



IHB File No. S3/4405

CIRCULAR LETTER 14/2010  
4 February 2010

**CHART SPECIFICATIONS OF THE IHO (S-4)**  
**New and Revised Specifications and Symbols for**  
**Pipeline and Cable Tunnels, Bridges, Wave Energy Devices,**  
**Unsurveyed Areas, Disused or Abandoned Platforms, Shellfish Beds**

Dear Hydrographer,

1 In accordance with its Terms of Reference, the IHO Chart Standardization and Paper Chart Working Group (CSPCWG) has a responsibility to 'keep under continuous review the IHO publication S-4 *Regulations of the IHO for International (INT) Charts and Chart Specifications of the IHO*, in order to advise the IHO on their updating, design and format' and to 'advise the IHO on suggestions put forward by Member States to update S-4, in accordance with IHO Specification B-160, with the goal of achieving the maximum possible adherence by Member States to the Regulations and Specifications'.

2 In addition to the continuing overall revision of S-4, CSPCWG has recently considered several subjects as a result of specific questions or proposals raised by Member States. They are listed in the title above. As a result, the CSPCWG now proposes some new and revised specifications for inclusion in S-4. Drafts of these are attached as annexes to this Circular Letter for Member States to review.

3 According to S-4 Specification B-160, Member States should inform the IHB (info@ihb.mc) if they have any major objections to the adoption of the additional specifications proposed in this Circular Letter, or any other comments, within three months. Therefore, Member States' comments should reach the IHB **no later than 4 May 2010**, using the Response Form at Annex G. If no objections are received, the IHB will announce in a follow-up Circular Letter that the revised specifications have come into force. CSPCWG will then include them in S-4 at the next opportunity.

On behalf of the Directing Committee  
Yours sincerely,

A handwritten signature in blue ink, appearing to read 'Robert Ward', is placed above the printed name.

Robert WARD  
Director

(All annexes in English only)

Annex A: Tunnels for cables and pipelines  
Annex B: Bridges  
Annex C: Wave energy devices  
Annex D: Unsurveyed Areas  
Annex E: Disused or Abandoned Platforms  
Annex F: Shellfish Beds  
Annex G: Response form

## Tunnels for cables and pipelines

**Introduction:** Oil and gas pipelines (and possibly cables) from sea to shore are, in some cases, being routed into mined tunnels some distance from a rocky coast (for example, in western Norway). The route of the tunnel is not necessarily known and the pipelines inside the tunnel are not vulnerable to damage from anchoring etc. It is proposed to portray the entrance to a pipeline tunnel, to show that the pipeline is in use, and to distinguish it from partly removed pipelines out of use. CSPCWG has agreed the following additions to the specification and a new symbol:

### Draft revised specification (new text in red)

- B-443.8**     **Cables, buried** so deep that they are not vulnerable to damage from anchoring, should not be charted (so that mariners are not unnecessarily inhibited from anchoring or fishing). In marginal cases they may be charted in magenta with a note stating the nominal depth to which they are buried, as L42.1, but with a cable symbol. **If they are partly laid in a tunnel, the entrance, if required to be shown, must be charted as L42.2, but with a cable symbol. For details, see B-444.5.**

### Draft revised specification and new symbol (new text in red)

- B-444.5**     **Pipes of all types, buried** so deep that they are not vulnerable to damage from anchoring, should not be charted (so that mariners are not unnecessarily inhibited from anchoring or fishing). In marginal cases they may be charted in magenta with a note stating the nominal depth to which they are buried.

----- *Buried 1.6m* -----

**L42.1**

**If required to be shown, the entrance to a pipeline tunnel must be charted by a magenta symbol (black symbol in the case of an outfall in a tunnel), about 3mm long:**

→→→→ )    ( →→→→    **L42.2**

**The pipeline inside the tunnel should not be charted. This symbol helps to distinguish partly lifted pipelines (or cables, see B-443.8) from those which are in use, but partly in a tunnel.**

