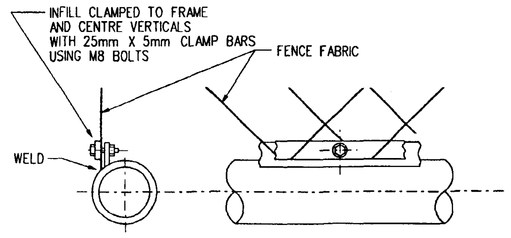
STRAINING POST & INTERMEDIATE POST



TYPICAL SECTION THRU FENCE



TYPICAL GATE CLADDING



POSITION OF CLAMP BARS RELATIVE TO FRAME

SPECIFICATION NOTES

1.0 QUALITY STANDARDS

1. THE QUALITY OF THE MATERIALS AND SERVICES SHALL MEET THE REQUIREMENTS AS FOLLOWS AND CONFORM WITH THE LATEST BUILDING CODE, OTHER APPLICABLE CODES AND STANDARDS, AND CONTRACT DOCUMENTS, UNLESS NOTED OTHERWISE.

2.0 MATERIALS & REQUIREMENTS

1. THE FENCES SHALL BE THE ANTI-INTRUDER CHAIN LINK TYPE IN ACCORDANCE WITH BS 1722 PART 10. FENCE POSTS SHALL BE MADE OF STEEL.
2. THE FABRIC SHALL BE MANUFACTURED FROM GALVANIZED STEEL WIRE IN ACCORDANCE WITH BS 1722 PART 10. FENCING SHALL MEASURE 2.4M (MINIMUM) FROM GRADE ELEVATION TO TOP OF CHAIN LINK FABRIC.
3. FABRIC SHALL HAVE A MESH SIZE OF 50mm. FABRIC SHALL BE SUPPLIED IN 2.4M WIDE ROLLS. ALL STEEL WIRE SHALL COMPLY WITH BS 4102. WIRE DIAMETER SHALL BE IN ACCORDANCE WITH CLAUSES 2.2 AND 2.1 RESPECTIVELY OF BS 1722 PART 10.
4. THE FABRIC SHALL BE MOUNTED ON FOUR EVENLY SPACED ROWS OF GALVANIZED COATED LINE WIRE, THE TOP OF WHICH SHALL BE DOUBLED. EACH WIRE SHALL BE SECURED TO EACH INTERMEDIATE POST AND TIGHTLY STRAINED BY MEANS OF EYEBOLT STRAINERS OR WINDERS AT EACH STRAINING POST.
5. THE TOP OF THE FABRIC, AND THE BOTTOM IF IT IS TO BE EXPOSED, SHALL BE PROTECTED BY A SINGLE LINE OF BARBED WIRE. THREE ROWS OF BARBED WIRE SHALL BE MOUNTED ON CRANKED TOPS OR EXTENSION ARMS CRANKED OUTWARD AT 45 DEGREES WITH DROPPER BARS AT THE CENTRE OF EACH PANEL. ONE ROW OF BARBED WIRE SHALL BE FIXED NOT MORE THAN 150mm ABOVE THE TOP OF THE FABRIC AND THE OTHERS EQUALLY SPACED ON THE EXTENSION ARMS AS RECOMMENDED IN SECTIONS 3.7 OF BS 1722 PART 10.
6. DOUBLE STRAINING POSTS SHALL BE PROVIDED AT ALL CORNERS. SINGLE STRAINING POSTS SHALL BE PROVIDED AT ALL OPENINGS. INTERMEDIATE STRAINERS SHALL BE PROVIDED AT LEAST EVERY 66M, AND AT CHANGES IN DIRECTION OR ACUTE VARIATIONS IN LEVEL OF FENCE.
7. FENCE POSTS SHALL BE EQUALLY SPACED AT INTERVALS NOT EXCEEDING 3M. ALL POSTS SHALL BE SET IN THE GROUND TO A MINIMUM DEPTH OF 750mm. POSTS SHALL BE ERECTED IN PREPARED HOLES AND THE HOLES FILLED WITH CONCRETE, TO A MINIMUM OF HALF THE HOLE DEPTH, WELL RAMMED AND CONSOLIDATED. AFTER THE CONCRETE HAS HARDENED THE REMAINDER OF THE HOLE SHALL BE BACKFILLED, WELL RAMMED AND CONSOLIDATED.
8. THE FABRIC SHALL BE BURIED 300mm INTO THE GROUND. WHERE BURYING IS NOT POSSIBLE, THE BOTTOM EDGE SHALL BE FASTENED TO THE GROUND AND FINISHED WITH A SINGLE ROW OF BARBED WIRE AS REQUIRED BY BS 1722 PART 10.
9. STEEL FOR FENCE POSTS SHALL COMPLY WITH THE REQUIREMENTS OF BS EN 10025 FE 430.
10. POSTS SHALL BE FABRICATED FROM ROLLED STEEL ANGLES TO BS 4848 PART 4, WITH EXTENSION ARMS AT 45° TO PROVIDE A VERTICAL FENCE HEIGHT OF 2.9M AND GALVANIZED AFTER FABRICATION TO COMPLY WITH BS 729.
11. THE MINIMUM SIZES OF ANGLES SHALL BE AS FOLLOWS:

