Property Registration Authority (PRA) Digital Mapping Project

Digitisation Protocol

Version 1.3

7th SEPTEMBER 2007

Amendment History - Document Status (e.g. Draft, Final, Release #):

Document Version #	Approval Date	Modified By	Section, Page(s)and Text Revised
1.0	25/11/2005	JOS	First draft
1.1	13/12//2005	PB	Second draft
1.2	21/02/2006	PB	Third draft
1.3	07/09/2007	SA	Fourth draft

Property Registration Authority Digital Mapping Project

Protocol to be adopted by Landmark/RMSI in respect of the transfer of Property Registration Authority (PRA) boundaries to Irish Transverse Mercator (ITM) Projection Digital Vector Maps produced by Ordnance Survey Ireland (OSi)

Contents

1. INTRODUCTION

Ordnance Survey Ireland (OSi), in its capacity as national mapping agency, is currently engaged in an ongoing programme of updating the national map base for Ireland. This programme has resulted in the production of three new large-scale map series (1:1000, 1:2500 and 1:5000) on a new map projection known as “Irish Transverse Mercator” (ITM) which will supersede a number of previous map series.

Arising from this, the Property Registration Authority is undertaking a programme of updating the Registry maps. The programme undertaken by the Property Registration Authority will necessitate the conversion of PRA mapping data to the OSi ITM projection, and result in the adoption and maintenance of Registry maps in digital vector form.

The purpose of this document is to outline the procedures and protocols for adoption of OSi topographic detail during the conversion process

This document will be the subject of frequent review and updating in the light of examples and situations encountered during the digitisation work.

2. GEO-POSITIONING AND DIGITISATION

2.1. Geo-Positioning

A key component of the conversion process will be the geo-positioning of scanned images of the Registry paper maps into the latest OSi ITM digital map projection. This process is required in order to compare registered data with the new OSi topographical detail and to digitise registered data that does not match OSi topographical detail.

There are two aspects of geo-positioning. Firstly, there is the positioning of the scanned images of the Registry Maps by reference to the latest OSi digital map projection. The geo-positioning process uses co-ordinates supplied by OSi to fit the County Series and Irish Grid projection maps to the latest OSi ITM map projection using defined mathematical transformation algorithms. The second element is the positioning of "imagettes" using local Control Points (topographical features that are common to both source and target maps) in order to get a best fit that will support the accurate digitisation of registered boundary lines and features that are not shown as OSi topographical detail in the latest OSi ITM projection digital map. These are required to account for any local residual distortions due, for example, to the age, physical quality and stretching of the paper map sheets. Imagettes may also be required in some instances to support the decision as to why OSi topographic detail was not adopted. Imagettes are small extracts from the Registry map sheet/book image that should be used to accurately digitise PRA boundary/feature lines.

2.2. Digitisation

Two processes will be required to digitise PRA map boundaries and features. The first process arises where vector geometry (topographical detail lines) in the OSi layers which are coincident with PRA boundary lines are copied into the appropriate registration layer in the Digital Mapping System. The second process, which arises where a boundary or feature is not defined as OSi topographical detail, requires the "freehand" digitising of vectors directly on top of the registered boundary lines that are visible on the underlying scanned geo-positioned images of the Registry map. The digitised PRA boundary lines should visually run down the centre of the scanned (rasterised) lines that are being digitised. The raster lines will be visible from the geo-positioned image or imagette of the Registry Map, whether based on a local or full map-sheet transformation.

2.3. Guidelines as to use of Control Points

When identifying control points for imagette management, fixed topographical features that are common to both source and target maps should be identified (The source map is the Registry Map and the target map is latest OSi ITM projection digital vector map). Examples of control point that should be used are the corners of buildings or field boundary intersections of two or more lines that are common to both source and target maps. Users should avoid using roadways and road intersections as control points as the representation of the width of roadways can change between map editions and series. Control points used should not be co-linear.

Where there is a co-incidence between OSi topographic detail and PRA boundaries or features, and there is a high degree of confidence in such co-incidence, imagettes are not required. However, for *every* case where lines are traced from geopositioned images of Registry maps, imagettes will be required to ensure that the PRA QA team can check that the lines have been traced accurately. The imagette should cover a large enough area to verify that sufficient control was achieved and to establish that the imagette matches the vector data at a significant number of control points.

3. NON CONCLUSIVENESS OF BOUNDARIES

The Registry Map is a General Map and identifies properties not boundaries

Section 85 of the Registration of Title Act, 1964, as amended by Section 62 of the Registration of Deeds and Title Act 2006 provides that, except as provided by this Act, neither the description of the land in a register not its identification by reference to a Registry map is conclusive as to boundaries or extent

Rule 9 of the Land Registration Rules 2006 provides that neither the description of land in the register not its identification by reference to a Registry map is conclusive as to its boundaries or extent and that a note to this effect shall be entered on the register.

The precise line of the property boundary is undetermined unless agreement has been reached between the affected parties and a note of conclusiveness entered on the register.

It is to be noted that the Registry map does not indicate whether it includes a hedge or wall and ditch, or runs along the centre of a wall or fence or its inner or outer face or how far it runs within or beyond it; or whether or not the land registered includes the whole or any portion of an adjoining road or stream. Where registration is made to the centre of a roadway or stream, the map is not to be taken as conclusive evidence that such, or any portion of same, is included in the property.

There may be valid reasons why the registered boundaries on the Registry map do not coincide with the topographic detail on the underlying OSi ITM projection map.

Examples are:

- Where the registered boundaries on the Registry map are not intended to correspond with any physical features on the ground that may be represented on the OSi map as topographic detail.
- Where the registered boundaries on the Registry map reflect the historical existence of topographic features that no longer exist on the ground.
- Where physical boundaries may have been informally adjusted by agreement of adjoining owners after the date of registration without executing any deed to record the adjustment.
- Where boundaries may have been adjusted by a deed which has not yet been lodged for registration.
- Where physical boundaries may have been adjusted unilaterally and, in time, the adjusted physical boundary may have become the legal boundary by virtue of the doctrine of adverse possession under the Statute of Limitations (there may, for example, have been encroachment).
- Where the application map is inaccurate. The boundary(s) may have been inaccurately drawn on the map submitted with the application for registration.
- Where topographic features on the OSi map are incorrectly or inaccurately digitised.

4. GENERAL GUIDELINES

The transfer of plans from the existing Registry maps to the latest OSi ITM projection digital vector map shall be carried out according to the guidelines set out below.

a. PRA Boundary or Feature Is Defined as OSi topographic detail on the Registry Map and Is Defined as OSi topographic Detail on the OSi ITM projection Map.
Where a registered boundary or feature is defined as OSi topographical detail on the Registry Map and is defined as OSi topographical detail on the latest OSi ITM projection digital map being either co-incident, or within the adoption criteria set out at Table 1, Section 5 and Appendix C, digitisation is to be carried out by copying the OSi vector detail to the appropriate PRA layer.
Example 1, Appendix D **(**Houses 1 to 15 Elmside) is an instance where PRA boundaries/features and OSi topographic detail are co-incident.

b. PRA Boundary or Feature Not Defined as OSi topographic Detail on the Registry Map and Not Defined as OSi topographic Detail on the OSi ITM projection Map.
Where a registered boundary or feature is not defined as OSi topographical detail on the Registry Map and is still not defined as OSi topographical detail on the latest OSi ITM projection digital map, the PRA boundary or feature is to be digitised by placing the vector along the centre of the underlying raster line, after an imagette has been created, if necessary.
Example 6, Appendix D (burden pipeline and right of way) is an instance where PRA detail is to be digitised

c. PRA Boundary or Feature Not Co-incident with OSi ITM projection Detail and not Within Adoption Criteria.
Where a registered boundary or feature as shown on the Registry map is not co-incident with the latest OSi ITM topographic detail and is not within the adoption criteria set out at Table 1, Section 5 and Appendix C, the PRA boundary or feature is to be digitised by placing the vector along the centre of the underlying raster line, after an imagette has been created, if necessary.
Example 1, Appendix D (Plan 48) is an instance where the PRA boundary is to be digitised.

d. PRA Boundary or Feature Not Defined as OSi topographic Detail on the Registry Map and Is Defined as OSi topographic Detail on the OSi ITM projection Map.
Where a registered boundary or feature is not defined as OSi topographical detail on the Registry Map and is defined as OSi topographical detail on the latest OSi ITM projection digital map being either co-incident or within the adoption criteria set out at Table 1, Section 5 and Appendix C, digitisation should be carried out by copying the OSi vector geometry to the appropriate PRA layer.
Example 1, Appendix D (15 to 20 Ashburn Court) and Example 2, Appendix D (most of the scheme excluding the parcels highlighted in the accompanying text) are instances where OSi detail can be adopted because it is obvious or necessary to do so.

e. Where the PRA boundaries have been transferred from a smaller scale map to a larger scale map. The adoption criteria in Table 1, Section 5 relating to the scale at which the plan was originally registered maybe applied
Examples 18 and 20, Appendix D demonstrates the need to refer to the 1/10560 scale.

If the PRA boundary or feature is not defined as OSi detail on the Registry Map and is defined as OSi topographic detail on the OSi ITM projection map and does not appear to be within the adoption criteria set out in Table 1, Section 5 it is important to check and verify if the plan in question falls into one of the categories below.

Currently mapped on 1/2500 scale but was transferred from 1/10560 scale.
Currently mapped at 1/1000 scale but was transferred from 1/2500 scale.

PRA boundaries that have been transferred from smaller scale maps to larger scale maps at some time in the past are, at best, only as accurate as they were on the source map. In order to identity boundaries digitised from the smaller scale for the QA team they should be flagged as low confidence.

f. Open Plan Development.

In open plan type developments not all of the properties boundaries will be represented as OSi topographic detail with the result that the ITM may only provide some of the features necessary to complete the digitisation of the properties in these developments. Examples are open side passages, open plan frontages, undefined rear gardens and side passages in development schemes. The PRA boundaries should be digitised, firstly by using whatever OSi topographic detail is available to decide the best outcome for each property or block of properties. This can be achieved by using available topographic data/detail such as a building centreline (in the case of semi detached houses), building outline, splitting gaps between buildings, extending some OSi topographic features etc. Secondly by digitising the vector along the centre of the underlying raster line to complete the remaining boundaries, using a sufficient number of imagette(s).to complete the remaining boundaries
See Examples 5, 22 and 23, Appendix D are examples of open plan development**.**

g. Obvious Ambiguity, Doubt or Difficulty.

Where obvious ambiguity doubt or difficulty would arise by adoption of latest OSi topographic detail the PRA boundary or feature is to be digitised by visually placing the vector along the centre of the line on the underlying raster image, after an imagette has been created, if necessary.
Example 2, Appendix D (entrances to sites 11 and 31) would be examples of “obvious ambiguity, doubt or difficulty”. See also Examples 21, 22, 23, 24, 25, 26, Appendix D.

h. Check All Available Images.

It is important that all source images of Registry Maps (i.e. all map versions, all map editions, all map scales and all lands index (map) books are referenced during the boundary digitisation process. This practice will ensure that all relevant boundary information is captured.
See Examples 18 and 20,Appendix D. demonstrate the importance of checking all available images.

i. **Folio Checks.**
When mapping problem cases it is sometimes worthwhile to establish which Folio the plans are registered on. It may be the case that the plans in question form part of the one Folio or may be registered on different Folios but be in the same ownership. This research may assist the decision to adopt or not to adopt OSi topographic detail

j. **Orthophoto.**
Orthophotos should be used to help decide whether to adopt or not to adopt OSi topographic detail.
See Examples 18 and 20, Appendix D.

k. **Burdens and Turbary Parcels**
Where a burden locator point has only been used to identify the position of Turbary parcels and Lease burden parcels the operator must populate the burden label with the plan reference at polygon capture stage. In many instances a seedpoint would have been placed particularly for each lease plan reference on the Registry map because at the time of placing seed points it would not have been obvious to the operator whether a leasehold folio is available. The plan reference would therefore have been recorded as an attribute against the seedpoint. This may also be the case where some Turbary plans are shown green on the Registry maps and may have been mistaken for leases. It would be useful not to lose this information where it has been recorded so that the label could be populated without having to return to the raster image.

Where there is doubt or difficulty, the matter is to be referred to PRA Quality Assurance officials.

The decision as to the whether or not OSi topographic detail can be adopted must be a balanced one and in line with good practice. The fact that a physical feature that could represent a boundary that exists on the ground is shown as OSi topographical detail does not necessarily mean that this is the correct registered boundary. *See Appendices A and B* for matters to be considered when making decisions.

Urban and Peri-urban areas will from time to time present particular difficulties for the bureau. In such instances the PRA QA team will provide images to the bureau before the digitisation process begins.

The bureau must digitise the boundaries in accordance with the images provided.

5. ADOPTION CRITERIA TO BE APPLIED

Table 1 below sets out the appropriate adoption criteria for transferring registered boundaries/features from each of the paper map scales currently in use in the PRA to the new OSi ITM projection maps.

The values in Table 1 below, in all cases, ***exclude*** the line/pen-width on the source map.

Table 1 – Values that can be applied

Scale of PR A Paper Map	Distance on paper map in mm (penwidth = 1mm)	Rural Agricultural Land (individual plots of 0.400 hectares or more)	Urban, peri-urban, rural and commercial (individual plots less than 0.400 hectares)
1/10560	1mm = 10.56m	± 20.00m	
1/2500	1mm = 2.5m	± 5.00m	± 3.00m
1/1250	1mm = 1.25m	± 2.50m	± 2.50m
1/1056	1mm = 1.056m	± 2.00m	± 2.00m
1/1000	1mm = 1m	± 2.00m	± 1.00m

6. ROADWAYS AND LANEWAYS

Where a roadway or laneway is defined as OSi topographical detail on the Registry Map and is defined as OSi topographical detail on the OSi ITM projection digital map either being co-incident or being within the adoption criteria set out at Table 1, Section 5 and Appendix C, adopt OSi topographic detail.

Where a roadway or laneway is *not* defined as OSi topographical detail on the Registry Map and is *not* defined as OSi topographical detail on the OSi ITM digital map, the PRA boundary or feature is to be digitised by placing the vector along the centre of the line(s) on the underlying raster image, after an imagette has been created, if necessary.

Where a roadway or laneway is not co-incident with the OSi topographic detail and is not within the adoption criteria set out at Table 1, Section 5 and Appendix C, the PRA boundary or feature is to be digitised by placing the vector along the centre of the underlying raster line.

In all cases where the boundary line on the Registry map shows registration to the centre or to a side of a roadway or laneway this must be maintained on the OSi ITM projection digital map.

See Examples 9, 22(a) 22(b) Appendix D.

Where registration in a housing development is clearly to the centre of the roadway the boundaries should not be snapped back to the edge of the footpath or road.

See Example 26 Appendix D.

Particular care is to be taken in the case of roadways and laneways that do not appear to be public roads.

All instances of ambiguity doubt or difficulty are to be referred to PRA Quality Assurance officials.

In development schemes the OSi topographic detail will often show the edge of a footpath as a single pecked line or as a double pecked line, where the registered boundary clearly does not extend to the centre of the road the single pecked line, or in the case of a double pecked line, the inner pecked line should be selected as the registered boundary.
See Example 22(b) Appendix D

7. DAMAGED MAPS

All such cases are to be referred to the PRA Quality Assurance officials for processing in accordance with internal PRA procedures.

8. REFERRALS

All instances of ambiguity doubt or difficulty as set out above are to be referred to PRA Quality Assurance officials. Quality Assurance officials may direct that digitisation proceed in accordance with either the boundary line as it appears on the PRA image or the OSi topographic detail as may be appropriate in the circumstances.

Appendix A - Where existing PRA boundary line or feature must be adopted

PRA boundary line or feature must be digitised in each of the following circumstances:

1. In open plan development where insufficient OSi topographic detail is available for selection to form the entire plan. See Examples 5 and 23, Appendix D.
2. Entrances. See Example 2, Appendix D (St..Anne's, entrances to 10, 11, 31 & 32) Example 9, Appendix D and Example 12, Appendix D.
3. PRA hand drawn lines (such as pipe lines and rights of way) which do not appear as OSi topographic detail. See Examples 6, 8(b) & 10 & 14, Appendix D.
4. Where the length of a plan exceeds the adoption criteria set out at Table 1, Section 5 and, in the case of development schemes, where any of the circumstances at Appendix C, Section 1.1.4 herein applies. See Example 11 and 13, Appendix D
5. Where the area of a plan exceeds the adoption criteria set out at Table 1, Section 5 and, in the case of development schemes, where any of the circumstances set out at Appendix C, Section 1.1.4 herein applies. See Example 11, Appendix D
6. Where the shape of a plan does not match the OSi topographic detail. See Example 11, Appendix D.
7. An end-plan in a development scheme where an adjoining parcel of land has been physically incorporated on the ground. See Example 2 (No 1 St Anne's), Appendix D. Please note that there may be a case for adopting OSi topographic detail if the adoption criteria at Table 1, Section 5 is met.
8. Where adoption of OSi topographic detail would require a transfer of a PRA plan from one Folio to another. .
9. Where changes have occurred in the course of non-tidal rivers and streams, (accretion and diluvion).
10. Lakes
11. Sea shore (existing registrations to High Water Mark are *not* to change)

Appendix B – Matters for consideration when adopting OSi topographic detail

The Authority is statutorily obliged to adopt OSi topographic detail and to effect necessary or obvious adjustments to registered boundaries to conform to OSi topographic detail and full account of this requirement is to be taken when development schemes are being digitised as part of the data conversion process.

The emphasis in development schemes must favour adoption of available OSi topographic detail. Where the plan(s) can be formed by adoption of either partial OSi topographic detail or the plan can be formed in its entirety by adoption of OSi topographic detail (including pecked lines that represent the edge of footpaths) the decision not to adopt should only arise where there is a substantive reason to do so.

Where any doubt or difficulty arises the matter is to be referred to the Registry Quality Assurance officers.

1. **The number of plans in a scheme**
   Where the number of plans shown on the Registry map in a development scheme match the number of sites that are shown as topographic detail on the latest OSi ITM projection map.

   Where the number of sites matches the numbers of plans adopt all available OSi topographic detail unless there is a valid reason not to do so.

   Where the number of sites does not match the number of plans the matter is to be referred to Quality Assurance Officers suggesting a solution.

   See Examples 21, 23, Appendix D

2. **The length and width of a plan**
   In the case of plans located in urban, suburban and rural residential developments registered on foot of Development Scheme Maps, the length and width of a plan is not to be changed (increased or decreased) by more than the amount specified at Appendix C, Section 1.1.4 herein. See Example 13**,** Appendix D**.**

   In instances where adoption criteria is exceeded and there is no alternative available the PRA boundary or feature is to be digitised by placing the vector along the centre of the underlying raster line, after an imagette has been created, if necessary.

   In the case of plans not forming part of such schemes, the adoption criteria at Table 1, Section 5 apply.

3. **The size of a plan.**
   In the case of plans located in urban, suburban and rural residential developments registered on foot of Development Scheme Maps, the area of the plan should not be changed (increased or decreased) by more than the amount specified at Appendix C, section 1.1.4 herein. See Example 11, Appendix D.

   In instances where adoption criteria is exceeded and there is no alternative available the PRA boundary or feature is to be digitised by placing the vector along the centre of the underlying raster line, after an imagette has been created, if necessary.

   In the case of plans not forming part of such schemes, the adoption criteria at Table 1, Section 5 apply.