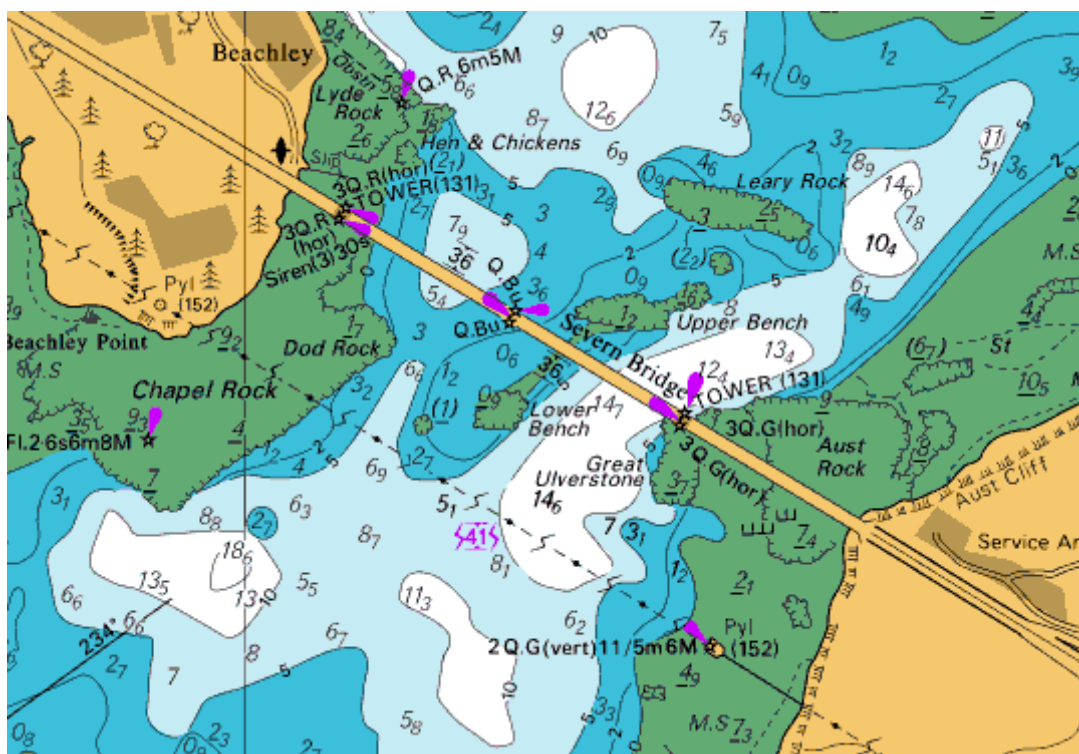
## Bridges

**Introduction:** Some recent incidents have demonstrated that it is important that vessels are aware of the positions of bridge supports and, in some cases, details of the depths under a bridge. CSPCWG has examined the various methods used to achieve this and proposes to include brief guidance, with some examples of good practice, in S-4, as follows:

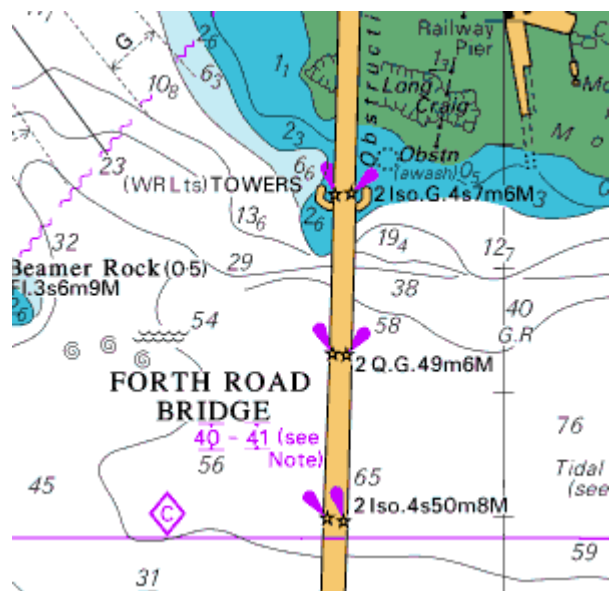
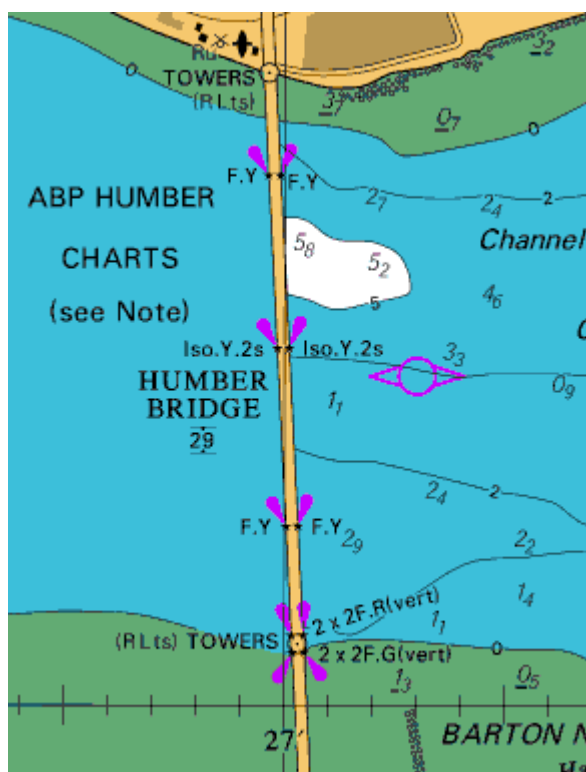
### Draft additional specifications

