## SPECIAL ATTENTION

| | |
|---|---|
| **Number:** | **747-57-2327** |
| Original Issue: | February 02, 2006 |
| Revision 8: | November 13, 2020 |
| ATA System: | 5720 2811 |

**SUBJECT:** WINGS - Center Wing and Outer Wing - Change to Fasteners in Fuel Tank Walls and Change to Wire Bundle Clamps

Export of this technology is controlled under the United States Export Administration Regulations (EAR) (15 CFR 300-774). An export license may be required before it is used for development, production or use by foreign persons from specific countries. The controller of this data has the individual responsibility to abide by all export laws.

ECCN: 9E991

## BOEING PROPRIETARY, CONFIDENTIAL AND/OR TRADE SECRET

Copyright © 2006 Boeing.
Unpublished Work. All Rights Reserved.

Treatment of this document and its content is governed by contract with Boeing. Rights to use this document are licensed on a per aircraft basis and such rights may not be transferable. For more information, contact The Boeing Company.

Boeing, the Boeing signature, the Boeing symbol, 707, 717, 727, 737, 747, 757, 767, 777, 787, Dreamliner, BBJ, DC-8, DC-9, DC-10, KC-10, KC-46, KDC-10, MD-10, MD-11, MD-80, MD-88, MD-90, P-8, Poseidon and Boeing liveries are all trademarks owned by The Boeing Company; and no trademark license is granted in connection with this document unless provided in writing by Boeing.

BLANK PAGE


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

## Table of Contents

Revision Transmittal Sheet . . . 7
Summary . . . 9
1. PLANNING INFORMATION . . . 15
A. Effectivity . . . 15
1. Airplanes . . . 15
2. Spares Affected . . . 21
B. Concurrent Requirements . . . 21
C. Reason . . . 21
D. Description . . . 23
E. Compliance . . . 28
F. Approval . . . 29
G. Manpower . . . 29
H. Weight and Balance Changes . . . 43
I. Electrical Load Data . . . 43
J. References . . . 43
1. Existing Data: . . . 43
2. Data Supplied with this Service Bulletin: . . . 44
3. Installation Drawings Used in the Preparation of this Service Bulletin: . . . 44
K. Publications Affected . . . 45
L. Interchangeability and Intermixability of Parts . . . 45
M. Software Accomplishment Summary . . . 45
2. MATERIAL INFORMATION . . . 47
A. Material - Price and Availability . . . 47
B. Industry Support Information . . . 49
C. Parts Necessary for Each Airplane . . . 49
1. Kits/Parts: . . . 49
2. Parts and Materials Supplied by the Operator: . . . 52
3. Parts Modified and Reidentified: . . . 54
4. Parts Removed and Not Replaced: . . . 54
D. Parts Necessary to Change Spares . . . 54
E. Special Tooling - Price and Availability . . . 54
F. Special Tooling Necessary to do this Service Bulletin . . . 54
3. ACCOMPLISHMENT INSTRUCTIONS . . . 55
A. GENERAL INFORMATION . . . 55
B. WORK INSTRUCTIONS . . . 56
FIGURE 1: WIRE BUNDLE CLAMP CONFIGURATION CHANGE - WIRE BUNDLES OVER 1 INCH IN DIAMETER [Group 1-45] . . . 76
FIGURE 2: WIRE BUNDLE CLAMP CONFIGURATION CHANGE - WIRE BUNDLE WITH A 0.3 INCH DIAMETER TO 1 INCH DIAMETER [Group 1-45] . . . 79
FIGURE 3: WIRE BUNDLE CLAMP CONFIGURATION CHANGE - POWER FEEDER WIRE BUNDLES [Group 1-45] . . . 81
FIGURE 4: WIRE BUNDLE CLAMP CONFIGURATION CHANGE - WIRE BUNDLE DIAMETER UNDER 0.3 INCH [Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2] . . . 84


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

FIGURE 5: FRONT SPAR - FRONT SPAR STATION 453 TO FRONT SPAR STATION 655 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS [Group 2, 5, 20, 27, 41] . . . . . 86
FIGURE 6: FRONT SPAR - FRONT SPAR STATION 453 TO FRONT SPAR STATION 655 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS [Group 3-4, 9, 17, 22, 25-26, 30-31, 33, 36, 40, 42, 45] . . . . . 89
FIGURE 7: FRONT SPAR - FRONT SPAR STATION 453 TO FRONT SPAR STATION 655 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS [Group 7-8, 21, 28-29, 32, 35, 43] . . . . 92
FIGURE 8: FRONT SPAR - FRONT SPAR STATION 453 TO FRONT SPAR STATION 655 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS [Group 1, 6, 16, 18-19, 23-24, 34, 37-39, 44] . . . . . 95
FIGURE 9: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS [Group 3-4, 9, 25, 30, 33] . . . . . 98
FIGURE 10: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS [Group 1, 6, 8, 16, 23, 32, 34-35, 37] . . 101
FIGURE 11: FRONT SPAR - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS [Group 11] . 105
FIGURE 12: FRONT SPAR - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS [Group 10, 12, 14] . . . . . 107
FIGURE 13: FRONT SPAR - FRONT SPAR STATION 453 TO FRONT SPAR STATION 655 - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS [Group 2, 5, 7-8, 20-21, 27-29, 32, 35, 41, 43] . . . . . 112
FIGURE 14: FRONT SPAR - FRONT SPAR STATION 453 TO FRONT SPAR STATION 655 - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMP [Group 1, 3-4, 6, 9, 16-19, 22-26, 30-31, 33-34, 36-40, 42, 44-45] . . . . . 115
FIGURE 15: FRONT SPAR - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS [Group 11] . 118
FIGURE 16: FRONT SPAR - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS [Group 10, 12-15] . . . . . 122
FIGURE 17: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS [Group 1, 3-4, 6, 9, 16] . . . . . 126
FIGURE 18: REAR SPAR - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS [Group 1-9, 16-45] . . . . . 130
FIGURE 19: REAR SPAR - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS [Group 1-9, 16-45] . . . . . 135
FIGURE 20: FRONT SPAR - FORWARD CARGO COMPARTMENT - LOCATION OF THE WIRE BUNDLE CLAMPS [Group 10-11, 13-15] . . . . . 140
FIGURE 21: FRONT SPAR - HORIZONTAL STABILIZER - LOCATION OF THE WIRE BUNDLE CLAMPS [Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-21, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2] . . . . . 142
FIGURE 22: REAR SPAR - HORIZONTAL STABILIZER - LOCATION OF THE WIRE BUNDLE CLAMPS [Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-21, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2] . . . . . 144
FIGURE 23: SEAL OF THE FASTENERS [Group 1-45] . . . . . 147
FIGURE 24: FRONT SPAR - NUMBER ONE AND NUMBER TWO MAIN FUEL TANKS - LOCATION OF THE FASTENERS [Group 1-9, 16-45] . . . . . 149
FIGURE 25: FRONT SPAR - NUMBER ONE AND NUMBER TWO MAIN FUEL TANKS - LOCATION OF THE FASTENERS [Group 10-15] . . . . . 157
FIGURE 26: REAR SPAR - NUMBER ONE AND NUMBER TWO MAIN FUEL TANKS - LOCATION OF THE FASTENERS [Group 1-9, 16-45] . . . . . 161


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

FIGURE 27: FRONT SPAR - NUMBER THREE AND NUMBER FOUR MAIN FUEL TANKS - LOCATION OF THE FASTENERS [Group 1-9, 16-45] . . . 170
FIGURE 28: FRONT SPAR - NUMBER THREE AND NUMBER FOUR MAIN FUEL TANKS - LOCATION OF THE FASTENERS [Group 10-15] . . . 178
FIGURE 29: REAR SPAR - NUMBER THREE AND NUMBER FOUR MAIN FUEL TANKS - LOCATION OF THE FASTENERS [Group 1-9, 16-45] . . . 182
FIGURE 30: FRONT SPAR - HORIZONTAL STABILIZER FUEL TANK - LOCATION OF THE FASTENERS [Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-21, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2] . . . 191
FIGURE 31: REAR SPAR - HORIZONTAL STABILIZER FUEL TANK - LOCATION OF THE FASTENERS [Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-21, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2] . . . 196
FIGURE 32: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS [Group 17, 20, 22, 26-27, 31] . . . 200
FIGURE 33: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS [Group 2, 7, 17, 19-22, 24, 26-27, 29, 31, 36, 38-42, 44-45] . . . 203
FIGURE 34: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS [Group 5, 8, 23, 25, 28, 30, 32-35, 37, 43] . 207
FIGURE 35: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS [Group 18] . . . 211
FIGURE 36: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS [Group 5] . . . 215
FIGURE 37: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS [Group 2, 7, 36, 40-42] . . . 218
FIGURE 38: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS [Group 18-19, 21, 24, 29, 38-39, 44] . . 221
FIGURE 39: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS [Group 28, 43] . . . 225
FIGURE 40: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS [Group 45] . . . 229
FIGURE 41: FRONT SPAR - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS [Group 11] . 232
FIGURE 42: FRONT SPAR - FRONT SPAR STATION 453 TO FRONT SPAR STATION 655 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS [Group 18] . . . 234
FIGURE 43: FRONT SPAR - FRONT SPAR STATION 885 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS [Group 18] . . . 237
FIGURE 44: FRONT SPAR - FRONT SPAR STATION 453 TO FRONT SPAR STATION 655 - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMP [Group 18] . . . 241
FIGURE 45: FRONT SPAR - FRONT SPAR STATION 453 TO FRONT SPAR STATION 655 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS [Group 32] . . . 244
FIGURE 46: FRONT SPAR - FRONT SPAR STATION 885 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS [Group 32] . . . 247
FIGURE 47: REAR SPAR - HORIZONTAL STABILIZER - LOCATION OF THE WIRE BUNDLE W4607 CLAMP [Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-21, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2] . . . 251
FIGURE 48: FRONT SPAR - STATION 600 LEFT WING - ADDITIONAL FASTENERS FILLET SEAL APPLICATION [Group 1-9, 16-45] . . . 254


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

FIGURE 49: FRONT SPAR - STATION 600 RIGHT WING - ADDITIONAL FASTENERS FILLET SEAL APPLICATION [Group 1-9, 16-45] . . . . . 259
FIGURE 50: REAR SPAR - HORIZONTAL STABILIZER FUEL TANK - ADDITIONAL FASTENERS FILLET SEAL APPLICATION [Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-21, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2] . . . . . 264
FIGURE 51: REAR SPAR - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS [Group 1-9, 16-45] . . . . . 268


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

## SPECIAL ATTENTION

**Number:** **747-57-2327**
Original Issue: February 02, 2006
Revision 8: November 13, 2020
ATA System: 5720 2811

**Revision Transmittal Sheet**

**SUBJECT:** WINGS - Center Wing and Outer Wing - Change to Fasteners in Fuel Tank Walls and Change to Wire Bundle Clamps

This revision includes all pages of the service bulletin.

**COMPLIANCE INFORMATION RELATED TO THIS REVISION**

Federal Aviation Administration (FAA) Airworthiness Directive AD 2007-20-01 is related to this service bulletin.

Effects of this Revision on airplanes on which the original issue, Revision 1, Revision 2, Revision 3, Revision4, Revision 5, Revision 6 or Revision 7 was previously done:

See Paragraph 1.D., Description for more information.

**REASON FOR REVISION**

This revision is sent to add instructions for airplanes in Groups 1 thru 9 and Groups 16 thru 45 to make clamp configuration changes on the rear spar of the right wing at WS 588. These clamp configuration changes are necessary to prevent a possible ignition source in the main fuel tanks caused by a wiring short. Also, this revision is sent to correct discrepancies found in this service bulletin.

These sections were changed:

1. Summary, Background - Added reference to related Service Related Problem (SRP) and Fleet Team Digest (FTD).

2. Summary, Action - Added Work Package 21 for airplane Groups 1-9 and 16-45.

3. Summary, Compliance - Added compliance time for Work Package 21.

4. Paragraph 1.A.1., Airplanes - Added the applicable line numbers.

5. Paragraph 1.C., Reason - Added reference to related SRP and FTD. Added Revision 8 data.

6. Paragraph 1.D., Description - Added Work Package 21 and Revision 8 data.

7. Paragraph 1.E., Compliance - Added compliance time for Work Package 21.

8. Paragraph 1.F., Approval - Updated approval statement.



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

9. Paragraph 1.G., Manpower - Removed task in existing manpower table and added new manpower table for Work Package 21.

10. Paragraph 1.J., References - Added missing 747-SRP-28-172 reference. Added new 747-SRP-57-0360 and 747 FTD 57-19001 references.

11. Paragraph 1.K., Publications Affected - Added new table and group applicability tags. Added publication affected.

12. Paragraph 2.A., Material - Price and Availability - Updated kit information.

13. Paragraph 2.C.2., Parts and Materials Supplied by the Operator - Added part and footnote to tables.

14. Paragraph 3.B., Work Instructions - Clarified work instructions. Added new Work Package 21 instructions for Group 1-9 and 16-45 airplanes to do more work.

15. FIGURE 10 - Changed group applicability and quantity in step table.

16. FIGURE 18 - Updated illustrations and changed quantity in step table.

17. FIGURE 19 - Updated illustrations and changed quantity in step table.

18. FIGURE 41 - Removed typographical error in illustration.

19. FIGURE 50 - Corrected figure title.

20. FIGURE 51 - Added new figure to show clamp location(s) related to the more work for this revision.

Vertical lines are put on the left edge of each page, except in Paragraph 1.A., Effectivity and format changes, to show the location of all content changes.

Pages with no vertical lines have no changes.

**REVISION HISTORY**

| | |
|---|---|
| Original Issue: | February 02, 2006 |
| Revision 1: | July 10, 2006 |
| Revision 2: | March 13, 2008 |
| Revision 3: | October 09, 2008 |
| Revision 4: | August 26, 2010 |
| Revision 5: | September 20, 2011 |
| Revision 6: | February 21, 2013 |
| Revision 7: | November 30, 2017 |
| Revision 8: | November 13, 2020 |


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

## SPECIAL ATTENTION

**Number:** **747-57-2327**
Original Issue: February 02, 2006
Revision 8: November 13, 2020
ATA System: 5720 2811

**Summary**

**SUBJECT:** WINGS - Center Wing and Outer Wing - Change to Fasteners in Fuel Tank Walls and Change to Wire Bundle Clamps

BOEING RECOMMENDS THAT EACH OPERATOR EXAMINE THIS DOCUMENT IMMEDIATELY.

**CONCURRENT REQUIREMENTS**

None.

**BACKGROUND**

Accomplishment of the modifications within this service bulletin will help prevent possible ignition sources in the auxiliary fuel tank, main fuel tanks, and surge tanks caused by a wiring short. An ignition source in a fuel tank could result in a fire or an explosion.

A review by Boeing identified a certain fastener type in the fuel tank walls that have an insufficient bond to the structure. If energy from a wiring short goes through the fastener, arcing can occur at the ends of the fasteners in the fuel tank. The ends of the fasteners in the fuel tank do not have sufficient electrical insulation to contain the energy from the arcs.

This service bulletin makes these changes where a high energy short can occur and certain fasteners are installed: Installs a polytetrafluoroethylene (TFE) sleeve on the wire bundles where the wire bundle clamp is installed to give more protection from chafing, replaces the wire bundle clamps with a different design that has better protection on its metal edges, and seals the ends of the fasteners in the fuel tanks to contain the electrical energy from a wiring short. These changes make sure that the risk of an ignition source in the fuel tank from a short is kept to a minimum.

This service bulletin is the result of the safety assessments conducted by Boeing under SFAR 88, "Fuel Tank System Fault Tolerance Evaluation Requirements".

Boeing Service Related Problem (SRP) 747-SRP-28-172 is related to this service bulletin.

Boeing Service Related Problem (SRP) 747-SRP-57-0360 is related to this service bulletin.

Boeing Fleet Team Digest (FTD) 747 FTD 57-19001 is related to this service bulletin.

**ACTION (PRR 85539-9)**

This service bulletin is divided into work packages that are related to the different areas of the airplane.



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**Group 1-12, 14, 16-45:**
Work Package 1: Get access to the front spar of the left wing and change the clamp configurations at the specified locations.

**Group 1-45:**
Work Package 2: Get access to the front spar of the right wing and change the clamp configurations at the specified locations.

**Group 1-9, 16-45:**
Work Package 3: Get access to the rear spar of the left wing and change the clamp configurations at the specified locations.

**Group 1-9, 16-45:**
Work Package 4: Get access to the rear spar of the right wing and change the clamp configurations at the specified locations.

**Group 10-11, 13-15:**
Work Package 5: Get access to the front spar of the center wing in the forward cargo compartment and change the clamp configurations at the specified locations.

**Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
Work Package 6: Get access to the front spar of the of the horizontal stabilizer and change the clamp configurations at the specified locations. Get access to the rear spar of the horizontal stabilizer and change the clamp configurations at the specified locations.

**Group 1-45:**
Work Package 7: Prepare the number one and number two main fuel tanks for entry. Get access to the fasteners and seal the fasteners at the specified locations. Close access to the main fuel tanks.

**Group 1-45:**
Work Package 8: Prepare the number three and number four main fuel tanks for entry. Get access to the fasteners and seal the fasteners at the specified locations. Close access to the main fuel tanks.

**Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
Work Package 9: Prepare the horizontal stabilizer fuel tank for entry. Get access to the fasteners and seal the fasteners at the specified locations. Close access to the horizontal stabilizer fuel tank.

**Group 11:**
Work Package 10 - Get access to the front spar of the right wing and change the clamp configurations at the specified locations.

**Group 1-9, 16-38:**
Work Package 11 - Get access to the rear spar of the right wing and change the clamp configurations at the specified locations.

**Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
Work Package 12 - Get access to the front spar and rear spar of the horizontal stabilizer tank and change the clamp configurations at the specified locations.


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**Group 11:**
Work Package 13 - Get access to the front spar of the right wing and change the clamp configurations at the specified locations.

**Group 18:**
Work Package 14 - Get access to the front spar of the left wing, and change the clamp configurations at the specified locations.

**Group 18:**
Work Package 15 - Get access to the front spar of the right wing, and change the clamp configurations at the specified locations.

**Group 32:**
Work Package 16 - Get access to the front spar of the left wing, and change the clamp configurations at the specified locations.

**Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-21, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
Work Package 17 - Get access to the rear spar of the horizontal stabilizer torque box. Do a general visual inspection for the installation of a clamp at the specified location on wire bundle W4607. If the specified clamp is installed, then make a clamp configuration change. If the specified clamp is not installed, then no more work is necessary.

**Group 1-9, 16-45:**
Work Package 18 - Prepare the number 2 main fuel tank (left wing) for entry. Get access to the fasteners and seal the fasteners at the specified locations. Close access to the number 2 main fuel tank.

**Group 1-9, 16-45:**
Work Package 19 - Prepare the number 3 main fuel tank (right wing) for entry. Get access to the fasteners and seal the fasteners at the specified locations. Close access to the number 3 main fuel tank.

**Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-21, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
Work Package 20 - Prepare the horizontal stabilizer fuel tank for entry. Get access to the fasteners and seal the fasteners at the specified locations. Close access to the horizontal stabilizer fuel tank.

**Group 1-9, 16-45:**
Work Package 21 - Get access to the rear spar of the right wing and change the clamp configurations at the specified locations.

Service bulletin 747-57-2326 has common access and defuel requirements. This bulletin can be incorporated at the same time or separately. Service Bulletin 747-57-2326 is separate from this bulletin because it corrects a design deficiency and has warranty remedies.

## EFFECTIVITY

747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747-400, 747-400D, 747-400F, 747SP Airplanes. Refer to Paragraph 1.A.1., Airplanes, for the list of affected airplanes.

## COMPLIANCE

Federal Aviation Administration (FAA) Airworthiness Directive (AD) 2007-20-01 is related to this service bulletin.


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The Federal Aviation Administration (FAA) will possibly release an additional Airworthiness Directive related to this service bulletin. The Airworthiness Directive will make the compliance tasks and times given in this service bulletin mandatory.

Boeing recommends that the change given in Revision 1 of this service bulletin be done within 60 months after the effective date of AD 2007-20-01. The effective date of AD 2007-20-01 is October 31, 2007.

**Group 1-9, 16-45:**
Boeing recommends that the change given in Work Packages 14, 15, 16, 17, 18, 19, and 20 of this service bulletin be done within 60 months after the Revision 7 issue date of this service bulletin.

**Group 1-9, 16-45:**
Boeing recommends that the change given in Work Package 21 of this service bulletin be done within 27 months after the Revision 8 issue date of this service bulletin.

**INDUSTRY SUPPORT INFORMATION**

Boeing warranty remedies are not available for the configuration changes given in this service bulletin.

**MANPOWER**

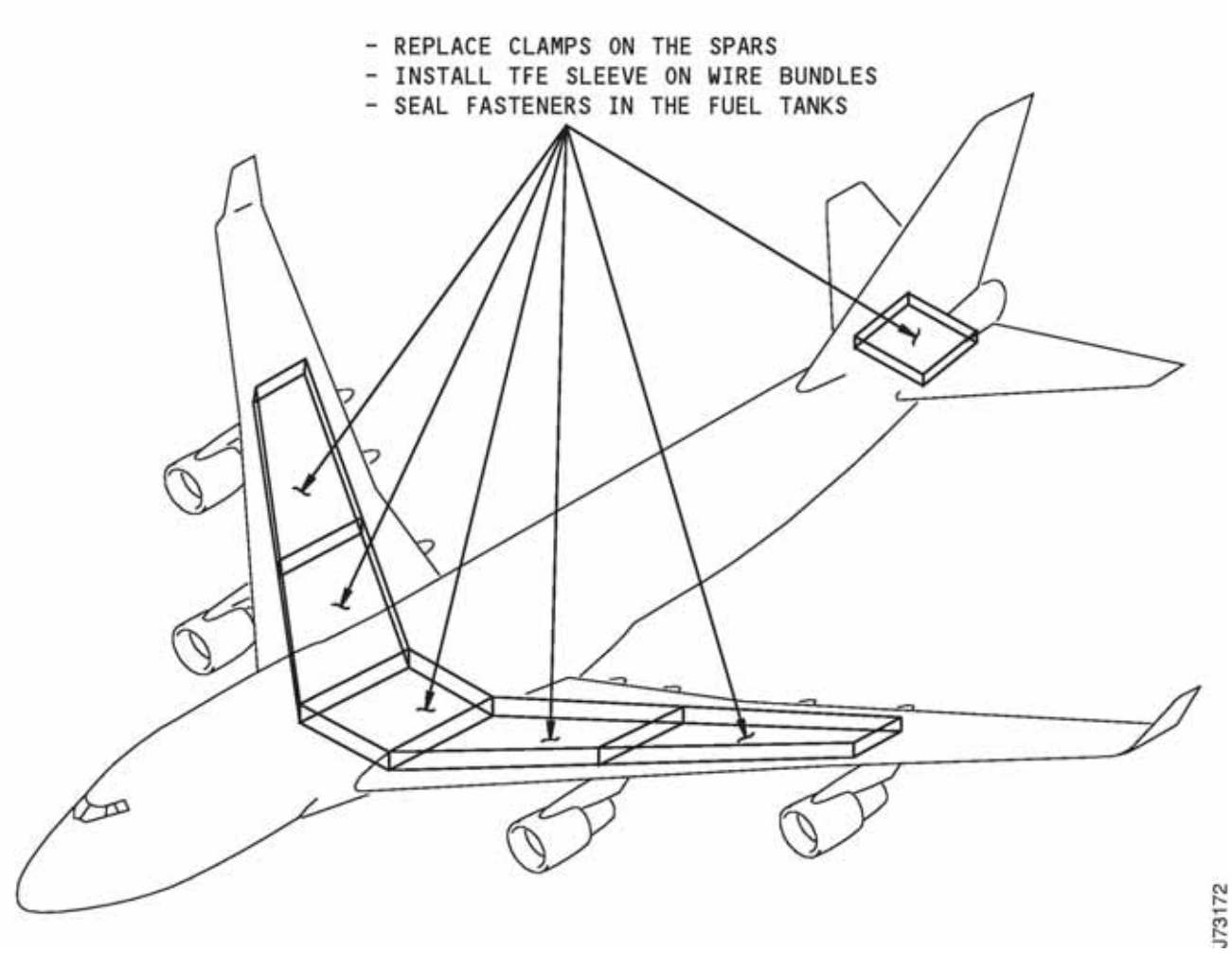
Refer to Paragraph 1.G., Manpower.

**MATERIAL INFORMATION**

Boeing Supplied Kits/Parts.

Refer to Paragraph 2.A., Material - Price and Availability.


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.





Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

BLANK PAGE


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

## SPECIAL ATTENTION

**Number:** **747-57-2327**
Original Issue: February 02, 2006
Revision 8: November 13, 2020
ATA System: 5720 2811

**SUBJECT:** WINGS - Center Wing and Outer Wing - Change to Fasteners in Fuel Tank Walls and Change to Wire Bundle Clamps

BOEING RECOMMENDS THAT EACH OPERATOR EXAMINE THIS DOCUMENT IMMEDIATELY.

### 1. PLANNING INFORMATION

#### A. Effectivity

1. Airplanes
Refer to Service Bulletin Index D6-30300 Part 3 for Airplane Variable Number, Line Number, and Serial Number data.

This bulletin is applicable to 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747-400, 747-400D, 747-400F, 747SP Airplane(s), line number(s) 645-1363 in 45 Group(s). Where the effectivity is presented with hyphens between line numbers, the airplane applicability means "through" and "inclusive", e.g. line numbers 1-9 means line numbers 1 through 9 inclusive.

This service bulletin is for the airplanes shown below. An equivalent change is on subsequent production airplanes. Refer to PRR85539-9 for data about this change.

| GROUP | CONFIGURATION | DESCRIPTION |
|---|---|---|
| 1 | - | 747-400/-400D airplanes |
| 2 | - | 747-400F airplanes without wire bundles W1726, W4300, and W4302 |
| 3 | - | 747-400F airplanes without wire bundle W1726 |
| 4 | - | 747-400 airplanes without wire bundle W1726 and without an activated horizontal stabilizer fuel tank |
| 5 | - | 747-400 airplanes without wire bundles W1726, W4300 and W4302 |
| 6 | - | 747-400F airplanes |
| 7 | - | 747-400F airplanes without wire bundles W4300 and W4302 |



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

| GROUP | CONFIGURATION | DESCRIPTION |
|---|---|---|
| 8 | - | 747-400 airplanes without wire bundles W4300 and W4302 |
| 9 | - | 747-400 airplanes without wire bundle W1726 |
| 10 | - | 747-100B SUD/-200B/-200C/-200F/-300 airplanes |
| 11 | - | 747-100B SUD/-200B/-200C/-200F/-300 airplanes that require changes to power feeder wire bundles on the left front spar |
| 12 | - | 747SP airplanes |
| 13 | - | 747-100B SUD/-200B/-200C/-200F/-300 airplanes that do not require changes to wire bundles on the left front spar |
| 14 | - | 747-100B SUD/-200B/-200C/-200F/-300 airplanes that require larger wire bundle clamps |
| 15 | - | 747-100B SUD/-200B/-200C/-200F/-300 airplanes that do not require changes to wire bundles on the left front spar and require larger clamps on the right front spar |
| 16 | - | 747-400/-400D airplanes without an activated horizontal stabilizer fuel tank |
| 17 | - | 747-400 airplanes affected by service bulletin 747-28-2197 and without wire bundle W1726 |
| | 1 | 747-400 airplanes that were changed by service bulletin 747-28-2197 |
| | 2 | 747-400 airplanes that were not changed by service bulletin 747-28-2197 |
| 18 | - | 747-400 airplanes without an activated horizontal stabilizer fuel tank |
| 19 | - | 747-400/-400D airplanes |
| | 1 | 747-400/-400D airplanes that were changed by service bulletin 747-28-2247 |
| | 2 | 747-400/-400D airplanes that were not changed by service bulletin 747-28-2247 |
| 20 | - | 747-400 airplanes without wire bundles W1726, W4300 and W4302 |
| | 1 | 747-400 airplanes that were changed by service bulletin 747-28-2265 |
| | 2 | 747-400 airplanes that were not changed by service bulletin 747-28-2265 |


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

| GROUP | CONFIGURATION | DESCRIPTION |
|---|---|---|
| 21 | - | 747-400 airplanes without wire bundles W4300 and W4302 |
| | 1 | 747-400 airplanes that were changed by service bulletin 747-28-2272 or 747-28-2274 |
| | 2 | 747-400 airplanes that were not changed by service bulletin 747-28-2272 or 747-28-2274 |
| 22 | - | 747-400 airplanes without wire bundle W1726 |
| | 1 | 747-400 airplanes that were changed by service bulletin 747-28-2272 or 747-28-2275 |
| | 2 | 747-400 airplanes that were not changed by service bulletin 747-28-2272 or 747-28-2275 |
| 23 | - | 747-400/-400D airplanes |
| 24 | - | 747-400/-400D airplanes |
| | 1 | 747-400/-400D airplanes that were changed by service bulletin 747-28-2293, 747-28-2300, or Large Cargo Freighter (LCF) modification service bulletins 747-00-2006 and 747-27-2438 or 747-00-0019 and 747-73-2073 |
| | 2 | 747-400/-400D airplanes that were not changed by service bulletin 747-28-2293, 747-28-2300, or LCF modification service bulletins 747-00-2006 and 747-27-2438 or 747-00-0019 and 747-73-2073 |
| 25 | - | 747-400 airplanes without wire bundle W1726 and without an activated horizontal stabilizer fuel tank |
| 26 | - | 747-400 airplanes without wire bundle W1726 and without an activated horizontal stabilizer fuel tank |
| 27 | - | 747-400 airplanes without wire bundles W1726, W4300 and W4302 |
| 28 | - | 747-400 airplanes without wire bundles W4300 and W4302 |
| 29 | - | 747-400 airplanes without wire bundles W4300 and W4302 |
| 30 | - | 747-400 airplanes without wire bundle W1726 |


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

| GROUP | CONFIGURATION | DESCRIPTION |
|---|---|---|
| 31 | - | 747-400 airplanes without wire bundle W1726 |
| | 1 | 747-400 airplanes that were changed by service bulletin 747-28-2275, 747-28-2279, 747-28-2285, 747-28-2295, or LCF modification service bulletins 747-00-2124 and 747-73-2074 |
| | 2 | 747-400 airplanes that were not changed by service bulletin 747-28-2275, 747-28-2279, 747-28-2285, 747-28-2295, or LCF modification service bulletins 747-00-2124 and 747-73-2074 |
| 32 | - | 747-400F airplanes without wire bundles W4300 and W4302 |
| 33 | - | 747-400F airplanes without wire bundle W1726 |
| 34 | - | 747-400F airplanes |
| 35 | - | 747-400F airplanes without wire bundles W4300 and W4302 |
| 36 | - | 747-400F airplanes without wire bundle W1726 |
| 37 | - | 747-400/-400D airplanes without an activated horizontal stabilizer fuel tank |
| 38 | - | 747-400/-400D airplanes without an activated horizontal stabilizer fuel tank |
| 39 | - | 747-400/-400D airplanes |
| | 1 | 747-400/-400D airplanes that were changed by service bulletin 747-28-2293 or 747-28-2300 |
| | 2 | 747-400/-400D airplanes that were not changed by service bulletin 747-28-2300 |
| 40 | - | 747-400 airplanes without wire bundle W1726 and without an activated horizontal stabilizer fuel tank |
| 41 | - | 747-400 airplanes without wire bundles W1726, W4300 and W4302 |
| 42 | - | 747-400 airplanes without wire bundle W1726 |
| | 1 | 747-400 airplanes that were changed by service bulletin 747-28-2275, 747-28-2279, 747-28-2285, or 747-28-2295 |
| | 2 | 747-400 airplanes that were not changed by service bulletin 747-28-2275, 747-28-2279, 747-28-2285, or 747-28-2295 |
| 43 | - | 747-400F airplanes without wire bundles W4300 and W4302 |


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

| GROUP | CONFIGURATION | DESCRIPTION |
|---|---|---|
| 44 | - | 747-400/-400D airplanes without an activated horizontal stabilizer fuel tank |
| 45 | - | 747-400 airplanes without wire bundle W1726 and without an activated horizontal stabilizer fuel tank |

Airplane Models:

747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747-400, 747-400D, 747-400F, 747SP

| Variable Number | Group |
|---|---|
| RB411 - RB413 | 15 |
| RB421 | 13 |
| RD166 - RD167 | 11 |
| RD231 - RD235 | 10 |
| RD262 | 15 |
| RD292 | 15 |
| RD301 - RD302 | 15 |
| RD311 | 15 |
| RD659 | 15 |
| RD755 | 15 |
| RD775 | 15 |
| RD783 | 15 |
| RD791 - RD792 | 15 |
| RF001 - RF006 | 1 |
| RH102 | 12 |
| RJ321 | 13 |
| RJ322 | 15 |
| RL401 - RL403 | 6 |
| RL411 - RL428 | 6 |
| RL431 - RL434 | 33 |
| RL451 - RL453 | 35 |
| RL461 - RL462 | 6 |
| RL471 - RL472 | 6 |
| RL651 - RL655 | 3 |

| Variable Number | Group |
|---|---|
| RL671 - RL675 | 3 |
| RL681 - RL683 | 6 |
| RL751 - RL752 | 34 |
| RM001 - RM003 | 25 |
| RM004 - RM007 | 4 |
| RM010 | 1 |
| RM011 - RM012 | 28 |
| RM013 | 8 |
| RM021 - RM024 | 1 |
| RM026 - RM027 | 30 |
| RM028 - RM030 | 9 |
| RM036 - RM045 | 30 |
| RM051 | 30 |
| RM052 - RM053 | 9 |
| RM071 | 9 |
| RM081 - RM084 | 30 |
| RM091 | 30 |
| RM096 - RM097 | 23 |
| RM116 - RM117 | 23 |
| RM126 - RM127 | 37 |
| RM128 - RM132 | 16 |
| RM136 - RM145 | 23 |
| RM146 - RM147 | 28 |
| RM156 - RM157 | 23 |

| Variable Number | Group |
|---|---|
| RM158 | 1 |
| RM166 - RM177 | 5 |
| RM191 - RM192 | 9 |
| RM231 - RM233 | 23 |
| RM241 - RM244 | 9 |
| RM245 - RM246 | 30 |
| RM261 - RM264 | 23 |
| RM316 - RM318 | 16 |
| RM331 - RM333 | 1 |
| RM341 | 9 |
| RM351 - RM355 | 1 |
| RM366 - RM367 | 30 |
| RM401 - RM403 | 9 |
| RM426 | 1 |
| RM431 | 9 |
| RM441 - RM443 | 1 |
| RM445 | 1 |
| RM801 - RM802 | 23 |
| RM803 | 1 |
| RM811 - RM813 | 4 |
| RM851 - RM859 | 33 |
| RM861 - RM862 | 3 |
| RM871 - RM873 | 43 |
| RM874 - RM880 | 35 |


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

| Variable Number | Group |
|---|---|
| RM881 - RM885 | 3 |
| RM886 - RM888 | 33 |
| RM891 - RM899 | 3 |
| RM901 - RM906 | 3 |
| RM911 | 32 |
| RR024 - RR025 | 14 |
| RR205 - RR206 | 15 |
| RR266 - RR267 | 14 |
| RR307 - RR310 | 15 |
| RR431 - RR432 | 13 |
| RR441 - RR442 | 15 |
| RR451 | 13 |
| RR522 | 13 |
| RR526 | 15 |
| RR554 - RR556 | 15 |
| RR566 | 13 |
| RR701 | 36 |
| RR721 - RR724 | 36 |
| RR746 - RR748 | 36 |
| RR851 - RR856 | 36 |
| RR861 - RR862 | 7 |
| RR951 - RR952 | 2 |
| RS002 | 14 |
| RS256 - RS259 | 14 |
| RS263 | 14 |
| RS265 - RS268 | 14 |
| RS275 - RS276 | 15 |
| RS303 - RS306 | 15 |
| RS319 - RS320 | 15 |
| RS331 - RS333 | 11 |
| RS341 - RS342 | 11 |
| RS703 | 13 |
| RS713 | 13 |

| Variable Number | Group |
|---|---|
| RS731 - RS732 | 13 |
| RS742 - RS743 | 13 |
| RS761 - RS762 | 15 |
| RS771 | 13 |
| RS781 - RS782 | 11 |
| RS786 | 14 |
| RT001 - RT010 | 24 |
| RT011 - RT014 | 39 |
| RT021 - RT022 | 31 |
| RT031 - RT033 | 26 |
| RT034 - RT035 | 40 |
| RT041 - RT042 | 31 |
| RT043 - RT044 | 17 |
| RT045 - RT047 | 31 |
| RT061 | 29 |
| RT071 - RT073 | 31 |
| RT074 - RT075 | 26 |
| RT101 - RT103 | 31 |
| RT121 | 31 |
| RT131 - RT133 | 31 |
| RT134 - RT137 | 42 |
| RT151 - RT152 | 29 |
| RT161 - RT162 | 24 |
| RT163 - RT168 | 39 |
| RT401 - RT410 | 31 |
| RT411 - RT412 | 27 |
| RT431 - RT441 | 31 |
| RT442 - RT447 | 42 |
| RT451 - RT455 | 27 |
| RT456 | 20 |
| RT457 - RT466 | 27 |
| RT467 - RT469 | 41 |
| RT471 - RT475 | 31 |

| Variable Number | Group |
|---|---|
| RT476 - RT496 | 24 |
| RT497 - RT499 | 39 |
| RT501 - RT507 | 31 |
| RT508 | 22 |
| RT509 | 31 |
| RT510 | 22 |
| RT511 - RT512 | 31 |
| RT513 | 22 |
| RT514 - RT520 | 31 |
| RT521 - RT530 | 42 |
| RT531 | 24 |
| RT532 - RT535 | 38 |
| RT551 - RT568 | 24 |
| RT571 | 29 |
| RT572 - RT576 | 21 |
| RT577 - RT590 | 29 |
| RT591 | 31 |
| RT601 - RT622 | 27 |
| RT623 - RT630 | 41 |
| RT631 - RT635 | 24 |
| RT636 - RT640 | 39 |
| RT641 - RT650 | 24 |
| RT651 - RT657 | 38 |
| RT671 - RT673 | 31 |
| RT681 - RT682 | 18 |
| RT691 - RT696 | 31 |
| RT697 - RT699 | 42 |
| RT701 - RT702 | 31 |
| RT703 | 24 |
| RT704 | 31 |
| RT711 - RT717 | 26 |
| RT741 - RT747 | 31 |
| RT748 - RT750 | 42 |


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

| Variable Number | Group |
|---|---|
| RT751 - RT755 | 24 |
| RT756 - RT757 | 19 |
| RT776 - RT777 | 24 |
| RT781 - RT782 | 21 |
| RT783 - RT784 | 29 |
| RT801 - RT803 | 42 |
| RT811 - RT814 | 29 |
| RT831 - RT837 | 42 |
| RT861 - RT864 | 24 |
| RT876 - RT878 | 26 |
| RT879 - RT880 | 40 |

| Variable Number | Group |
|---|---|
| RT931 - RT932 | 24 |
| RT945 - RT949 | 42 |
| RT951 - RT954 | 24 |
| RT955 | 39 |
| RT966 - RT967 | 44 |
| RU001 | 45 |
| RU002 - RU006 | 40 |
| RU016 - RU017 | 42 |
| RU031 | 31 |
| RU032 | 42 |
| RU051 - RU052 | 42 |

| Variable Number | Group |
|---|---|
| RU059 - RU060 | 42 |
| RU061 - RU062 | 39 |
| RU081 - RU083 | 42 |
| RU101 - RU102 | 39 |
| RU121 | 39 |
| RU122 - RU125 | 44 |
| RU126 - RU132 | 39 |
| RU801 - RU808 | 38 |
| RU809 | 44 |
| RU831 - RU839 | 38 |
| RU840 - RU841 | 44 |

2. Spares Affected
None.

**B. Concurrent Requirements**

None.

**C. Reason**

Accomplishment of the modifications within this service bulletin will help prevent possible ignition sources in the auxiliary fuel tank, main fuel tanks, and surge tanks caused by a wiring short. An ignition source in a fuel tank could result in a fire or an explosion.

A review by Boeing identified a certain fastener type in the fuel tank walls that have an insufficient bond to the structure. If energy from a wiring short goes through the fastener, arcing can occur at the ends of the fasteners in the fuel tank. The ends of the fasteners in the fuel tank do not have sufficient electrical insulation to contain the energy from the arcs.

This Service Bulletin makes these changes where a high energy short can occur and certain fasteners are installed: Installs a polytetrafluoroethylene (TFE) sleeve on the wire bundles where the wire bundle clamp is installed to give more protection from chafing, replaces the wire bundle clamps with a different design that has better protection on its metal edges, and seals the ends of the fasteners in the fuel tanks to contain the electrical energy from a wiring short. These changes make sure that the risk of an ignition source in the fuel tank from a short is kept to a minimum.

This service bulletin is the result of the safety assessments conducted by Boeing under SFAR 88, "Fuel Tank System Fault Tolerance Evaluation Requirements".

Boeing Service Related Problem (SRP) 747-SRP-28-172 is related to this service bulletin.

Boeing Service Related Problem (SRP) 747-SRP-57-0360 is related to this service bulletin.

Boeing Fleet Team Digest (FTD) 747 FTD 57-19001 is related to this service bulletin.


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

Revision 1 was sent to move airplanes into different groups and add locations of clamps that must be changed.

Several airplanes without activated horizontal stabilizer fuel tanks were incorrectly included in groups for airplanes with a horizontal stabilizer tank. Some airplanes have service bulletins to deactivate the horizontal stabilizer tank. The airplanes that do not have work related to the horizontal stabilizer tank are moved into other groups and configurations. More work is necessary to change clamps on the front and rear spar of the main wing, and the front and rear spar of the horizontal stabilizer tank. Typographical errors are corrected.

Revision 2 was sent to show specific configurations of wire bundles on the front spar near Front Spar Station (FSS) 703, add part numbers for larger clamps, specify permitted alternative fuel tank sealants, clarify figures, and correct errors.

Operator input and a detailed review of engineering drawings of the airplane configurations indicate that there are minor differences in the wire bundle configurations near FSS 703 on the front spar. To show the different configurations, new groups of airplanes are required. Also, for some airplanes, the clamps included in the original top kits do not fit some power feeder wire bundles at certain locations on the front spar. New top kits and a supplemental kit were created to add the larger clamps.

Revision 3 was sent to add more sizes of BACC10KL()R wire bundle clamps for power feeder wire bundles to the kits. Some operators have reported that BACC10KL106R and BACC10KL107R clamps are needed on power feeder wire bundles on the front spar. Also, the 015U1781-1 and 015U1781-2 top kits have been replaced by the 015U1781-7 and 015U1781-8 top kits but they were inadvertently deleted from the bulletin in Revision 2. These kits can still be used to accomplish the changes in this bulletin and should be referenced in the Material Information section. Also, the selection of the applicable clamp for installation on power feeder wire bundles with three wires requires clarification.

The data given in Information Notice 747-57-2327 IN03 is included in this revision.

Revision 4 was sent to show the possible clamp configurations of wire bundle installation on the front spar. Also this revision is sent to do more work to make clamp changes at one location on the front spar of the wing for Group 11 airplanes. A review of the bonding and grounding analysis and the wire bundle installation drawings show that one more clamp configuration change must be accomplished at Front Spar Station 1120. This clamp configuration change is necessary to prevent a possible ignition source in the main fuel tanks caused by a wiring short.

