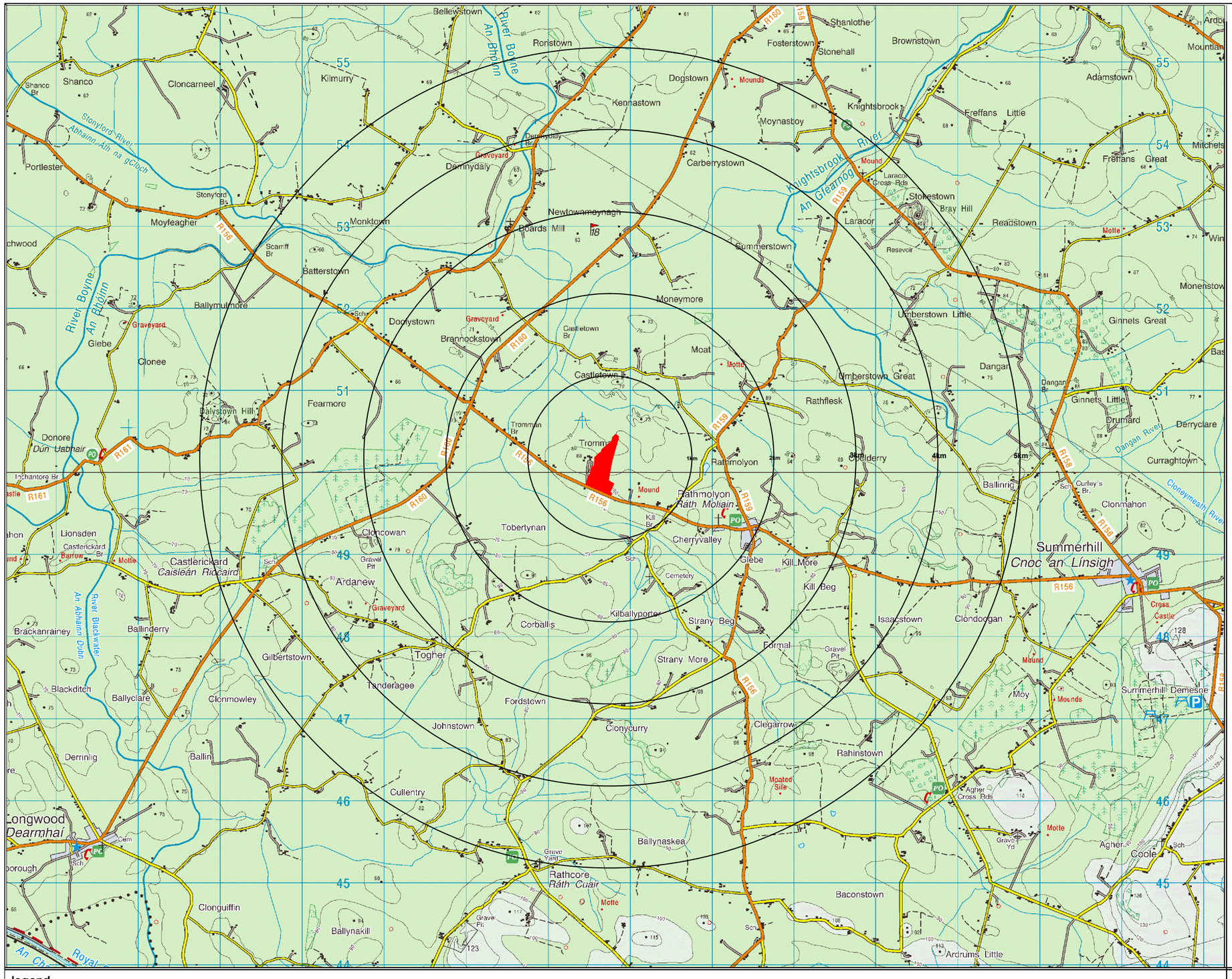

legend

Site Boundary

Distance from Site in Kilometers

client	date	scale	by	notes
Keegan Quarries Ltd.	January .24	1:50000@A3	pm	

Location and Context

fig.9.0

Tromman Quarry, Rathmolyan

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TOPOGRAPHY:

flat	**undulating**	**rolling**	steep	vertical	**plain**	**rolling lowland**	plateau
scarp/ cliffs	hills	dry valley	deep gorge	**broad valley**	narrow valley	wetland glen	drumlin

DOMINANT LAND COVER AND LANDSCAPE ELEMENTS:

BUILT FORM	HERITAGE	AGRICULTURE	LANDCOVER	STRUCTURAL VEG.	HYDROLOGY	SERVICES
farm buildings	vernacular buildings	walls	designed parkland	deciduous woodland	**river**	motorway
masts/ poles	country house/ estate	fences	scrub	coniferous plantation	**stream**	**primary road**
pylons	**field systems**	**hedges**	**marsh**	**mixed woodland**	resevoir	**secondary road**
bridges	prehistoric ritual	**tillage**	peat bog	**shelterbelt**	dry valley	**local road**
commercial	hill top enclosure/ fort	**arable**	moor/ heath	**hedgerow trees**	pond	**track/ lane**
industry	eclesiastic	**improved pasture**	rough grassland	**hedgerows**	lough	path/ cycleway
settlement	war memorial/ battle	rough grazing	water meadow	**clumps/ clusters**	drainage ditch	railway
urban	cemetry	**hedge banks/ ditch**	**grassland**	**isolated trees**	canal	pylons
military	coppice	orchard	**species rich grassland**	avenues	surface water	masts/ poles
other	other (castle)	other	other	other	other	other

BRIEF DESCRIPTION:

The site sits on an area of raised ground between two tributaries of the Boyne River system and on the Western edge of the Rathmoylan Lowland area. The landuse of the area is mixed arable and pasture divided into medium to large fields edged in mature hedgerows and interspersed with streams and rivers. The area is interspersed with blocks of mature woodland and estate avenue and parkland. The village of Rathmoylan is approximately 2km to the East of the site and the town of Trim approximately 7km to the North.

KEY CHARACTERISTICS:

The landscape character in the immediate vicinity the site is typical of this area; situated on one of the South facing slopes of raised ground with a mature woodland copse to the West and a tributary stream forming the site's Southern boundary. The R156 road passing East to West through the site is fringed with mature native hedgerow. Road hedgerows in the locality are often trimmed to eyelevel.

LANDSCAPE CAPACITY:

The site's Zone of Visual Influence (ZVI) is relatively compact with a low density of visual receptors within. These are mostly private residential properties and a school. There are no monuments or major tourist attractions in the area of the site. The scale and texture of the landscape is relatively large and so the locality has the capacity to absorb change without and lasting or major impact to its underlying character.