**381.5 Bridge supports** may be an obstruction to navigation and should be charted (if the positions are known). It is difficult to be prescriptive about how they should be charted, as circumstances may vary considerably. Some options (which may be combined) are:

- Where bridge supports carry navigation lights (and/or daymarks), chart as small light stars (and/or beacons) with appropriate descriptions. Add a legend, eg 'TOWER', 'Pylon', as appropriate to distinguish between lights on the bridge superstructure and on bridge supports (examples A to C);
- For suspension bridges, or others for which the supports extend above the bridge, a position circle symbol with legend should be shown, eg 'TOWER', 'Pylon' (example B) or, if large enough scale, the tower can be shown to scale (example F);
- Where bridge supports are wider than the actual bridge, show to scale in plan outline (usually continuing the bridge sides through the widening, unless it is known that the bridge itself widens at those points) (example C and D);
- The supports may also be shown as lines across the bridge, even if they do not protrude beyond the width of the bridge or above the bridge (examples E to G);
- Insert a large-scale inset plan to enable the above actions to be taken (example F and G)
- Add a profile view diagram (example H and I):



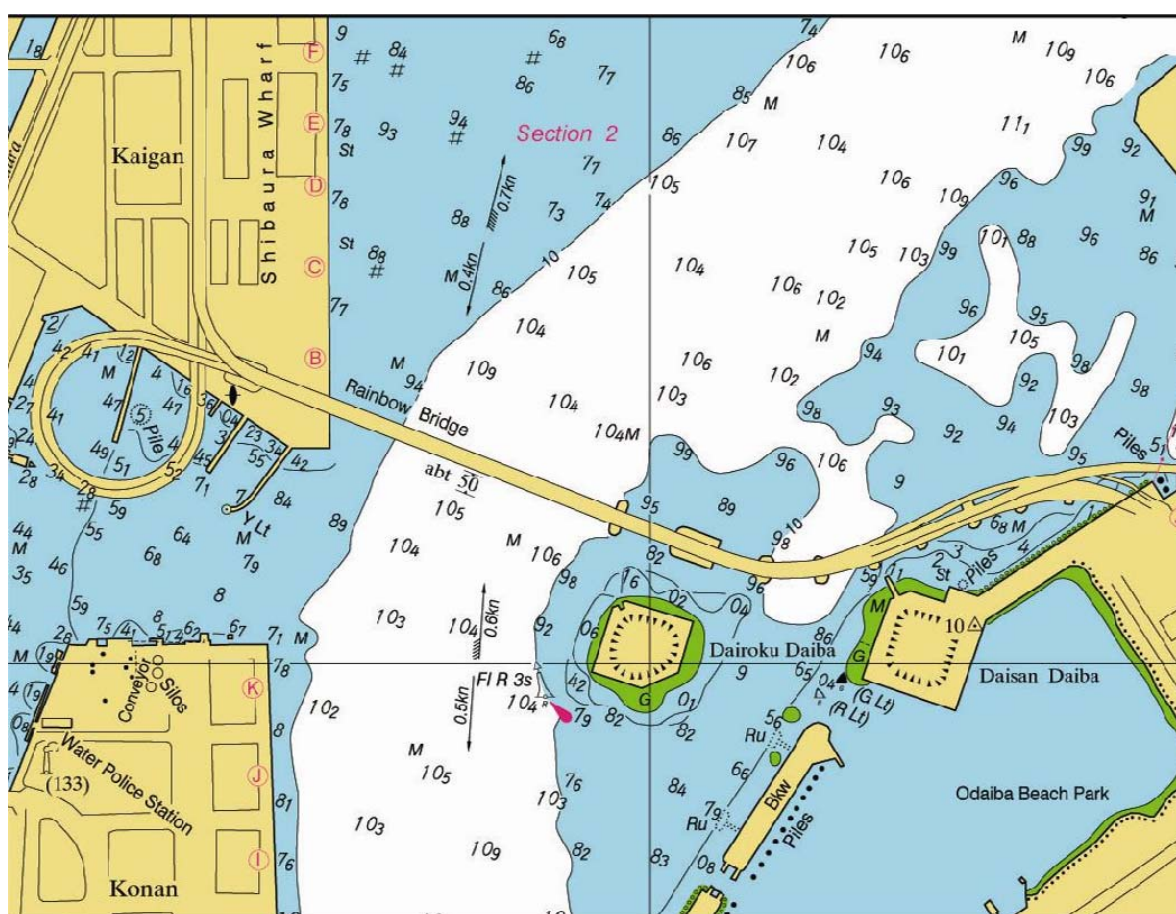
Example A (Source: United Kingdom Hydrographic Office)