The data given in Information Notice 747-57-2327 IN04 is included in this revision.

Revision 5 was sent to do more work to make clamp configuration changes on the front spar of the wings for Group 18 and Group 32 airplanes. The clamp configuration changes necessary on wire bundles W1726, W4300 and W4302 were not included in the original issue or Revision 1 thru 4 of this service bulletin. These clamp configuration changes are necessary to prevent a possible ignition source in the main fuel tanks caused by a wiring short. Also, this revision is sent to correct discrepancies found in this service bulletin.

Revision 6 was sent to correct discrepancies found by operators during the accomplishment of this service bulletin. Also, a clamp configuration change on the rear spar of the horizontal stabilizer torque box is added. This clamp configuration change is necessary to help prevent a possible ignition source within the fuel tanks caused by a wiring short.


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

Revision 7 was sent to add instructions to apply a fillet seal to additional fasteners that are used for the attachment of wire bundle brackets to the left and right front wing spar, and horizontal stabilizer rear spar. The fillet seal is applied to the specified fasteners in the fuel tanks and will stop the potential of a wiring hot short between components and fasteners, which could cause an ignition source within the adjacent fuel tanks.

Revision 8 is sent to add instructions for airplanes in Groups 1 thru 9 and Groups 16 thru 45 to make clamp configuration changes on the rear spar of the right wing at WS 588. These clamp configuration changes are necessary to prevent a possible ignition source in the main fuel tanks caused by a wiring short. Also, this revision is sent to correct discrepancies found in this service bulletin.

## D. Description

This service bulletin is divided into work packages that are related to the different areas of the airplane.

**Group 1-12, 14, 16-45:**
Work Package 1: Get access to the front spar of the left wing and change the clamp configurations at the specified locations.

**Group 1-45:**
Work Package 2: Get access to the front spar of the right wing and change the clamp configurations at the specified locations.

**Group 1-9, 16-45:**
Work Package 3: Get access to the rear spar of the left wing and change the clamp configurations at the specified locations.

**Group 1-9, 16-45:**
Work Package 4: Get access to the rear spar of the right wing and change the clamp configurations at the specified locations.

**Group 10-11, 13-15:**
Work Package 5: Get access to the front spar of the center wing in the forward cargo compartment and change the clamp configurations at the specified locations.

**Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
Work Package 6: Get access to the front spar of the of the horizontal stabilizer and change the clamp configurations at the specified locations. Get access to the rear spar of the horizontal stabilizer and change the clamp configurations at the specified locations.

**Group 1-45:**
Work Package 7: Prepare the number one and number two main fuel tanks for entry. Get access to the fasteners and seal the fasteners at the specified locations. Close access to the main fuel tanks.

**Group 1-45:**
Work Package 8: Prepare the number three and number four main fuel tanks for entry. Get access to the fasteners and seal the fasteners at the specified locations. Close access to the main fuel tanks.


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
Work Package 9: Prepare the horizontal stabilizer fuel tank for entry. Get access to the fasteners and seal the fasteners at the specified locations. Close access to the horizontal stabilizer fuel tank.

**Group 11:**
Work Package 10 - Get access to the front spar of the right wing and change the clamp configurations at the specified locations.

**Group 1-9, 16-38:**
Work Package 11 - Get access to the rear spar of the right wing and change the clamp configurations at the specified locations.

**Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
Work Package 12 - Get access to the front spar and rear spar of the horizontal stabilizer tank and change the clamp configurations at the specified locations.

**Group 11:**
Work Package 13 - Get access to the front spar of the right wing and change the clamp configurations at the specified locations.

**Group 18:**
Work Package 14 - Get access to the front spar of the left wing, and change the clamp configurations at the specified locations.

**Group 18:**
Work Package 15 - Get access to the front spar of the right wing, and change the clamp configurations at the specified locations.

**Group 32:**
Work Package 16 - Get access to the front spar of the left wing, and change the clamp configurations at the specified locations.

**Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-21, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
Work Package 17 - Get access to the rear spar of the horizontal stabilizer torque box. Do a general visual inspection for the installation of a clamp at the specified location on wire bundle W4607. If the specified clamp is installed, then make a clamp configuration change. If the specified clamp is not installed, then no more work is necessary.

**Group 1-9, 16-45:**
Work Package 18 - Prepare the number 2 main fuel tank (left wing) for entry. Get access to the fasteners and seal the fasteners at the specified locations. Close access to the number 2 main fuel tank.

**Group 1-9, 16-45:**
Work Package 19 - Prepare the number 3 main fuel tank (right wing) for entry. Get access to the fasteners and seal the fasteners at the specified locations. Close access to the number 3 main fuel tank.


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-21, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
Work Package 20 - Prepare the horizontal stabilizer fuel tank for entry. Get access to the fasteners and seal the fasteners at the specified locations. Close access to the horizontal stabilizer fuel tank.

**Group 1-9, 16-45:**
Work Package 21 - Get access to the rear spar of the right wing and change the clamp configurations at the specified locations.

Service bulletin 747-57-2326 has common access and defuel requirements. This bulletin can be incorporated at the same time or separately. Service Bulletin 747-57-2326 is separate from this bulletin because it corrects a design deficiency and has warranty remedies.

Revision 1 - More work is necessary on airplanes changed as shown in the original issue of this service bulletin. Refer to Work Packages 10, 11, and 12 as applicable for instructions.

Work Package 10 is added for Group 11 airplanes to change one clamp on the front spar of the right wing at front spar station (FSS) 600.

Work Package 11 is added for Group 1-9 and Group 16-38 airplanes to change three clamps on the rear spar of the right wing at FSS 683.

Work Package 12 is added for Group 1, 5, 8-9; Group 17, Configuration 1; Group 19, Configuration 2; Group 20, Configuration 2; Group 21, Configuration 2; Group 22, Configuration 2; Group 23-24, 27-30; Group 31, Configuration 2 airplanes to change one clamp on the front spar of the horizontal stabilizer tank at Right Buttock Line (RBL) 2 and three clamps on the rear spar of the horizontal stabilizer tank at RBL 18.

Revision 2 - For airplanes in Group 10, and Groups 12-15, no more work is necessary on airplanes changed as shown in the Original Issue or Revision 1 of this service bulletin.

Revision 2 - For airplanes in Group 1-9, Group 11, and Groups 16-45, no more work is necessary on airplanes changed as shown in Revision 1 of this service bulletin.

Revision 2 - For airplanes in Group 1-9, Group 11, and Groups 16-45, more work is necessary for airplanes changed by the Original Issue of this bulletin. Refer to Work Packages 10, 11 and 12 for instructions.

Revision 3 - No more work is necessary on airplanes changed as shown in the Original Issue, Revision 1, or Revision 2 of this service bulletin.

Revision 4 - For Group 11 airplanes, more work is necessary on airplanes changed in accordance with the original issue, Revision 1, Revision 2 and Revision 3 of this service bulletin. Refer to Work Package 13 for instructions.

Revision 4 - For Group 1-45 airplanes, more work is necessary on airplanes changed in accordance with the original issue of this service bulletin. Refer to Work Packages 10, 11, and 12 for instructions.

Revision 4 - For Group 1-10, and Groups 12-45 airplanes, no more work is necessary on airplanes changed in accordance with the Revision 1, Revision 2 and Revision 3 of this service bulletin.


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

Revision 5 - For Group 18 airplanes, more work is necessary on airplanes changed in accordance with the original issue, Revision 1, Revision 2, Revision 3 or Revision 4 of this service bulletin. Refer to Work Package 14 and Work Package 15 for the instructions.

Revision 5 - For Group 32 airplanes, more work is necessary on airplanes changed in accordance with the original issue, Revision 1, Revision 2, Revision 3 or Revision 4 of this service bulletin. Refer to Work Package 16 for the instructions.

Work Package 14 is added for Group 18 airplanes to change five clamps on wire bundles W1726 and W4300 on the front spar of the left wing at front spar station (FSS) 453 to FSS 655, and FSS 885 to FSS 1141.

Work Package 15 is added for Group 18 airplanes to change two clamps on wire bundle W4302 on the front spar of the right wing at FSS 453 to FSS 655.

Work Package 16 is added for Group 32 airplanes to change five clamps on wire bundle W1726 on the front spar of the left wing at FSS 453 to FSS 655, and FSS 885 to FSS 1141.

Revision 6 - More work was necessary on airplanes changed in accordance with the original issue, Revision 1, Revision 2, Revision 3, Revision 4 or Revision 5 of this service bulletin. For Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-21, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2 airplanes, make a clamp configuration change on the rear spar of the horizontal stabilizer torque box. Refer to Work Package 17 for the work instructions.

Effects of Revision 8 on airplanes on which the original issue, Revision 1, Revision 2, Revision 3, Revision 4, Revision 5, Revision 6 or Revision 7 was previously done:

| Group | Condition | Action |
|---|---|---|
| Groups 1-9 and 16-45 | Airplanes that have accomplished the Original Issue, Revision 1, Revision 2, Revision 3, Revision 4, Revision 5, or Revision 6 of this service bulletin. | Do Work Packages 18, 19 and 21 |
| Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-21, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2 | Airplanes that have accomplished the Original Issue, Revision 1, Revision 2, Revision 3, Revision 4, Revision 5, or Revision 6 of this service bulletin. | In addition to Work Packages 18 and 19, also do Work Packages 20 and 21 |
| Groups 10-15 | Airplanes that have accomplished Revision 1, Revision 2, Revision 3, Revision 4, Revision 5, Revision 6, or Revision 7 of this service bulletin. | None |
| Groups 1-9 and 16-45 | Airplanes that have accomplished Revision 7 of this service bulletin. | Do Work Package 21 |


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The work in this service bulletin is done in the maintenance zone(s) given below.

**Group 1, 5, 8-9, 17, 19-24, 27-31, 39, 41-42:**

| Affected Maintenance Zones | |
|---|---|
| **Model** | **Zone** |
| 747-400 | 338, 348, 511, 521, 541, 542, 543, 544, 545, 551, 571, 572, 611, 621, 641, 642, 643, 644, 645, 651, 671, 672 |

**Group 2-3, 6-7, 32-36, 43:**

| Affected Maintenance Zones | |
|---|---|
| **Model** | **Zone** |
| 747-400F | 511, 521, 541, 542, 543, 544, 545, 551, 571, 572, 611, 621, 641, 642, 643, 644, 645, 651, 671, 672 |

**Group 4, 16, 18, 25-26, 37, 40, 45:**

| Affected Maintenance Zones | |
|---|---|
| **Model** | **Zone** |
| 747-400 | 511, 521, 541, 542, 543, 544, 545, 551, 571, 572, 611, 621, 641, 642, 643, 644, 645, 651, 671, 672 |

**Group 10:**

| Affected Maintenance Zones | |
|---|---|
| **Model** | **Zone** |
| 747-200B | 124, 511, 521, 541, 542, 543, 544, 545, 551, 611, 621, 641, 642, 643, 644, 645, 651 |

**Group 11:**

| Affected Maintenance Zones | |
|---|---|
| **Model** | **Zone** |
| 747-200B, 747-300 | 124, 511, 521, 541, 542, 543, 544, 545, 551, 611, 621, 641, 642, 643, 644, 645, 651 |


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**Group 12:**

| Affected Maintenance Zones | |
|---|---|
| **Model** | **Zone** |
| 747SP | 511, 521, 541, 542, 543, 544, 545, 551, 611, 621, 641, 642, 643, 644, 645, 651 |

**Group 13, 15:**

| Affected Maintenance Zones | |
|---|---|
| **Model** | **Zone** |
| 747-200B, 747-200C, 747-200F, 747-300 | 124, 611, 621, 641, 642, 643, 644, 645, 651 |

**Group 14:**

| Affected Maintenance Zones | |
|---|---|
| **Model** | **Zone** |
| 747-100B SUD, 747-200F, 747-300 | 124, 511, 521, 541, 542, 543, 544, 545, 551, 611, 621, 641, 642, 643, 644, 645, 651 |

**Group 38, 44:**

| Affected Maintenance Zones | |
|---|---|
| **Model** | **Zone** |
| 747-400, 747-400D | 511, 521, 541, 542, 543, 544, 545, 551, 571, 572, 611, 621, 641, 642, 643, 644, 645, 651, 671, 672 |

## E. Compliance

Federal Aviation Administration (FAA) Airworthiness Directive (AD) 2007-20-01 is related to this service bulletin. The effective date of AD 2007-20-01 is October 31, 2007.

The Federal Aviation Administration (FAA) will possibly release an additional Airworthiness Directive related to this service bulletin. The Airworthiness Directive will make the compliance tasks and times given in this service bulletin mandatory.

Boeing recommends that the change given in Revision 1 of this service bulletin be done within 60 months after the effective date of AD 2007-20-01.

**Group 1-9, 16-45:**
Boeing recommends that the change given in Work Packages 14, 15, 16, 17, 18, 19, and 20 of this service bulletin be done within 60 months after the Revision 7 issue date of this service bulletin.


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**Group 1-9, 16-45:**
Boeing recommends that the change given in Work Package 21 of this service bulletin be done within 27 months after the Revision 8 issue date of this service bulletin.

## F. Approval

**NOTE:** The approval statement that follows is valid for all affected airplanes, except 747-100B SUD and 747-400D airplanes.

This service bulletin was examined by the Federal Aviation Administration (FAA). The changes specified in this service bulletin comply with the applicable regulations and are FAA approved, as well as European Aviation Safety Agency (EASA)/Joint Aviation Authorities (JAA) approved for all EASA/JAA approved airplanes listed in the service bulletin effectivity. This service bulletin and its approval were based on the airplane in its original Boeing delivery configuration or as modified by other approved Boeing changes.

If an airplane has a non-Boeing modification or repair that affects a component or system also affected by this service bulletin, the operator is responsible for obtaining appropriate regulatory agency approval before incorporating this service bulletin.

In addition, the Manager of the FAA Seattle Aircraft Certification Office approves the action (i.e. inspection or modification) defined in this service bulletin as an alternative method of compliance to the requirements of paragraph (f)(1) of AD 2007-20-01. All provisions of AD 2007-20-01 that are not specifically referenced in the above statement remain fully applicable and must be complied with.

**NOTE:** The approval statement that follows is valid for 747-100B SUD and 747-400D airplanes.

This service bulletin was examined by the Federal Aviation Administration (FAA). The changes specified in this service bulletin comply with the applicable regulations and are FAA approved for all airplanes listed in the service bulletin effectivity. This service bulletin and its approval were based on the airplane in its original Boeing delivery configuration or as modified by other approved Boeing changes.

If an airplane has a non-Boeing modification or repair that affects a component or system also affected by this service bulletin, the operator is responsible for obtaining appropriate regulatory agency approval before incorporating this service bulletin.

In addition, the Manager of the FAA Seattle Aircraft Certification Office approves the action (i.e. inspection or modification) defined in this service bulletin as an alternative method of compliance to the requirements of paragraph (f)(1) of AD 2007-20-01. All provisions of AD 2007-20-01 that are not specifically referenced in the above statement remain fully applicable and must be complied with.

## G. Manpower

The tables below shows an estimate of the task-hours necessary to do this change for each work package. This estimate is for direct labor only, done by an experienced crew. Adjust the estimate with operator task-hour data if necessary. The estimate does not include lost time. These are some examples of lost time:

— Time to adjust to the workplace
— Time to schedule the work
— Time to examine the work
— Time to cure the materials
— Time to make the parts


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

— Time to find the tools.

**Group 32:**
**Work Package 1 - Front Spar - Left Wing - Change of the Wire Bundle Clamps**

| Task | Number of Persons | Task Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 2 | 1.00 | 0.50 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 7 | 2 | 1.00 | 0.50 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 10 | 1 | 0.75 | 0.75 |
| Close Access | 2 | 1.00 | 0.50 |
| Total per Airplane | | 3.75 | 2.25 |

**Group 20, 27:**
**Work Package 1 - Front Spar - Left Wing - Change of the Wire Bundle Clamps**

| Task | Number of Persons | Task-Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 2 | 1.00 | 0.50 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 5 | 2 | 1.00 | 0.50 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 32 | 1 | 0.75 | 0.75 |
| Close Access | 2 | 1.00 | 0.50 |
| Total per Airplane | | 3.75 | 2.25 |

**Group 5:**
**Work Package 1 - Front Spar - Left Wing - Change of the Wire Bundle Clamps**

| Task | Number of Persons | Task-Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 2 | 1.00 | 0.50 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 5 | 2 | 1.00 | 0.50 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 36 | 1 | 0.75 | 0.75 |
| Close Access | 2 | 1.00 | 0.50 |
| Total per Airplane | | 3.75 | 2.25 |


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**Group 2, 41:**
**Work Package 1 - Front Spar - Left Wing - Change of the Wire Bundle Clamps**

| Task | Number of Persons | Task-Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 2 | 1.00 | 0.50 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 5 | 2 | 1.00 | 0.50 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 37 | 1 | 0.75 | 0.75 |
| Close Access | 2 | 1.00 | 0.50 |
| Total per Airplane | | 3.75 | 2.25 |

**Group 3-4, 9, 25, 30, 33:**
**Work Package 1 - Front Spar - Left Wing - Change of the Wire Bundle Clamps**

| Task | Number of Persons | Task-Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 2 | 1.00 | 0.50 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 6 | 2 | 2.00 | 1.00 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 9 | 1 | 0.75 | 0.75 |
| Close Access | 2 | 1.00 | 0.50 |
| Total per Airplane | | 4.75 | 2.75 |

**Group 17, 22, 26, 31:**
**Work Package 1 - Front Spar - Left Wing - Change of the Wire Bundle Clamps**

| Task | Number of Persons | Task-Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 2 | 1.00 | 0.50 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 6 | 2 | 2.00 | 1.00 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 32 | 1 | 0.75 | 0.75 |
| Close Access | 2 | 1.00 | 0.50 |
| Total per Airplane | | 4.75 | 2.75 |

**Group 36, 40, 42:**
**Work Package 1 - Front Spar - Left Wing - Change of the Wire Bundle Clamps**

| Task | Number of Persons | Task-Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 2 | 1.00 | 0.50 |


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**Group 36, 40, 42:**
**Work Package 1 - Front Spar - Left Wing - Change of the Wire Bundle Clamps**

| Task | Number of Persons | Task-Hours | Elapsed Hours |
|---|---|---|---|
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 6 | 2 | 2.00 | 1.00 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 37 | 1 | 0.75 | 0.75 |
| Close Access | 2 | 1.00 | 0.50 |
| Total per Airplane | | 4.75 | 2.75 |

**Group 8, 28, 35:**
**Work Package 1 - Front Spar - Left Wing - Change of the Wire Bundle Clamps**

| Task | Number of Persons | Task-Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 2 | 1.00 | 0.50 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 7 | 2 | 2.00 | 1.00 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 10 | 1 | 1.75 | 1.75 |
| Close Access | 2 | 1.00 | 0.50 |
| Total per Airplane | | 5.75 | 3.75 |

**Group 21, 29:**
**Work Package 1 - Front Spar - Left Wing - Change of the Wire Bundle Clamps**

| Task | Number of Persons | Task-Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 2 | 1.00 | 0.50 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 7 | 2 | 2.00 | 1.00 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 38 | 1 | 1.75 | 1.75 |
| Close Access | 2 | 1.00 | 0.50 |
| Total per Airplane | | 5.75 | 3.75 |

**Group 43:**
**Work Package 1 - Front Spar - Left Wing - Change of the Wire Bundle Clamps**

| Task | Number of Persons | Task-Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 2 | 1.00 | 0.50 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 7 | 2 | 2.00 | 1.00 |


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**Group 43:**
**Work Package 1 - Front Spar - Left Wing - Change of the Wire Bundle Clamps**

| Task | Number of Persons | Task-Hours | Elapsed Hours |
|---|---|---|---|
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 39 | 1 | 1.75 | 1.75 |
| Close Access | 2 | 1.00 | 0.50 |
| Total per Airplane | | 5.75 | 3.75 |

**Group 45:**
**Work Package 1 - Front Spar - Left Wing - Change of the Wire Bundle Clamps**

| Task | Number of Persons | Task-Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 2 | 1.00 | 0.50 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 6 | 2 | 2.00 | 1.00 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 40 | 1 | 1.75 | 1.75 |
| Close Access | 2 | 1.00 | 0.50 |
| Total per Airplane | | 5.75 | 3.75 |

**Group 1, 6, 16, 23, 34, 37:**
**Work Package 1 - Front Spar - Left Wing - Change of the Wire Bundle Clamps**

| Task | Number of Persons | Task-Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 2 | 1.00 | 0.50 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 8 | 2 | 2.00 | 1.00 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 10 | 1 | 1.75 | 1.75 |
| Close Access | 2 | 1.00 | 0.50 |
| Total per Airplane | | 5.75 | 3.75 |

**Group 18-19, 24, 38-39, 44:**
**Work Package 1 - Front Spar - Left Wing - Change of the Wire Bundle Clamps**

| Task | Number of Persons | Task Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 2 | 1.00 | 0.50 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 8 | 2 | 2.00 | 1.00 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 38 | 1 | 1.75 | 1.75 |


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**Group 18-19, 24, 38-39, 44:**
**Work Package 1 - Front Spar - Left Wing - Change of the Wire Bundle Clamps**

| Task | Number of Persons | Task Hours | Elapsed Hours |
|---|---|---|---|
| Close Access | 2 | 1.00 | 0.50 |
| Total per Airplane | | 5.75 | 3.75 |

**Group 10, 12, 14:**
**Work Package 1 - Front Spar - Left Wing - Change of the Wire Bundle Clamps**

| Task | Number of Persons | Task-Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 2 | 1.00 | 0.50 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 12 | 2 | 2.50 | 1.25 |
| Close Access | 2 | 1.00 | 0.50 |
| Total per Airplane | | 4.50 | 2.25 |

**Group 11:**
**Work Package 1 - Front Spar - Left Wing - Change of the Wire Bundle Clamps**

| Task | Number of Persons | Task-Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 2 | 1.00 | 0.50 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 11 | 1 | 1.00 | 1.00 |
| Close Access | 2 | 1.00 | 0.50 |
| Total per Airplane | | 3.00 | 2.00 |

**Group 2, 7, 20-21, 27, 29, 41:**
**Work Package 2 - Front Spar - Right Wing - Change of the Wire Bundle Clamps**

| Task | Number of Persons | Task-Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 2 | 1.00 | 0.50 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 13 | 2 | 2.25 | 1.13 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 33 | 2 | 2.00 | 1.00 |
| Close Access | 2 | 1.00 | 0.50 |
| Total per Airplane | | 6.25 | 3.13 |


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**Group 5, 8, 28, 32, 35, 43:**
**Work Package 2 - Front Spar - Right Wing - Change of the Wire Bundle Clamps**

| Task | Number of Persons | Task-Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 2 | 1.00 | 0.50 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 13 | 2 | 2.25 | 1.13 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 34 | 2 | 2.00 | 1.00 |
| Close Access | 2 | 1.00 | 0.50 |
| Total per Airplane | | 6.25 | 3.13 |

**Group 18:**
**Work Package 2 - Front Spar - Right Wing - Change of the Wire Bundle Clamps**

| Task | Number of Persons | Task-Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 2 | 1.00 | 0.50 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 14 | 2 | 2.25 | 1.13 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 35 | 2 | 2.00 | 1.00 |
| Close Access | 2 | 1.00 | 0.50 |
| Total per Airplane | | 6.25 | 3.13 |

**Group 1, 3-4, 6, 9, 16:**
**Work Package 2 - Front Spar - Right Wing - Change of the Wire Bundle Clamps**

| Task | Number of Persons | Task-Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 2 | 1.00 | 0.50 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 14 | 2 | 3.00 | 1.50 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 17 | 2 | 2.00 | 1.00 |
| Close Access | 2 | 1.00 | 0.50 |
| Total per Airplane | | 7.00 | 3.50 |

**Group 17, 19, 22, 24, 26, 31, 36, 38-40, 42, 44-45:**
**Work Package 2 - Front Spar - Right Wing - Change of the Wire Bundle Clamps**

| Task | Number of Persons | Task-Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 2 | 1.00 | 0.50 |


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**Group 17, 19, 22, 24, 26, 31, 36, 38-40, 42, 44-45:**
**Work Package 2 - Front Spar - Right Wing - Change of the Wire Bundle Clamps**

| Task | Number of Persons | Task-Hours | Elapsed Hours |
|---|---|---|---|
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 14 | 2 | 3.00 | 1.50 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 33 | 2 | 2.00 | 1.00 |
| Close Access | 2 | 1.00 | 0.50 |
| Total per Airplane | | 7.00 | 3.50 |

**Group 23, 25, 30, 33-34, 37:**
**Work Package 2 - Front Spar - Right Wing - Change of the Wire Bundle Clamps**

| Task | Number of Persons | Task-Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 2 | 1.00 | 0.50 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 14 | 2 | 3.00 | 1.50 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 34 | 2 | 2.00 | 1.00 |
| Close Access | 2 | 1.00 | 0.50 |
| Total per Airplane | | 7.00 | 3.50 |

**Group 11:**
**Work Package 2 - Front Spar - Right Wing - Change of the Wire Bundle Clamps**

| Task | Number of Persons | Task-Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 2 | 1.00 | 0.50 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 15 | 2 | 3.50 | 1.75 |
| Close Access | 2 | 1.00 | 0.50 |
| Total per Airplane | | 5.50 | 2.75 |

**Group 10, 12-15:**
**Work Package 2 - Front Spar - Right Wing - Change of the Wire Bundle Clamps**

| Task | Number of Persons | Task-Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 2 | 1.00 | 0.50 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 16 | 2 | 3.00 | 1.50 |
| Close Access | 2 | 1.00 | 0.50 |


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**Group 10, 12-15:**
**Work Package 2 - Front Spar - Right Wing - Change of the Wire Bundle Clamps**

| Task | Number of Persons | Task-Hours | Elapsed Hours |
|---|---|---|---|
| Total per Airplane | | 5.00 | 2.00 |

**Group 1-9, 16-45:**
**Work Package 3 - Rear Spar - Left Wing - Change of the Wire Bundle Clamps**

| Task | Number of Persons | Task Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 1 | 0.75 | 0.75 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 18 | 2 | 8.50 | 4.25 |
| Close Access | 1 | 0.75 | 0.75 |
| Total per Airplane | | 10.00 | 5.75 |

**Group 1-9, 16-45:**
**Work Package 4 - Rear Spar - Right Wing - Change of the Wire Bundle Clamps**

| Task | Number of Persons | Task Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 1 | 0.75 | 0.75 |
| FIGURE 1, FIGURE 2 and FIGURE 19 | 2 | 7.14 | 3.57 |
| Close Access | 1 | 0.75 | 0.75 |
| Total per Airplane | | 8.64 | 5.07 |

**Group 10-11, 13-15:**
**Work Package 5 - Front Spar - Forward Cargo Compartment - Change of the Wire Bundle Clamps**

| Task | Number of Persons | Task-Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 1 | 0.25 | 0.25 |
| FIGURE 2 and FIGURE 20 | 1 | 0.50 | 0.50 |
| Close Access | 1 | 0.25 | 0.25 |
| Total per Airplane | | 1.00 | 1.00 |

**Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
**Work Package 6 - Front and Rear Spar - Horizontal Stabilizer - Change of the Wire Bundle Clamps**

| Task | Number of Persons | Task-Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 1 | 0.25 | 0.25 |


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
**Work Package 6 - Front and Rear Spar - Horizontal Stabilizer - Change of the Wire Bundle Clamps**

| Task | Number of Persons | Task-Hours | Elapsed Hours |
|---|---|---|---|
| FIGURE 2, FIGURE 4 and FIGURE 21 | 2 | 3.38 | 1.69 |
| FIGURE 2, FIGURE 4 and FIGURE 22 | 2 | 5.14 | 2.57 |
| Close Access | 1 | 0.25 | 0.25 |
| Total per Airplane | | 9.02 | 4.76 |

**Group 1-9, 16-45:**
**Work Package 7 - Front Spar and Rear Spar - Number One and Number Two Main Fuel Tanks - Seal of the Fasteners**

| Task | Number of Persons | Task-Hours | Elapsed Hours |
|---|---|---|---|
| Prepare/Open Access | 4 | 13.00 | 3.25 |
| FIGURE 23 and FIGURE 24 | 4 | 79.00 | 19.75 |
| FIGURE 23 and FIGURE 26 | 4 | 27.00 | 6.75 |
| Close Access | 4 | 13.00 | 3.25 |
| Total per Airplane | | 132.00 | 33.00 |

**Group 10-15:**
**Work Package 7 - Front Spar - Number One and Number Two Main Fuel Tanks - Seal of the Fasteners**

| Task | Number of Persons | Task-Hours | Elapsed Hours |
|---|---|---|---|
| Prepare/Open Access | 4 | 13.00 | 3.25 |
| FIGURE 23 and FIGURE 25 | 4 | 16.00 | 4.00 |
| Close Access | 4 | 13.00 | 3.25 |
| Total per Airplane | | 42.00 | 10.50 |

**Group 1-9, 16-45:**
**Work Package 8 - Front Spar and Rear Spar - Number Three and Number Four Main Fuel Tanks - Seal of the Fasteners**

| Task | Number of Persons | Task-Hours | Elapsed Hours |
|---|---|---|---|
| Prepare/Open Access | 4 | 13.00 | 3.25 |
| FIGURE 23 and FIGURE 27 | 4 | 79.00 | 19.75 |
| FIGURE 23 and FIGURE 29 | 4 | 27.00 | 6.75 |


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**Group 1-9, 16-45:**
**Work Package 8 - Front Spar and Rear Spar - Number Three and Number Four Main Fuel Tanks - Seal of the Fasteners**

| Task | Number of Persons | Task-Hours | Elapsed Hours |
|---|---|---|---|
| Close Access | 4 | 13.00 | 3.25 |
| Total per Airplane | | 132.00 | 33.00 |

**Group 10-15:**
**Work Package 8 - Front Spar - Number Three and Number Four Main Fuel Tanks - Seal of the Fasteners**

| Task | Number of Persons | Task-Hours | Elapsed Hours |
|---|---|---|---|
| Prepare/Open Access | 4 | 13.00 | 3.25 |
| FIGURE 23 and FIGURE 28 | 4 | 16.00 | 4.00 |
| Close Access | 4 | 13.00 | 3.25 |
| Total per Airplane | | 42.00 | 10.50 |

**Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
**Work Package 9 - Front and Rear Spar - Horizontal Stabilizer Fuel Tank - Seal of the Fasteners**

| Task | Number of Persons | Task-Hours | Elapsed Hours |
|---|---|---|---|
| Prepare/Open Access | 4 | 5.00 | 1.25 |
| FIGURE 23 and FIGURE 30 | 4 | 72.00 | 18.00 |
| FIGURE 23 and FIGURE 31 | 4 | 18.00 | 4.50 |
| Close Access | 4 | 5.00 | 1.25 |
| Total per Airplane | | 100.00 | 25.00 |

**Group 11:**
**Work Package 10 - More Work - Front Spar - Right Wing - Change of the Wire Bundle Clamps at Front Spar Station 600**

| Task | Number of Persons | Task-Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 2 | 1.00 | 0.50 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 15 | 1 | 0.38 | 0.38 |
| Close Access | 2 | 1.00 | 1.00 |
| Total per Airplane | | 2.38 | 1.88 |


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**Group 1-9, 16-45:**
**Work Package 11 - More Work - Rear Spar - Right Wing - Change of the Wire Bundle Clamps at Rear Spar Station 683**

| Task | Number of Persons | Task-Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 1 | 0.75 | 0.75 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 19 | 1 | 1.14 | 1.14 |
| Close Access | 1 | 0.75 | 0.75 |
| Total per Airplane | | 2.64 | 2.64 |

**Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23-24, 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
**Work Package 12 - More Work - Front and Rear Spar - Horizontal Stabilizer - Change of the Wire Bundle Clamps**

| Task | Number of Persons | Task Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 1 | 0.25 | 0.25 |
| FIGURE 2, FIGURE 4 and FIGURE 21 | 1 | 0.38 | 0.38 |
| FIGURE 2, FIGURE 4 and FIGURE 22 | 1 | 1.14 | 1.14 |
| Close Access | 1 | 0.25 | 0.25 |
| Total per Airplane | | 2.02 | 2.02 |

**Group 11:**
**Work Package 13 - More Work - Front Spar - Right Wing - Change of the Wire Bundle Clamps**

| Task | Number of Persons | Task Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 1 | 0.75 | 0.75 |
| FIGURE 2, FIGURE 4 and FIGURE 41 | 1 | 0.50 | 0.50 |
| Close Access | 1 | 0.75 | 0.75 |
| Total per Airplane | | 2.00 | 2.00 |

**Group 18:**
**Work Package 14 - More Work - Front Spar - Left Wing - Change of the Wire Bundle W1726 and W4300 Clamps**

| Task | Number of Persons | Task Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 1 | 0.75 | 0.75 |


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**Group 18:**
**Work Package 14 - More Work - Front Spar - Left Wing - Change of the Wire Bundle W1726 and W4300 Clamps**

| Task | Number of Persons | Task Hours | Elapsed Hours |
|---|---|---|---|
| FIGURE 1, FIGURE 2, FIGURE 3, FIGURE 42 and FIGURE 43 | 1 | 1.75 | 1.75 |
| Close Access | 1 | 0.75 | 0.75 |
| Total per Airplane | | 3.25 | 3.25 |

**Group 18:**
**Work Package 15 - More Work - Front Spar - Right Wing - Change of the Wire Bundle W4302 Clamps**

| Task | Number of Persons | Task Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 1 | 0.75 | 0.75 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 44 | 1 | 0.75 | 0.75 |
| Close Access | 1 | 0.75 | 0.75 |
| Total per Airplane | | 2.25 | 2.25 |

**Group 32:**
**Work Package 16 - More Work - Front Spar - Left Wing - Change of the Wire Bundle W1726 Clamps**

| Task | Number of Persons | Task Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 1 | 0.75 | 0.75 |
| FIGURE 1, FIGURE 2, FIGURE 3, FIGURE 45 and FIGURE 46 | 1 | 1.75 | 1.75 |
| Close Access | 1 | 0.75 | 0.75 |
| Total per Airplane | | 3.25 | 3.25 |

**Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-21, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
**Work Package 17 - More Work - Rear Spar - Horizontal Stabilizer - Change of the Wire Bundle W4607 Clamp**

| Task | Number of Persons | Task Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 1 | 0.75 | 0.75 |
| FIGURE 2, FIGURE 4 and FIGURE 47 | 1 | 0.50 | 0.50 |
| Close Access | 1 | 0.75 | 0.75 |
| Total per Airplane | | 2.00 | 2.00 |


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**Group 1-9, 16-45:**
**Work Package 18 - More Work - Fillet Seal Application of Additional Fasteners at FSSI 600 (LEFT WING)**

| Task | Number of Persons | Task Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 2 | 3.00 | 1.50 |
| FIGURE 48 | 2 | 1.50 | 0.75 |
| Close Access | 2 | 3.00 | 1.50 |
| Total per Airplane | | 7.50 | 3.75 |

**Group 1-9, 16-45:**
**Work Package 19 - More Work - Fillet Seal Application for Additional Fasteners at FSSI 600 (RIGHT WING)**

| Task | Number of Persons | Task Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 2 | 3.00 | 1.50 |
| FIGURE 49 | 2 | 1.50 | 0.75 |
| Close Access | 2 | 3.00 | 1.50 |
| Total per Airplane | | 7.50 | 3.75 |

**Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-21, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
**Work Package 20 - More Work - Fillet Seal Application for Additional Fasteners at Horizontal Stabilizer Fuel Tank Rear Spar**

| Task | Number of Persons | Task Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 4 | 5.00 | 1.25 |
| FIGURE 50 | 2 | 1.50 | 0.75 |
| Close Access | 4 | 5.00 | 1.25 |
| Total per Airplane | | 11.50 | 3.25 |

**Group 1-9, 16-45:**
**Work Package 21 - More Work - Rear Spar - Right Wing - Change of the Wire Bundle Clamps at WS 588**

| Task | Number of Persons | Task Hours | Elapsed Hours |
|---|---|---|---|
| Open Access | 1 | 0.75 | 0.75 |
| FIGURE 1, FIGURE 2, FIGURE 3 and FIGURE 51 | 1 | 0.75 | 0.75 |
| Close Access | 1 | 0.75 | 0.75 |
| Total per Airplane | | 2.25 | 2.25 |


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

## H. Weight and Balance Changes

**Group 2-4, 6-7, 16; Group 17, Configuration 2; Group 18; Group 19-22, 24, Configuration 1; Group 25-26; Group 31, Configuration 1; Group 32-38; Group 39, Configuration 1; Group 40; Group 42, Configuration 1; Group 43-45:**

| Airplane | Change in Weight (Pounds) | Change in Moment (Pound-Inches) |
|---|---|---|
| 747-400/400F airplanes without a Horizontal Stabilizer Tank | +4.8 | +9120 |

**Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**

| Airplane | Change in Weight (Pounds) | Change in Moment (Pound-Inches) |
|---|---|---|
| 747-400 airplanes with a Horizontal Stabilizer Tank | +5.5 | +10450 |

**Group 11:**

| Airplane | Change in Weight (Pounds) | Change in Moment (Pound-Inches) |
|---|---|---|
| 747-200B/-300 airplanes | +2.0 | +3800 |

**Group 13, 15:**

| Airplane | Change in Weight (Pounds) | Change in Moment (Pound-Inches) |
|---|---|---|
| 747-200B/-200C/-200F/-300 airplanes | +2.1 | +3990 |

**Group 10, 12, 14:**

| Airplane | Change in Weight (Pounds) | Change in Moment (Pound-Inches) |
|---|---|---|
| 747-100BSUD/-200B/-200F/-300/SP airplanes | +2.5 | +4750 |

## I. Electrical Load Data

Not changed.

## J. References

1. Existing Data:

    a. Engineering Change Memo PRR 85539-9


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

b. Boeing Service Bulletin 747-57-2326

c. Boeing Service Related Problem (SRP) 747-SRP-28-172, 747-SRP-57-0360

d. Federal Aviation Administration (FAA) Airworthiness Directive (AD) 2007-20-01

e. Service Bulletin Index D6-30300

f. Standard Overhaul Practices Manual (SOPM) 20-30-93

g. Standard Wiring Practices Manual (SWPM) 20-10-11, 20-10-12

h. 747 Fleet Team Digest (FTD) 57-19001

i. 747-100/200/300 Aircraft Maintenance Manual (AMM) 12-09-08, 27-81-00, 28-11-00, 28-11-02, 28-26-00, 57-31-00

j. 747-400 Aircraft Maintenance Manual (AMM) 06-09-05, 06-09-08, 27-51-00, 27-81-00, 28-11-00, 28-11-02, 28-11-19, 28-26-00, 51-31-01, 57-31-00

2. Data Supplied with this Service Bulletin:

None.

3. Installation Drawings Used in the Preparation of this Service Bulletin:

| Drawing Number | Title |
|---|---|
| 112U7002 | Fitting Instl- Inbd Nacelle, Wing |
| 288U1269 | Wire Bundle Installation Front Spar and Leading Edge LH ILES 240 Thru 678.4 |
| 288U1270 | Wire Bundle Installation Front Spar and Leading Edge RH ILES 240 Thru 678.4 |
| 288U1274 | Wire Bundle Installation Front Spar and Leading Edge RH ILES 678.4 Thru FSS 1688.5 |
| 288U1291 | Wire Bundle Installation Rear Spar and Trailing Edge LH, WS 350 Thru 842 |
| 288U1292 | Wire Bundle Installation Rear Spar and Trailing Edge RH, WS 350 Thru 842 |
| 288U8165 | Wire Bundle Installation Horz Stabilizer Torque Box and Horz Fuel External Tank Wire Routing |
| 61B70119 | Wire Bundle Installation Forward Cargo Area STA 1000 Bulkhead |
| 61B70157 | Wire Bundle Installation L.H. L.E., F.S.,Wing Tip L.E. 8, Wing-Body Join |
| 61B70158 | Wire Bundle Installation, RH Leading Edge, Front Spar and Wing-Body Join |
| 65B03588 | Front Spar Instl - Center Sect., Horiz. Stab. |
| 65B03595 | Rear Spar Instl - Center Sect., Horiz. Stab. |

These drawings were used to prepare this service bulletin. These drawings are not necessary to make the specified changes, and are not supplied with this service bulletin. These drawings may not be applicable to all airplane configurations or operators.


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

## K. Publications Affected

1. Publications:

**Group 1-9, 16-45:**

| Publication | Chapter-Section |
|---|---|
| 747 Illustrated Parts Catalog | 57-00 |
| 747 Aircraft Maintenance Manual | 28-22 |

**Group 10-15:**

| Publication | Chapter-Section |
|---|---|
| 747 Aircraft Maintenance Manual | 28-22 |

2. Damage Tolerance Based Structural Inspections:

Boeing has evaluated the repairs and/or changes in this service bulletin for effects on Fatigue Critical Structure (FCS) and for changes to Damage Tolerance Inspections (DTI) required in the Maintenance Program. This service bulletin affects FCS but no new DTIs are necessary.

## L. Interchangeability and Intermixability of Parts

Accomplishment of this service bulletin does not affect interchangeability or intermixability of parts.

## M. Software Accomplishment Summary

Not affected.


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

BLANK PAGE


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

## 2. MATERIAL INFORMATION

### A. Material - Price and Availability

Boeing can supply the kits shown in Paragraph 2.C., Parts Necessary for Each Airplane. Operators are encouraged to share schedule requirements with Boeing for incorporation of the service bulletin. The kits are subject to the terms and conditions of the Boeing standard purchase order acknowledgment. Prices are in United States Dollars. Terms: Net 30 days.