VISUAL ASSESSMENT CRITERIA:

SCALE:	intimate	small	**medium**	large
TEXTURE:	smooth	**textured**	rough	very rough
COLOUR:	monochrome	**muted**	colourful	garish
COMPLEXITY:	uniform	simple	**diverse**	complex
REMOTENESS:	wilderness	remote	vacant	**active**
UNITY:	unified	**interrupted**	fragmented	chaotic
ENCLOSURE:	expansive	**open**	enclosed	constrained
VISUAL DYNAMIC:	sweeping	**spreading**	dispersed	channelled
PATTERN (2 Dimensional):	dominant	**strong**	broken	weak
FORM (3 Dimensional):	straight	**angular**	curved	sinuous

PERCEPTION:

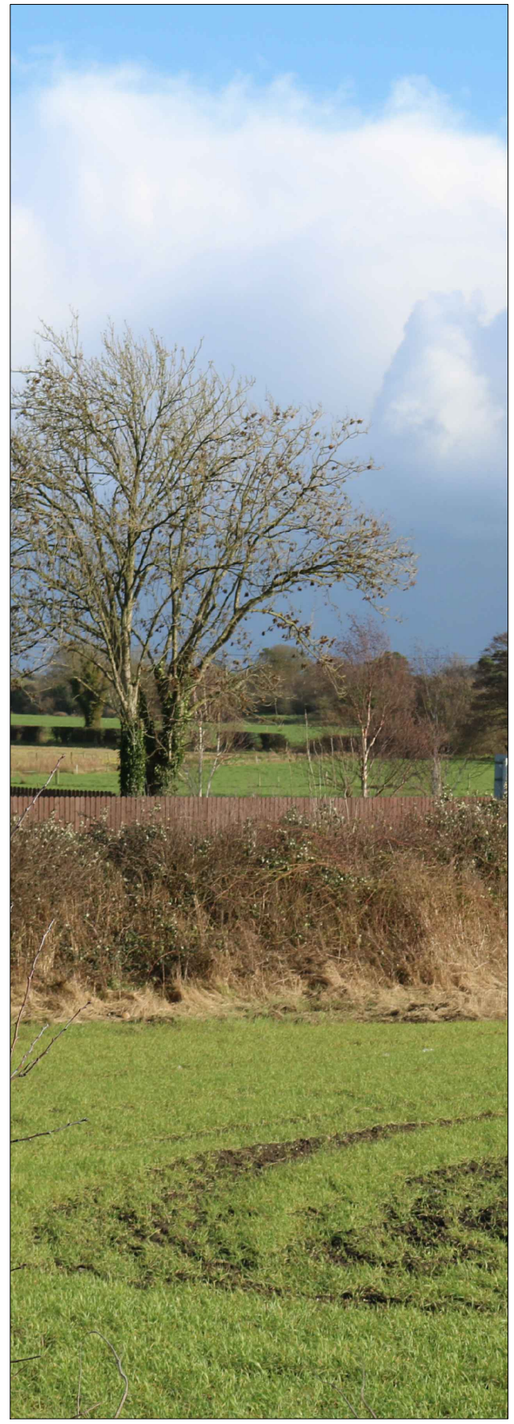
SECURITY:	intimate	comfortable	**safe**	unsettling	threatening
STIMULOUS:	monotonous	bland	**interesting**	challenging	inspiring
TRANQUILITY:	inaccessible	remote	vacant	**peaceful**	busy
PLEASURE:	unpleasant	acceptable	**pleasant**	attractive	beautiful

ARCHITECTURE:

Material:	walls - white harl/pebbledash/white render/ some older stone buildings. roof - slate or buff tiles
Vernacular Style:	shallow roof pitch on bungalows and two storey dwellings
Settlement Form:	low density individual dwellings with cluster development at Rathmoylan

INITIAL LANDSCAPE ARCHITECTURAL RESPONSE:

As a landscape, the area surrounding the site is typical of the region. The hedgerows; mature trees; woodland blocks and undulating topography provide the capacity for this landscape to absorb considered change. Apart from views from the R156 road bisecting the proposed site most views to the site will be from the South East. The landscape elements of hedgerow and trees and woodland blocks should where possible be protected and reinforced with further and screen planting introduced. Earth mounding along the R156 corridor and to the visible edges of the site could serve to lessen further the potential impact of any proposed developments,



Survey undertaken by: Pete Mullin BA (Hons) MLI Chartered Landscape Architect

client	date	survey time	survey season	survey weather conditions
Keegan Quarries Ltd.	Jan 2024	1.30 pm	Autumn	

Landscape Character Survey

fig.9.1

north

Tromman Quarry, Rathmolyan

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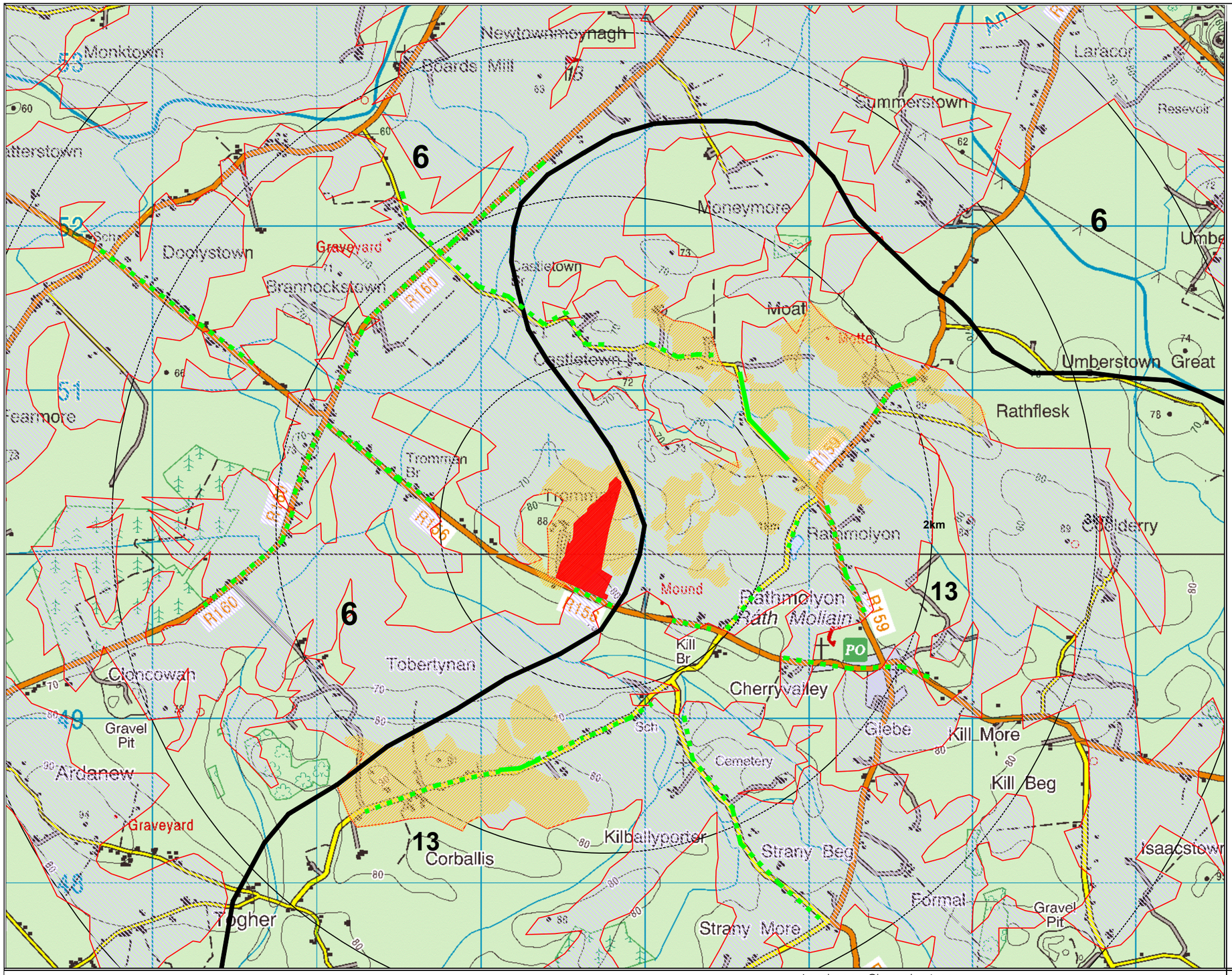