### Example C

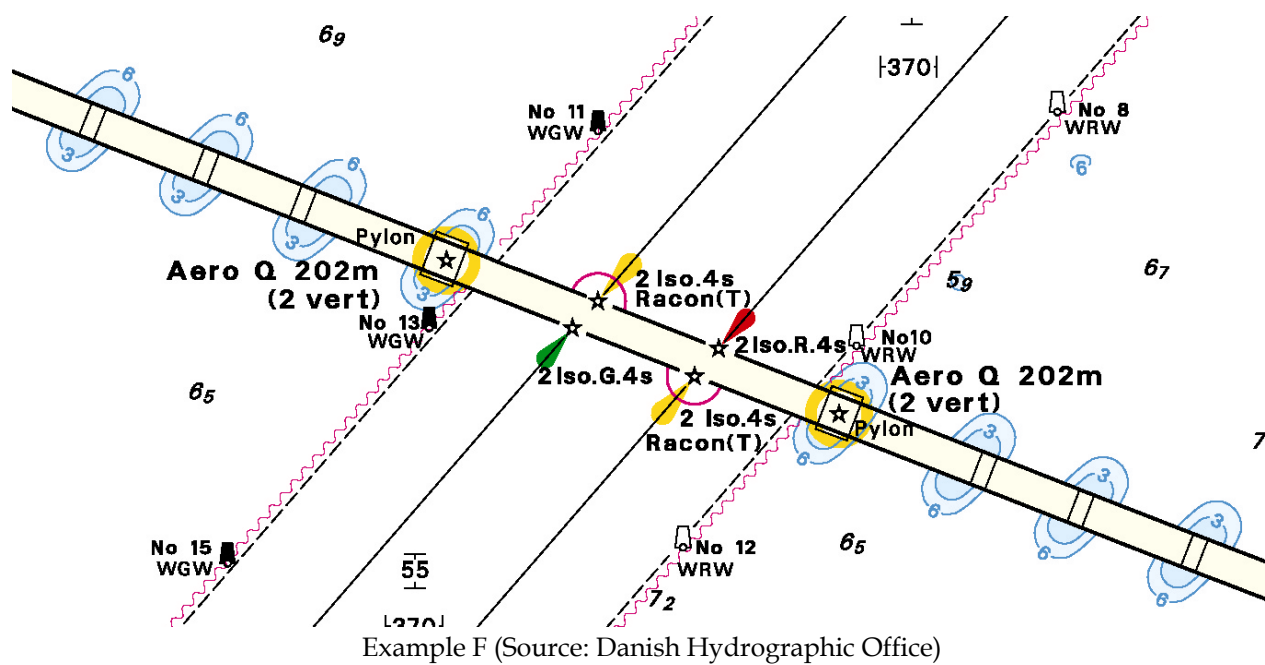
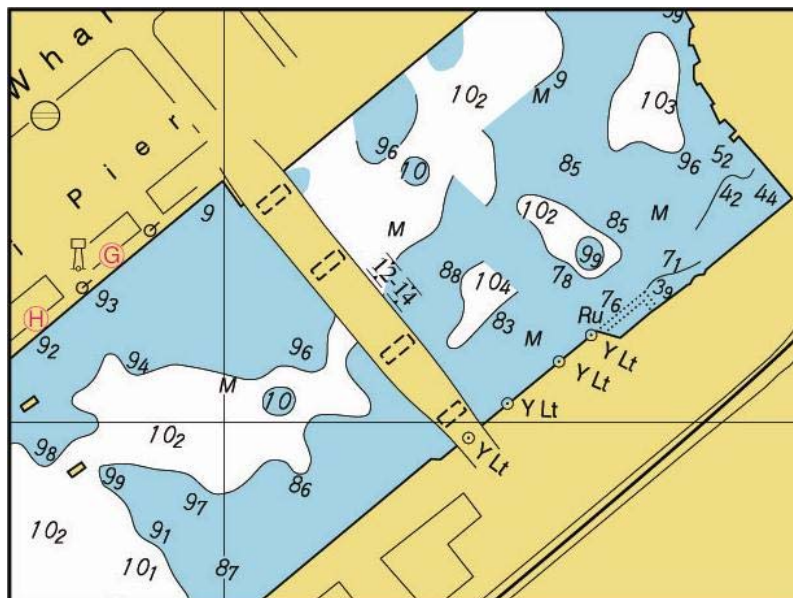
### Example B