Reference this service bulletin and submit your purchase order by one of these methods:

1. Order on-line via ATA Spec 2000 or The Boeing PART Page

2. Fax to (206) 662-7145

**Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
**REFER TO THE BOEING PART PAGE ON MYBOEINGFLEET.COM OR CONTACT FIRST RESPONDER AT FR@BOEING.COM FOR THE LATEST REORDER LEAD TIME (ROLT) AND PRICE INFORMATION**

| Kit Number | Name | Date | QTY | ROLT as of the Revision 08 date of this Service Bulletin (Calendar Days) | Unit Price as of the Revision 04 date of this Service Bulletin (US Dollars) |
|---|---|---|---|---|---|
| 015U1781-1 | Top Kit (a) | No Longer available | | | |
| 015U1781-7 | Replacement Top Kit (a) | - | - | 213 | - |
| (a) A 015U1781-1 Top Kit plus a 015U1781-701 Supplemental Kit plus a 015U1781-702 Supplemental Kit is equivalent to a 015U1781-7 Replacement Top Kit. | | | | | |

**Group 2-4, 6-7, 16; Group 17, Configuration 2; Group 18; Group 19-22, 24, Configuration 1; Group 25-26; Group 31, Configuration 1; Group 32-38; Group 39, Configuration 1; Group 40; Group 42, Configuration 1; Group 43-45:**
**REFER TO THE BOEING PART PAGE ON MYBOEINGFLEET.COM OR CONTACT FIRST RESPONDER AT FR@BOEING.COM FOR THE LATEST REORDER LEAD TIME (ROLT) AND PRICE INFORMATION**

| Kit Number | Name | Date | QTY | ROLT as of the Revision 08 date of this Service Bulletin (Calendar Days) | Unit Price as of the Revision 04 date of this Service Bulletin (US Dollars) |
|---|---|---|---|---|---|
| 015U1781-2 | Top Kit (a) | - | - | 208 | - |
| 015U1781-8 | Replacement Top Kit (a) | - | - | 213 | - |
| (a) A 015U1781-2 Top Kit plus a 015U1781-701 Supplemental Kit plus a 015U1781-702 Supplemental Kit is equivalent to a 015U1781-8 Replacement Top Kit. | | | | | |


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**Group 11:**
**REFER TO THE BOEING PART PAGE ON MYBOEINGFLEET.COM OR CONTACT FIRST RESPONDER AT FR@BOEING.COM FOR THE LATEST REORDER LEAD TIME (ROLT) AND PRICE INFORMATION**

| Kit Number | Name | Date | QTY | ROLT as of the Revision 08 date of this Service Bulletin (Calendar Days) | Unit Price as of the Revision 04 date of this Service Bulletin (US Dollars) |
|---|---|---|---|---|---|
| 015U1781-3 | Top Kit | 01/05/06 | 1 | 175 | 415.00 |

**Group 13:**
**REFER TO THE BOEING PART PAGE ON MYBOEINGFLEET.COM OR CONTACT FIRST RESPONDER AT FR@BOEING.COM FOR THE LATEST REORDER LEAD TIME (ROLT) AND PRICE INFORMATION**

| Kit Number | Name | Date | QTY | ROLT as of the Revision 08 date of this Service Bulletin (Calendar Days) | Unit Price as of the Revision 04 date of this Service Bulletin (US Dollars) |
|---|---|---|---|---|---|
| 015U1781-4 | Top Kit | 01/05/06 | 1 | 175 | 390.00 |

**Group 10, 12, 15:**
**REFER TO THE BOEING PART PAGE ON MYBOEINGFLEET.COM OR CONTACT FIRST RESPONDER AT FR@BOEING.COM FOR THE LATEST REORDER LEAD TIME (ROLT) AND PRICE INFORMATION**

| Kit Number | Name | Date | QTY | ROLT as of the Revision 08 date of this Service Bulletin (Calendar Days) | Unit Price as of the Revision 04 date of this Service Bulletin (US Dollars) |
|---|---|---|---|---|---|
| 015U1781-5 | Top Kit | 01/05/06 | 4 | 175 | 412.00 |

**Group 14:**
**REFER TO THE BOEING PART PAGE ON MYBOEINGFLEET.COM OR CONTACT FIRST RESPONDER AT FR@BOEING.COM FOR THE LATEST REORDER LEAD TIME (ROLT) AND PRICE INFORMATION**

| Kit Number | Name | Date | QTY | ROLT as of the Revision 08 date of this Service Bulletin (Calendar Days) | Unit Price as of the Revision 04 date of this Service Bulletin (US Dollars) |
|---|---|---|---|---|---|
| 015U1781-6 | Top Kit | 01/05/06 | 2 | 208 | 431.00 |


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**Group 1-9, 16-45:**
**REFER TO THE BOEING PART PAGE ON MYBOEINGFLEET.COM OR CONTACT FIRST RESPONDER AT FR@BOEING.COM FOR THE LATEST REORDER LEAD TIME (ROLT) AND PRICE INFORMATION**

| Kit Number | Name | Date | QTY | ROLT as of the Revision 08 date of this Service Bulletin (Calendar Days) | Unit Price as of the Revision 04 date of this Service Bulletin (US Dollars) |
|---|---|---|---|---|---|
| 015U1781-701 | Supplemental Kit (a) | 8/07/07 | 1 | 175 | 907.00 |
| 015U1781-702 | Supplemental Kit (a) | 8/27/08 | 150 | 175 | 643.00 |
| (a) A 015U1781-1 Top Kit plus a 015U1781-701 Supplemental Kit plus a 015U1781-702 Supplemental Kit is equivalent to a 015U1781-7 Replacement Top Kit. A 015U1781-2 Top Kit plus a 015U1781-701 Supplemental Kit plus a 015U1781-702 Supplemental Kit is equivalent to a 015U1781-8 Replacement Top Kit. | | | | | |

### B. Industry Support Information

Boeing warranty remedies are not available for the configuration changes given in this service bulletin.

### C. Parts Necessary for Each Airplane

1. Kits/Parts:

To get the kits/parts shown below, refer to Paragraph 2.A., Material - Price and Availability.

**NOTE:** One top kit and the items shown in Paragraph 2.C.2., Parts and Materials Supplied by the Operator, are necessary for each airplane.

| Kit 015U1781 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| New Part Number | QTY | | | | | | Name | Existing Part Number | Notes |
| | -1 | -2 | -3 | -4 | -5 | -6 | | | |
| 015U1781-1 | - | . | . | . | . | . | Top Kit - Wire Bundle Clamp Installation | | |
| 015U1781-2 | . | - | . | . | . | . | Top Kit - Wire Bundle Clamp Installation | | |
| 015U1781-3 | . | . | - | . | . | . | Top Kit - Wire Bundle Clamp Installation | | |
| 015U1781-4 | . | . | . | - | . | . | Top Kit - Wire Bundle Clamp Installation | | |
| 015U1781-5 | . | . | . | . | - | . | Top Kit - Wire Bundle Clamp Installation | | |
| 015U1781-6 | . | . | . | . | . | - | Top Kit - Wire Bundle Clamp Installation | | |


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

| Kit 015U1781 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **New Part Number** | **QTY** | | | | | | **Name** | **Existing Part Number** | **Notes** |
| | **-1** | **-2** | **-3** | **-4** | **-5** | **-6** | | | |
| 005W3281-3 | 4 | 4 | . | . | . | . | Sleeve - 1/2 inch I.D. (As supplied 0.75 inch I.D) | | |
| 005W3281-4 | 4 | 4 | . | . | . | . | Sleeve - 5/8 inch I.D (As supplied 0.93 inch I.D) | | |
| 005W3281-5 | 6 | 6 | 2 | 2 | 2 | 2 | Sleeve - 1 inch I.D. (As supplied 1.5 inch I.D.) | | |
| BACC10GU101 | 3 | . | . | . | . | . | CLAMP, WIRE BUNDLE | | |
| BACC10JU103 | 11 | . | . | . | . | . | WIRE BUNDLE CLAMP | | |
| BACC10JU104 | 29 | 29 | . | . | . | . | WIRE BUNDLE CLAMP | | |
| BACC10JU105 | 9 | 9 | . | . | . | . | WIRE BUNDLE CLAMP | | |
| BACC10JU106 | 40 | 40 | . | . | . | . | WIRE BUNDLE CLAMP | | |
| BACC10JU107 | . | . | 2 | 2 | 2 | 1 | WIRE BUNDLE CLAMP | | |
| BACC10JU108 | 3 | 3 | 5 | 5 | 7 | 3 | WIRE BUNDLE CLAMP | | |
| BACC10JU109 | 2 | 2 | 5 | 5 | 10 | 11 | WIRE BUNDLE CLAMP | | |
| BACC10JU110 | 2 | 2 | 10 | 2 | 11 | 9 | WIRE BUNDLE CLAMP | | |
| BACC10JU111 | 4 | 4 | 2 | 1 | 4 | 1 | WIRE BUNDLE CLAMP | | |
| BACC10JU112 | 3 | 3 | 2 | 2 | 4 | 4 | WIRE BUNDLE CLAMP | | |
| BACC10JU113 | 3 | 3 | 1 | 5 | 3 | 6 | WIRE BUNDLE CLAMP | | |
| BACC10JU114 | . | . | . | 6 | 1 | 6 | CLAMP, LOOP | | |
| BACC10KL104R | 12 | 12 | 7 | . | . | . | CLAMP, LOOP | | |
| BACC10KL105R | 3 | 8 | 2 | . | . | . | CLAMP, LOOP | | |
| JM44LC52H111RFB | 6 | . | . | . | . | . | CLAMP | | |


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

| Kit 015U1781 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **New Part Number** | **QTY** | | | | **Name** | **Existing Part Number** | **Notes** |
| | **-7** | **-8** | **-701** | **-702** | | | |
| 015U1781-7 | - | . | . | . | Replacement Top Kit - Wire Bundle Clamp Installation | | |
| 015U1781-701 | . | . | - | . | Supplemental Kit - Wire Bundle Clamp Installation | | |
| 015U1781-702 | . | . | . | - | Supplemental Kit | | |
| 015U1781-8 | . | - | . | . | Replacement Top Kit - Wire Bundle Clamp Installation | | |
| 005W3281-3 | 4 | 4 | . | . | Sleeve - 1/2 inch I.D. (As supplied 0.75 inch I.D) | | |
| 005W3281-4 | 4 | 4 | . | . | Sleeve - 5/8 inch I.D (As supplied 0.93 inch I.D) | | |
| 005W3281-5 | 6 | 6 | . | . | Sleeve - 1 inch I.D. (As supplied 1.5 inch I.D.) | | |
| BACC10GU101 | 3 | . | . | . | CLAMP, WIRE BUNDLE | | |
| BACC10JU103 | 11 | . | . | . | WIRE BUNDLE CLAMP | | |
| BACC10JU104 | 29 | 29 | . | . | WIRE BUNDLE CLAMP | | |
| BACC10JU105 | 9 | 9 | . | . | WIRE BUNDLE CLAMP | | |
| BACC10JU106 | 40 | 40 | . | . | WIRE BUNDLE CLAMP | | |
| BACC10JU108 | 3 | 3 | . | . | WIRE BUNDLE CLAMP | | |
| BACC10JU109 | 2 | 2 | . | . | WIRE BUNDLE CLAMP | | |
| BACC10JU110 | 2 | 2 | . | . | WIRE BUNDLE CLAMP | | |
| BACC10JU111 | 4 | 4 | . | . | WIRE BUNDLE CLAMP | | |
| BACC10JU112 | 3 | 3 | . | . | WIRE BUNDLE CLAMP | | |


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

| Kit 015U1781 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **New Part Number** | **QTY** | | | | **Name** | **Existing Part Number** | **Notes** |
| | **-7** | **-8** | **-701** | **-702** | | | |
| BACC10JU113 | 3 | 3 | . | . | WIRE BUNDLE CLAMP | | |
| BACC10KL104R | 12 | 12 | . | . | CLAMP, LOOP | | |
| BACC10KL105R | 3 | 3 | . | . | CLAMP, LOOP | | |
| BACC10KL106R | 12 | 12 | . | 12 | CLAMP, LOOP | | |
| BACC10KL107R | 12 | 12 | . | 12 | CLAMP, LOOP | | |
| JM44LC52H111RFB | 6 | 6 | . | . | CLAMP | | |
| TA027063-23P | 1 | 1 | 1 | . | CLAMP | | |
| TA027063-26P | 1 | 1 | 1 | . | CLAMP | | |
| TA027063-27P | 1 | 1 | 1 | . | CLAMP | | |
| TA027063-37P | 1 | 1 | 1 | . | CLAMP | | |

2. Parts and Materials Supplied by the Operator:

**Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-31; Group 39, Configuration 2; Group 41; Group 42, Configuration 2:**

| **Part Number / Specification** | **QTY** | **Name** | **Notes** |
|---|---|---|---|
| BMS 13-54 , TYPE III, CLASS 1, FINISH C, WHITE | 200 ft. | LACING TAPE | (a)(b) |
| BMS 11-7 (SOLVENTS IN SOPM 20-30-93 optional) | 24 fl. oz. | SOLVENT | (a)(b) |
| BMS 5-45, CLASS A-2, GRADE 1 (ALTERNATIVE FUEL TANK SEALANTS IN 747-400 AMM 51-31-01 optional) | 12 fl. oz. | SEALANT | (a)(b)(c) |
| BMS 5-45, CLASS B-2, GRADE 1 (ALTERNATIVE FUEL TANK SEALANTS IN 747-400 AMM 51-31-01 optional) | 48 fl. oz. | SEALANT | (a)(b)(c) |
| BMS 15-5 | - | WIPER | (b) |
| TFE-2X STANDARD WALL | 3 inches | SLEEVE | (a)(d) |
| BACC10JU112 or BACC10JU113 | 1 | WIRE BUNDLE CLAMP | (e) |
| (a) Quantity is approximate. | | | |
| (b) See the Qualified Products List at the end of the Boeing Material Specification (BMS) for supplier data. | | | |
| (c) Refer to 747-400 AMM 51-31-01 as an accepted procedure. | | | |
| (d) Chemplast or Zeus Industrial Products. | | | |


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-31; Group 39, Configuration 2; Group 41; Group 42, Configuration 2:**

| Part Number / Specification | QTY | Name | Notes |
|---|---|---|---|
| (e) This part is recommended for Work Package 21. | | | |

**Group 2-4, 6-7, 16; Group 17, Configuration 2; Group 18; Group 19-22, 24, Configuration 1; Group 25-26, 32-38; Group 39, Configuration 1; Group 40; Group 42, Configuration 1; Group 43-45:**

| Part Number / Specification | QTY | Name | Notes |
|---|---|---|---|
| BMS 13-54 , TYPE III, CLASS 1, FINISH C, WHITE | 200 ft. | LACING TAPE | (a)(b) |
| BMS 11-7 (SOLVENTS IN SOPM 20-30-93 optional) | 20 fluid oz. | SOLVENT | (a)(b) |
| BMS 5-45, CLASS A-2, GRADE 1 (ALTERNATIVE FUEL TANK SEALANTS IN 747-400 AMM 51-31-01 optional) | 10 fluid oz. | SEALANT | (a)(b)(c) |
| BMS 5-45, CLASS B-2, GRADE 1 (ALTERNATIVE FUEL TANK SEALANTS IN 747-400 AMM 51-31-01 optional) | 40 fluid oz. | SEALANT | (a)(b)(c) |
| BMS 15-5 | - | WIPER | (b) |
| TFE-2X STANDARD WALL | 3 inches | SLEEVE | (a)(d) |
| BACC10JU112 or BACC10JU113 | 1 | WIRE BUNDLE CLAMP | (e) |
| (a) Quantity is approximate. | | | |
| (b) See the Qualified Products List at the end of the Boeing Material Specification (BMS) for supplier data. | | | |
| (c) Refer to 747-400 AMM 51-31-01 as an accepted procedure. | | | |
| (d) Chemplast or Zeus Industrial Products. | | | |
| (e) This part is recommended for Work Package 21. | | | |

**Group 10-15:**

| Part Number / Specification | QTY | Name | Notes |
|---|---|---|---|
| BMS 13-54 , TYPE III, CLASS 1, FINISH C, WHITE | 200 ft. | LACING TAPE | (a)(b) |
| BMS 11-7 (SOLVENTS IN SOPM 20-30-93 optional) | 10 fluid oz. | SOLVENT | (a)(b) |
| BMS 5-45, CLASS A-2, GRADE 1 (ALTERNATIVE FUEL TANK SEALANTS IN 747-100/200/300 AMM 28-11-00 optional) | 5 fluid oz. | SEALANT | (a)(b)(c) |


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**Group 10-15:**

| Part Number / Specification | QTY | Name | Notes |
|---|---|---|---|
| BMS 5-45, CLASS B-2, GRADE 1 (ALTERNATIVE FUEL TANK SEALANTS IN 747-100/200/300 AMM 28-11-00 optional) | 18 fluid oz. | SEALANT | (a)(b)(c) |
| BMS 15-5 | - | WIPER | (b) |
| TFE-2X STANDARD WALL | 3 inches | SLEEVE | (a)(d) |
| (a) Quantity is approximate. | | | |
| (b) See the Qualified Products List at the end of the Boeing Material Specification (BMS) for supplier data. | | | |
| (c) Refer to 747-100/200/300 AMM 28-11-00 as an accepted procedure. | | | |
| (d) Chemplast or Zeus Industrial Products. | | | |

3. Parts Modified and Reidentified:

   None.

4. Parts Removed and Not Replaced:

   None.

**D. Parts Necessary to Change Spares**

None.

**E. Special Tooling - Price and Availability**

None.

**F. Special Tooling Necessary to do this Service Bulletin**

No special tools or equipment are necessary to do the change in this service bulletin. But, maintenance and overhaul tools in the manuals given in Paragraph 1.J., References, can be necessary. Examine operator tool supply to make sure all necessary tools are available.


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

## 3. ACCOMPLISHMENT INSTRUCTIONS

### A. GENERAL INFORMATION

| | |
|---|---|
| **CAUTION** | KEEP THE WORK AREA, WIRES AND ELECTRICAL BUNDLES CLEAN OF METAL PARTICLES OR CONTAMINATION WHEN YOU USE TOOLS. UNWANTED MATERIAL, METAL PARTICLES OR CONTAMINATION CAUGHT IN WIRE BUNDLES CAN CAUSE DAMAGE TO THE BUNDLES. DAMAGED WIRE BUNDLES CAN CAUSE SPARKS OR OTHER ELECTRICAL DAMAGE. |

**NOTE:**

1. Manual titles are referred to by acronyms. Refer to Paragraph 1.J., References, for definition of the acronyms.

2. Obey all of the warnings and cautions given in the specified manual sections.

3. The work instructions are divided into work packages. Task-Hours and Elapsed-Hours for each package are given in Paragraph 1.G., Manpower. You can do each work package independently.

4. Unless shown differently, these dimensions and tolerances are used:

   — Linear dimensions are in inches
   — Tolerance on linear dimensions, other than rivet and bolt edge margins, is plus or minus 0.03 inch.

5. Refer to the Boeing Standard Wiring Practices Manuals SWPM 20-10-11 and SWPM 20-10-12 for the wire installation procedures.

6. These work instructions refer to procedures included on other Boeing documents. When the words "refer to" are used and the operator has an accepted alternative procedure, the accepted alternative procedure can be used. When the words "in accordance with" are included in the instruction, the procedure in the Boeing document must be used.

7. If it is necessary to remove more parts for access, you can remove those parts. If you can get access without removing identified parts, it is not necessary to remove all of the identified parts. Jacking and shoring limitations must be observed.

8. The necessary conditions for selection of a clamp and clamp size are included in SWPM 20-10-12. If the clamp size for the wire harness supports specified in this service bulletin does not make a correct fit on the wire bundle, refer to SWPM 20-10-12 as an accepted procedure to select the correct clamp.

9. A General Visual Inspection is defined as: A visual examination of an interior or exterior area, installation or assembly to detect obvious damage, failure or irregularity. This level of inspection is made from within touching distance unless otherwise specified. A mirror may be necessary to enhance visual access to all exposed surfaces in the inspection area. This level of inspection is made under normally available lighting conditions such as daylight, hangar lighting, flashlight or drop-light and may require removal or opening of access panels or doors. Stands, ladders or platforms may be required to gain proximity to the area being checked.


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

## B. WORK INSTRUCTIONS

**Group 1-12, 14, 16-45:**
**WORK PACKAGE 1 - Front Spar - Left Wing - Change of the Wire Bundle Clamps**

1. **Group 1-9, 16-45:**
   Extend the leading edge flaps. Refer to 747-400 AMM 27-81-00 as an accepted procedure.

2. **Group 10-12, 14:**
   Extend the leading edge flaps. Refer to 747-100/200/300 AMM 27-81-00 as an accepted procedure.

3. **Group 1-9, 16-45:**
   Install safety locks on the leading edge flaps. Refer to 747-400 AMM 27-81-00 as an accepted procedure.

4. **Group 10-12, 14:**
   Install safety locks on the leading edge flaps. Refer to 747-100/200/300 AMM 27-81-00 as an accepted procedure.

5. **Group 1-9, 16-45:**
   Remove the access panel 521FT. Refer to 747-400 AMM 06-09-08 as an accepted procedure.

6. **Group 10-12, 14:**
   Remove the access panel 521FT. Refer to 747-100/200/300 AMM 12-09-08 as an accepted procedure.

7. **Group 2, 5, 20, 27, 41:**
   Change the wire bundle clamp configuration on the front spar from Front Spar Station 453 to Front Spar Station 655 at the locations in accordance with:

   — FIGURE 1 for wire bundles that are more than 1 inch in diameter.
   — FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.
   — FIGURE 3 for power feeder wire bundles.
   — FIGURE 5 for the locations of the clamp changes.

8. **Group 3-4, 9, 17, 22, 25-26, 30-31, 33, 36, 40, 42, 45:**
   Change the wire bundle clamp configuration on the front spar from Front Spar Station 453 to Front Spar Station 655 at the locations in accordance with:

   — FIGURE 1 for wire bundles that are more than 1 inch in diameter.
   — FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.
   — FIGURE 3 for power feeder wire bundles.
   — FIGURE 6 for the locations of the clamp changes.

9. **Group 7-8, 21, 28-29, 32, 35, 43:**
   Change the wire bundle clamp configuration on the front spar from Front Spar Station 453 to Front Spar Station 655 at the locations in accordance with:

   — FIGURE 1 for wire bundles that are more than 1 inch in diameter.
   — FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.
   — FIGURE 3 for power feeder wire bundles.
   — FIGURE 7 for the locations of the clamp changes.


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

10. **Group 1, 6, 16, 18-19, 23-24, 34, 37-39, 44:**
Change the wire bundle clamp configuration on the front spar from Front Spar Station 453 to Front Spar Station 655 at the locations in accordance with:

— FIGURE 1 for wire bundles that are more than 1 inch in diameter.
— FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.
— FIGURE 3 for power feeder wire bundles.
— FIGURE 8 for the locations of the clamp changes.

11. **Group 3-4, 9, 25, 30, 33:**
Change the wire bundle clamp configuration on the front spar from Front Spar Station 704 to Front Spar Station 1141 at the locations in accordance with:

— FIGURE 1 for wire bundles that are more than 1 inch in diameter.
— FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.
— FIGURE 3 for power feeder wire bundles.
— FIGURE 9 for the locations of the clamp changes.

12. **Group 1, 6, 8, 16, 23, 32, 34-35, 37:**
Change the wire bundle clamp configuration on the front spar from Front Spar Station 704 to Front Spar Station 1141 at the locations in accordance with:

— FIGURE 1 for wire bundles that are more than 1 inch in diameter.
— FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.
— FIGURE 3 for power feeder wire bundles.
— FIGURE 10 for the locations of the clamp changes.

13. **Group 17, 20, 22, 26-27, 31:**
Change the wire bundle clamp configuration on the front spar from Front Spar Station 704 to Front Spar Station 1141 at the locations in accordance with:

— FIGURE 1 for wire bundles that are more than 1 inch in diameter.
— FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.
— FIGURE 3 for power feeder wire bundles.
— FIGURE 32 for the locations of the clamp changes.

14. **Group 5:**
Change the wire bundle clamp configuration on the front spar from Front Spar Station 704 to Front Spar Station 1141 at the locations in accordance with:

— FIGURE 1 for wire bundles that are more than 1 inch in diameter.
— FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.
— FIGURE 3 for power feeder wire bundles.
— FIGURE 36 for the locations of the clamp changes.

15. **Group 2, 7, 36, 40-42:**
Change the wire bundle clamp configuration on the front spar from Front Spar Station 704 to Front Spar Station 1141 at the locations in accordance with:

— FIGURE 1 for wire bundles that are more than 1 inch in diameter.
— FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.
— FIGURE 3 for power feeder wire bundles.
— FIGURE 37 for the locations of the clamp changes.


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

16. **Group 18-19, 21, 24, 29, 38-39, 44:**
Change the wire bundle clamp configuration on the front spar from Front Spar Station 704 to Front Spar Station 1141 at the locations in accordance with:

— FIGURE 1 for wire bundles that are more than 1 inch in diameter.
— FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.
— FIGURE 3 for power feeder wire bundles.
— FIGURE 38 for the locations of the clamp changes.

17. **Group 28, 43:**
Change the wire bundle clamp configuration on the front spar from Front Spar Station 704 to Front Spar Station 1141 at the locations in accordance with:

— FIGURE 1 for wire bundles that are more than 1 inch in diameter.
— FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.
— FIGURE 3 for power feeder wire bundles.
— FIGURE 39 for the locations of the clamp changes.

18. **Group 45:**
Change the wire bundle clamp configuration on the front spar from Front Spar Station 704 to Front Spar Station 1141 at the locations in accordance with:

— FIGURE 1 for wire bundles that are more than 1 inch in diameter.
— FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.
— FIGURE 3 for power feeder wire bundles.
— FIGURE 40 for the locations of the clamp changes.

19. **Group 11:**
Change the wire bundle clamp configuration on the front spar at the locations in accordance with:

— FIGURE 1 for wire bundles that are more than 1 inch in diameter.
— FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.
— FIGURE 3 for power feeder wire bundles.
— FIGURE 11 for the locations of the clamp changes.

20. **Group 10, 12, 14:**
Change the wire bundle clamp configuration on the front spar inboard of the first engine nacelle at the locations in accordance with:

— FIGURE 1 for wire bundles that are more than 1 inch in diameter.
— FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.
— FIGURE 3 for power feeder wire bundles.
— FIGURE 12 for the locations of the clamp changes.

21. **Group 1-9, 16-45:**
Remove the safety locks on the leading edge flaps. Refer to 747-400 AMM 27-81-00 as an accepted procedure.

22. **Group 1-9, 16-45:**
Retract the leading edge flaps. Refer to 747-400 AMM 27-81-00 as an accepted procedure.


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

23. **Group 10-12, 14:**
Remove the safety locks on the leading edge flaps. Refer to 747-100/200/300 AMM 27-81-00 as an accepted procedure.

24. **Group 10-12, 14:**
Retract the leading edge flaps. Refer to 747-100/200/300 AMM 27-81-00 as an accepted procedure.

25. **Group 1-9, 16-45:**
Install the access panel 521FT. Refer to 747-400 AMM 06-09-08 as an accepted procedure.

26. **Group 10-12, 14:**
Install the access panel 521FT. Refer to 747-100/200/300 AMM 12-09-08 as an accepted procedure.

27. **Group 1-12, 14, 16-45:**
Put the airplane back to a serviceable condition.

**Group 1-45:**
**WORK PACKAGE 2 - Front Spar - Right Wing - Change of the Wire Bundle Clamps**

1. **Group 1-9, 16-45:**
Extend the leading edge flaps. Refer to 747-400 AMM 27-81-00 as an accepted procedure.

2. **Group 10-15:**
Extend the leading edge flaps. Refer to 747-100/200/300 AMM 27-81-00 as an accepted procedure.

3. **Group 1-9, 16-45:**
Install safety locks on the leading edge flaps. 747-400 AMM 27-81-00 as an accepted procedure.

4. **Group 10-15:**
Install safety locks on the leading edge flaps. Refer to 747-100/200/300 AMM 27-81-00 as an accepted procedure..

5. **Group 1-9, 16-45:**
Remove the access panel 621FT. Refer to 747-400 AMM 06-09-08 as an accepted procedure.

6. **Group 10-15:**
Remove the access panel 621FT. Refer to 747-100/200/300 AMM 12-09-08 as an accepted procedure.

7. **Group 2, 5, 7-8, 20-21, 27-29, 32, 35, 41, 43:**
Change the wire bundle clamp configuration on the front spar from Front Spar Station 453 to Front Spar Station 646 at the locations in accordance with:

   — FIGURE 1 for wire bundles that are more than 1 inch in diameter.
   — FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.
   — FIGURE 3 for power feeder wire bundles.
   — FIGURE 13 for the locations of the clamp changes.

8. **Group 1, 3-4, 6, 9, 16-19, 22-26, 30-31, 33-34, 36-42, 44-45:**
Change the wire bundle clamp configuration on the front spar from Front Spar Station 453 to Front Spar Station 655 at the locations in accordance with:

   — FIGURE 1 for wire bundles that are more than 1 inch in diameter.


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

— FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.
— FIGURE 3 for power feeder wire bundles.
— FIGURE 14 for the locations of the clamp changes.

9. **Group 11:**
Change the wire bundle clamp configuration on the front spar at the locations in accordance with:

— FIGURE 1 for wire bundles that are more than 1 inch in diameter.
— FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.
— FIGURE 3 for power feeder wire bundles.
— FIGURE 15 for the locations of the clamp changes.

10. **Group 10, 12-15:**
Change the wire bundle clamp configuration on the front spar at the locations in accordance with:

— FIGURE 1 for wire bundles that are more than 1 inch in diameter.
— FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.
— FIGURE 3 for power feeder wire bundles.
— FIGURE 16 for the locations of the clamp changes.

11. **Group 1, 3-4, 6, 9, 16:**
Change the wire bundle clamp configuration on the front spar from Front Spar Station 704 to Front Spar Station 1141 at the locations in accordance with:

— FIGURE 1 for wire bundles that are more than 1 inch in diameter.
— FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.
— FIGURE 3 for power feeder wire bundles.
— FIGURE 17 for the locations of the clamp changes.

12. **Group 2, 7, 17, 19-22, 24, 26-27, 29, 31, 36, 38-42, 44-45:**
Change the wire bundle clamp configuration on the front spar from Front Spar Station 704 to Front Spar Station 1141 at the locations in accordance with:

— FIGURE 1 for wire bundles that are more than 1 inch in diameter.
— FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.
— FIGURE 3 for power feeder wire bundles.
— FIGURE 33 for the locations of the clamp changes.

13. **Group 5, 8, 23, 25, 28, 30, 32-35, 37, 43:**
Change the wire bundle clamp configuration on the front spar from Front Spar Station 704 to Front Spar Station 1141 at the locations in accordance with:

— FIGURE 1 for wire bundles that are more than 1 inch in diameter.
— FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.
— FIGURE 3 for power feeder wire bundles.
— FIGURE 34 for the locations of the clamp changes.

14. **Group 18:**
Change the wire bundle clamp configuration on the front spar from Front Spar Station 704 to Front Spar Station 1141 at the locations in accordance with:

— FIGURE 1 for wire bundles that are more than 1 inch in diameter.
— FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

— FIGURE 3 for power feeder wire bundles.
— FIGURE 35 for the locations of the clamp changes.

15. **Group 1-9, 16-45:**
Remove the safety locks on the leading edge flaps. Refer to 747-400 AMM 27-81-00 as an accepted procedure.

16. **Group 1-9, 16-45:**
Retract the leading edge flaps. Refer to 747-400 AMM 27-81-00 as an accepted procedure.

17. **Group 10-15:**
Remove the safety locks on the leading edge flaps. Refer to 747-100/200/300 AMM 27-81-00 as an accepted procedure.

18. **Group 10-15:**
Retract the leading edge flaps. Refer to 747-100/200/300 AMM 27-81-00 as an accepted procedure.

19. **Group 1-9, 16-45:**
Install the access panel 621FT. Refer to 747-400 AMM 06-09-08 as an accepted procedure.

20. **Group 10-15:**
Install the access panel 621FT. Refer to 747-100/200/300 AMM 12-09-08 as an accepted procedure.

21. Put the airplane back to a serviceable condition.

**Group 1-9, 16-45:**
**WORK PACKAGE 3 - Rear Spar - Left Wing - Change of the Wire Bundle Clamps**

1. **Group 1-9, 16-45:**
Deactivate the trailing edge flaps. Refer to 747-400 AMM 27-51-00 as an accepted procedure.

2. **Group 1-9, 16-45:**
Get access to the rear spar. Open access panels 561BB, 571BB, 572EB, 572FB, 572GB. Refer to 747-400 AMM 06-09-08.

3. **Group 1-9, 16-45:**
Change the wire bundle clamp configuration on the rear spar at the locations in accordance with:

— FIGURE 1 for wire bundles that are more than 1 inch in diameter.
— FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.
— FIGURE 18 for the locations of the clamp changes.

4. **Group 1-9, 16-45:**
Close access panels 561BB, 571BB, 572EB, 572FB, 572GB. Refer to 747-400 AMM 06-09-08.

5. **Group 1-9, 16-45:**
Activate the trailing edge flaps. Refer to 747-400 AMM 27-51-00.

6. **Group 1-9, 16-45:**
Put the airplane back to a serviceable condition.


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**Group 1-9, 16-45:**
**WORK PACKAGE 4 - Rear Spar - Right Wing - Change of the Wire Bundle Clamps**

1. **Group 1-9, 16-45:**
   Deactivate the trailing edge flaps. Refer to 747-400 AMM 27-51-00 as an accepted procedure.

2. **Group 1-9, 16-45:**
   Get access to the rear spar. Open access panels 661BB, 671BB, 672EB, 672FB, 672GB. Refer to 747-400 AMM 06-09-08 as an accepted procedure.

3. **Group 1-9, 16-45:**
   Change the wire bundle clamp configuration on the rear spar at the locations in accordance with:

   — FIGURE 1 for wire bundles that are more than 1 inch in diameter.
   — FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.
   — FIGURE 19 for the locations of the clamp changes.

4. **Group 1-9, 16-45:**
   Close access panels 661BB, 671BB, 672EB, 672FB, 672GB. Refer to 747-400 AMM 06-09-08 as an accepted procedure.

5. **Group 1-9, 16-45:**
   Activate the trailing edge flaps. Refer to 747-400 AMM 27-51-00 as an accepted procedure.

6. **Group 1-9, 16-45:**
   Put the airplane back to a serviceable condition.

**Group 10-11, 13-15:**
**WORK PACKAGE 5 - Front Spar - Forward Cargo Compartment - Change of the Wire Bundle Clamps**

1. **Group 10-11, 13-15:**
   Get access to the forward cargo compartment.

2. **Group 10-11, 13-15:**
   Remove fabric partition at aft end of the forward cargo compartment.

3. **Group 10-11, 13-15:**
   Change the wire bundle clamp configuration on the front spar at the locations in accordance with:

   — FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.
   — FIGURE 20 for the locations of the clamp changes.

4. **Group 10-11, 13-15:**
   Close access to the rear bulkhead.

5. **Group 10-11, 13-15:**
   Put the airplane back to a serviceable condition.


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**

**WORK PACKAGE 6 - Front and Rear Spar - Horizontal Stabilizer - Change of the Wire Bundle Clamps**

1. **Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
   Open access door 312AR. Refer to 747-400 AMM 06-09-05 an accepted procedure.

2. **Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
   Remove the spray shields that cover the front spar of the horizontal stabilizer.

3. **Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
   Change the wire bundle clamp configuration on the front spar at the locations in accordance with:

   — FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.
   — FIGURE 4 for wire bundles with a diameter less than 0.3 inch.
   — FIGURE 21 for the locations of the clamp changes.

4. **Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
   Open access door 315AL. Refer to 747-400 AMM 06-09-05.

5. **Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
   Change the wire bundle clamp configuration on the rear spar at the locations in accordance with:

   — FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.
   — FIGURE 4 for wire bundles with a diameter less than 0.3 inch.
   — FIGURE 22 for the locations of the clamp changes.

6. **Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
   Install the spray shields that cover the front spar of the horizontal stabilizer.

7. **Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
   Close access door 312AR. Refer to 747-400 AMM 06-09-05 as an accepted procedure.

8. **Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
   Close access door 315AL. Refer to 747-400 AMM 06-09-05 as an accepted procedure.


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

9. **Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
Put the airplane back to a serviceable condition.

**Group 1-45:**
**WORK PACKAGE 7 - Front Spar and Rear Spar - Number One and Number Two Main Fuel Tanks - Seal of the Fasteners**

1. **Group 1-9, 16-45:**
Defuel the number one main tank and the number two main tank. Refer to 747-400 AMM 28-26-00, Page Block 201 as an accepted procedure.

2. **Group 10-15:**
Defuel the number one main tank and the number two main tank. Refer to 747-100/200/300 AMM 28-26-00, Page Block 201 as an accepted procedure.

3. **Group 1-9, 16-45:**
Prepare the number one main tank and number two main tank for entry. Refer to 747-400 AMM 28-11-00, Page Block 201 as an accepted procedure.

4. **Group 10-15:**
Prepare the number one main tank and number two main tank for entry. Refer to 747-100/200/300 AMM 28-11-00, Page Block 201 as an accepted procedure.

5. **Group 1-9, 16-45:**
Get access to the front spar in the fuel tank. Remove the access doors shown in the table as necessary and remove internal access doors as necessary. Refer to 747-400 AMM 28-11-02 and 747-400 AMM 57-31-00 as accepted procedures.

| Access Door | Gives Access to Fastener Locations Between Wing Spar Stations (WS) |
|---|---|
| 544AB and 545AZ | WS 411.42 and WS 440.62 |
| 545AB | WS 499.02 and WS 614.50 |
| 545BB | WS 614.50 and WS 724.50 |
| 546BB and 546BZ | WS 862.00 and WS 889.50 |
| 552EB and 552FZ | WS 1084.00 and WS 1112.00 |
| 552FB and 552GZ | WS 1112.00 and WS 1141.10 |

6. **Group 10-15:**
Get access to the front spar in the fuel tank. Remove the access doors shown in the table as necessary and remove internal access doors as necessary. Refer to 747-100/200/300 AMM 28-11-02 and 747-100/200/300 AMM 57-31-00 as accepted procedures.

| Access Door | Gives Access to Fastener Locations Between Wing Spar Stations (WS) |
|---|---|
| 544AB | WS 411.42 and WS 440.62 |


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

| Access Door | Gives Access to Fastener Locations Between Wing Spar Stations (WS) |
|---|---|
| 545AB | WS 499.02 and WS 586.62 |
| 546BB and 546BZ | WS 862.00 and WS 889.50 |
| 552EB and 552FZ | WS 1084.00 and WS 1112.00 |
| 552FB and 552GZ | WS 1112.00 and WS 1141.10 |

7. **Group 1-9, 16-45:**
Locate and seal the fasteners on the front spar in the main tank as given in:

— FIGURE 23 for the seal of the fasteners.
— FIGURE 24 for the location of the fasteners.

8. **Group 10-15:**
Locate and seal the fasteners on the front spar in the main tank as given in:

— FIGURE 23 for the seal of the fasteners.
— FIGURE 25 for the location of the fasteners.

9. **Group 1-9, 16-45:**
Locate and seal the fasteners on the rear spar in the main tank as given in:

— FIGURE 23 for the seal of the fasteners.
— FIGURE 26 for the location of the fasteners.

10. **Group 1-9, 16-45:**
Install the access doors removed in Step 5. Refer to 747-400 AMM 28-11-02 as an accepted procedure.

11. **Group 10-15:**
Install the access doors removed in Step 6. Refer to 747-100/200/300 AMM 28-11-02.

12. Put the airplane back to a serviceable condition.

**Group 1-45:**
**WORK PACKAGE 8 - Front Spar and Rear Spar - Number Three and Number Four Main Fuel Tanks - Seal of the Fasteners**

1. **Group 1-9, 16-45:**
Defuel the number three main tank and the number four main tank. Refer to 747-400 AMM 28-26-00, Page Block 201 as an accepted procedure.

2. **Group 10-15:**
Defuel the number three main tank and the number four main tank. Refer to 747-100/200/300 AMM 28-26-00, Page Block 201 as an accepted procedure.

3. **Group 1-9, 16-45:**
Prepare the number three main tank and number four main tank for entry. Refer to 747-400 AMM 28-11-00, Page Block 201 as an accepted procedure.


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

4. **Group 10-15:**
Prepare the number three main tank and number four main tank for entry. Refer to 747-100/200/300 AMM 28-11-00, Page Block 201 as an accepted procedure.

5. **Group 1-9, 16-45:**
Get access to the front spar in the fuel tank. Remove the access doors shown in the table as necessary and remove internal access doors as necessary. Refer to 747-400 AMM 28-11-02 and 747-400 AMM 57-31-00 as accepted procedures.

| Access Door | Gives Access to Front and Rear Spar Areas Between Wing Spar Stations (WS) |
|---|---|
| 644AB and 645AZ | WS 411.42 and WS 440.62 |
| 645AB | WS 499.02 and WS 614.50 |
| 645BB | WS 614.50 and WS 724.50 |
| 646BB and 646BZ | WS 862.00 and WS 889.50 |
| 652EB and 652FZ | WS 1084.00 and WS 1112.00 |
| 652FB and 652GZ | WS 1112.00 and WS 1141.10 |

6. **Group 10-15:**
Get access to the front spar in the fuel tank. Remove the access doors shown in the table as necessary and remove internal access doors as necessary. Refer to 747-100/200/300 AMM 28-11-02 and 747-100/200/300 AMM 57-31-00 as accepted procedures.

| Access Door | Gives Access to Front and Rear Spar Areas Between Wing Spar Stations (WS) |
|---|---|
| 644AB | WS 411.42 and WS 440.62 |
| 645AB | WS 499.02 and WS 586.62 |
| 646BB and 646BZ | WS 862.00 and WS 889.50 |
| 652EB and 652FZ | WS 1084.00 and WS 1112.00 |
| 652FB and 652GZ | WS 1112.00 and WS 1141.10 |

7. **Group 1-9, 16-45:**
Locate and seal the fasteners on the front spar in the main tank in accordance with:

— FIGURE 23 for the seal of the fasteners.
— FIGURE 27 for the location of the fasteners.

8. **Group 10-15:**
Locate and seal the fasteners on the front spar in the main tank in accordance with:

— FIGURE 23 for the seal of the fasteners.
— FIGURE 28 for the location of the fasteners.

9. **Group 1-9, 16-45:**
Locate and seal the fasteners on the rear spar in the main tank in accordance with:


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

— FIGURE 23 for the seal of the fasteners.
— FIGURE 29 for the location of the fasteners.

10. **Group 1-9, 16-45:**
Install the access doors removed in Step 5. Refer to 747-400 AMM 28-11-02 as an accepted procedure.

11. **Group 10-15:**
Install the access doors removed in Step 6. Refer to 747-100/200/300 AMM 28-11-02 as an accepted procedure.

12. Put the airplane back to a serviceable condition.

**Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
**WORK PACKAGE 9 - Front and Rear Spar - Horizontal Stabilizer Fuel Tank - Seal of the Fasteners**

1. **Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
Defuel the horizontal fuel tank. Refer to 747-400 AMM 28-26-00, Page Block 201 as an accepted procedure.

2. **Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
Prepare the horizontal fuel tank for entry. Refer to 747-400 AMM 28-11-00, Page Block 201 as an accepted procedure.

3. **Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
Get access to the rear spar and front spar in the fuel tank. Remove the access door 338AZ. Refer to 747-400 AMM 28-11-19 as an accepted procedure.

4. **Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
Locate and seal the fasteners on the front spar in the tank in accordance with:

— FIGURE 23 for the seal of the fasteners.
— FIGURE 30 for the location of the fasteners.

5. **Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
Locate and seal the fasteners on the rear spar in the tank in accordance with:

— FIGURE 23 for the seal of the fasteners.
— FIGURE 31 for the location of the fasteners.


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

6. **Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
   Close the access to the fuel tank. Install the access door 338AZ. Refer to 747-400 AMM 28-11-19 as an accepted procedure.

7. **Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
   Put the airplane back to a serviceable condition.

**Group 11:**
**WORK PACKAGE 10 - More Work for Airplanes Changed by the Original Issue of this Service Bulletin**

1. **Group 11:**
   Extend the leading edge flaps. Refer to 747-100/200/300 AMM 27-81-00 as an accepted procedure.

2. **Group 11:**
   Install safety locks on the leading edge flaps. Refer to 747-100/200/300 AMM 27-81-00 as an accepted procedure.

3. **Group 11:**
   Remove the access panel 621FT. Refer to 747-100/200/300 AMM 12-09-08 as an accepted procedure.

4. **Group 11:**
   Change the wire bundle clamp configuration on the front spar at the locations in accordance with:

   — FIGURE 1 for wire bundles that are more than 1 inch in diameter.
   — FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.
   — FIGURE 3 for power feeder wire bundles.
   — FIGURE 15 for the locations of the clamp changes at Front Spar Station 600.

5. **Group 11:**
   Remove the safety locks on the leading edge flaps. Refer to 747-100/200/300 AMM 27-81-00 as an accepted procedure.

