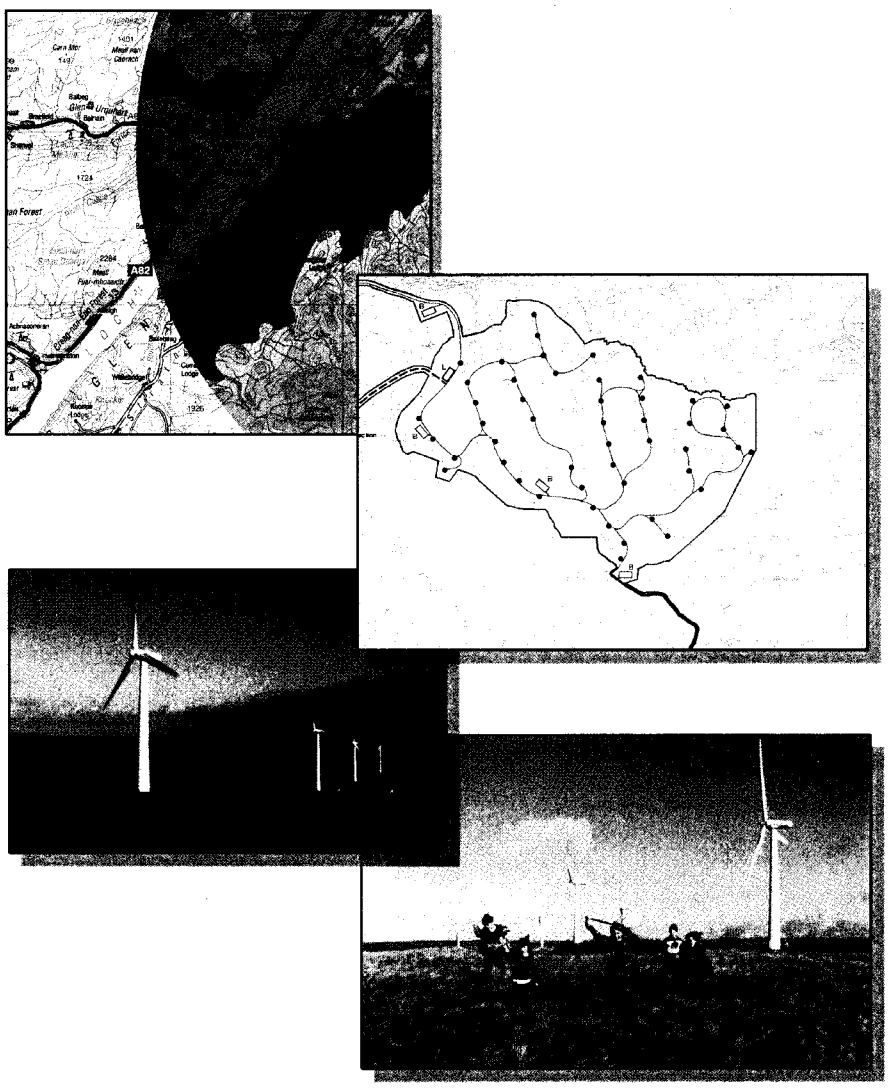
NATIONAL WIND POWER

FARR
WIND FARM



Environmental Statement
Volume 4
Technical Appendices
September 2002

Farr Wind Farm

Environmental Statement

IN0780009a Volume 4 of 4 September 2002

Final

National Wind Power
Riverside House,
Meadowbank,
Furlong Road,
Bourne End,
Buckinghamshire,
SL8 5AJ

Quality Control Sheet

Publication title:	Farr Wind Farm, Environmental Statement
CAN:	IN0780009a
Volume number:	Volume 4 of 4
Version	Final
Date:	September 2002
File Reference:	

Prepared under the management of:

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Directed, reviewed and approved by:

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Pat Alexander – Project Director

FARR WINDFARM

ENVIRONMENTAL STATEMENT

VOLUME 4

APPENDICES

APPENDIX A LANDSCAPE
APPENDIX B ECOLOGY
APPENDIX C ORNITHOLOGY
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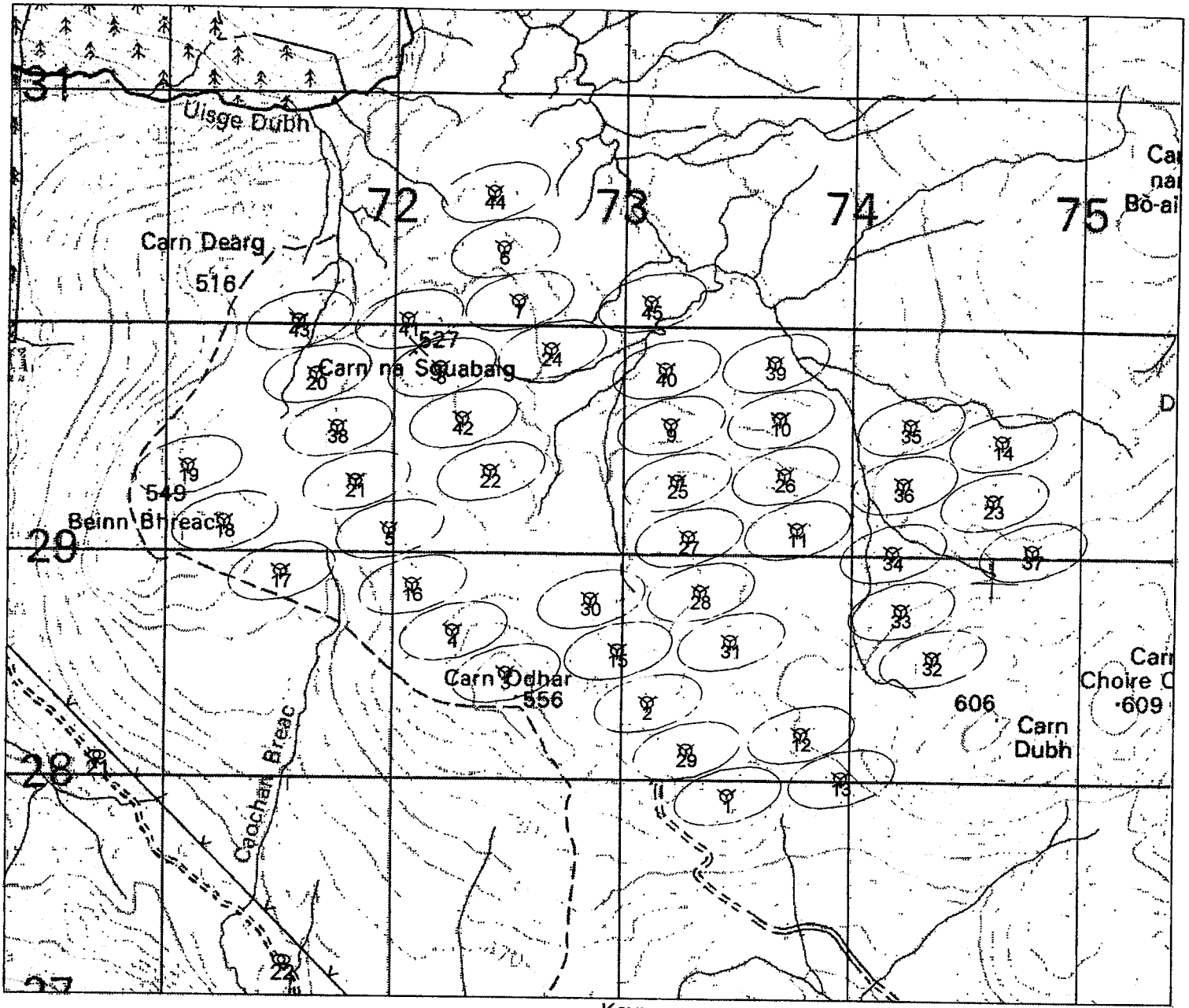
APPENDIX E HYDROLOGY
APPENDIX F NOISE
APPENDIX G EMI
APPENDIX H SCOPING REPORT

Appendix A Landscape

Illustrated wireframes for alternative site layouts



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Key:-

Turbine

Viewpoint

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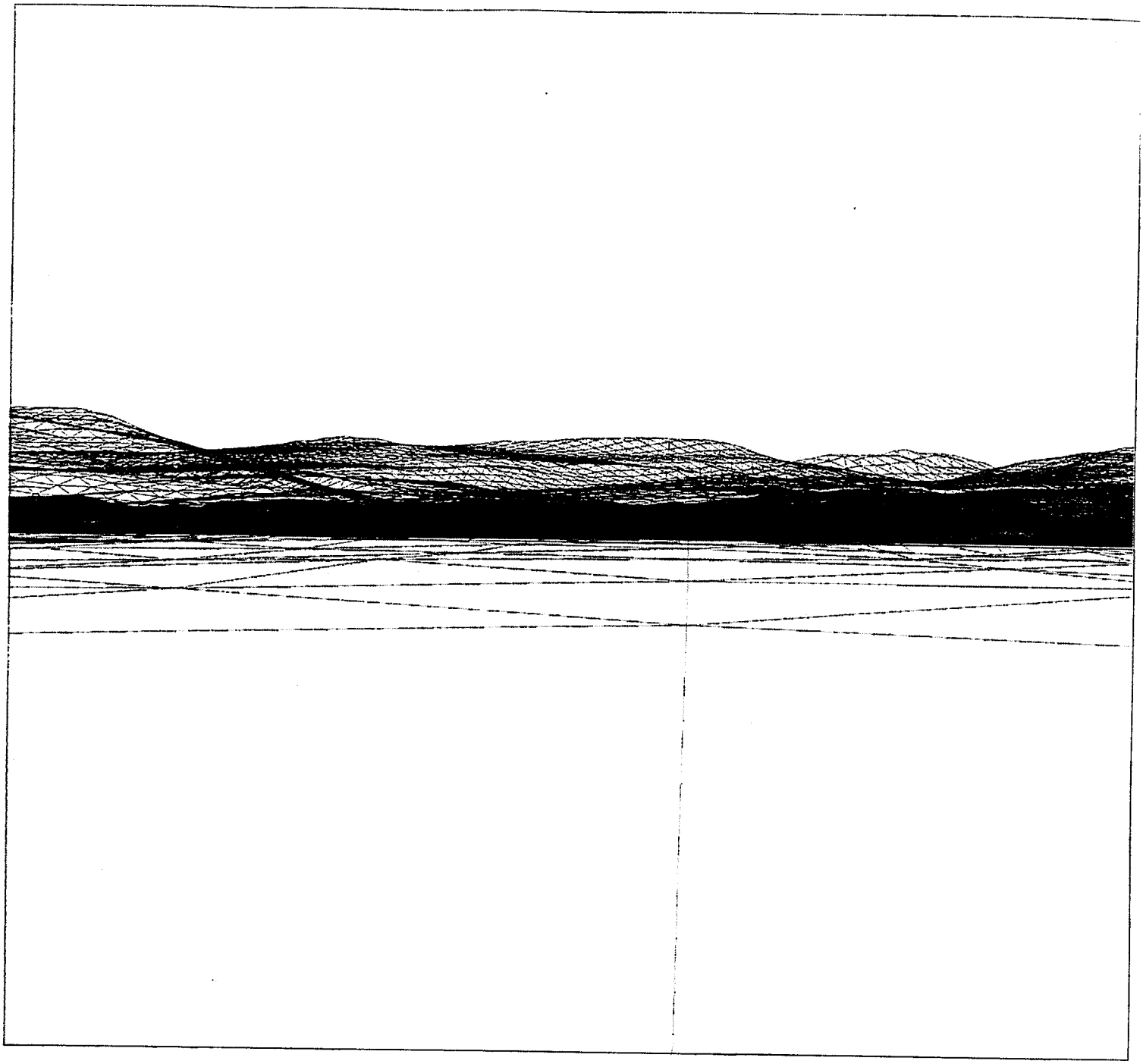

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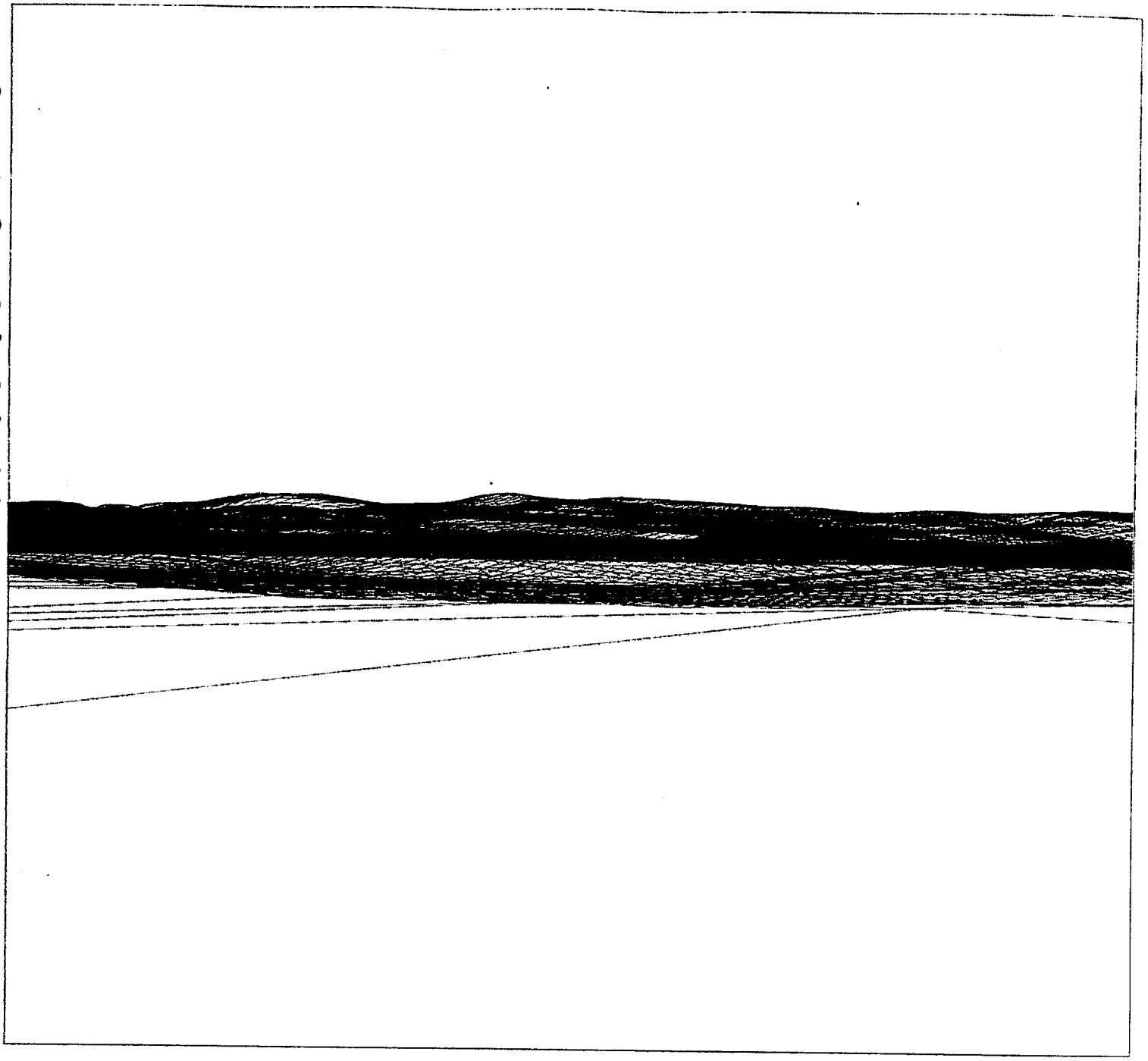

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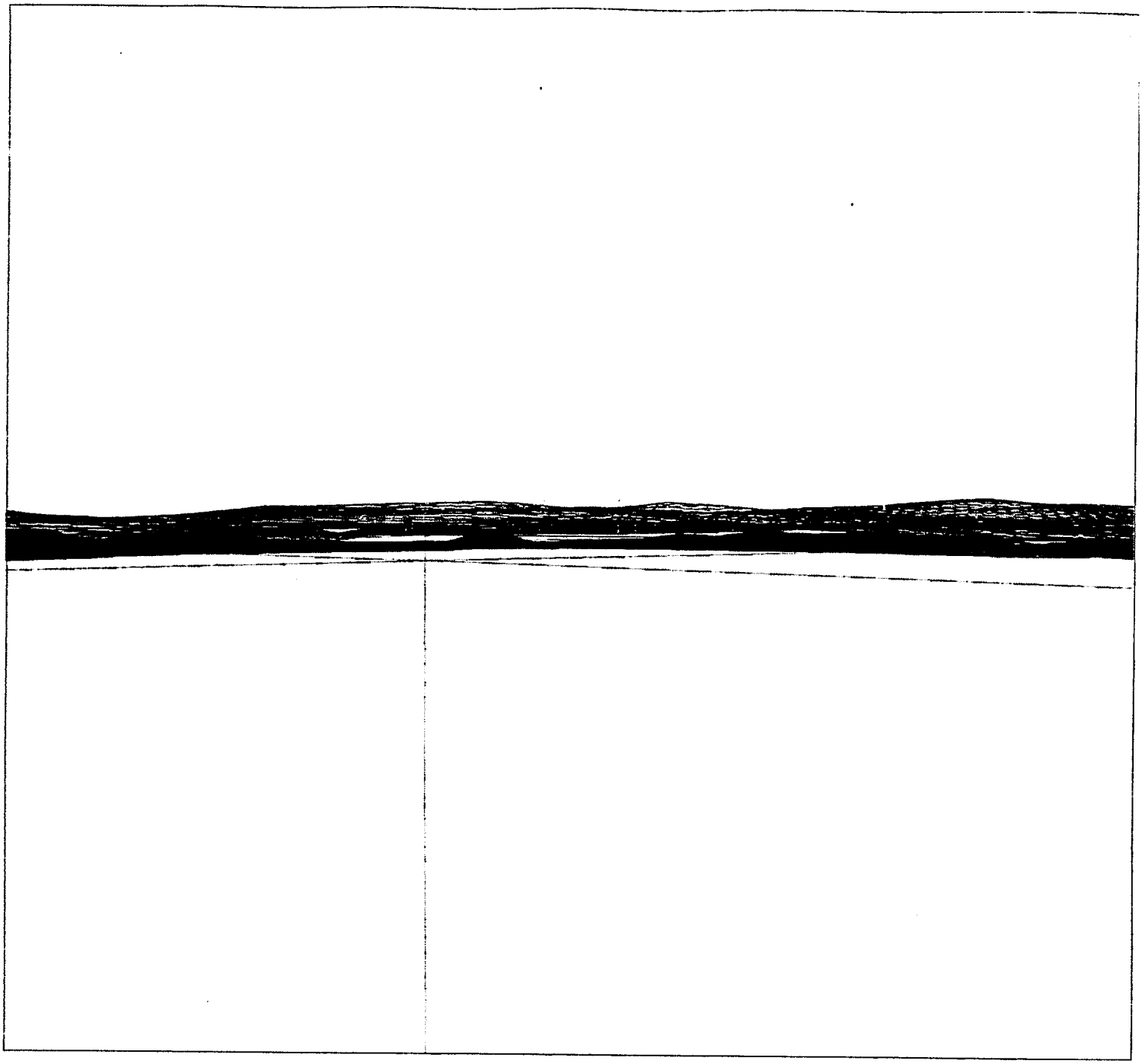

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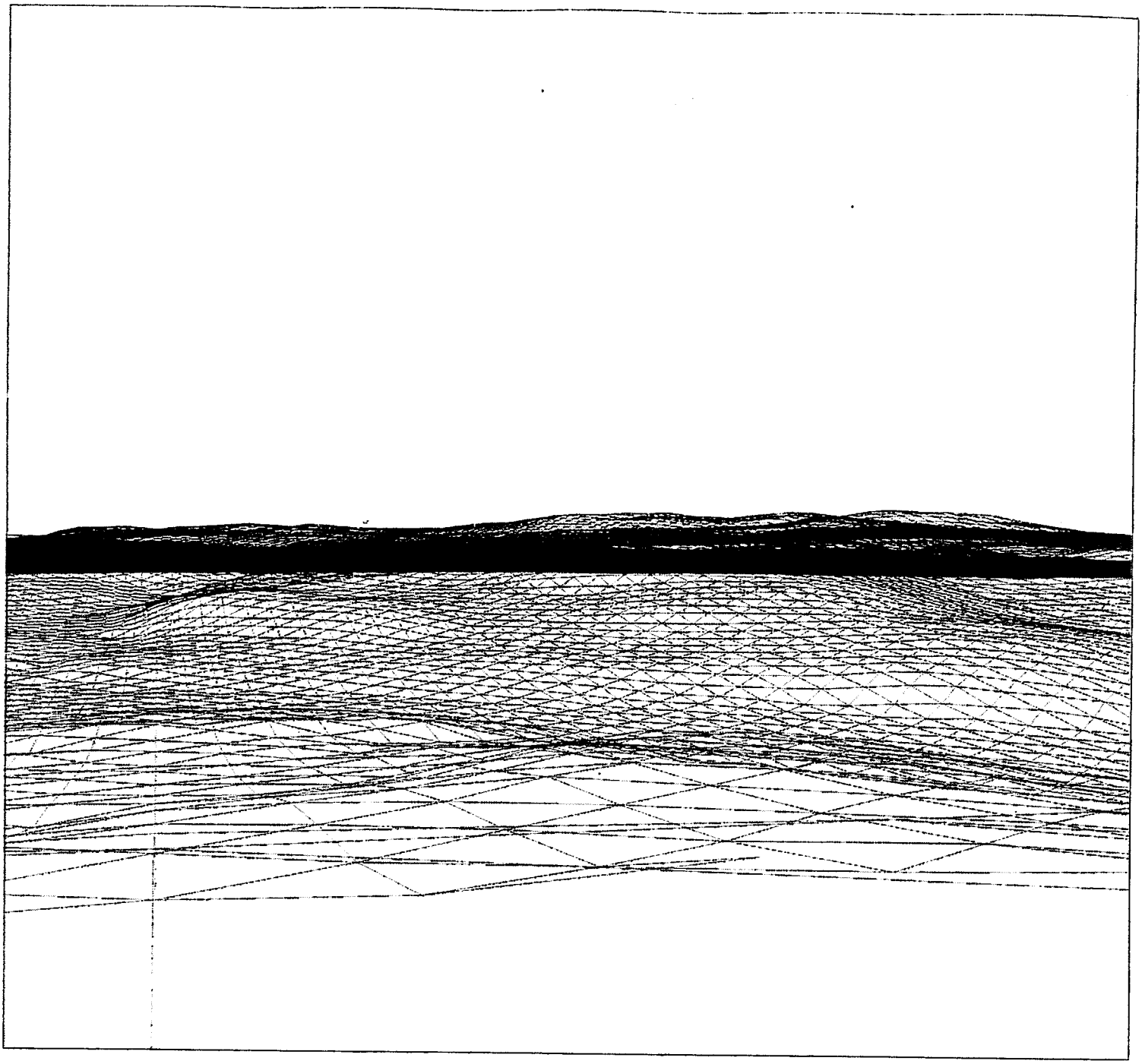