legend

- Site Boundary
- Distance from Site in Kilometers
- ZTVI - Proposed Extraction
- ZTVI - Existing Development
- Sections of Road with Open Views
- Sections of Road with Partial /Glimpsed Views

Landscape Character Areas.
Meath Co Dev Plan 2021-2027

6- Central Lowlands
(High Landscape Value)
(Moderate Sensitivity)

13- Rathmoylan Lowlands
(High Landscape Value)
(High Sensitivity)

client	date	scale	by	notes
Keegan Quarries Ltd.	Jan .24	1:50000@A3	pm	

Visual Analysis

fig.9.2

Tromman Quarry, Rathmolyan

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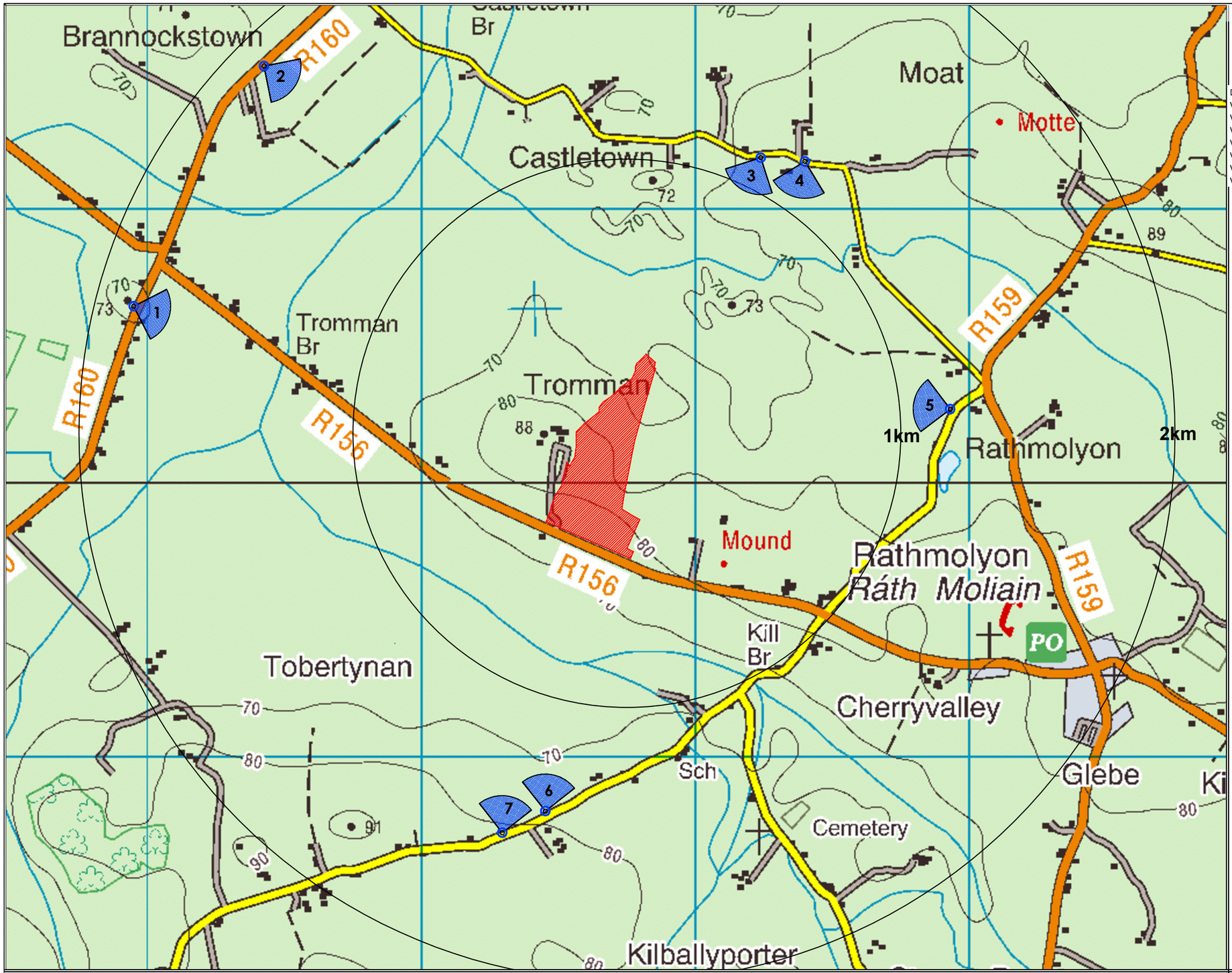

Viewpoint Receptors

Description	Grid Reference	X	Y	Latitude	Longitude
VP1	N 76003 50730	276003	250730	53.501289	-6.8552381
VP2	N 76368 51482	276368	251482	53.507988	-6.8495505
VP3	N 78216 51194	278216	251194	53.505137	-6.8217775
VP4	N 78344 51188	278344	251188	53.505061	-6.8198571
VP5	N 78923 50236	278923	250236	53.496423	-6.8113598
VP6	N 77417 48767	277417	248767	53.483443	-6.8344215
VP7	N 77289 48716	277289	248716	53.483012	-6.8363634

legend

Site Boundary

Distance from Site in Kilometers

Viewpoint Receptors

client	date	scale	by	notes
Keegan Quarries Ltd.	Jan .24	1:50000@A3	pm	

Viewpoint Receptors

fig.9.3

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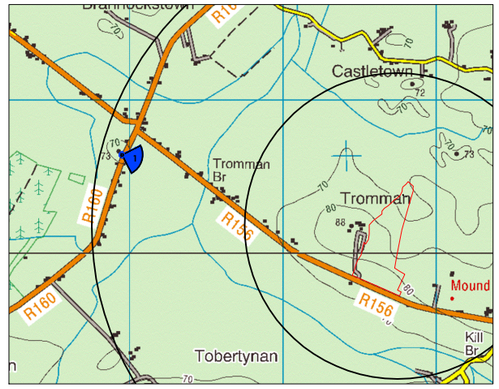
Panoramic View



Location: **Viewpoint 1**

Viewpoint Elevation:	73m AOD (Malin Head)
Distance to Site:	1850m
Irish Grid Reference:	N 76003 50730
Horizontal Angle of View:	90 Degrees

north

Viewpoint 1 East from R160.
View East from the R160 approximately 1.8km from the subject site. From this open section of regional road the upper portions of the existing overburden tip is visible - this element will gradually be removed over the course of the development. The existing and proposed extractive areas not visible due to intervening topography and structure vegetation .