4. **The shape of each plan**
   All discrepancies which would result in a significant alteration in the shape of a plan are to be digitised by placing the vector along the centre of the underlying raster line, after an imagette has been created, if necessary .
   See Example 2, and 11 Appendix D
5. **The availability of OSi topographic detail in development schemes.**
   It is important that Bureau make use of all available OSi topographic detail when digitising in development schemes.
   - **a)** Adopt all OSi boundary lines where possible.
   - **b)** Be careful of adoption of end sites where the size of the site has increased/decreased significantly.
   - **c)** Be careful that passageways between properties are not closed off by adoption of OSi detail.
   - **d)** Be careful where the shape of a site has changed significantly.
   - **e)** **<u>When in doubt refer difficult decisions to PRA Quality Assurance staff</u>**.

It is important that Bureau recognise what to digitise where only part of the property is offered as OSi detail for adoption.

- **f)** Maintain shape and symmetry of sites.
- **g)** Where part of the boundary is available as OSi topographic detail and the remainder of the boundary has to be freehand digitised, boundaries and features that were drawn as straight lines on the source image should be maintained as straight lines on the target map. They should not be bent to touch the endpoint of the line on the PRA map image.
- **h)** Sometimes OSi will provide some geometry that will indicate how the properties should be formed. Localise adjustments and digitising decisions using each block of sites that are completely (or more completely) defined by OSi topographic detail. Decisions on digitising can then be confined to as few as two sites in some cases, or to the entire row of sites in others, where very little topographic detail is available in the OSi geometry. See Examples 23(b), (c), (d) Appendix D.
- **i)** Use building geometry as a guide to dividing the sites into plans. Many buildings that are being split are in fact ‘Semi-Detached’ houses that should be split in half..
  See Examples 23(b), (c), (d) Appendix D
- **j)** For many of the properties in the Example 23(b) Appendix D, an OSi topographic detail line can be seen dividing the semi detached buildings. Where available these OSi topographic detail lines should be selected as the boundary between the properties and the balance made up of freehand digitised lines projected to the front and rear, preserving the shape and size of the plans. See Example 23(d) Appendix D
- **k)** Where there is **<u>No</u>** OSi geometry provided for dividing the semi detached building the boundary line should be freehand digitised splitting the building in half.
  See Examples 23(b), (d) Appendix D
- **l)** Most semi-detached houses will have a side entrance to their back garden, so where there is a gap shown between semi-detached buildings it is important to divide the gap equally between the properties. See Example 23(d) Appendix D.

Do not snap to the gable end of a building where the boundary line should split the gap equally between adjoining properties. There is no benefit in preserving the exact width of the plan as marked on PRA image if the finished digitised line ends up being offset from the OSi centreline geometry of the building thus allocating a greater share of the building to one party. When digitising schemes it is important to evaluate the OSi geometry provided, select the known

quantities and apply the above guidelines. The remainder of the scheme should then fall into place. See Examples 22(a), 22(b), 23(a), 23(b) 23(c), 23(d) Appendix D

It is important that Bureau recognise things that they <u>should not do</u> in development schemes

m) **<u>Do not snap to the gable end of a house</u>** where a gap should exist between semi detached houses.

n) **<u>Do not bend boundary lines</u>** and pull the shape of the parcel into an irregular shape by snapping to OSi detail where the original shape of the parcel was a regular shaped square/rectangle.

o) **<u>Do not include footpaths</u>**, inner pecked line is normally the front extent of the property. See Examples 23(a), 23(b) 23(c), 23(d) Appendix D

p) Where registrations in a development scheme are clearly **<u>registered to the centre of a roadway they must continue to be when digitised</u>**. See Example 26(a) and 26(b).

The data capture team need to recognise that the pecked lines represent the public footpaths – **<u>Ownership does not normally include any part of the footpath</u>** so in all cases where the PRA boundary is near the OSi pecked line, then the pecked OSi pecked line nearest to the building/house should be digitised as the boundary.

Maintain Consistency in what is adopted as the boundary in schemes, In example 22(b) the inner pecked line was adopted for all of the sites except the last two in the row. The inner pecked line should have continued to be adopted for the last two sites in the row thus excluding the public footpath.

6. The effect of non-adoption of OSi topographic detail on adjoining plans.

Is there a reason why the plans cannot be formed by adopting the available OSi topographic detail?

- Problems fitting one or two parcels should not dictate the outcome with the result that the majority of the other plans in the development are wrongly digitised.

If necessary do more local adjustments to the source PRA image before deciding the outcome.

7. The effect of adoption of OSi detail on adjoining plans.

Check what the desired outcome should be.

- Will adopting the available OSi detail cause problems digitising adjoining plans?

Raise query with PRA Quality Assurance officers if still in doubt.

8. How to handle shift in the position of Townland Boundary where it will have a significant impact on a property in a housing development.

Sometimes a shift in the position of an 'undefined' Townland boundary in a development scheme could, if bureau adopt the 'new' position of the Townland boundary, significantly reduce the size of the property. It would be important that bureau have a mechanism to handle this in their data capture process so that the property would be digitised as one complete parcel even if it has to straddle the Townland boundary. See Example 24 Appendix D

9. The condition of the Registry map.

Where the plan to be digitised is affected by a fold, crease, tear or other damage. All such cases are to be flagged for PRA Quality Assurance staff.

Appendix C - Mapping Adoption Criteria

C.1 Registered boundaries are to be digitised onto the OSi ITM projection digital vector map as follows;

C.1.1 Urban, Suburban and Rural Residential Development (registered on foot of Scheme Maps)

Typically 0.200 hectares or less

And

Urban, Suburban and Rural Industrial/Commercial Development (registered on foot of Scheme Maps)

Typically not exceeding 0.400 hectares.

In such instances the following criteria are to be applied.

1. The overall scheme as shown on Registry map should be compared to the OSi topographic detail on the OSi ITM projection digital vector map.
2. The same number of plans shown on the Registry map must be shown as topographic detail on the OSi ITM projection digital vector map.
3. Where there is a discrepancy in the number of plans the matter must be referred to the PRA Quality Assurance team
4. The shape and size of each of the plans within the overall scheme must be evaluated against the following criteria, each of which has to be satisfied:
    a. Length of plan length should not be changed (increased or decreased) by more than 20% See Example 13 Appendix D
    b. Area of plan area should not be changed (increased or decreased) by more than 30%.
    c. Original shape of plan should not be altered from a regular square or rectangle to an irregular shape.

Subject to the above, the OSi topographic detail may be adopted.

In respect of each plan in the development scheme, which is not co-incident with or where the plan differs in shape or size according to the criteria at C.1.1.4 above, then PRA boundary must be digitised after all available OSi topographic features have been used to help achieve a best fit.

See Examples 1, 2, 3, 4, 5, 7, 21, 22, 23, 21 & 27 Appendix D.

C.1.2 Urban, Suburban and Rural one-off properties (individual sites)

Typically not exceeding 0.400 hectares.

In the case of ribbon developments, situated in urban, sub-urban and rural locations the following adoption criteria are to be applied.

1. Where a registered boundary or feature when viewed in relation to the latest OSi ITM projection topographic detail is co-incident or within the adoption criteria set out at Table 1, Section 5 and this Appendix, OSi topographic detail may be adopted.

In respect of each plan which is not co-incident with or within the adoption criteria set out at Table 1, Section 5, all maps and scales should be taken into consideration before deciding not to adopt the revised OSi topographic detail.

Before making decisions not to adopt available OSi topographic detail where the orientation of some boundary lines appears to exceed the adoption criteria. If the area and shape of the various plans can still be maintained then OSi topographic detail should be adopted.
See Example 27, Appendix D

Where a change in width of a road between the different OSi series and editions can be seen the length of the site might still be within adoption criteria if this change is taken into consideration. See Example 27, Appendix D.

Where none of the above issues have a bearing on the outcome the PRA boundary should be digitised.

C.1.3 Rural and some Urban properties (Agricultural land, undeveloped properties)

Typically consisting of one or many separate or adjoining plans of 0.400 hectares or larger.

In the case of agricultural plans the adoption criteria set out at Table 1, Section 5 and Appendix B are to be applied.

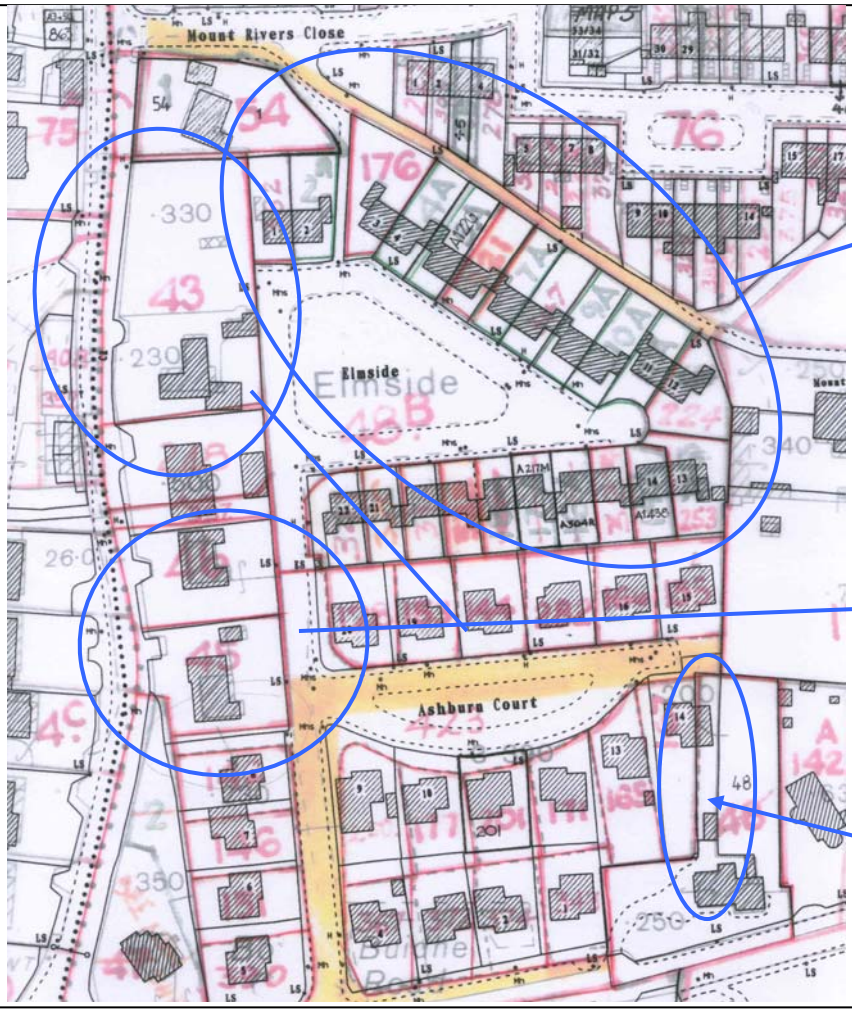
1. Where such plans when viewed in relation to the revised OSi topographic detail are co-incident or are within the adoption criteria set out at Table 1, Section 5, OSi topographic detail may be adopted.

In respect of each plan that is not co-incident with or within the adoption criteria set out at Table 1, Section 5, the history of the parcel should be taken into consideration by viewing the images of all maps and scales before deciding not to adopt the OSi topographic detail.

Where none of the above issues have a bearing on the outcome the PRA boundary should be digitised

Appendix D - Examples

EXAMPLE 1

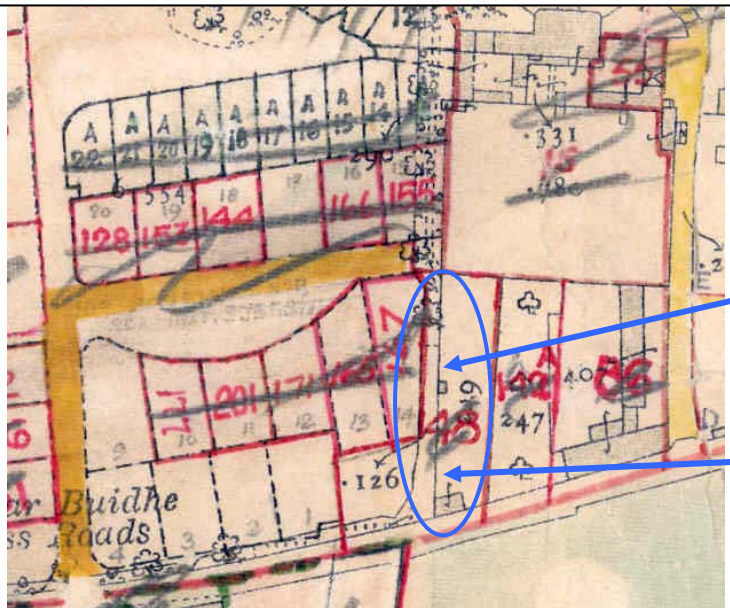


Matching exactly
Houses 1 to 15 Elmside are within adoption criteria

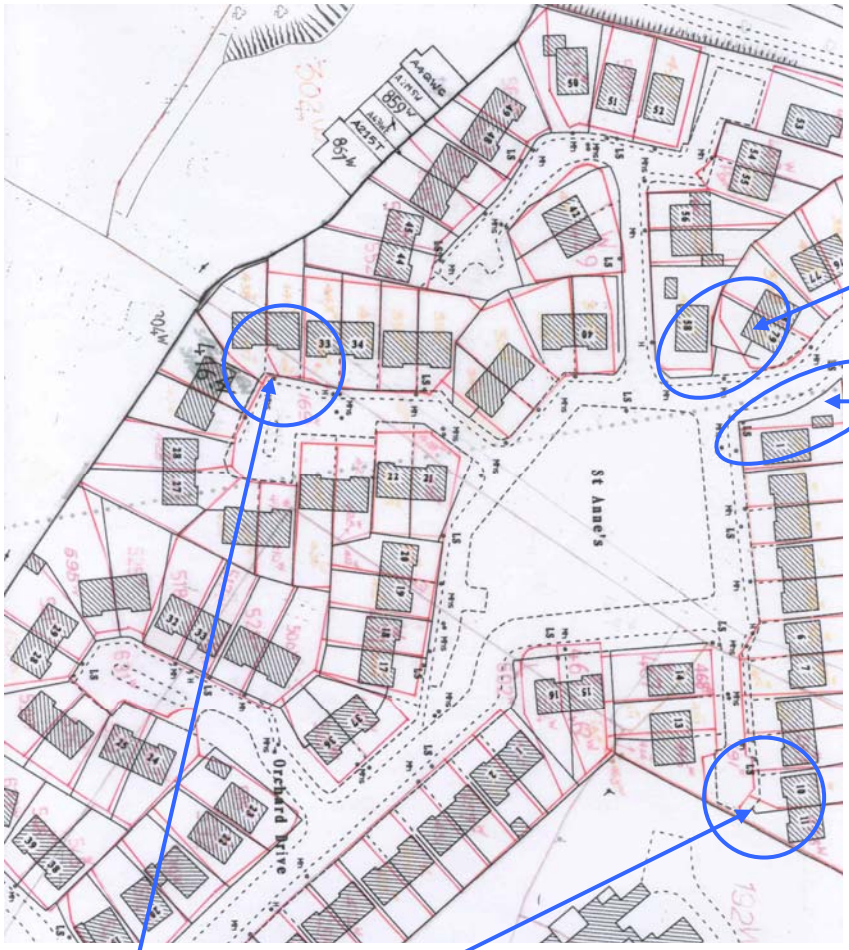
Substantially the same
Houses 45, 46, 43 Elmside are within adoption criteria

Cannot adopt
Adopting the nearest OSi feature is outside the adoption criteria.
The position of the Registered boundary line matches an OSi topographic detail line on an older edition map
Digitise the PRA line for part of boundary Plan 48

IMAGE OF CANCELLED MAP



EXAMPLE 2



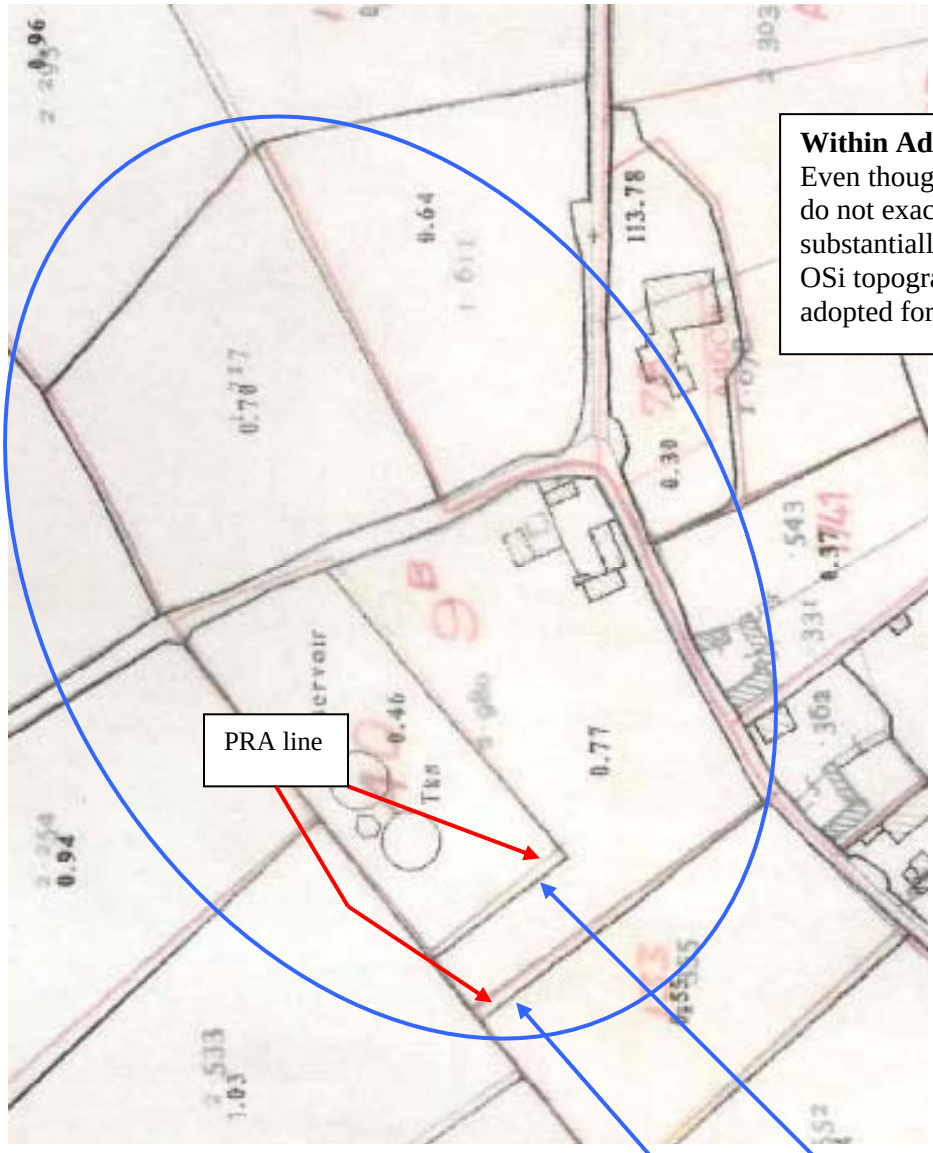
Some doubt here as shape of site changes

Care should be taken where an end site on the OSi map appears to include a part outside of the registered boundary