6. **Group 11:**
   Install the access panel 621FT. Refer to 747-100/200/300 AMM 12-09-08 as an accepted procedure.

7. **Group 11:**
   Retract the leading edge flaps. Refer to 747-100/200/300 AMM 27-81-00 as an accepted procedure.

8. **Group 11:**
   Put the airplane back to a serviceable condition.

**Group 1-9, 16-45:**
**WORK PACKAGE 11 - More Work for Airplanes Changed by the Original Issue of this Service Bulletin**

1. **Group 1-9, 16-45:**
   Deactivate the trailing edge flaps. Refer to 747-400 AMM 27-51-00 as an accepted procedure.


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

2. **Group 1-9, 16-45:**
Get access to the rear spar. Open access panels 671BB, 672EB, 672FB, 672GB. Refer to 747-400 AMM 06-09-08 as an accepted procedure.

3. **Group 1-9, 16-45:**
Change the wire bundle clamp configuration on the rear spar at the locations in accordance with:

— FIGURE 1 for wire bundles that are more than 1 inch in diameter.
— FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.
— FIGURE 3 for power feeder wire bundles.
— FIGURE 19 for the locations of the clamp change.

4. **Group 1-9, 16-45:**
Close access panels 671BB, 672EB, 672FB, 672GB. Refer to 747-400 AMM 06-09-08 as an accepted procedure.

5. **Group 1-9, 16-45:**
Activate the trailing edge flaps. Refer to 747-400 AMM 27-51-00 as an accepted procedure.

6. **Group 1-9, 16-45:**
Put the airplane back to a serviceable condition.

**Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
**WORK PACKAGE 12 - More Work for Airplanes Changed by the Original Issue of this Service Bulletin**

1. **Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
Open access door 312AR. Refer to 747-400 AMM 06-09-05 an accepted procedure.

2. **Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
Change the wire bundle clamp configuration on the front spar at the locations in accordance with:

— FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.
— FIGURE 4 for wire bundles with a diameter less than 0.3 inch.
— FIGURE 21 for the locations of the clamp changes at right buttock line (RBL) 2.

3. **Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
Close access door 312AR. Refer to 747-400 AMM 06-09-05 as an accepted procedure.

4. **Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
Open access door 315AL. Refer to 747-400 AMM 06-09-05.


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

5. **Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
Change the wire bundle clamp configuration on the rear spar at the locations in accordance with:

— FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.
— FIGURE 4 for wire bundles with a diameter less than 0.3 inch.
— FIGURE 22 for the locations of the clamp changes at Right Buttock Line 18.

6. **Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
Close access door 315AL. Refer to 747-400 AMM 06-09-05 as an accepted procedure.

7. **Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
Put the airplane back to a serviceable condition.

**Group 11:**
**WORK PACKAGE 13 - More Work for Airplanes Changed by the Original Issue, Revision 1, Revision 2, or Revision 3 of this Service Bulletin**

1. **Group 11:**
Extend the leading edge flaps. Refer to 747-100/200/300 AMM 27-81-00 as an accepted procedure.

2. **Group 11:**
Install safety locks on the leading edge flaps. Refer to 747-100/200/300 AMM 27-81-00 as an accepted procedure..

3. **Group 11:**
Remove the access panel 621FT. Refer to 747-100/200/300 AMM 12-09-08 as an accepted procedure.

4. **Group 11:**
Change the wire bundle clamp configuration on the front spar at the locations in accordance with:

— FIGURE 1 for wire bundles that are more than 1 inch in diameter.
— FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.
— FIGURE 3 for power feeder wire bundles.
— FIGURE 41 for the locations of the clamp change.

5. **Group 11:**
Remove the safety locks on the leading edge flaps. Refer to 747-100/200/300 AMM 27-81-00 as an accepted procedure.

6. **Group 11:**
Retract the leading edge flaps. Refer to 747-100/200/300 AMM 27-81-00 as an accepted procedure.

7. **Group 11:**
Install the access panel 621FT. Refer to 747-100/200/300 AMM 12-09-08 as an accepted procedure.


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

8. **Group 11:**
   Put the airplane back to a serviceable condition.

**Group 18:**
**WORK PACKAGE 14 - More Work for Airplanes Changed by the Original Issue, Revision 1, Revision 2, Revision 3 or Revision 4 of this Service Bulletin. Front Spar - Left Wing - Change of the Wire Bundle W1726 and W4300 Clamps**

1. Extend the leading edge flaps. Refer to 747-400 AMM 27-81-00 as an accepted procedure.

2. Install safety locks on the leading edge flaps. Refer to 747-400 AMM 27-81-00 as an accepted procedure.

3. Remove the access panel 521FT. Refer to 747-400 AMM 06-09-08 as an accepted procedure.

4. Change the wire bundles W1726 and W4300 clamp configuration on the front spar from Front Spar Station 453 to Front Spar Station 655 at the locations in accordance with:

   — FIGURE 1 for wire bundles that are more than 1 inch in diameter.
   — FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.
   — FIGURE 3 for power feeder wire bundles.
   — FIGURE 42 for the locations of the clamp change.

5. Change the wire bundle W1726 clamp configuration on the front spar from Front Spar Station 885 to Front Spar Station 1141 at the locations in accordance with:

   — FIGURE 1 for wire bundles that are more than 1 inch in diameter.
   — FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.
   — FIGURE 3 for power feeder wire bundles.
   — FIGURE 43 for the locations of the clamp change.

6. Remove the safety locks on the leading edge flaps. Refer to 747-400 AMM 27-81-00 as an accepted procedure.

7. Retract the leading edge flaps. Refer to 747-400 AMM 27-81-00 as an accepted procedure.

8. Install the access panel 521FT. Refer to 747-400 AMM 06-09-05 as an accepted procedure.

9. Put the airplane back to a serviceable condition.

**Group 18:**
**WORK PACKAGE 15 - More Work for Airplanes Changed by the Original Issue, Revision 1, Revision 2, Revision 3 or Revision 4 of this Service Bulletin. Front Spar - Right Wing - Change of the Wire Bundle W4302 Clamps**

1. Extend the leading edge flaps. Refer to 747-400 AMM 27-81-00 as an accepted procedure.

2. Install safety locks on the leading edge flaps. Refer to 747-400 AMM 27-81-00 as an accepted procedure.

3. Remove the access panel 621FT. Refer to 747-400 AMM 06-09-08 as an accepted procedure.


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

4. Change the wire bundle W4302 clamp configuration on the front spar from Front Spar Station 453 to Front Spar Station 655 at the locations in accordance with:

    — FIGURE 1 for wire bundles that are more than 1 inch in diameter.
    — FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.
    — FIGURE 3 for power feeder wire bundles.
    — FIGURE 44 for the locations of the clamp change.

5. Remove the safety locks on the leading edge flaps. Refer to 747-400 AMM 27-81-00 as an accepted procedure.

6. Retract the leading edge flaps. Refer to 747-400 AMM 27-81-00 as an accepted procedure.

7. Install the access panel 621FT. Refer to 747-400 AMM 06-09-05 as an accepted procedure.

8. Put the airplane back to a serviceable condition.

**Group 32:**
**WORK PACKAGE 16 - More Work for Airplanes Changed by the Original Issue, Revision 1, Revision 2, Revision 3 or Revision 4 of this Service Bulletin. Front Spar - Left Wing - Change of the Wire Bundle W1726 Clamps**

1. Extend the leading edge flaps. Refer to 747-400 AMM 27-81-00 as an accepted procedure.

2. Install safety locks on the leading edge flaps. Refer to 747-400 AMM 27-81-00 as an accepted procedure.

3. Remove the access panel 521FT. Refer to 747-400 AMM 06-09-08 as an accepted procedure.

4. Change the wire bundle W1726 clamp configuration on the front spar from Front Spar Station 453 to Front Spar Station 655 at the locations in accordance with:

    — FIGURE 1 for wire bundles that are more than 1 inch in diameter.
    — FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.
    — FIGURE 3 for power feeder wire bundles.
    — FIGURE 45 for the locations of the clamp change.

5. Change the wire bundle W1726 clamp configuration on the front spar from Front Spar Station 885 to Front Spar Station 1141 at the locations in accordance with:

    — FIGURE 1 for wire bundles that are more than 1 inch in diameter.
    — FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.
    — FIGURE 3 for power feeder wire bundles.
    — FIGURE 46 for the locations of the clamp change.

6. Remove the safety locks on the leading edge flaps. Refer to 747-400 AMM 27-81-00 as an accepted procedure.

7. Retract the leading edge flaps. Refer to 747-400 AMM 27-81-00 as an accepted procedure.

8. Install the access panel 521FT. Refer to 747-400 AMM 06-09-05 as an accepted procedure.

9. Put the airplane back to a serviceable condition.


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**

**WORK PACKAGE 17 - More Work for Airplanes Changed by the Original Issue, Revision 1, Revision 2, Revision 3, Revision 4 or Revision 5 of this Service Bulletin. Rear Spar - Horizontal Stabilizer - Change of the Wire Bundle W4607 Clamp**

1. Open access door 315AL. Refer to 747-400 AMM 06-09-05 as an accepted procedure.

2. Do a general visual inspection on wire bundle W4607 for the installation of a clamp at the specified location in accordance with FIGURE 47.

3. If the specified clamp is not installed on wire bundle W4607, then no more work is necessary.

4. If the specified clamp is installed on wire bundle W4607, then do the step that follows:

    a. Change the wire bundle clamp configuration on the rear spar at the specified location in accordance with:

        – FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.
        – FIGURE 4 for wire bundles with a diameter less than 0.3 inch.
        – FIGURE 47 for the location of the clamp change.

5. Close access door 315AL. Refer to 747-400 AMM 06-09-05 as an accepted procedure.

6. Put the airplane back to a serviceable condition.

**Group 1-9, 16-45:**

**WORK PACKAGE 18 - More Work for Airplanes Changed by the Original Issue, Revision 1, Revision 2, Revision 3, Revision 4, Revision 5 or Revision 6 of this Service Bulletin - Fillet Seal Application for Fasteners at FSSI 600 (LEFT WING)**

1. Defuel the number two main tank. Refer to 747-400 AMM 28-26-00, Page Block 201 as an accepted procedure.

2. Prepare the number two main tank for entry. Refer to 747-400 AMM 28-11-00, Page Block 201 as an accepted procedure.

3. Remove access panel 545AB to get access to the front spar. Refer to 747-400 AMM 28-11-02 as accepted procedures.

4. Remove internal access doors as necessary to get access to the fastener locations between wing spar stations WS 499.02 and WS 614.50. Refer to 747-400 AMM 57-31-00 as an accepted procedure.

5. Locate and seal the fasteners on the front spar in the number two main tank in accordance with FIGURE 48.

6. Install internal access doors. Refer to 747-400 AMM 57-31-00 as an accepted procedure.

7. Install access panel 545AB. Refer to 747-400 AMM 28-11-02 as an accepted procedure.

8. Put the airplane back to a serviceable condition.


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**Group 1-9, 16-45:**
**WORK PACKAGE 19 - More Work for Airplanes Changed by the Original Issue, Revision 1, Revision 2, Revision 3, Revision 4, Revision 5 or Revision 6 of this Service Bulletin - Fillet Seal Application for Fasteners at FSSI 600 (RIGHT WING)**

1. Defuel the number three main tank. Refer to 747-400 AMM 28-26-00, Page Block 201 as an accepted procedure.

2. Prepare the number three main tank for entry. Refer to 747-400 AMM 28-11-00, Page Block 201 as an accepted procedure.

3. Remove access panel 645AB to get access to the front spar in the fuel tank. Refer to 747-400 AMM 28-11-02 as an accepted procedure.

4. Remove internal access doors as necessary to get access to the fastener locations between wing spar stations WS 499.02 and WS 614.50. Refer to 747-400 AMM 57-31-00 as an accepted procedure.

5. Locate and seal the fasteners on the front spar in the number three main tank in accordance with FIGURE 49.

6. Install internal access doors. Refer to 747-400 AMM 57-31-00 as an accepted procedure.

7. Install access panel 645AB. Refer to 747-400 AMM 28-11-02 as an accepted procedure.

8. Put the airplane back to a serviceable condition.

**Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2:**
**WORK PACKAGE 20 - More Work for Airplanes Changed by the Original Issue, Revision 1, Revision 2, Revision 3, Revision 4, Revision 5 or Revision 6 of this Service Bulletin - Fillet Seal Application Horizontal Stabilizer Fuel Tank Fasteners**

1. Defuel the horizontal stabilizer fuel tank. Refer to 747-400 AMM 28-26-00, Page Block 201 as an accepted procedure.

2. Prepare the horizontal stabilizer fuel tank for entry. Refer to 747-400 AMM 28-11-00, Page Block 201 as an accepted procedure.

3. Remove the access door 338AZ to get access to the rear spar. Refer to 747-400 AMM 28-11-19 as an accepted procedure.

4. Locate and seal the fasteners on the rear spar in the tank in accordance with FIGURE 50.

5. Close the access to the horizontal stabilizer fuel tank. Install the access door 338AZ. Refer to 747-400 AMM 28-11-19 as an accepted procedure.


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

6. Put the airplane back to a serviceable condition.

**Group 1-9, 16-45:**
**WORK PACKAGE 21 - More Work for Airplanes Changed by the Original Issue, Revision 1, Revision 2, Revision 3, Revision 4, Revision 5, Revision 6, or Revision 7 of this Service Bulletin - Full Cushion Clamp and Sleeve installation at WS 588 (RIGHT WING)**

1. **Group 1-9, 16-45:**
   Deactivate the trailing edge flaps. Refer to 747-400 AMM 27-51-00 as an accepted procedure.

2. **Group 1-9, 16-45:**
   Get access to the rear spar. Open access panels 672EB, 672FB, 672GB. Refer to 747-400 AMM 06-09-08 as an accepted procedure.

3. **Group 1-9, 16-45:**
   Change the wire bundle clamp configuration at the locations in accordance with:

   — FIGURE 1 for wire bundles that are more than 1 inch in diameter.
   — FIGURE 2 for wire bundles with a diameter between 0.3 inch and 1 inch.
   — FIGURE 3 for power feeder wire bundles.
   — FIGURE 51 for the locations of the clamp change at WS 588.

4. **Group 1-9, 16-45:**
   Close access panels 672EB, 672FB, 672GB. Refer to 747-400 AMM 06-09-08 as an accepted procedure.

5. **Group 1-9, 16-45:**
   Activate the trailing edge flaps. Refer to 747-400 AMM 27-51-00 as an accepted procedure.

6. **Group 1-9, 16-45:**
   Put the airplane back to a serviceable condition.


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 1-45.**

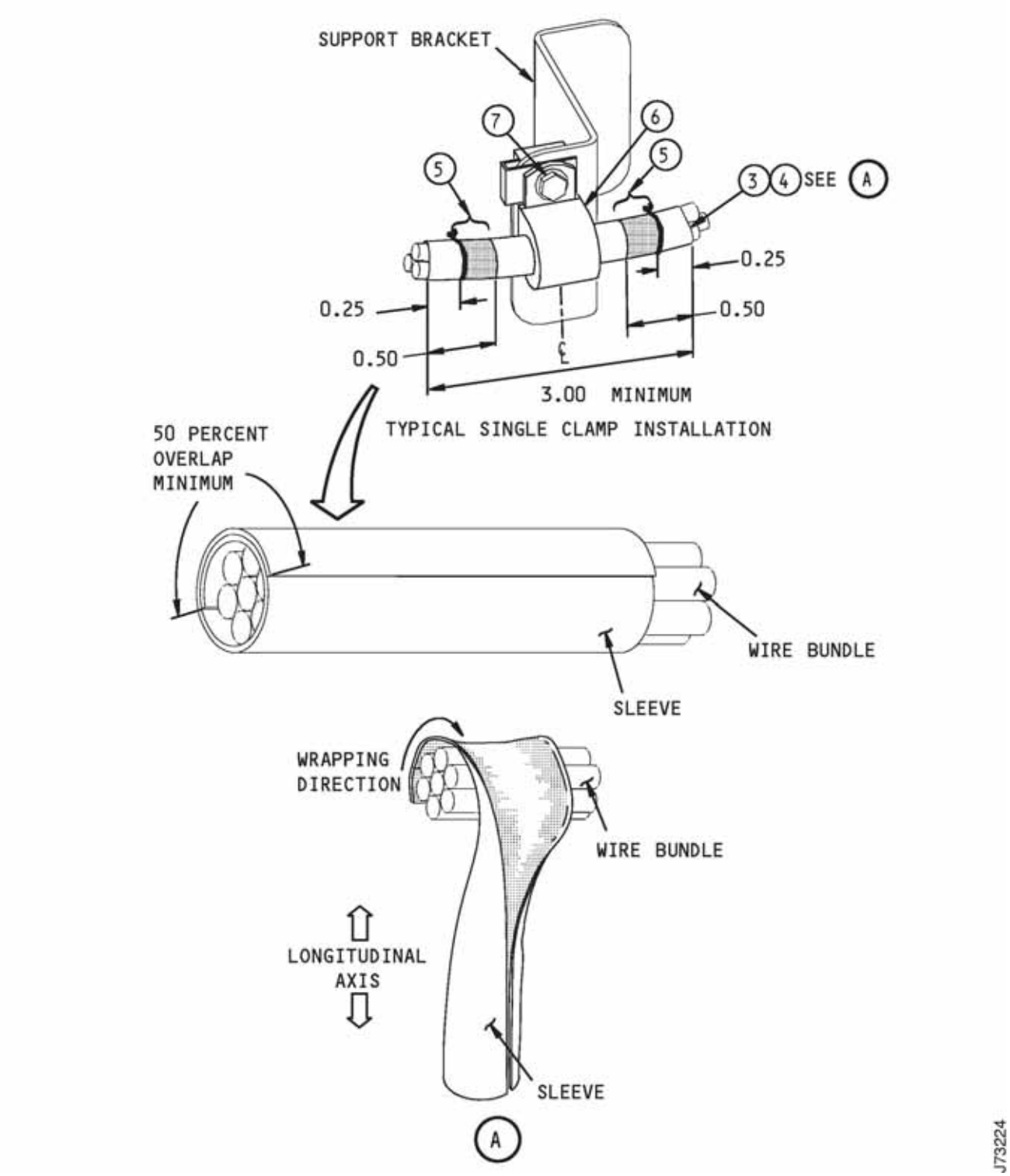



**FIGURE 1: WIRE BUNDLE CLAMP CONFIGURATION CHANGE - WIRE BUNDLES OVER 1 INCH IN DIAMETER**
**(SHEET 1 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Remove/Keep | SCREW | - | 1 | |
| | Remove/Keep | WASHER | - | 1 | |
| | Remove/Keep | SPACER | - | 1 | If a spacer is installed. |
| | Remove/Keep | NUT | - | 1 | It is not necessary to remove the nut if it is fastened to the bracket. |
| 2 | Remove | CLAMP | - | 1 | Record the clamp size before it is discarded to help select the new clamp size. |
| 3 | Cut | SLEEVE | 005W3281-() | 1 | Make sure to cut the sleeve longitudinally for installation on the wire bundle. |
| | Cut | SLEEVE | 005W3281-() | 1 | (a) |
| 4 | Install (New) | SLEEVE | 005W3281-() | 1 | (b)(c)(d)(e) |
| 5 | Install (New) | LACING TAPE | BMS13-54 , TYPE III, CLASS 1, FINISH C, WHITE | 2 | (h) |
| 6 | Install (New) | CLAMP | BACC10JU() (BACC10JU()P optional) | 1 | In the same position as the old clamp. (f)(g) |
| 7 | Install (Kept) | WASHER | - | 1 | |
| | Install (Kept) | SCREW | - | 1 | |
| | Install (Kept) | SPACER | - | 1 | |
| | Install (Kept) | NUT | - | 1 | |

(a) The sleeve must have the sufficient length to make a 50 percent minimum overlap when it is fully wrapped around the bundle.

(b) The direction of the wrap must be along the longitudinal axis of the sleeve.

(c) Make sure that the curled edges are pointed away from the wire bundle.

(d) The edges of the sleeve must make a 50 percent minimum overlap when it is fully wrapped around the bundle.

(e) The center of the sleeve must be aligned with the center of the clamp.

(f) Use the clamp size recorded in Step 2 to get the approximate size of the new clamp.

(g) Refer to SWPM 20-10-12 as an accepted procedure for the installation of wire bundle support clamps.

**FIGURE 1: WIRE BUNDLE CLAMP CONFIGURATION CHANGE - WIRE BUNDLES OVER 1 INCH IN DIAMETER**
**(SHEET 2 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| (h) The string tie can be placed anywhere between 0.25 inch from the edge of the sleeve and 0.50 inch maximum from the edge of the sleeve. Refer to SWPM 20-10-11 as an accepted procedure to assemble a wire harness tie. | | | | | |

**FIGURE 1: WIRE BUNDLE CLAMP CONFIGURATION CHANGE - WIRE BUNDLES OVER 1 INCH IN DIAMETER**
**(SHEET 3 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 1-45.**

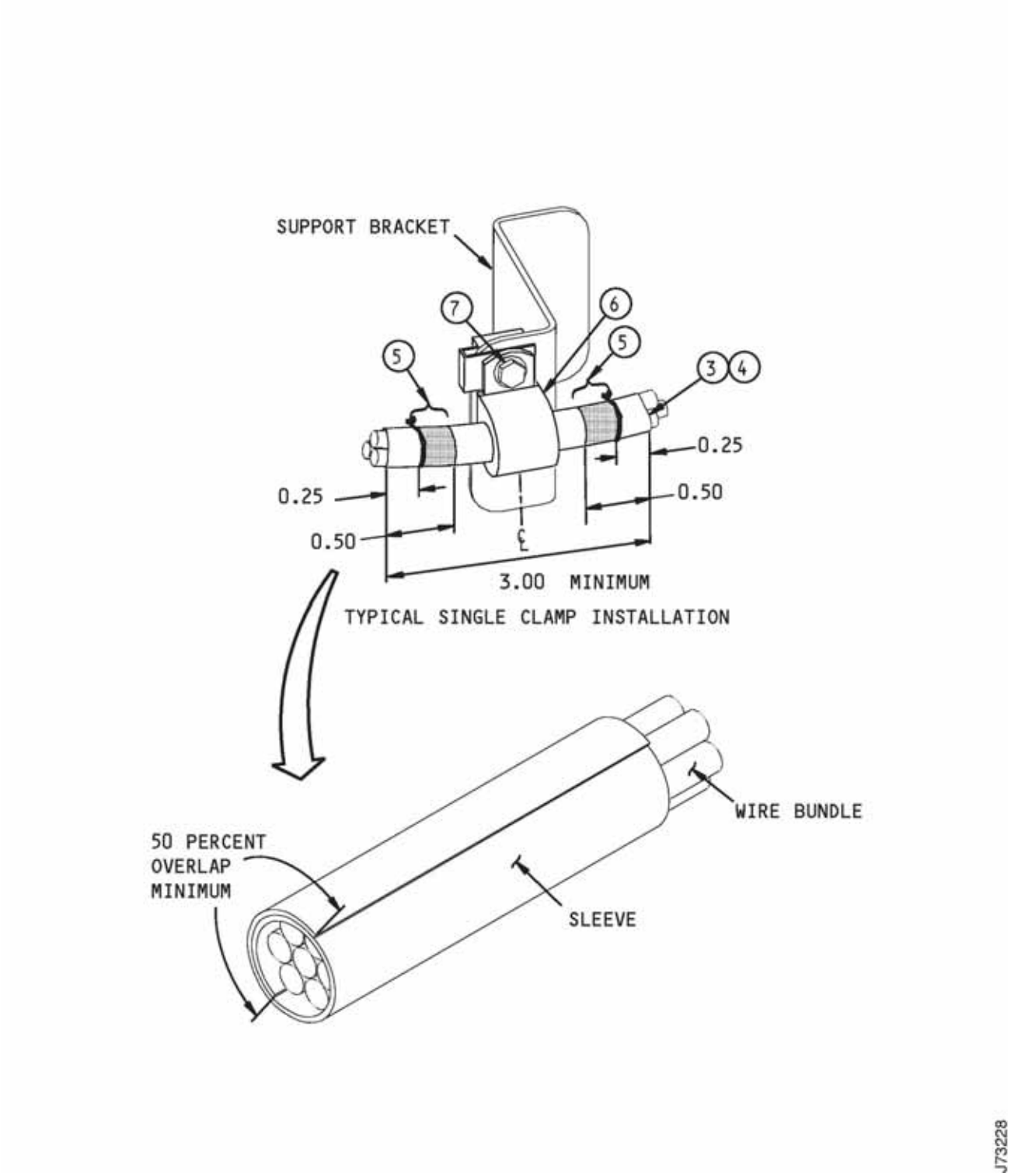



**FIGURE 2: WIRE BUNDLE CLAMP CONFIGURATION CHANGE - WIRE BUNDLE WITH A 0.3 INCH DIAMETER TO 1 INCH DIAMETER**
**(SHEET 1 OF 2)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for this location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Remove/Keep | SCREW | - | 1 | |
| | Remove/Keep | WASHER | - | 1 | |
| | Remove/Keep | SPACER | - | 1 | If a spacer is installed. |
| | Remove/Keep | NUT | - | 1 | It is not necessary to remove the nut if it is fastened to the bracket. |
| 2 | Remove | CLAMP | - | 1 | Record the clamp size before it is discarded to help select the new clamp size. |
| 3 | Cut | SLEEVE | 005W3281-() | 1 | A 3 inch minimum length of sleeve is necessary. (a) |
| | Cut | SLEEVE | 005W3281-() | 1 | Make sure to cut the sleeve longitudinally for installation on the wire bundle. |
| 4 | Install (New) | SLEEVE | 005W3281-() | 1 | (b)(c) |
| 5 | Install (New) | LACING TAPE | BMS13-54 , TYPE III, CLASS 1, FINISH C, WHITE | 2 | (f) |
| 6 | Install (New) | CLAMP | BACC10JU() (BACC10JU()P optional) | 1 | (d)(e) |
| 7 | Install (Kept) | WASHER | - | 1 | |
| | Install (Kept) | SCREW | - | 1 | |
| | Install (Kept) | SPACER | - | 1 | |
| | Install (Kept) | NUT | - | 1 | |

(a) The sleeve must have the sufficient diameter to make a 50 percent minimum overlap when it is fully wrapped around the bundle.

(b) The edges of the sleeve must make a 50 percent minimum overlap when it is fully wrapped around the bundle.

(c) The center of the sleeve must be aligned with the center of the clamp.

(d) Use the clamp size recorded in Step 2 to get the approximate size of the new clamp.

(e) Refer to SWPM 20-10-12 as an accepted procedure for the installation of wire bundle support clamps.

(f) The string tie can be placed anywhere between 0.25 inch from the edge of the sleeve and 0.50 inch maximum from the edge of the sleeve. Refer to SWPM 20-10-11 as an accepted procedure to assemble a wire harness tie.

**FIGURE 2: WIRE BUNDLE CLAMP CONFIGURATION CHANGE - WIRE BUNDLE WITH A 0.3 INCH DIAMETER TO 1 INCH DIAMETER**
**(SHEET 2 OF 2)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 1-45.**

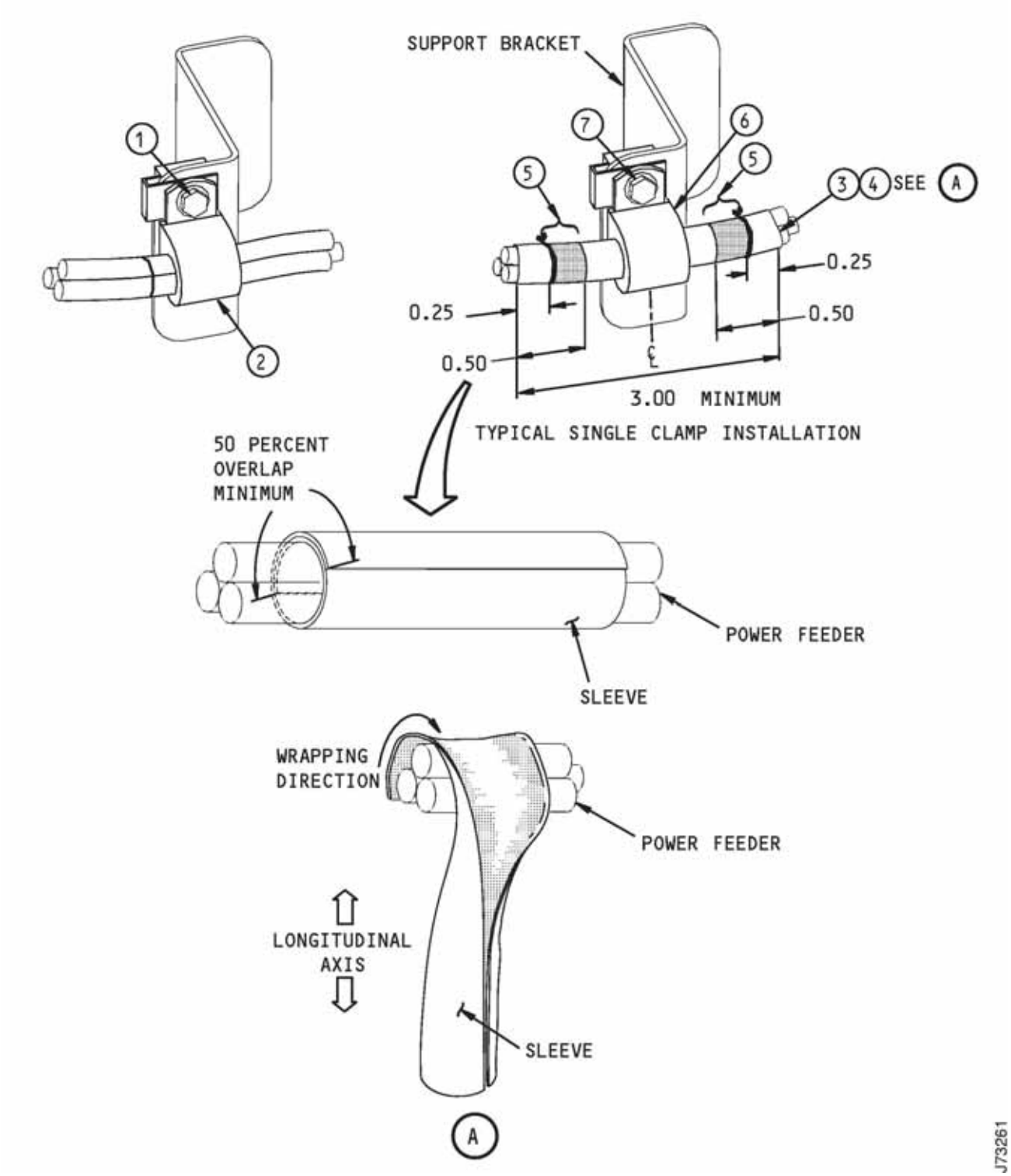



**FIGURE 3: WIRE BUNDLE CLAMP CONFIGURATION CHANGE - POWER FEEDER WIRE BUNDLES (SHEET 1 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Remove / Keep | SCREW | - | 1 | |
| | Remove / Keep | WASHER | - | 1 | |
| | Remove / Keep | SPACER | - | 1 | If a spacer is installed. |
| | Remove / Keep | NUT | - | 1 | It is not necessary to remove the nut if it is fastened to the bracket. |
| 2 | Remove | CLAMP | - | 1 | Record the clamp size before it is discarded to help select the new clamp size. |
| 3 | Cut | SLEEVE | 005W3281-() | 1 | Make sure to cut the sleeve longitudinally for installation on the wire bundle. |
| | Cut | SLEEVE | 005W3281-() | - | (a) |
| 4 | Install (New) | SLEEVE | 005W3281-() | 1 | (b)(c)(d)(e) |
| 5 | Install (New) | LACING TAPE | BMS 13-54, TYPE III, CLASS 1, FINISH C, WHITE | 2 | (h) |
| 6 | Install (New) | CLAMP | BACC10KL()(TA027063()P optional) | 1 | Install this clamp on power feeder wire bundles with three wires. (f)(g) |
| | Install (New) | CLAMP | JM44LC52H()RFB(TA027063()P optional) | 1 | Install this clamp on power feeder wire bundles with four wires. (f)(g) |
| 7 | Install (Kept) | WASHER | - | 1 | |
| | Install (Kept) | SCREW | - | 1 | |
| | Install (Kept) | SPACER | - | 1 | |
| | Install (Kept) | NUT | - | 1 | |
| (a) The sleeve must have the sufficient length to make a 50 percent minimum overlap when it is fully wrapped around the bundle. | | | | | |
| (b) The direction of the wrap must be along the longitudinal axis of the sleeve. | | | | | |

**FIGURE 3: WIRE BUNDLE CLAMP CONFIGURATION CHANGE - POWER FEEDER WIRE BUNDLES (SHEET 2 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| (c) | Make sure that the curled edges are pointed away from the wire bundle. | | | | |
| (d) | The edges of the sleeve must make a 50 percent minimum overlap when it is fully wrapped around the bundle. | | | | |
| (e) | The center of the sleeve must be aligned with the center of the clamp. | | | | |
| (f) | Use the clamp size recorded in Step 2 to get the approximate size of the new clamp. | | | | |
| (g) | Refer to SWPM 20-10-12 as an accepted procedure for the installation of wire bundle support clamps. | | | | |
| (h) | The string tie can be placed anywhere between 0.25 inch from the edge of the sleeve and 0.50 inch maximum from the edge of the sleeve. Refer to SWPM 20-10-11 as an accepted procedure to assemble a wire harness tie. | | | | |

**FIGURE 3: WIRE BUNDLE CLAMP CONFIGURATION CHANGE - POWER FEEDER WIRE BUNDLES (SHEET 3 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-22, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2.**

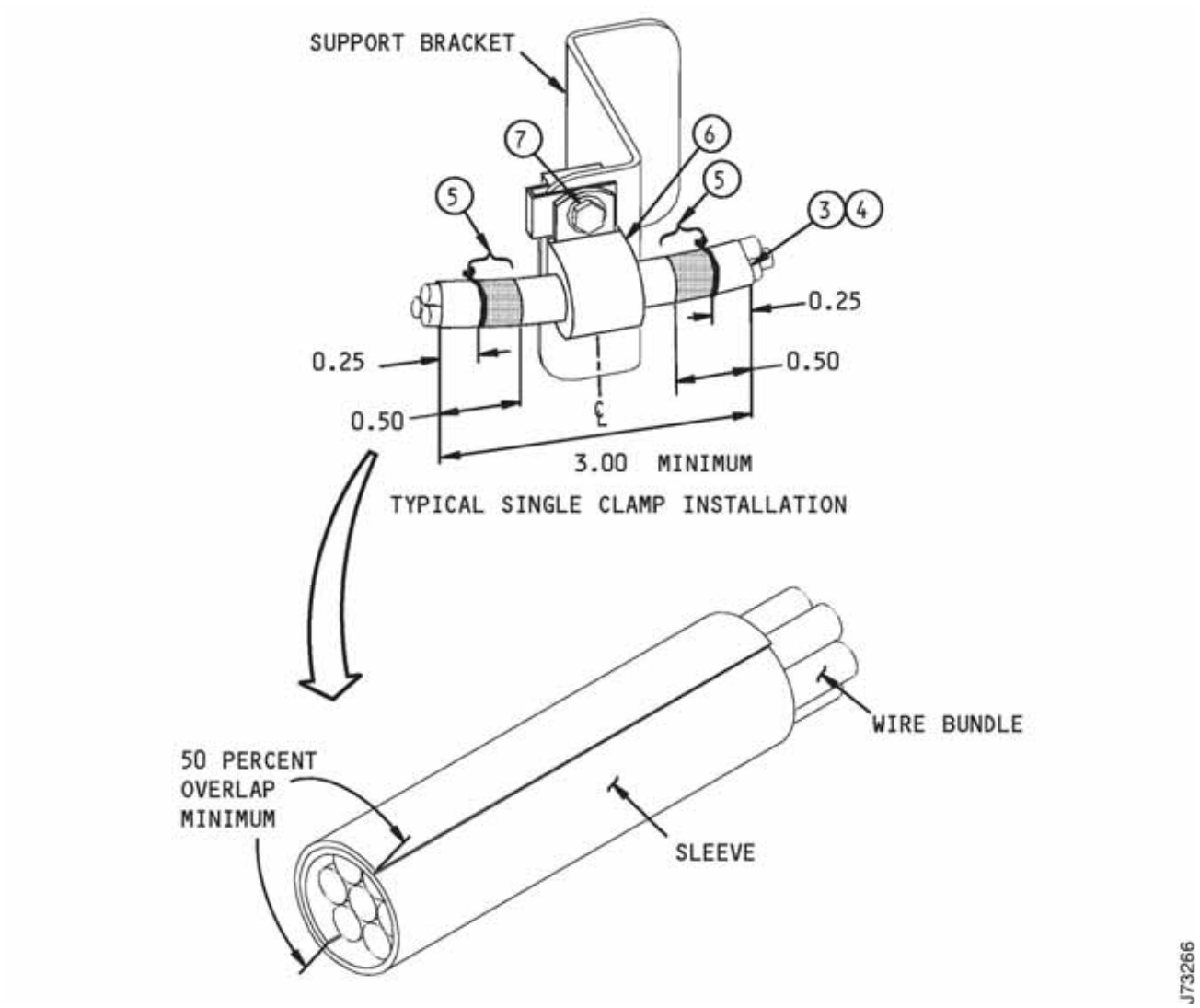



**FIGURE 4: WIRE BUNDLE CLAMP CONFIGURATION CHANGE - WIRE BUNDLE DIAMETER UNDER 0.3 INCH**
**(SHEET 1 OF 2)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for this location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Remove/Keep | SCREW | - | 1 | |
| | Remove/Keep | WASHER | - | 1 | |
| | Remove/Keep | SPACER | - | 1 | If a spacer is installed. |
| | Remove/Keep | NUT | - | 1 | It is not necessary to remove the nut if it is fastened to the bracket. |
| 2 | Remove | CLAMP | - | 1 | Record the clamp size before it is discarded to help select the new clamp size. |
| 3 | Cut | SLEEVE | 005W3281-() | 1 | A 3 inch minimum length of sleeve is necessary. (a) |
| | Cut | SLEEVE | 005W3281-() | 1 | Make sure to cut the sleeve longitudinally for installation on the wire bundle. |
| 4 | Install (New) | SLEEVE | 005W3281-() | 1 | (b)(c) |
| 5 | Install (New) | LACING TAPE | BMS13-54 , TYPE III, CLASS 1, FINISH C, WHITE | 2 | (f) |
| 6 | Install (New) | CLAMP | BACC10GU() | 1 | (d)(e) |
| 7 | Install (Kept) | WASHER | - | 1 | |
| | Install (Kept) | SCREW | - | 1 | |
| | Install (Kept) | SPACER | - | 1 | |
| | Install (Kept) | NUT | - | 1 | |

(a) The sleeve must have the sufficient diameter to make a 50 percent minimum overlap when it is fully wrapped around the bundle.

(b) The edges of the sleeve must make a 50 percent minimum overlap when it is fully wrapped around the bundle.

(c) The center of the sleeve must be aligned with the center of the clamp.

(d) Use the clamp size recorded in Step 2 to get the approximate size of the new clamp.

(e) Refer to SWPM 20-10-12 as an accepted procedure for the installation of wire bundle support clamps.

(f) The string tie can be placed anywhere between 0.25 inch from the edge of the sleeve and 0.50 inch maximum from the edge of the sleeve. Refer to SWPM 20-10-11 as an accepted procedure to assemble a wire harness tie.