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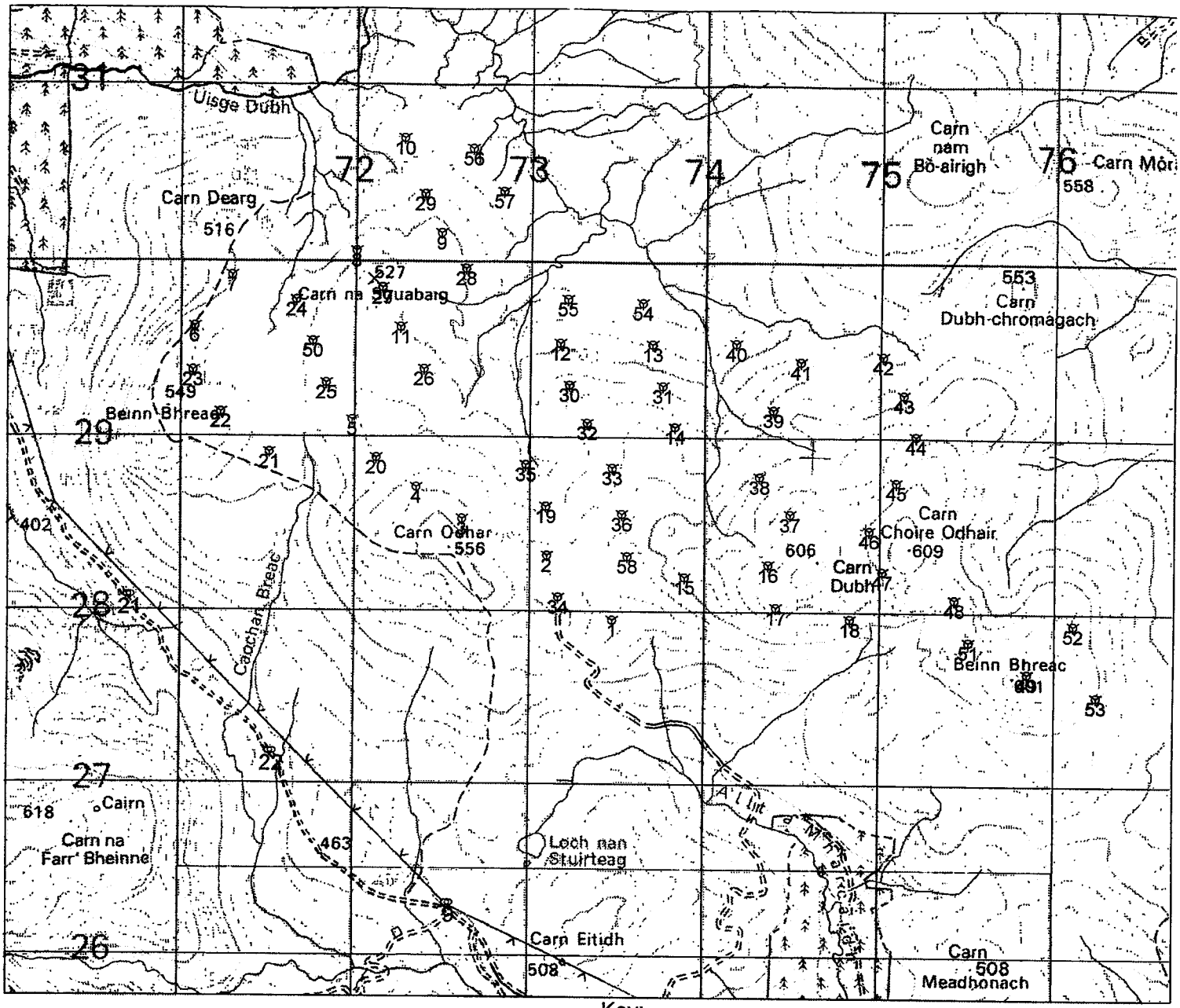

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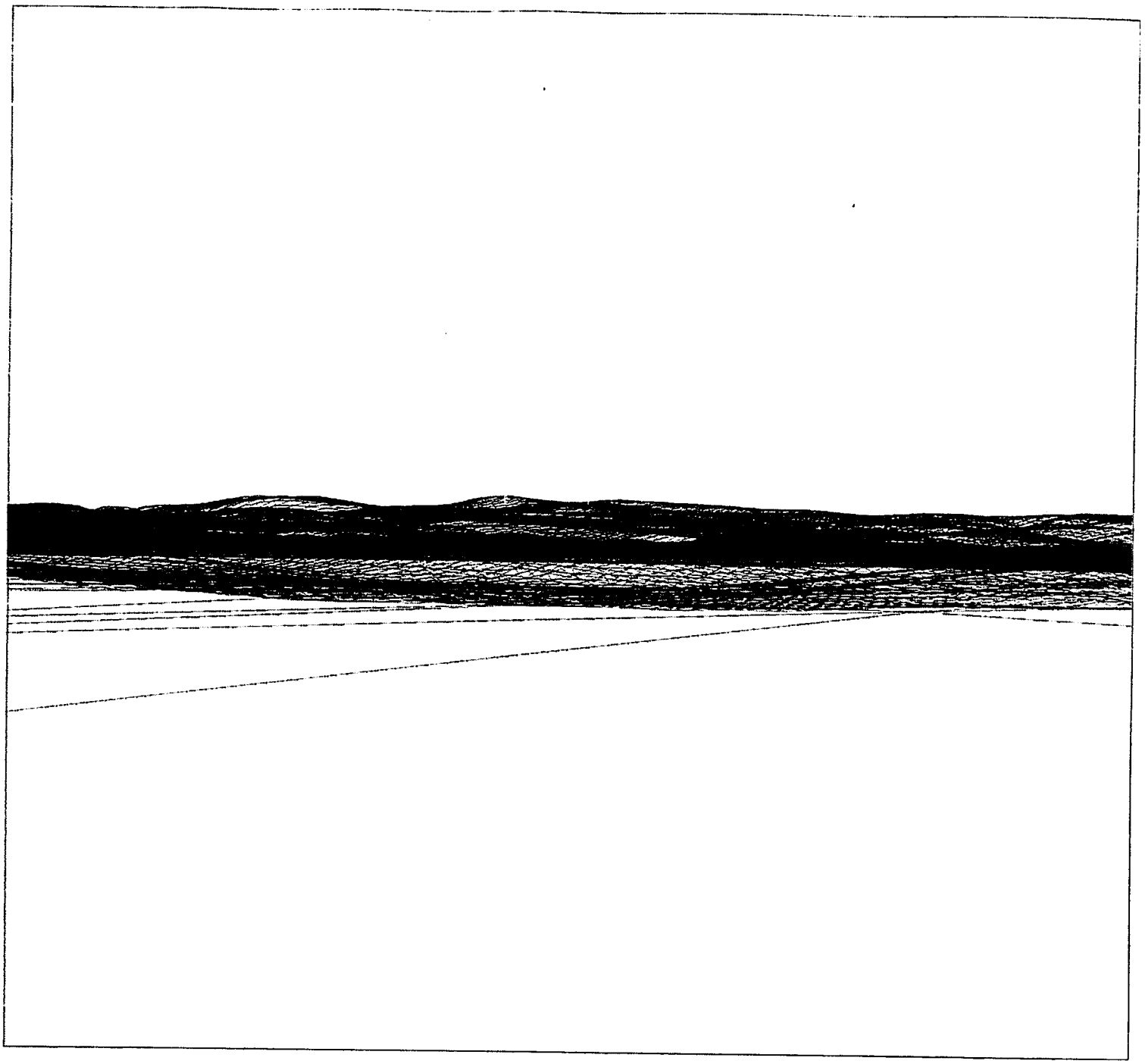

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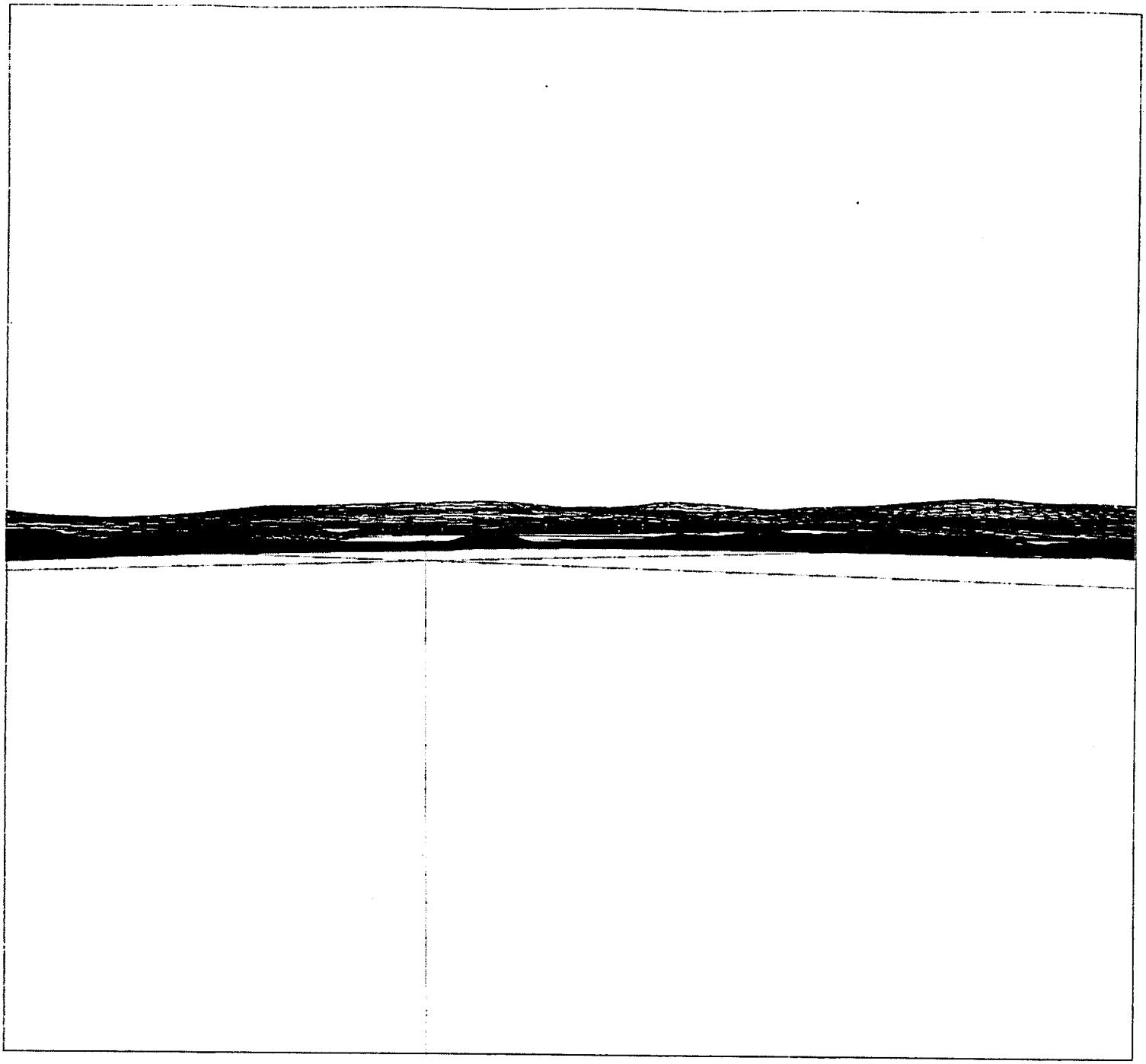

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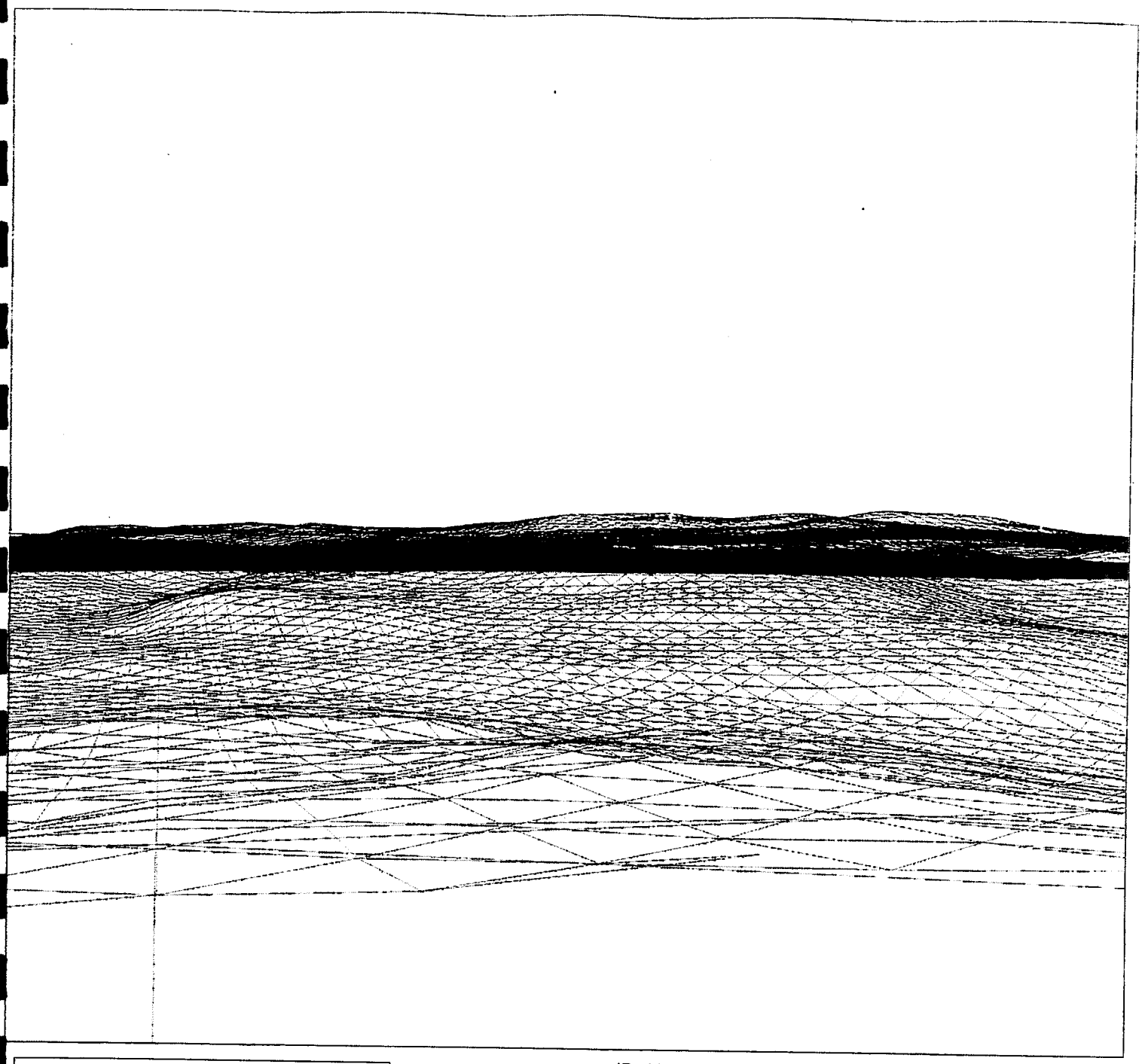

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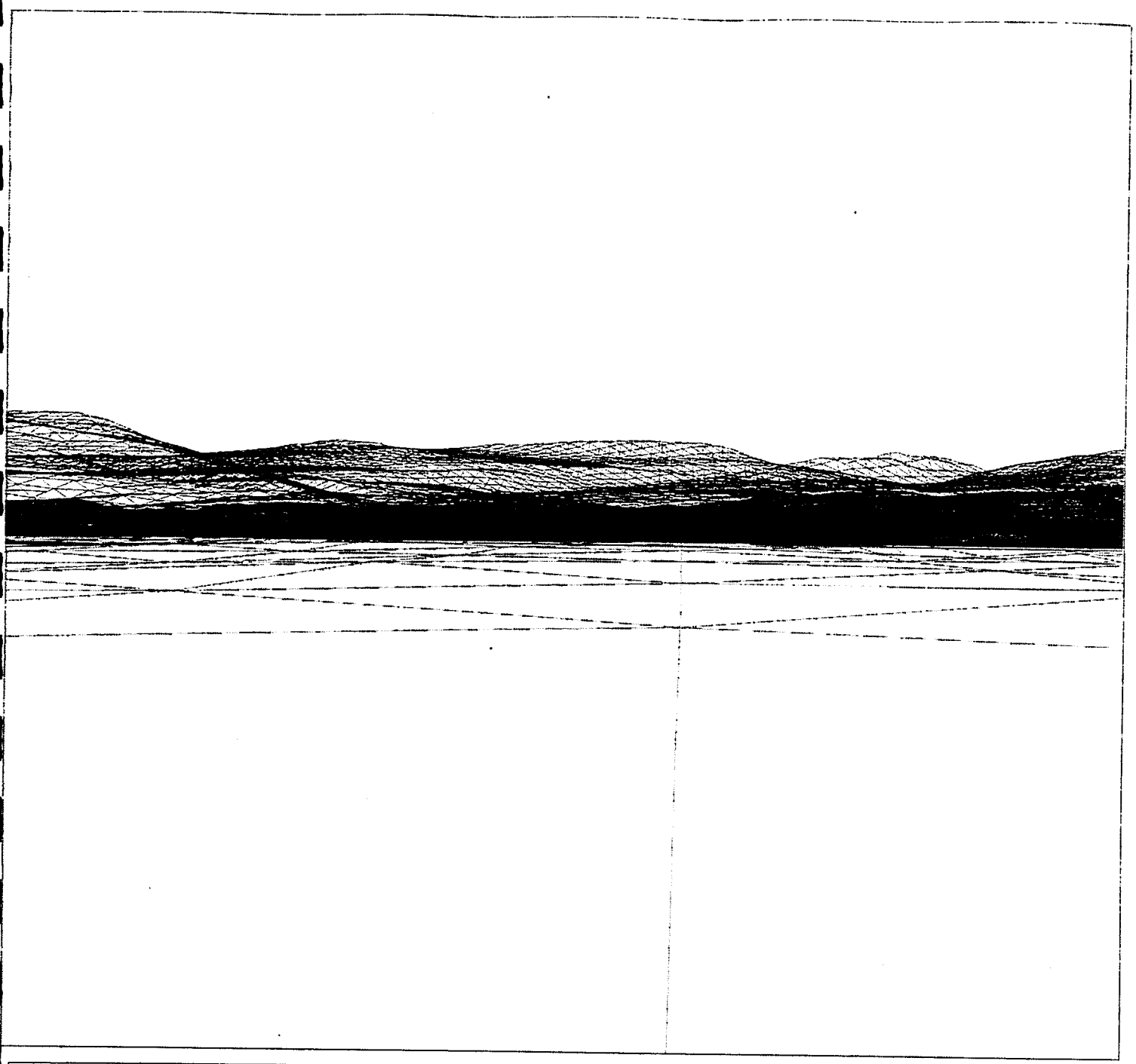