Outside Adoption Criteria
Entrance to sites 10 & 11 and 31 &32
Obvious doubt or difficulty in adopting the OSi pecked line here as taking the OSi lines would narrow the entrance to both parcels 11 and 31

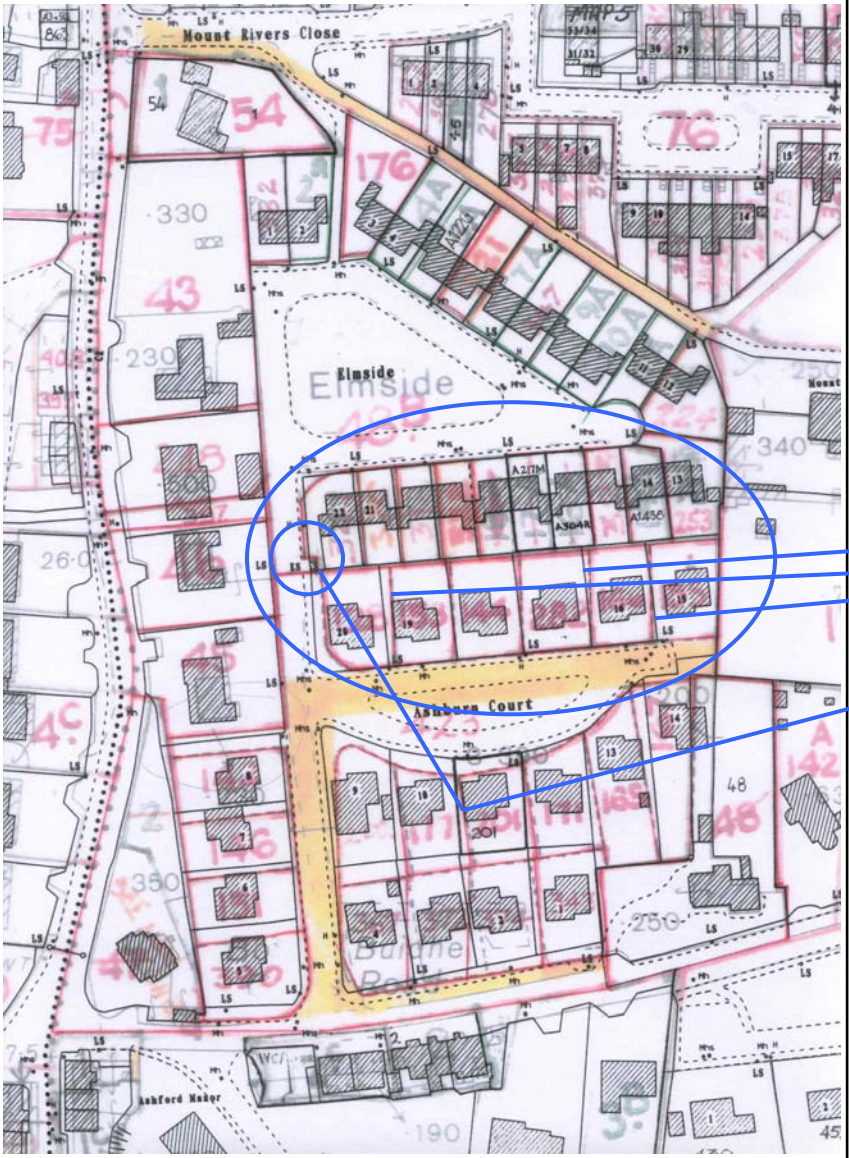
Within Adoption Criteria
OSi topographical detail can be adopted as the registered boundaries for most of the remainder of the scheme

EXAMPLE 3



Within Adoption Criteria
Even though Plans 40 and 9B do not exactly match they are substantially the same and the OSi topographic detail can be adopted for the entire parcels

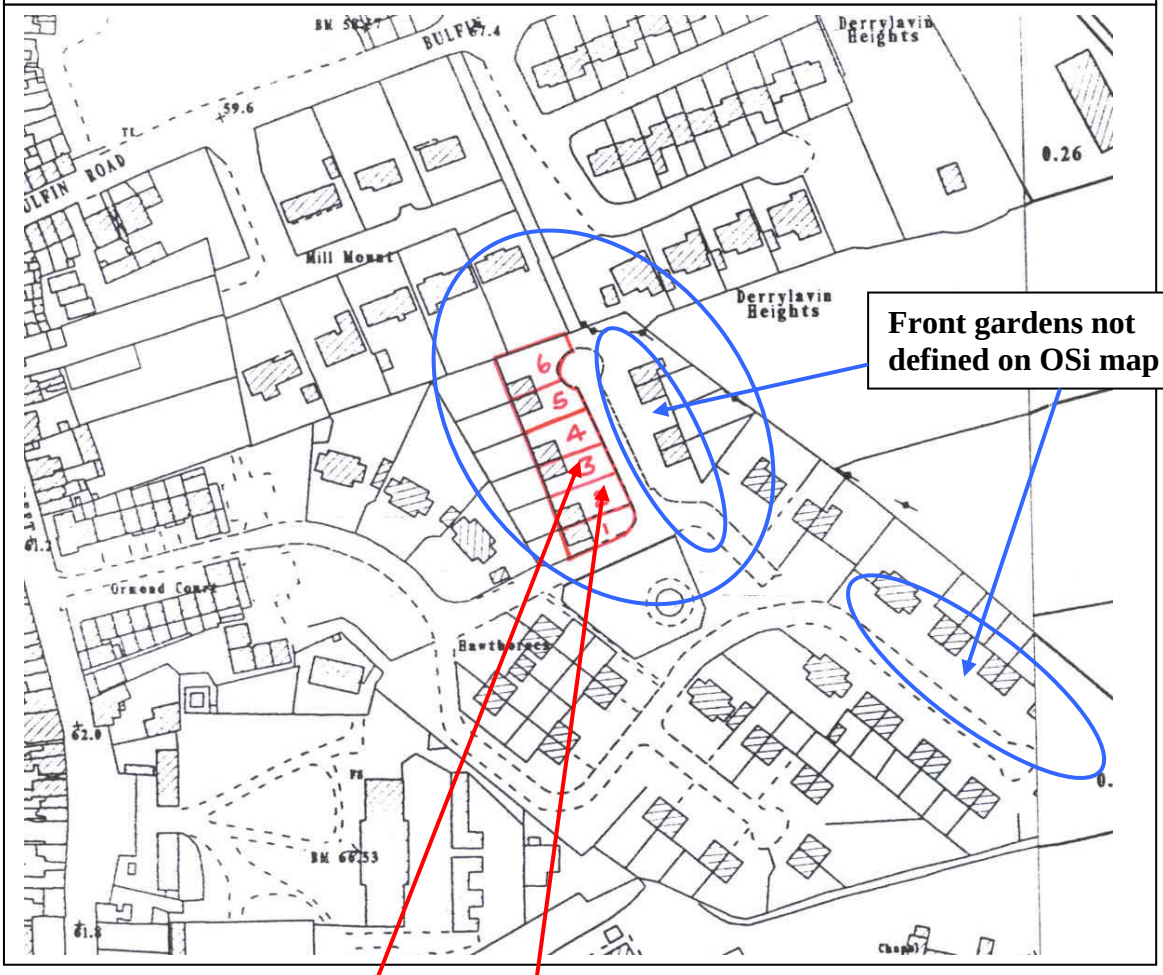
EXAMPLE 4



Within Adoption Criteria
Houses 15 to 20 Elmside
Substantially the same

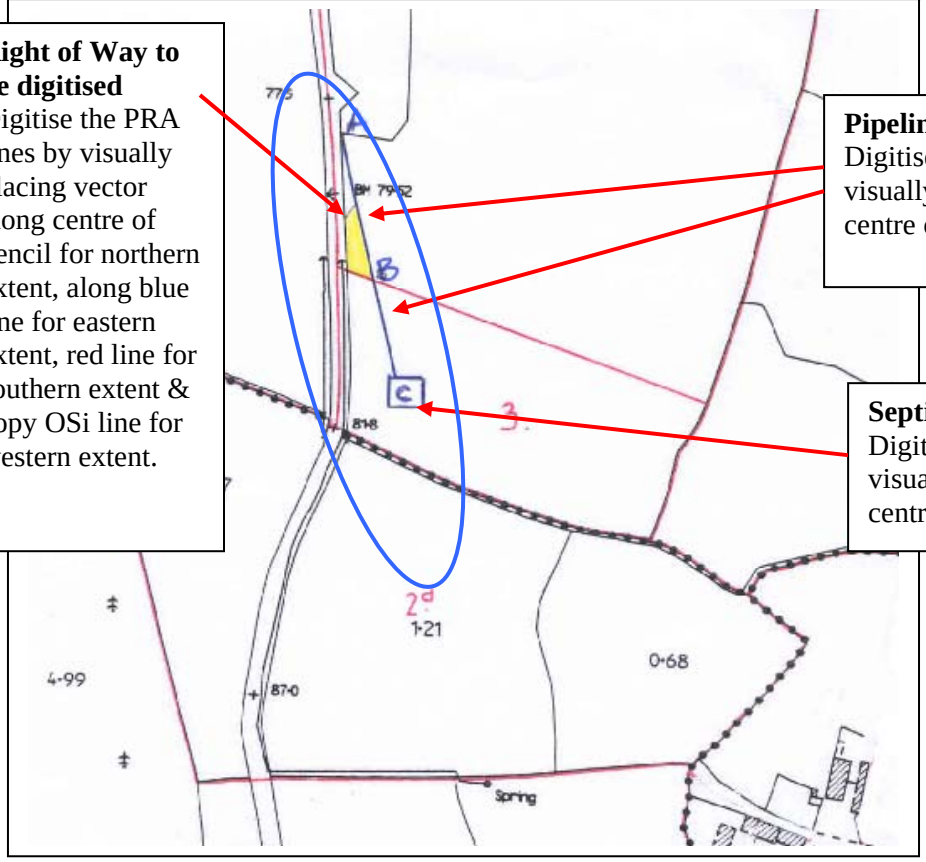
Note ESB sub site to be excluded
ESB sub-sites are identified on OSi maps with the letters ***ES***

EXAMPLE 5



Open front.
OSi detail does not show boundary for front gardens because no physical feature exists on ground at time of survey. However, registered boundary does exist and the red line indicates the position of these dividing lines.
Digitise by visually placing the vectors along the centre of the underlying registered line.
An imagette may need to be created for local control.

EXAMPLE 6

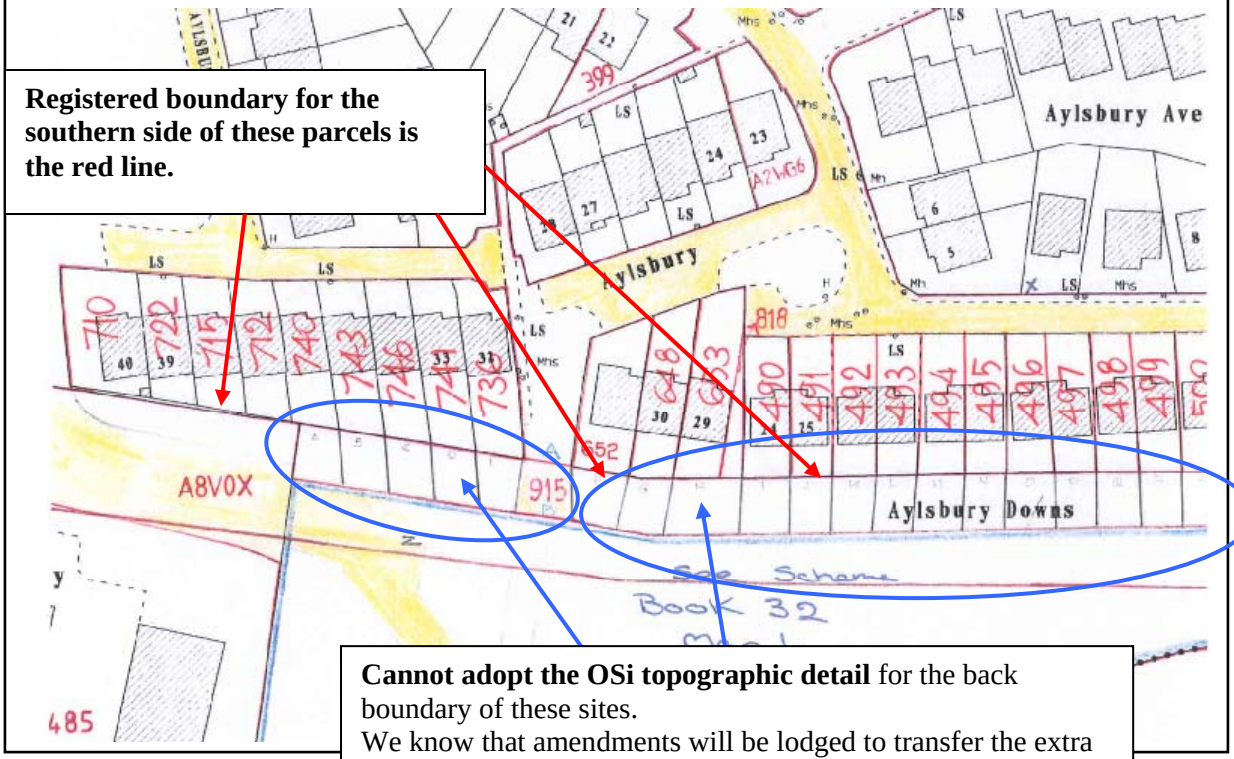


Right of Way to be digitised
Digitise the PRA lines by visually placing vector along centre of pencil for northern extent, along blue line for eastern extent, red line for southern extent & copy OSi line for western extent.

Pipeline to be digitised
Digitise the PRA feature lines by visually placing vector along centre of underlying blue line.

Septic Tank to be digitised
Digitise the PRA feature by visually placing vector along centre of underlying blue line.

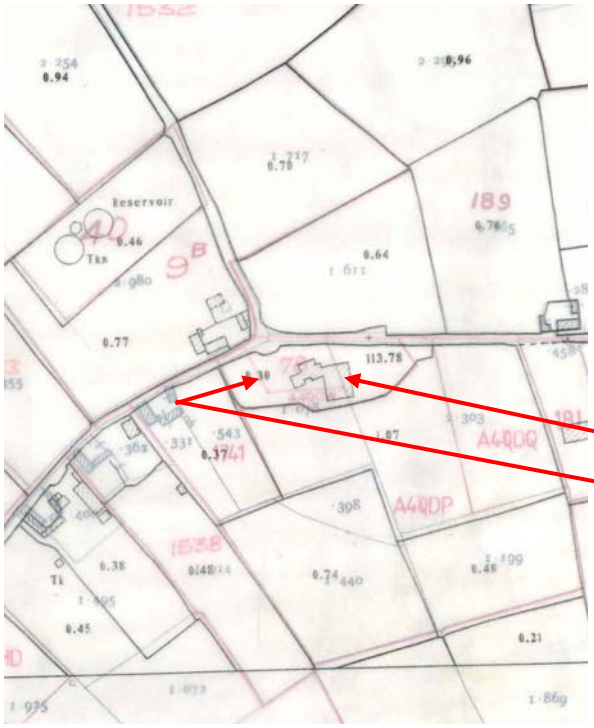
EXAMPLE 7



Registered boundary for the southern side of these parcels is the red line.

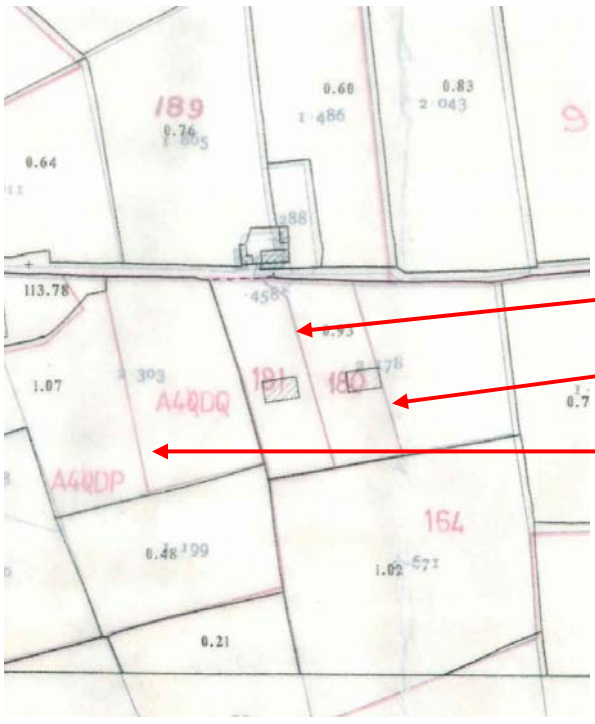
Cannot adopt the OSi topographic detail for the back boundary of these sites.
We know that amendments will be lodged to transfer the extra portions because a scheme map has been approved

EXAMPLE 8 (a)



Boundaries of Plan 78 to be digitised
Digitise by visually placing the vectors along the centre of the underlying registered line (Centre of raster red lines)

EXAMPLE 8 (b)



Some segments of Plans 180, 181 and A4QDQ to be digitised
Digitise by visually placing the vectors along the centre of the underlying registered line
(Centre of raster red lines)

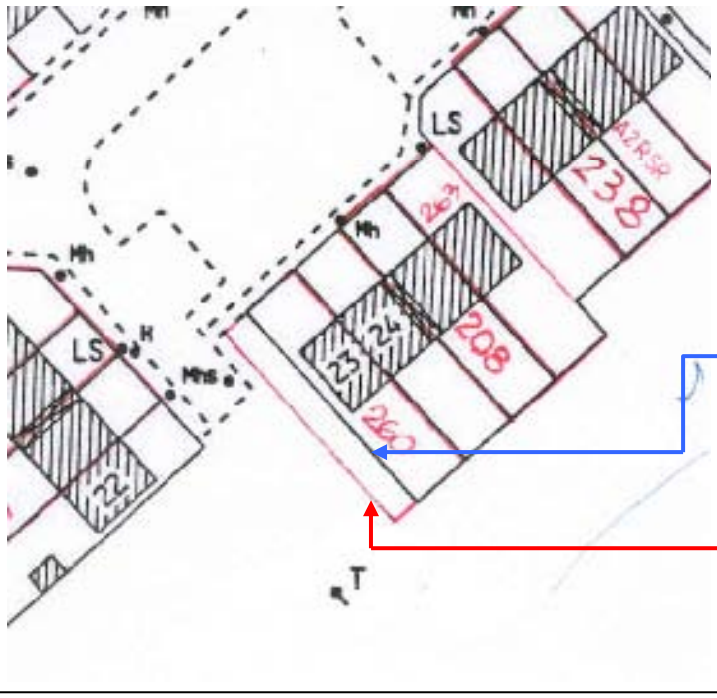
EXAMPLE 9

Digitise PRA boundary line by visually placing vector along the centre of the underlying raster line (red line)