Local Landscape & Visual Effect from this View

Viewpoint	Landscape & Visual Sensitivity	Magnitude (Operational Stage)	Predicted Effect (Operational Stage)	Magnitude (Restoration Stage)	Predicted Effect (Restoration Stage)	Magnitude (Alternative)	Predicted Effect (Alternative)
1	Medium - Low (Landscape)	Very Low	Negligible (Neutral)	Medium	Moderate(Beneficial)	Low	Minor (Neutral)
	Medium - Low (Visual)	Very Low	Negligible (Neutral)	Very Low	Negligible(Beneficial)	Very Low	Negligible(Neutral)

Mitigation
Considered sequence of extraction and phased restoration. Review all boundaries
for opportunities to improve screening through earthworks and planting.
Gradual removal of existing overburden stockpile.

client	date	scale	by	notes
Keegan Quarries Ltd.	Jan. 24	NTS@A3	pjm	Image represents an eyelevel impression of view at monocular distance of 30cm

Photo Viewpoint 1

fig.9.4

north

Tromman Quarry, Rathmolyan

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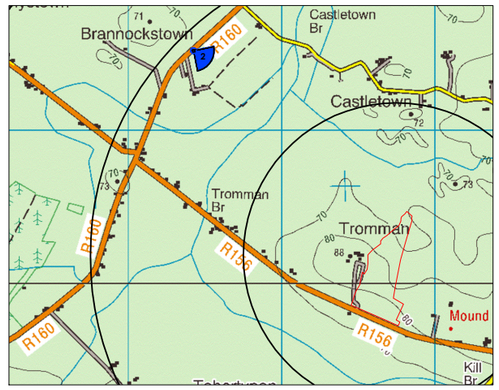

Location: **Viewpoint 2**

Viewpoint Elevation:	73m AOD (Malin Head)
Distance to Site:	1750m
Irish Grid Reference:	N 76368 51482
Horizontal Angle of View:	90 Degrees

north

Viewpoint 2 Southeast from R160.
View Southeast from the R160 approximately 1.7km from the subject site. From this open section of regional road the temporary overburden tip is partially visible. The proposed extraction area would not be visible due to a combination of intervening vegetation, topography and distance.

Local Landscape & Visual Effect from this View								
Viewpoint	**Landscape & Visual Sensitivity**	**Magnitude (Operational Stage)**	**Predicted Effect (Operational Stage)**	**Magnitude (Restoration Stage)**	**Predicted Effect (Restoration Stage)**	**Magnitude (Alternative)**	**Predicted Effect (Alternative)**	**Mitigation**
2	Medium - Low (Landscape)	Very Low	Negligible (Neutral)	Medium	Moderate(Beneficial)	Low	Minor (Neutral)	Considered sequence of extraction and phased restoration. Review all boundaries for opportunities to improve screening through earthworks and planting. Gradual removal of existing overburden stockpile.
	Medium - Low (Visual)	Very Low	Negligible (Neutral)	Very Low	Negligible(Beneficial)	Very Low	Negligible(Neutral)	

client Keegan Quarries Ltd. | **date** Jan. 24 | **scale** NTS@A3 | **by** pjm

notes Image represents an eyelevel impression of view at monocular distance of 30cm

Photo Viewpoint 2

fig.9.5

north

Tromman Quarry, Rathmolyan

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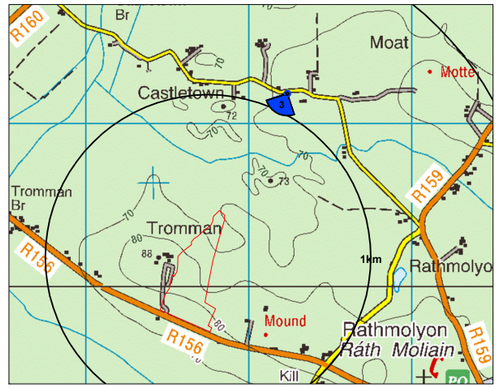

Location: **Viewpoint 3**

Viewpoint Elevation:	73m AOD (Malin Head)
Distance to Site:	850m
Irish Grid Reference	N 78216 51194
Horizontal Angle of View:	90 Degrees

Viewpoint 3 South from L80141.
View South from minor road L80141 less than 1km from the subject site. From this open section of road the existing temporary overburden is clearly visible, however areas of proposed extraction would not be visible due to a combination of intervening vegetation, buildings and topography.

Local Landscape & Visual Effect from this View

Viewpoint	Landscape & Visual Sensitivity	Magnitude (Operational Stage)	Predicted Effect (Operational Stage)	Magnitude (Restoration Stage)	Predicted Effect (Restoration Stage)	Magnitude (Alternative)	Predicted Effect (Alternative)
3	Medium - Low (Landscape)	Very Low	Negligible (Neutral)	Medium	Moderate(Beneficial)	Low	Minor (Neutral)
	Low (Visual)	Very Low	Negligible(Neutral)	Medium	Minor(Beneficial)	Very Low	Negligible(Neutral)

Mitigation
Considered sequence of extraction and phased restoration. Review all boundaries
for opportunities to improve screening through earthworks and planting.
Gradual removal of existing overburden stockpile.

client Keegan Quarries Ltd.

date Jan. 24

scale NTS@A3

by pjm

notes Image represents an eyelevel impression of view at monocular distance of 30cm

Photo Viewpoint 3

fig.9.6

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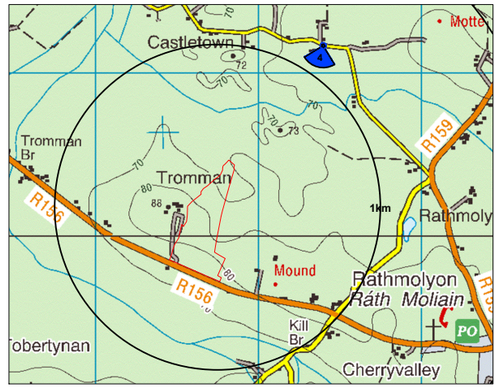

Location: **Viewpoint 4**

Viewpoint Elevation:	75m AOD (Malin Head)
Distance to Site:	850m
Irish Grid Reference	N 78344 51188
Horizontal Angle of View:	90 Degrees

north

Viewpoint 4 Southwest from L80141.
View South from minor road L80141 less than 1km from the subject site. From this open section of road the existing temporary overburden is clearly visible, however areas of proposed extraction would not be visible due to a combination of intervening vegetation and topography.