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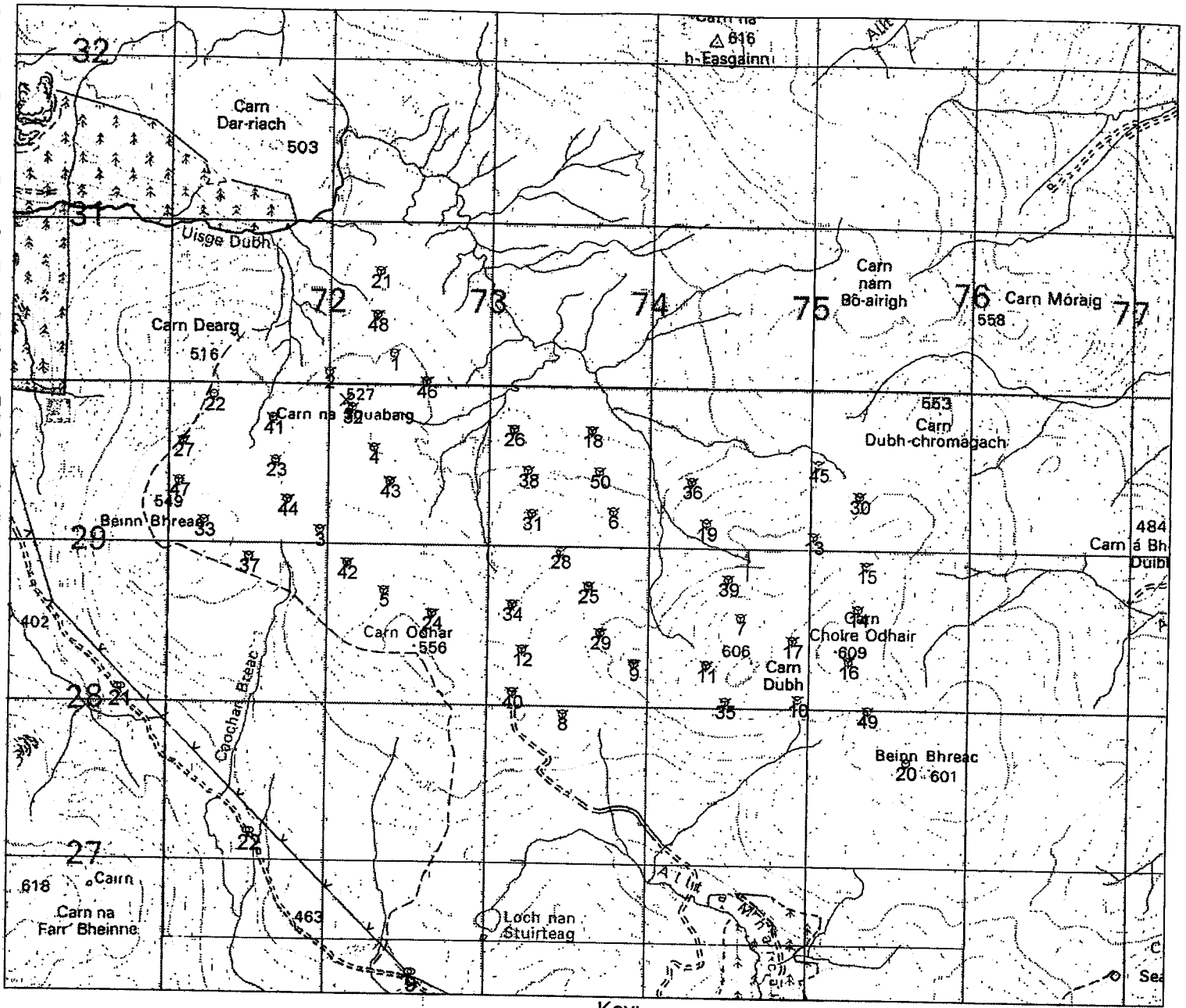

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Scoping Study (25.02.02)
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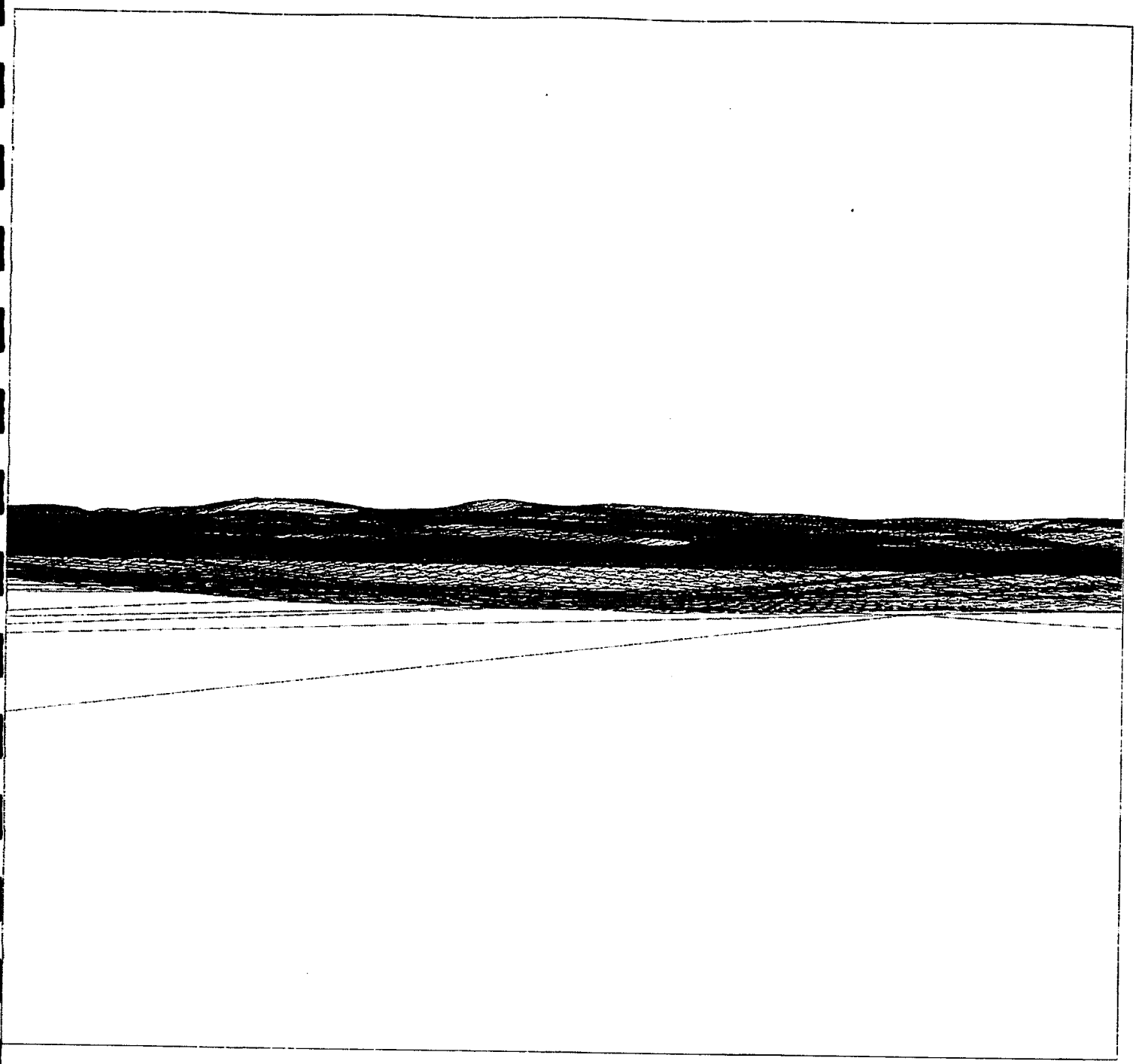

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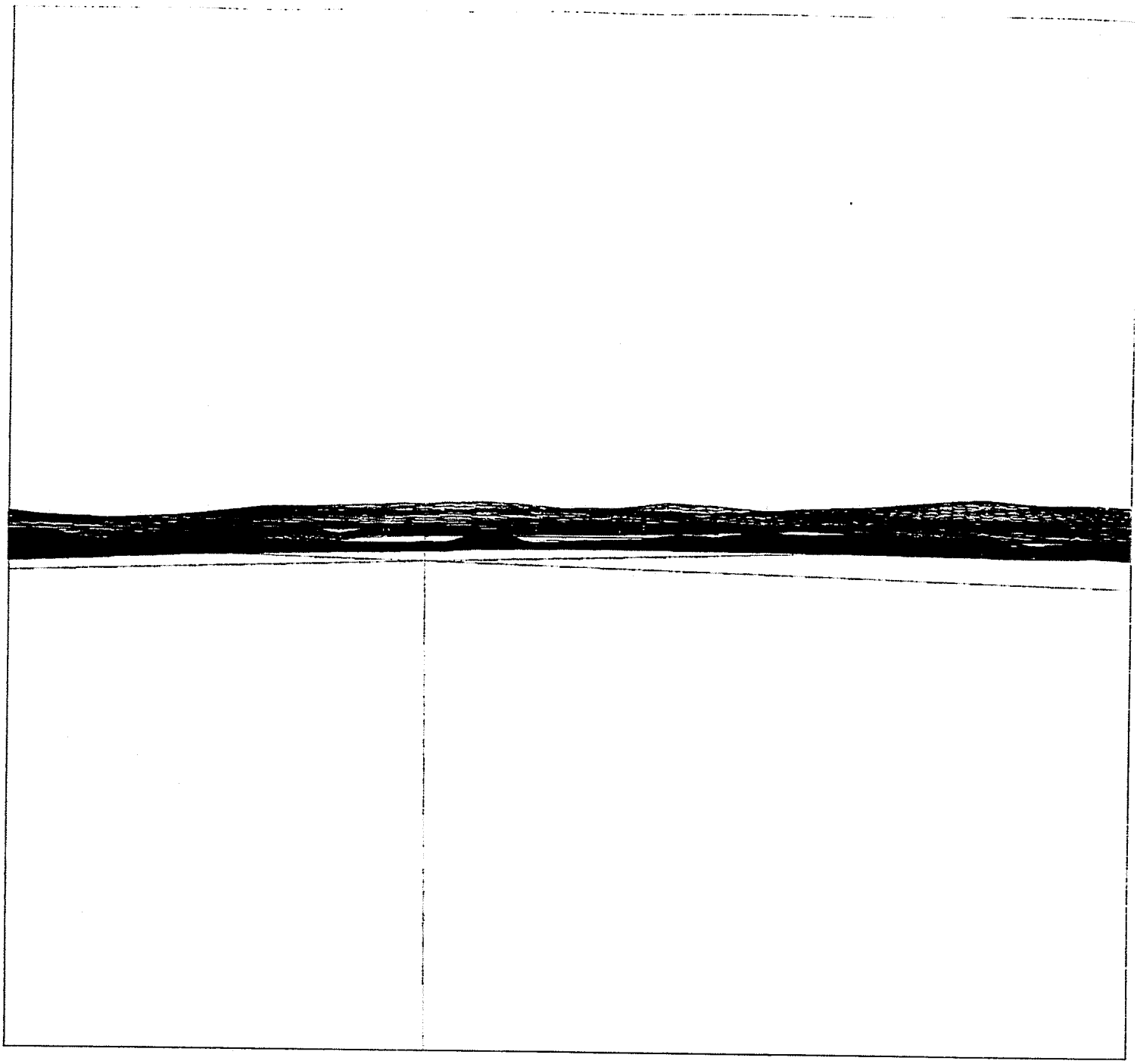

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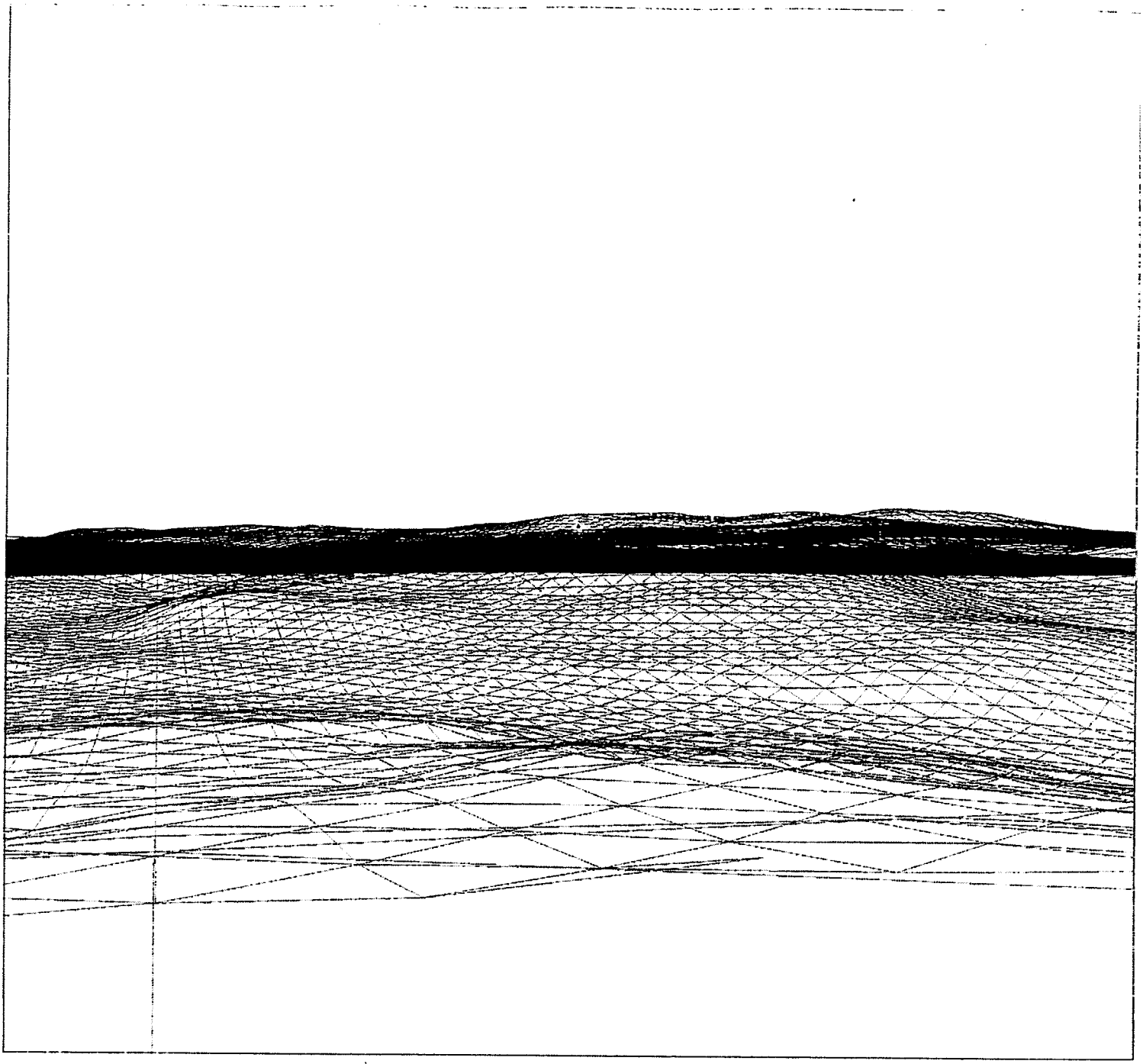

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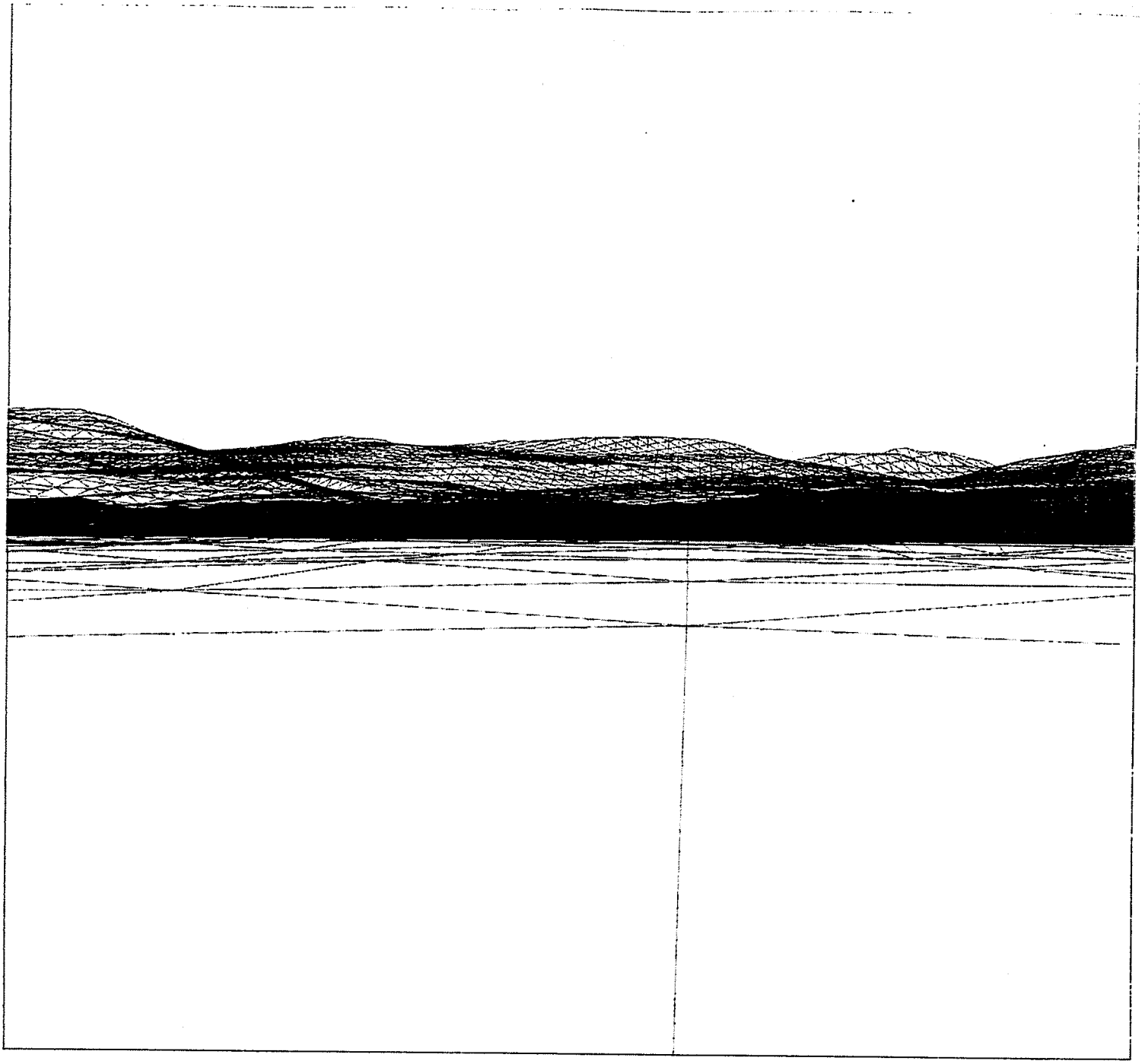

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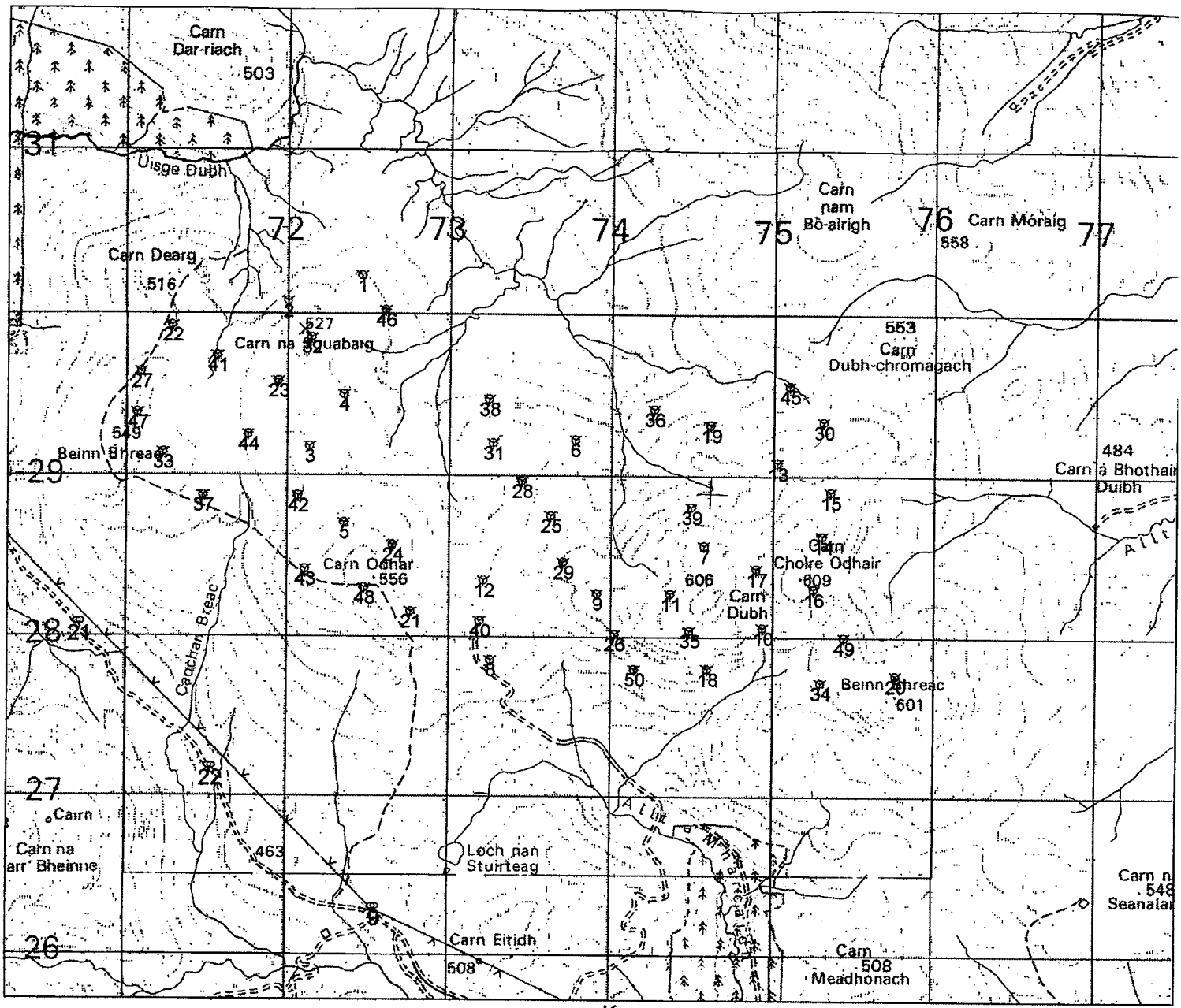