		LENGTH
INTERMEDIATE POSTS	50mm X 50mm X 6mm ANGLE	3.2M LONG
STRAINING POSTS	70mm X 70mm X 8mm ANGLE	3.2M LONG
STRUTS	45mm X 45mm X 5mm ANGLE	3.2M LONG
45° TOPS AT STRAINING POSTS	50mm X 50mm X 6mm ANGLE	
45° TOPS AT INTERMEDIATE POSTS	45mm X 45mm X 5mm ANGLE	

3.0 STRETCHER BARS AND DROPPER BARS

1. STRETCHER BARS SHALL BE 25mm X 5mm GALVANIZED STEEL FLAT BA SLOTTED TO MATCH LINE WIRES, WITH MEANS OF SECURING TO THE ADJ FENCE POST. EACH STRETCHER BAR SHALL BE FURNISHED WITH ALL NEC GALVANIZED CLEATS, EYEBOLTS AND "U" CONNECTORS.
2. DROPPER BARS FOR BARBED WIRE TOPPING SHALL BE 25mm X 5mm GALVANIZED STEEL FLAT BAR WITH HALF ROUND STAPLES FOR FASTENIN BARBED WIRE TO THEM.

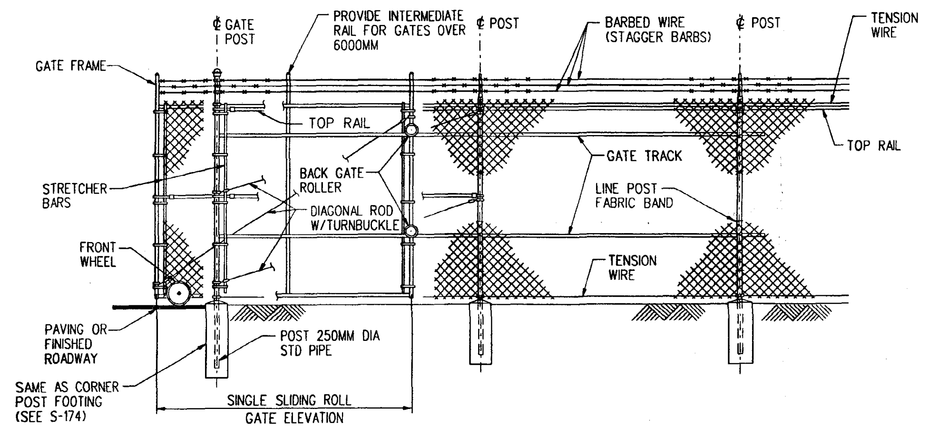
4.0 GATES

1. ALL GATES SHALL BE FABRICATED FROM STEEL TUBES COMPLYING WITH BS 4848 PART 2. GATES SHALL BE OD ALL WELDED CONSTRUCTION AND GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH BS 729. ALL GATE SHALL BE ADEQUATELY BRACED AND CONSTRUCTED IN ACCORDANCE WITH CLAUSE 2.8.2 OF BS 1722 PART 10.
2. GATES SHALL BE FURNISHED WITH HINGES OF A TYPE WHICH PREVENTS REMOVAL FROM THE GATE POSTS. GATE HINGES SHALL ALLOW THE GATE SWING 180°.