Local Landscape & Visual Effect from this View	Landscape & Visual Sensitivity	Magnitude (Operational Stage)	Predicted Effect (Operational Stage)	Magnitude (Restoration Stage)	Predicted Effect (Restoration Stage)	Magnitude (Alternative)	Predicted Effect (Alternative)
4	Medium - Low (Landscape)	Very Low	Negligible (Neutral)	Medium	Moderate(Beneficial)	Low	Minor (Neutral)
	Low (Visual)	Very Low	Negligible (Neutral)	Medium	Minor(Beneficial)	Very Low	Negligible(Neutral)

Mitigation
Considered sequence of extraction and phased restoration. Review all boundaries
for opportunities to improve screening through earthworks and planting.
Gradual removal of existing overburden stockpile.

client Keegan Quarries Ltd.

date Jan. 24

scale NTS@A3

by pjm

notes Image represents an eyelevel impression of view at monocular distance of 30cm

Photo Viewpoint 4

fig.9.7

north

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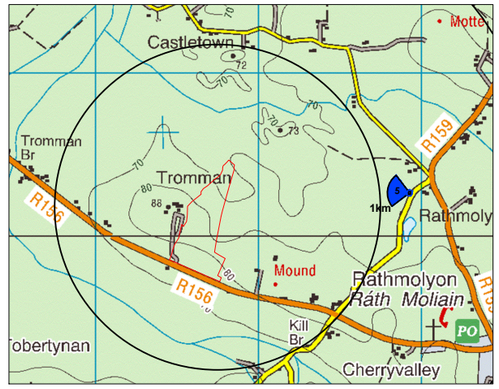

Location:	**Viewpoint 4**
Viewpoint Elevation:	75m AOD (Malin Head)
Distance to Site:	1128m
Irish Grid Reference	N 78344 51188
Horizontal Angle of View:	90 Degrees

Viewpoint 5 West from L80140.
View South from minor road L80140 approx 1.1km from the subject site. From this section of road the existing temporary overburden is clearly visible, however areas of proposed extraction would not be visible due to a combination of intervening vegetation and topography.

Local Landscape & Visual Effect from this View								
Viewpoint	**Landscape & Visual Sensitivity**	**Magnitude (Operational Stage)**	**Predicted Effect (Operational Stage)**	**Magnitude (Restoration Stage)**	**Predicted Effect (Restoration Stage)**	**Magnitude (Alternative)**	**Predicted Effect (Alternative)**	**Mitigation**
5	Medium - Low (Landscape)	Very Low	Negligible (Neutral)	Medium	Moderate(Beneficial)	Low	Minor (Neutral)	Considered sequence of extraction and phased restoration. Review all boundaries for opportunities to improve screening through earthworks and planting. Gradual removal of existing overburden stockpile.
	Low (Visual)	Very Low	Negligible (Neutral)	Medium	Minor(Beneficial)	Very Low	Negligible(Neutral)	

client	date	scale	by	notes
Keegan Quarries Ltd.	Jan. 24	NTS@A3	pjm	Image represents an eyelevel impression of view at monocular distance of 30cm

Photo Viewpoint 5

fig.9.8

Tromman Quarry, Rathmolyan

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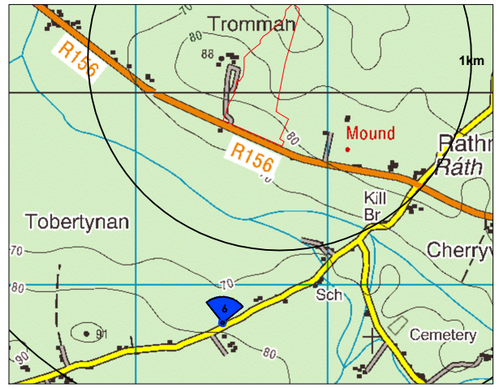

Location:	**Viewpoint 6**
Viewpoint Elevation:	78m AOD (Malin Head)
Distance to Site:	991m
Irish Grid Reference	N 77417 48767
Horizontal Angle of View:	90 Degrees

Viewpoint 6 North from L80142.
View South from minor road L80142 approx 1km from the subject site. From this section of road the existing temporary overburden is clearly visible, however areas of existing or proposed extraction are not visible due to a combination of intervening vegetation and topography.

Local Landscape & Visual Effect from this View

Viewpoint	Landscape & Visual Sensitivity	Magnitude (Operational Stage)	Predicted Effect (Operational Stage)	Magnitude (Restoration Stage)	Predicted Effect (Restoration Stage)	Magnitude (Alternative)	Predicted Effect (Alternative)
6	Medium - Low (Landscape)	Very Low	Negligible (Neutral)	Medium	Moderate(Beneficial)	Low	Minor (Neutral)
	Medium (Visual)	Very Low	Negligible (Neutral)	Low	Minor (Beneficial)	Very Low	Negligible(Neutral)

Mitigation
Considered sequence of extraction and phased restoration. Review all boundaries
for opportunities to improve screening through earthworks and planting.
Gradual removal of existing overburden stockpile.

client	date	scale	by	notes
Keegan Quarries Ltd.	Jan. 24	NTS@A3	pjm	Image represents an eyelevel impression of view at monocular distance of 30cm

Photo Viewpoint 6

fig.9.9

Tromman Quarry, Rathmolyan

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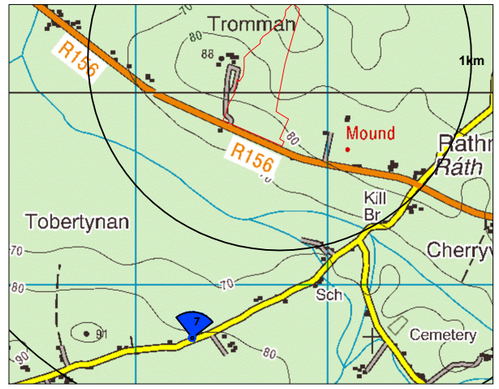

Location: **Viewpoint 7**

Viewpoint Elevation:	81m AOD (Malin Head)
Distance to Site:	1050m
Irish Grid Reference	N 77289 48716
Horizontal Angle of View:	90 Degrees

north

Viewpoint 7 North from L80142.
View South from minor road L80142 approx 1km from the subject site. From this section of road the existing temporary overburden is clearly visible, however areas of existing and proposed extraction would not be visible due to a combination of intervening vegetation and topography.

