CSMWG17-06.7A

CONTRACT BETWEEN
THE INTERNATIONAL HYDROGRAPHIC BUREAU, OF MONACO
AND
CARIS BV

REVISION, AMENDMENT AND TESTING OF CONDITIONAL SYMBOLOGY PROCEDURES WRECKSnn AND OBSTRNnn

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Document Version

Date	Primary Author(s)	Version	Description of Version
2007-05-29	Sherry Munn	1.0	Initial Document
2007-05-30	Sherry Munn	1.1	Added Mike Eaton's notes to the Purpose/Objective Section

1 Distribution List

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1 Terminology

1.1 Acronyms & Abbreviations

CSMWG – Colours and Symbols Working Group
CSP – Conditional Symbology Procedure

2 Introduction

2.1 Project Participant(s) and Contact Information

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2.2 Purpose/Objective

This development is required as a result of action item 37 of the minutes of the 16th meeting of the IHO Colours and Symbols Maintenance Working Group (CSMWG) held in Monaco in 2006. It is aimed at visualizing the values of soundings belonging to a wreck or another obstruction lying on the sea bed, by modifying the relevant Conditional Symbology Procedures (CSP).

At present when the mariner selects viewing group 33010 (soundings) the display shows only the depths of the soundings in object class SOUNDG. To see the depths over rocks, wrecks or obstructions as well, the mariner must make cursor-picks of the objects individually. Or he can select viewing group 34050 (non-dangerous rocks, wrecks and obstructions) for display, which would bring in all such objects whether they had a sounding value or not and so cause clutter.

This amendment sets up a new viewing group 34051 (non-dangerous rocks, wrecks and obstructions which have a VALSOU attribute), and conditional symbology procedures OBSTRNnn and WRECKSnn have been revised to assign all non-dangerous rocks, wrecks and obstructions which have a VALSOU attribute to this group. Also, because at present these procedures only display depths of less than 20 metres they have been revised to display all depths. The sounding will always be shown whenever these objects are on the display

Note however that Isolated Dangers (rocks, wrecks and obstructions whose depth is less than the safety contour and which lie in water deeper than the safety contour) will continue to be symbolised only with the "Isolated Danger" symbol SY(ISODGR01), whose shape was not designed for showing a depth value.

The revised versions of procedures OBSTRNnn and WRECKSnn are included in this document together with a revision to the Viewing Groups and a discussion on displaying the depth over Isolated Dangers.

2.3 References

IHO ECDIS Presentation Library. Edition 3.3, March 2004. Special Publication No. 52: ANNEX A of APPENDIX 2. Published by the International Hydrographic Bureau, Monaco.

3 Delivery Items

3.1 Viewing Groups

A new viewing group (34051) for non-dangerous rocks (UWTROC), wrecks (WRECKS) and obstructions (OBSTRN) which have a VALSOU attribute has been added.

Update to section 13.2 VIEWING GROUPS for Other Chart Information:

J, K, L SEABED, OBSTRUCTIONS, PIPELINES	
34000	Seabed Information: rocks, wrecks & obstns, pipes & cables
34010	nature of seabed (SBDARE)
34020	spring (SPRING), sea weed (WEDKLP)
34030	na
34040	fish haven (FSHHAV), fishing stakes, etc. (FSHFAC)
34050	rocks (UWTROC), wrecks (WRECKS), obstructions (OBSTNS), which are not a danger to own-ship's navigation (these are all Display Base if a danger to own-ship)
34051	non-dangerous rocks (UWTROC), wrecks (WRECKS) and obstructions (OBSTRN) which have a VALSOU attribute and are not a danger to own-ship's navigation (these are all Display Base if a danger to own-ship)
34060	na
34070	submarine cable (CBLSUB), submarine pipeline (PIPSOL)

By adding a new viewing group, the Mariner can view all of the obstructions and wrecks lying on the sea bed that have the attribute VALSOU set along with soundings by choosing the viewing group 34051 and 33010 (soundings). If viewing group 34050 is not selected, then the obstructions and wrecks lying on the seafloor without the attribute VALSOU set will not be displayed.

3.2 OBSTRNnn Conditional Procedure

The OBSTRN05 diagrams have been updated as follows:

3.2.1 Title Page:

Title page and diagrams have been renamed to increment the version number (from OBSTRN05 to OBSTRN06).

3.2.2 Page 1:

Inserted “SET THE VIEWING GROUP TO 34051” before the call to SNDFRM03.
Note that the viewing group will be overridden by the UDWHAZ04 procedure if the feature is an isolated danger.

3.2.3 Continuation A:

For UWTROC or OBSTRN features that have an attribute VALSOU > 20 metres, set the ‘SOUNDING’ local variable to TRUE to indicate that the sounding value should be displayed.

3.2.4 Continuation B:

In the NO section of the “HAS THE PROCEDURE ‘UDWHAZ04’ INDICATED THE ISOLATED DANGER SYMBOL SHOULD BE SHOWN?” if statement, remove the condition for VALSOU <= 20 metres.