Digitise PRA boundary line For entrances do not snap to OSi line here

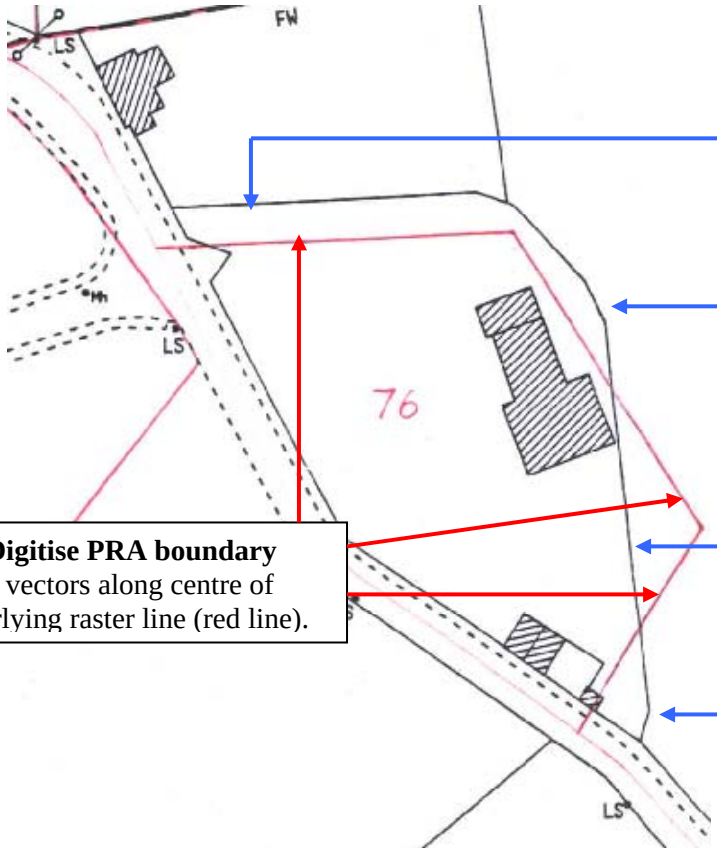
Digitise PRA boundary by placing vectors along centre of underlying raster line (red line)

EXAMPLE 10



Do not adopt OSi detail. In this case the registration was made based on the latest OSi map that was available and the applicants plotted the line outside of the OSI detail line **Digitise PRA boundary** by placing vectors along centre of underlying raster line (red line)

EXAMPLE 11

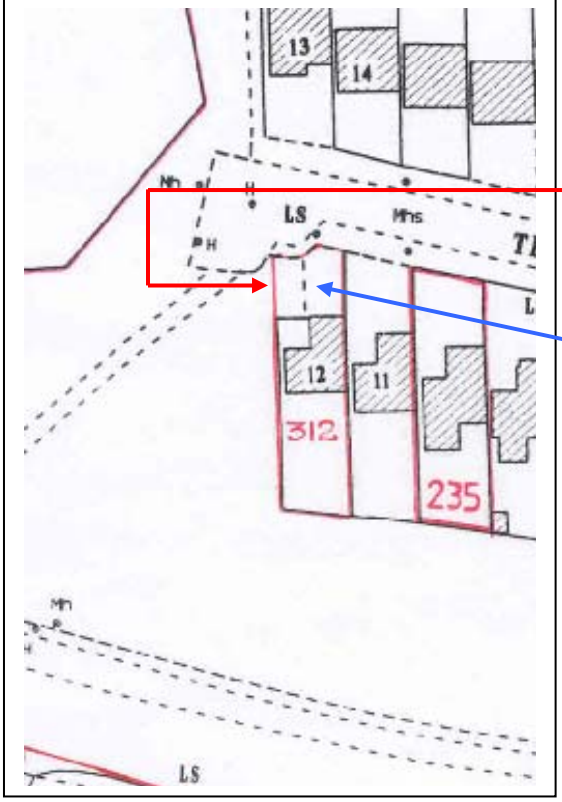


Do not adopt OSi topographic detail line.

The shape and location of the parcel boundaries do not match the OSi detail.

Digitise PRA boundary
Place vectors along centre of underlying raster line (red line).

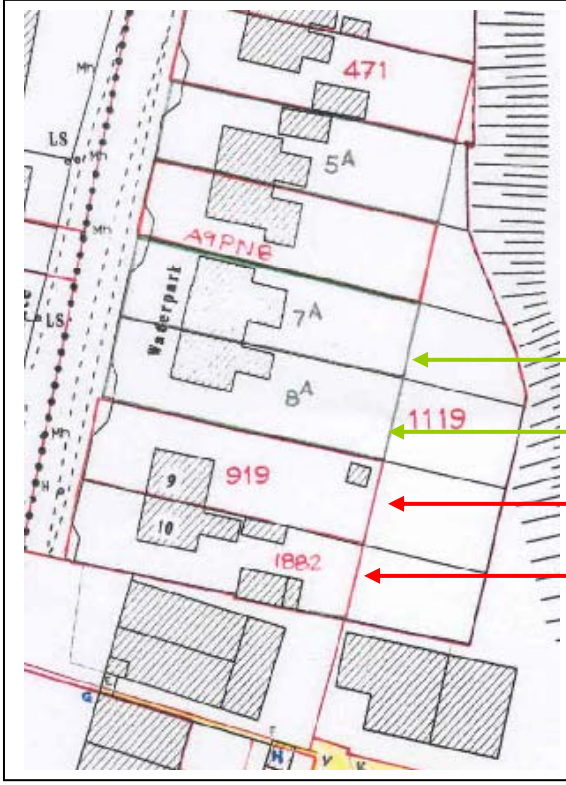
EXAMPLE 12



Digitise PRA boundary line by visually placing vector along the centre of the underlying raster line (red line)

There is no OSi detail line closing the parcel nor can the pecked line be relied upon. The PRA line must be digitised.

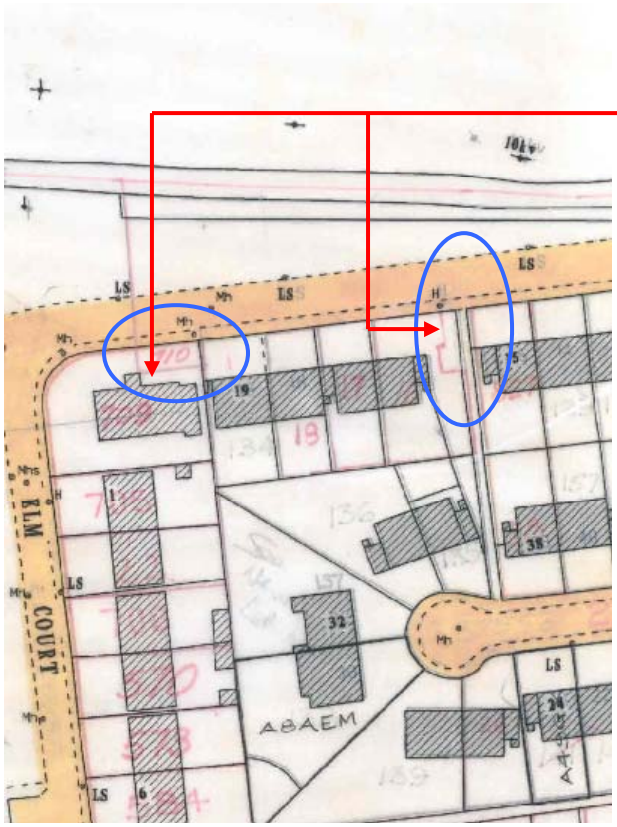
EXAMPLE 13



Cannot adopt OSi topographic detail as sites 7, 8, 9 & 10 change by more than 20% in length.

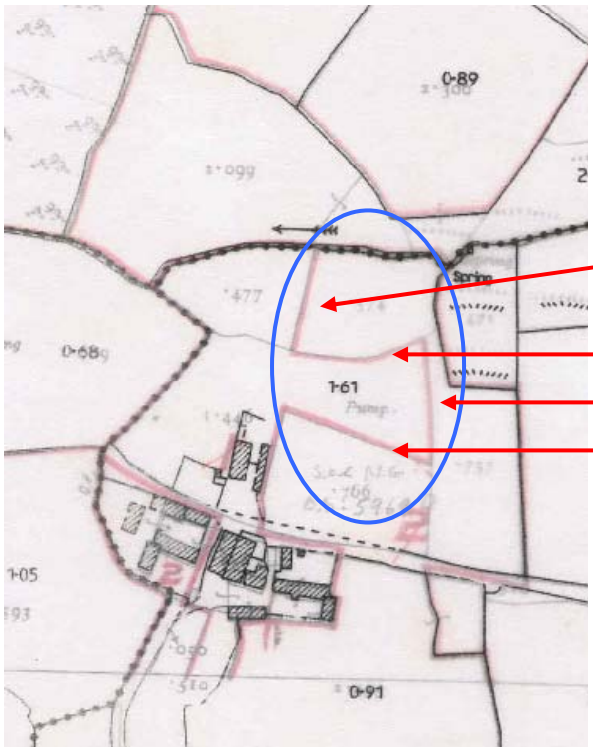
Digitise PRA boundary line by visually placing vector along the centre of the underlying raster line (red or green line)

EXAMPLE 14



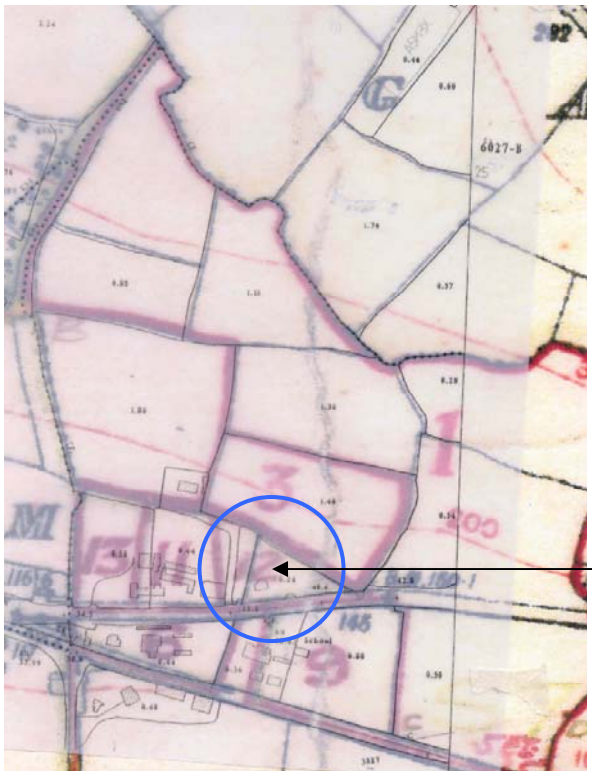
Must digitise PRA line

EXAMPLE 15



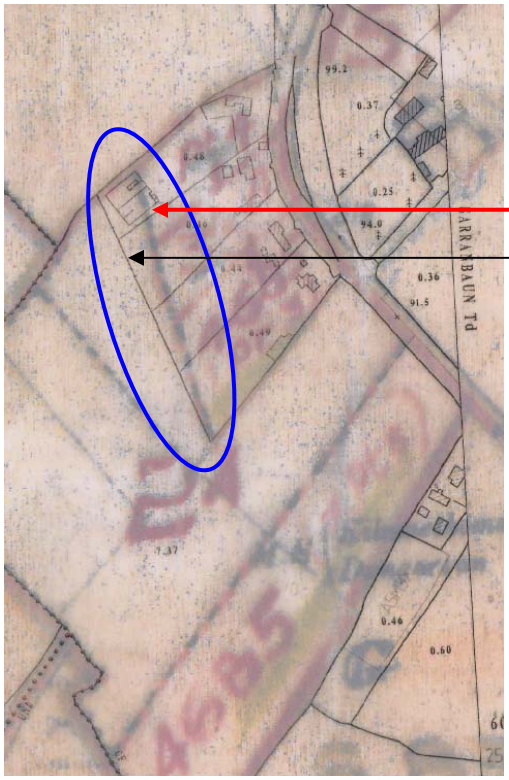
Digitise OSi raster detail line by visually placing vector(s) along the centre of the underlying OSi raster lines (**black line** not the red line in this case)

EXAMPLE 16



Digitise by placing vector along the centre of the underlying black dashed line as it forms the boundary.
The red line is used to highlight the boundary and not to represent the registered boundary

EXAMPLE 17

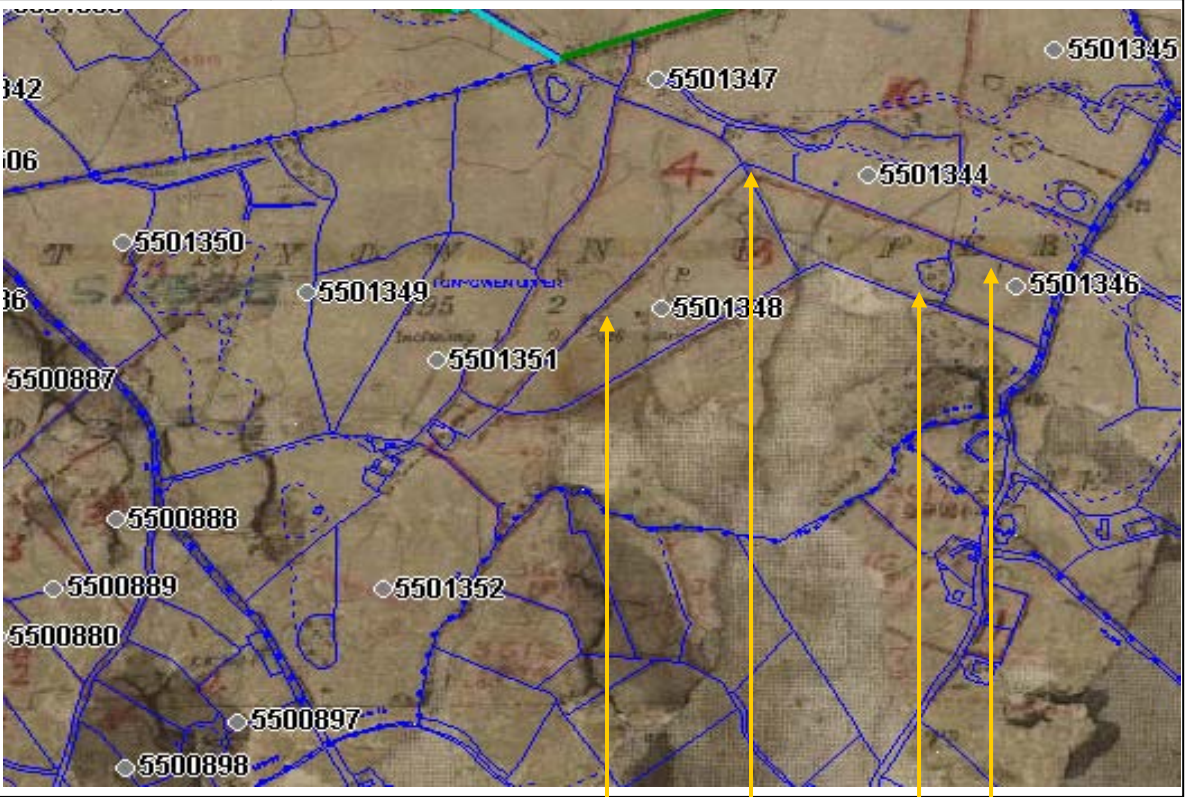


NOTE the thickness of the registered boundary lines when enlarged from 1/10560 to 1/2500

Can adopt OSi topographic detail here

More latitude to adopt OSi detail when digitising PRA boundaries onto the 1/2500 scale where registered boundary is not OSi detail on the 1/10560 scale Registry map

EXAMPLE 18 (a)	OSi detail(blue lines): vectors overlaid on PRA 1/10560 scale raster map

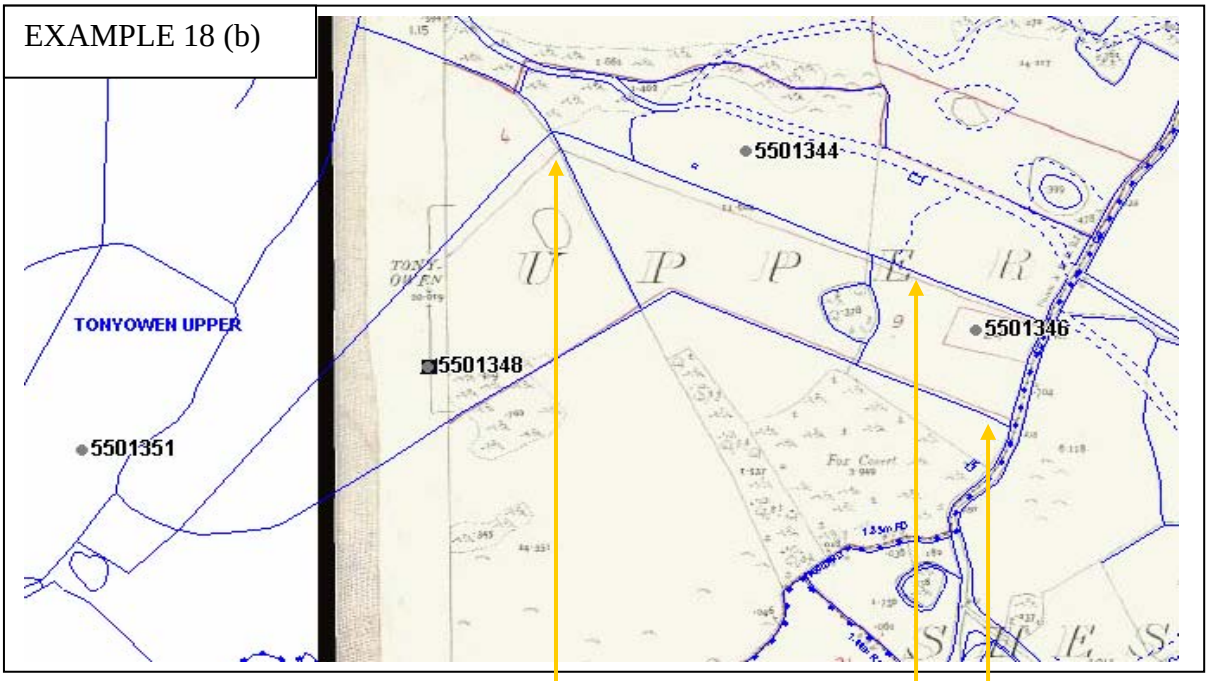


Where **the PRA boundary is not OSi detail on the 1/2500** scale map and **is now available as OSi detail on the OSi ITM projection digital map.**

It is very important to compare the new OSi detail with the 1/10560 scale map to verify if the PRA boundaries were originally mapped on that scale (1/10560) before deciding whether to adopt or not.