Local Landscape & Visual Effect from this View								
Viewpoint	**Landscape & Visual Sensitivity**	**Magnitude (Operational Stage)**	**Predicted Effect (Operational Stage)**	**Magnitude (Restoration Stage)**	**Predicted Effect (Restoration Stage)**	**Magnitude (Alternative)**	**Predicted Effect (Alternative)**
7	Medium - Low (Landscape)	Very Low	Negligible (Neutral)	Medium	Moderate(Beneficial)	Low	Minor (Neutral)
	Medium (Visual)	Very Low	Negligible (Neutral)	Low	Minor(Beneficial)	Very Low	Negligible(Neutral)

Mitigation
Considered sequence of extraction and phased restoration. Review all boundaries
for opportunities to improve screening through earthworks and planting.
Gradual removal of existing overburden stockpile.

client Keegan Quarries Ltd.

date Jan. 24

scale NTS@A3

by pjm

notes Image represents an eyelevel impression of view at monocular distance of 30cm

Photo Viewpoint 7

fig.9.10

north

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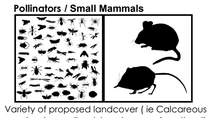
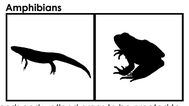
TARGET FAUNA POST RESTORATION

Pollinators / Small Mammals



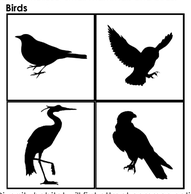
Variety of proposed landcover (ie Calcareous grassland, woodland, hazel copse, & wetland) offer habitats to sustain diverse populations of insect, mollusc, small mammals and birds.

Amphibians



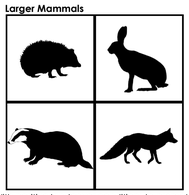
Ponds and wetland areas to be created to attract amphibian species with grassland and hibernacula.

Birds



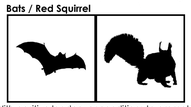
Diversity habitat will first attract common native birds & in time with appropriate management encourage a hierarchy of bird species (incl raptors). Exposed rock faces combine with wetland habitat to offer excellent nesting & feeding ground for raptors such as Peregrine.

Larger Mammals



With positive landcover conditions to promote a healthy insect, small bird and mammal population, combined with a balance of woodland, calcareous grassland & wet meadow habitat; larger native mammal such as hare, hedgehog, badger & fox will be encouraged.

Bats / Red Squirrel

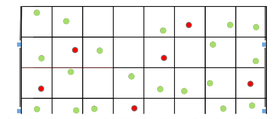


With positive landcover conditions to promote a healthy insect population, combined with roosting and nesting opportunities, protected species such as bat and red squirrel will be encouraged.

NOTE:
No herbicides or pesticides to be permitted during the establishment or extractive operational stage or after operations have ceased & restoration established.

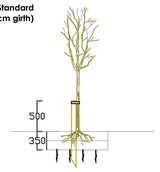
PLANTING DETAILS

Distance of Woodland Belt Varies (Refer to plan)



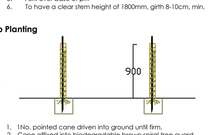
Boundary strip of woodland/hedgerow screen mix
Approx 2m wide band of woodland edge species.

Light Standard (8-10cm girth)



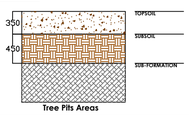
1. 75mm dia stake pressure treated driven min 800mm below ground 500mm above ground
2. Tie affixed to tree with Tom tie.
3. Pit with open textured face.
4. Topsoil min 350 depth within pit
5. Fork over base of pit.
6. To have a clear stem height of 1800mm, girth 8-10cm, min.

Whip Planting

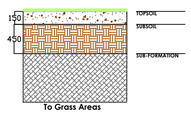


1. 1No. pointed cane driven into ground until firm.
2. Cane affixed into biodegradable brown spiral tree guard.
3. 300mm disk of mulch (50mm deep) around base.
4. Root cell notch planted with slow release fertiliser and watered until saturated.