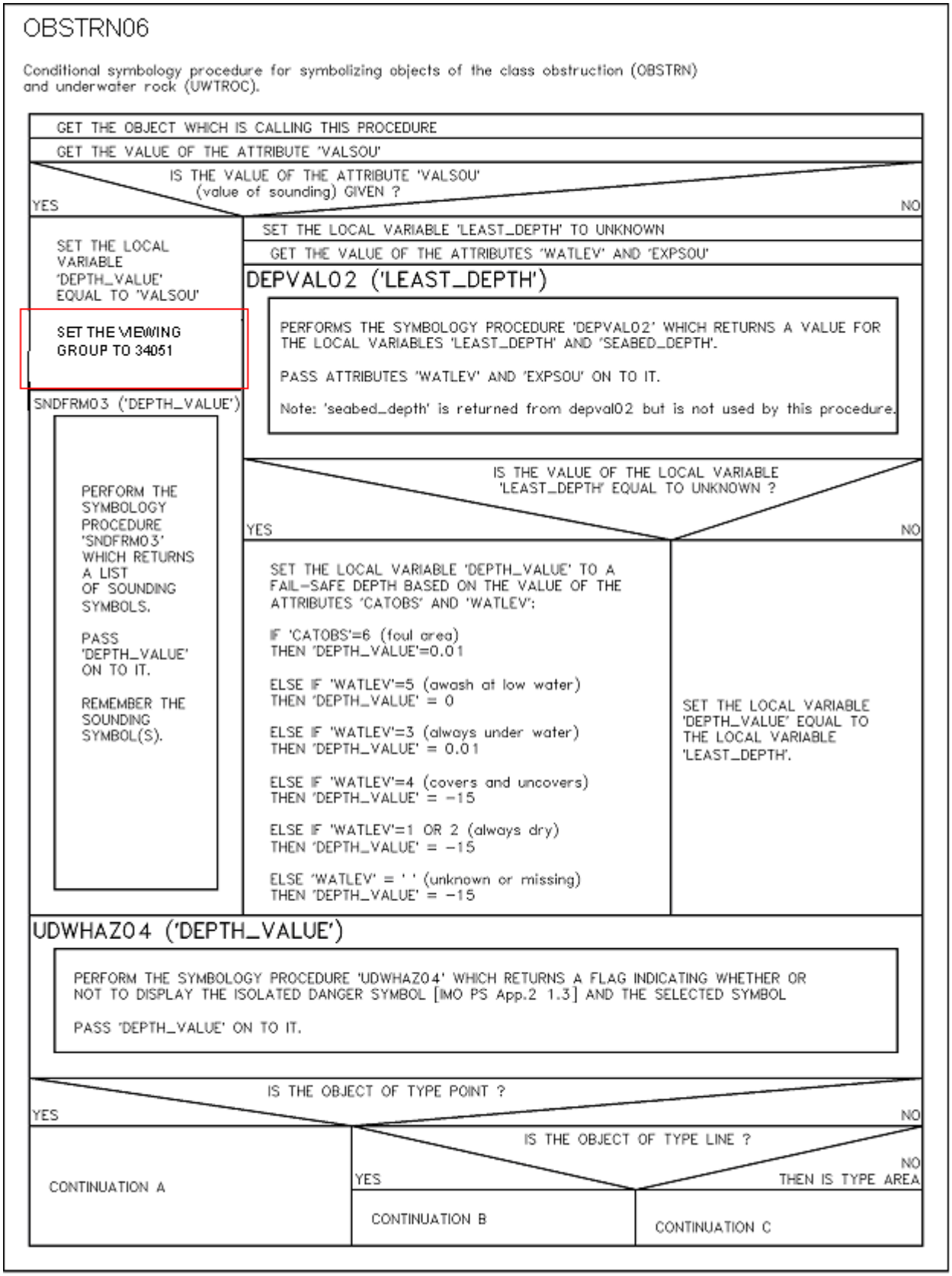
3.2.5 Continuation C:

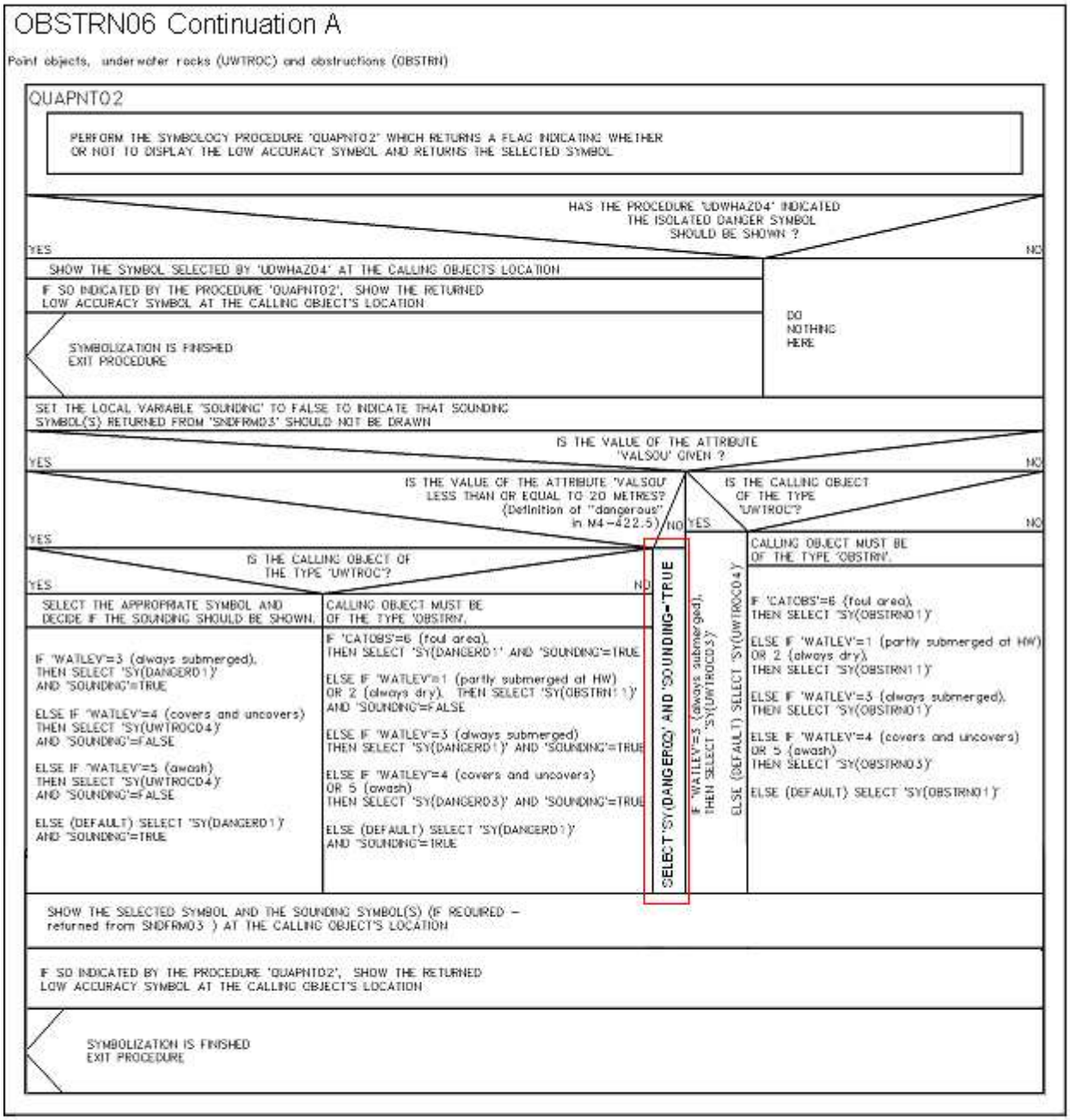
No changes.

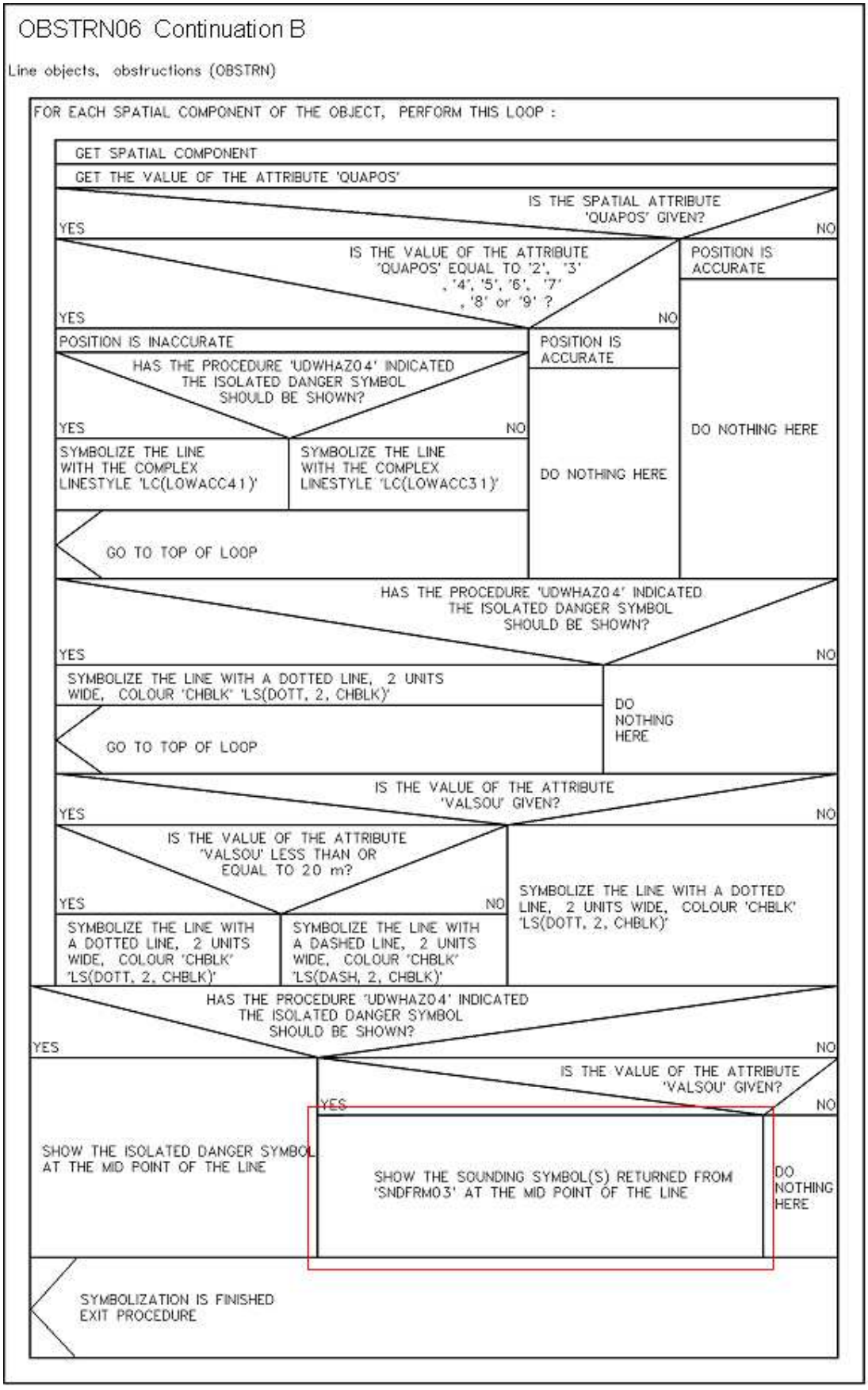
The following diagrams have red boxes around the modified sections. Diagrams with no red-lining have been included at the end of this document.