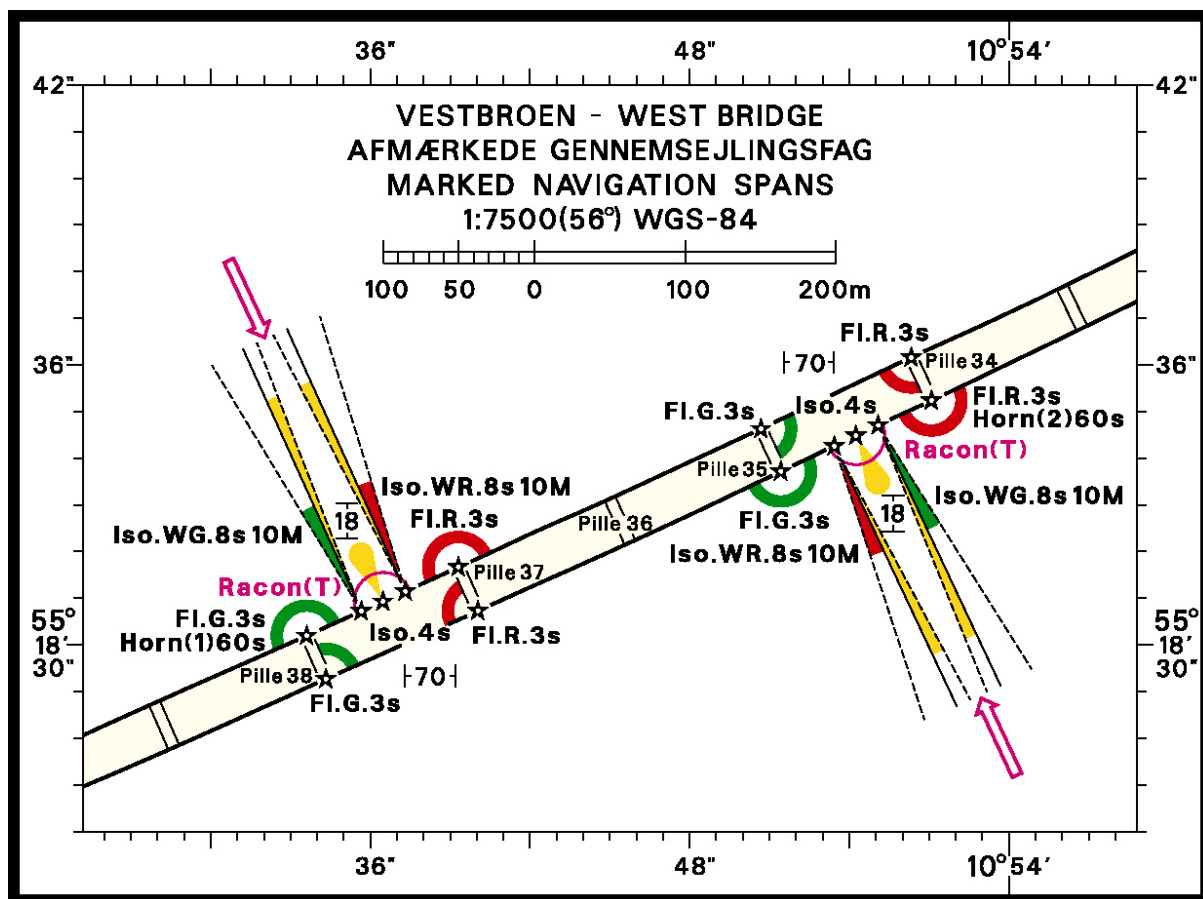
Examples B & C (Source: United Kingdom Hydrographic Office)



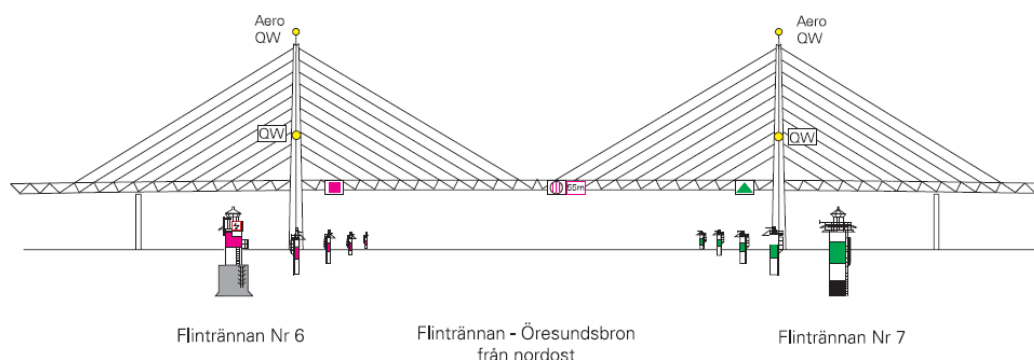
Example D (Source: Japanese Hydrographic and Oceanographic Department)