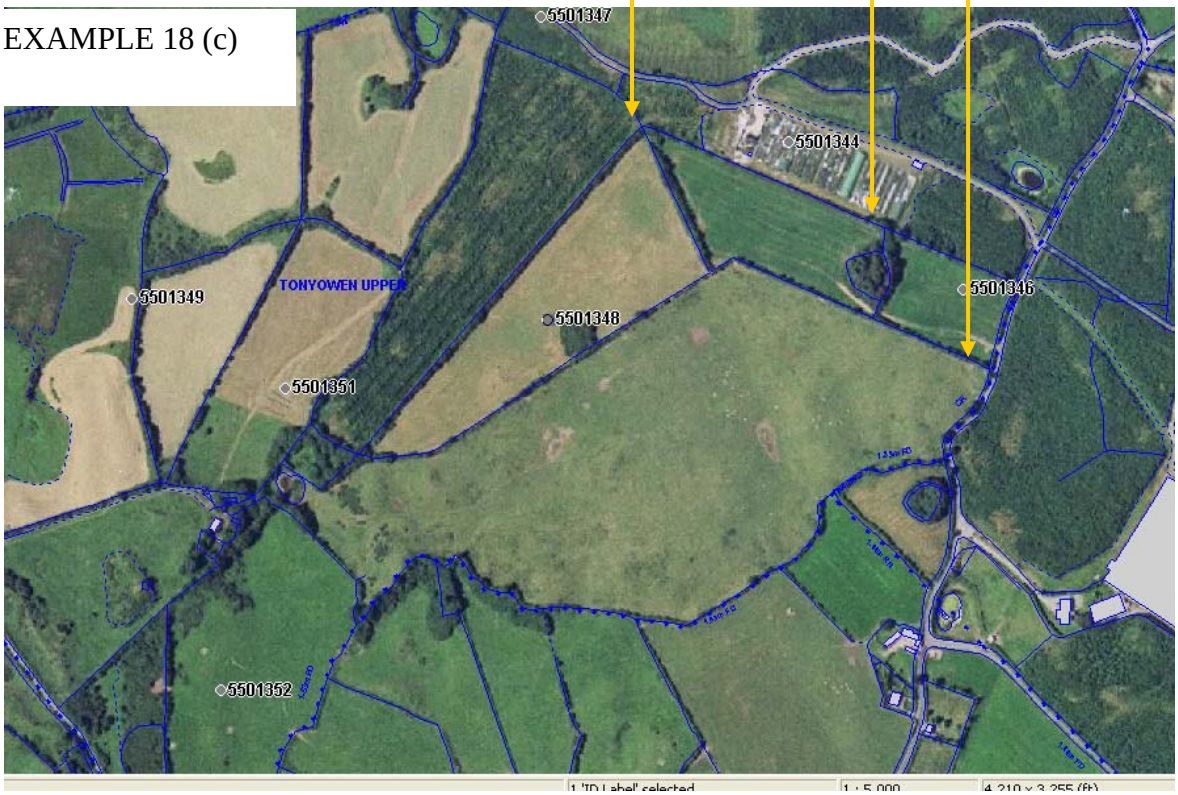
If the PRA boundaries were originally mapped on the smaller scale then the latitude for adoption can be extended to that of the smaller scale.

EXAMPLE 18 (b)

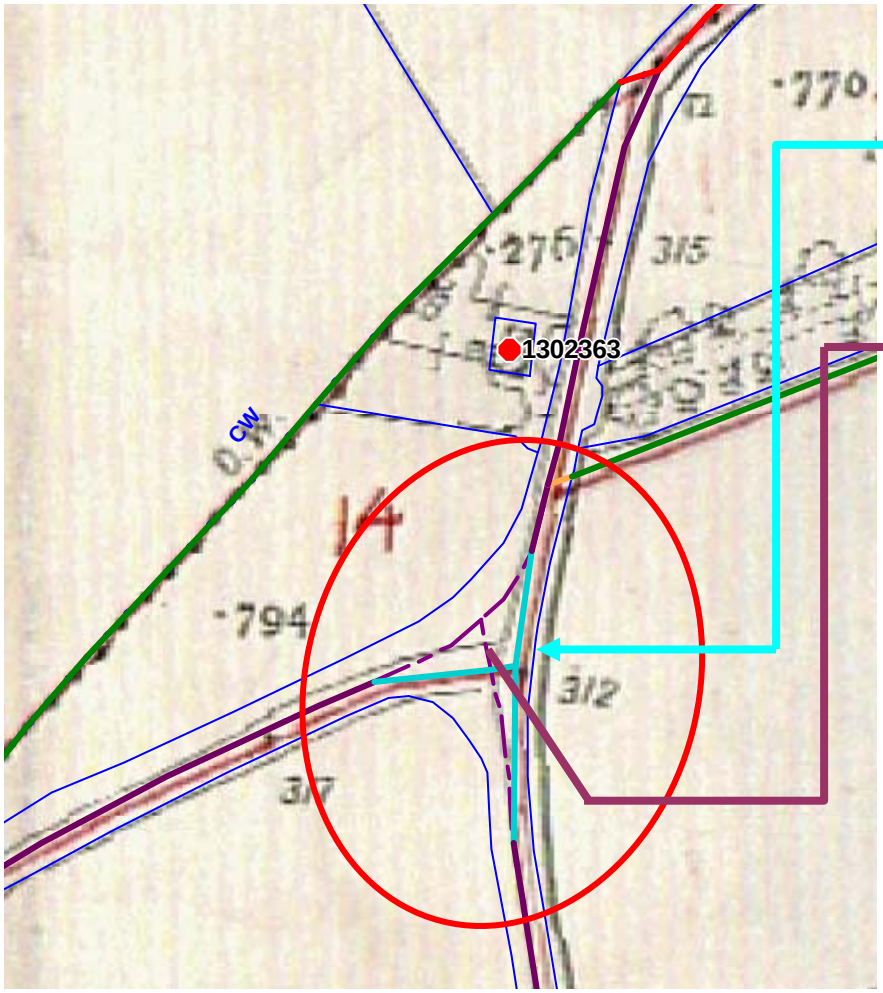


Comparing the PRA boundary with the smaller scale puts the issue of adoption into context especially when compared to the Orthophoto for the area.

EXAMPLE 18 (c)



EXAMPLE 19

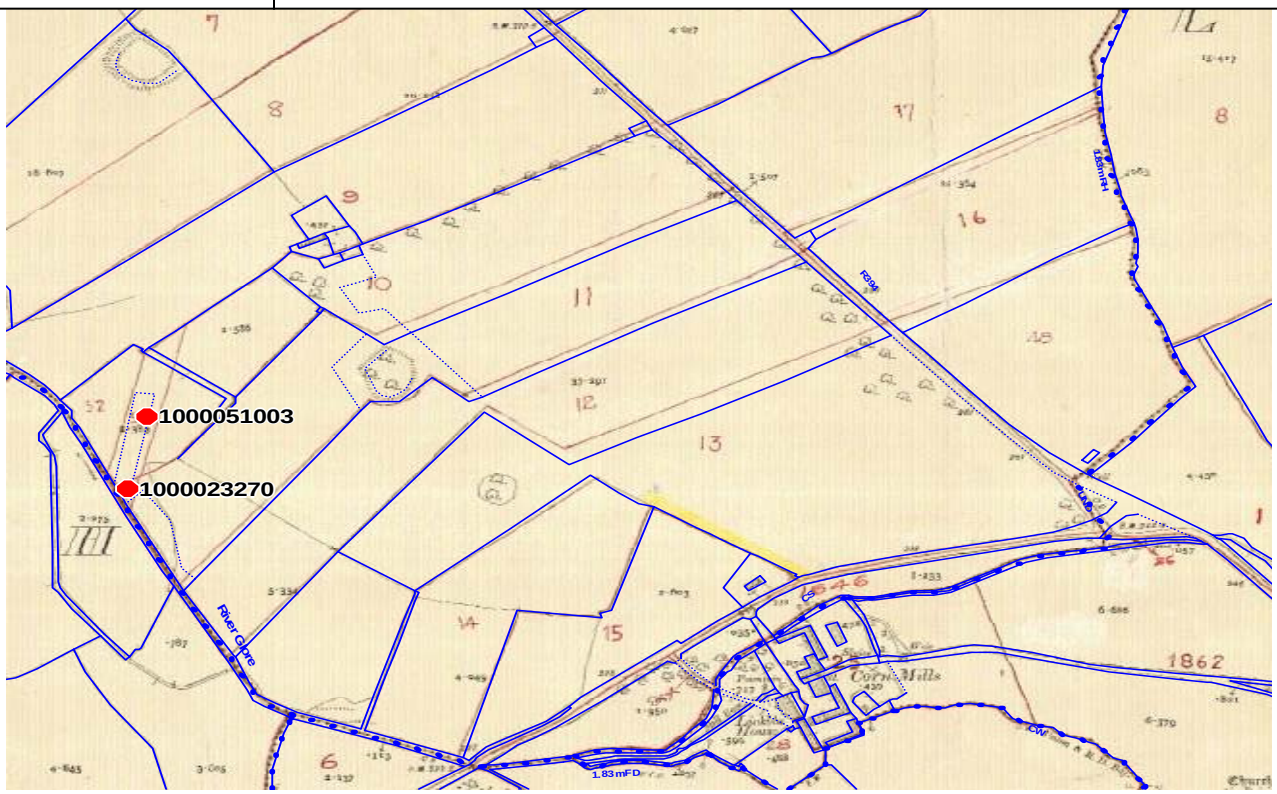


In circumstances like these, there is no need to freehand digitise the road centreline (light blue lines).

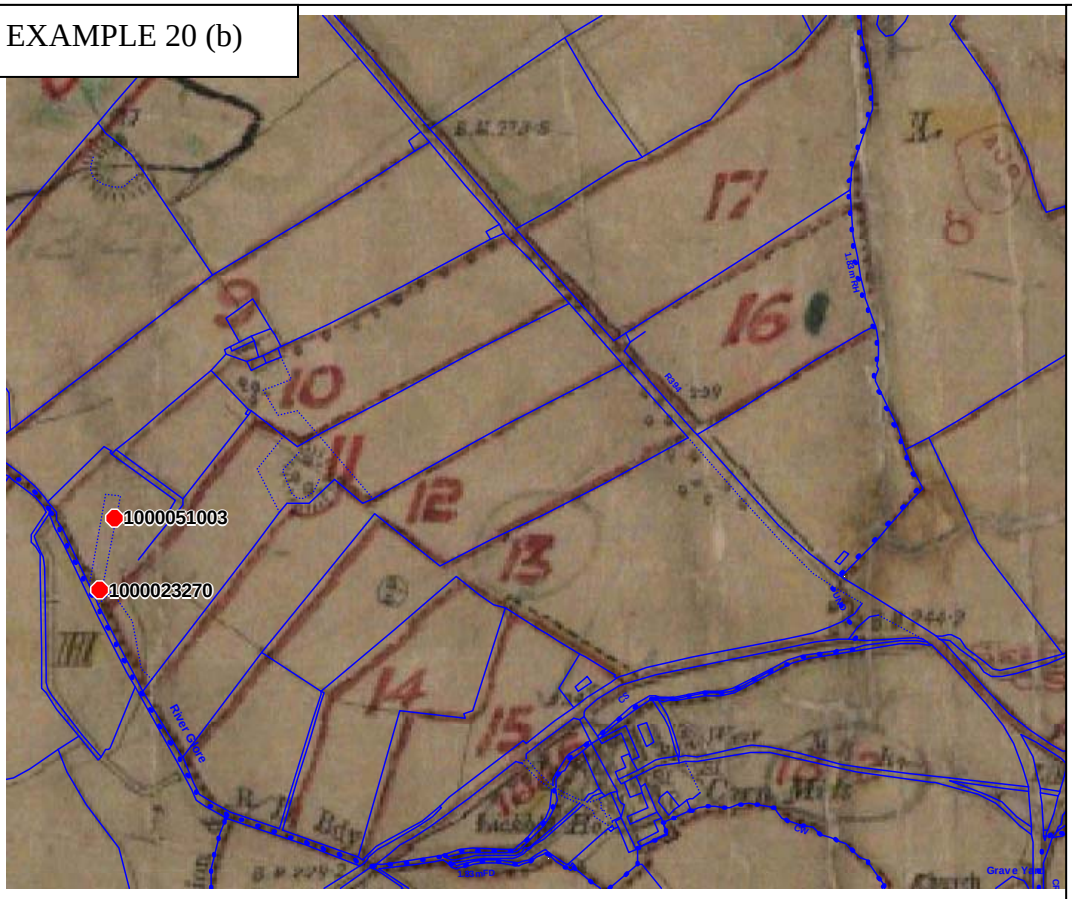
The road layout has changed between the County Series raster and the OSi ITM projection vector.
The purple line is the road centreline as digitised by OSi,

OSi detail can be adopted as it makes no material difference to the registration of any of the surrounding parcels because ownership to the centre of the public road does not indicate possession.

EXAMPLE 20 (a)	**PRA 1/2500 County Series Raster behind OSi ITM Vector (Blue Lines)** Some of the Registered boundary lines in this image appear to be outside the adoption criteria.



EXAMPLE 20 (b)



PRA County Series 1/10560 behind OSi ITM Vector (Blue Lines)
Registered boundary lines in 1/10560 image are a very good match. **All PRA map scales must always be consulted at some stage in the digitisation process** to avoid the following being digitised. (See 20(d) and 2o (e)

In rural areas the 1/10560 must be compared to registered boundaries as these were often the original source maps

EXAMPLE 20 (c)

OSi vectors highlighted as light blue lines in this image over orthophoto.

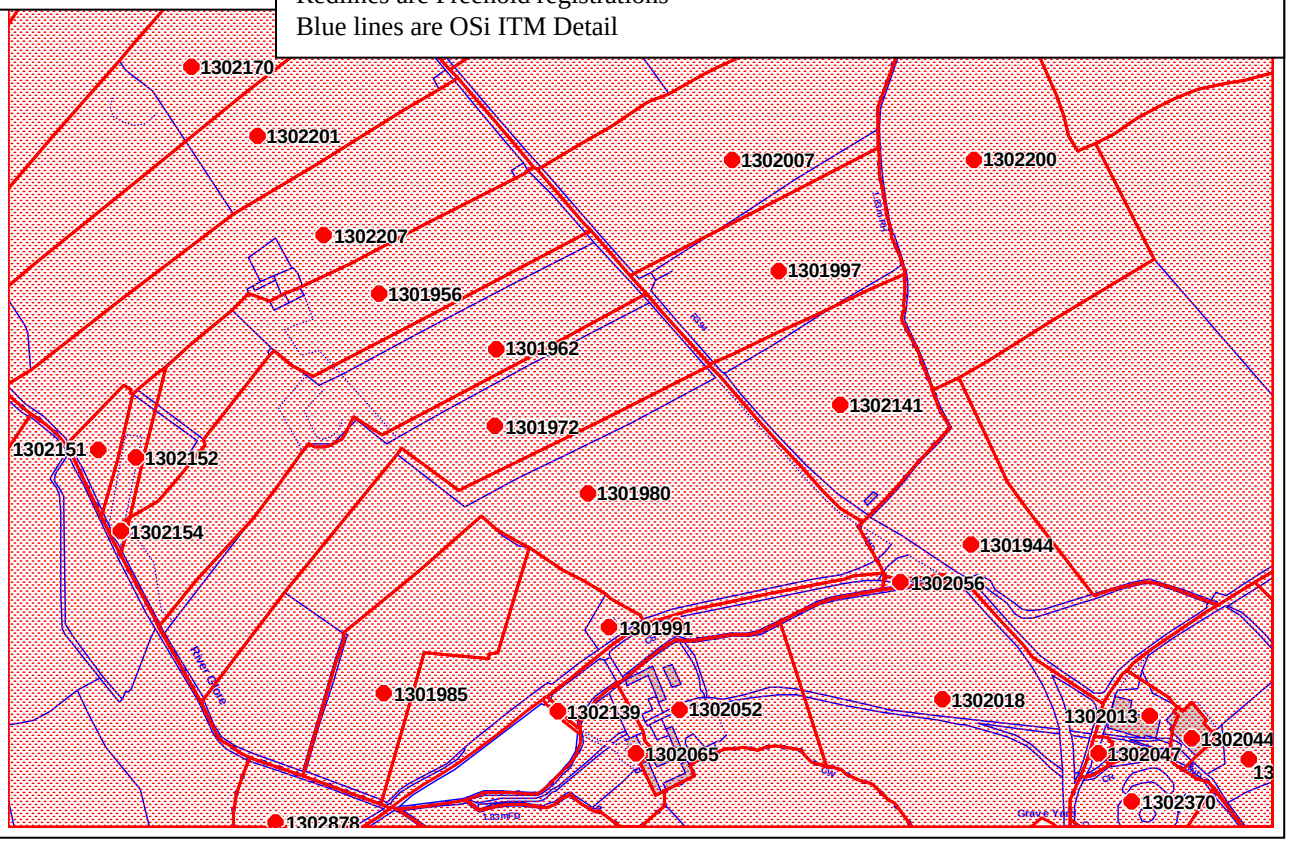
The digitised boundaries should be snapped to OSi topographic detail on the ITM in accordance with the registered boundaries on the 1/10560 (original source map) and not digitised from 1/2500 scale map.

The discrepancy in the position of the boundaries between the different scale Registry maps would have been introduced when plotting boundaries onto the 1/2500 from the smaller scale.

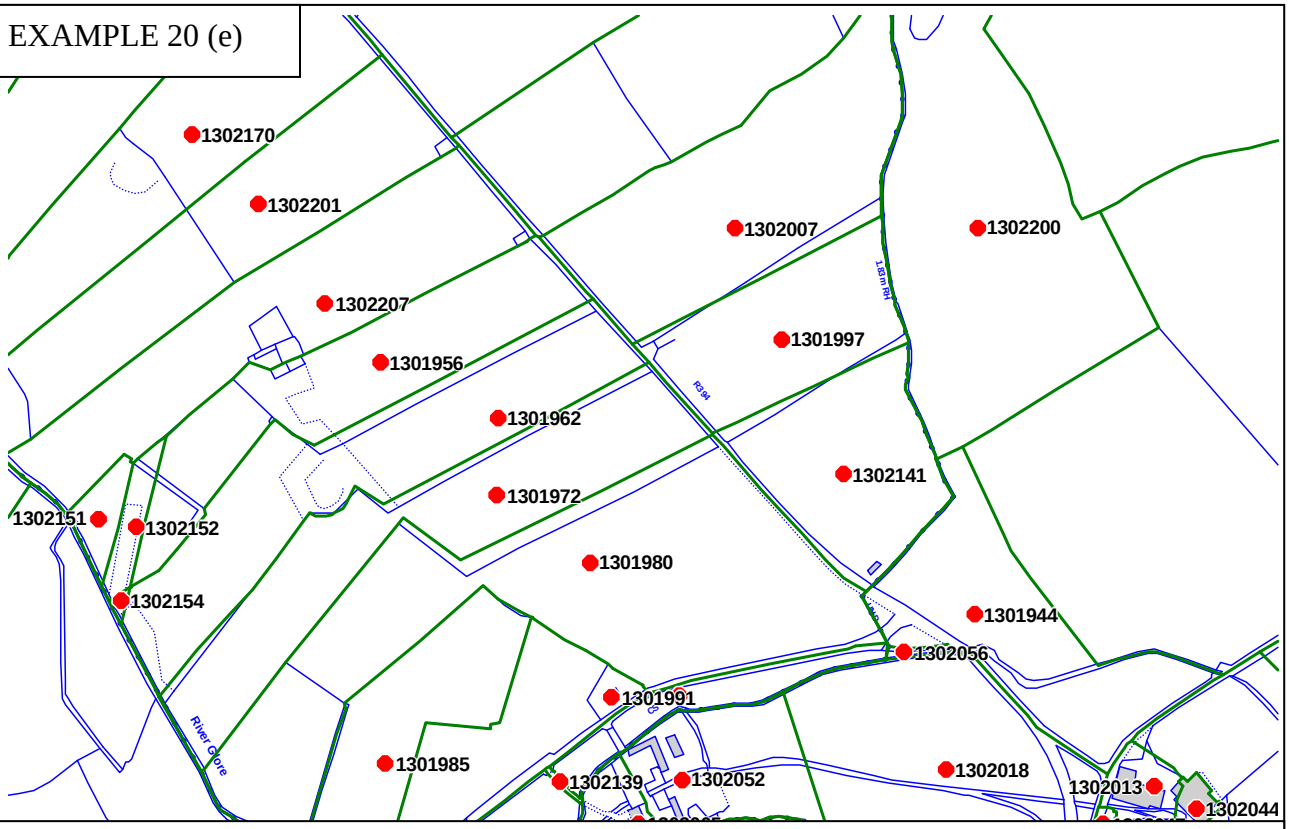
The boundaries on 1/2500 should be ignored and the 1/2500 tolerance of 5m should not be applied