**FIGURE 4: WIRE BUNDLE CLAMP CONFIGURATION CHANGE - WIRE BUNDLE DIAMETER UNDER 0.3 INCH**
**(SHEET 2 OF 2)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 2, 5, 20, 27, 41.**

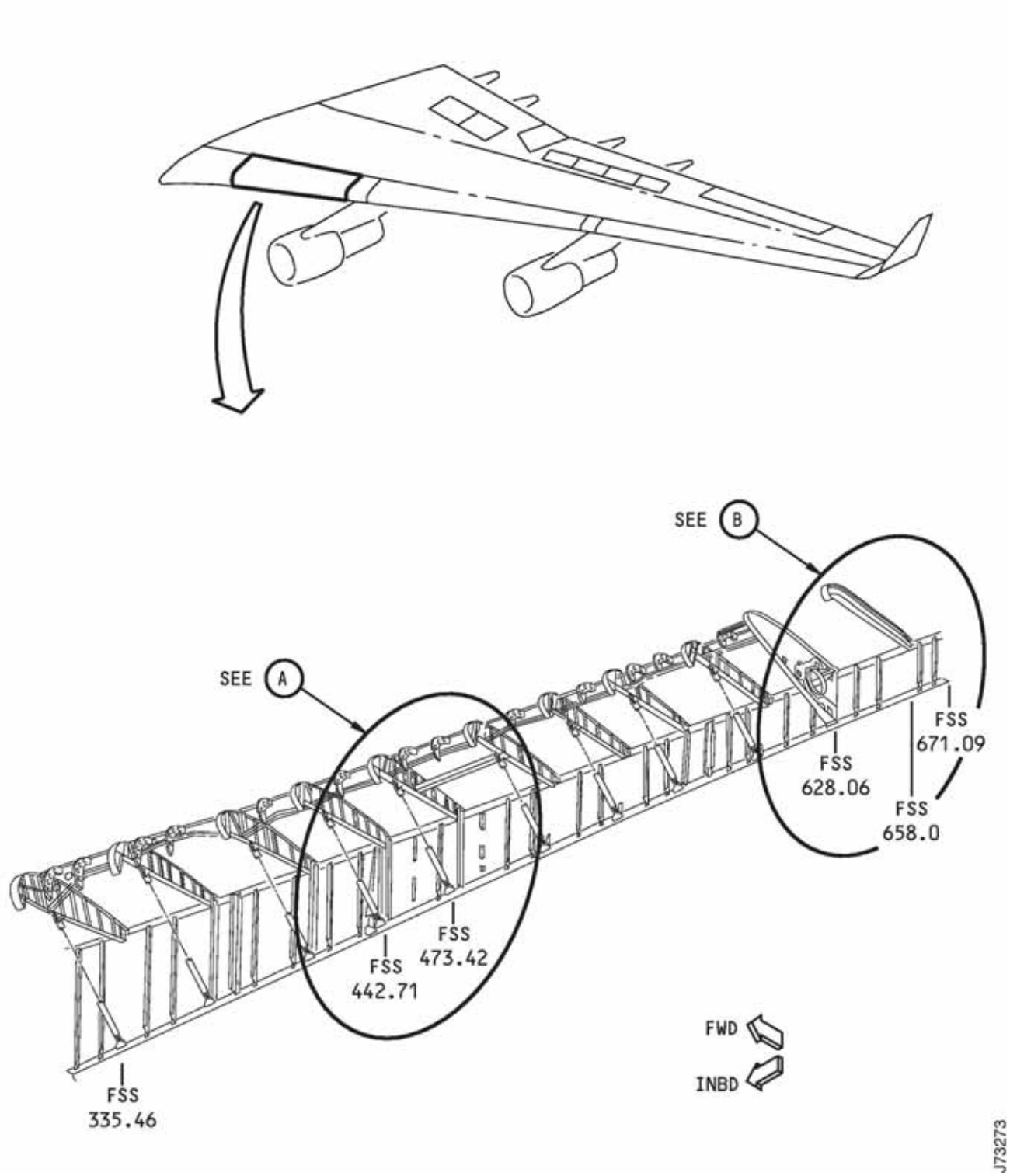



**FIGURE 5: FRONT SPAR - FRONT SPAR STATION 453 TO FRONT SPAR STATION 655 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 1 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

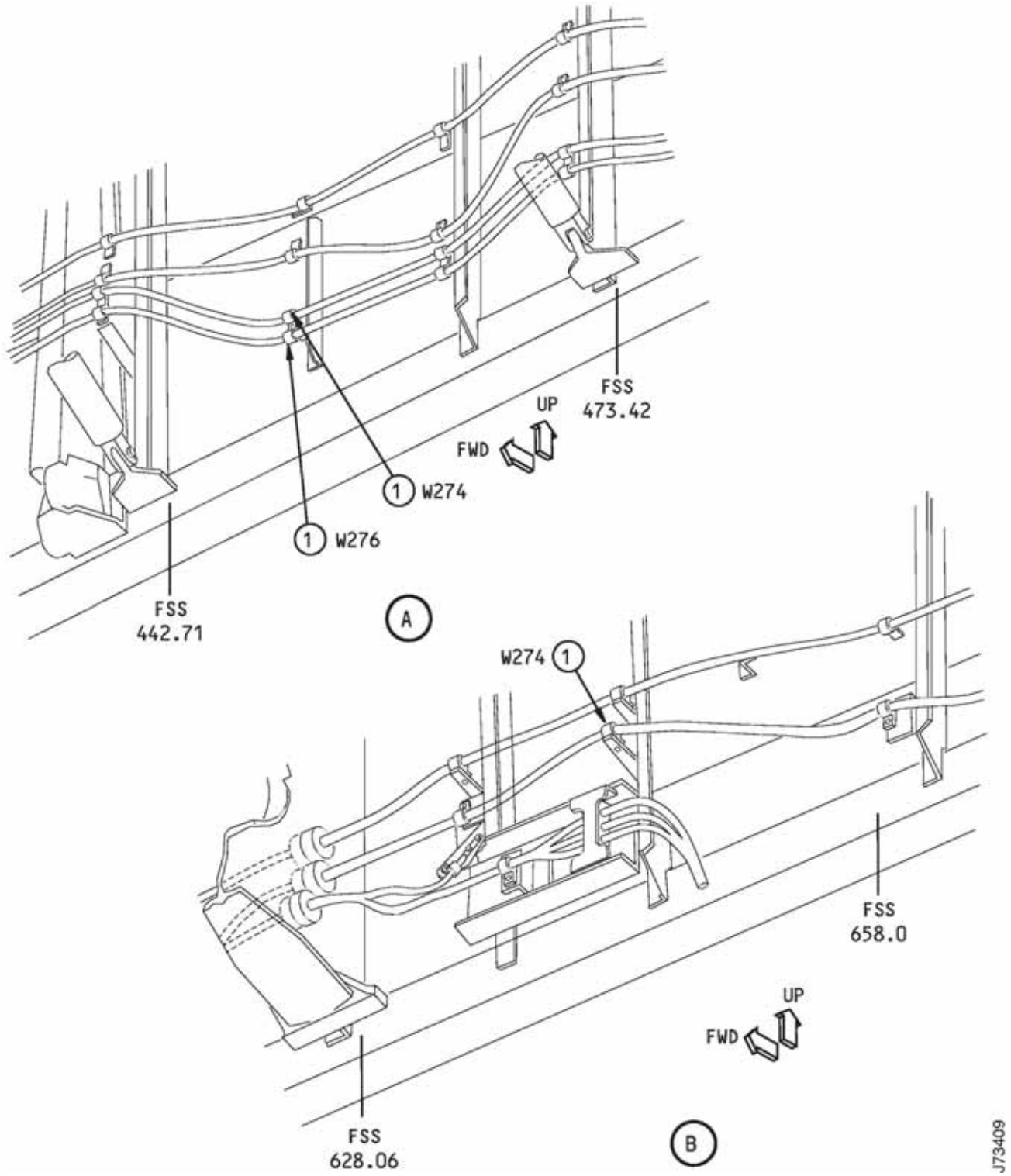



**FIGURE 5: FRONT SPAR - FRONT SPAR STATION 453 TO FRONT SPAR STATION 655 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 2 OF 3)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | CLAMP | - | 3 | Get access. Find the existing clamp on the specified wire bundle at the location specified by the circle symbol. (a) |
| (a) The actual configuration of the airplane can be different than the configuration in the figure. Some airplanes may not have a clamp installed on the specified wire bundle at the location specified by the circle symbol. If a clamp is not installed on the specified wire bundle at the location specified by the circle symbol, it is not necessary to install a sleeve and a new clamp at that location. | | | | | |

**FIGURE 5: FRONT SPAR - FRONT SPAR STATION 453 TO FRONT SPAR STATION 655 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS**
**(SHEET 3 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 3-4, 9, 17, 22, 25-26, 30-31, 33, 36, 40, 42, 45.**

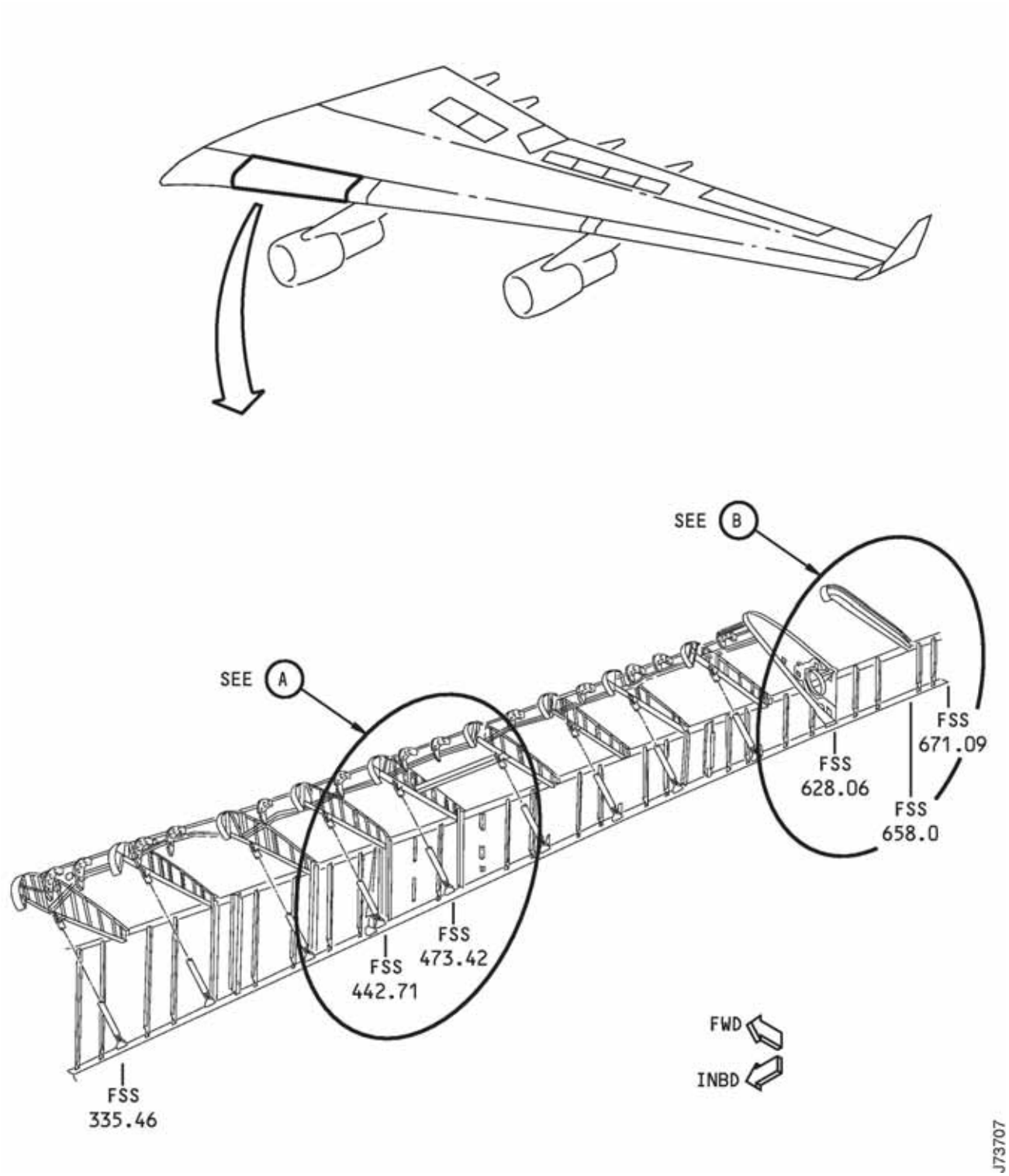



**FIGURE 6: FRONT SPAR - FRONT SPAR STATION 453 TO FRONT SPAR STATION 655 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 1 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

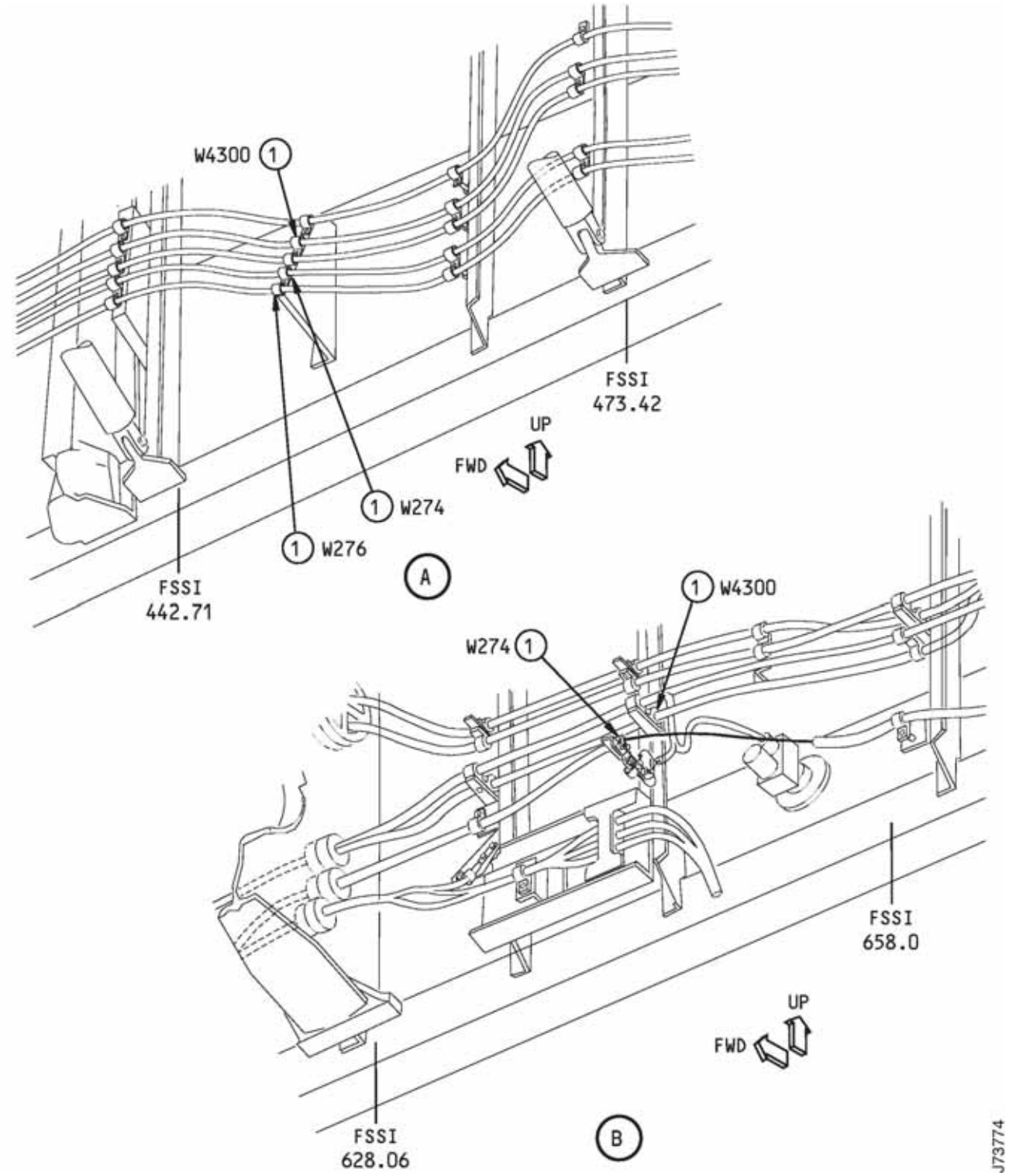



**FIGURE 6: FRONT SPAR - FRONT SPAR STATION 453 TO FRONT SPAR STATION 655 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 2 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | CLAMP | - | 5 | Get access. Find the existing clamp on the specified wire bundle at the location specified by the circle symbol. (a) |
| (a) The actual configuration of the airplane can be different than the configuration in the figure. Some airplanes may not have a clamp installed on the specified wire bundle at the location specified by the circle symbol. If a clamp is not installed on the specified wire bundle at the location specified by the circle symbol, it is not necessary to install a sleeve and a new clamp at that location. | | | | | |

**FIGURE 6: FRONT SPAR - FRONT SPAR STATION 453 TO FRONT SPAR STATION 655 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS**
**(SHEET 3 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 7-8, 21, 28-29, 32, 35, 43.**

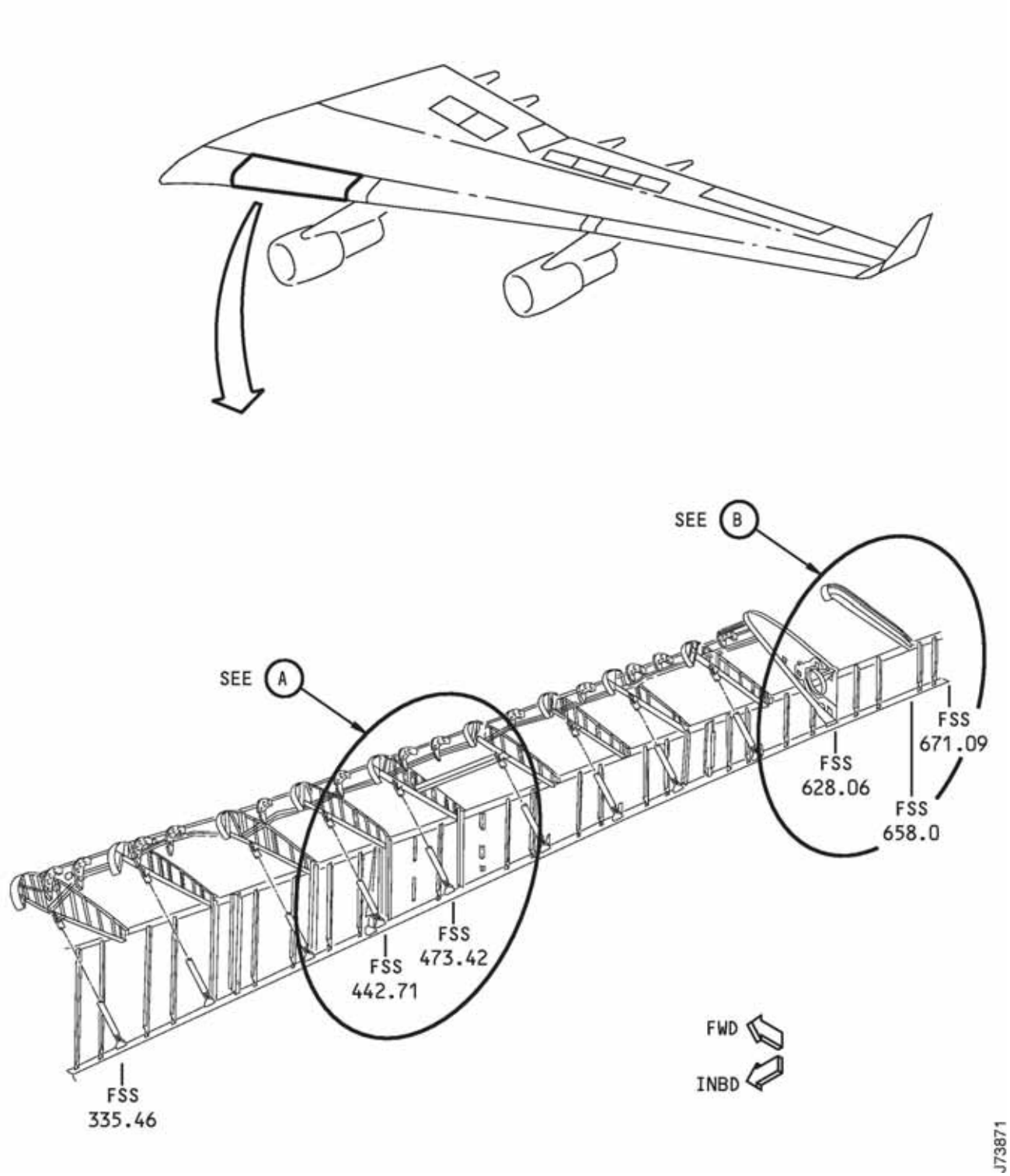



**FIGURE 7: FRONT SPAR - FRONT SPAR STATION 453 TO FRONT SPAR STATION 655 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 1 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

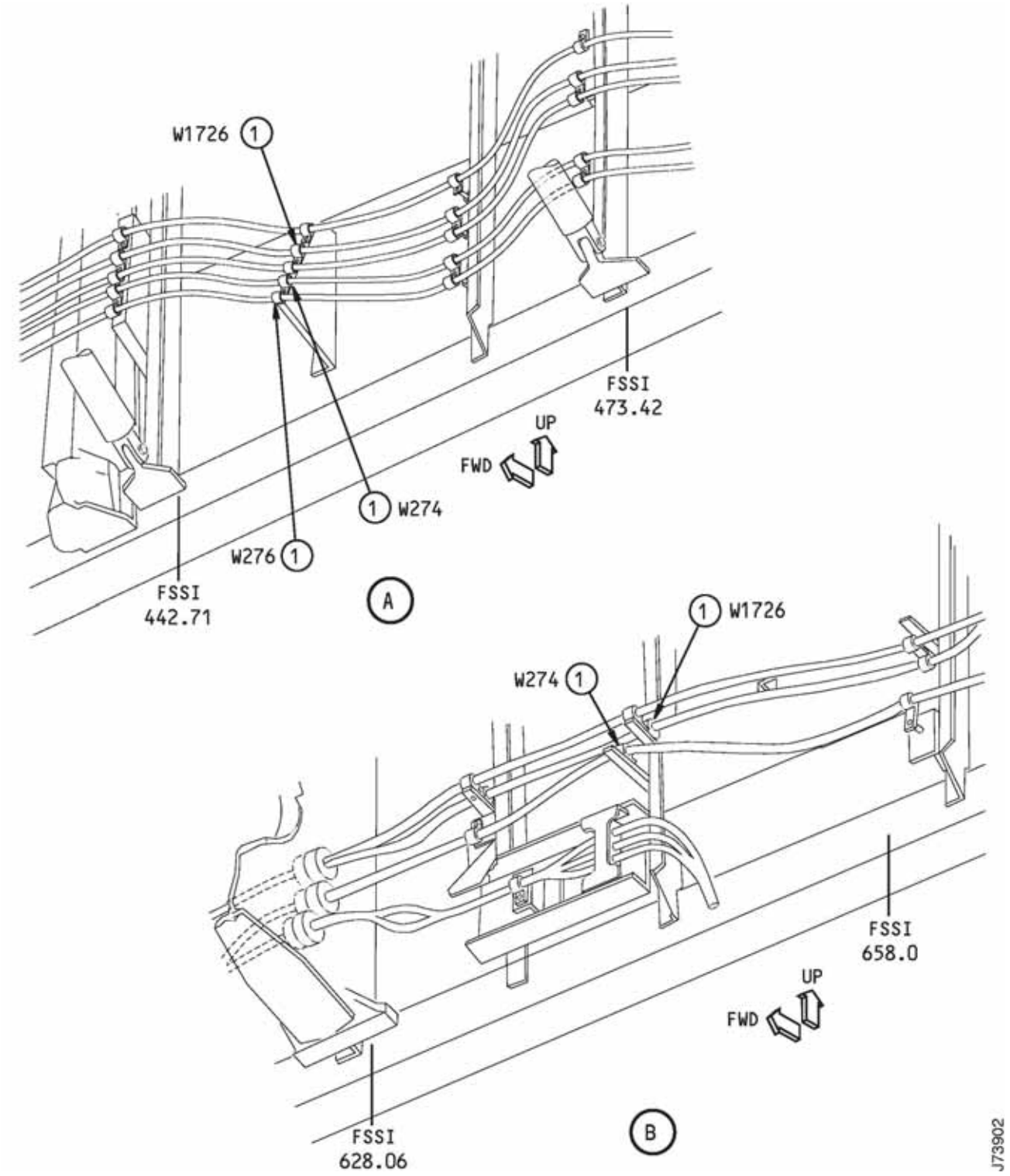



**FIGURE 7: FRONT SPAR - FRONT SPAR STATION 453 TO FRONT SPAR STATION 655 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS**
**(SHEET 2 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | CLAMP | - | 5 | Get access. Find the existing clamp on the specified wire bundle at the location specified by the circle symbol. (a) |
| (a) The actual configuration of the airplane can be different than the configuration in the figure. Some airplanes may not have a clamp installed on the specified wire bundle at the location specified by the circle symbol. If a clamp is not installed on the specified wire bundle at the location specified by the circle symbol, it is not necessary to install a sleeve and a new clamp at that location. | | | | | |

**FIGURE 7: FRONT SPAR - FRONT SPAR STATION 453 TO FRONT SPAR STATION 655 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS**
**(SHEET 3 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 1, 6, 16, 18-19, 23-24, 34, 37-39, 44.**

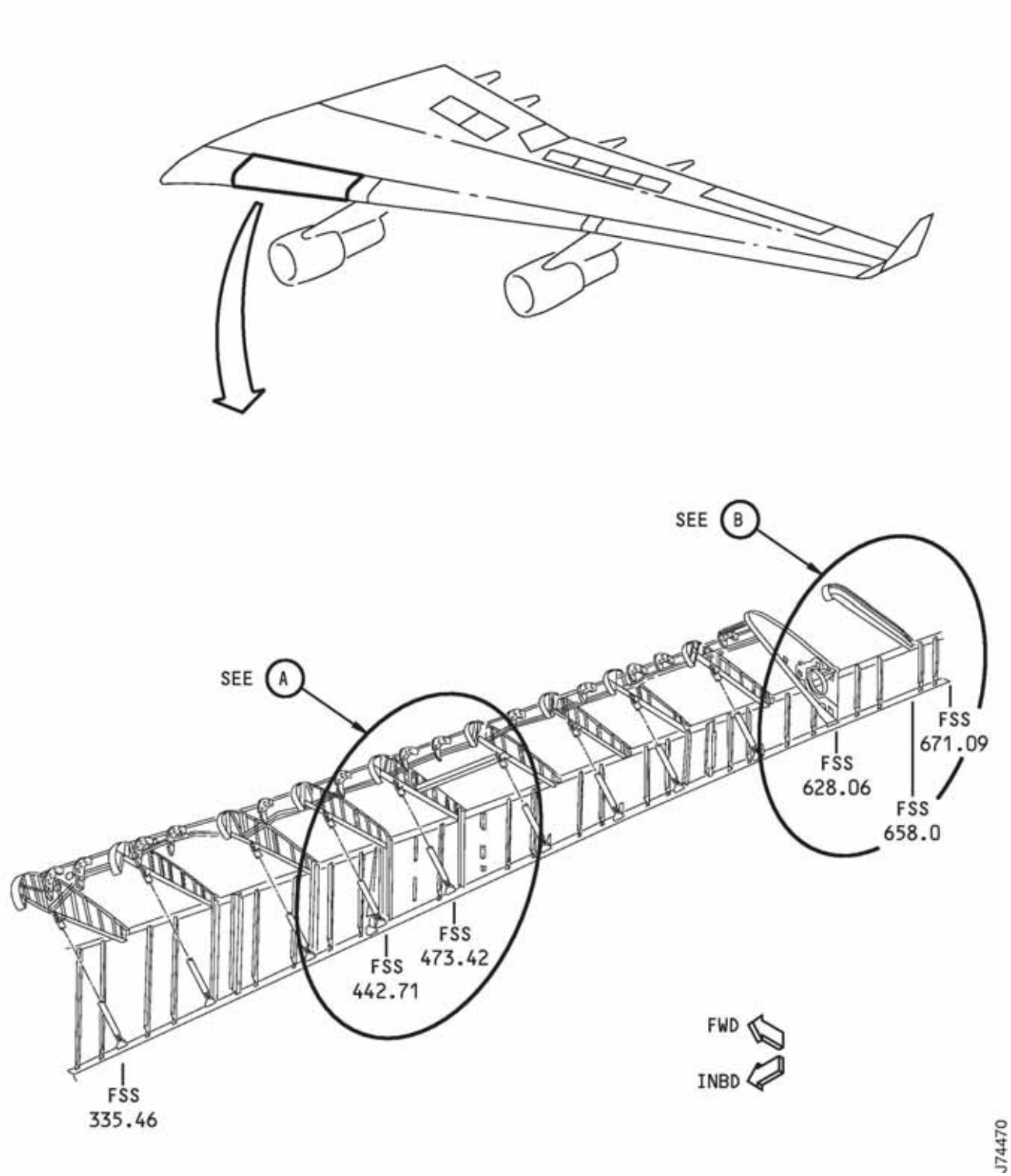



**FIGURE 8: FRONT SPAR - FRONT SPAR STATION 453 TO FRONT SPAR STATION 655 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 1 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

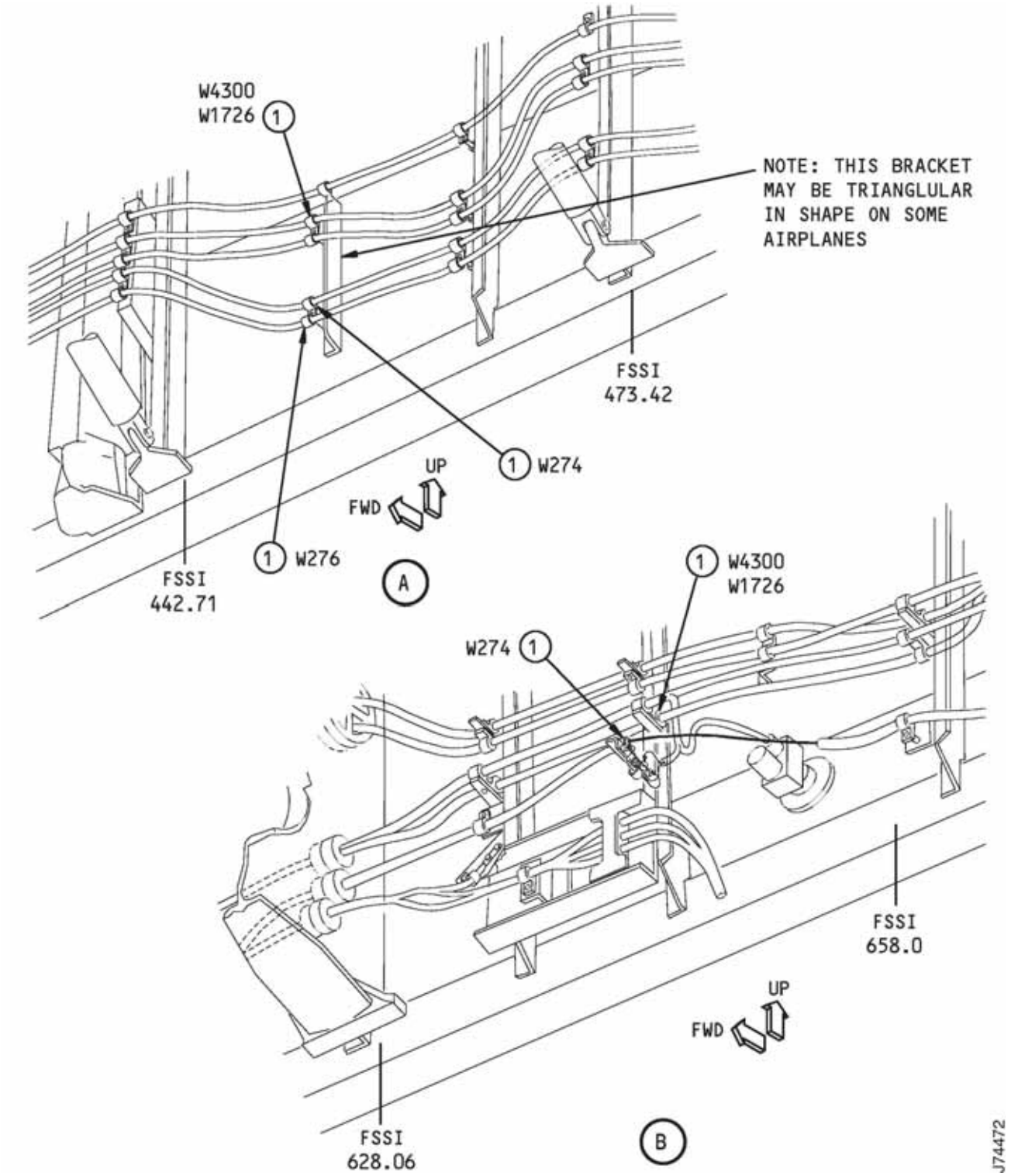



**FIGURE 8: FRONT SPAR - FRONT SPAR STATION 453 TO FRONT SPAR STATION 655 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 2 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | CLAMP | - | 5 | Get access. Find the existing clamp on the specified wire bundle at the location specified by the circle symbol. (a) |
| (a) The actual configuration of the airplane can be different than the configuration in the figure. Some airplanes may not have a clamp installed on the specified wire bundle at the location specified by the circle symbol. If a clamp is not installed on the specified wire bundle at the location specified by the circle symbol, it is not necessary to install a sleeve and a new clamp at that location. | | | | | |

**FIGURE 8: FRONT SPAR - FRONT SPAR STATION 453 TO FRONT SPAR STATION 655 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS**
**(SHEET 3 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 3-4, 9, 25, 30, 33.**

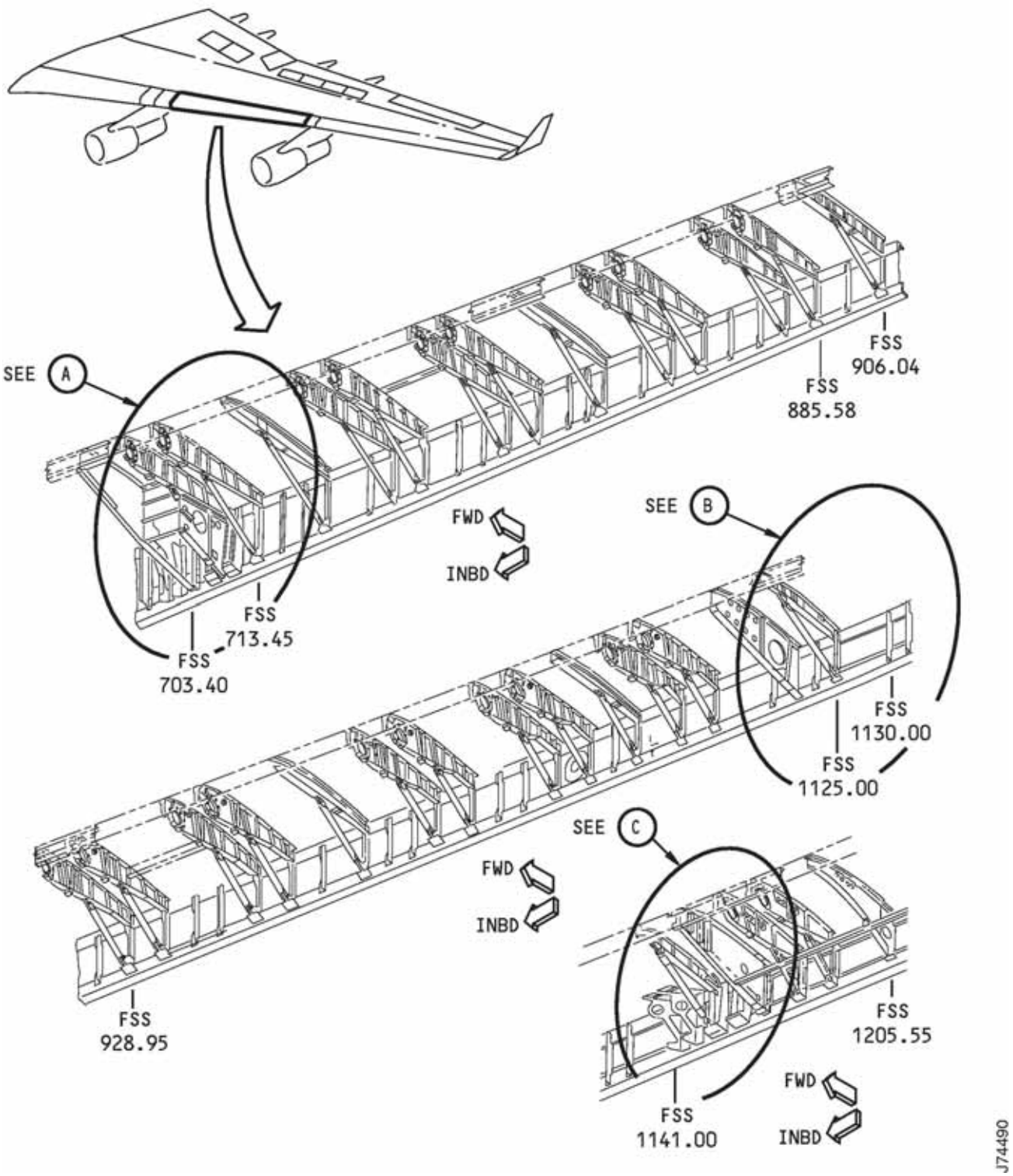



**FIGURE 9: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 1 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

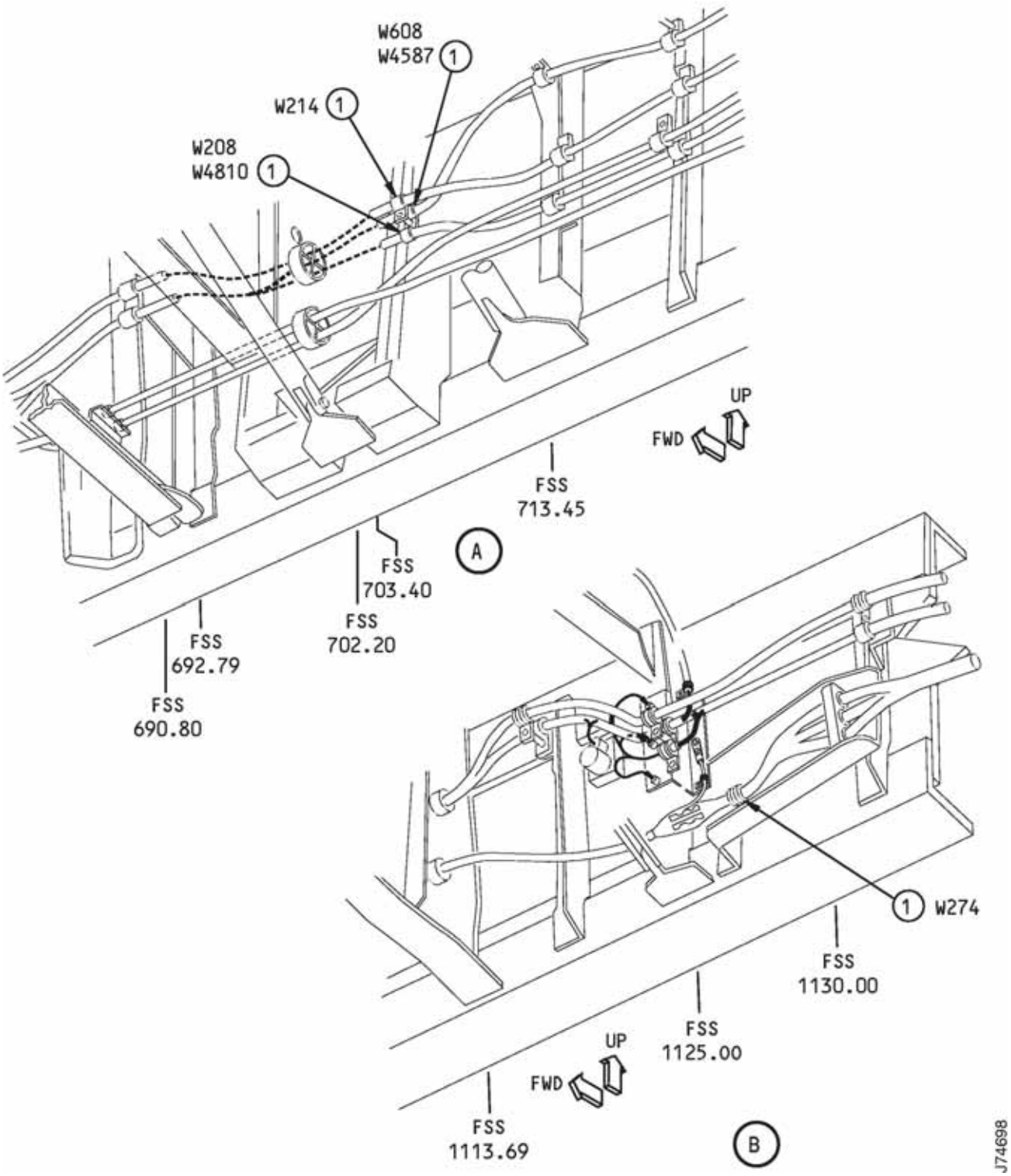
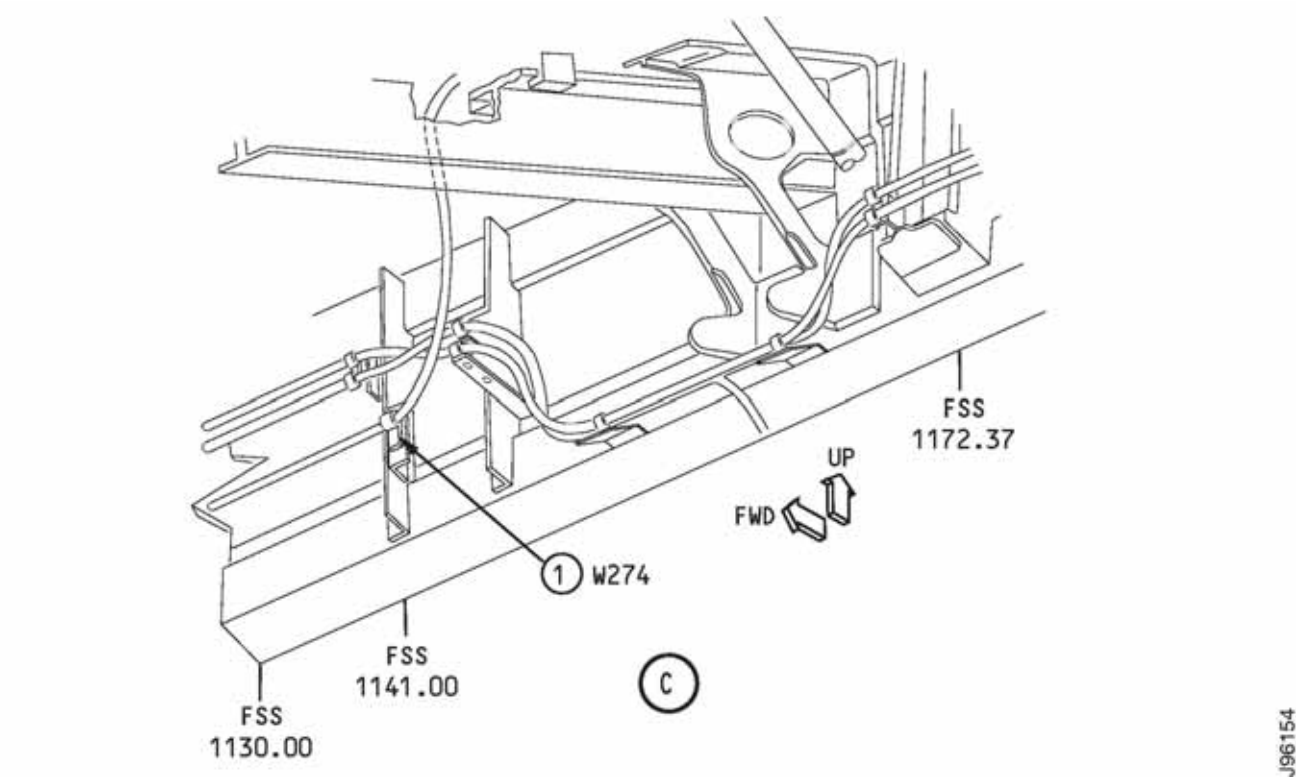



**FIGURE 9: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS**
**(SHEET 2 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.