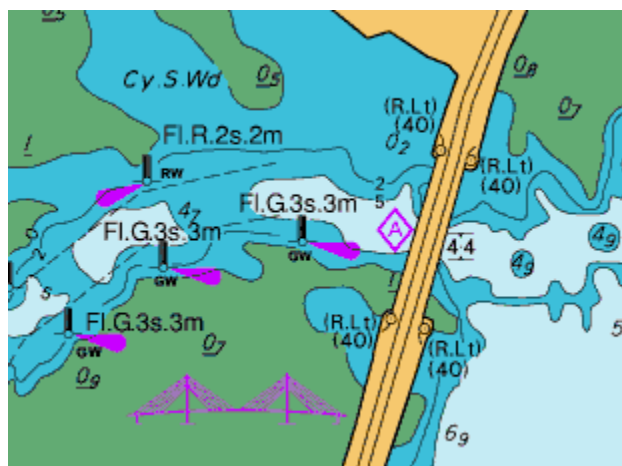




Example G (Source: Danish Hydrographic Office)



Example H (Source: Swedish Maritime Administration)

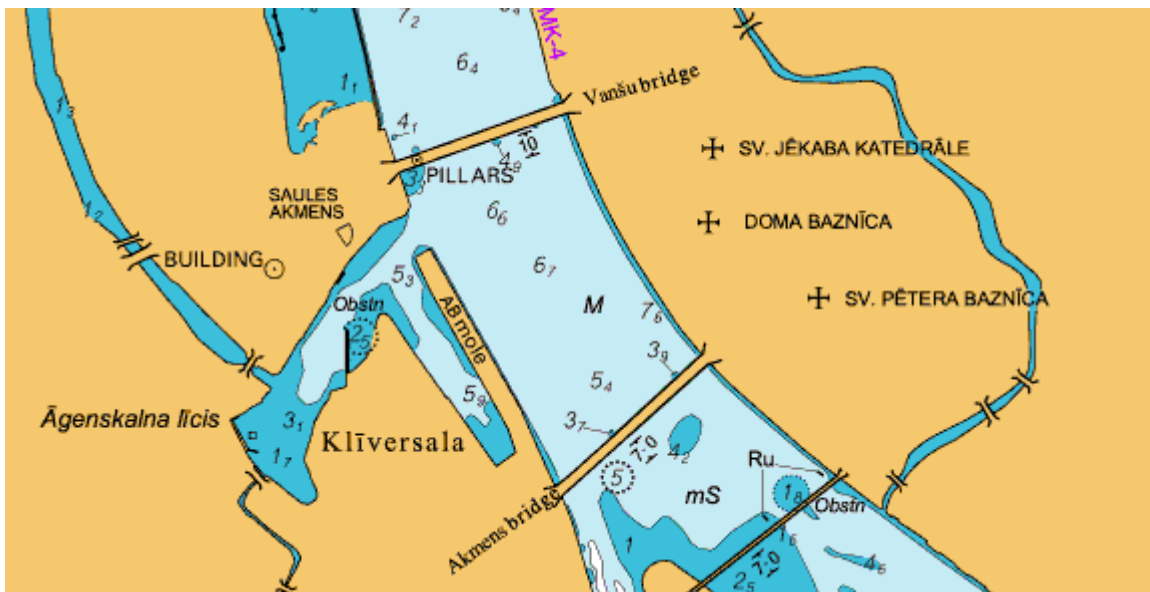


Example I (Source: Bahrain Chart)

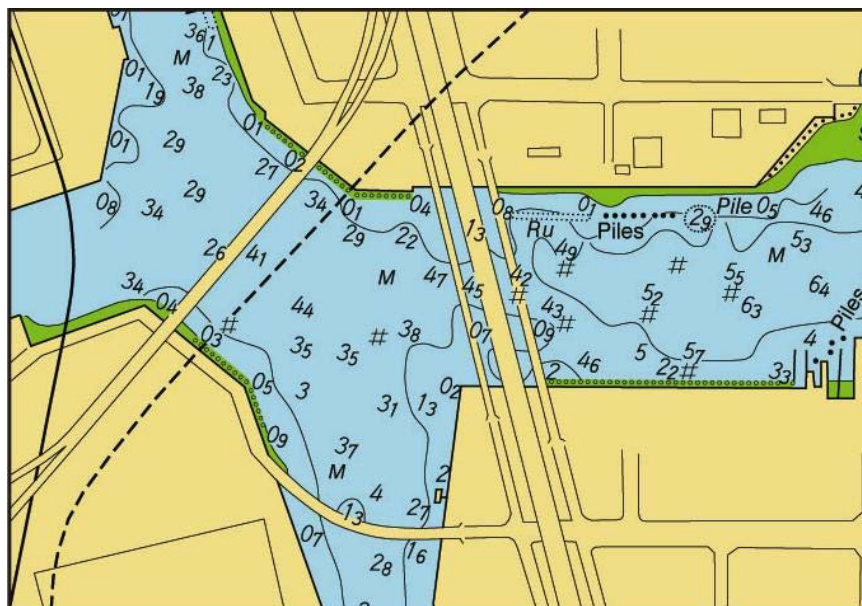
**381.6 Depth (including obstructions) under bridges.** The physical presence of a bridge can affect the flow of water and hence the location of shoals and deeper channels in its vicinity, including underneath it. Normal sounding selection principles apply in the waters either side of a bridge. However, it may be appropriate to select a sounding (or obstruction) which is under the bridge (either because it is a controlling depth or because depth varies significantly across the width of a bridge span). In such cases it should be shown as a 'sounding out of position', in accordance with the guidance at S-4 B-412.2. I11 (using a pointer) is to be preferred to I12, as the exact position under the span may be important (Example A).