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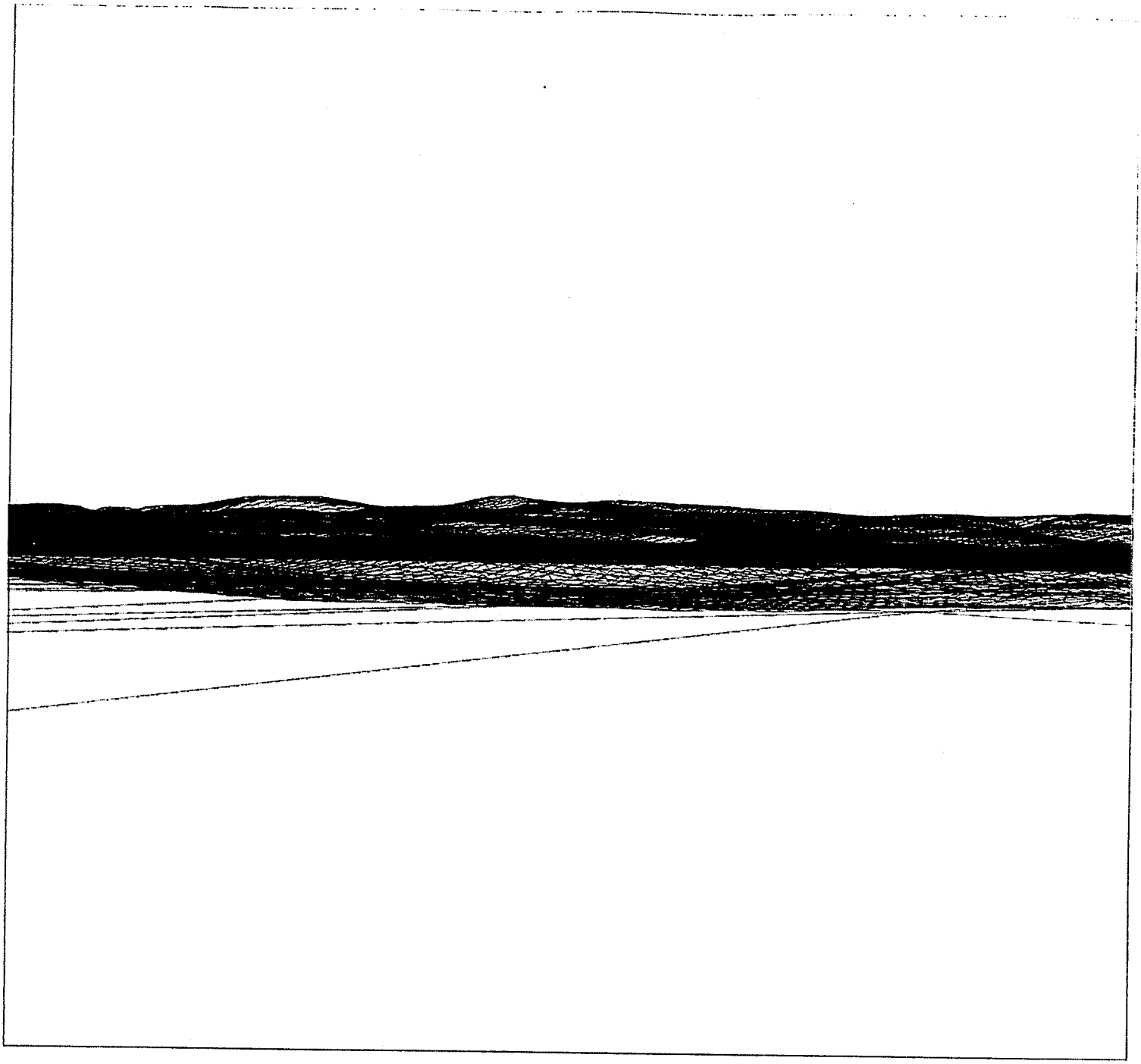

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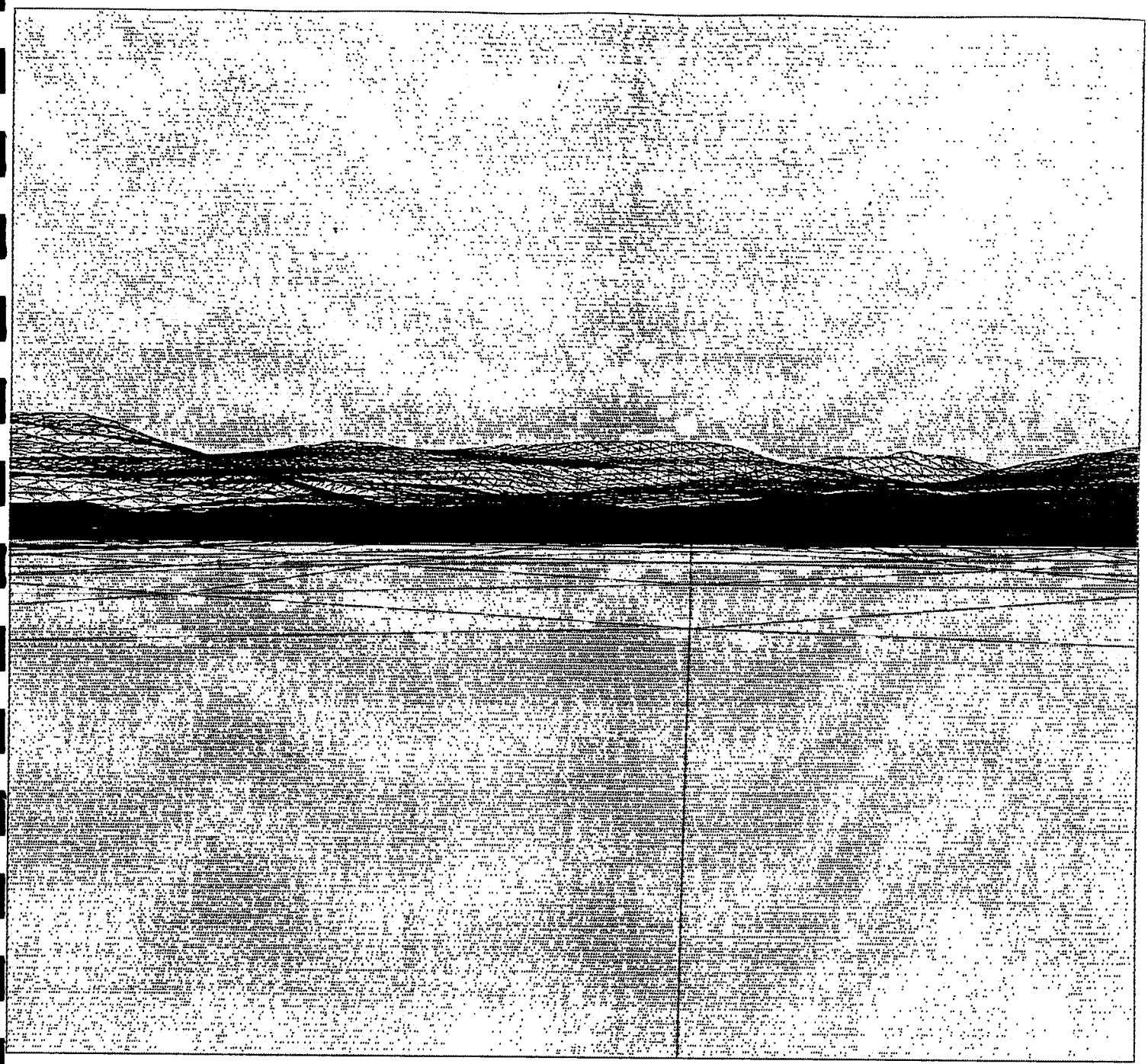

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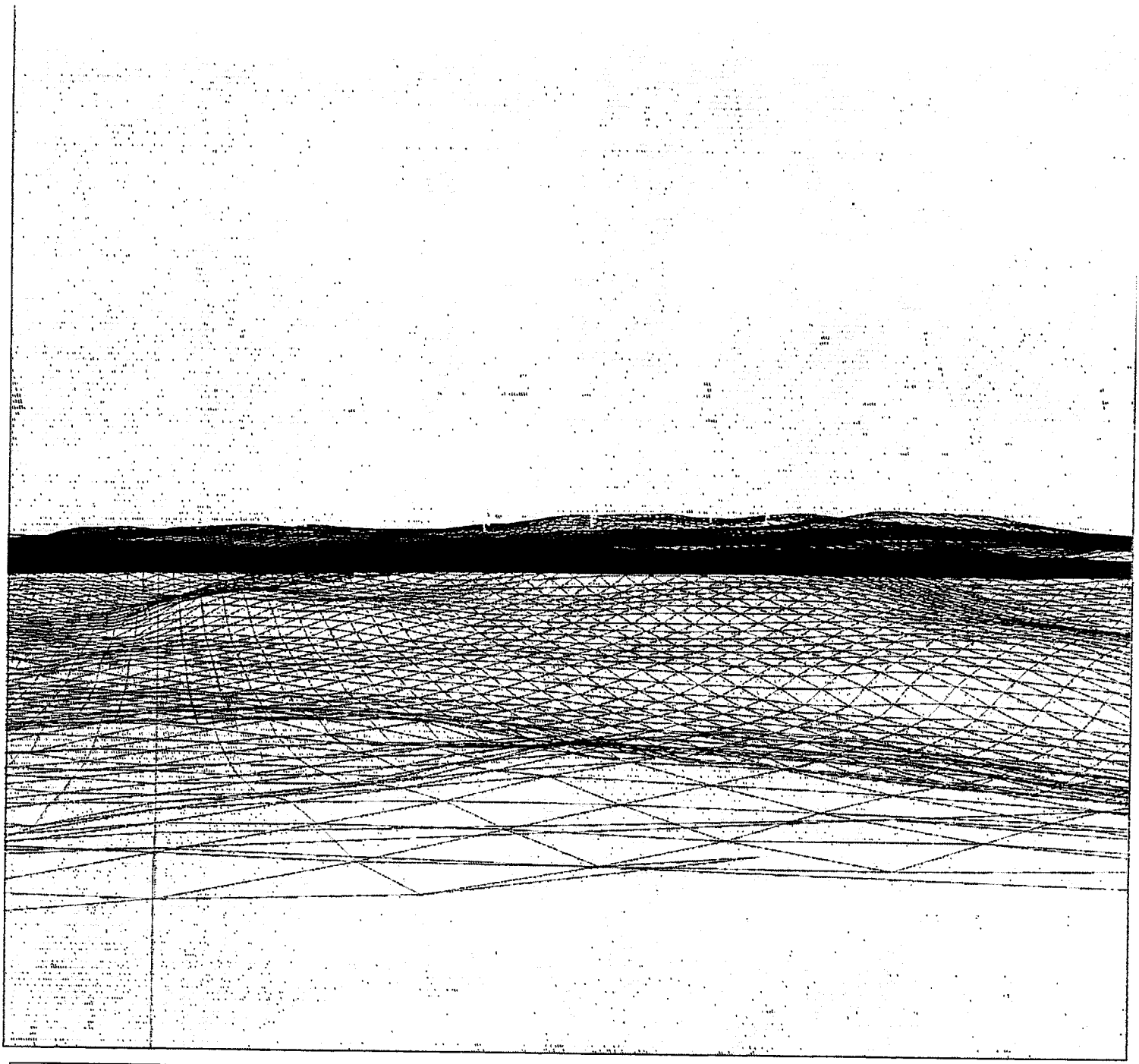

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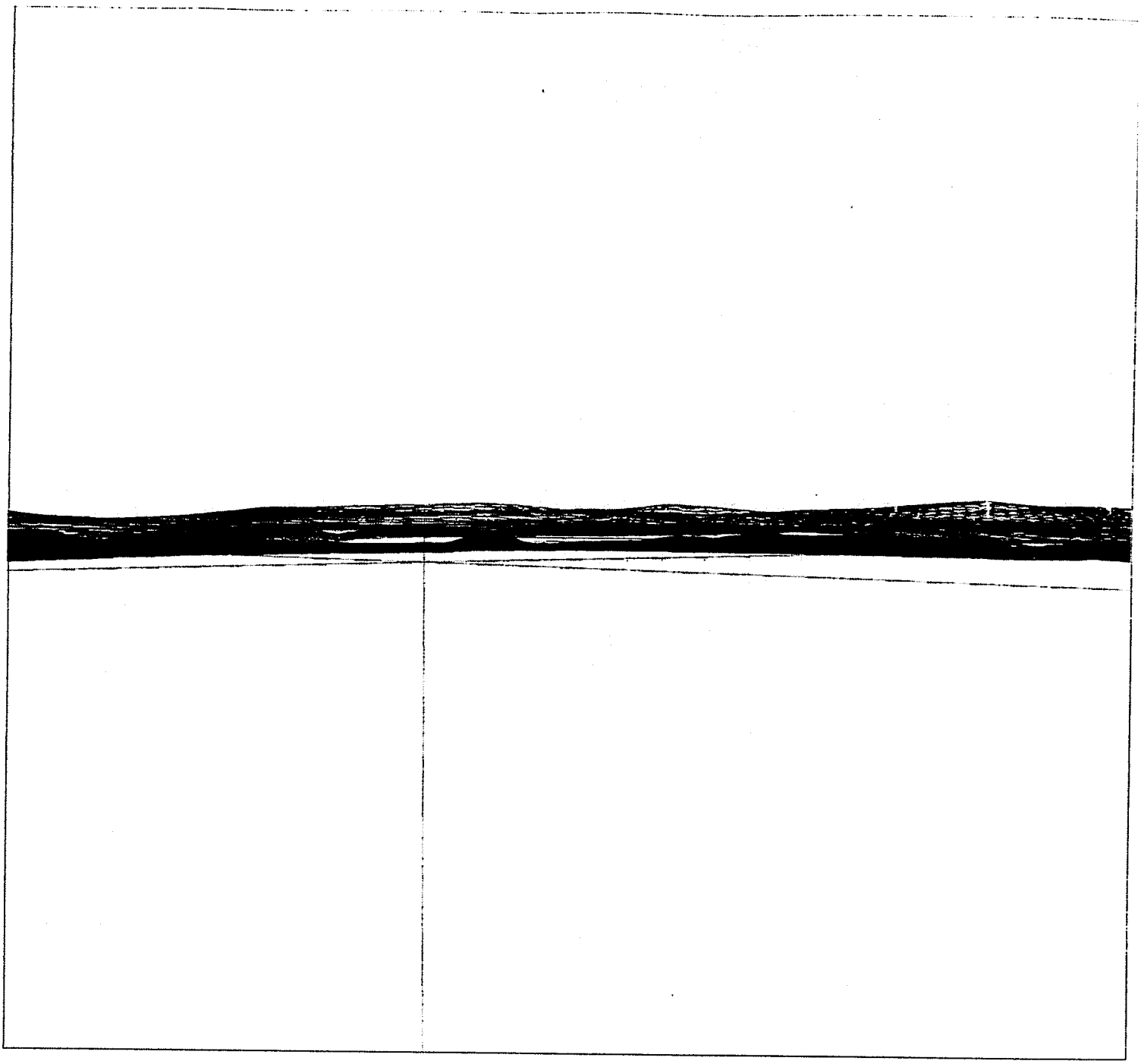

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ID: 9,Adjacent to Cairn Eitidh on minor road south of site
Date: July 22, 2002
Grid Ref: 272550 826300
Bearing: 13 degrees

Landscape character area summaries

Farmed and Wooded Foothills

This landscape character type lies to the north west of the site and abuts Strathnairn and the Great Glen.

Topography Low rocky hills of up to 430m height, have a complex irregular landform with craggy tops and upper slopes. Some of the hills are divided by narrow steep glens and corries, interspersed with broader areas of undulating ground between hills and basins filled with lochs.

Landcover, landuse and landscape elements Tops of hills are open with lower slopes often covered by coniferous forest, sometimes planted on sheer, rocky slopes. Gentler mid and lower hill slopes tend to be covered by mixed woodlands within which, fields of pasture, rough wet grazing and small scattered farms occur. Coniferous plantations are under constant management, creating a pattern of felled and recently planted areas. A network of narrow roads cut through woodlands and on the edge of lochs, connecting small scattered farms and cottages.

Designated Landscapes There are no designated landscapes within this landscape character type.

Scale of landscape The landform of small hills and narrow glens gives a sense of enclosure and an intimate to small scale character in many parts of this landscape. The landscape is more open where valleys and lochs occur, although some enclosure still occurs as hills contain and provide an edge to these elements giving a medium scale in such areas.

Nature of views Views are contained by hills and the extensive woodlands which are a feature of the character type. Longer views are possible across lochs and some areas adjacent to the Nairn valley floor. Panoramic views are a feature from the hill tops which are predominantly open.

Landscape quality This is a landscape with a diversity of elements including complex rugged hills, broadleaved and coniferous woodlands, lochs, farmland and small, often traditional, buildings. It is considered to be of high - medium quality.

Sensitivity to change The introduction of large scale vertical features outwith this character type may create visual foci in the context of this small-medium scale, visually diverse landscape where open views are possible from some areas. Sensitivity to change is considered to be medium.

Sensitive receptors Residents of the few scattered farms and houses in the area would be potentially affected as would walkers accessing the hills.

Rolling Farmland and Woodland

This landscape forms a backdrop to the south of Inverness and the Moray Firth.

Topography Rolling north facing hill slopes and plateaux rising to the *Flat Moorland Plateaux with Woodland* character type.

Landcover, landuse and landscape elements An even balance of farmland and woodland in this character type. Coniferous and broadleaved woodlands and hedgerows enclose pastoral and occasional arable fields, creating a diverse landscape with varying patterns of openness and enclosure. Estate features such as stone walls, beech hedging, parkland and wooded policies are a distinctive feature in some areas. This is a settled landscape with farms and isolated houses often set against a wooded backdrop and connected by a network of roads. Settlements are scattered throughout the area and are typically associated with road junctions and bridging points.

Designated landscapes There are no designated landscapes within this character type.

Scale of landscape The wooded character of the landscape provides enclosed and semi-enclosed spaces giving a medium to small scale, dependant on location.

Nature of views Visibility is limited in places surrounding by woodland. Open areas on upper slopes allow distant views northwards over the Firths. The *Rolling Uplands* within which the windfarm site is located, feature as a backdrop to this character type in views from the north.

Landscape quality This landscape has a diverse mix of landscape patterns and landuses and is considered to be of medium quality.

Sensitivity to change. Views from within the type focus to the north and are generally contained by woodland. The *Rolling Uplands* within which the windfarm site is located, feature as a backdrop to this character type in views from the north. The *Rolling Farmland and Woodland* type is considered to be of low - medium sensitivity to change.

Sensitive receptors Residents of farms, houses and settlements on upper slopes within the area and people taking in views of the *Rolling Uplands* seen in the context of this character type, in views from the north.

Broad Steep sided Glen

This landscape character type comprises the 'Great Glen' to the north-west of the site.

Topography Broad steep sided, 'V' shaped glen, the floor of which is occupied by the long deep Loch Ness. Little flat land occurs along the sides of the loch.

Landcover, landuse and landscape elements Simple components of flanking hills, loch and sky make up this character type. Coniferous plantations are extensive on the glen sides and semi-natural woodlands align the loch shore. Agricultural land is restricted to small scale pastures at the intersections with side glens and at the alluvial plains at either end of the loch. Estate policies are a feature on gentler slopes at the southern end of the loch. The A82 is a prominent feature on the western side of the Glen. Settlement is sparse due to the absence of flat land close to the loch. Isolated farms and small settlements occur on flatter middle hill slopes, backed by forestry. Larger settlements are located at the intersections with side glens and these tend to accommodate tourist facilities.

Landscape designations There are no designated landscapes within this character type.

Scale of landscape The pronounced containment of the Glen results in a medium scale landscape.

Nature of views The Glen's steep long sides and even skylines create a strong sense of linear enclosure. Views focus either along the length of the Glen or across the loch to the opposite shore, taking in the distant *Rolling Uplands*, from more elevated viewpoints, and a fairly even skyline and occasional focal features on the loch shore. Access routes typically follow the loch shore, where views tend to be intermittently screened or filtered by woodland, although occasional laybys and minor roads up into the flanking hills on the western side of the Glen offer more expansive views.

Landscape quality The dramatic landform of the Great Glen and presence of Loch Ness is a striking natural feature, separating the rounded uplands of the Eastern Highlands with the more rugged mountains and glens and lochs of the Western Highlands. The geometric layout of forestry and a clutter of signage and tourist facilities are detractive features in some areas. Overall the landscape is considered to be of medium quality

Sensitivity to change This is a strongly self-contained landscape with few views of adjacent character types. Large scale elements visible on the skyline may intrude on the sense of containment and integrity of the Great Glen although the containment of views would also limit visibility of external features. The Broad Steep Sided Glen character type is considered to be of low- medium sensitivity to change.

Sensitive receptors Tourists and travellers using the A82 and accessing tourist facilities along the loch shore. Residents affected are likely to be few due to the sparseness of settlement in the area. Walkers using footpaths within the hills flanking the Great Glen.

Flat Moorland Plateau with Woodland

This character type lies to the north-east of the site and abuts Strathnairn and the *Rolling Farmland and Woodland* character type.

Topography A flat to gently undulating moorland plateau rising to approximately 250m height.

Landcover, landuse and landscape elements Heather moorland is the dominant landcover although extensive coniferous plantations also occur. Thin bands of wind-pruned trees line water courses and small isolated lochans. This is a largely uninhabited landscape apart from a few isolated farms and houses on its outer edges. Service elements, such as the A9 and power lines, cross this area and tend to be highly visible due to the openness of the landscape.

Landscape designations There are no landscape designations within this character type.

Scale of landscape This is generally a large scale landscape due to its gently undulating plateaux landform and open character. Some enclosure occurs where forestry is present however, where a medium scale occurs.