The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | CLAMP | - | 5 | Get access. Find the existing clamp on the specified wire bundle at the location specified by the circle symbol. (a) |
| (a) The actual configuration of the airplane can be different than the configuration in the figure. Some airplanes may not have a clamp installed on the specified wire bundle at the location specified by the circle symbol. If a clamp is not installed on the specified wire bundle at the location specified by the circle symbol, it is not necessary to install a sleeve and a new clamp at that location. | | | | | |

**FIGURE 9: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS**
**(SHEET 3 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 1, 6, 8, 16, 23, 32, 34-35, 37.**

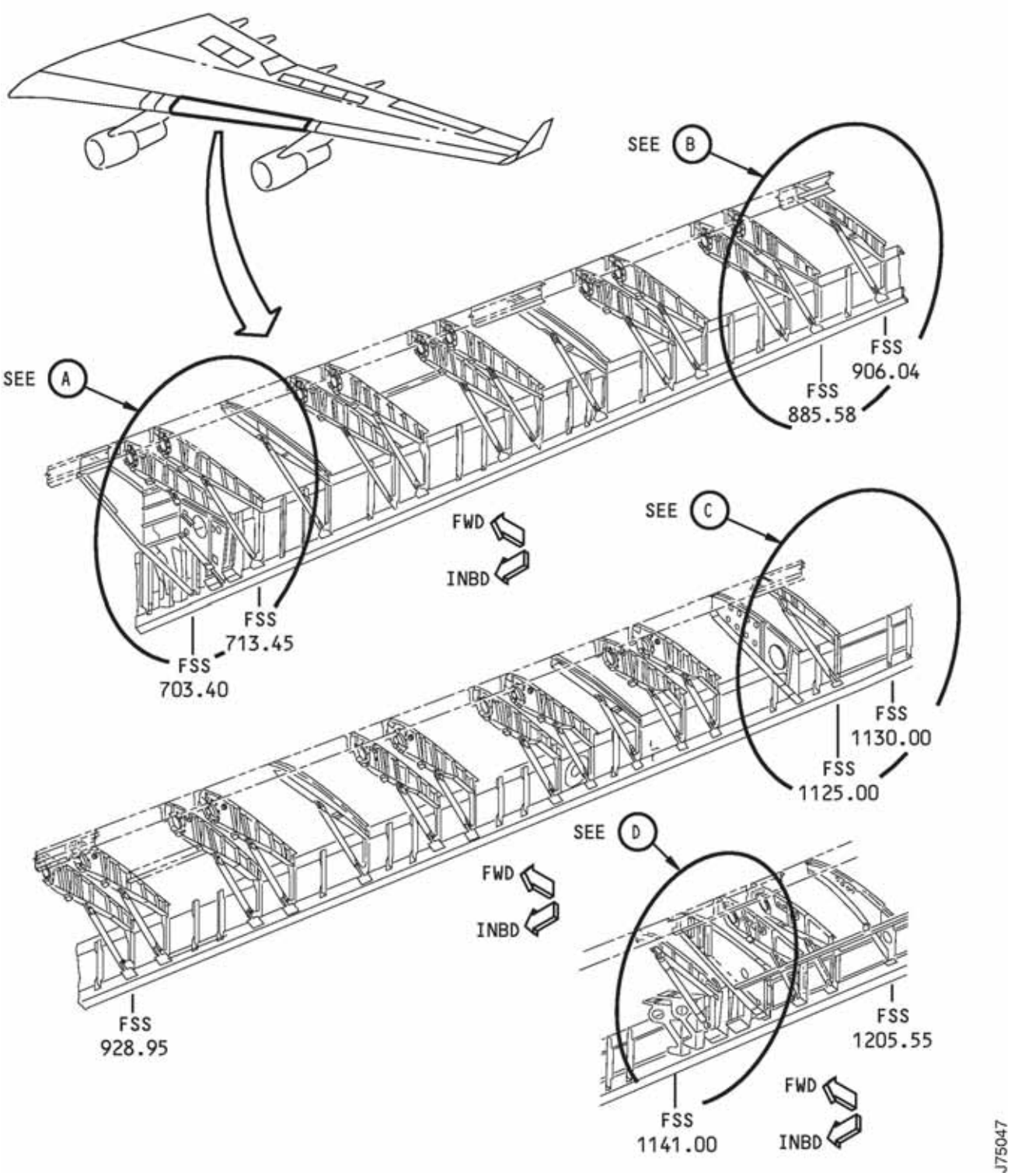



**FIGURE 10: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 1 OF 4)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

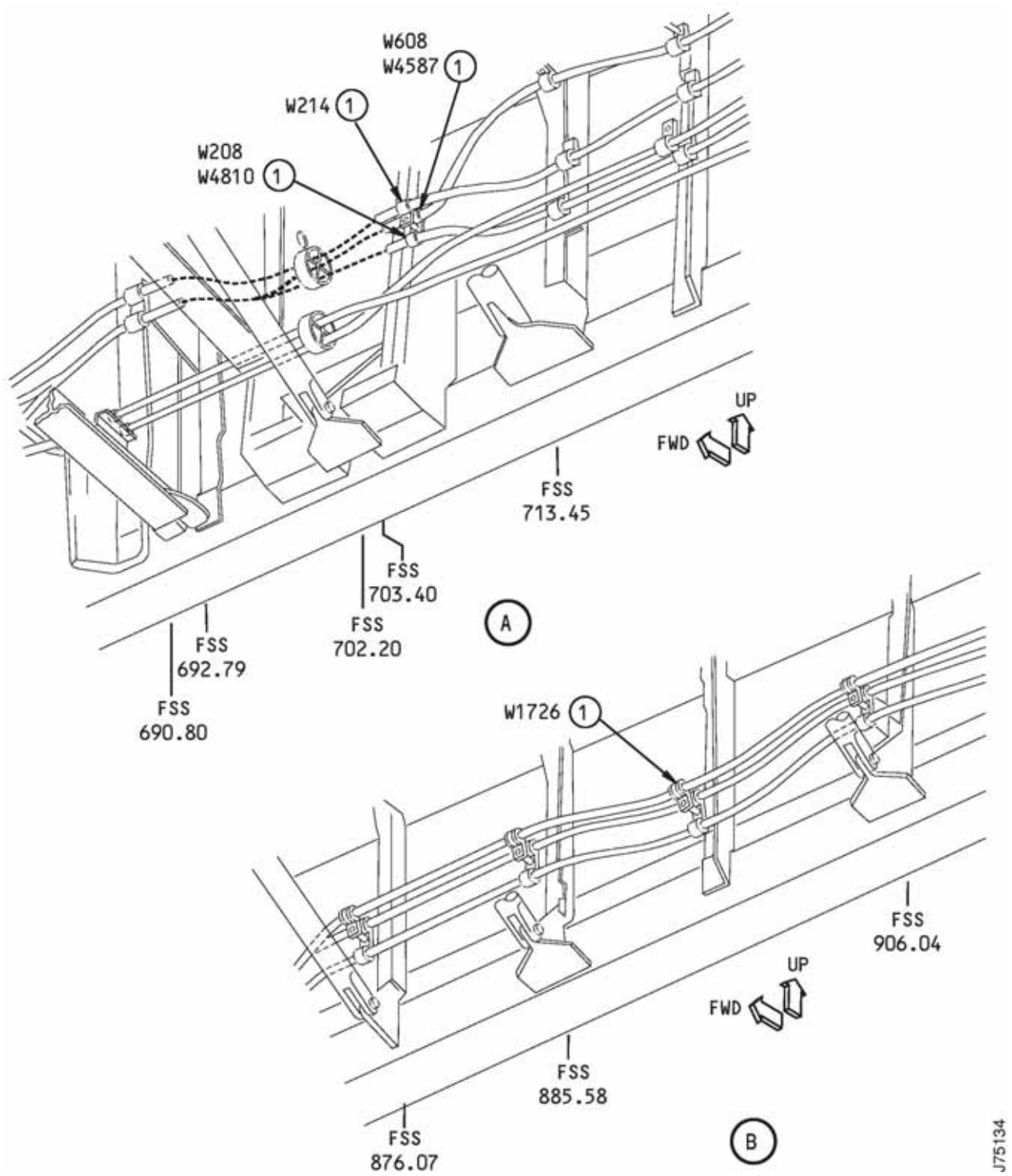



**FIGURE 10: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 2 OF 4)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

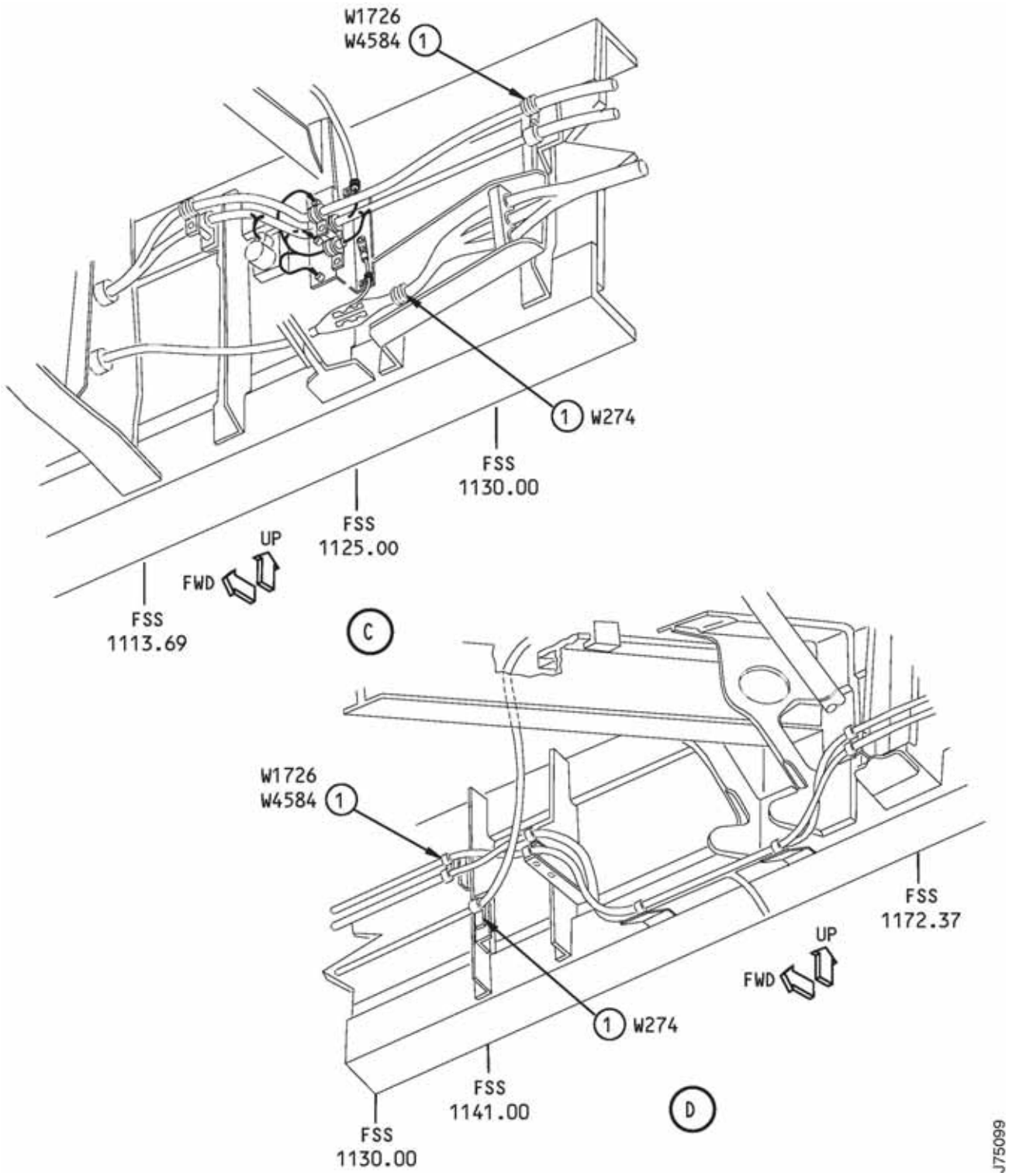



**FIGURE 10: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 3 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | CLAMP | - | 8 | Get access. Find the existing clamp on the specified wire bundle at the location specified by the circle symbol. (a) |
| (a) The actual configuration of the airplane can be different than the configuration in the figure. Some airplanes may not have a clamp installed on the specified wire bundle at the location specified by the circle symbol. If a clamp is not installed on the specified wire bundle at the location specified by the circle symbol, it is not necessary to install a sleeve and a new clamp at that location. | | | | | |

**FIGURE 10: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 4 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 11.**

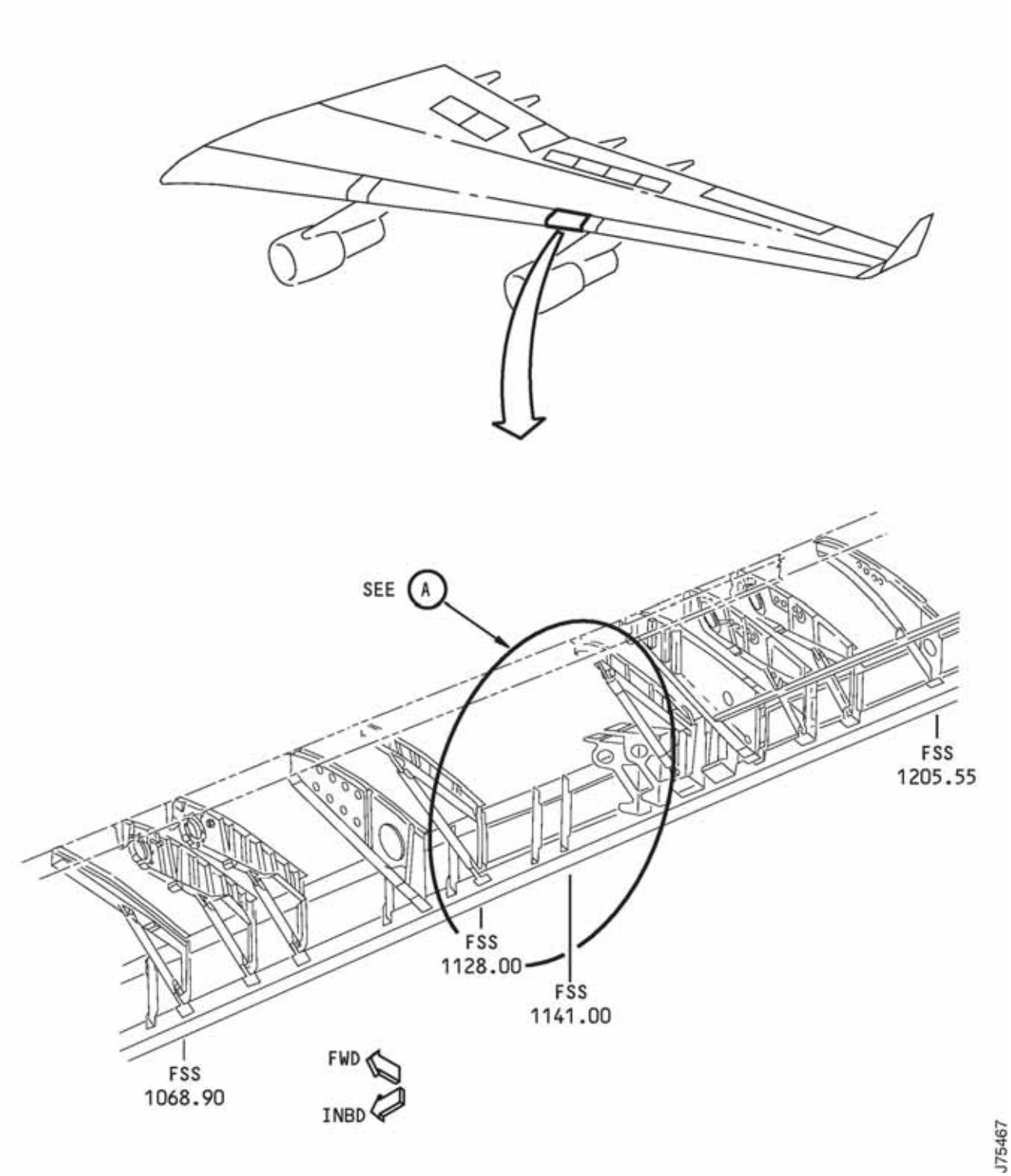
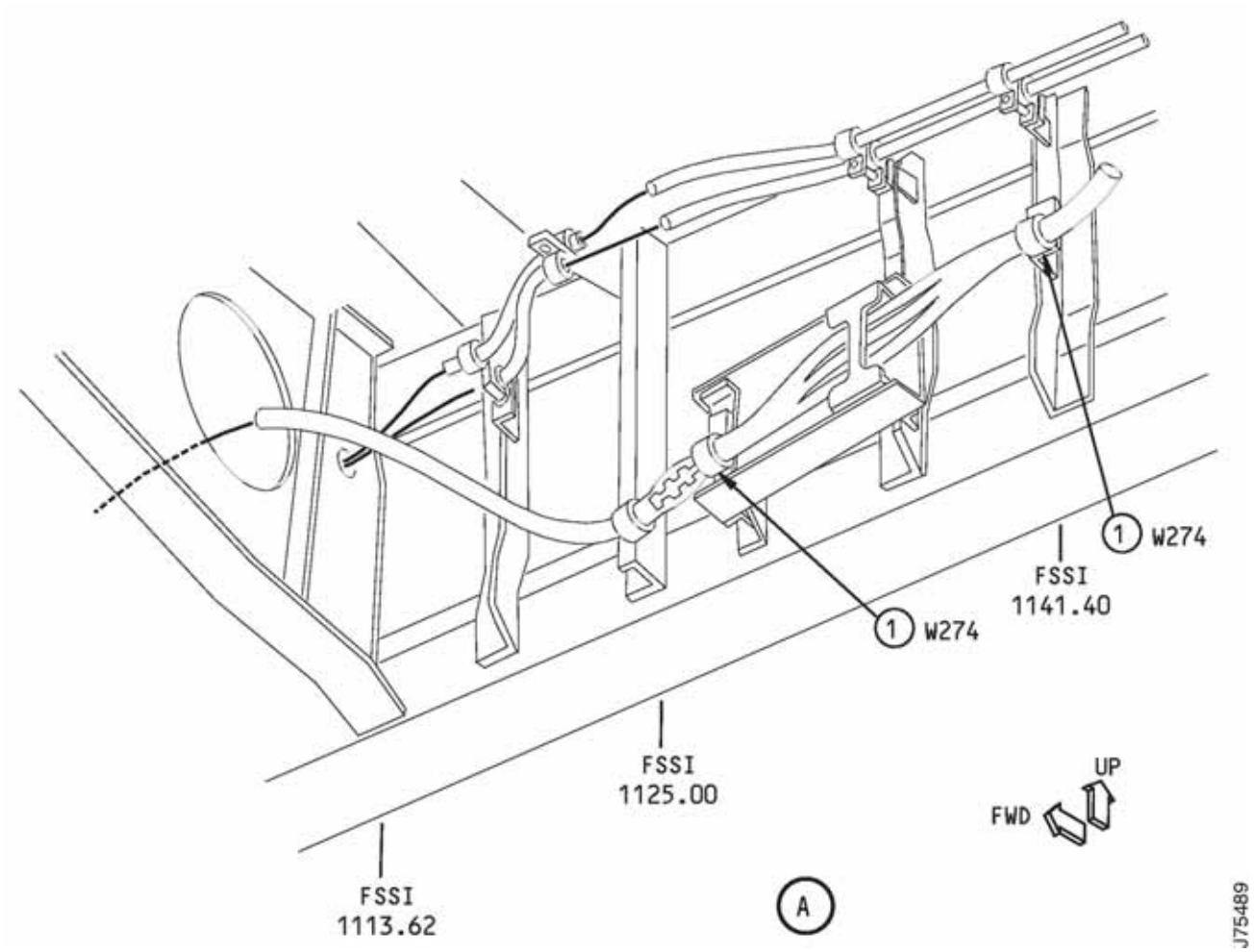



**FIGURE 11: FRONT SPAR - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 1 OF 2)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.




The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | CLAMP | - | 2 | Get access. Find the existing clamp on the specified wire bundle at the location specified by the circle symbol. (a) |

(a) The actual configuration of the airplane can be different than the configuration in the figure. Some airplanes may not have a clamp installed on the specified wire bundle at the location specified by the circle symbol. If a clamp is not installed on the specified wire bundle at the location specified by the circle symbol, it is not necessary to install a sleeve and a new clamp at that location.

**FIGURE 11: FRONT SPAR - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 2 OF 2)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 10, 12, 14.**

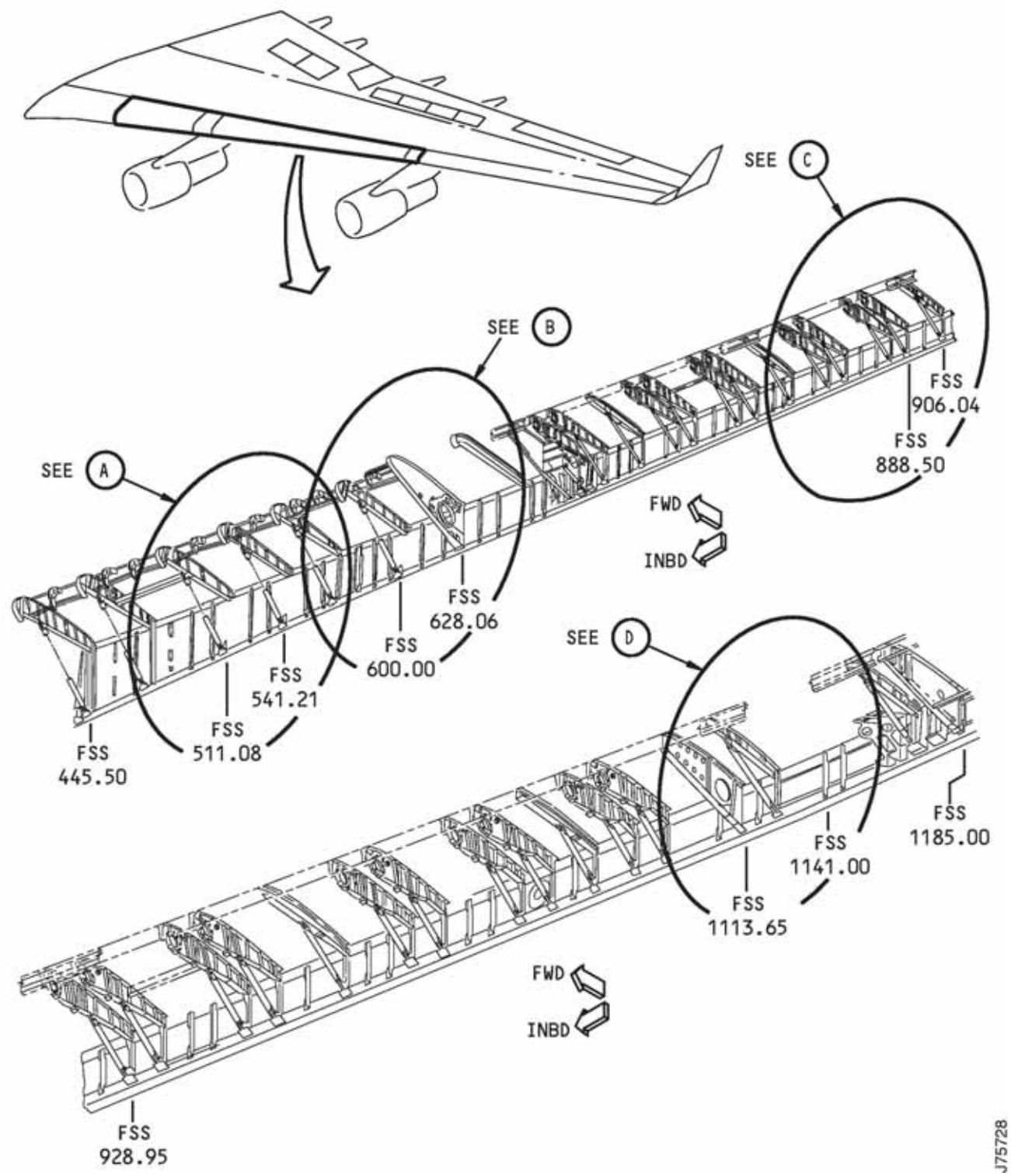



**FIGURE 12: FRONT SPAR - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 1 OF 5)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

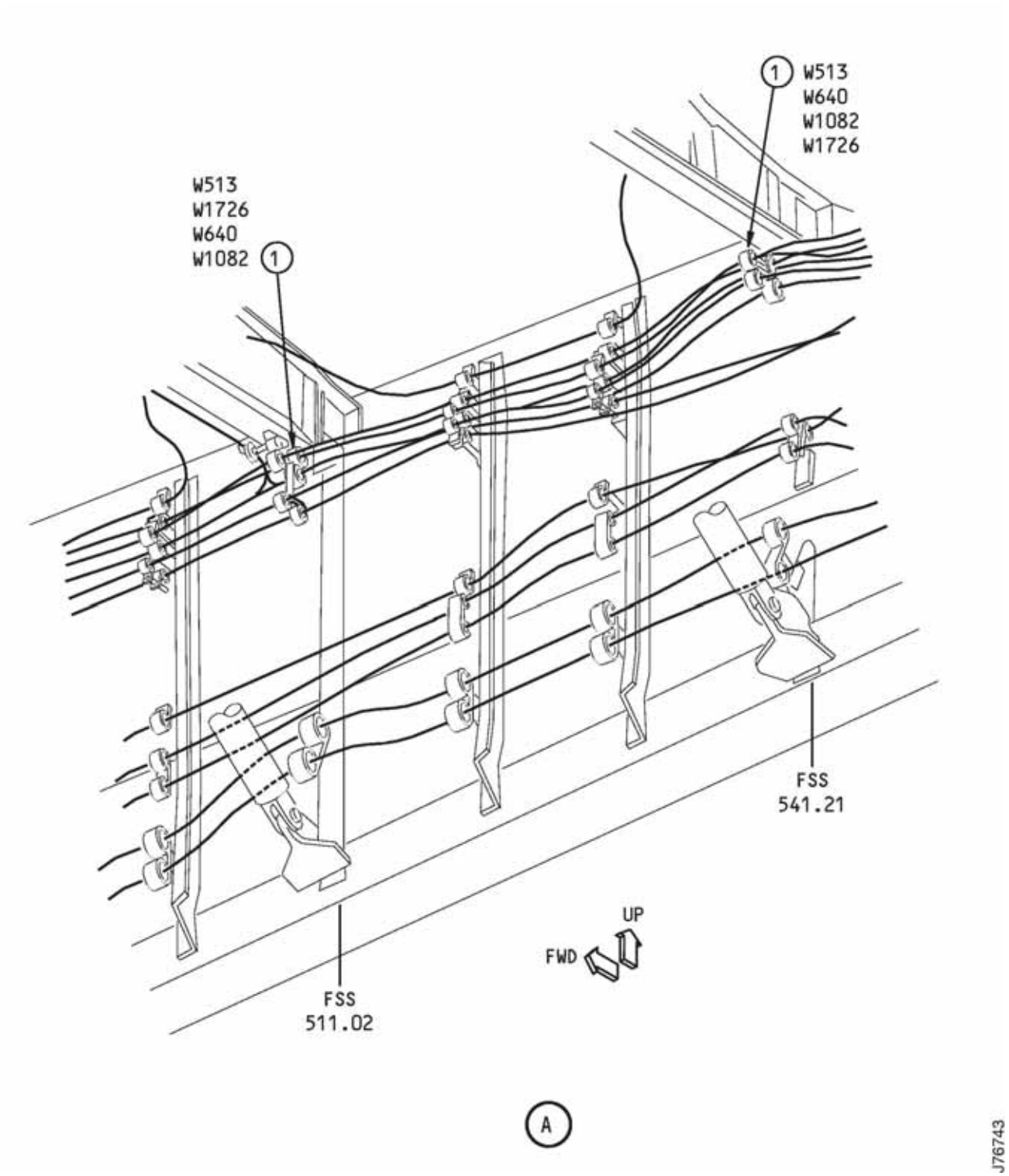



**FIGURE 12: FRONT SPAR - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 2 OF 5)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

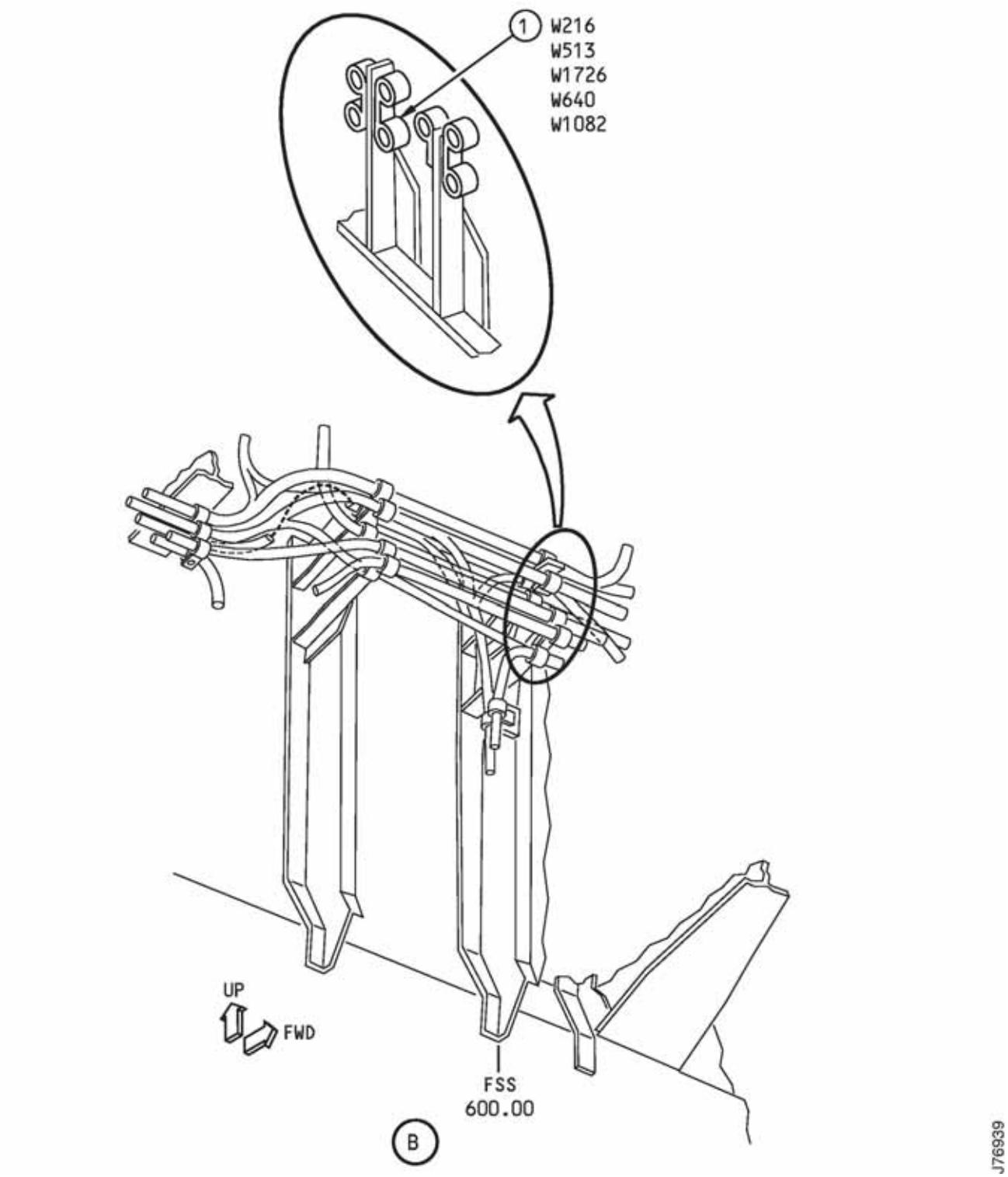



**FIGURE 12: FRONT SPAR - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 3 OF 5)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

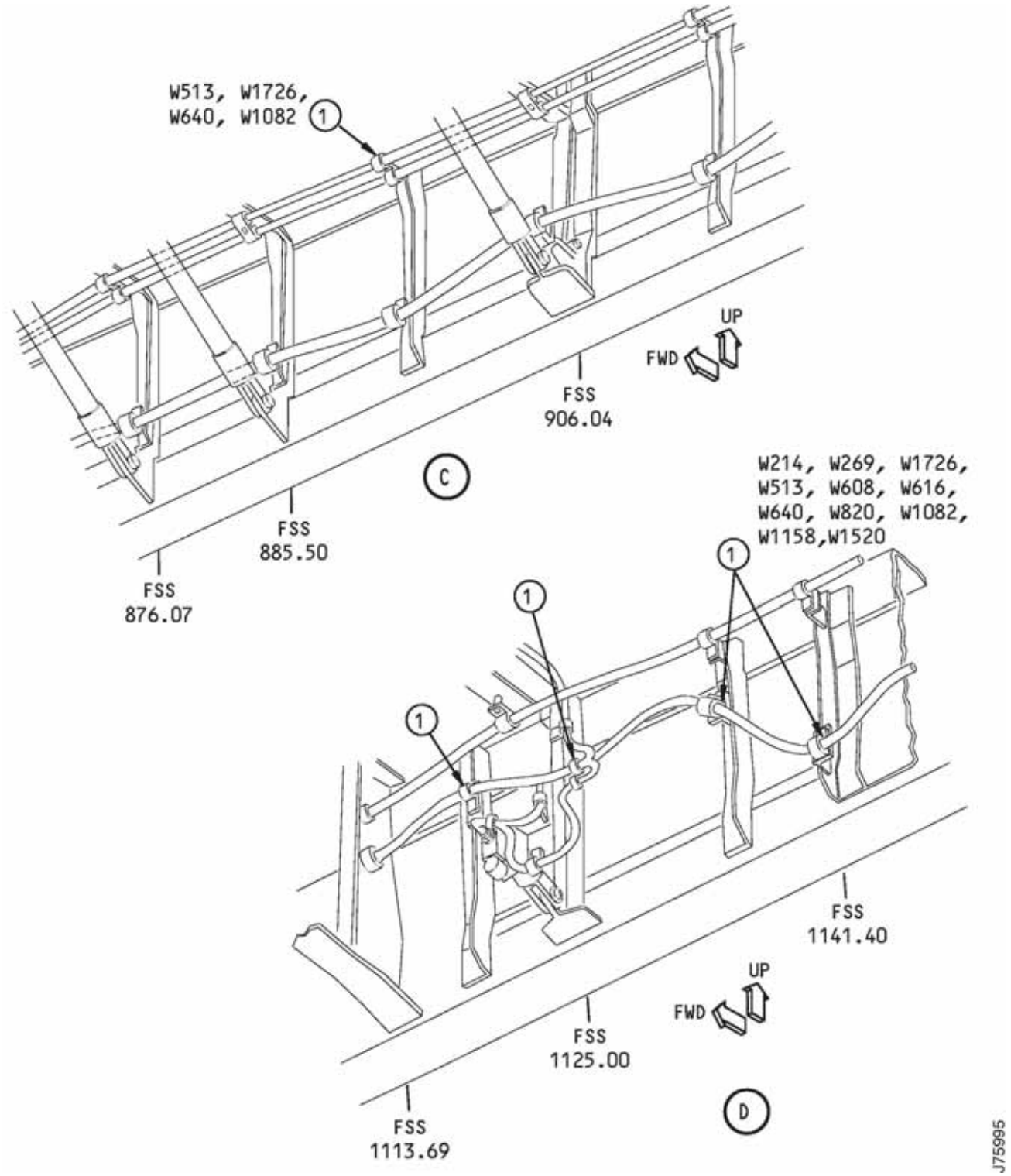



**FIGURE 12: FRONT SPAR - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 4 OF 5)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | CLAMP | - | 8 | Get access. Find the existing clamp on the specified wire bundle at the location specified by the circle symbol. (a) |
| (a) The actual configuration of the airplane can be different than the configuration in the figure. Some airplanes may not have a clamp installed on the specified wire bundle at the location specified by the circle symbol. If a clamp is not installed on the specified wire bundle at the location specified by the circle symbol, it is not necessary to install a sleeve and a new clamp at that location. | | | | | |

**FIGURE 12: FRONT SPAR - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 5 OF 5)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 2, 5, 7-8, 20-21, 27-29, 32, 35, 41, 43.**

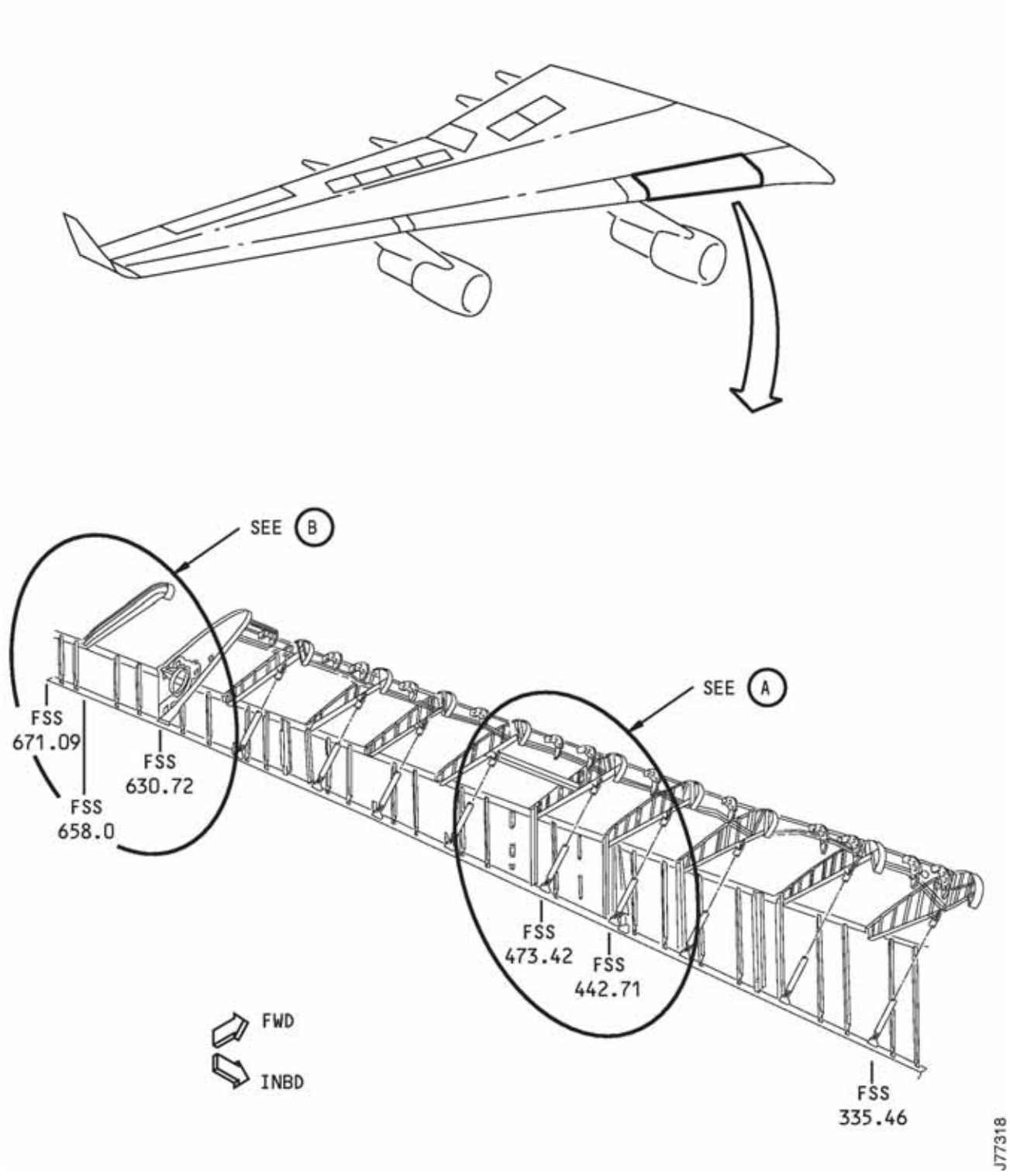



**FIGURE 13: FRONT SPAR - FRONT SPAR STATION 453 TO FRONT SPAR STATION 655 - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 1 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

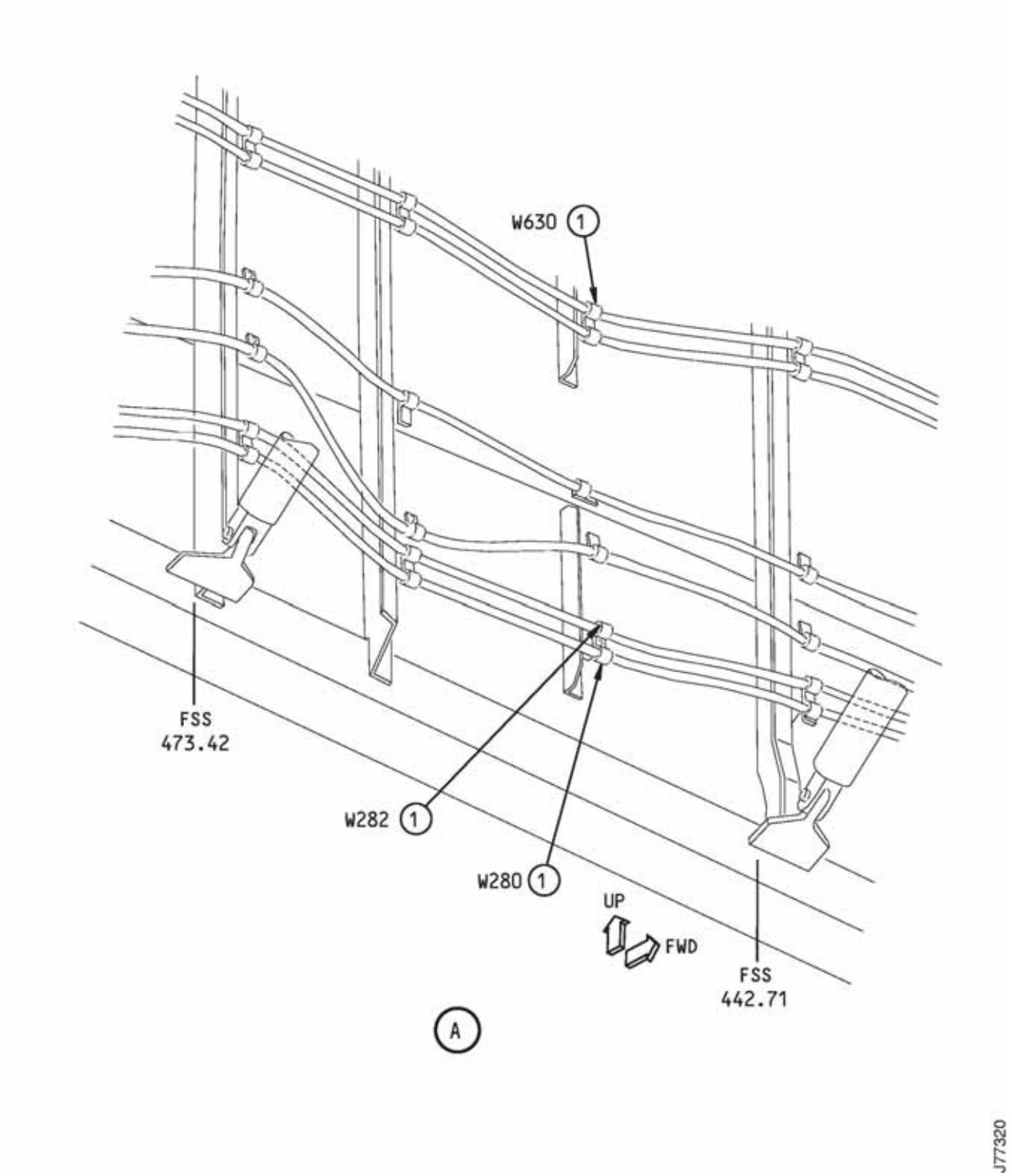
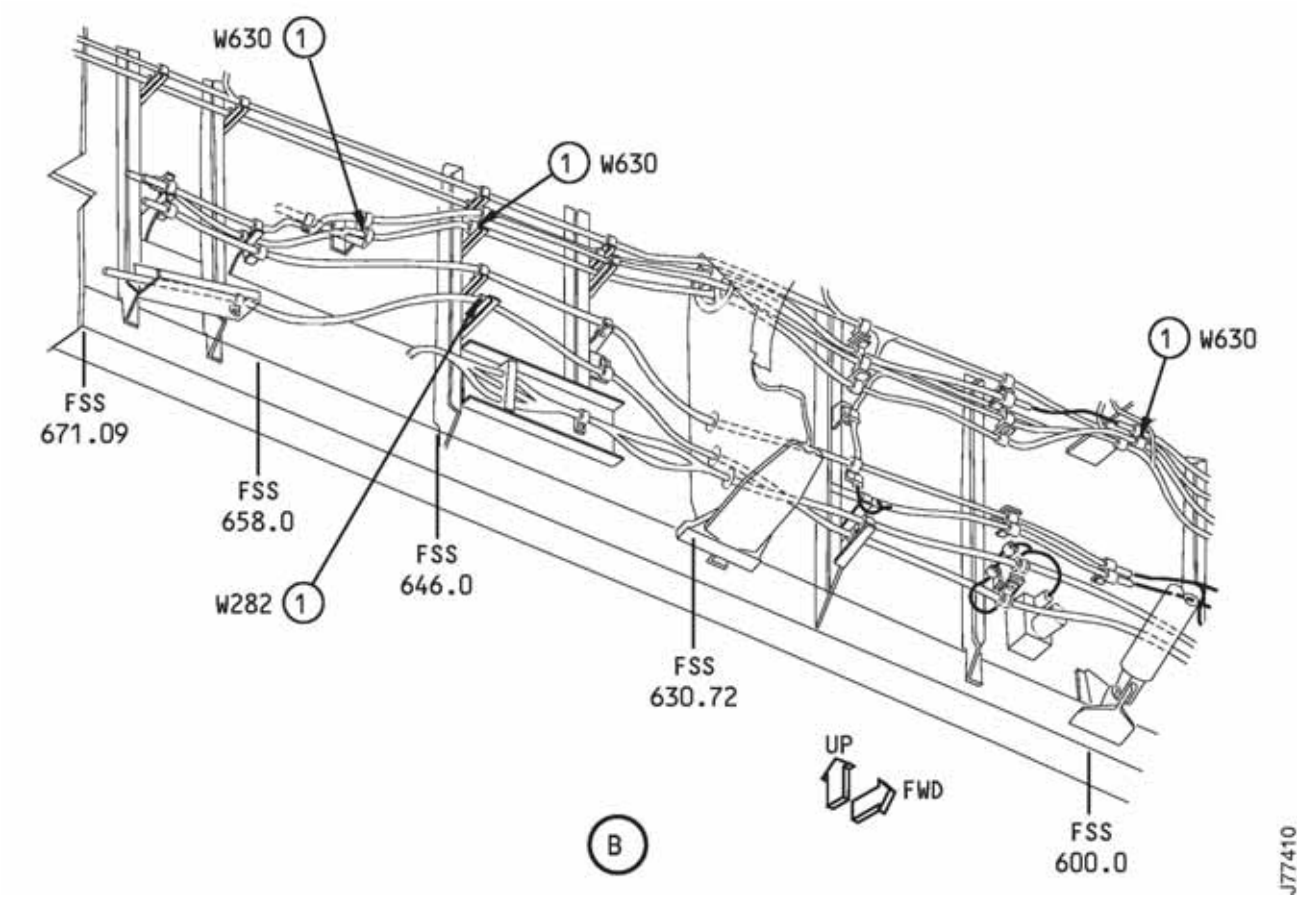



**FIGURE 13: FRONT SPAR - FRONT SPAR STATION 453 TO FRONT SPAR STATION 655 - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 2 OF 3)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.