Alternatively, soundings may be shown in their true positions, with the bridge and land tint retained over the top (Example B).

Depth contours should normally be broken at the bridge as it will usually be obvious where the contours go. On very large scale charts, where the bridge is shown true to scale and it clarifies the picture, the contours can be continued through the bridge.



Example A (Source: Latvian Hydrographic Office)



Example B (Source: Japanese Hydrographic and Oceanographic Department)

## Wave energy devices

**Introduction:** Offshore renewable energy installations (OREI) utilising wave action continue to be developed. Many are already being deployed, at least experimentally. For the present, use of the 'development area' limit is usually appropriate. However, it is likely that in the near future a generic symbol for such installations will be required. CSPCWG has decided that a symbol modelled on the wind farm symbol, but containing the well-known electric flash symbol (as used for overhead cables, for example) instead of a turbine symbol would be intuitive and sufficiently generic to cover the wide range of devices that seem likely to be installed.

### Draft revised specification and new symbol (new text in red)

**B-445.12 Wave energy devices; Wave Farms.** A wide variety of devices for harnessing wave energy are being developed. These devices need protection and are also potentially dangerous to navigation.

At the present stage of the industry, wave farms should usually be treated as Development Areas (limit N1.2, N2.1 or N2.2 as appropriate, see B445.7); that is, charted in magenta, as the actual obstructions will come and go or be moved as experiments progress. A legend such as '*Renewable Energy Installations - Development Area (see Note)*' should be inserted in the area. Small areas may be simply labelled '*Development Area (see Note)*' or '*Wave Farm (see Note)*'. All cables, buoys, lights and permanent structures should be charted as normal.

A magenta note should be inserted warning of the potentially hazardous nature of the area, for example:

#### DEVELOPMENT AREA

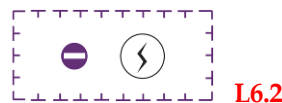
Extensive testing of renewable energy installations, both above and below the surface, takes place in this area. Mariners should exercise caution if navigating in this area. For further information, see [eg associated publication].

Later, if such an area becomes established as a wave farm, the symbol for a renewable energy installation should normally be inserted in an area. Symbol N1.1 (black maritime limit implying permanent physical obstructions) should normally be used for the limit of a wave farm:



**L6.1**

However, if navigation is prohibited, N2.2 must be used:



**L6.2**

If there are other restrictions, N2.1 may be used, noting the principles for portraying coincident limits at B-439.6.

Usually, the renewable energy installation symbol will be used in combination with an area symbol, although if necessary (eg because of scale) it may be used as a point symbol, with the centre of the circle representing the position:



**L6.3**



## Unsurveyed Areas

**Introduction:** A blue and white striped area infill has been used for many years to symbolise unsurveyed areas in Swedish waters. It has been found particularly useful in coastal areas which are impossible to survey because of, for example, the existence of log ponds. Other Member States in the region have indicated an intention to use this symbol and have proposed its adoption as an optional International symbol.

In some cases, the existing portrayal options do not give a clear indication to the mariner that an area has not been surveyed, especially small areas where it is impractical to include a legend. Leaving an area blank could in some cases be interpreted as a result of cartographic editing or generalization. However, the proposed infill symbol is considered to be intuitive for chart users.