3. ALL GATES SHALL BE FITTED WITH DROP BOLTS AND SLAM PLATES IN ACCORDANCE WITH CLAUSE 2.8.7 OF BS 1722 PART 10.
4. LOCKING BARS SHALL BE PROVIDED TO ALL GATES AND PROVISION MADE THE ATTACHMENT OF A PADLOCK WHICH SHALL BE ACCESSIBLE FROM BO SIDES OF THE GATE.

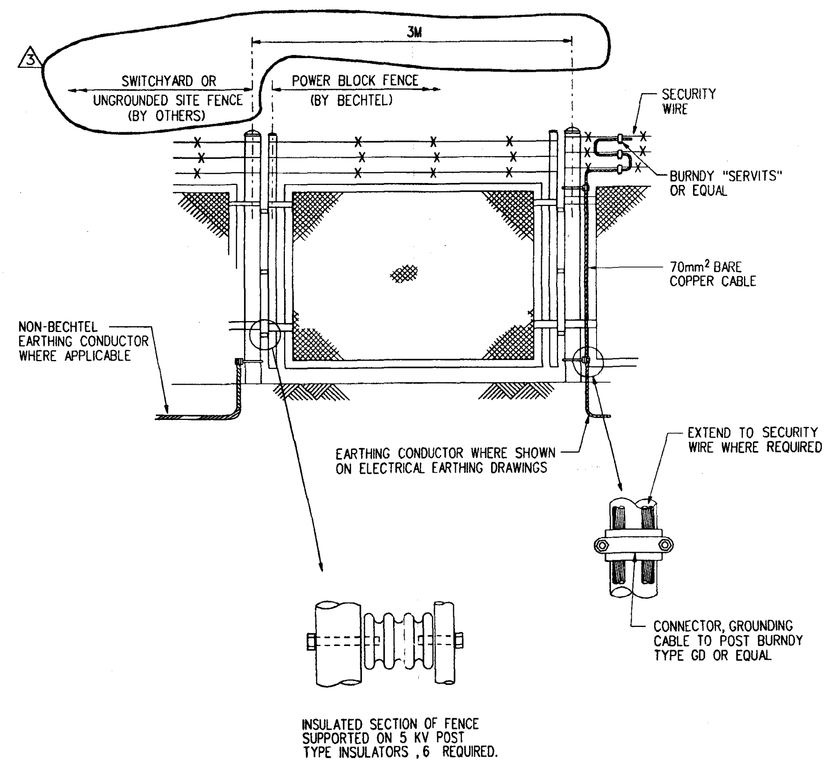
5.0 ERECTION

1. FENCES AND GATES SHALL BE ERECTED PLUMB AND STRAIGHT BETWEEN CORNER POSTS, ALL IN ACCORDANCE WITH SECTION 3 OF BS 1722 PARTS 1 AND 10.

TYPICAL DETAILS PLANT FENCE



WOVEN WIRE SLIDING GATE



FENCE ISOLATION SECTION

DETAIL 1 01X-CF-0010-G0001

AMENDED PLAN
Ref. NEW

DETERMINED PLAN

SOUTH HOLLAND DC HOUSING & PLANNING 25 SEP 2001 Ref:

NO.	DATE	REVISIONS	BY	CHK	DES. SUPV.	ENGR.
3	12/08/99	REVISED AS NOTED	DTS		-	
2	3/24/99	FENCE ISOLATION SECTION ADDED	KLK	DJW	-	DJW
1	9/28/98	REVISED AS NOTED	DTS	DJW	-	DJW
0	7/1/98	ISSUED FOR CONSTRUCTION	DTS	DJW	-	DJW

SCALE NONE | DATE 4-7-98 | DESIGNED | DRAWN DTS | CHIEF ENGR.

BECHTEL LIMITED

CIVIL/ STRUCTURAL STANDARD
FENCING DETAILS

JOB NO.	DRAWING NO.
23802	01X-C9-0090-G000