The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | CLAMP | - | 7 | Get access. Find the existing clamp on the specified wire bundle at the location specified by the circle symbol. (a) |

(a) The actual configuration of the airplane can be different than the configuration in the figure. Some airplanes may not have a clamp installed on the specified wire bundle at the location specified by the circle symbol. If a clamp is not installed on the specified wire bundle at the location specified by the circle symbol, it is not necessary to install a sleeve and a new clamp at that location.

**FIGURE 13: FRONT SPAR - FRONT SPAR STATION 453 TO FRONT SPAR STATION 655 - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 3 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 1, 3-4, 6, 9, 16-19, 22-26, 30-31, 33-34, 36-40, 42, 44-45.**

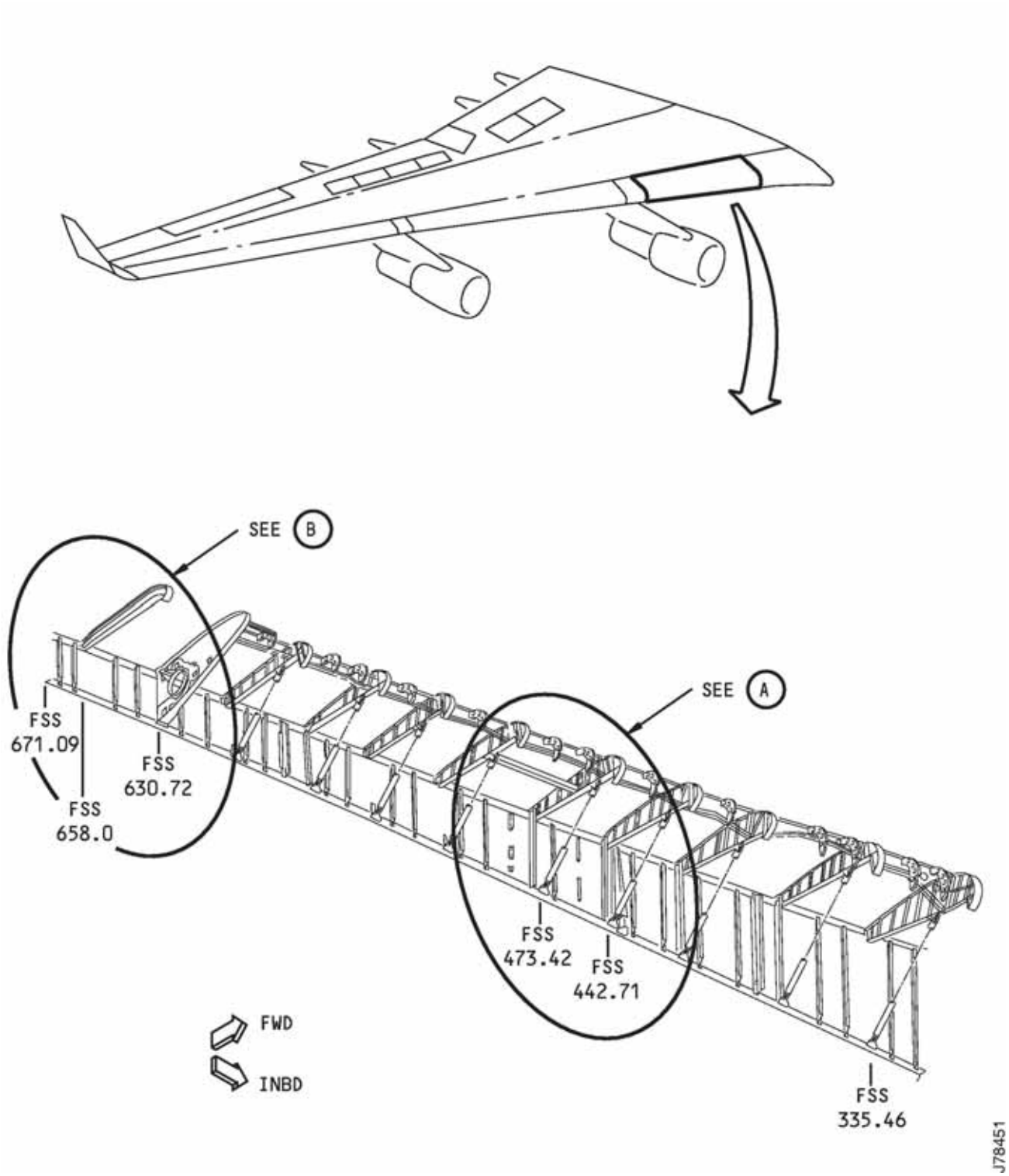



**FIGURE 14: FRONT SPAR - FRONT SPAR STATION 453 TO FRONT SPAR STATION 655 - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMP (SHEET 1 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

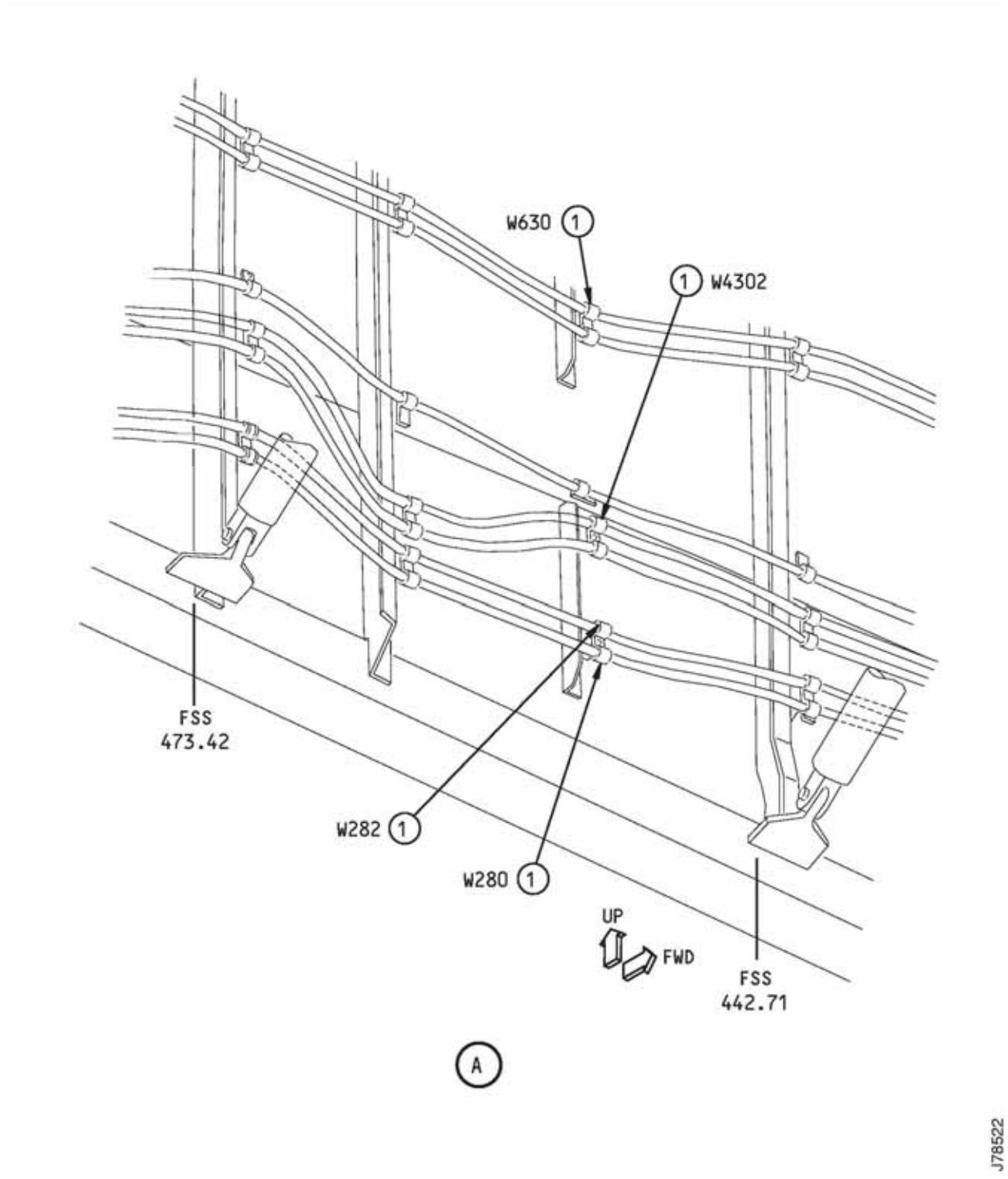
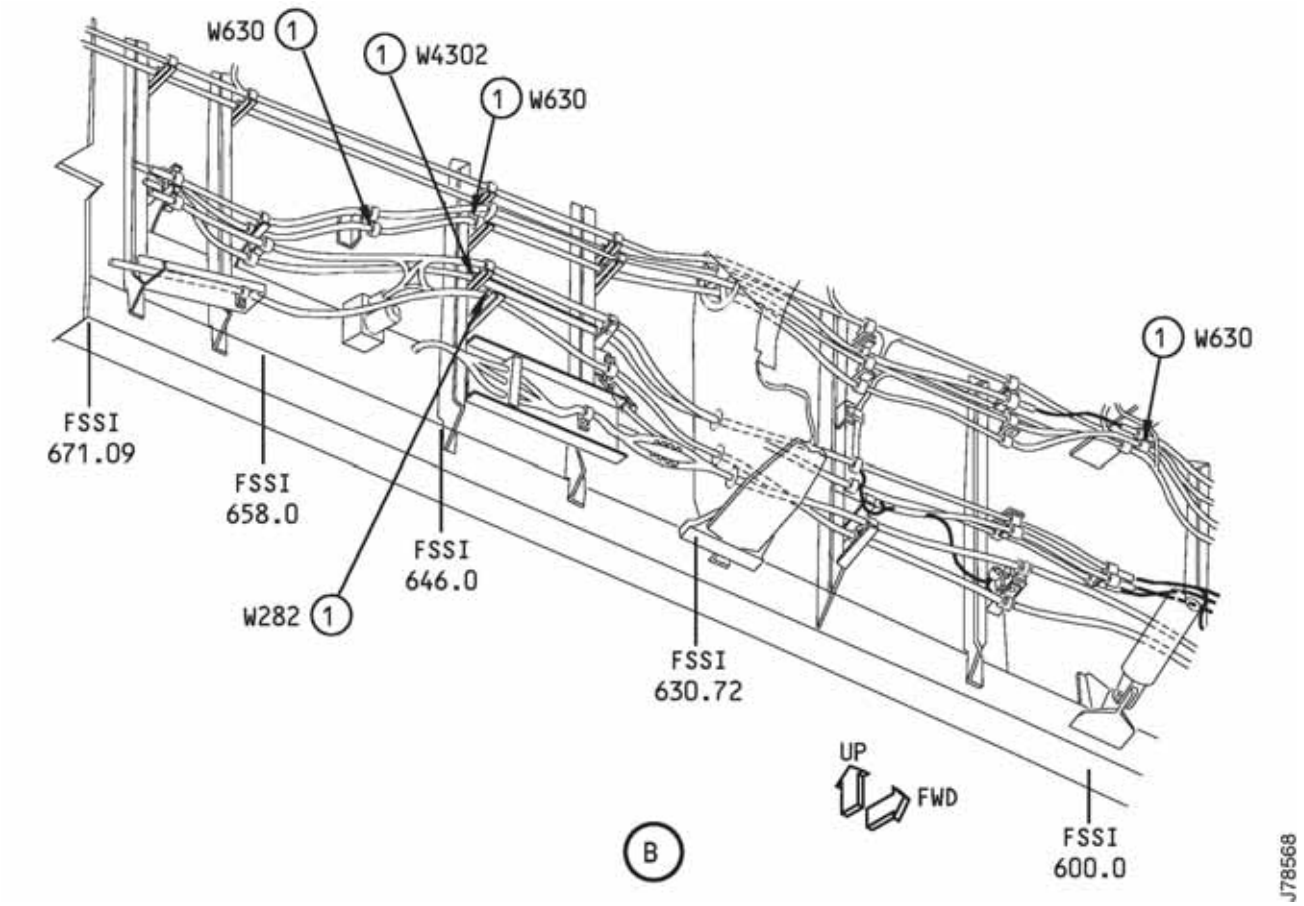



**FIGURE 14: FRONT SPAR - FRONT SPAR STATION 453 TO FRONT SPAR STATION 655 - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMP (SHEET 2 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.




The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | CLAMP | - | 9 | Get access. Find the existing clamp on the specified wire bundle at the location specified by the circle symbol. (a) |
| (a) The actual configuration of the airplane can be different than the configuration in the figure. Some airplanes may not have a clamp installed on the specified wire bundle at the location specified by the circle symbol. If a clamp is not installed on the specified wire bundle at the location specified by the circle symbol, it is not necessary to install a sleeve and a new clamp at that location. | | | | | |

**FIGURE 14: FRONT SPAR - FRONT SPAR STATION 453 TO FRONT SPAR STATION 655 - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMP (SHEET 3 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 11.**

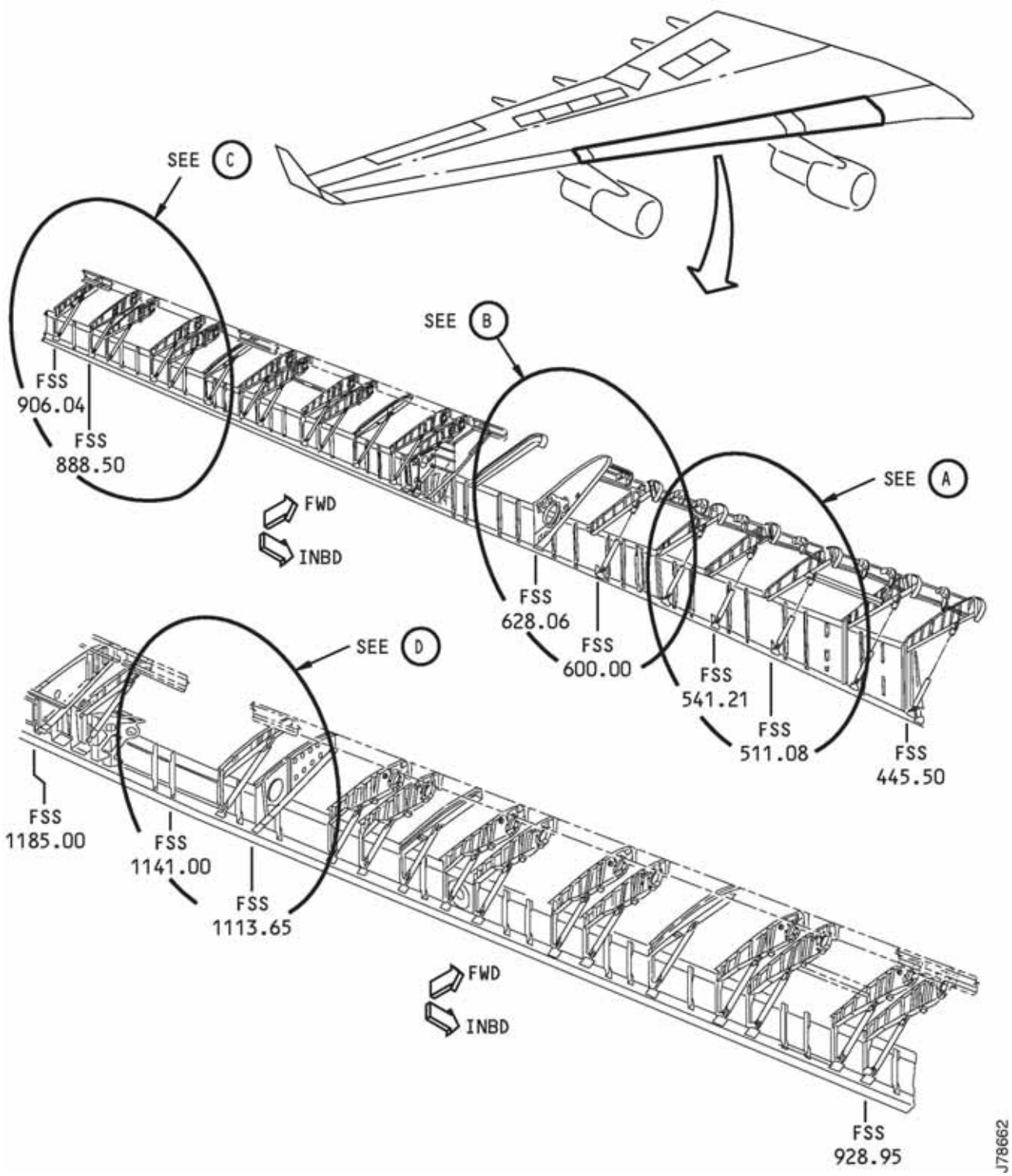



**FIGURE 15: FRONT SPAR - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 1 OF 4)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

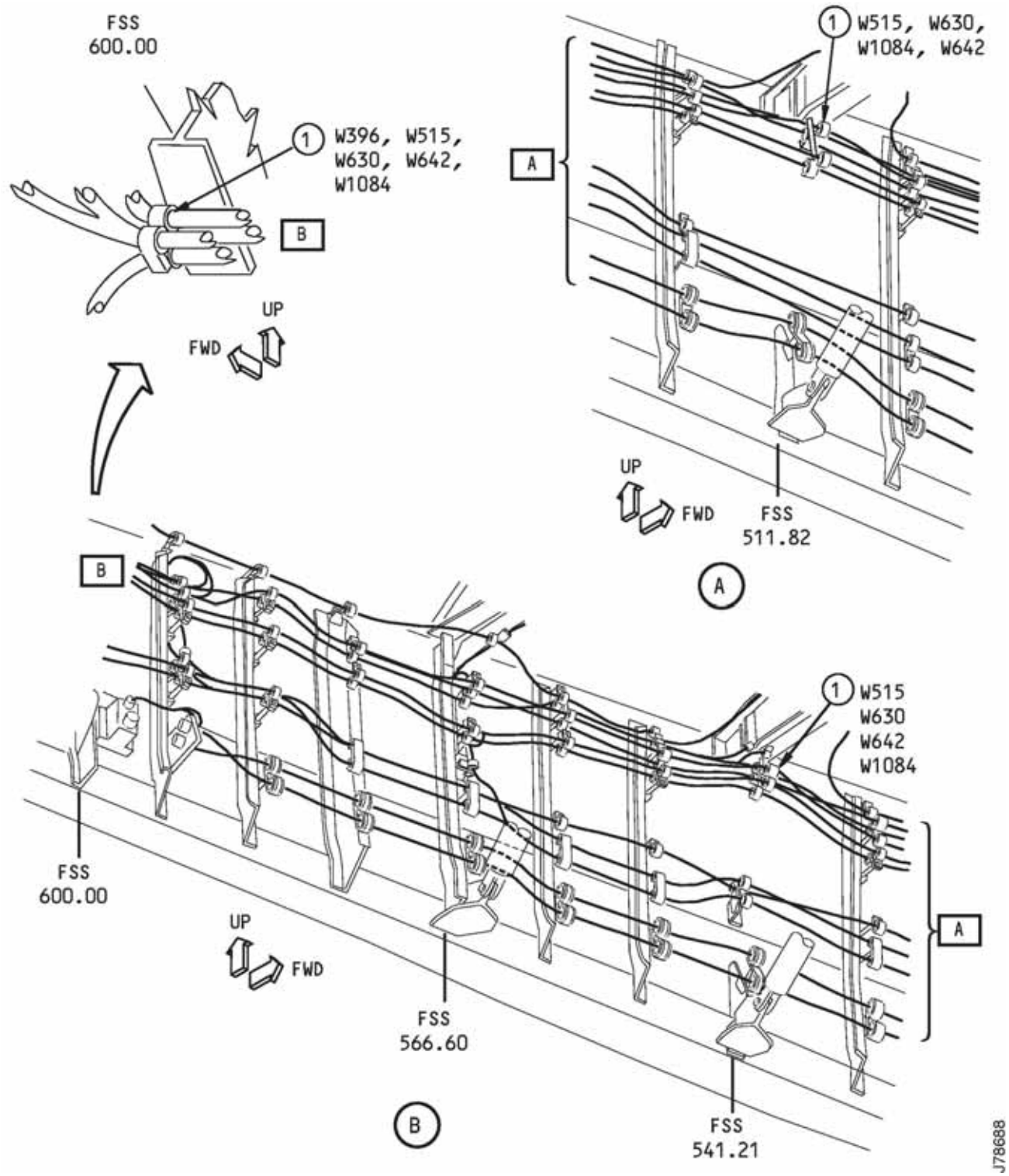



**FIGURE 15: FRONT SPAR - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 2 OF 4)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

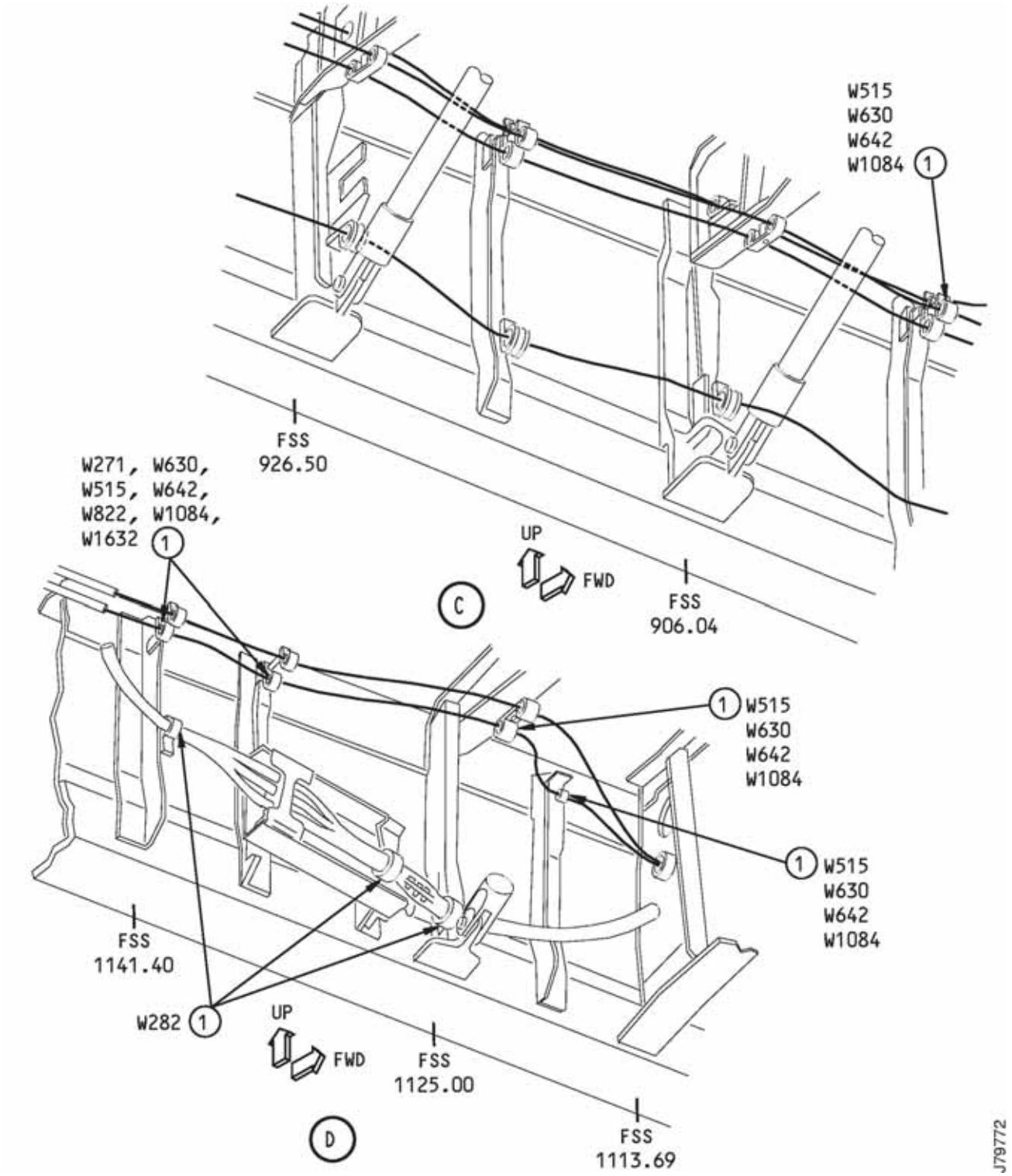



**FIGURE 15: FRONT SPAR - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 3 OF 4)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | CLAMP | - | 11 | Get access. Find the existing clamp on the specified wire bundle at the location specified by the circle symbol. (a) |
| (a) The actual configuration of the airplane can be different than the configuration in the figure. Some airplanes may not have a clamp installed on the specified wire bundle at the location specified by the circle symbol. If a clamp is not installed on the specified wire bundle at the location specified by the circle symbol, it is not necessary to install a sleeve and a new clamp at that location. | | | | | |

**FIGURE 15: FRONT SPAR - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 4 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 10, 12-15.**

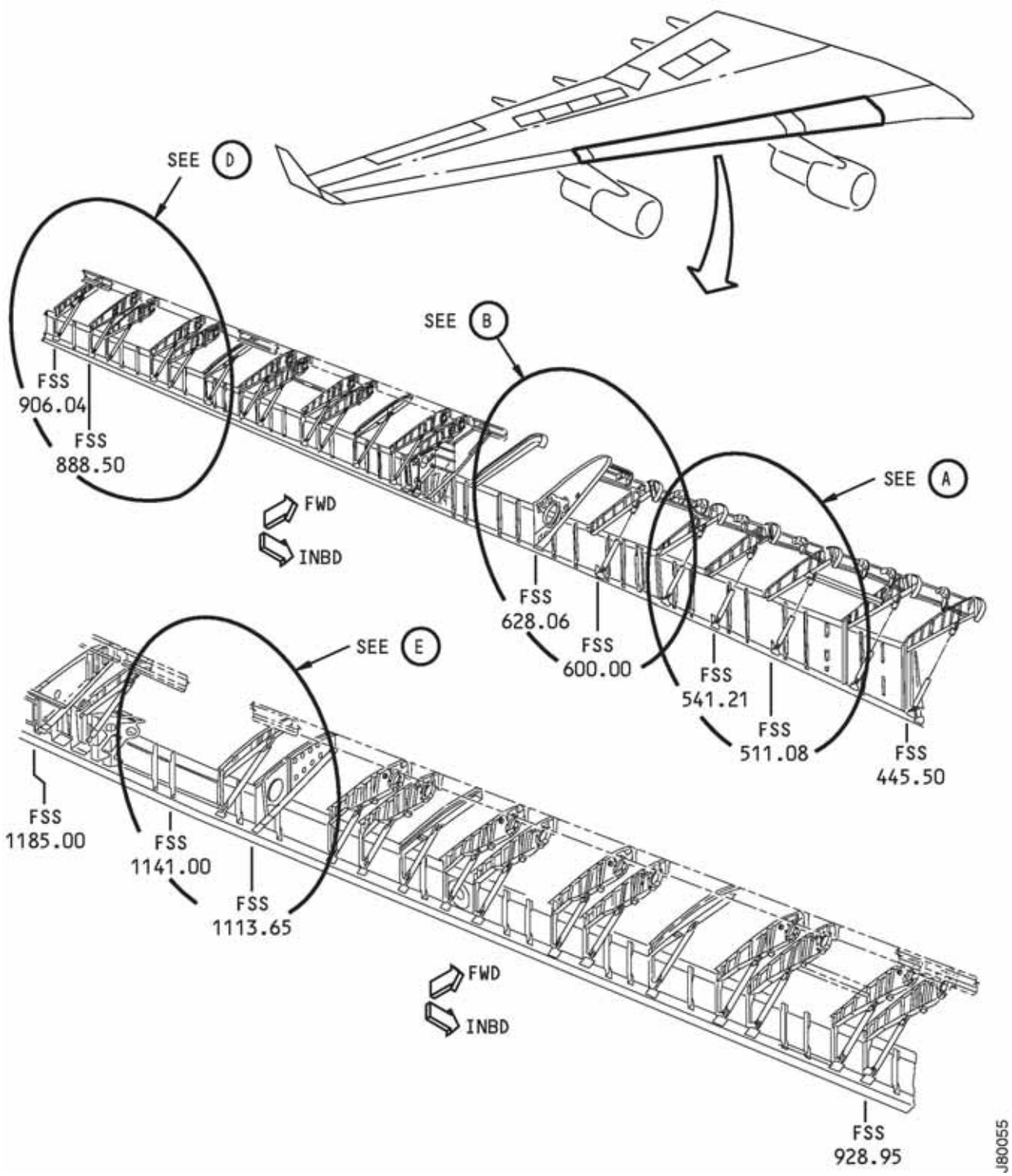



**FIGURE 16: FRONT SPAR - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 1 OF 4)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

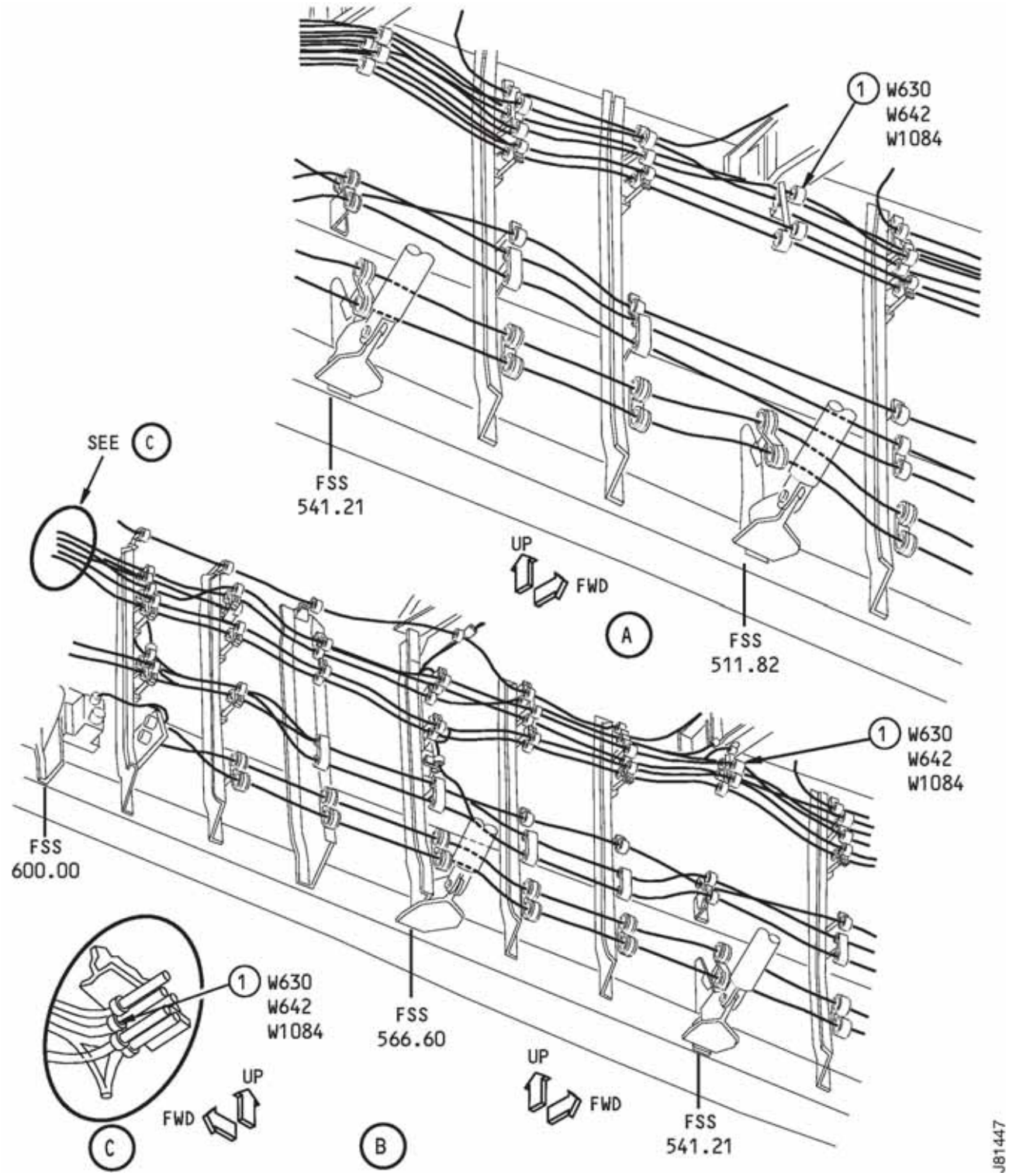



**FIGURE 16: FRONT SPAR - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 2 OF 4)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

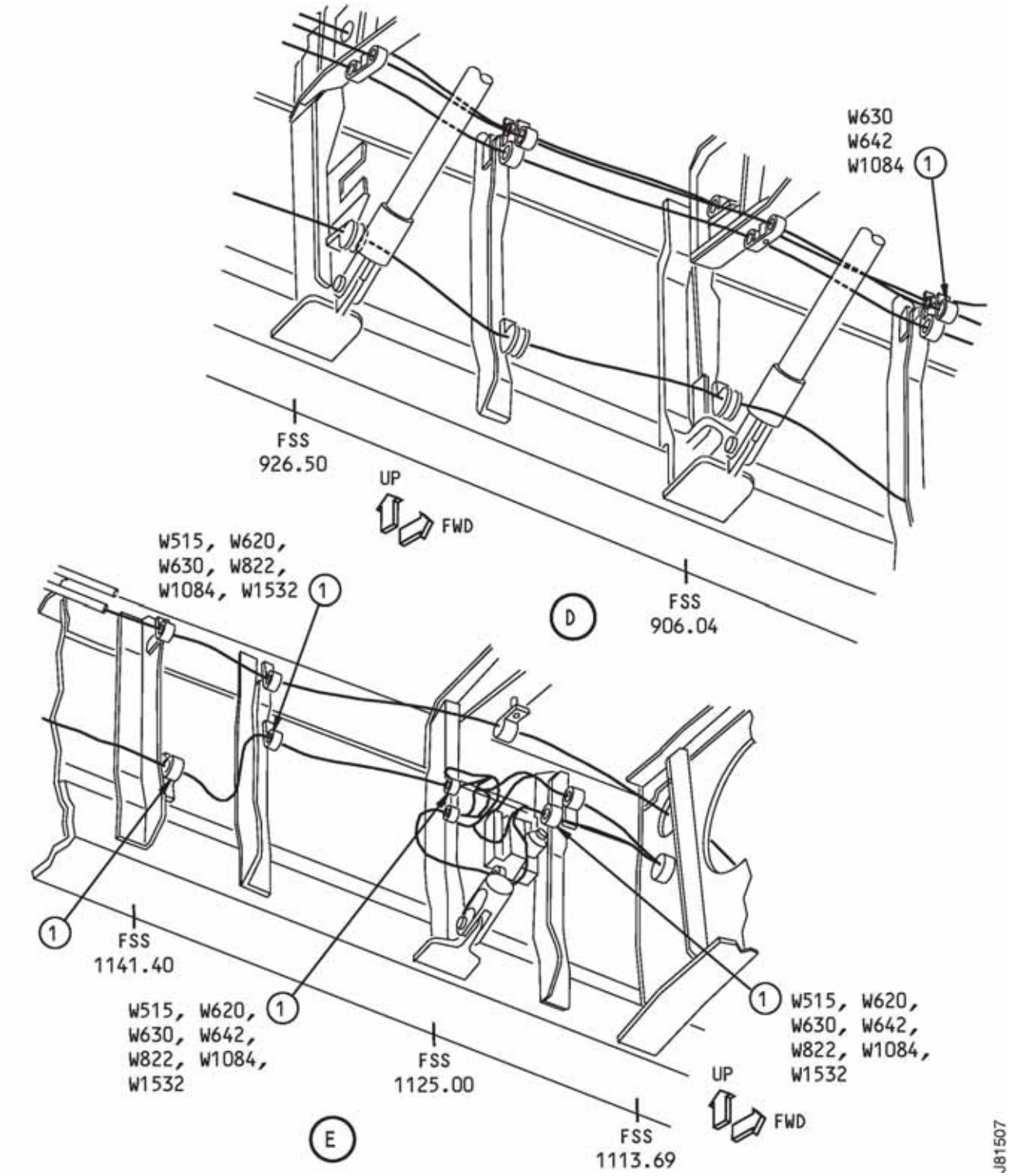



**FIGURE 16: FRONT SPAR - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 3 OF 4)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | CLAMP | - | 8 | Get access. Find the existing clamp on the specified wire bundle at the location specified by the circle symbol. (a) |
| (a) The actual configuration of the airplane can be different than the configuration in the figure. Some airplanes may not have a clamp installed on the specified wire bundle at the location specified by the circle symbol. If a clamp is not installed on the specified wire bundle at the location specified by the circle symbol, it is not necessary to install a sleeve and a new clamp at that location. | | | | | |

**FIGURE 16: FRONT SPAR - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 4 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 1, 3-4, 6, 9, 16.**

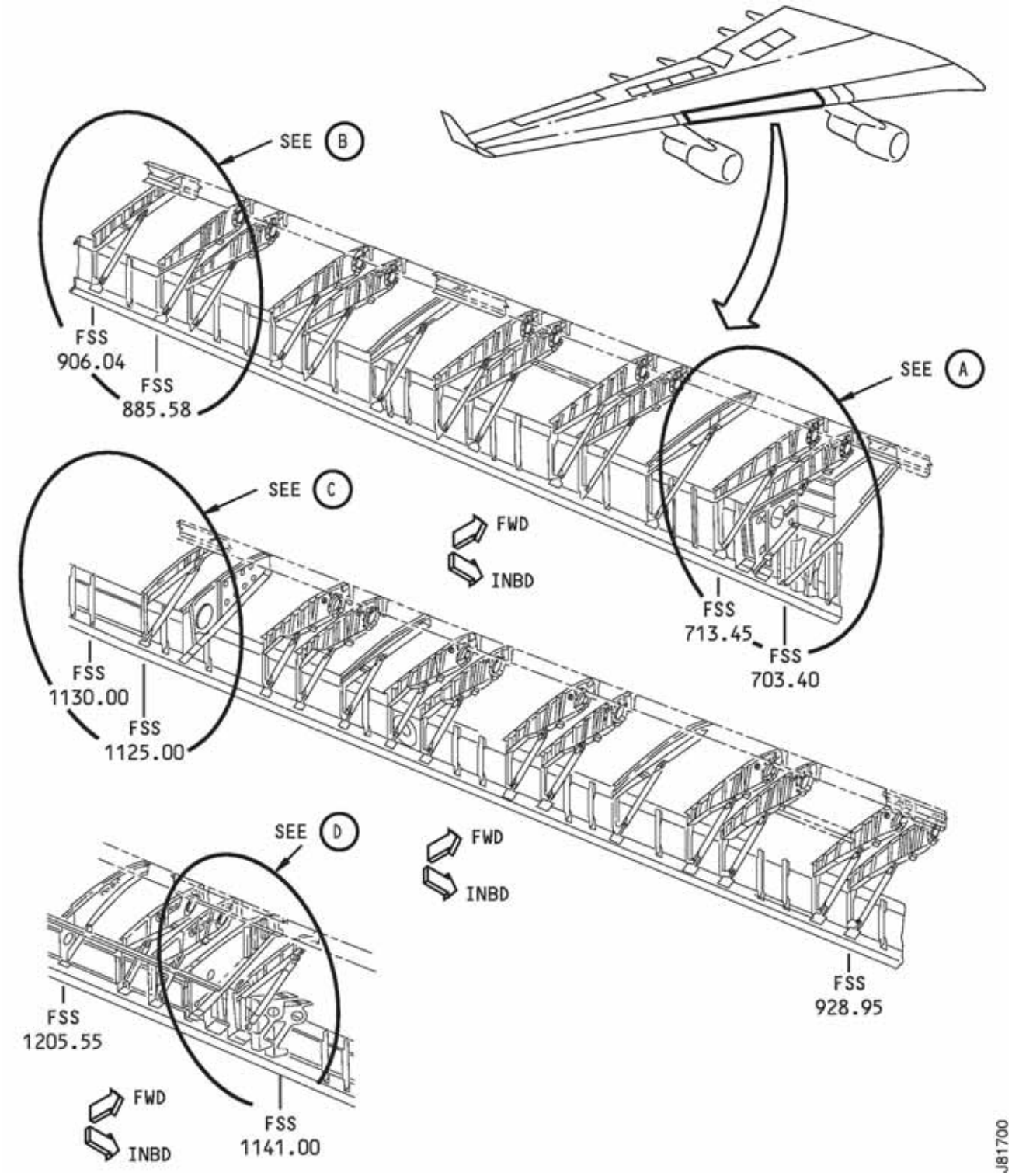



**FIGURE 17: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 1 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