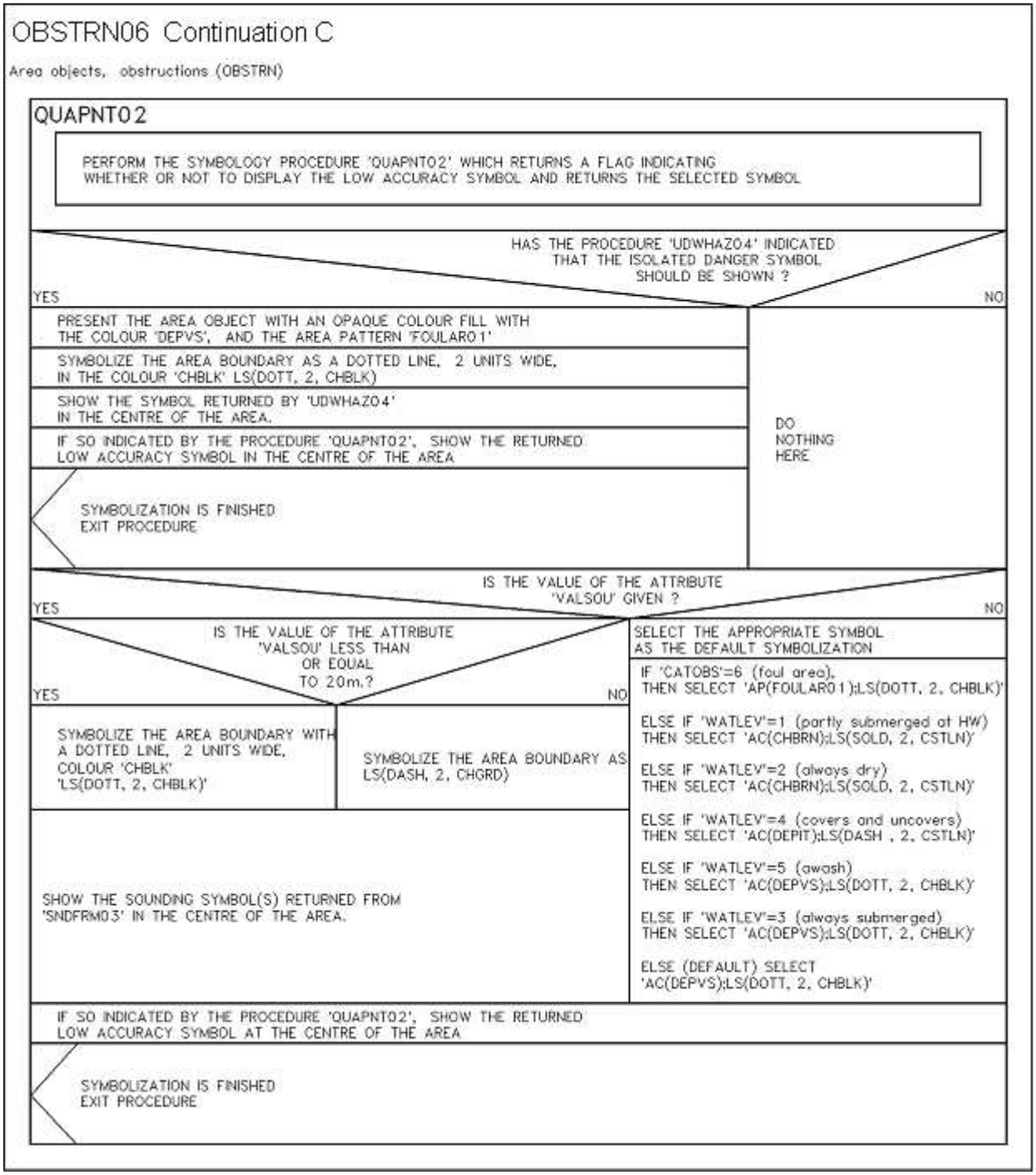
12.2.9 Conditional Symbology Procedure 'OBSTRN06'