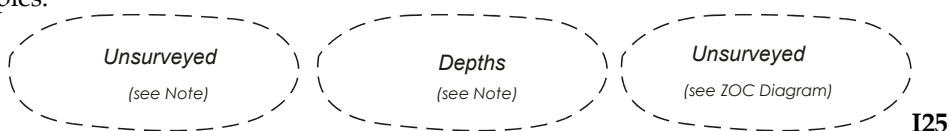
### Draft revised specification and new symbol (new text in red)

**B-418.1 Areas delimited by a bold line.** In unsurveyed areas which are considered dangerous for vessels to enter, a very positive form of warning is required. Such areas must be shown by bold dashed black or magenta limits, with the legend either:

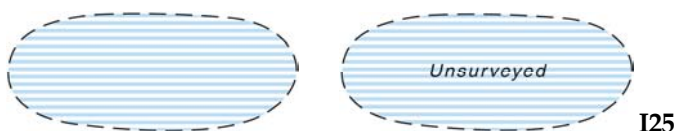
- 'Unsurveyed' (which may be accompanied by a note) or
- 'Depths (see Note)'.

A reference to the Source or ZOC Diagram may be inserted instead of a note.

Examples:



This treatment is likely to be most appropriate in inshore waters such as coastal archipelagos and barrier reefs and where ice has receded. It may be reinforced by the omission or insertion of colour tints within the bold line, or by **horizontal blue bands (0.5mm wide, 0.5mm gaps) inserted within the area. If blue bands are inserted, the legend 'Unsurveyed' or equivalent may be included if space permits:**



Small areas (eg gaps left in surveys because of obstructions such as icebergs, **log ponds** or moored vessels), **should** have the legend alongside the limit **if blue bands are not inserted.**

## Disused or Abandoned Platforms

**Introduction:** INT1 L14 is an unused space holder for 'Disused platform'. During the review of B-440, it was decided there is no need for a specific symbol. However, recent information about platforms in the North Sea suggested that a review of that decision was required, as it is useful to distinguish between a platform which has simply been abandoned but still looks like a working platform (ie all the superstructure is still present) and one where the superstructure has been dismantled and all that are left visible are above-water legs and/or base.

### Draft revised specification and new symbol (new text in red)

#### B-445.2 Platforms (including production platforms).

Proposed new paragraph:

- f. **A disused or abandoned platform** may be labelled '(disused)', or equivalent. If the superstructure has been removed, leaving only an above-water base structure, this should instead be labelled with the **international abbreviation 'Ru'**. The label should be '(ru)' if there is any retained designation (eg Z-44) or descriptor (eg SPM):



Features associated with abandoned platforms should also be reviewed, eg:

- pipelines would normally be amended to disused;
- a safety zone may still apply and if so should be charted accordingly;
- it may still carry navigation lights, so a flare (and if required a light description) should be included as appropriate (see b above);
- if no associated features remain, consideration should be given to enhancing its prominence on the chart (eg with a danger line) as it remains a significant collision hazard.

For charting platforms which have been removed below the surface, see B-422.9 and B-449.7.

## Shellfish Beds

**Introduction:** Shellfish beds are currently shown on charts with a legend and a limit. Several legends may be used depending of the kind of activity: Shellfish Beds, Oysters, Mussels, etc. Shellfish beds often occur inshore in shallow water where charts are cluttered. The clutter increases on Bilingual charts. In accordance with the policy of using intuitive symbols rather than legends, and to reduce chart clutter, CSPCWG proposes a new symbol.

### Draft revised specification and new symbol (new text in red)

**B-447.4** **Shellfish beds that do not contain physical obstructions.** The limits should be charted by a dashed magenta line (N1.2) with an oblique shell symbol (width approximately 3mm) at intervals of approximately 40mm or closer and not exceeding 50mm. For small areas, a centred oblique shell symbol may be inserted within the area defined by the dashed magenta line N1.2.



K47

A note may be inserted warning against anchoring or grounding in the area, or giving details of any local regulations.

If shellfish beds contain obstructions to surface navigation, eg trestles, the symbol for a marine farm must be used (see B-447.6).

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**New and Revised Specifications and Symbols for**  
**Pipeline and Cable Tunnels, Bridges, Wave Energy Devices,**  
**Unsurveyed Areas, Disused or Abandoned Platforms, Shellfish Beds**

**Response Form**

(to be returned to the IHB by 4 May 2010)

E-mail: [info@ihb.mc](mailto:info@ihb.mc) - Fax: +377 93 10 81 40)

Note: The boxes will expand as you type your answers.

**Member State :**

**Contact :**

**E-mail :**

Do you agree with the new or revised specifications and symbols? If you answer 'No', please explain in the comment section below the tables.

S-4 reference	Title	Yes	No
B-443.8	Tunnels for cables.		
B-444.5	Tunnels for pipelines.		
B-381.5	Bridge supports.		
B-381.6	Depth (including obstructions) under bridges.		
B-445.12	Wave energy devices; Wave Farms.		
B-418.1	Unsurveyed Areas.		
B-445.2f.	A disused or abandoned platform.		
B-447.4	Shellfish beds that do not contain physical obstructions.		

**Comments :**

**Signature :**

**Date :**