Nature of views The exposed character of the moorland plateau allows panoramic and uninterrupted views of distant hills. Extensive coniferous plantations severely limit views in some areas however.

Landscape quality This is a landscape of limited visual diversity and few natural defining features. Commercial forestry does not reflect the natural landform of the area, appearing angular and intrusive. Communications and powerlines are prominent. The quality of the landscape is considered to be low to medium in general.

Sensitivity to change The openness of the landscape makes it of moderate susceptibility to change, although in parts of this type, the presence of large scale man-made features, such as power lines and extensive commercial forestry reduces this to low sensitivity to change.

Sensitive receptors As there are few people residing in this remote and exposed area and no known popular walking routes, the principal receptors potentially affected would be travellers using the A9.

Rocky Moorland Plateau with Woodland

This is a sub-type of the *Rocky Moorland Plateau* Character type. It is located to the north-east of the Great Glen.

Topography *Small rocky hills rising out of an open, gently rolling moorland plateaux.*

Landcover, landuse and landscape elements Rocky heather and grass moorland dominates hill tops and upper slopes. Small lochans and areas of bog occupy depressions. Large coniferous plantations cover much of the plateau and are occasionally broken by large fields of windswept rough pasture associated with isolated small hill farms and crofts. Broadleaves fringe the lower margins of forestry and provide a more irregular and softer edge at the transition with adjacent landscape types.

Landscape designations No landscape designations apply to this character type.

Scale of landscape There is a mix of scale present within this landscape. The enclosure created by small rocky hills and forestry gives a small scale in some areas, while a more exposed and medium scale occurs in areas of open moorland plateau.

Nature of views Small hills and high points are formed by rocky outcrops and offer extensive views of the surrounding landscape, particularly focussing on the settled straths and glens below the rocky plateau. However, extensive forestry screens views from most of the area however.

Landscape quality The complex rugged landform and textures of this landscape tend to be masked to some extent by the extensive coniferous forestry cover. Overall, landscape quality is considered to be low-medium dependant on location.

Sensitivity to change This landscape type appears remote due to its elevation and general lack of open views, although is adjacent to the Great Glen and more settled areas to the east. Extensive forestry is a characteristic of the type and tends to screen views of adjacent character types. The introduction of large scale elements visible from open elevated areas of this landscape type has potential to intrude on the sense of containment and remoteness experienced. Sensitivity to change is considered to be medium.

Sensitive receptors Local residents, walkers and travellers on the minor roads which traverse the area.

Enclosed Firth

The enclosed Firth encompasses an area of the Inner Moray Firth stretching east of the Kessock Bridge and ending where the Firth is narrowed by the spur-shaped headlands of Chanonry Point at Fortrose and Fort George in Morayshire.

Topography A coastal landscape type with a gently shelving edge on the Morayshire shore and a more pronounced rocky sloping edge on the southern shores of the Black Isle.

Landcover, landuse and landscape elements This is a natural dynamic landscape with diurnal rhythms of water, seasonally migrating birds and boat traffic. Coastal settlements tend to be linear, squeezed between land and water and largely retain a core of traditional buildings and harbours on the Black Isle side. Settlements are less constrained by landform on the gentler coastal plain of the Morayshire shore. Fort George and occasional industrial artefacts on the Morayshire shore form visual foci when viewed from the north over the flat plane of water.

Landscape designations There are no designated landscapes within this character type.

Scale of landscape The *Enclosed Firth* comprises a basin contained by land on either side and constricted to the east by the promontories of Chanonry Point and Fort George. The closeness of these shores results in a medium scale landscape.

Nature of views Wide panoramic views over the firth and the proximity of the opposing shoreline gives a sense of visual containment. The *Rolling Farmlands and Woodlands* and distant *Rolling Uplands* feature in views from the north and form part of the overall visual experience of the *Enclosed Firth*. The Kessock bridge allows this character type to be experienced from the middle, giving views of both shores and up and down the Firth.

Landscape quality The expansive flat smoothness and reflective qualities of the Firth provide a contrast with the visual diversity of edging shorelines. Industry mars the rural qualities of the Morayshire coast in some areas. The *Enclosed Firth* is considered to be of medium quality.

Sensitivity to change The introduction of large scale vertical elements outwith the *Enclosed Firth* has potential to impact on its landscape character due to their location on the skyline which forms a wider landscape context in views from the Firth. A number of vertical industrial elements are present on part of the Morayshire coast within the *Enclosed Firth* character type, although no such features disrupt the skyline.

Sensitive receptors Many people use coastal footpaths, tourist/recreation facilities and sail on this part of the Moray Firth. Residents on the southern shores of the Black Isles may also be affected by the development.

Inverness: Suburban Fringe

The town of Inverness is situated at the mouth of the River Ness on the southern shores of the Moray Firth. The town is backed by hills to the south and firths and tidal lands to the north, which give it a distinct agricultural and marine setting. The *Inverness District Landscape Character Assessment* breaks the town into a number of districts, each of which possesses distinctive characteristics. Part of the *Suburban Fringe* to the west of the town centre may be potentially affected by the proposed development.

Topography The western part of the *Suburban Fringe* rises from the Caledonian Canal located in the basin of the River Ness, to Craig Phadrig at 155m height – part of a long ridge of hills which eventually forms the western edge of the Great Glen.

Landcover, landuse and landscape elements The western part of the *Suburban Fringe* comprises low density housing interspersed with hospitals set in large grounds, small areas of grazing land and recreational facilities such as golf courses located close to the Caledonian Canal and River Ness. Craig Phadrig provides a wooded backdrop to this area to the west and woodlands also highlight the small but prominent hills at Tomnahurich and Torvean. Housing within the area largely comprises modern estates of semi-detached and detached houses extending onto the lower slopes of Craig Phadrig.
Landscape designations There are no designated landscapes within this character type.
Scale of landscape This is a medium scale landscape contained by the flanking hills of the Ness basin.

Nature of views Intervening buildings and vegetation tend to screen views of the landscape surrounding Inverness from lower parts of the *Suburban Fringe* set within the Ness basin. From elevated areas however, glimpses of landscape features such as Ben Wyvis, the Kessock Bridge and the Firths can be obtained and these give an appreciation of the area's Highland situation and dramatic setting.

Landscape quality The western part of the *Suburban Fringe* of Inverness comprises often poorly located and designed modern housing and hospital buildings, backed by a distinctive backdrop of wooded hills and interspersed with a diverse and sometimes visually cluttered range of recreational, municipal and agricultural landuses on the fringes of the town. This landscape is therefore judged to be of low to medium quality.

Sensitivity to change The presence of a wide range of built elements within this landscape character sub-type as a whole minimises its sensitivity to change. However, the landscape setting of Inverness with hills providing a backdrop to the south and the Moray Firth to the north, is of importance and may be sensitive to change in some areas. Overall sensitivity to change is considered to be low-medium.

Sensitive receptors Residents and people using footpaths and recreational facilities in the area.

The Central Massif

This character type comprises the Cairngorms Mountains, lying some 35km to the south-east of the site.

Topography The *Central Massif* of the Cairngorms is the highest mountain landscape in Britain, and comprises massive granite plateaux of a generally uniform height, deeply incised by steep sided glens and corries and with summits up to 1309m height.

Landcover, landuse and landscape elements The extensive undulating plateaux of the Caringorms have a bare, yet coarse textured surface, comprising huge boulder fields, shattered stone, gravel and sand slopes. The massif is devoid of trees, except in lower sheltered glens where scattered remnant pine occur. Ground vegetation on the high plateaux is sub-arctic in character, forming an intricate pattern of mosses and liverworts with occasional matt grass and dwarf willow hugging the ground. In some places snow lies for many months of the year, and tends to accentuate the smooth curves and cavities of the landform. There are few built elements throughout the area, although well-worn footpaths, cairns and bothies occur and on the northern edge of the massif, in Coire Cas and Coire na Ciste, there are extensive ski lifts and tows, the funicular railway, buildings and car parks, all being highly visible features in this open landscape.

Landscape designations The Cairngorms are designated as a National Scenic Area. The whole of this character type falls within the proposed Cairngorms National Park.

Scale of landscape This character type has a massive scale due the expansiveness and height of the mountain plateaux and its openness.

Nature of views The general uniformity of summit levels and the great height of the massif, provides extensive panoramas over plateaux, sky and distant hill ranges such as the Monadliath (*Rolling Uplands* character type) to the north and west.

Landscape quality The unique mountain character and 'wildland' qualities of the *Central Massif* in the context of the United Kingdom, result in this being a high quality landscape, as acknowledged by its designation as a National Scenic Area. It is also located within the proposed Cairngorms National Park.

Sensitivity to change The elevated character, openness and unique qualities of this landscape results in it being highly sensitive to change, particularly within and within close view from the *Central Massif.*

Sensitive receptors Walkers and climbers using footpaths and routes within the massif. People using the funicular railway and ski-ing facilities.

Appendix B Ecology

Appendix B Ecology

Table B1 : Extents (ha) of vegetation types and other cover in main habitat survey area

Habitat	Cover code		Area (ha)	Percent area
Blanket bog	M1	M1 *Sphagnum auriculatum* bog pools	0.72	0.07
	M17	M17 *Scirpus cespitosus – Eriophorum vaginatum* blanket bog, no clear sub-community	0.05	0.01
	M17b	M17b *Scirpus cespitosus – Eriophorum vaginatum* blanket bog, *Cladonia* spp. sub-community	469.49	46.56
	M17c	M17c *Scirpus cespitosus – Eriophorum vaginatum* blanket bog, *Juncus squarrosus* sub-community	0.64	0.06
	M18	M18 *Erica tetralix – Sphagnum papillosum* blanket bog, no clear sub-community	2.23	0.22
	M18b	M18b *Erica tetralix – Sphagnum papillosum* blanket bog, *Empetrum nigrum – Cladonia* spp. sub-community	0.83	0.08
	M19	M19 *Calluna vulgaris – Eriophorum vaginatum* blanket bog, no clear sub-community	0.83	0.08
	M19a	M19a *Calluna vulgaris – Eriophorum vaginatum* blanket bog, *Erica tetralix* sub-community	150.34	14.91
	M19b	M19b *Calluna vulgaris – Eriophorum vaginatum* blanket bog, *Empetrum nigrum* sub-community	247.51	24.54
	M19c	M19c *Calluna vulgaris – Eriophorum vaginatum* blanket bog, *Vaccinium vitis-idaea – Hylocomium splendens* sub-community	5.74	0.57
	OW	OW Open standing water in bog pools and gullies	7.68	0.76
		Total blanket bog	886.06	87.87
Wet heath	M15b	M15b *Scirpus cespitosus – Erica tetralix* wet heath, Typical sub-community	22.40	2.22
	M15c	M15c *Scirpus cespitosus – Erica tetralix* wet heath, *Cladonia* spp. sub-community	2.26	0.22
		Total wet heath	24.66	2.44
Dry heath	H12	H12 *Calluna vulgaris – Vaccinium myrtillus* dry heath, no clear sub-community	1.17	0.12
	H12a	H12a *Calluna vulgaris – Vaccinium myrtillus* dry heath, *Calluna vulgaris* sub-community	53.68	5.32
	H12/H22	Intermediate between H12 and H22 heath communities	2.02	0.20
	H13a	H13a *Calluna vulgaris – Cladonia arbuscula* dry heath, *C. arbuscula – C. rangiferina* sub-community	2.61	0.26
	H22	H22a *Vaccinium myrtillus – Rubus chamaemorus* dry heath, no clear sub-community	0.08	0.01
		Total dry heath	59.56	5.91
Acidic Flush	M6	M6 *Carex echinata – Sphagnum recurvum/S. auriculatum* flush, no clear sub-community	0.10	0.01
	M6b	M6b *Carex echinata – Sphagnum recurvum/S. auriculatum* flush, *Carex nigra – Nardus stricta* sub-community	1.87	0.19
	M6c	M6c *Carex echinata – Sphagnum recurvum/S. auriculatum* flush, *Juncus effusus* sub-community	13.05	1.29
	M6b/M18	Intermediate between M6b flush and M18 mire	0.03	0.01
	S9	S9 *Carex rostrata* swamp	0.06	0.01
		Total flush and swamp	15.11	1.50
Acidic Grassland	U4a	U4a *Festuca ovina – Agrostis capillaris – Galium saxatile* acidic grassland, Typical sub-community	1.94	0.19
	U6d	U6d *Juncus squarrosus – Festuca ovina* acidic grassland, *Agrostis capillaris – Luzula multiflora* sub-community	4.52	0.45

		Total acidic grassland	6.46	0.64
Woodland and Scrub	W19a	W19a *Juniperus communis – Oxalis acetosella* woodland, *Vaccinium vitis-idaea – Deschampsia flexuosa* sub-community	0.16	0.02
Other	BP	Bare peat	16.15	1.60
	BR	Bare rock	0.10	0.01
	BS	Bare mineral soil	0.16	0.02
Total			1008.41	

Table B2 : Blanket bog condition: SNH upland land management impact survey

Blanket bog impact type	Degree of impact (%)				Impact trend (%)				
	Light	Moderate	Heavy	None	Stable	Decreasing	Increasing	Chronically heavy	Chronically light
Drainage and erosion	31.21	25.70	30.31	12.78	48.77	3.57	9.67	27.22	
Burning intensity	0.95	0.32	0.03	98.70					
Burning frequency	1.19	0.11		98.70	1.30				
Trampling	99.92	0.03	0.05						
Grazing	9.12	90.88							
Trampling and grazing					96.67		2.27		1.06

Table B3 : Dwarf shrub heath condition: SNH upland land management impact survey

Dwarf shrub heath impact type	Degree of impact (%)				Impact trend (%)	
	Light	Moderate	Heavy	None	Stable	Chronically light
Browsing	9.89	89.33	0.78		99.06	0.94
Burning intensity	63.42	15.63	0.43	20.52		
Burning frequency	63.92	15.55		20.52	79.48	

Table B4 : Wind-clipped summit heath: SNH upland land management impact survey

Wind-clipped summit heath impact type	Degree of impact (%)				Impact trend (%)
	Light	Moderate	Heavy	None	Stable
Grazing and trampling	90.63	9.37			100.00
Burning				100.00	

Table B5 : Flush: SNH upland land management impact survey

Flush Impact Type	Degree of impact (%)				Impact trend (%)
	Light	Moderate	Heavy	None	Stable
Grazing	60.52	39.48			
Trampling	77.63	22.37			
Grazing and trampling					100.00

Table B6 : Permanent habitat loss (sq. m.) resulting from construction phase impacts

Habitat	Borrow pit and laydown areas	Wind farm roads	Northern access road	Southern access road	Crane pads	Site office and grid connection buildings	**Totals (sq.m.)**
Conifer plantation			27550				**27550**
Flushes		24	7493	599	72		**8188**
Blanket bog	25000	131408	19654	951	30268	4900	**212181**
Wet heath		4051	8384		432		**12867**
Dry heath	5000	1283	5514	6725	72	150	**18744**
Acidic grassland		216	4724	2263	648		**7851**
Total area (sq.m.)	**30000**	**136982**	**73319**	**10538**	**31492**	**5050**	**287381**

Table B7 : Extents (sq. m.) of habitat restoration for temporary habitat loss during construction phase impacts

Habitat	Wind farm road batter restoration	Northern access road batter restoration	Turbine base restoration	Borrow pit and laydown area restoration	Totals (sq.m.)
Conifer plantation		29616			**29616**
Flushes	26	8055	40		**8121**
Blanket bog	141263	21127	16816		**179206**
Wet heath	4355	9013	240		**13608**
Dry heath	1379	5928	40		**7347**
Acidic grassland	232	5078	360		**5670**
Total area (sq.m.)	**147255**	**78817**	**17496**	**30000**	**273568**

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Appendix C Ornithology

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Appendix D Archaeology

Appendix D Archaeology

Gazetteer of sites

Sites within the area of the of the windfarm

Site 001	Carn na Sguabaig	Grouse butts	NH 72466 29085 - NH 72789 29130
Site 002	Carn Dubh	Grouse butts	NH 74010 28933 - NH 73657 28781
Site 003	Carn Dubh	Grouse butts	NH 73721 28314 - NH 73747 28648
Site 004	Carn Odhar	Grouse butts	NH 72872 27702 - NH 72789 27254
Site 005	Carn Odhar	Grouse butts	NH 72970 27707 - NH 72933 27401
Site 007	Beinn Bhreac	Grouse butts	NH 74857 27252 - NH 74467 27015

In addition to those grouse butts marked on the present OS maps, there are a further three lines of butts within the proposal area (figure 36). As with those noted on the map, many of these have been recently improved, but all could reflect a long period of use. The majority are very well built, often having drains, stone lined inner faces and wooden duckboards covering the ground surface. Each butt is numbered. Sites 004 and 005, which are associated with the modern bothy (Site 006), run down the south facing slope of Carn Odhar. Site 003 runs over the west shoulder of Carn Dubh, extending down into a boggy area on the north side of the summit, from where Site 004 runs away from it an oblique angle further down the slope. The more isolated line of butts, Site 001, may no longer be in use, as they lie much further away from the present estate tracks. They too run across a very boggy area, close to a tributary of the north flowing Caochan na Baidheig, on the gently sloping eastern flank of Carn na Sguabaig.

Recommendations As these features represent one aspect of the continued use of these upland areas, they have some historical significance within a local context. It would be preferable if each line of butts could be avoided during any construction work undertaken for the windfarm. An exclusion zone of at most 10m would probably be adequate along either side.

Site 006 Carn Odhar Bothy NH 72800 27700
A modern wooden bothy (figure 36), lying adjacent to the estate track and serving the grouse butts in the immediate vicinity.

Recommendations Although this might be the successor of an earlier bothy, it is of no antiquity in itself.

Site 008 Glenkyllachy Hollowway NH 7174 3037 - NH 7231 2631
Annotated as a path on the modern OS map this hollowway extends from the Garbole road, passing through the eastern half of the proposal area and finishing on the eastern flank of Carn Dearg, at a ford across a tributary of the Uisge Dubh. One other ford is shown along its length. Although not depicted on the earlier maps, it is possible that this routeway is much earlier in date than this would suggest, particularly as it appears to terminate rather abruptly at the burn. It is clearly visible on the post-WWII aerial photographs.

Recommendations Where this path is crossed by machinery involved in the construction of the windfarm, care should be taken to create as little disturbance as possible. It is not felt that the path is of enough significance for further precautions to be necessary.

Sites along the northern access road

Site 026 General Wade's Military Road NMRS/SMR no. ? NH 7989 2783
Following the rebellion of 1715, General Wade was commissioned to construct a network of roads intended to make the more remote areas of Scotland more accessible, with the ultimate aim of subjugating the Highlanders. A stretch of Wade's road from Perth passes through the narrow corridor known as the Stairsneach nan Gaidheal, 'the threshold of the Gael' (M'Bean 1791, 228), before turning north on a line more or less parallel with the present A9, on its way to Inverness (Figure 36). In 1746, the mouth of the pass became the scene of one of the more notorious events in Bonnie Prince Charlie's campaign (see Site 029). The historical importance of this narrow pass suggests that the eighteenth century road follows the line of a much earlier route. According to Shaw, the 'more remote banditti' of Badenoch and Strathspey found the pass so convenient that they paid the

proprietor, presumably Mackintosh of Moy, a proportion of their spoil (mainly cattle) for the privilege of the free use of the pass (1775, vol. II, 201).

Recommendations Although, along this part of its length, it is not legally protected, the line of General Wade's Road is an important historical resource. It is probable that much of the original road remains underneath the present surface and the passage of heavy vehicles may detrimentally affect these remains. In addition, the road is utilised as a signed footpath. An archaeological watching brief in conjunction with a detailed assessment of the road alignment and construction methods to be used will be required. A 100m envelope has been provided to allow realignment of the road if required and this is deemed sufficient to provide adequate mitigation.

Site 027 Badachreamh, Inn; farmstead, NMRS no. NH73SW3 NH 7287 3495 SMR no. NH73SW0004
A farmstead, comprising a single unroofed building on the east side of General Wade's Road and another building, also unroofed, with an attached enclosure on the west, is shown on the OS First edition map. Only the building to the east of the road is shown on the Second edition map. Badachreamh, which means the 'place of wild garlic', came into being as a droving inn in the eighteenth century (Name Book, Book 5, 148; Meldrum 1983, 32).

Recommendations This farmstead appears to lie underneath the line of the present A9. Although the buildings have been destroyed, it is possible that traces of the cultivation areas or other features associated with the buildings might be recovered if the track is upgraded in this area. Therefore, contractors working in this vicinity should be made aware of the potential for discoveries of archaeological or historical significance and great care should be taken to cause as little disturbance as possible during any construction work.

Site 028 Uaigh an Duine-bheo Grave; cairn SMR no. NH 73SW00006 NH 7272 3482
In the Name Book, the 'grave of the living man' is described as a small cairn of stones, located within a green hollow at the side of the cart road leading from General Wade's Road to Wester Lairgs (Book 5, 148). During a dispute between Macgillivray of Dunmaglass and Mackintosh of Moy over the boundary of the land of Lairgs in the seventeenth century, one of the witnesses perjured himself by filling his shoes with soil from Dunmaglass and then - while standing on Mackintosh's lands - swore the ground on which he stood was part of Dunmaglass. The form of his oath was so unusual that the man's testimony was thought to be suspect. His subterfuge was discovered and, for perjuring himself, he was buried alive on the spot.

Recommendations The cairn has recently been located and is now marked out to protect it from forestry operations (information contained in Highland Council Sites and Monuments Record). This site lies some distance from the proposed routes of the northern access road in this area, but it is an important site within local folklore and - particularly when viewed in conjunction with Sites 026 and 029 - it would be preferable to avoid any action which would materially affect its setting.