EXAMPLE 20 (d)

Digitised boundaries by Title - Sample of what RMSI have digitised
Redlines are Freehold registrations
Blue lines are OSi ITM Detail

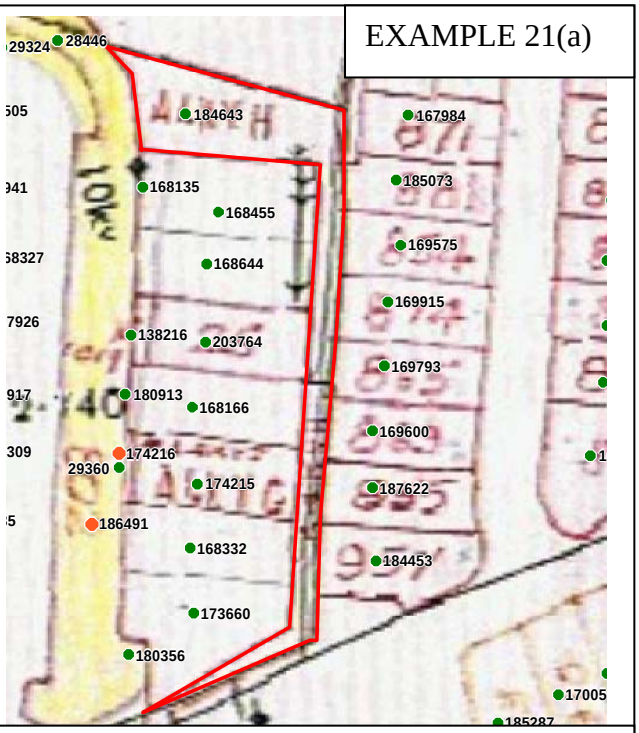


EXAMPLE 20 (e)



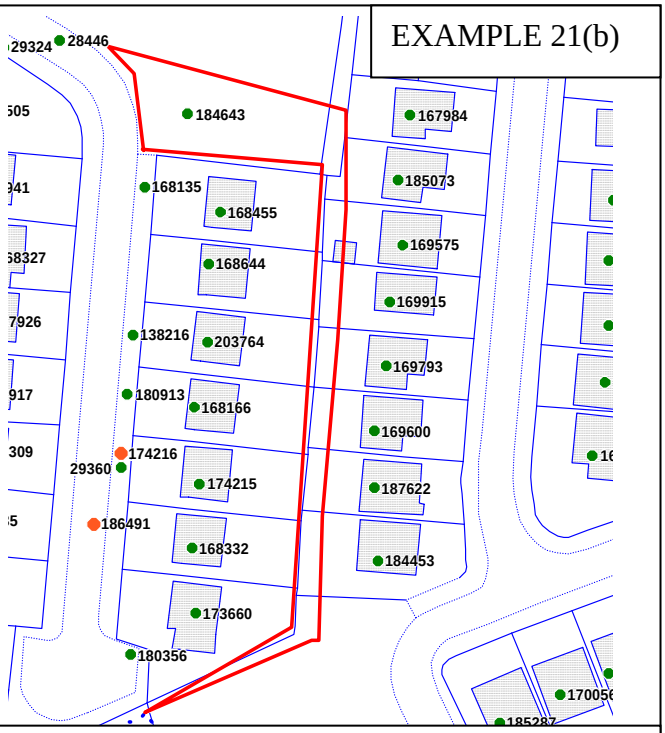
Digitised boundaries displayed by confidence. The Green lines are High confidence?
Confidence code should not be considered high where there are OSi ITM lines nearby that could be adopted? Even if this was the correct outcome, **where there are OSi vectors available that could be adopted but are outside the adoption criteria, the confidence code allocated to that feature should be considered as low** (especially from a Registry perspective) because these are the lines that we will want to pay particular attention to.

EXAMPLE 21(a)



PRA Image of above Plan belongs to the developers Folio. It is basically a plot of land that remains after sites have been transferred. The strip does not exist on the ground. See Ortho in Example 21(e) .

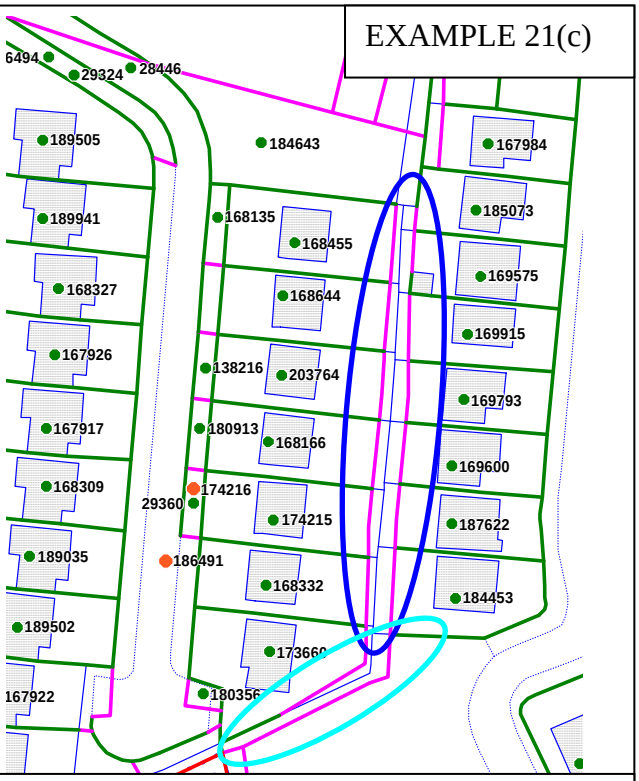
EXAMPLE 21(b)



This is the problem facing RMSI.

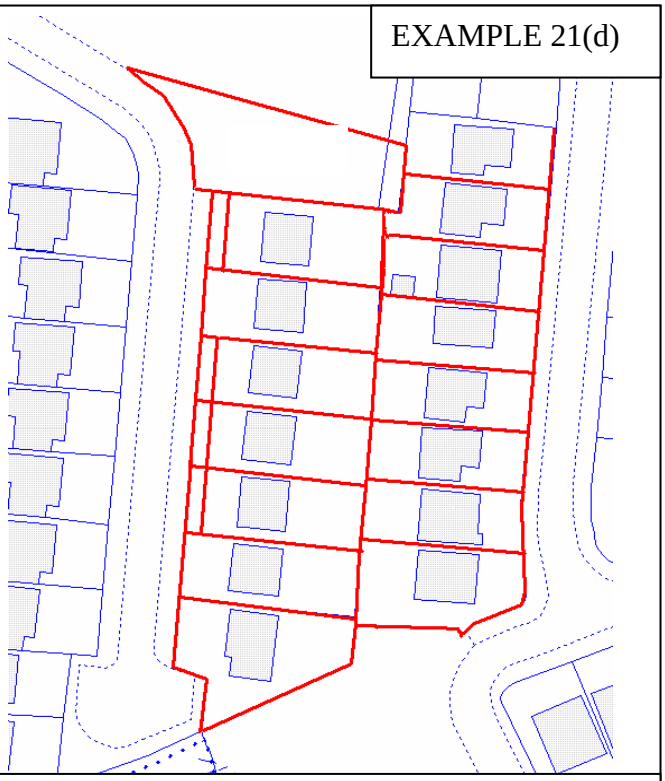
What to do where there is no gap at the back of the sites on the ITM? – Developer has no access to strip

EXAMPLE 21(c)



RMSI have not adopted because they face a dilemma with what to do with the strip circled in dark blue and then what happens to the piece at the end of the strip circled in light blue.

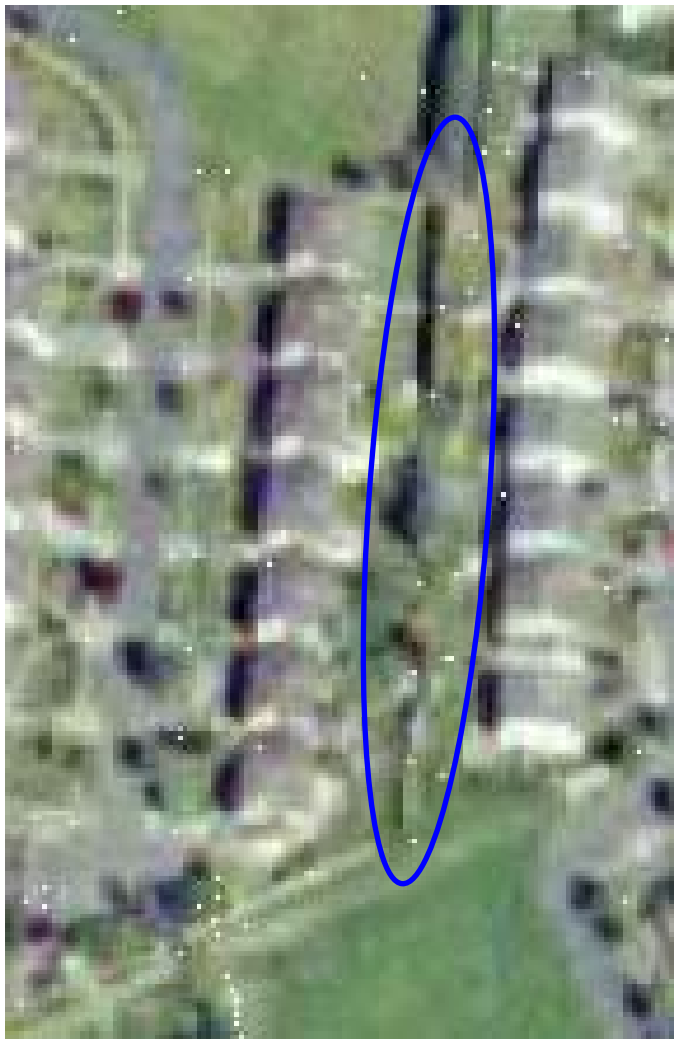
EXAMPLE 21(d)



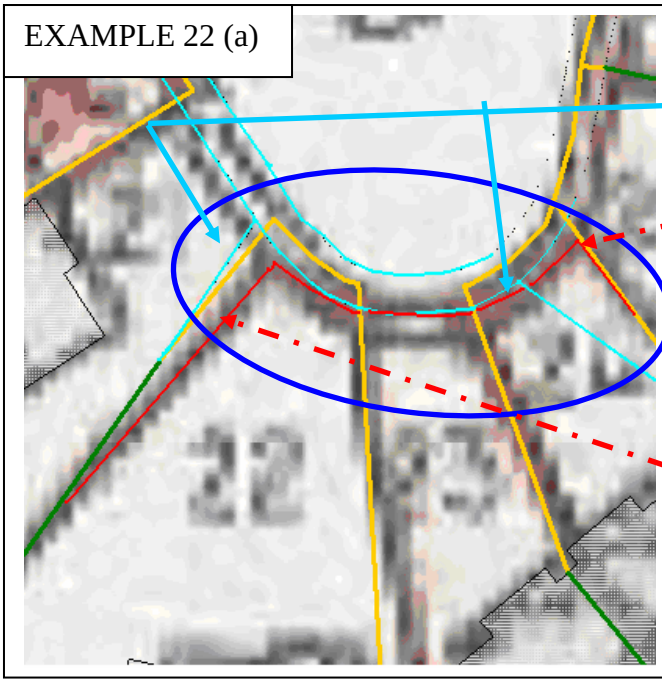
PRA want to adopt OSi detail as indicated in above image. There is still a parcel that represents plan A4KYH on the developers Folio. The shape and size of the plan is not as important as adopting the OSi detail because the developer is no longer in possession of that strip of land on the ground.

Aeial photo of the development supports the view
that there is no passage to the rear of the houses

EXAMPLE 21 (e)

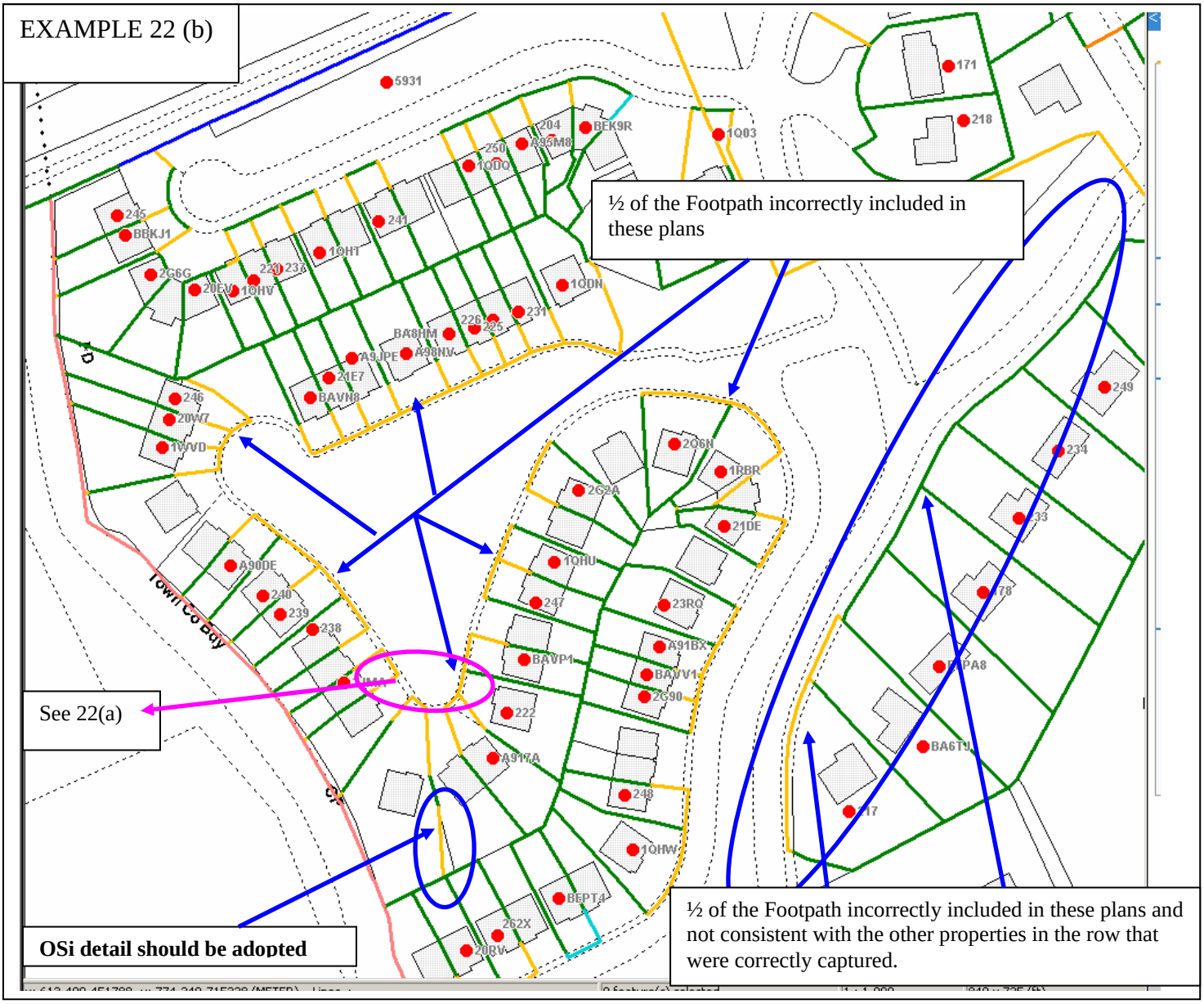


EXAMPLE 22 (a)

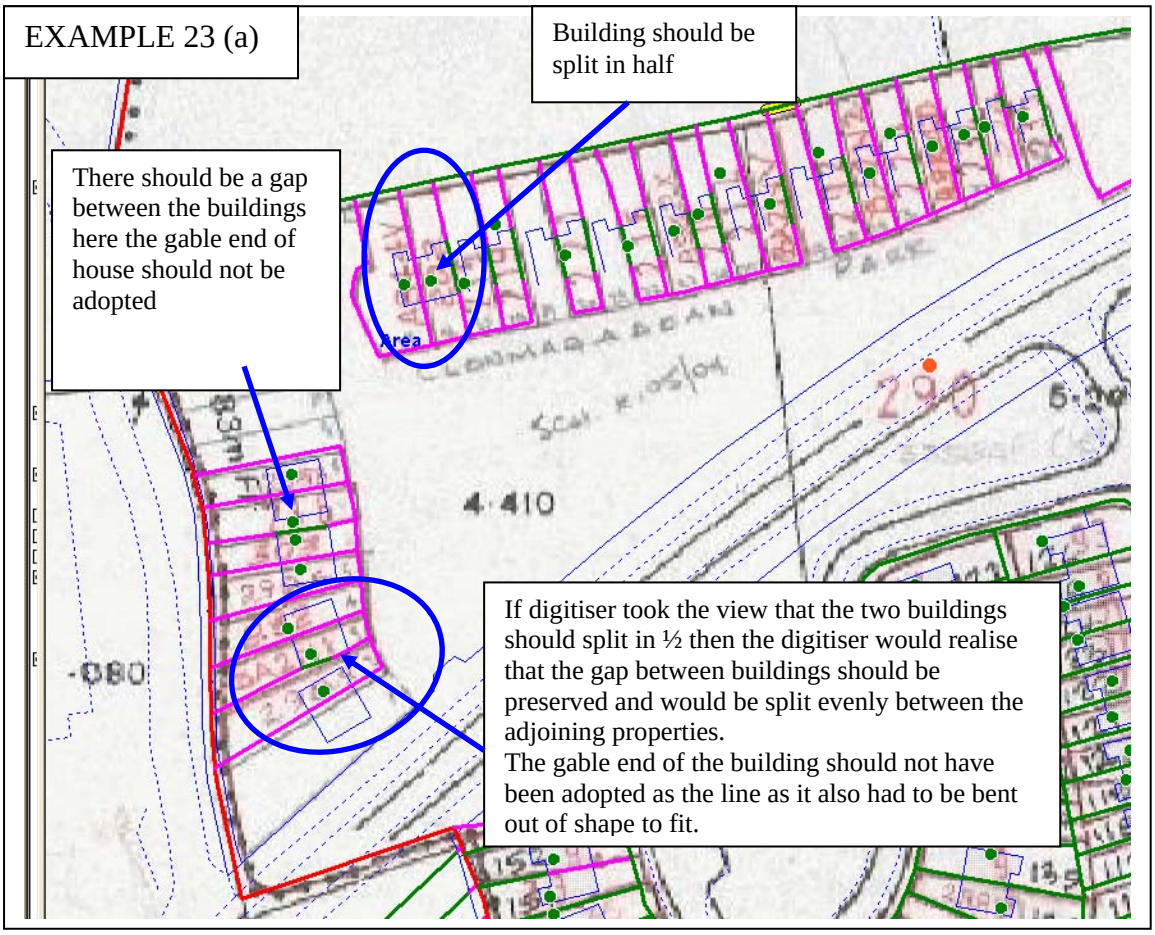


OSi edge of footpath detail (highlighted as a light blue line) should be adopted here.
Distance between the two OSi lines measures 12m (approx) on the ITM and 13m (approx on PRAI image (red lines). Divide the 3 plans along the front by digitising points 4m apart would give best result
Front of properties should be snapped to the inner light blue line which is the edge of the footpath and should not be digitised to the yellow lines which have been incorrectly placed along ½ the footpath