Applies to:	S-57 Object Class "obstruction" (OBSTRN) S-57 Object Class "under water rock" (UWTROC)
Spatial Object(s):	Point, Line, Area.
Attribute(s) used:	"value of sounding" (VALSOU) "water level" (WATLEV) "exposure of sounding" (EXPSOU)
Parameter(s):	Object to be symbolized from SENC
Defaults:	Display Priority given by look-up table OVERRADAR priority given by look-up table Display Category given by look-up table Viewing Group given by look-up table Area Color fill from underlying ‘DEPARE’ or ‘UNSARE’
Remarks:	Obstructions or isolated underwater dangers of depths less than the safety contour which lie within the safe waters defined by the safety contour are to be presented by a specific isolated danger symbol and put in IMO category "DISPLAY BASE" (see IMO Performance Standard for ECDIS, App.2, 1.3). This task is performed by the most recent edition of sub-procedure UDWHAZnn which is called by this symbology procedure. Objects of the class "under water rock" are handled by this routine as well to ensure a consistent symbolization of isolated dangers on the seabed. The current UDWHAZnn also allows the mariner the option of displaying isolated dangers in the waters between the safety contour and the zero metre line. In the case that the value of attribute VALSOU for this object is unknown, the most recent edition of sub-procedure DEPVALnn is called. This will provide a default 'least_depth' from the DRVAL1 of the underlying depth area on condition that the value of attribute EXPSOU is not 2 (shoaler than the depth area), and the value of attribute WATLEV is 3 (always underwater).









3.3 WRECKSnn Conditional Procedure

The WRECKS03 diagrams have been updated as follows:

3.3.1 Title Page:

Title page and diagrams have been renamed to increment the version number (WRECKS03 to WRECKS04).

3.3.2 Page 1:

Inserted “SET THE VIEWING GROUP TO 34051” before the call to SNDFRM03.
Note that the viewing group will be overridden by the UDWHAZ04 procedure if the feature is an isolated danger.

3.3.3 Continuation A:

Move the block “SHOW THE SOUNDING SYMBOL(S) (returned from SNDFRM03) ON TOP AT THE CALLING OBJECT’S LOCATION” from inside of the “IS THE VALUE OF VALSOU <= 20 metres” outside (to ensure that soundings are displayed regardless of the attribute VALSOU’s value).

3.3.4 Continuation B:

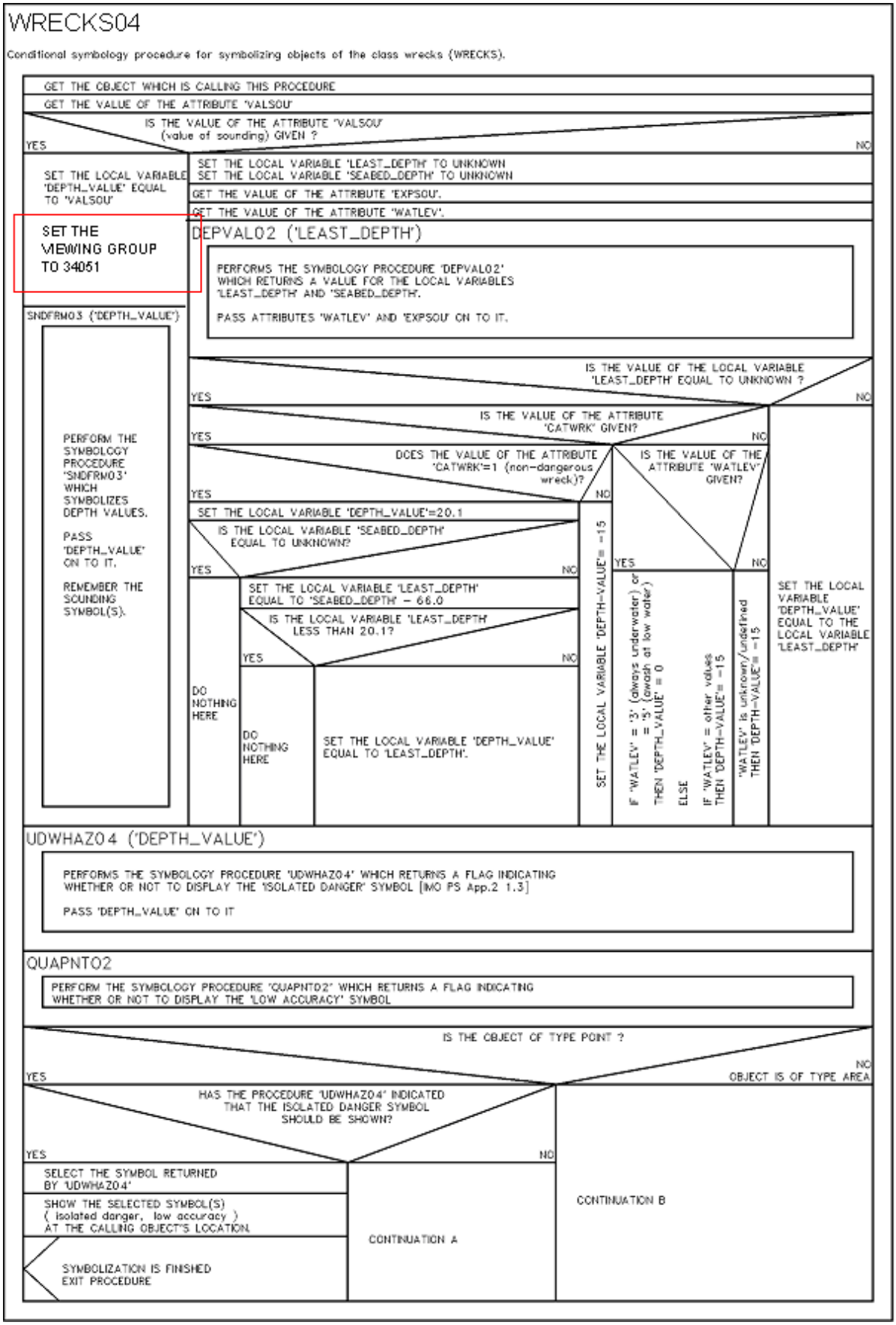
Remove the “IS THE VALUE OF THE ATTRIBUTE VALUE ‘VALSOU’ <= 20 metres” condition. Keep the following two statements:

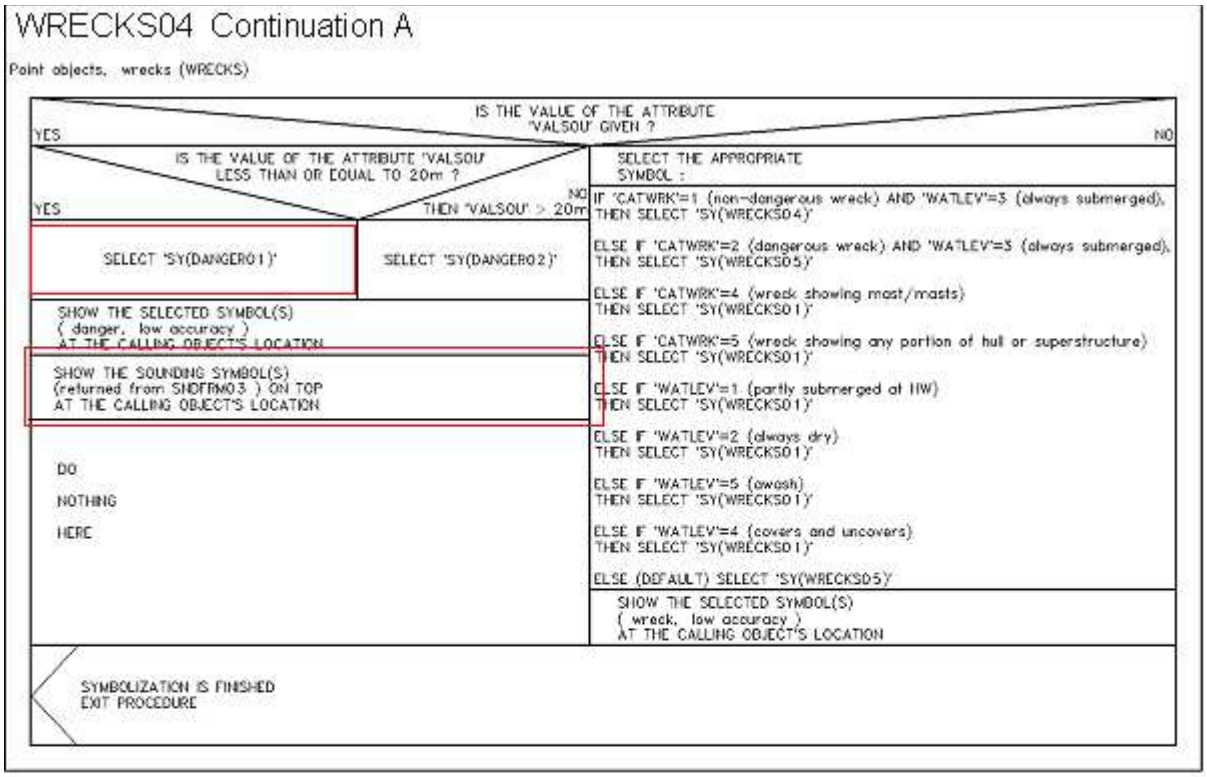
“WHERE REQUIRED, SHOW THE SELECTED SYMBOL(S) RETURNED BY ‘UDWHAZ04’ AND ‘QUAPNT02’ I NTHE CENTRE OF THE AREA”
and
“SHOW THE SOUNDING SYMBOL(S) (returned from SNDFRM03) IN THE CENTRE OF THE AREA.”