Site 029 *Rout of Moy* *Battle site* *NMRS/SMR no. NH73SW1* *centred NH 7298 3464*
In 1746, in the February before Culloden, Donald Fraser, a blacksmith in Moy and four other men, foiled an attempt by government soldiers to capture Prince Charles, then resident at Moy. By stationing themselves carefully behind peat stacks, the five men gave the impression that the whole of the Highland army was guarding the mouth of the pass. The consequent flight of Lord Loudon's forces, some 1500 strong, is known as the Rout of Moy (Shaw 1775, Vol. II, 200-1).

Recommendations The precise location of this skirmish is no longer known. While it is probable that the fleeing soldiers may well have dropped some of their belongings, it is unlikely that any traces of this event would be recoverable archaeologically, except as chance finds. However, this site is well known locally and a commemorative sign has been erected by the Inverness Field Club in a lay-by on the A9. Since it lies along the line of General Wade's Road, it provides an additional reason for a careful archaeological assessment of this route during construction.

Site 030 Creagan Bad Each Hollowway NH 77506 26642
A possible hollowway curving around the south east side of Creagan Bad Each has been exploited as a NE-SW ride within the modern forestry plantation (Figure 36). It crosses the line of the proposed access road, at a gateway in the present forestry fence. The fence, itself, probably follows the line of

an earlier boundary, which first appears on the OS Second edition map, as there are older cast iron fence posts and strainers still visible along its length.

Site 031 Allt na Fuar-ghlaic Hollowway approx. NH 7219 3460
A track, running up from the cart road linking General Wade's Road with Wester Lairgs, follows the eastern bank of the Allt na Fuar-ghlaic for a considerable distance up the lower slopes of Beinn na Cailleach (Fig. 5). This track appears on the OS First edition map, but is not shown on the modern map. In addition, there are possible traces of cultivation or peat cutting in this area, which show up on the aerial photographs taken in the late 1940's, just prior to the planting of the forestry plantations. These are unlikely to be identifiable under the present tree cover. The hollowway was not recognised on the ground either, in the vicinity of where the proposed access road crosses the burn, although it is shown as extending beyond this point.

Site 032 Allt na Fuar-ghlaic, Farmstead, NMRS no. NH73SW2, NH 7133 3445, SMR no. NH73SW0003
A farmstead comprising three unroofed buildings, three small enclosures and a ring dyke is shown on the earlier editions of the OS maps. All also appear on the modern map and are clearly visible on the aerial photographs taken after World War II. They currently lie within a young plantation.

Recommendations This farmstead lies outwith the area of any developments associated with the proposed windfarm and should not be affected during construction work.

Site 033 Allt na Fuar-ghlaic ?Hollowway NH 7112 3433
Site 034 Allt na Fuar-ghlaic ?Hollowway NH 7091 3432
Two possible hollowways running upslope from the cart road linking Moy with Wester Lairgs appear to have been exploited as rides within the modern forestry plantation (Figure 36). They are only visible within the long vegetation at the side of the track, before they disappear into the trees. Neither are marked on the earlier maps, but the more easterly example may be visible on the post-WWII photographs, running immediately to the south of the enclosure and three buildings which form Site 032, towards what may be a square enclosure.

Recommendations Where the hollowways cross the line of the present forest track, they have already been destroyed. It is unlikely that further upgrading of the track will substantially affect either site.

Site 035 Allt na Lairge Hollowway; mill lade NH 7054 3426
At the point where the current forest road crosses the Allt na Lairge, a mill lade runs down to the farm of Wester Lairgs (Figure 36). This has been preserved in the line of a forest ride, although the long vegetation of summer meant that it was not precisely identified on the ground; however, it may be represented by a distinct hollow, immediately to the north west of where the track crosses the burn. The lade is shown on both the First and Second edition maps, running into a small mill pond to the south west of the farm; the farm itself is described as a large new farm steading, 'one of the best for miles around' and included a dwelling, manager's house and outoffices (Name Book, Book 20, 31). The lade also shows up very clearly on the aerial photographs, as do a number of clearance cairns located amidst an area of improved ground to the west of the lade; the latter should lie some distance from the proposed access road. To the south west of the burn, a very distinct hollow way continues up the slope before it disappears into the modern plantation; its junction with the present track is no longer apparent, but it seems likely that it crossed the burn at what appears to be a ford, lying immediately to the north of where the present track crosses the burn.

Recommendations Where the hollowway crosses the line of the present forest track, it has probably already been destroyed. It is unlikely that further upgrading of the track will substantially affect this site, but great care should be taken to prevent damage to what appears to be the ford on the north side of the present track.

Site 036 Blàr Bhuidhe ?Hollowway approx. NH 6906 3327
On the south side of an unnamed burn running down from Blàr Buidhe to Inverarnie, is a trackway, which on the OS First edition map, splits to run on either bank of the burn, just outside what appears to be Inverarnie's head dyke (Figure 36). As they are not shown on the modern map, it is unclear whether these tracks extend as far as the line of the present forest road. No trace of them was recognised during the survey.

Recommendations Neither track was observed on the ground and no archaeological mitigation will be necessary in this area.

Site 037 Allt a Chreagain Hollowway NH 6923 3197
Running along the south bank of the Allt a Chreagain is a trackway, which runs up onto the flank of Creag an Dubhair, finishing on its south side (Figure 36). The trackway appears on the OS First edition map, the modern OS map and is also clearly visible on the aerial photographs taken in the late 1940's. It still survives as a hollowway on the west side of the present forestry track, where it has been utilised during forestry operations. On the east side of the track, it is less obvious, because of the brash, but does still seem to be present as a distinct hollow.

Recommendations Where it crosses the present forest track, the line of the earlier hollowway has probably already been destroyed. It is unlikely that further upgrading of the track will substantially affect this site.

Site 038 Allt an Loin Eorna Building approx. NH 698 312
Distinctly visible on the post-WWII aerial photographs is an unroofed rectangular building lying on the west facing slopes between the Allt an Loin Eorna and the Uisge Dubh (Figure 36). It does not appear on the earlier editions of the OS maps and cannot now be located, but must lie in the vicinity of the forestry track (which is intended to be upgraded as part of the northern access road) running along the north side of the Uisge Dubh. Apparent on the same photographs, there are very faint suggestions of rig and furrow or peat cutting between the building and the Allt an Loin Eorna.

Recommendations Although not located during the survey, it is possible that traces of the building remain within this area. Contractors working on the site should be made aware of the potential for discoveries of archaeological or historical significance in this area. Great care should be taken in this vicinity to cause as little disturbance as possible during any construction work.

Site 039 Lynroich Farmstead NMRS no. NH63SE106 NH 69952 30494
SMR no. NH63SE0113
The farmstead of Lynroich, which is described in the Name Book as moderately sized and with 'suitable offices attached' (Book 13, 34), survives on a low, level topped knoll, immediately to the west of the present forest track (Figure 36). The buildings, which were one storey high, thatched and in indifferent repair in 1870, are arranged around a courtyard. In contrast to the farmstead of Culcairn (NMRS no. NH63SE58, SMR no. NH63SE0055, NH 695 303), which lies at a similar height on the opposite side of the Allt Gogach (now the Allt Beag), this layout suggests that a greater degree of improvement had taken place at Lynroich. The buildings have been recently cleared of trees and are in relatively good condition, although obscured by brash. They are constructed from large, predominantly white granite boulders; the basal course consists of rounded boulders, but the surviving upper courses, which seem to be earth bonded in places, consist of more carefully squared blocks, laid to form neat internal faces. Although the walls stand to under 1m high, the amount of tumble at each end of the three main structures suggests that they once had stone-built gable ends. In plan, the farmstead appears slightly different to its representation on the OS First edition map; in particular, the building at the south east corner was not recognised. The entrance appears to have been at the north east corner, with a building on each of the three sides of the courtyard. The two structures on the west and south sides measure 14-15m long by 4m wide internally. Those on the north and south sides are smaller and less well preserved, measuring about 7m long by 4m wide. The eastern building is divided into two unequally sized compartments.

The farmstead stands on the edge of the highest of two terraces, running in parallel to the Allt Gogach. It lies in the centre of a ring dyke, while a number of walls further sub-divide the larger enclosure into smaller areas, the majority of which are shown as improved ground. One of these dividing walls survives along the east side of the present track, but disappears before the northern edge of the recently felled area is reached. The east side of the wall, standing to approximately 0.3m high, is almost completely turfed over, but the much more prominent west face rises 0.6m above the ground surface on this side. Although access was originally via a track leaving the Garbole road to the south west of the buildings, the present forest track leaves the road on the north side of the Allt Gogach; this has disturbed the walls which are visible in this area on the First edition map, but traces of the large boulders which probably formed the basal course of the walls do survive to the south of the buildings. A stretch of wall, running along the line of the more recent forestry fence, is reminiscent of a lynchet, as the ground surface on its west side is much lower than that on the east; this description is also true of the square enclosure surrounding the farmstead itself, although here the

natural slope of the ground is much steeper. Further walling is visible to the south of the present track, curving along the southern bank of the burn; it also consists mainly of the large rounded boulders forming the basal course.

Recommendations The buildings of this farmstead should be safeguarded if the adjacent track is to be upgraded, although it is probably not possible to maintain the standard 20m exclusion zone around it, if the present line of the track is not to be shifted. The majority of the field walls associated with the farmstead should not be affected by the proposal, although those which run along the track to the south and north of the buildings should also be protected. The known features should be marked out before construction work begins in this area.

Site 040 Lynroich Sheepfold; building approx. NH 6999 3023
On the OS First edition map, a large rectangular sheepfold is shown on the west side of the Allt Gogach. It does not appear on the Second edition map or on the modern map, the latter because it now lies within the relatively young plantations within this area. Prior to the expansion of the forestry around Lynroich, the sheepfold is visible - with a single tree in its north east corner. Just to the west of the sheepfold, and again visible on both the 1874 map and on the aerial photographs, is an unroofed rectangular building, divided into two compartments and lying immediately outside the ring dyke associated with the settlements of Lynroich (Site 039) and Culcairn. The function of this building is unclear, but it may be associated with the nearby sheepfold.

Recommendations Although neither the fold nor the building were located during the survey, they lie on the opposite side of the Allt Gogach to the proposed line of the grid connection and, if they do still survive under the trees, should not be affected by construction works associated with the windfarm.

Site 041 Uisge Dubh Sheepfold; shieling hut NH 72093 31515
On a grassy flat within a bend of the Uisge Dubh is a drystone sheepfold (Figure 36). It is rectangular in shape, utilising the rising ground to the south as its fourth side. The entrance appears to be in the centre of the east wall, next to a very large outcrop of rock, of rounded shape, which has been incorporated into the construction of the wall. The walls taper towards the top and are capped in places by a layer of turf. Attached to the north east corner of the fold is a small rectangular building measuring 3m E-W by 4m N-S overall; the earth bonded walls are 0.5m thick and stand up to 1m high at the point where the building abuts the fold. Around 10m to the east of the fold are the very slight remains of a probable shieling hut. Its walls seem to be made predominantly of turf and are very spread, reaching only c. 0.2m in height, although they appear more substantial on the north side, where the ground drops away very slightly. The hut measures 5m E-W by 2.5m N-S overall. There is a break in the wall at the south east corner and, at the west end of both long walls, are another two possible gaps; none of these is definite enough to confirm the location of the original entrance.

Recommendations This sheepfold and shieling hut lie outwith the area of any developments associated with the proposed windfarm and should not be affected during construction work.

Site 042 Carn Dearg Grouse butts NH 70389 30424 - NH 70760 30349
A line of grouse butts, apparent on the modern 1:10000 map, but which were not visited as part of this survey (Figure 36). They are clearly visible on the aerial photographs taken soon after the Second World War.

Recommendations As these grouse butts represent one aspect of the continued use of these upland areas, they have some historical significance within a local context. However, they lie upslope of the proposed line and should not be affected by construction works.

Site 043 Carn Dearg Marker cairn NH 71214 30219
This cairn was not visited during this survey, but is marked on the 1:10000 map. It is located on the summit of Carn Dearg and, although probably of comparatively recent date, may be a shepherd's cairn.

Recommendations This cairn lies outwith the area of any developments associated with the proposed windfarm and should not be affected during construction work.

Sites along the southern access road

Site 044	Carn Eitidh	Grouse butts	NH 73514 26184 - NH 73658 26749
Site 045	Carn Eitidh	Grouse butts	NH 73855 26509 - NH 74171 26606
Site 046	Caochan Dubh	Grouse butts	NH 74466 27015 - NH 74856 27252

Each of these lines of grouse butts are marked on the modern 1:10000 map and are clearly visible on the aerial photographs taken soon after the Second World War. All are equally apparent on the ground.

Recommendations As these grouse butts represent one aspect of the continued use of these upland areas, they have some historical significance within a local context. However, the upgrading of the existing track should not detrimentally affect their setting.

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9.10.1944	SCOT/106G/DYCE/32	6153-6161	1:25,000
9.8.1947	CPE/SCOT/UK 255	4204-4215	1:10,000
		4278-4264	
		4436-4432	
21.5.1948	541/A/399	3294-3296	1:10,000
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20.8.1950	541/A/591	4070-4062	1:10,000

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Acknowledgements

Thanks are extended to the various landowners and factors for allowing access to their land, and to the staff of The Highland Council Archaeology Unit, the Highland Council Archives, and the Inverness Reference Library for their assistance in making available the resources consulted in this study. Thanks are also due to Laura Dougal of Enviros for her continued patience.

Appendix E Hydrology

Appendix E Hydrology

Photo 1 – Stream leaving the west of the site

Photo 2 – Allt a'Mharcaidh at NH 750 248

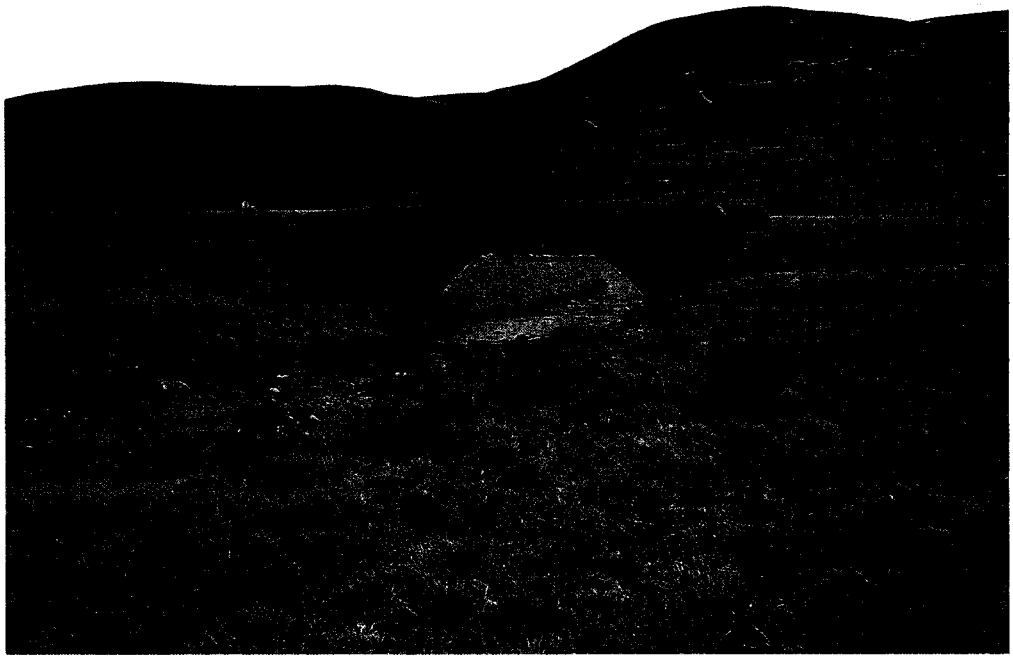

Photo 3 – Allt a'Mharcaidh and River Findhorn confluence (NH 759 243)

Photo 4 – River Findhorn at NH 765 244

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Appendix F Noise

Appendix F Noise

Figure F1 Predicted noise levels at Flichity House and both Day and Night time criteria.

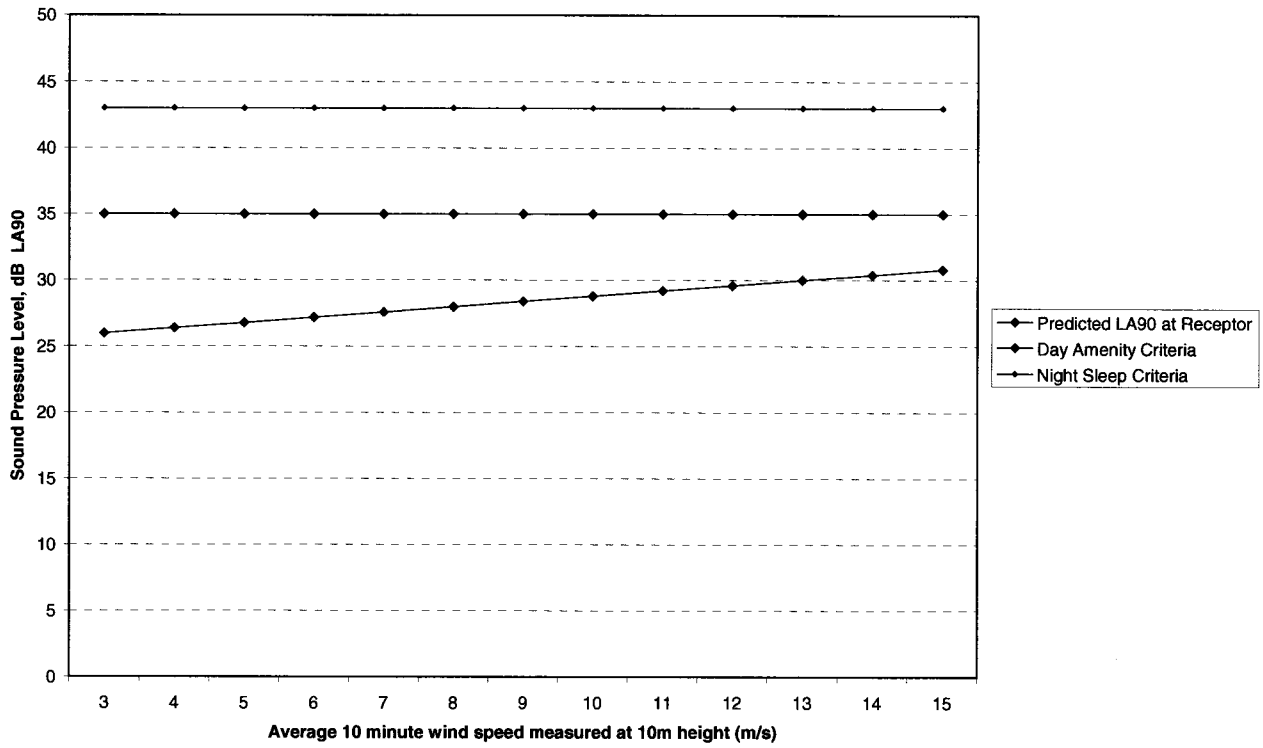


Figure F2 Predicted noise levels at Mains of Flichity and both Day and Night time criteria.

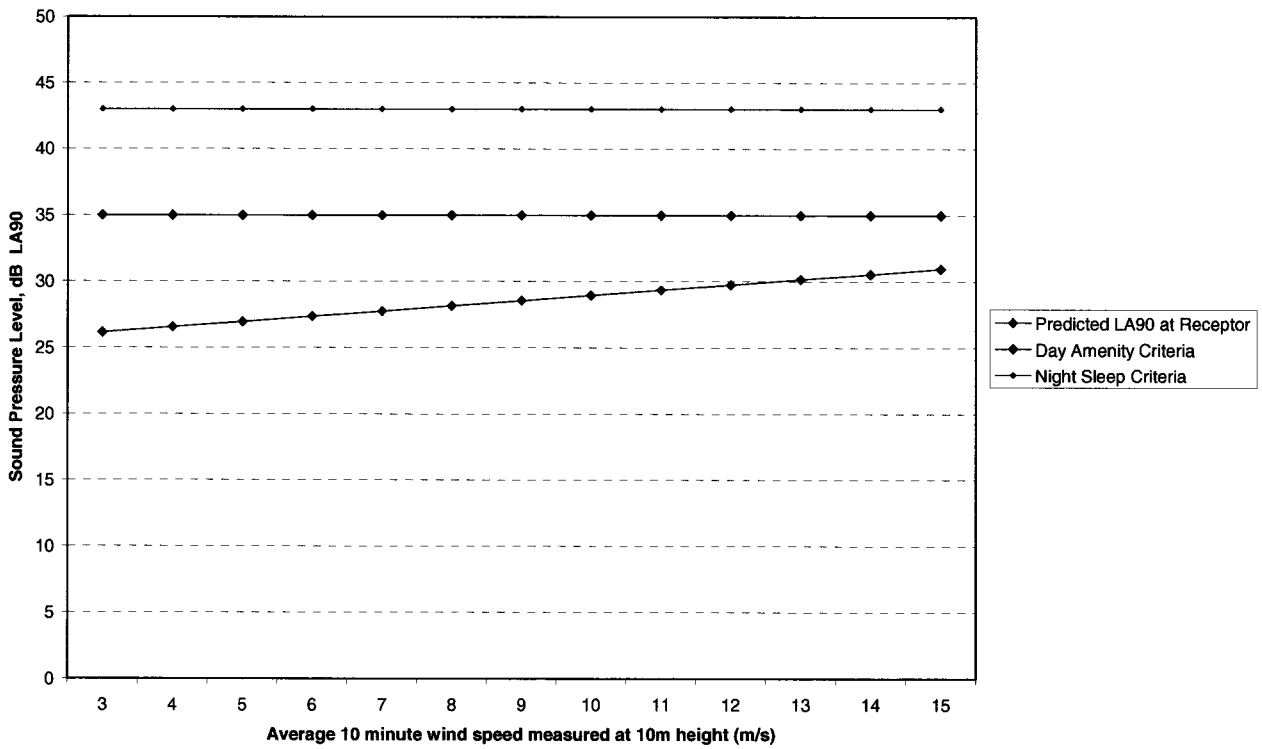


Figure F3 Predicted noise levels at Farr House and both Day and Night time criteria.