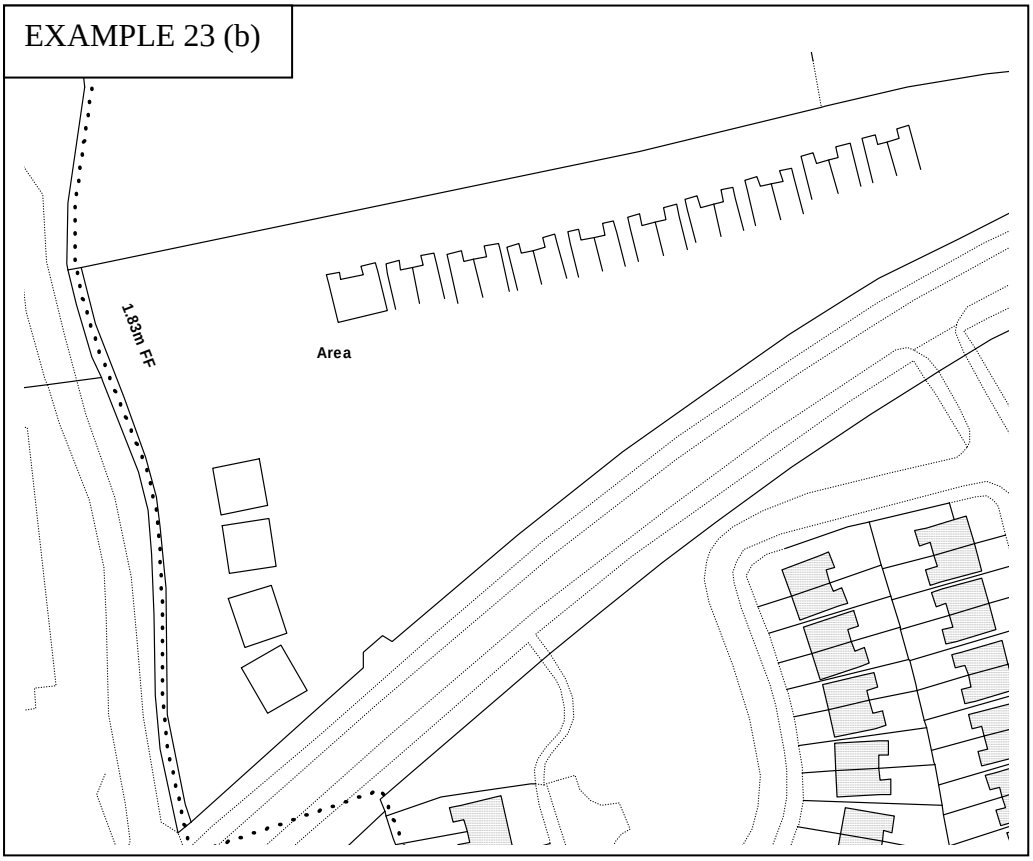
EXAMPLE 22 (b)



EXAMPLE 23 (a)

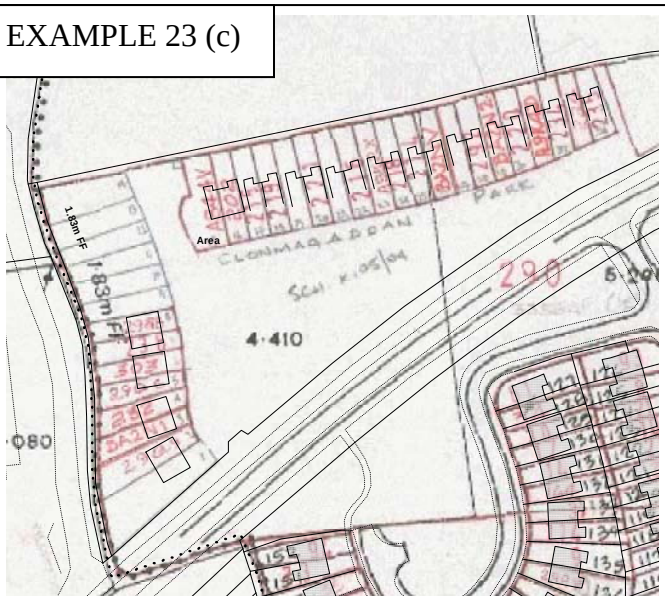


EXAMPLE 23 (b)

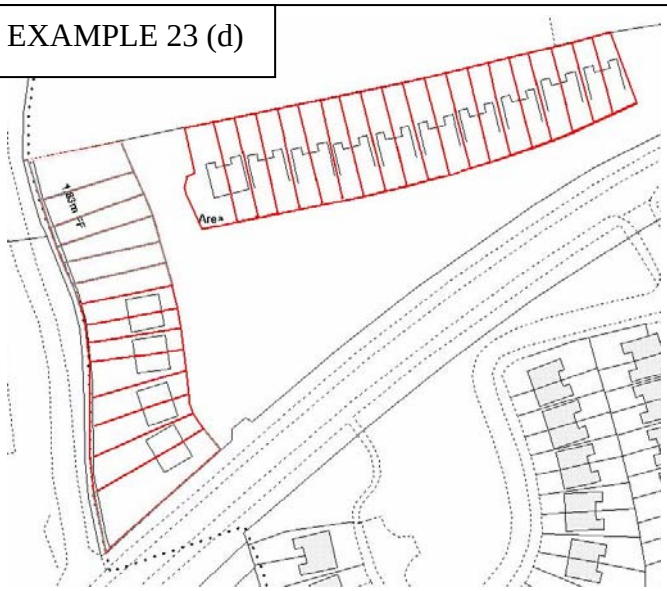


Problem facing Data Capture bureau is that the available lines in the ITM do not provide enough geometry to complete the plans example 23(c) and the available OSi vectors do not fit neatly in with the sites as registered in the develepoment and shown on the underlying PRA image Example 23 (c).

EXAMPLE 23 (c)



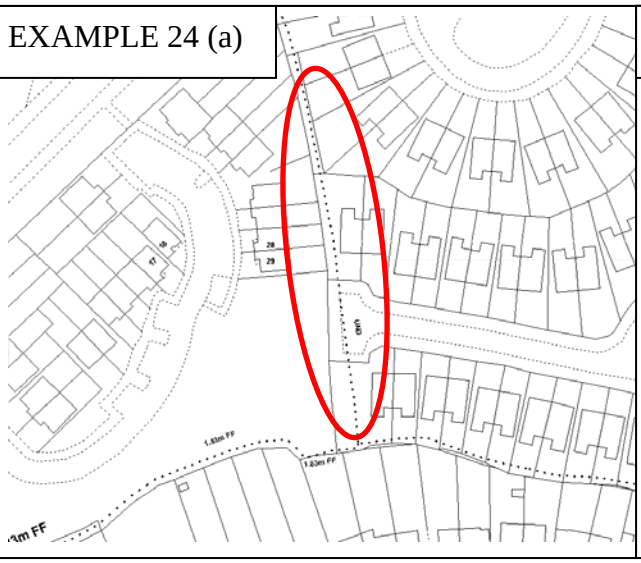
EXAMPLE 23 (d)



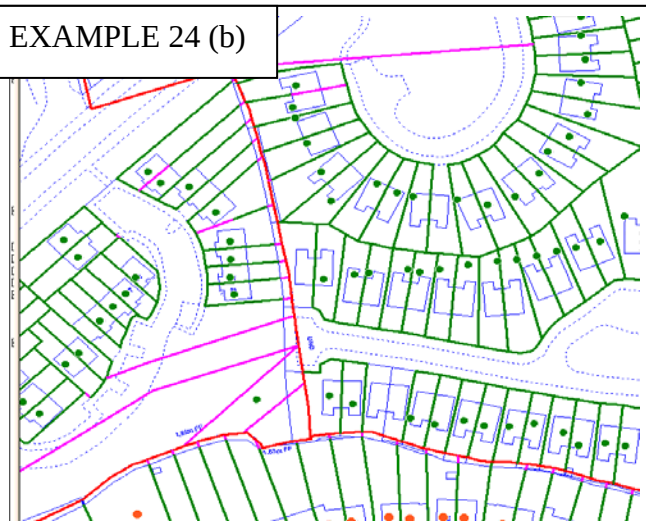
The outcome of making the adjustments can be seen in above image Example 23 (d)

Position of the Townland boundary in development schemes can cause problems. The sites circled below extend beyond the Townland boundary. Image 24(b) shows how RMSI have given ownership of the areas in question to the adjoining neighbours. Sites on the east side of the Townland boundary lose out and the ones on the west side gain when on the ground they own to the physical feature

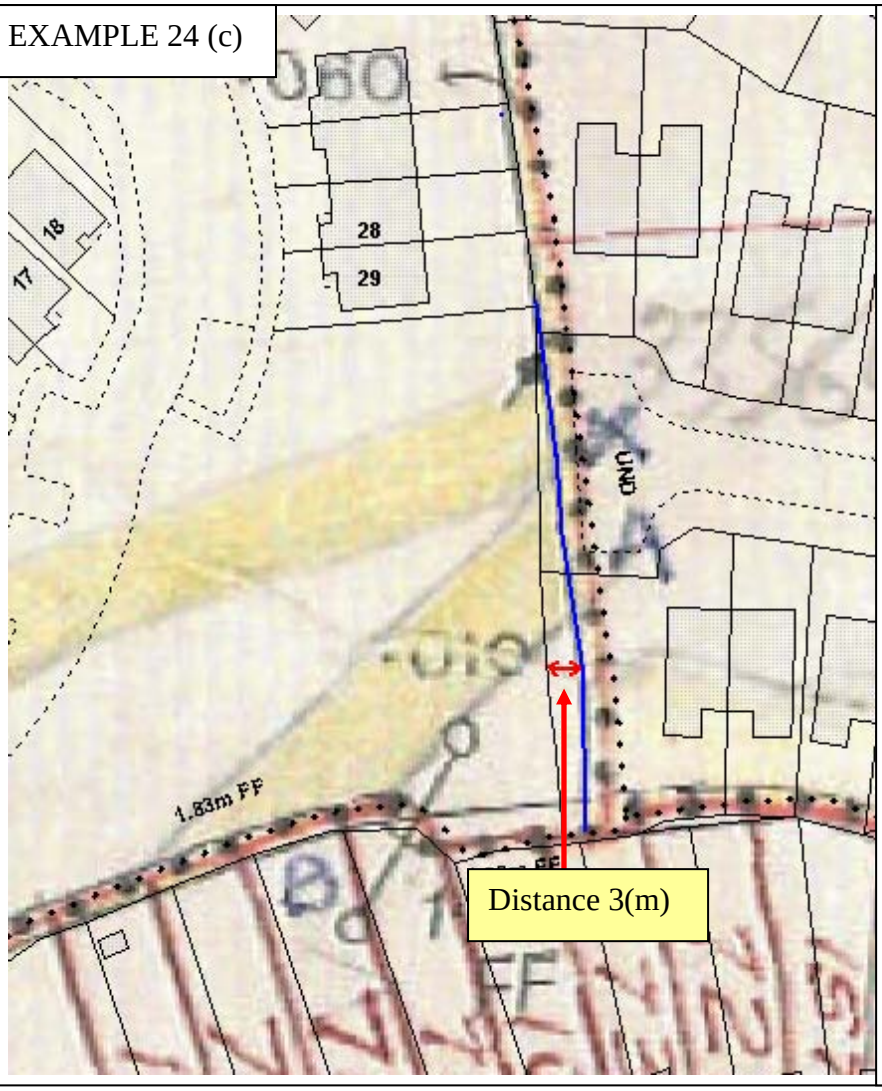
EXAMPLE 24 (a)



EXAMPLE 24 (b)



EXAMPLE 24 (c)



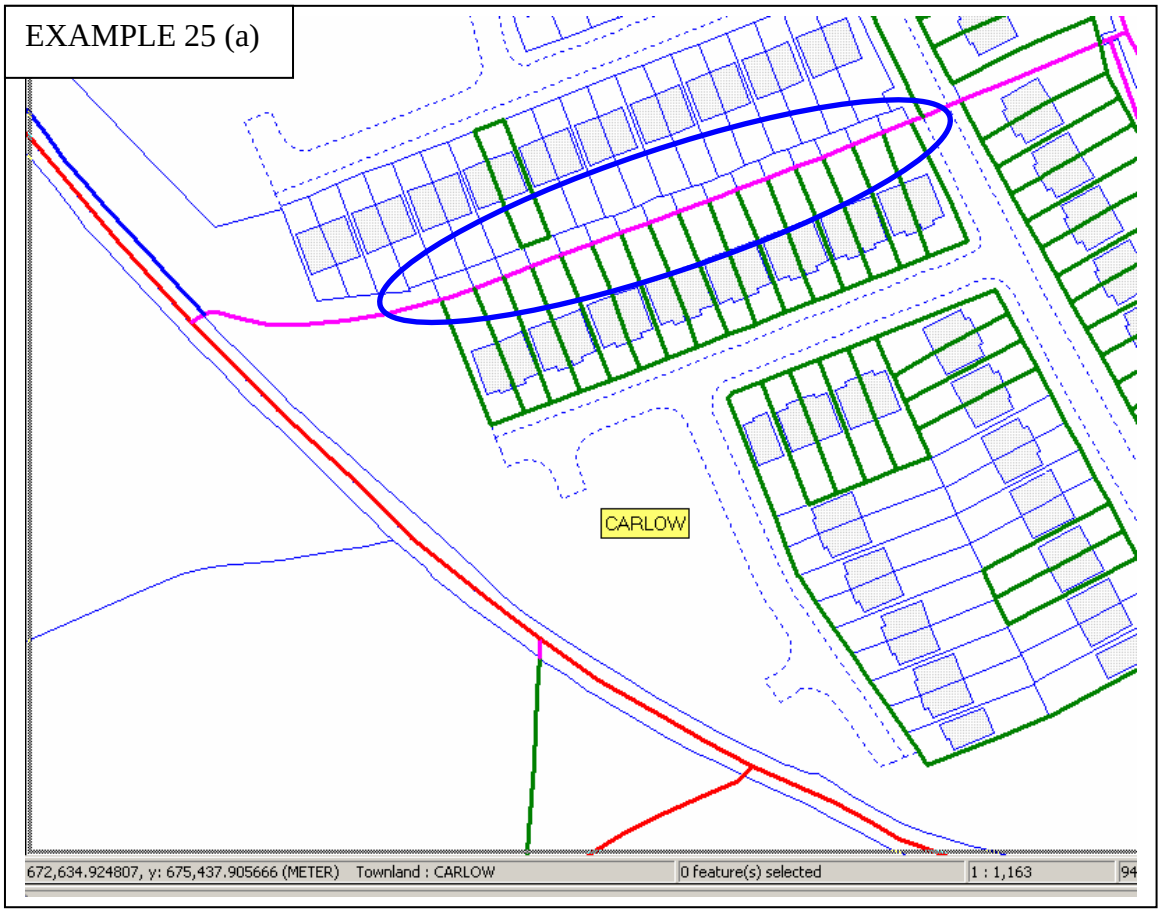
The position of the old OSi topographic detail line is highlighted in blue in this image. The undefined Townland boundary on the old edition map ran parallel 1.83m from the physical feature.

The distance between the new OSi feature and the old OSi feature measures 3m approx it is within adoption criteria so we want to snap to new OSi topographic feature.

We do not want to appear to take, what would on the ground be, a large part of the parcel in a housing estate and include it in an adjoining property,

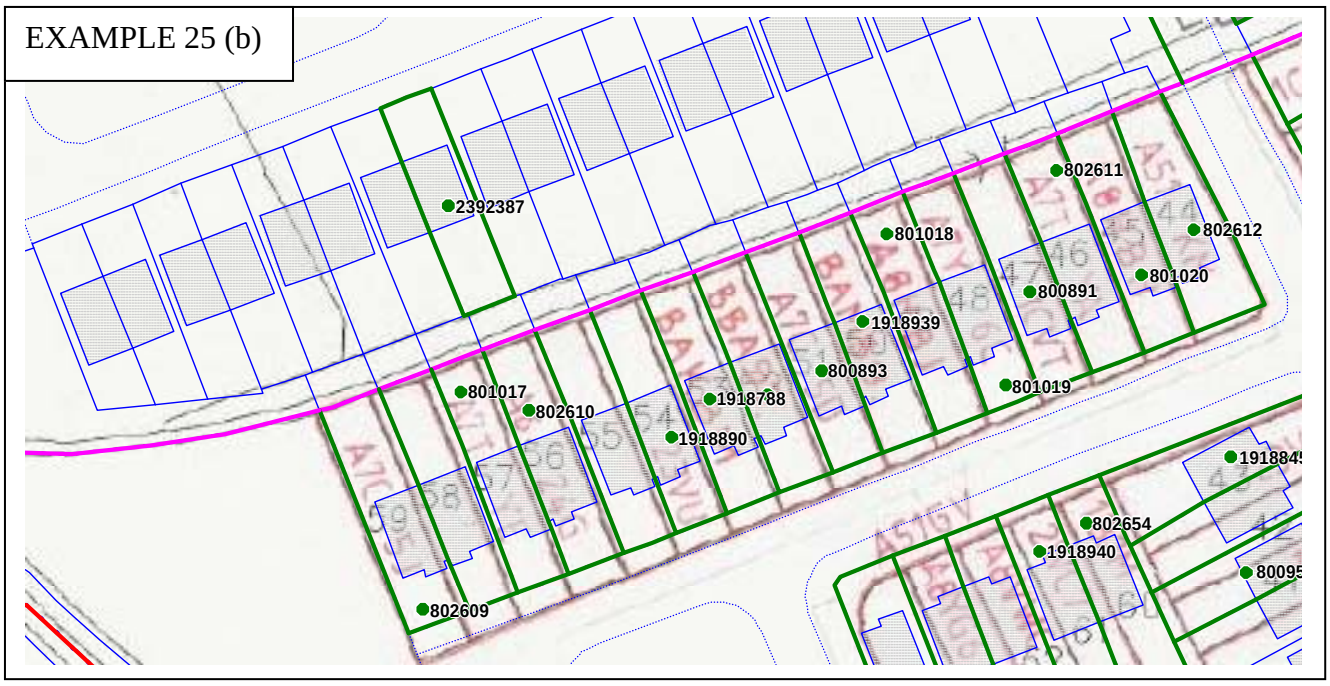
RMSI should not follow the Townland boundary in these cases.

EXAMPLE 25 (a)



The sites in this development must be captured at the back up to the OSi detail line including the strip regardless of the position of the historical boundary line between the properties otherwise we will create a gap that does not exist on the ground and end up shortening the length of these sites.