EARTHWORKS DETAILS

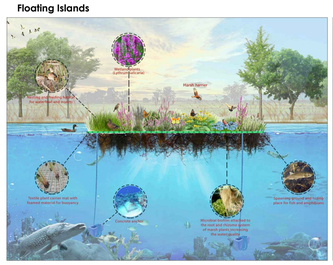


Tree Pits Areas



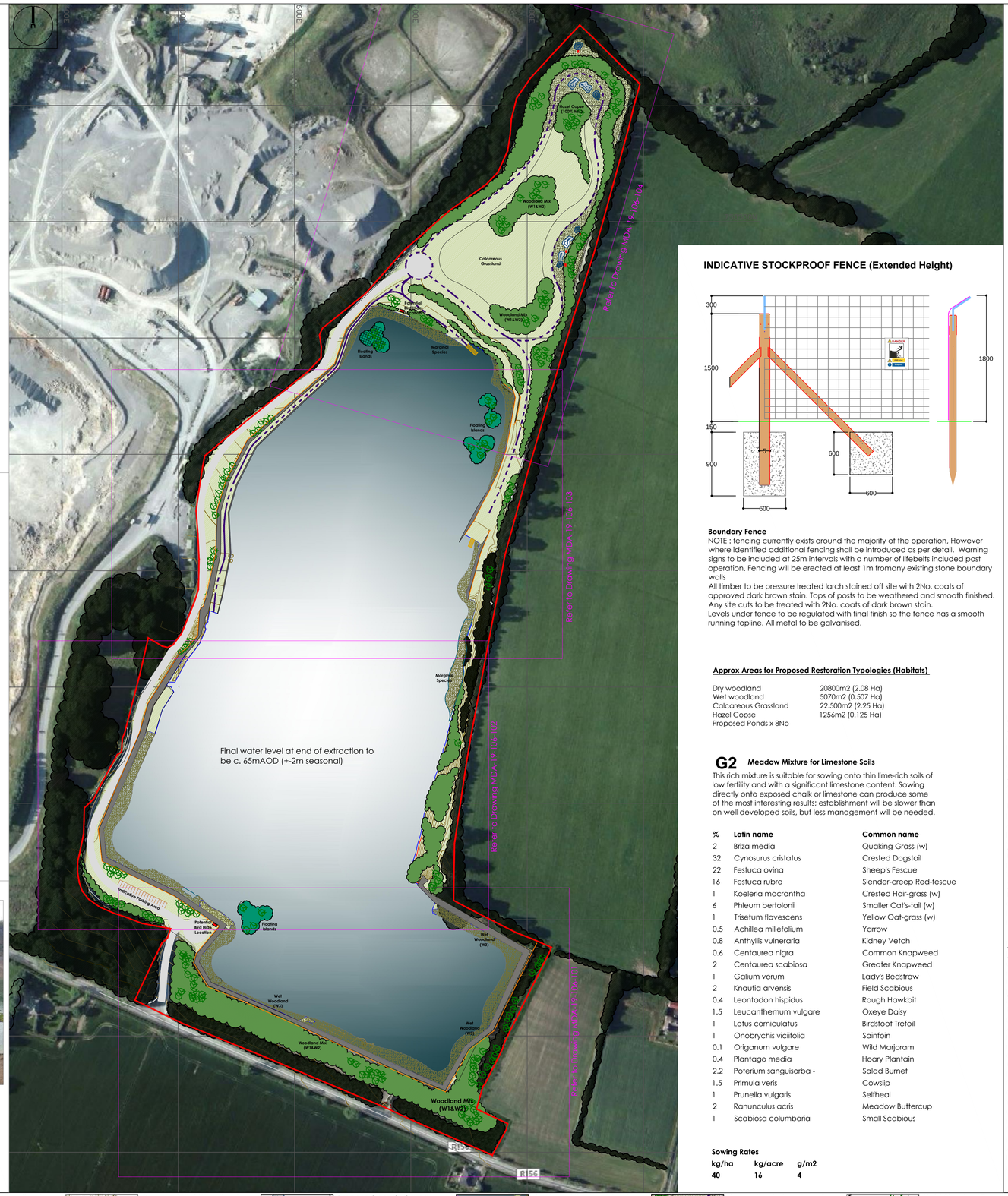
To Grass Areas

Floating Islands



W3 WET WOODLAND MIX — 0.507Ha @2500 Plants Per Ha = 1267No

%	SPECIES	SIZE	GROWN	HEIGHT/TRANSPL	NUMBER
20	Salix cinerea	40-60cm	BR / Cell	1 + 1 Branched	253
20	Betula pubescens	40-60cm	BR / Cell	1 + 1 Branched	253
20	Alnus glutinosa	40-60cm	BR / Cell	1 + 1 Branched	253
20	Prunus spinosa	40-60cm	BR / Cell	1 + 1 Branched	253
20	Salix fragilis	40-60cm	BR / Cell	1 + 1 Branched	253



INDICATIVE STOCKPROOF FENCE (Extended Height)

Boundary Fence
NOTE : fencing currently exists around the majority of the operation, However where identified additional fencing shall be introduced as per detail. Warning signs to be included at 25m intervals with a number of lifebelts included post operation. Fencing will be erected at least 1m fromany existing stone boundary walls
All timber to be pressure treated larch stained off site with 2No. coats of approved dark brown stain. Tops of posts to be weathered and smooth finished. Any site cuts to be treated with 2No. coats of dark brown stain.
Levels under fence to be regulated with final finish so the fence has a smooth running topline. All metal to be galvanised.

Approx Areas for Proposed Restoration Typologies (Habitats)

Dry woodland	20800m2 (2.08 Ha)
Wet woodland	5070m2 (0.507 Ha)
Calcareous Grassland	22.500m2 (2.25 Ha)
Hazel Copse	1256m2 (0.125 Ha)
Proposed Ponds x 8No	

G2 Meadow Mixture for Limestone Soils

This rich mixture is suitable for sowing onto thin lime-rich soils of low fertility and with a significant limestone content. Sowing directly onto exposed chalk or limestone can produce some of the most interesting results; establishment will be slower than on well developed soils, but less management will be needed.

%	Latin name	Common name
2	Briza media	Quaking Grass (w)
32	Cynosurus cristatus	Crested Dogstail
22	Festuca ovina	Sheep's Fescue
16	Festuca rubra	Slender-creep Red-fescue
1	Koeleria macrantha	Crested Hair-grass (w)
6	Phleum bertolonii	Smaller Cat's-tail (w)
1	Trisetum flavescens	Yellow Oat-grass (w)
0.5	Achillea millefolium	Yarrow
0.8	Anthyllis vulneraria	Kidney Vetch
0.6	Centaurea nigra	Common Knapweed
2	Centaurea scabiosa	Greater Knapweed
1	Galium verum	Lady's Bedstraw
2	Knautia arvensis	Field Scabious
0.4	Leontodon hispidus	Rough Hawkbit
1.5	Leucanthemum vulgare	Oxeye Daisy
1	Lotus corniculatus	Birdsfoot Trefoil
1	Onobrychis viciifolia	Sainfoin
0.1	Origanum vulgare	Wild Marjoram
0.4	Plantago media	Hoary Plantain
2.2	Poterium sanguisorba -	Salad Burnet
1.5	Primula veris	Cowslip
1	Prunella vulgaris	Selfheal
2	Ranunculus acris	Meadow Buttercup
1	Scabiosa columbaria	Small Scabious

Sowing Rates

kg/ha	kg/acre	g/m2
40	16	4

W1 MAIN WOODLAND MIX 75% — 2.08Ha @2500 Plants Per Ha = 5200No (3900)

	%	SPECIES	COMMON	SIZE	GROWN	TRANSPLANTS	NUMBER
Qr	35	Quercus robur	Oak	40-60cm	BR	1 + 2 Branched	1365
Ps	15	Pinus sylvestris	Scots PIne	40-60cm	BR	1 + 1 Branched	585
Bp	20	Betula pendula	Birch	40-60cm	BR	1 + 1 Branched	780
Ag	15	Alnus glutinosa	Alder	40-60cm	BR	1 + 1 Branched	585
Sa	10	Sorbus aucuparia	Rowan	40-60cm	BR	1 + 1 Branched	390
Pa	5	Prunus avium	Cherry	40-60cm	BR	1 + 1 Branched	195
* Fe		Fraxinus excelsior	Ash *	40-60cm	BR	1 + 1 Branched	

W2 WOODLAND EDGE MIX 25% — (1300)

	%	SPECIES	COMMON	SIZE	GROWN	TRANSPLANTS	NUMBER
Ca	30	Corylus avellana	Hazel	40-60cm	BR	1 + 1 Branched	390
Cm	15	Crataegus monogyna	Hawthorn	40-60cm	BR	1 + 1 Branched	195
Ps	10	Prunus spinosa	Blackthorn	40-60cm	BR	1 + 1 Branched	130
Ia	15	Ilex aquifolium	Holly	40-60cm	BR	1 + 1 Branched	195
Qi	5	Acer campestre	Field Maple	40-60cm	BR	1 + 1 Branched	65
Ue	5	Ulex europaeus	Gorse	40-60cm	BR	1 + 1 Branched	65
Ag	5	Alnus glutinosa	Alder	40-60cm	BR	1 + 1 Branched	65
Ms	5	Malus sylvestris	Crabapple	40-60cm	BR	1 + 1 Branched	65
Vo	5	Viburnum opulus	Guelder Rose	40-60cm	BR	1 + 1 Branched	65
Sci	5	Salix cinerea	Willow	40-60cm	BR	1 + 1 Branched	65

* Due to Ash back there is at time of submission a moratorium on specifying this species, however as resistant strains emerge over ther life of this operation it is expected that it will be possible to specify.