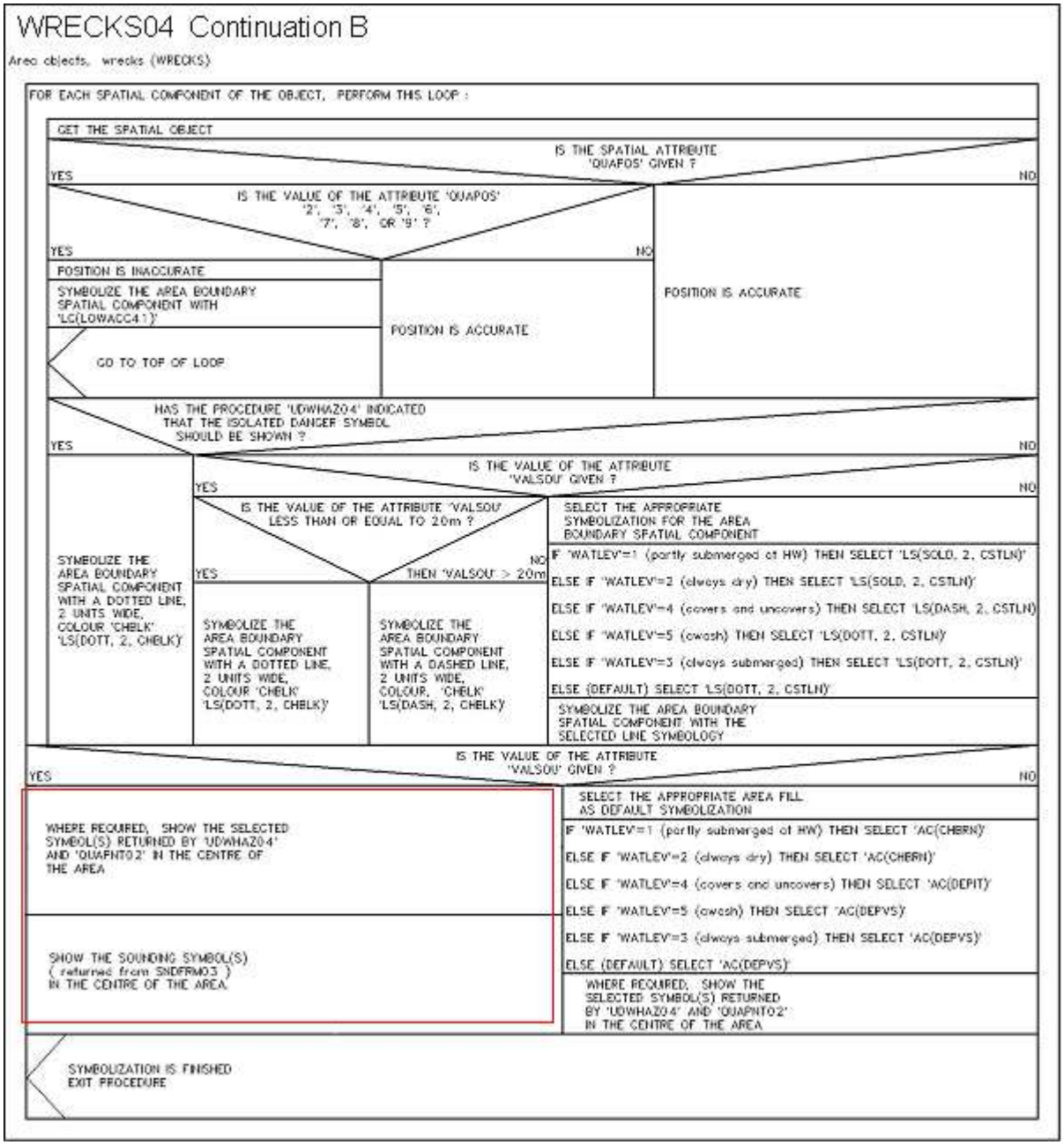
The following diagrams have red boxes around the modified sections. Diagrams with no red lines have been included at the end of this document.

12.2.27 Conditional Symbology Procedure 'WRECKS04'

Applies to:	S-57 Object Class "wrecks" (WRECKS)
Spatial Object(s):	Point, Area
Attribute(s) used:	"value of sounding" (VALSOU) "category of wreck" (CATWRK) "water level" (WATLEV)
Parameter(s):	Object to be symbolized from SENC
Defaults:	Display Priority given by look-up table OVERRADAR priority given by look-up table Display Category given by look-up table Viewing Group given by look-up table Area colour fill from underlying DEPARE or UNSARE
Remarks:	Wrecks of depths less than the safety contour which lie within the safe waters defined by the safety contour are to be presented by a specific isolated danger symbol and put in IMO category “DISPLAY BASE” (see App.2, 1.3, of the IMO Performance Standards for ECDIS). This task is performed by the sub-procedure “UDWHAZnn” which is called by this symbology procedure. CSP "UDWHAZ" also allows the mariner the option of displaying isolated dangers in the waters between the safety contour and the zero metre line. In the case that the value of attribute VALSOU for the wreck is unknown, sub-procedure "DEPVAL' is called. This will provide as default 'LEAST_DEPTH' the DRVAL1 of the underlying depth area, but only on condition that the value of attribute EXPSOU is not 2 (shoaler than the depth area), and the value of attribute WATLEV is 3 (always underwater). For the case that a wreck of unknown VALSOU lies in deep water, sub-procedure 'DEPVAL' also provides the DRVAL1 of the underlying depth area as the 'SEABED_DEPTH' for use in calculating a 'safe clearance depth' over the wreck in accordance with IHO publication M-4 appendix to specification B-422.7.







3.4 NOTES/EXCEPTIONS:

There are three instances when OBSTRN, UWTROC or WRECKS features with a value set for the attribute VALSOU will not have a sounding displayed using these revised symbolization procedures:

1. Features that have been flagged by procedure UDWHAZnn as isolated dangers. The isolated danger symbol does not support the display of a sounding on top. If the CSMWG determines that the Mariner will want to display soundings over the isolated danger symbols, the following steps could be taken:

    - Design a new isolated danger symbol that could support the display of soundings on top. Note that this symbol may have to be larger in size and it will only be used if the feature is an isolated danger and VALSOU has been set (to avoid unnecessary clutter).
    - Add a new viewing group xxxxx for isolated dangers with VALSOU set. This would match with the proposal for adding a new viewing group for non-isolated dangers with VALSOU set.
    - Procedure UDWHAZnn would set the viewing group to the new viewing group if the calling feature has VALSOU set and the feature is an isolated danger.
    - Procedure UDWHAZnn would choose the new symbol only if the calling feature is an isolated danger and has VALSOU set.
    - Add a recommendation to the title pages of the WRECKS and OBSTRN procedures: "It is recommended that whenever viewing group 33010 is displayed, viewing group xxxxxx should also be displayed. This will ensure that depths over isolated dangers are displayed as well as those from object class soundings."