EXAMPLE 25 (b)



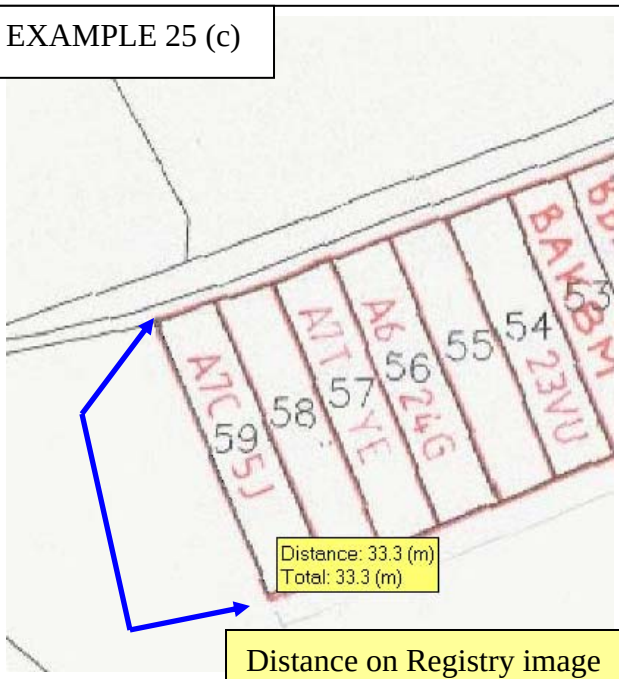
The key point in capturing the boundary data in development schemes is to: -

- Check what the desired outcome should be.
    - Are there the same number of sites in the row or batch of properties being assessed?
    - Are the properties by and large the same shape and size?
    - Do more local adjustments to the source PRA image need to be made before deciding the outcome?

- What is the reason why the plans cannot be formed by adopting the available OSi ITM detail?
    - Are one or two sites in the row or batch of houses that are causing the problem?
    - Problems fitting one or two parcels should not dictate the outcome with the result that we get the majority of the other plans in the development wrongly digitised.

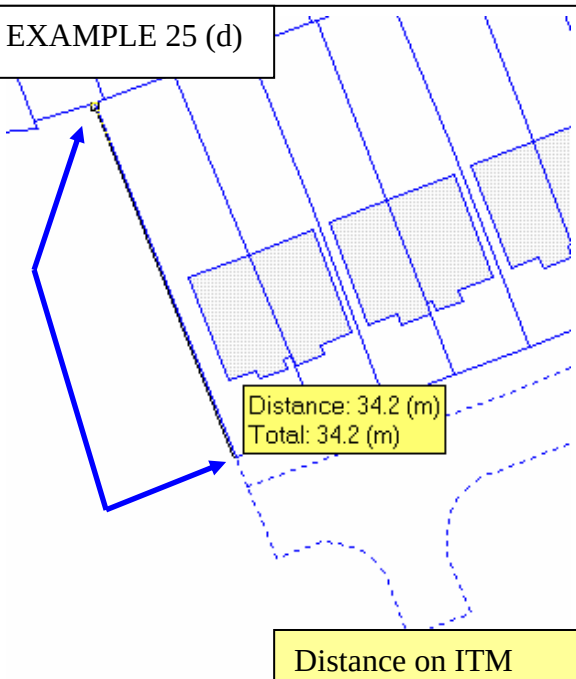
- **If still in doubt about what to do raise query with PRA staff.**

EXAMPLE 25 (c)



Distance on Registry image

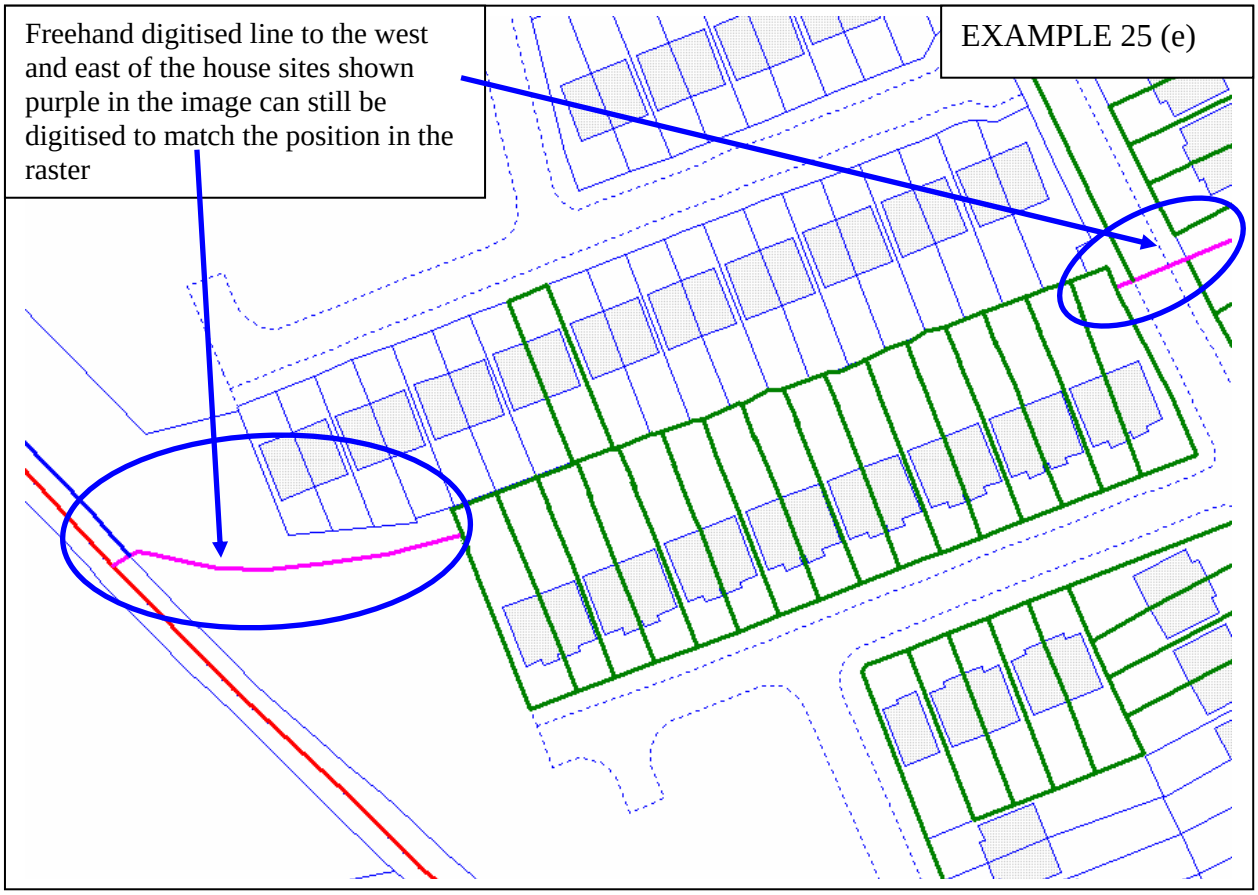
EXAMPLE 25 (d)



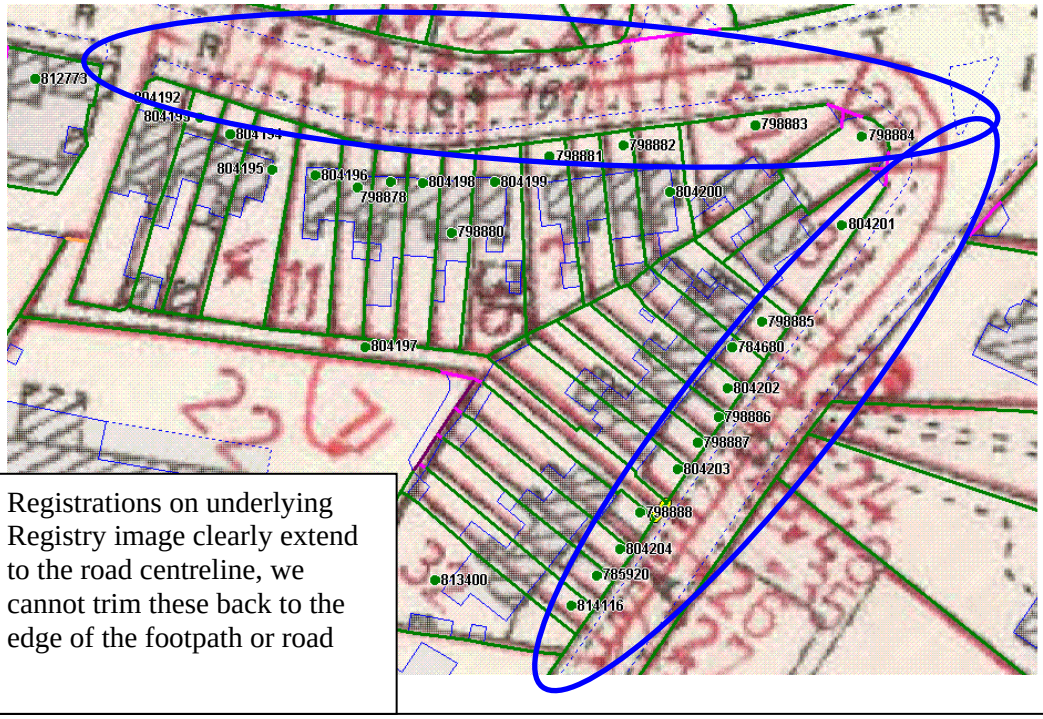
Distance on ITM

The length of the above sites should also be taken into consideration before deciding to shorten any of them.

The plans should be captured as shown below. The historical boundary can be continued where it does not affect the house sites (circled blue in image below)



EXAMPLE 26 (a)

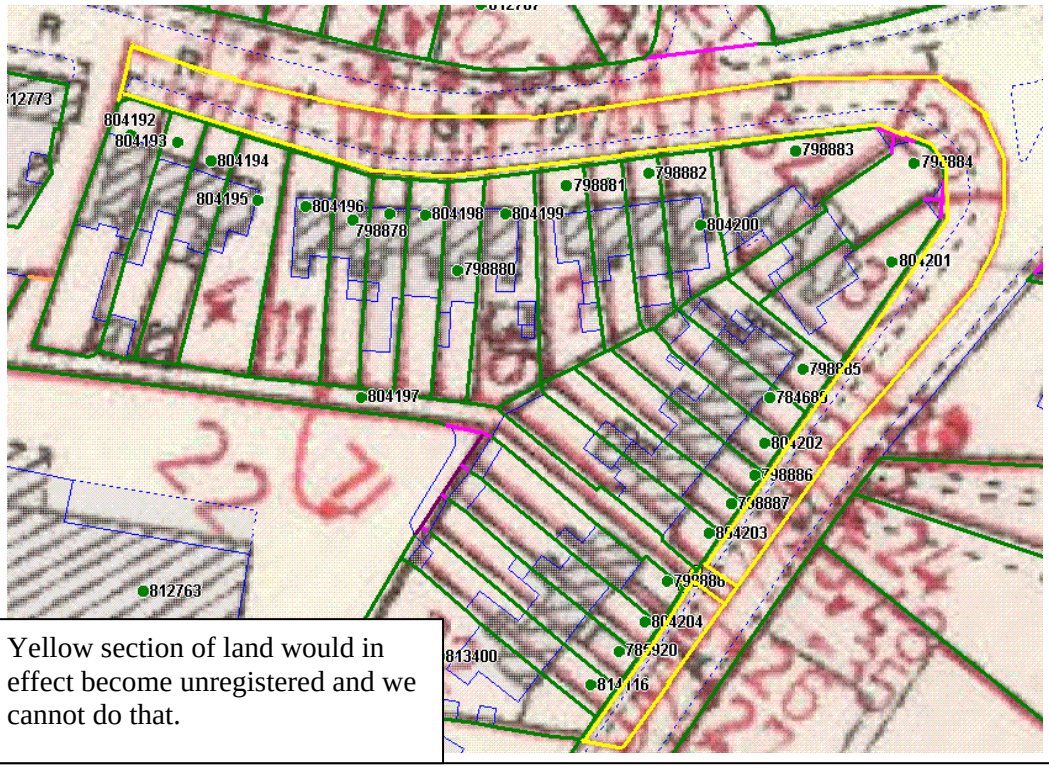


Registrations on underlying Registry image clearly extend to the road centreline, we cannot trim these back to the edge of the footpath or road

Where the registered boundaries in a housing development clearly extend to the road centreline as in the Registry raster image, registrations cannot be trimmed back to the edge of the sites. **We cannot un-register land when capturing parcels.**

What would we do with the balance of the property (shown yellow in the image below) that extended to the road centre? We may no longer have a Folio to which we can return the yellow piece as that Folio would more than likely be closed once all of the lands have been distributed.

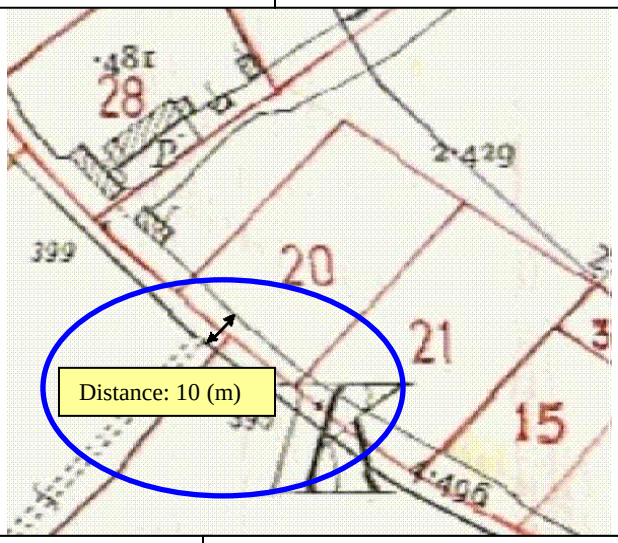
EXAMPLE 26 (b)



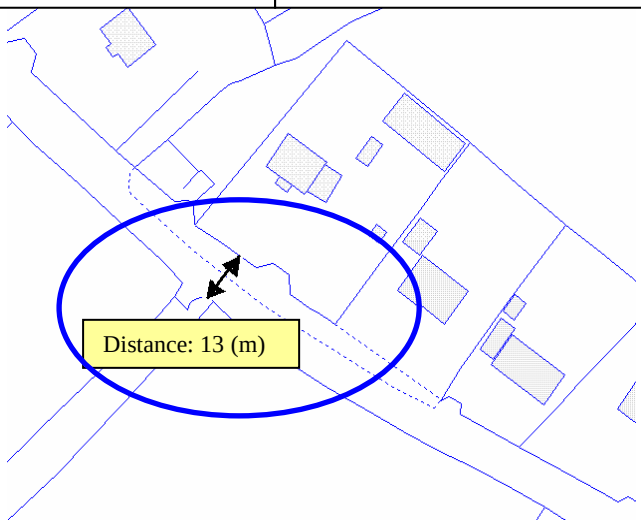
Yellow section of land would in effect become unregistered and we cannot do that.

It would appear that in some instances applicant's surveyors do not take alterations to the road layout into consideration when preparing maps and is most noticeable where the width of the road has changed between the County Series and ITM. In this example the road has been widened by 3m approximately. The sites on the north side of the road are stepped back 3m because of planning requirements. Image 27(c) shows that the southern side of the road on the county series matches the ITM because it is still basically the same feature. Example 27(d) is an imagette prepared to see the result of rotating the image to better fit north side of the road on the county series to the ITM, the result makes the decision to adopt OSi ITM easier for plan 20 as the distance is now nearer 5m than 7.5m. The result is that Plans 20, 21, 15 and 35 could all have been adopted instead of the outcome that we see in Example 27 (f).

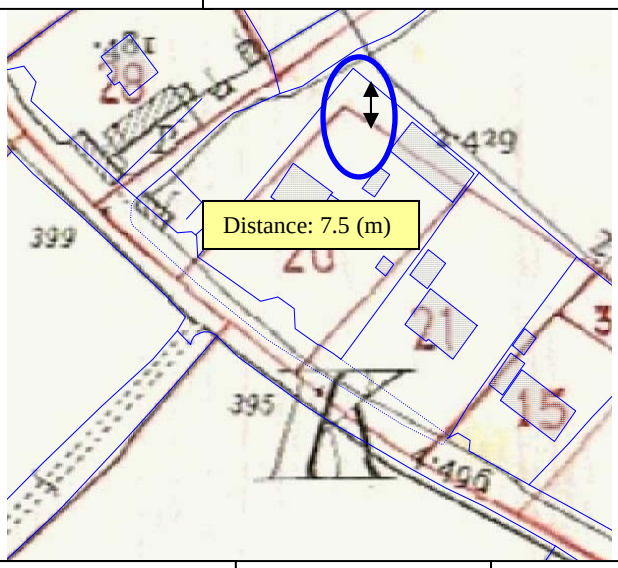
EXAMPLE 27 (a) Image of Registry map



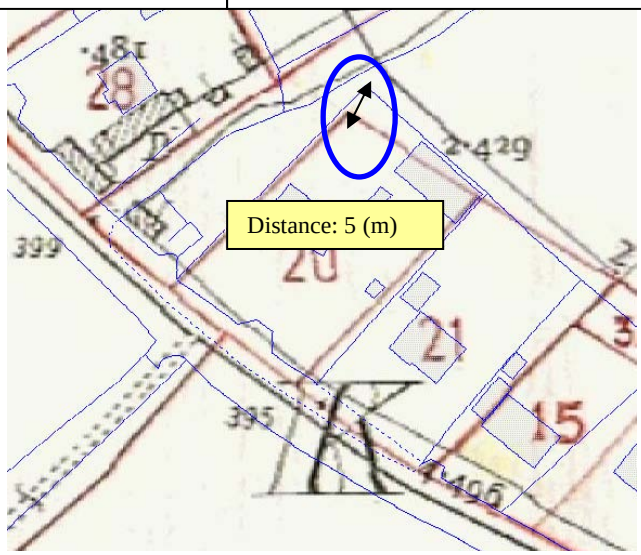
EXAMPLE 27 (b) Image of OSi ITM



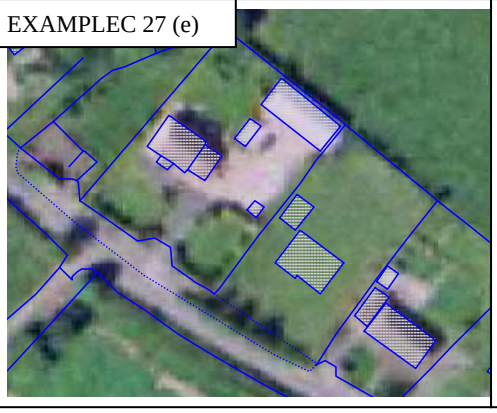
EXAMPLE 27 (c) Image of OSi ITM over Registry map



EXAMPLE 27 (d) Imagette of Registry map rotated

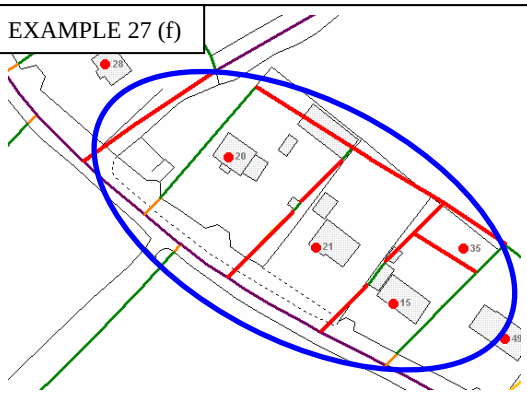


EXAMPLEC 27 (e)



The orthophoto also indicates that we should have some confidence in snapping to the OSi topographic detail as the back boundary for plans 20, 21, and 35.

EXAMPLE 27 (f)



This is along the HWM where we have very little latitude to adopt. However, for consistency sake it is better if the digitiser decides that s/he either can adopt all the way along the area in question or cannot adopt all the way along. This would ensure consistency in the resultant boundary.

Also and this applies to all cases where the OSi cannot be adopted , it is probably better if having decided not to adopt the line the digitiser does not snap to OSi for any part of the line especially where the segments that are being adopted form very short strips.

EXAMPLE 28