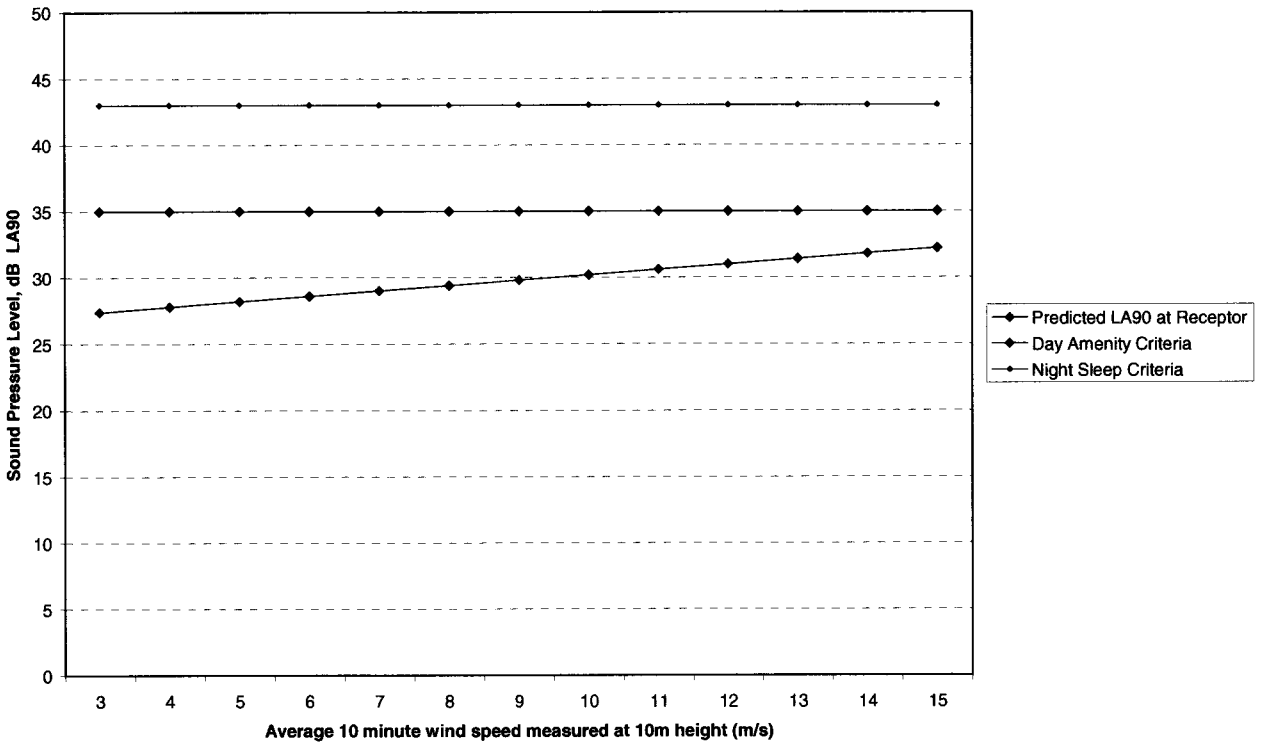


Figure F4 Predicted noise levels at Bothy and both Day and Night time criteria.

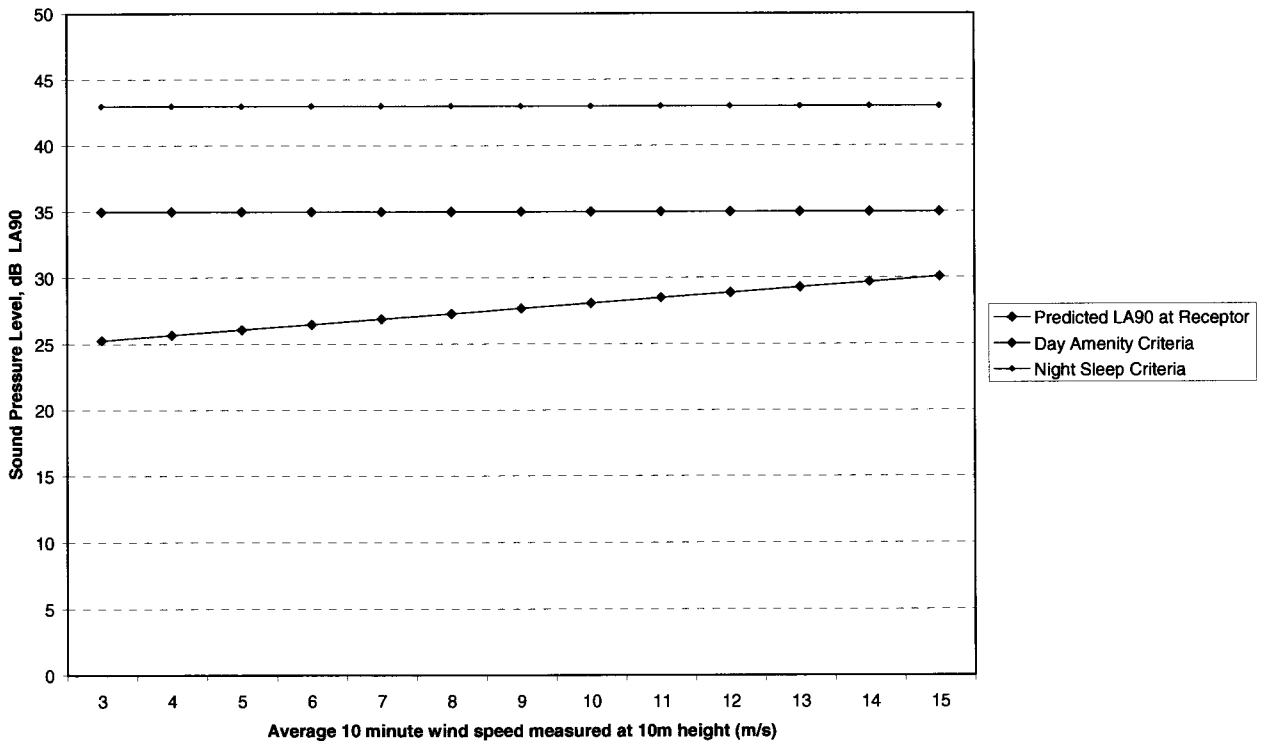


Figure F5 Predicted noise levels at Residences near Tomatin Distillery and both Day and Night time criteria.

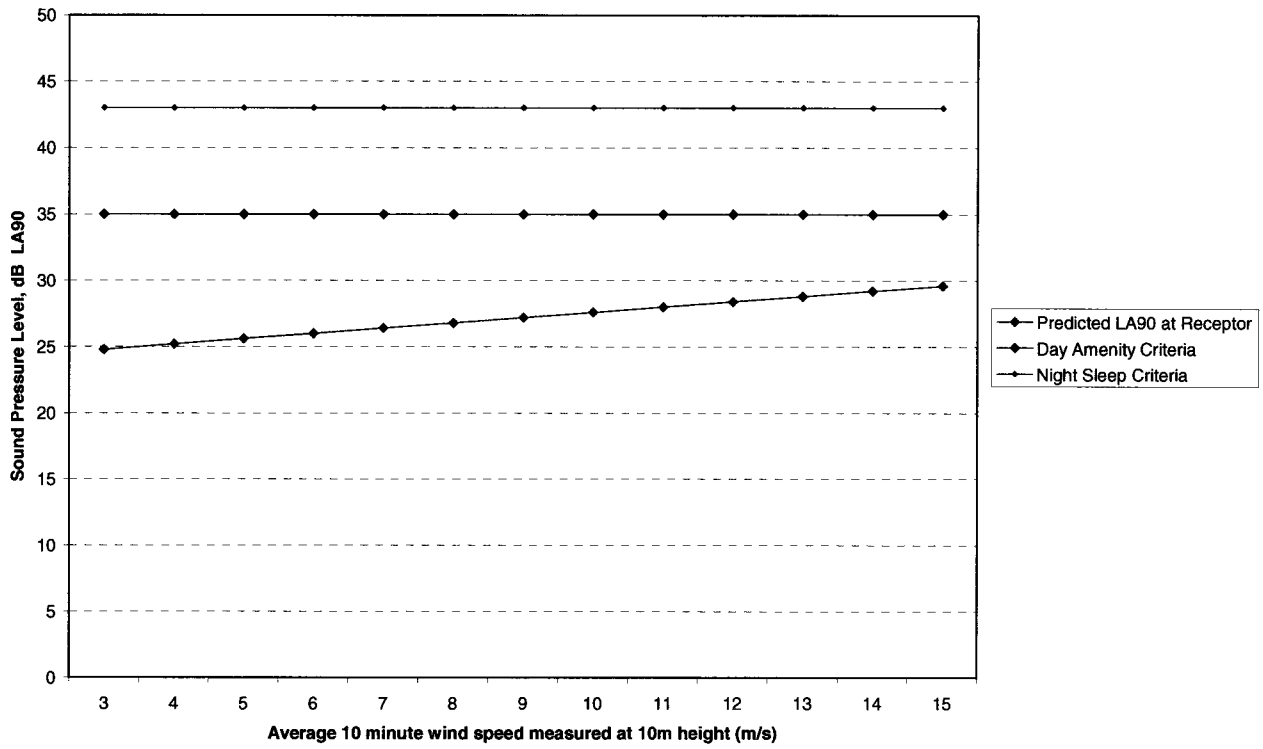


Figure F6 Predicted noise levels at Tomatin and both Day and Night time criteria.

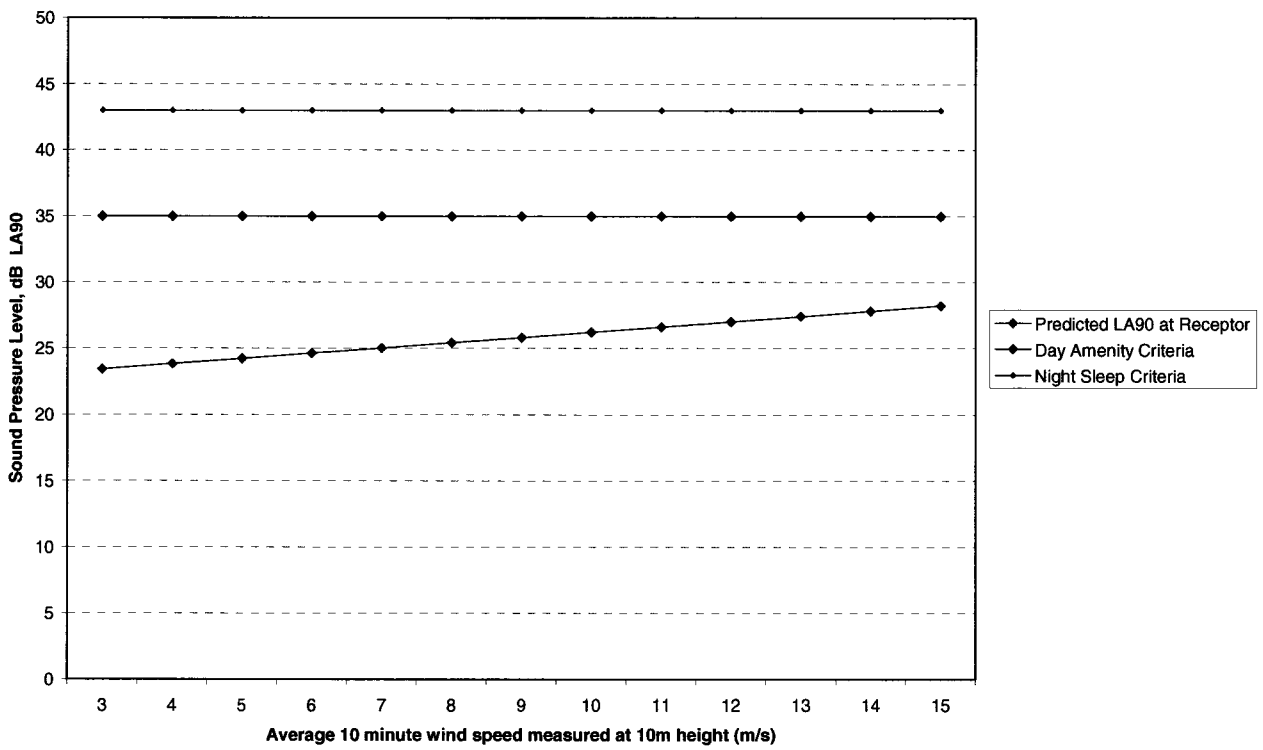
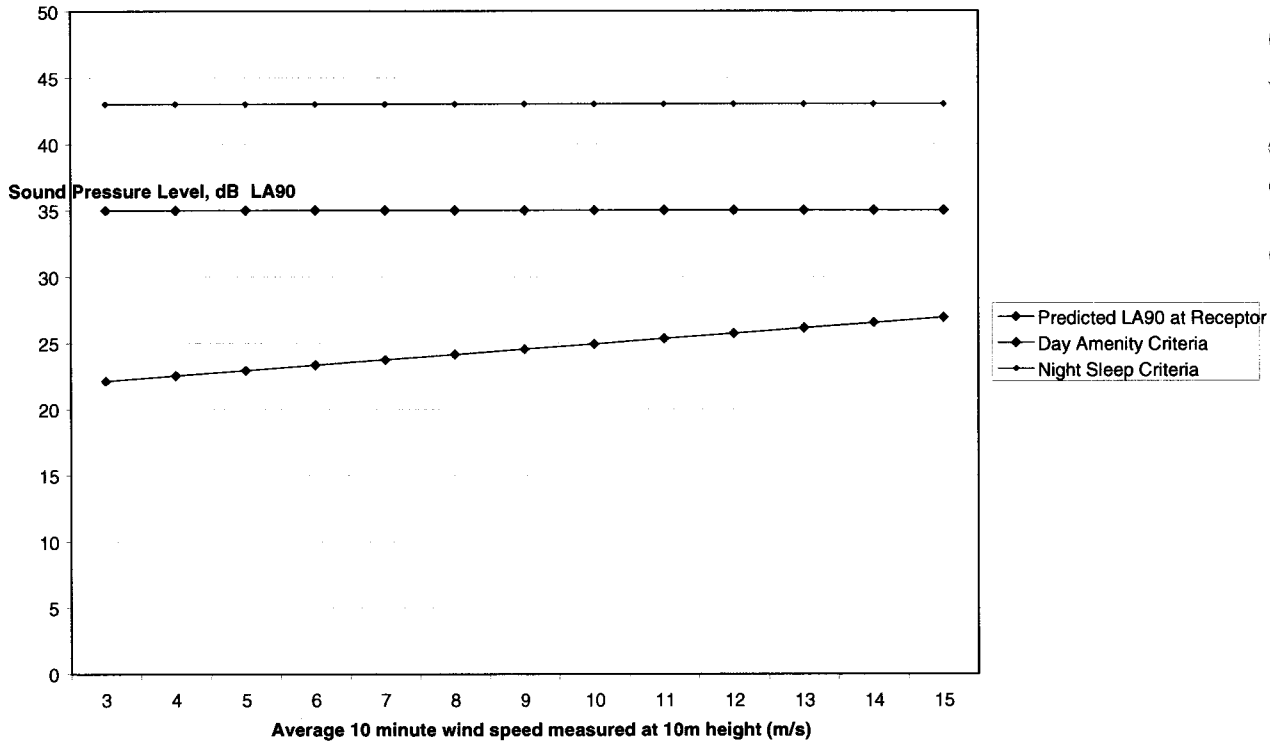


Figure F7 Predicted noise levels at Kyllachy House and both Day and Night time criteria.



Appendix G EMI

Appendix G EMI

Table G1 : Identified telecommunications sites within 30km of proposed Farr Wind farm

Grid	*Easting*	*Northing*	*Location*	*No. of links*	*Distance from Farr (km)*
NH	44200	29500	Lochletter, Glen Urquhart	4	26
NH	46500	42700	Aigas, Strathglass		28
NH	48200	49900	Cnoc Udais, Muir of Ord	5	30
NH	4840	5020	Auchmore Wood, Muir of Ord		30
NH	48500	19400	Cairn Dearg, Foyers	9	24
NH	49900	34900	S of Kiltarlity	2	22
NH	50200	21700	Boleskine, Foyers		23
NH	506	392	Auchvaich Farm, Kiltarlity		23
NH	50700	44900	SW of Beauly		25
NH	51460	46760	Beauly		24
NH	53200	42400	S of Beauly	2	23
NH	577	307	Wester Erchite		13
NH	58800	29500	Achnabat	11	12
NH	59660	53130	Tore	2	27
NH	59960	55250	N of Tore		28
NH	61200	39500	Dochfour		14
NH	6224	4134	Dochgarroch		14
NH	62500	43400	Dunain Hill	18	16
NH	63100	44400	Craigphadrig	2	17
NH	6329	4900	Artafallie, Kessock		21
NH	63900	58000	Mount Eagle	7	29
NH	64310	49300	N of N Kessock		19
NH	64400	59000	Mount Eagle		30
NH	64900	58900	Mount Eagle	4	30
NH	65050	54270	N of Munlochy		15
NH	66200	44800	Inverness		15
NH	66200	44500	Inverness	2	15
NH	66300	44700	Inverness, Eden Court	2	15
NH	6638	4560	Friars Lane, Inverness	2	16
NH	66400	45200	Inverness		15
NH	66600	45300	Inverness		15
NH	66700	44780	Inverness		15
NH	66900	45300	Inverness		15
NH	66900	46400	Inverness		16
NH	66900	46060	Inverness		16
NH	67300	53300	Munlochy Bay		14
NH	67400	44600	Inverness		15
NH	67500	46900	Inverness		16
NH	67705	44890	Inverness		15
NH	6822	3285	Farr		4
NH	68400	44800	Inverness		15
NH	68500	44700	Inverness		15
NH	68600	44400	Inverness		15
NH	68800	44400	Inverness		15
NH	7030	5500	Knockmuir Farm, Avoch		25
NH	70700	45270	Smithton		15
NH	71200	41800	Bogbain	2	12
NH	7165	4598	Smithton Industrial Estate, Inverness		15
NH	71700	37600	Daviot	2	7
NH	71850	39380	Daviot		9

NH	72050	37140	Daviot Meall Mor		7
NH	73600	35000			5
NH	74500	40500	Craggie, E of Daviot	4	11
NH	7594	0051	Spey St, Kingussie		27
NH	76090	52070	Dalcross	3	23
NH	77300	56700	Ardersier		28
NH	78900	34600	Moy	4	6
NH	82000	27200	Tomatin		8
NH	82300	28900	Corrybrough, Tomatin		7
NH	83700	25000	Slochd	3	8
NH	84000	09800	Alvie		21
NH	84185	09607	Alvie		21
NH	8470	5040	Cawdor		22
NH	85400	23300	S of Slochd	3	10
NH	88100	55900	S of Nairn	3	29
NH	89400	12700	Aviemore		21
NH	89520	14990	N of Aviemore		20
NH	91600	20400	S of Carrbridge		19
NH	94000	12600	E of Aviemore	5	23
NH	95330	47150	Redburn, Findhorn Valley	2	28
NJ	00300	26700	Laggan Hill, Dulnain Bridge	3	25
NJ	02560	33300	N of Grantown		29
NN	77000	98500	Ruthven	2	29

Appendix H Scoping Report

Appendix H Scoping Report

Farr Wind Farm

Scoping Report

February 2002

Prepared for National Wind Power

by

Enviros Aspinwall

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1. Introduction

National Wind Power Ltd (NWP) was formed in 1991 and has extensive experience of wind farm development and management. By early 2002 NWP had developed seventeen wind farms world wide, with fourteen established in the UK. With this experience and such a considerable portfolio of wind farm projects, NWP has built up a reputation as leading the UK wind power market.

The purpose of this document is to set out in advance the anticipated likely environmental effects that may occur as a result of a wind farm development at this site, and the assessment process by which these effects will be evaluated and reported in the Environmental Statement (ES). To do this in a systematic way, the baseline environmental conditions must be established, as well as the source of any potential impacts and the associated receptors must be identified. Preliminary assessments of significance can then be made in order to identify those issues which should be addressed in the Environmental Impact Assessment and reported in the ES. It is important to recognise site specific concerns, although these are often common to most similar types of development.

A brief technical description is given for each key issue, however, it should be recognised that at this early stage in the project planning and environmental assessment process, few firm details are yet available.

This document invites consultees to comment on the assessment approach outlined for each issue to be addressed in the ES, identify any other areas which should be addressed in the assessment, raise any issues of perceived concern, and provide any relevant environmental information relating to the site and surrounding area.

A list of consultees to be contacted for their opinions is attached in Appendix A. All non statutory consultees will be consulted via a letter and all statutory consultees including the Local Authority and SEPA will be sent the full scoping report for reference. We would encourage suggestions from those consultees listed in Appendix A, of any other group, organisation or individual not included within the list, that may have an interest in a wind farm development at this particular site.

In accordance with The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000, regarding formal scoping, the Scottish Ministers will be asked to provide their formal opinion on the information included within the Scoping Report. This will enable NWP to be clear about what the Scottish Ministers actually consider to be the main effects of the development and consequently to focus on these areas in the ES.