LIGHT STANDARD TREES

	%	SPECIES	COMMON	SIZE (girth)	HEIGHT	APP. STEM	NUMBER
Qr	50	Quercus robur	Oak	6-8cm	2.5-2.75m	1.5 - 1.8m	As Shown
Bp	25	Betula Pendula	Birch	6-8cm	2.5-2.75m	1.5 - 1.8m	
Ag	25	Alnus Glutinosa	Alder	6-8cm	2.5-2.75m	1.5 - 1.8m	

Restoration Concept

Restoration of this extractive operation is focused on habitat creation and delivering biodiversity. In addition it has been recognized there is long term potential to accommodate active and passive recreation - Walking, birdwatching, fishing etc.
This site could be assimilated with adjoining lands (particularly through the restoration of the adjoining quarry site to the west) to contribute to regional biodiversity.
Conectivity of this site within a region wide green infrastructure strategy should be explore by the Authorities.
The majority of the subject site will be occupied by water body and surrounded by calcareous grassland and native woodland (incl Hazel copse). New ponds with wetland areas would also be created. Sections of expose rock face would remain post operation and offer valuable nesting opportunities for birds (including raptors).
Restoration will be applied progressively on this site, therefore as areas reach their maximum extent of extraction rehabilitation would commence. Long term this site offers potential to create a diverse habitat - with similar examples of former quarry sites having become designated nature reserves.

Soil Management

Much of the soils and overburden layers at this quarry operation have in the past been stripped and relocated and are generally unavailable for restoration purposes. However some pockets of topsoils remain intact, which can be utilized for future restoration. Where soils (including stored soil) are identified, these should be appropriately transported to areas available for restoration.
Soil Stripping :- Stripping should apply guidance from MAFF data sheets.
Soil Storage :- Location of striped soils storage to be agreed on site - Storage berms should be clearly signed & protected. Storage Berm Height (maximum): 3m.
Handling Soils :-
- Aggressive weeds to to be topped and selectively herbicide added as required
- Give notice and obtain instructions before moving topsoil.
- Plant: Select and use plant to minimize disturbance, trafficking and compaction.
- Contamination: Do not mix topsoil with;
- Subsoil, stone, hardcore, rubbish or material from demolition work.
- Other grades of topsoil.
Multiple handling: Keep to a minimum. Use or stockpile topsoil as soon as possible after stripping.
Wet conditions: Handle topsoil in the driest condition possible. Do not handle during or after heavy rainfall or when it is wetter than the plastic limit less 3%, to BS 1377-2.
Spreading Soils:-
Temporary roads/surfacing: Broken and remove before spreading topsoil.
Layers: - Depth (maximum): 150 mm. - Gently firm each layer before spreading the next.
Depths after firming and settlement (minimum):
- Grass areas - 50mm (excluding wet wildflower grassland areas)
- Planted areas - 150mm. Crumb structure: Do not compact topsoil. Preserve a friable texture of separate visible crumbs wherever possible

Proposed Woodland Planting

Years 1-3 (Establishment)
Maintain shrub & woodland areas in a weed free condition (No herbicide application on site).
Prune minor damage back to healthy wood and check for and treat disease. Gap up to replace damaged or failed plant material in accordance with the original planting specification, which shall form part of the management documentation. Check protective fencing, where used, and maintain in good condition.
Year 4-10
As canopies merge, remove guards and stakes and cease weed control.
Thin out weakest specimens if planting becomes overcrowded and start to restrict growth.
1 no. basic-level inspection bi-annual by qualified professional (in autumn to coincide with fungal fruiting) to check physiological and biological condition -
At the end of this period determine if thinned to 5 m to maintain continued grassland cover beneath.
Felled trees to be used to create hibernatula
Year 11-20
1 no. basic-level inspection bi annual by qualified arboriculturist (in autumn to coincide with fungal fruiting) to check physiological and biological condition
Thin out weakest specimens every 5 years as planting becomes overcrowded and start to restrict growth.
Year 20+
1 no. basic-level inspection per annum by qualified arboriculturist (in autumn to coincide with fungal fruiting) to check physiological and biological condition
Interplant gaps and openings with new transplants every 5 years as required. Felled trees to be used to create hibernatula.

Proposed Grasslands

Preparation
Ground preparation should follow the supplier's instructions with the removal of weeds, rubbish and stones of over75 mm diameter. The seed will be sown following extraction activities during times of sufficient warmth and moisture, ideally in late spring or early autumn.
First year management
Most of the sown meadow species are perennial and will be slow to germinate and grow and will not usually flower in the first growing season. There will often be a flush of annual weeds from the soil in the first growing season. This weed growth is easily controlled by topping or mowing. (No herbicide applied on site)
Avoid cutting in the spring and early summer if the mixture is autumn sown and contains Yellow Rattle, or if the mixture has been sown with a nurse of cornfield annuals. These sown annuals should be allowed to flower, then in mid-summer cut and remove the vegetation. It is important to cut back the annuals before they die back, set seed and collapse: this cut will reveal the developing meadow mixture and give it the space it needs to develop.
Management once established
In the second and subsequent years sown areas can be managed in a number of ways which, in association with soil fertility, will determine the character of the grassland.
On poor shallow soils one or two cuts at the end of the summer, or occasional light grazing, may be all that is required to maintain diversity and interest.
On deeper soils best results are usually obtained by traditional meadow management based around a main summer hay cut in combination with autumn and possibly spring mowing or grazing. Meadow grassland is not cut or grazed from spring through to late July/August to give the sown species an opportunity to flower.
Refinement of options would tailor by the project ecologist and form part of future management plans.
After flowering in July or August take a 'hay cut': cut back with a scythe, petrol strimmer or tractor mower to c 50mm. Leave the 'hay' to dry and shed seed for 1-7 days then remove from site.
Mow or graze the re-growth through to late autumn/winter to c 50mm and again in spring if needed.

legend

- Planning Application Boundary
- Existing Hedgerows/ Scrub & Woodland
- Proposed Dry Woodland Planting (W1 & W2 - H1)
- Species Rich Dry Calcareous Grassland (G2)
- Proposed Wet Woodland (W3)
- Species Rich Wet Calcareous Grassland (G2)
- Proposed ponded area profiled & finished suitable for future amphibian habitation
- Proposed future birdhide location
- Anchored floating islands completed with riperian species
- Rock faces to be retained as potential habitat for nesting birds
- Approximate location of informal pathways & routes through site
- Marginal & emergent species with potential jetty locations
- Light Standard Trees
- Protective Fencing

client: Keegan Quarries	date: Jan 24	scale: 1:2000 @ A1, 1:4000 @ A3	by: pjm	notes:

Landscape Restoration
Tromman Quarry,Rathmoylan Co. Meath.

MDA Fig 9.11
MDA 19-106-100

mda
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