2. UWTROC features with VALSOU set and WATLEV=4 (covers and uncovers) or WATLEV=5 (awash) display the UWTROC04 symbol, which is a star and will not support the display of a sounding over top of the symbol.

3. OBSTRN features with VALSOU set and WATLEV=1 (partly submerged at high water) or WATLEV=2 (always dry) displays the OBSTRN11 symbol, which is a small box with a black outline and land area colour fill. A sounding symbol cannot be displayed on top of this symbol.

3.5 Testing

Testing was done to ensure that the sounding symbols could be displayed inside of the DANGER02 symbol, which will now have soundings displayed on top for rocks, wrecks or obstructions with VALSOU attribute values > 20 metres.

Testing for removing the condition for displaying soundings only on top of rocks, wrecks or obstructions with VALSOU attribute values <= 20 metres was performed.

Diagram 1: Testing drawing of soundings on top of OBSTRN/UWTROC features (points, lines and areas). The line OBSTRN feature is symbolized with a dashed black line. The sounding value is difficult (if not impossible) to interpret. It will be necessary to review this symbolization instruction. For point and area features, the sounding symbols are displayed clearly.

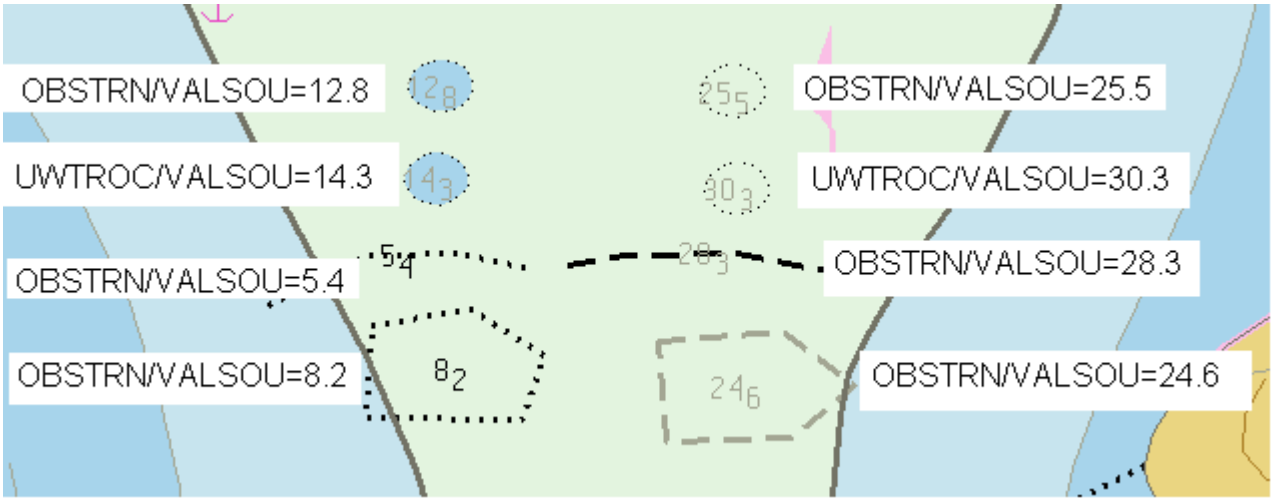
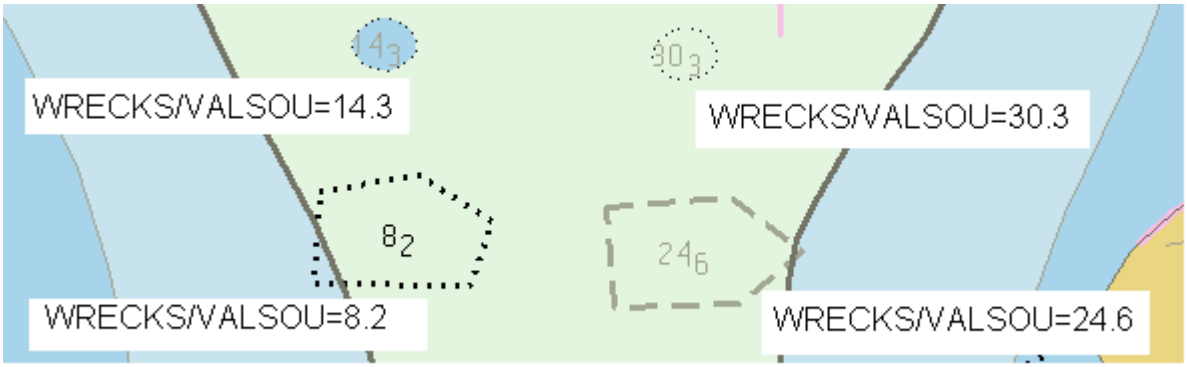


Diagram 1: Testing drawing of soundings on top of OBSTRN/UWTROC features (points, lines and areas).



3.6 Diagrams