2. The Site

2.1 Site Description

The proposed wind farm site lies within the local authority of the Highland Council, at Farr near Tomatin, Inverness shire. The location of the development site is shown on Figure 1.

2.2 Proposed Development

Farr wind farm would comprise of up to 50, 2MW turbines located on high ground to south west of Tomatin. The turbines would be three bladed horizontal axis machines. The height to the hub of the turbines would be 60m with a maximum rotor blade diameter of 42m, giving an overall height of 102 m to blade tip. The turbines would be connected by underground cable to the nearby 132 kv line.

The turbines would be connected by an on-site access track for maintenance purposes, which would link to the adjacent public road system.

A feasibility study is currently being carried out to identify the off-site access route for construction purposes, as well as the location of the substation and grid connection.

An indicative layout of the proposed wind farm is shown on Figure 2. It should be noted that this layout is not fixed and that there are likely to be some changes to the layout as a result of the iterative design and environmental impact assessment process.

3. Planning and Legislation

As this is an application for a wind farm of over 50MW generating capacity, the development will fall under Section 36 of the Electricity Act (1989) and The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000.

The ES will consider the following legislation and planning guidance:

The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000;
Planning Advice Note 58, Environmental Impact Assessment;
National Planning Policy Guidance, Renewable Energy Developments, (Revised 2000);
Planning Advice Note 45, Renewable Energy Technologies, 2002.

The ES will also consider the following local and regional planning guidance:

The Highland Structure Plan, March 2001;
The Inverness Local Plan (Consultative Draft, June 2001); and
The Badenoch and Strathspey Local Plan, September 1997

The proposed wind farm site does not lie in any designated area. However the site area is identified in the Draft Local Plan (2001) as being a potential area for a wind farm.

4. Environmental Impact Assessment

A full environmental impact assessment of the proposed wind farm development will be carried out and will address the following matters:

Landscape and Visual Assessment;
Noise Assessment;
Ecological Assessment;
Ornithological Assessment;
Archaeological Assessment;
Geology and Hydrology;
Electro-magnetic and air safeguarding issues;
Public Access and Safety;
Transportation and access; and
Socio-economic effects.

The following sections identify the anticipated environmental effects in relation to each of the above issues, and outline the assessment methods and procedures by which the ES will seek to evaluate each of these effects.

4.1 Landscape and Visual Assessment

It is anticipated that potential landscape and visual effects will be a key issue to be addressed by the Environmental Impact Assessment. The assessment will examine the potential effects of the proposed wind farm development and ancillary features on the landscape and visual amenity of the agreed study area. It will be based on relevant and accepted guidance, and will draw on information provided by statutory consultees, current landscape planning policies and other relevant documentation, a computer based visibility analysis and field work observations.

The landscape and visual assessment (LVA) methodology will be agreed with the local authority and relevant statutory consultees, but it is anticipated that it will be based on the following documents:

Technical Report on Wind Energy Development and the Landscape (Countryside Commission 1991);
The Advisory Booklet on Landscape Assessment Guidance (Countryside Commission 1993);
The Landscape Institute and Institute of Environmental Assessment's Guidelines for Landscape and Visual Impact Assessment (1995) and draft amended version;
Guidelines on the Environmental Impacts of Wind farms and Small Scale Hydro-electric Schemes (Scottish Natural Heritage 2001); and
National Planning Policy Guideline (NPPG 6) Renewable Energy The Scottish Executive (2000).

Summary Method of Landscape and Visual Assessment
Following the Landscape Institute's Guidelines, landscape effects are defined as relating to changes in the fabric, character and quality of the landscape as a result of the proposed development. Visual effects relate to changes in the available views of the landscape.

The LVA will concentrate on a 25 km radius study area. A draft Zone of Visual Influence (ZVI) has been prepared to 40 km radius, which indicates that potential visibility of the proposed wind farm is mainly concentrated in the area within 15 km of the wind farm. Visibility drops off sharply to the north east of the proposed wind farm and again at the 15 km limit, due to topography. Whilst the ZVI shows that the wind farm may be visible in more distant views, this is scattered and very fragmented, and is largely confined to the summit areas to the north east, south east and south west of the proposed wind farm. To the north of the Great Glen, there may be visibility from the higher parts of the Black Isle, although much of this is forested, and from isolated south east facing slopes to the north and west.

The LVA will establish the baseline landscape and visual conditions, and examine the sensitivity of the landscape of the site and surrounding study area to change associated with the development of a wind farm.

General approach to LVA and Key Tasks
The landscape assessment will establish the existing baseline landscape character by a classification of landscape types and an assessment of the sensitivity of these types to determine their capacity to accommodate change. A review of Scottish Natural Heritage's landscape assessment for the area (Inverness District Landscape Character Assessment SNH 1999), has been undertaken. While the SNH study will form a baseline assessment of landscape character suitable for the LVA, more detailed definition of landscape character will be undertaken for the area immediately surrounding the proposed wind farm.

The visual assessment will be carried out to analyse the visibility of the proposed wind farm, as well as any existing wind farms in the study area, and the potential visibility of any other currently proposed wind farms in the study areas.

The magnitude of the change to the existing conditions resulting from the proposed wind farm on the landscape and visual amenity of the area will be predicted and the significance of these changes assessed.

Our approach to the LVA includes the following key tasks:

Desk Studies;
Confirmation of Scope and Methodology with relevant local authority representatives and SNH;
Identification of Viewpoints;
Site Visits and Surveys;
Landscape Character Assessment;
Visual Assessments; and
Reporting.

An initial informal consultation has been undertaken with THC/SNH to discuss general environmental and planning issues that need to be considered. Further consultation will be undertaken with SNH to confirm requirements and detailed issues to be addressed in the LVA following submission of the Scoping Report.

Landscape Assessment
The landscape assessment will describe, classify and analyse the quality and sensitivity of the landscape within the study area in order to establish the baseline landscape conditions, taking account of existing wind farms in the study area. Existing documentation on landscape character will also be referred to, including SNH's Landscape Character Assessments for the area. These will include the Inverness District LCA which covers the area occupied by the proposed wind farm along with adjacent LCAs undertaken for the Cairngorms, Ross and Cromarty, Skye and Lochalsh and Lochaber, depending on the location of viewpoints selected for the LVA. Account will also be taken of landscape designations in the study area. The landscape of the study area will be classified into landscape character areas which will be analysed for their capacity to accommodate change.

The presence of 'Wildland' qualities as a component of landscape character will be appraised and an assessment made of any potential impacts of the scheme on this aspect based on published criteria and information outlined in the THC Structure Plan and NPPG 14.

An assessment of the magnitude and significance of the effects of the proposed wind farm extension on the landscape will then be produced for both construction and operational stages.

Visual Assessment
The visual assessment will be based on the analysis of a zone of visual influence (ZVI) extending 25 km from the centre of the proposed wind farm, an assessment of the general

visibility of the proposal and from views from agreed viewpoints representing sensitive receptors at a range of distances from the proposed development in the study area. The assessment will involve a desk study, field observations, the preparation of computer generated ZVIs and photomontages as well as analysis of this data.

The viewpoints selected will be defined following production of the ZVI and agreed with the local planning authority prior to the commencement of the LVA. Initial appraisal of the site and its general visibility suggests that the following types of viewpoints will be selected:

Viewpoints on the A9 on north and southbound carriageways. While views from much of the section of the A9 between Aviemore and Inverness are screened by coniferous forest or in cutting, open views are possible mainly where the road is elevated over the Dulnain, Findhorn and Strathdearn;
Representative viewpoints on the fringes of Inverness within residential areas and areas used for recreation;
Viewpoints from populated areas nearby the proposed wind farm site, eg within Strathdearn and the Strathnairn area;
Potential views from the Loch Ness area and from hills popular with walkers to the west of Inverness;
A representative view from the Black Isle area;and
Representative views from the Cairngorms proposed National Park area, including one elevated viewpoint from Cairngorm summit and one from lower ground around Aviemore/Grantown on Spey, depending on the outcome of the ZVI.

It is anticipated that up to 15 viewpoints will be identified for the assessment. The sensitivity of each viewpoint and the magnitude of the predicted change arising from the proposed wind farm extension will be assessed. An assessment of the significance of residual visual effects will be undertaken for both construction and operational stages.

Mitigation Measures
Generation of the final layout and design of the proposed wind farm extension, including all ancillary features, will be an iterative process. Where measures which result in reduction of either landscape or visual negative effects can be accommodated within the overall proposal, and within the constraints arising from other environmental considerations, such as ecology or archaeology, these will be incorporated into the proposed development, and will be reported on in the ES.

The final analysis will assess the residual landscape and visual effects once any such measures have been incorporated within the design.

Cumulative assessment
Cumulative effects arise where the proposed development results in:

an increase in the extent of area affected by views of one or more wind farms;
an increase in the number of locations in the area where one or more wind farms are already visible and the additional turbines will result in an additional wind farm in the view;
an increase in the number and/or density of turbines visible in the view; and
an increase in the angle of view from any viewpoint which includes turbines.

An assessment will be made of the potential visibility of the operational Novar wind farm and any proposed wind farms within the public domain within the study area, to evaluate the potential cumulative effects in relation to visibility from key sensitive areas such as public roads, footpaths, villages and towns.

An analysis will also be carried out of the transport network in the study area, and an estimate made of the length of roads and railways from which each of the proposed wind farms included in the assessment may be visible.

Conclusions
The LVA will summarise the significant landscape and visual effects identified in the detailed assessment and will make comment on the acceptability of the proposed wind farm in the study area.

Consultees are invited to comment on the proposed methodology and key issues to be addressed in the landscape and visual assessment.

4.2 Noise Assessment

The noise assessment will be carried out in accordance with the guidance provided by ETSU-R-97 "The Assessment and Rating of Noise From Wind Farms" 1996.

The closest receptors to be included appear to be the following bothy/lunch huts:

Bothy (Carn na Seanlaich) (276900, 826400); and
Bothy (278200, 831700).

These receptors are not permanently occupied. There are no other residential properties within 2 km of the currently proposed turbine layout.

Consultees are invited to comment on potential noise impacts at this site.

4.3 Ecological Assessment

An initial ecological baseline survey of the Farr Estate was carried out in August 1996 on behalf of NWP. This report concludes that none of the vegetation communities or sub-communities are rare or scarce in a National or Regional context.

A further ecological assessment of the proposed site area will be carried out and any additional available ecological data will be reviewed.

The following surveys will be carried out to cover the site and its immediate surroundings:

Detailed Phase 1 habitat survey to expand on the information already gathered from the initial baseline survey to include the proposed site area. This would involve surveying aerial photographs of the area and extrapolating key areas to survey during the site visit.
Target notes will reference all NVC vegetation types and reference will be made to the relationship between the vegetation and hydrology in the area.
Review and contribute to the method statements for the construction stage of the development particularly during the construction of roads and turbine bases.

An ecological baseline survey map will be produced and will include all target note information.

Comments are invited regarding species presence on the site, any additional factors and the proposed assessment method.

4.4 Ornithological Assessment

A Breeding Bird Survey of the Farr site was carried out in June 2001. This report stated that within the survey area, upland waders favoured drier rounded hills and gentle slopes. Within the area densities of Golden Plover appeared to be optimum levels in this particular habitat. Dunlin and Curlews were noted to be in insignificant numbers, with Red Grouse and Meadow Pipit being widely dispersed throughout the area. No raptor species were thought to be breeding on the surveyed moorland area but all species that were recorded used the moorland for foraging.

Breeding bird survey
A further breeding bird survey will be conducted, following the methodology described in Brown and Shepherd (1993) and in accordance with guidance provided by the SNH office in Inverness.

Wintering bird survey
Data will be reviewed from wintering bird surveys, previously conducted surveys and will be expanded by existing information held by Scottish Natural Heritage (SNH) and the Royal Society for the Protection of Birds (RSPB).

A collision risk model for the site will be run using SNH/BWEA methodologies. Mitigation measures and recommendations for minimising ornithological effects will also be provided.

Comments are invited regarding species presence on the site, any additional factors and the proposed assessment method.

4.5 Archaeological Assessment

An archaeological baseline assessment of the site area will be carried out. This will identify the presence or absence of any archaeological features in the proposed site area and assess the likely impact of the development upon them.

The objectives of the archaeological study are:

To collate any known archaeological information on the proposal area;
To identify any previously unknown archaeological sites through inspection of the aerial photographic record and the available cartographic evidence;
To evaluate the archaeological significance of the area by field inspection;
To assess the potential impact in this area in accordance with the requirements of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000, and, if required, suggest the appropriate mitigation measures required.

The sources to be consulted as part of the archaeological assessment will include:

National Monument Record for Scotland (NMRS), held by Royal Commission on Ancient and Historical Monuments of Scotland;
Sites and Monument Record (SMR) for Highland area, held by the Highland Council Archaeology Unit in Inverness;
Highland Council Archive in Inverness, landholding records; and
Inverness Reference Library, statistical accounts.

Consultees are invited to raise issues of potential concern and to provide any relevant information on the site and surrounding area pertinent to the assessment.

4.6 Geology and Hydrology

The construction and operational phases of the development have the potential to affect the hydrology and geology within the localised area, including drainage patterns and water courses.

The assessment will identify catchment watersheds, receiving waters and summary flow statistics. It will describe drainage patterns and examine potential impacts in relation to water flow and water quality.

These issues will be considered during the assessment process and appropriate mitigation incorporated into the detailed design.

The Tomatin Distillery is located to the east of the site boundary. The distillery will be included within the hydrogeological study for the ES to consider all possible effects on the distillery during the construction stages of the development. Mitigation measures will be suggested if required.

Comments are invited to comment on the proposed assessment method and raise any issues of concern in relation to hydrology and hydrogeology.

4.7 Electro-magnetic and air safeguarding issues

A review of the potential issues concerned with Electro-magnetic interference including television links and reception, phone and mobile phone networks will be carried out.

The work will be conducted in five phases:

Telecommunications facility search
A search will be conducted using proprietary facility databases and map data to identify all telecommunications transmitter and receiver facilities within 30km of the proposed wind farm.

Transmitter/radio link parameter determination
Technical parameters such as the type of radio facility, identity of operator, frequency range, location of fixed links, will be determined for the site, through consultation with the Radiocommunications Agency, local planning authority, and radio site owners/operators.

Identification of vulnerable facilities
A map study of the proximity of potentially vulnerable fixed links/broadcast facilities to the wind farm will be carried out.

Consultation with owners/operators
The following potential telecommunications facility operators will be consulted:

TV and radio broadcasters and rebroadcast link operators;
Mobile and fixed telephone operators;
MoD;
CAA and NATS;
Emergency services;
Utility Operators;
Local authorities; and
Mobile radio operators.

Assessment
Data on the potential EMI/performance effects for all facilities will be compiled and assessed including identification of potential mitigation measures and recommendations.

Comments are invited on any particular areas of concern in relation to telecommunications.

Public Access and Safety

The ES will asses existing use of the site by the public and address any potential effects during both construction and operational stages of the wind farm development with particular regard to health and safety.

Comments are invited in relation to any public access and safety matters.

4.8 Transportation and access

An assessment will be carried out of the transportation demands arising from the construction and long tern operation of the proposed Farr Wind Farm.

The principal objectives of the study will be:

Assess the quantities of bulk construction materials, equipment and other materials required during construction;
Identify likely sources of aggregates, cement and other bulk materials required during construction;
Identify the routes for transporting the bulk construction materials and equipment;

Identify possible modes of delivering bulk construction material and equipment to site and to estimate volumes of movement by mode;
Develop transport options;
Carryout for each transportation option an economic appraisal; and
Recommend highway improvements necessary for the construction period and long term operation of the station.

The additional traffic generated during construction and operation of the wind farm will be assessed in accordance with the Institute of Environmental Assessment Guideline for the Environmental Assessment of Road Traffic.

The Road Authority will be consulted in respect of seasonal variation adjustment factors and daily peak period growth rates and the traffic management measures.

Comments are invited in relation to the proposed method of assessing potential effects on transportation and access.

4.9 Socio-economic effects

The potential for both adverse and positive local effects will be evaluated in the environmental assessment process. This will involve identification of the existing socio-economic baseline conditions in the surrounding area, and consideration of potential direct or indirect effects on economic output, employment and the local population. All opportunities for local business involvement and local employment will be addressed during the socio-economic assessment.

Comments are invited on any other issues of concern.

5. Public Consultation

NWP will ensure that all Community Councils, community members and other interested parties are actively consulted throughout the environmental impact assessment process.

6. Scoping responses

The responses to the scoping exercise have been summarised below

Consultee	**Summary of comments**
Scottish Executive	**Description of the development** Off site access must be closely characterised in the ES, including construction of new roads and upgrading of existing, particularly around Tomatin where likely to be sensitive issue. Description should include details of all related activities (e.g. borrow pits) and must include detail on pre construction, construction, operation, decommissioning and restoration stages of the project. Construction methodologies and scheduling should be included where possible. Particular attention should be given to method of road construction on deeper areas of peat, referring to best practice elsewhere. The use of culverts, where necessary, should be described and appropriate design and mitigation measures identified. Scheduling of road construction should be provided, preferably avoiding the winter season. The ES should describe arrangements for the management of concrete on the site. The ES should describe methods for fuel transport and storage on the site, including the identification of a site compound for storage purposes. The need for and location of borrow pits must be addressed. The ES should refer to the management of controlled waste where appropriate. The ES should demonstrate that the use of recycled and secondary materials are to be used where possible on the site and that site design, including landscaping, takes account of the need to reduce the use of raw materials and excessive earthworks. The ES should describe the provision of appropriate facilities for site workers in accordance with SEPA pollution prevention guidelines (4). The ES should demonstrate that there will be no noise impact on valley communities such as Tomatin. **Description of environmental impacts** The ecological assessment should include an assessment of the presence of protected species within the development area as required by part III of the Conservation (Natural Habitats) regulations 1994. The timing of species and habitat surveys should be carefully described in the ES. The ES should include an explanation the design of the wind farm which has been chose, including hub heights etc. Careful attention should be paid to the design allowing flexibility in terms of turbine heights and layout to accommodate landscape considerations. Landscape and visual assessment The landscape character of the area needs to be assessed on a finer scale than the broad landscape character categories in the Inverness Landscape Character assessment. The assessment should include off site developments including, for example, borrow pits and site access tracks. The assessment should include higher land around Loch Rithven.

	The original 40km ZVI should be included in addition to the 25km ZVI. Ornithological assessment Specific attention should be paid to raptors and the methods used to assess their presence and abundance should be described. A confidential annex detailing the location of any protected species should be provided for the deciding authority, but not made public with the main body of the ES. Geological and hydrological assessment Should include information on peat depths and surface waters across the development site. Archaeology There are no historical designations of national importance within or in close proximity to the site. The Highland archaeological service should provide details of any known sites of local or regional importance. Methods for assessing impacts All methods used in the Environmental Impact Assessment should be described. The ES should identity and address all pollution risks, including preventative measures and mitigation. The ES should describe measures to prevent particulate and chemical water pollution of watercourses, particularly of *Allt na Frithe*, the water source for Tomatin distillery. Potential effects on the Findhorn and its fisheries interests should also be described. The sustainability of the project should be assessed, including reference to the benefits in terms of CO_2 reductions and focusing on materials management and the management of waste. All waste streams associated with the works should be described within the ES. A full assessment of visitor patterns in the wider area should be undertaken to identify any value in combining visitor access to the distillery with potential visitor access to the wind farm. A cumulatvie impact assessment should be undertaken with the proposal by RES at Dunmaglass, approx 10km SW of the site. Mitigation measures The ES should describe measures taken to ensure public safety, with particular reference to underground cable connection to the nearby 132kV line. Mitigation measures to reduce any environmental impacts within the ES, including broader environmental management practices on the site, including the management of sub contractors. Method statements for construction practices and pollution control, should be include where appropriate. Where mitigation measures are required beyond the construction phase, their management should be described. With reference to hydrological impact, in addition to mitigation measures, any longer term monitoring and management should be described. Any degradation of the existing road fabric and detailed mitigation

	measures will be required, including measures to avoid erosion of hillsides. Difficulties in compiling additional information The ES should highlight any problems encountered with obtaining information on protected species which has been withheld for reasons of confidentiality.

Appendix A : List of Consultees

Association for the Protection of Rural Scotland
BBC Research Department
British Telecommunications
BT Cellnet
Cable & Wireless
Channel 5 Broadcasting
Civil Aviation Authority
Department of Trade and Industry – Radio Communications Agency
Farming and Wildlife Advisory Group
Forest Enterprise
Friends of the Earth (Scotland)
Health & Safety Executive
Highland Council –
Environmental Health Department
Highways Department
Local Planning Department
Strategic Planning Development
Highland Police
Highlands of Scotland Tourist Board
ITC
Ministry of Defence – Defence Estates Safeguarding
National Air Traffic Service
National Trust for Scotland
North of Scotland Archaeological Service
North of Scotland Water
Ntl
One to One
Orange
Ramblers Association
RSPB
Scottish Civic Trust
Scottish Executive – SEDD Planning Division
Scottish Executive – Development Department
Scottish Executive – Environmental Department
Scottish Fisheries Co-ordination Centre
Scottish Rights of Way & Access Society
Scottish Wildlife Trust
SEPA (Scottish Environment Protection Agency)
SERAD (Scottish Executive Environment and Rural Affairs Department)
SNH (Scottish Natural Heritage)
Strathdearn Community Council
Strathnairn Community Council
The Highlands of Scotland Convention Bureau
The Mountaineering Council of Scotland
The Tomatin Distillery Co Ltd
Vodaphone
Visit Scotland
WWF Scotland