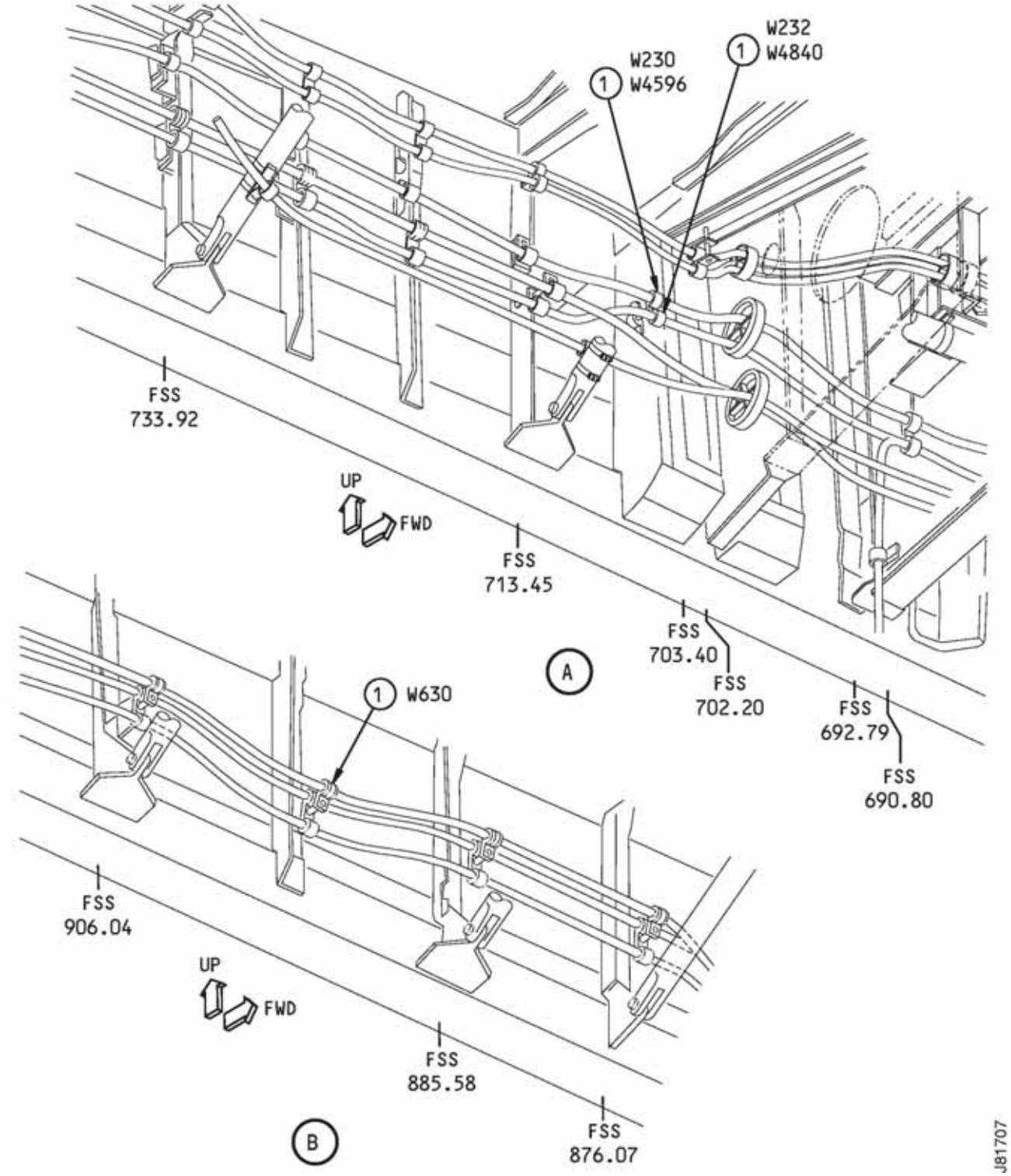



**FIGURE 17: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 2 OF 4)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

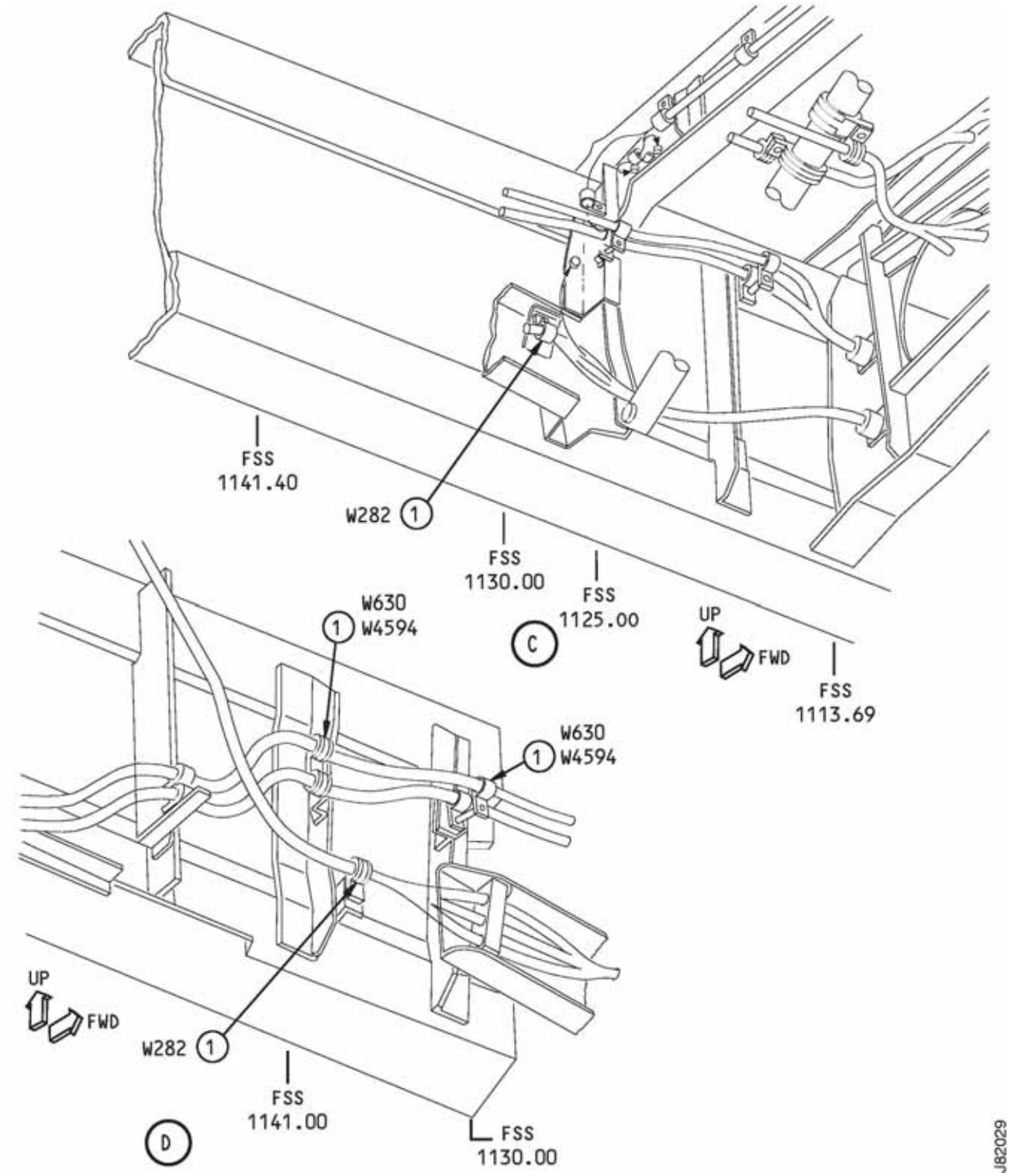



**FIGURE 17: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 3 OF 4)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | CLAMP | - | 7 | Get access. Find the existing clamp on the specified wire bundle at the location specified by the circle symbol. (a) |
| (a) The actual configuration of the airplane can be different than the configuration in the figure. Some airplanes may not have a clamp installed on the specified wire bundle at the location specified by the circle symbol. If a clamp is not installed on the specified wire bundle at the location specified by the circle symbol, it is not necessary to install a sleeve and a new clamp at that location. | | | | | |

**FIGURE 17: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 4 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 1-9, 16-45.**

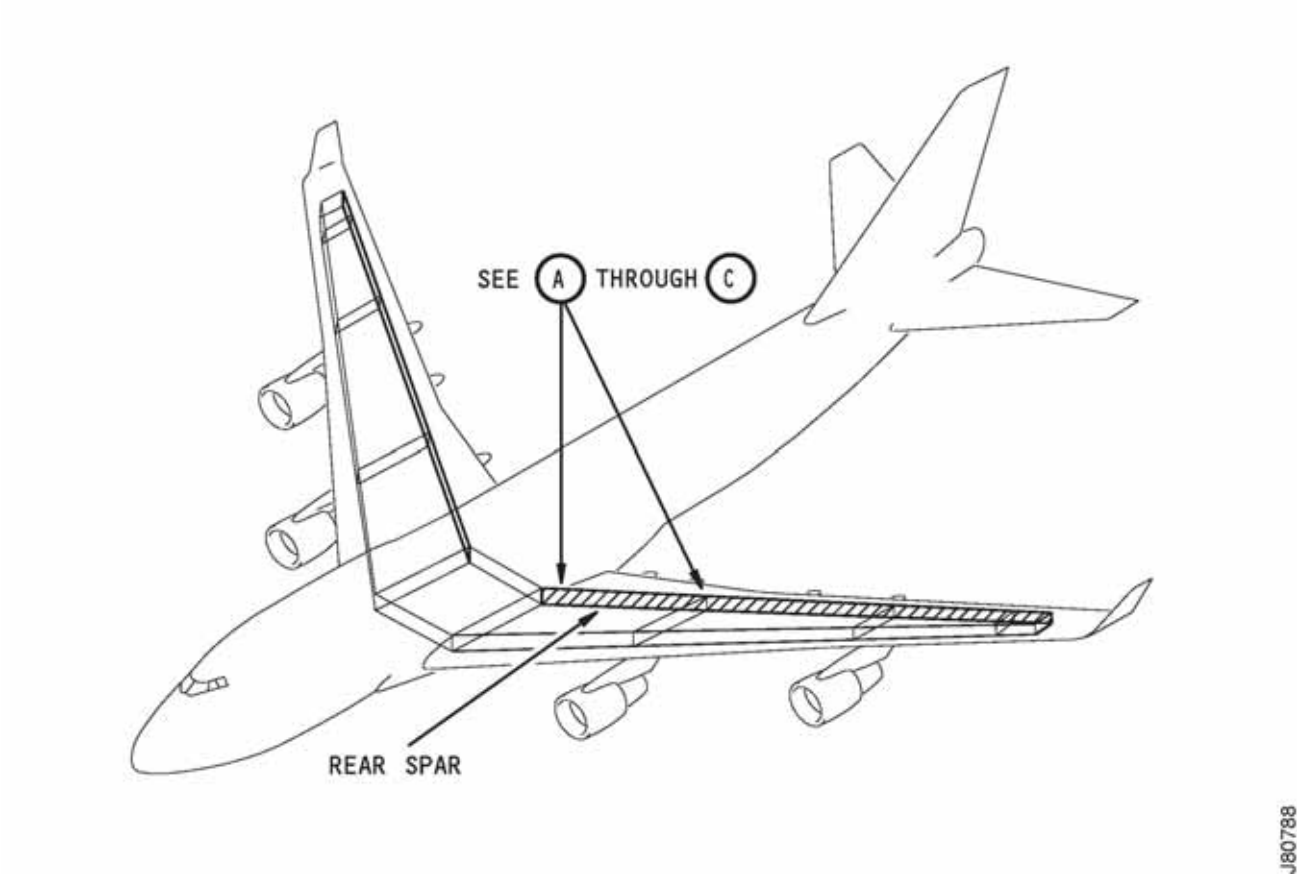



**FIGURE 18: REAR SPAR - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 1 OF 5)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

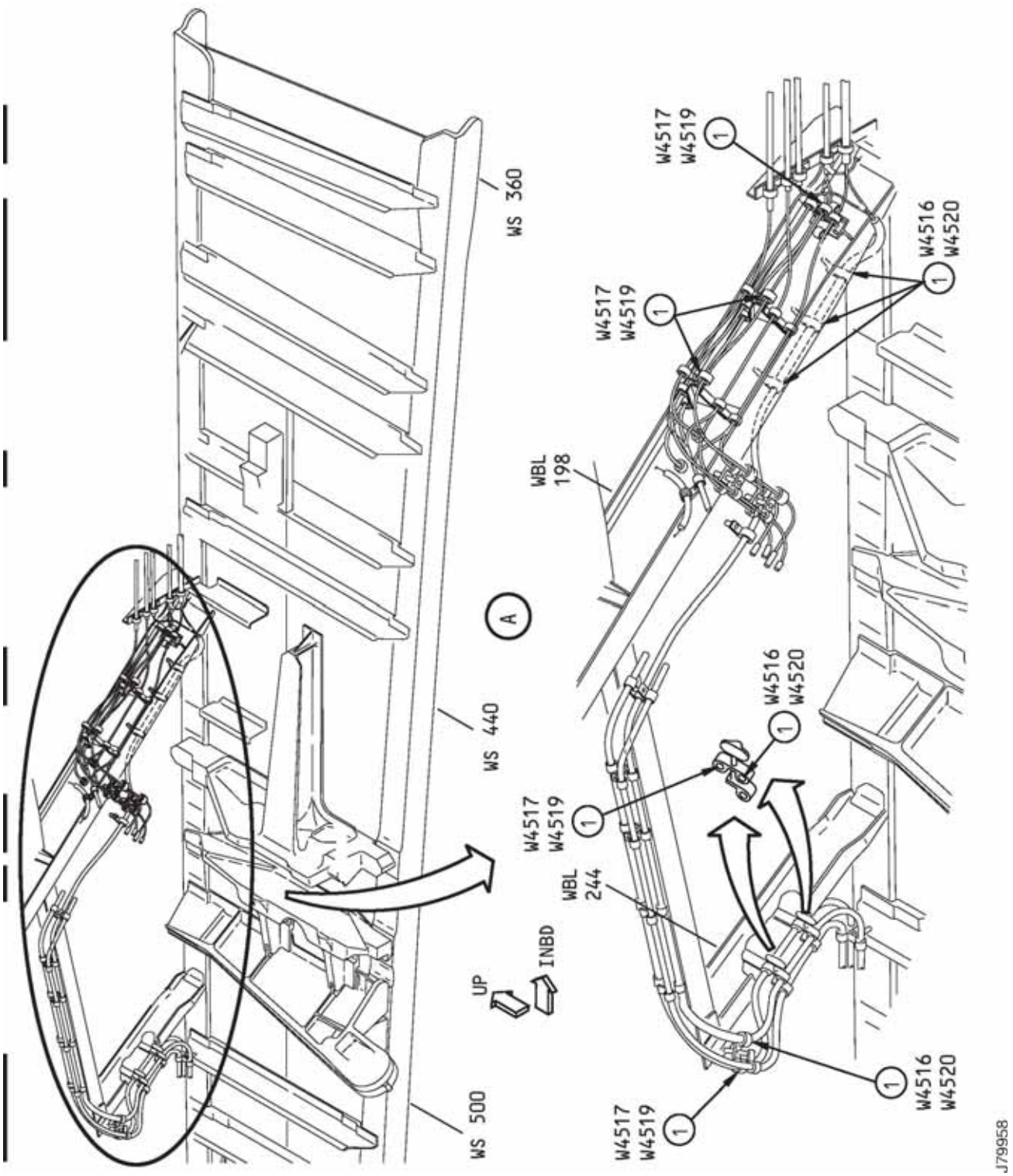



**FIGURE 18: REAR SPAR - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 2 OF 5)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

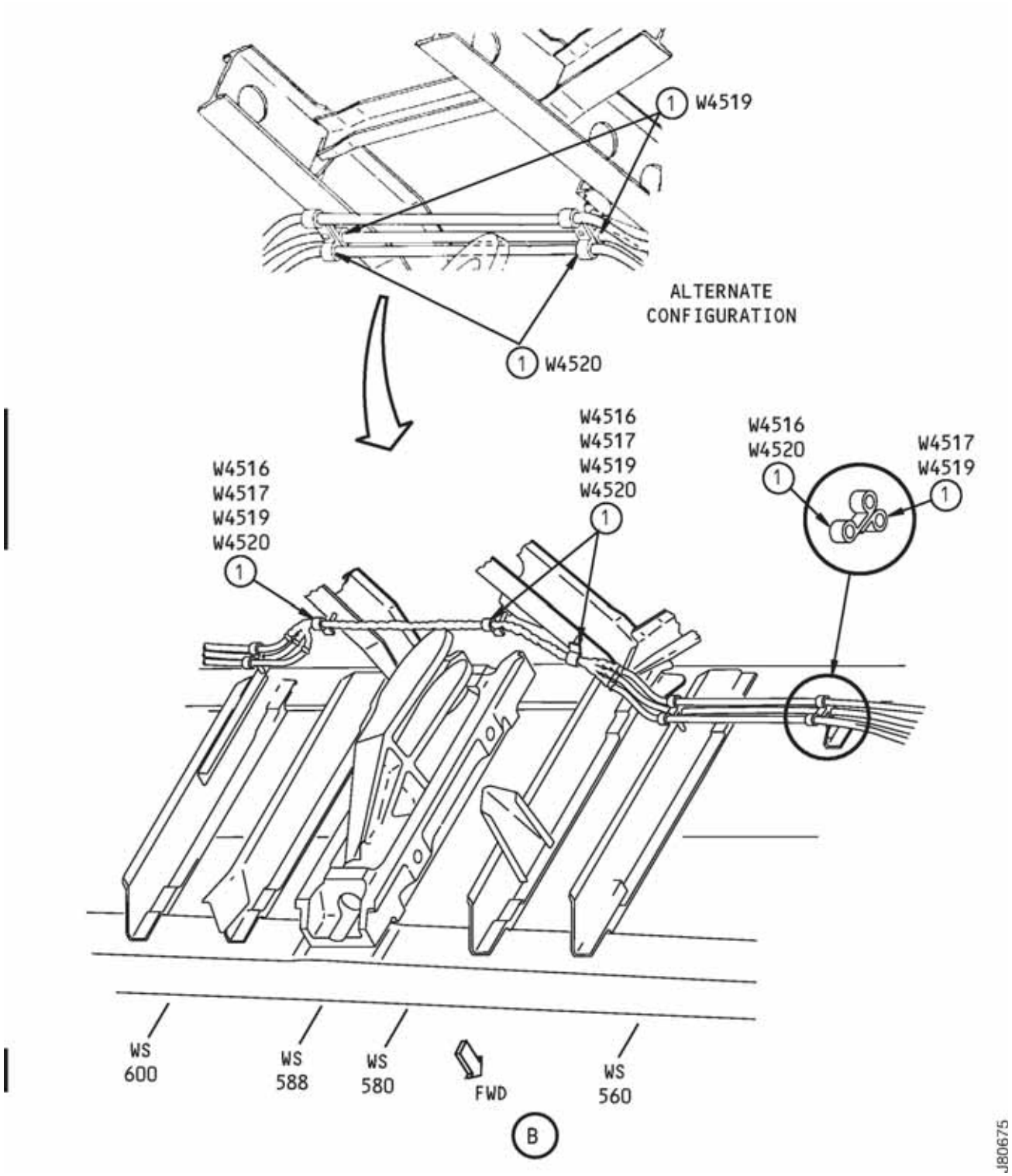



**FIGURE 18: REAR SPAR - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 3 OF 5)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

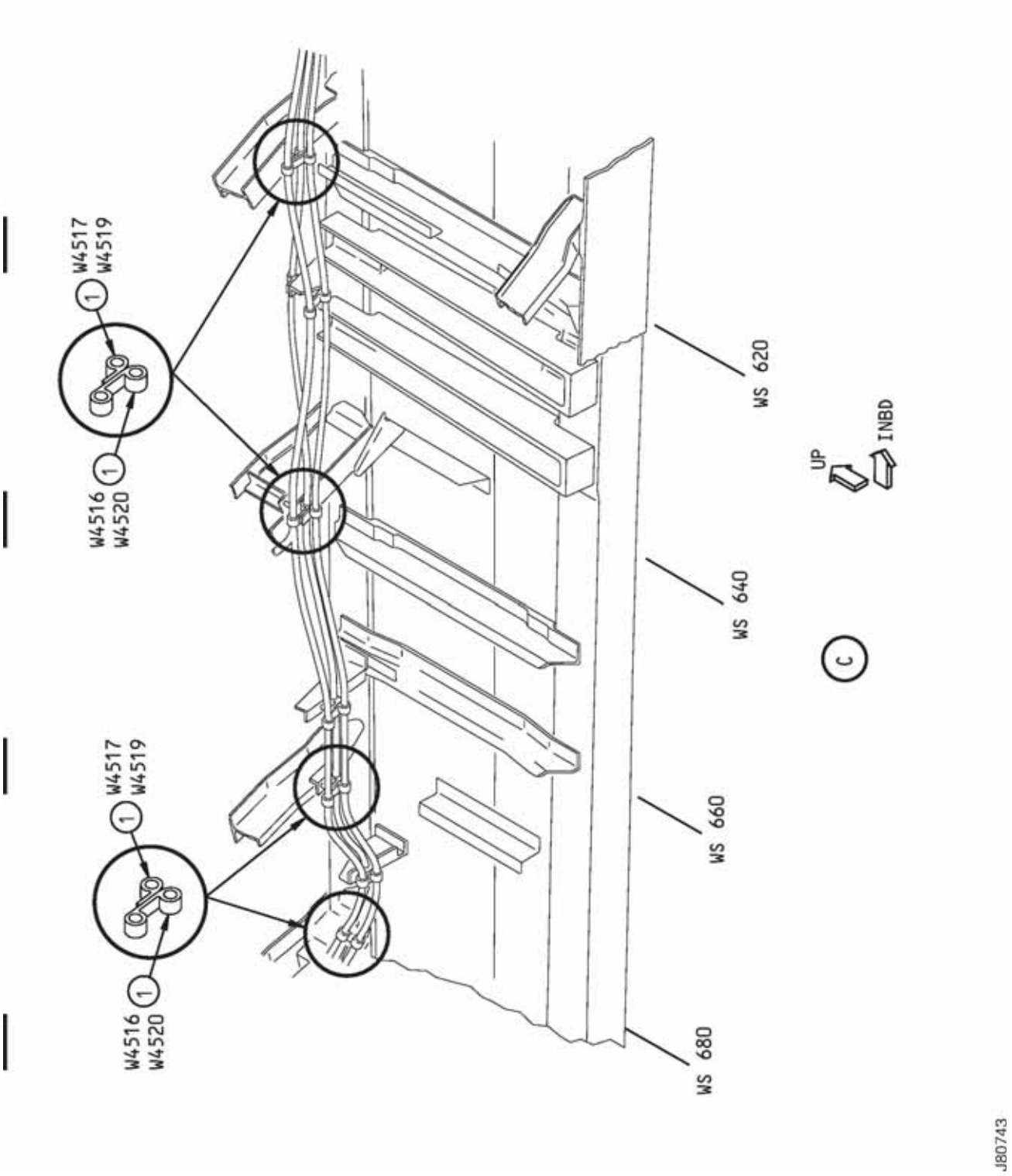



**FIGURE 18: REAR SPAR - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 4 OF 5)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | CLAMP | - | 25 | Get access. Find the existing clamp on the specified wire bundle at the location specified by the circle symbol. (a) |
| (a) The actual configuration of the airplane can be different than the configuration in the figure. Some airplanes may not have a clamp installed on the specified wire bundle at the location specified by the circle symbol. If a clamp is not installed on the specified wire bundle at the location specified by the circle symbol, it is not necessary to install a sleeve and a new clamp at that location. | | | | | |

**FIGURE 18: REAR SPAR - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 5 OF 5)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 1-9, 16-45.**

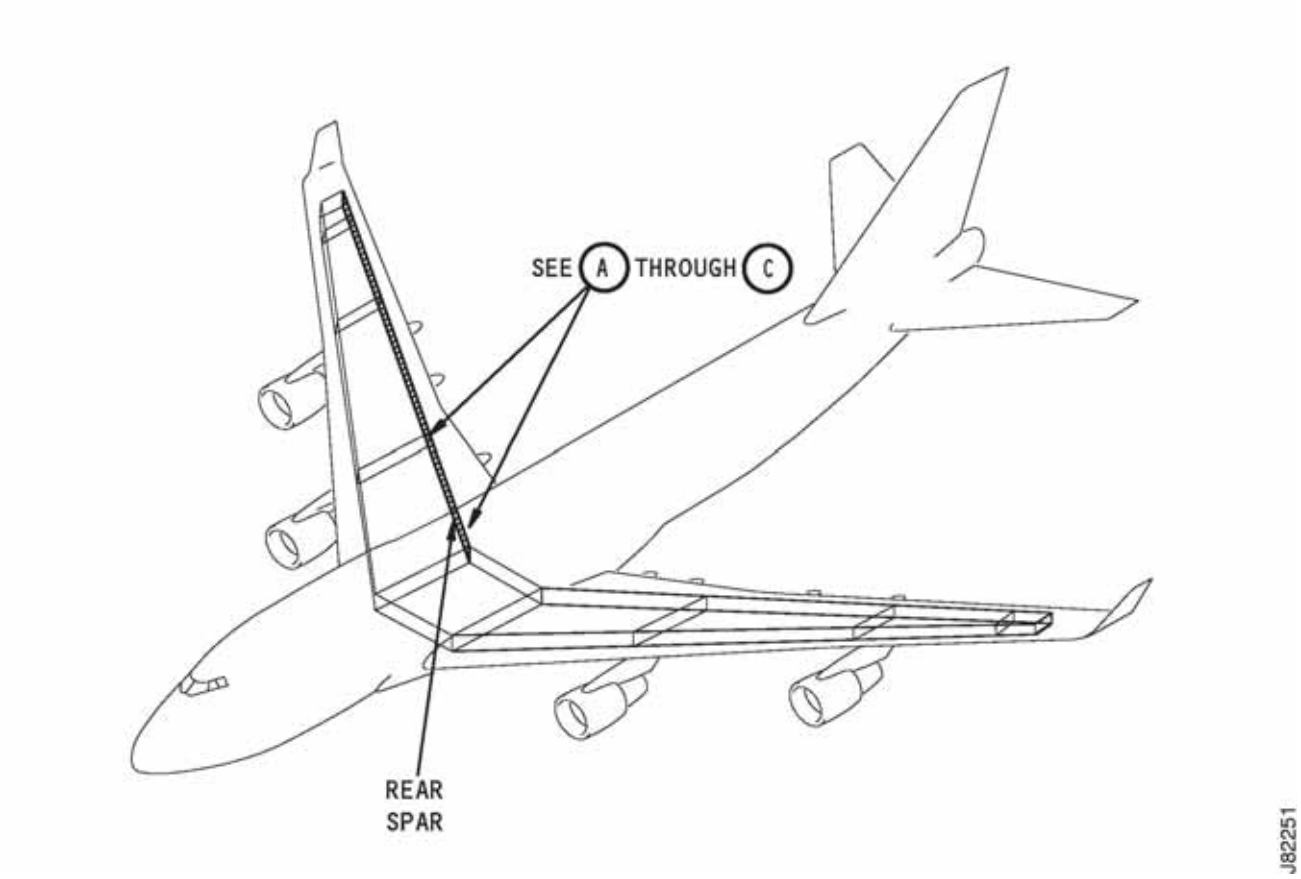



**FIGURE 19: REAR SPAR - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 1 OF 5)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

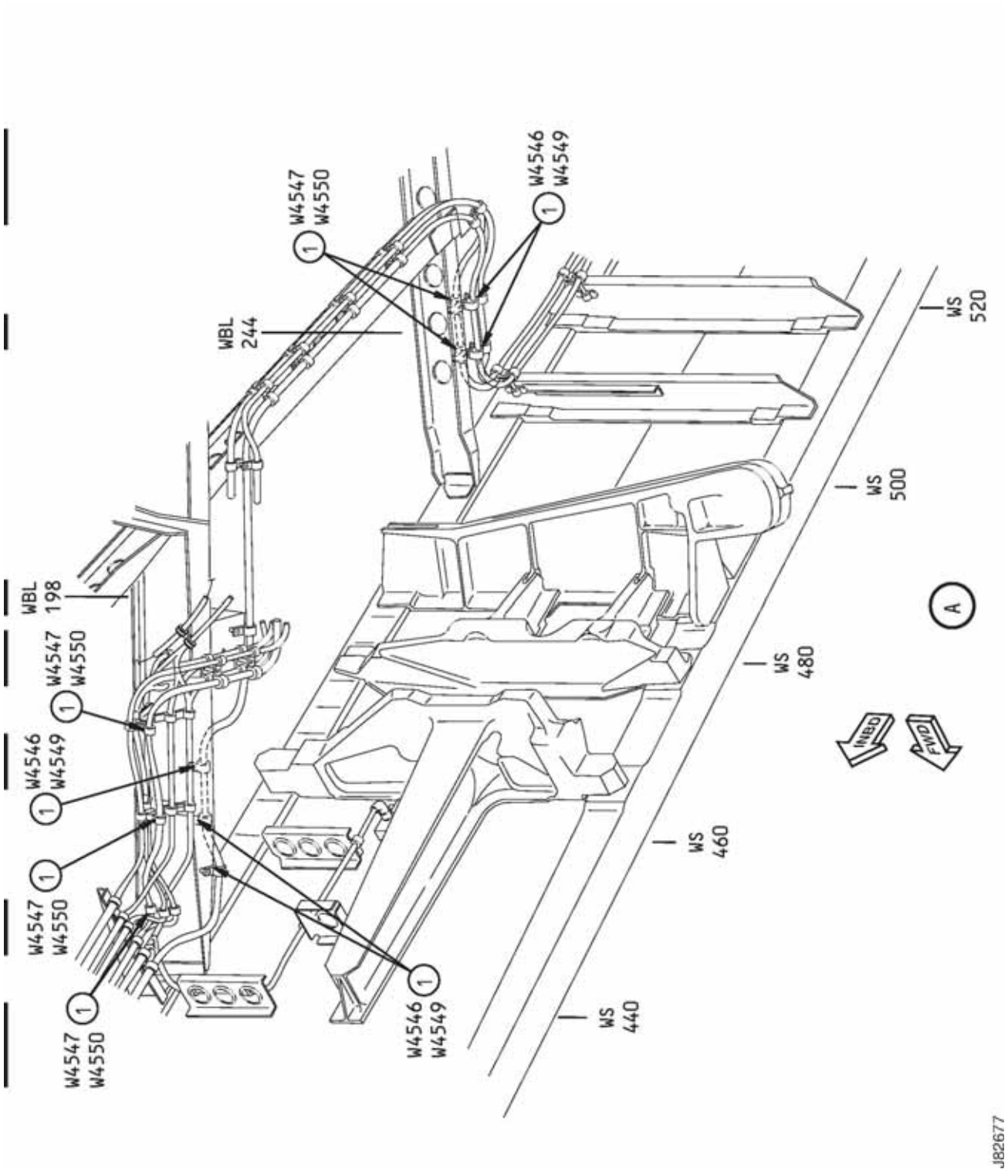



**FIGURE 19: REAR SPAR - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 2 OF 5)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

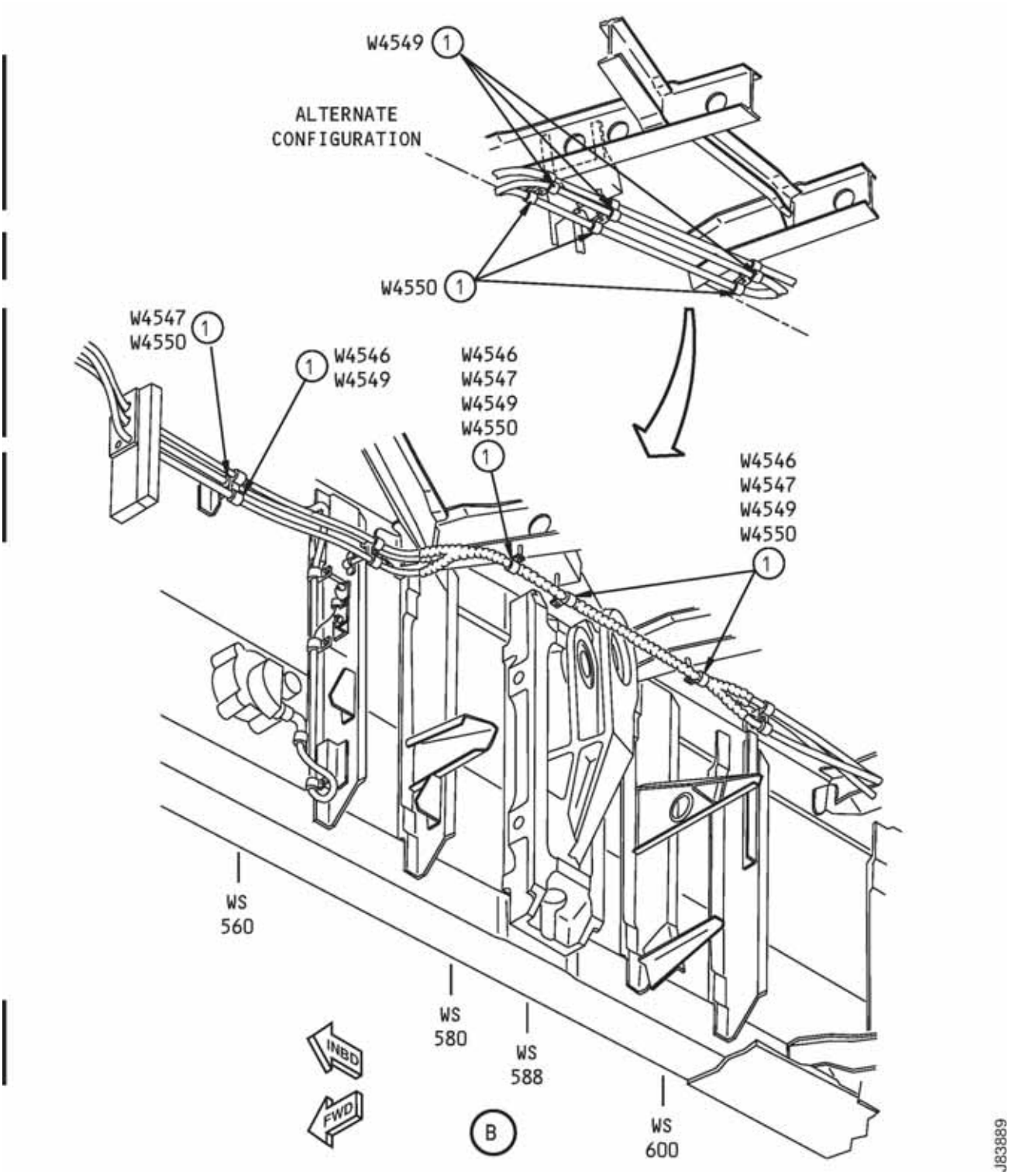



**FIGURE 19: REAR SPAR - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 3 OF 5)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

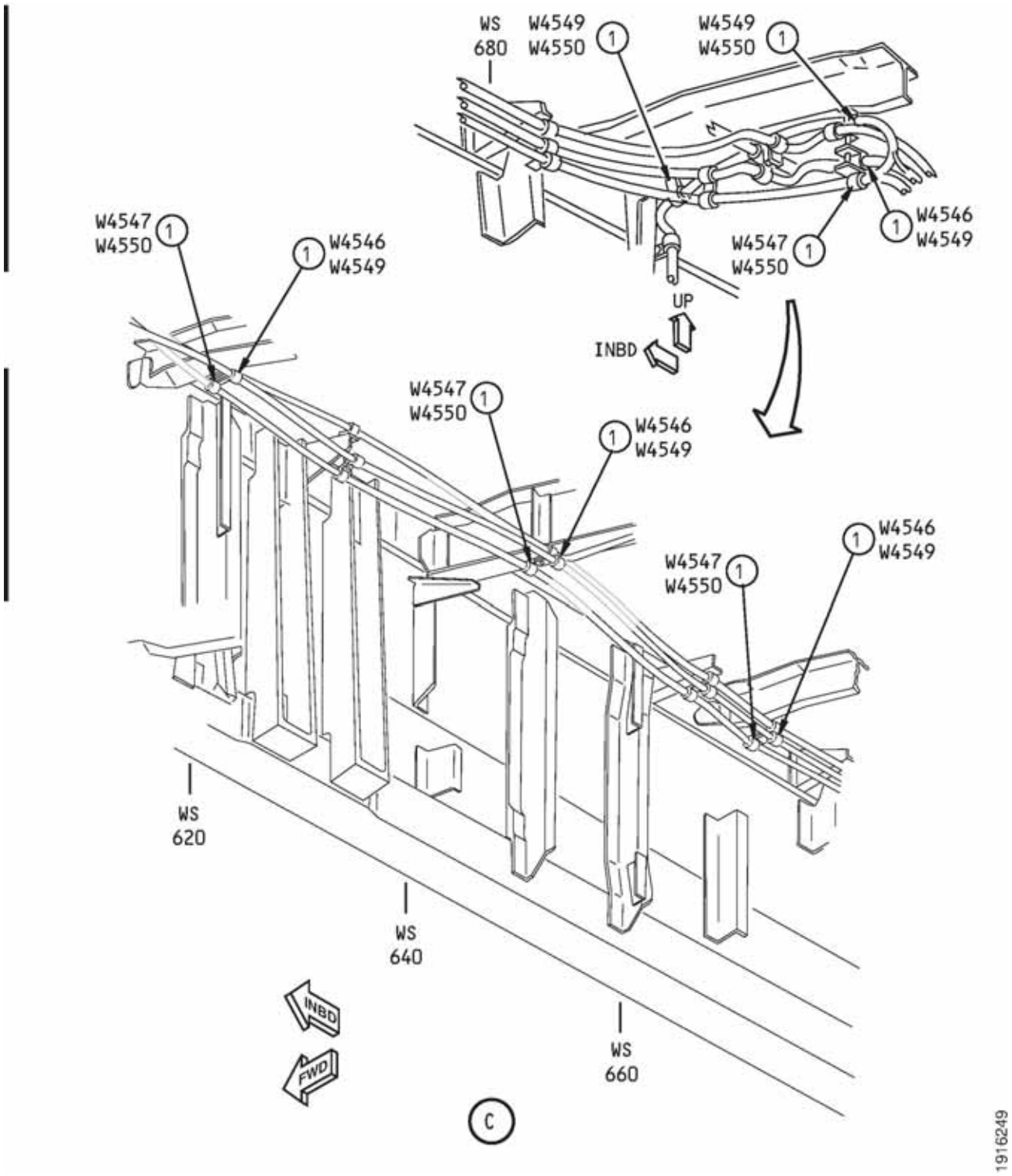



**FIGURE 19: REAR SPAR - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 4 OF 5)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | CLAMP | - | 25 | Get access. Find the existing clamp on the specified wire bundle at the location specified by the circle symbol. (a) |
| (a) The actual configuration of the airplane can be different than the configuration in the figure. Some airplanes may not have a clamp installed on the specified wire bundle at the location specified by the circle symbol. If a clamp is not installed on the specified wire bundle at the location specified by the circle symbol, it is not necessary to install a sleeve and a new clamp at that location. | | | | | |

**FIGURE 19: REAR SPAR - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 5 OF 5)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 10-11, 13-15.**

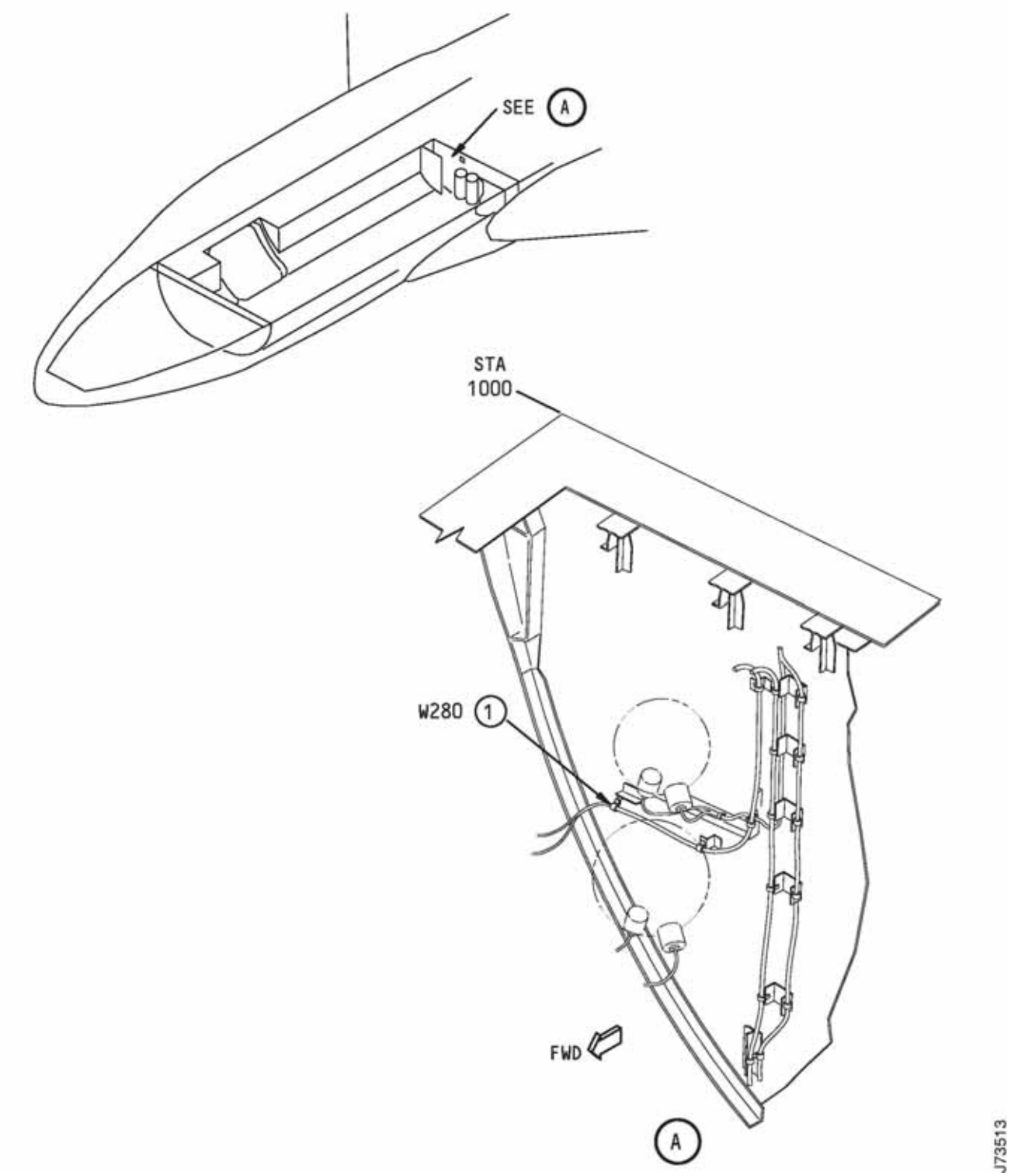



**FIGURE 20: FRONT SPAR - FORWARD CARGO COMPARTMENT - LOCATION OF THE WIRE BUNDLE CLAMPS**
**(SHEET 1 OF 2)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | CLAMP | - | 1 | Get access. Find the existing clamp on the specified wire bundle at the location specified by the circle symbol. (a) |
| (a) The actual configuration of the airplane can be different than the configuration in the figure. Some airplanes may not have a clamp installed on the specified wire bundle at the location specified by the circle symbol. If a clamp is not installed on the specified wire bundle at the location specified by the circle symbol, it is not necessary to install a sleeve and a new clamp at that location. | | | | | |

**FIGURE 20: FRONT SPAR - FORWARD CARGO COMPARTMENT - LOCATION OF THE WIRE BUNDLE CLAMPS**
**(SHEET 2 OF 2)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-21, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2.**

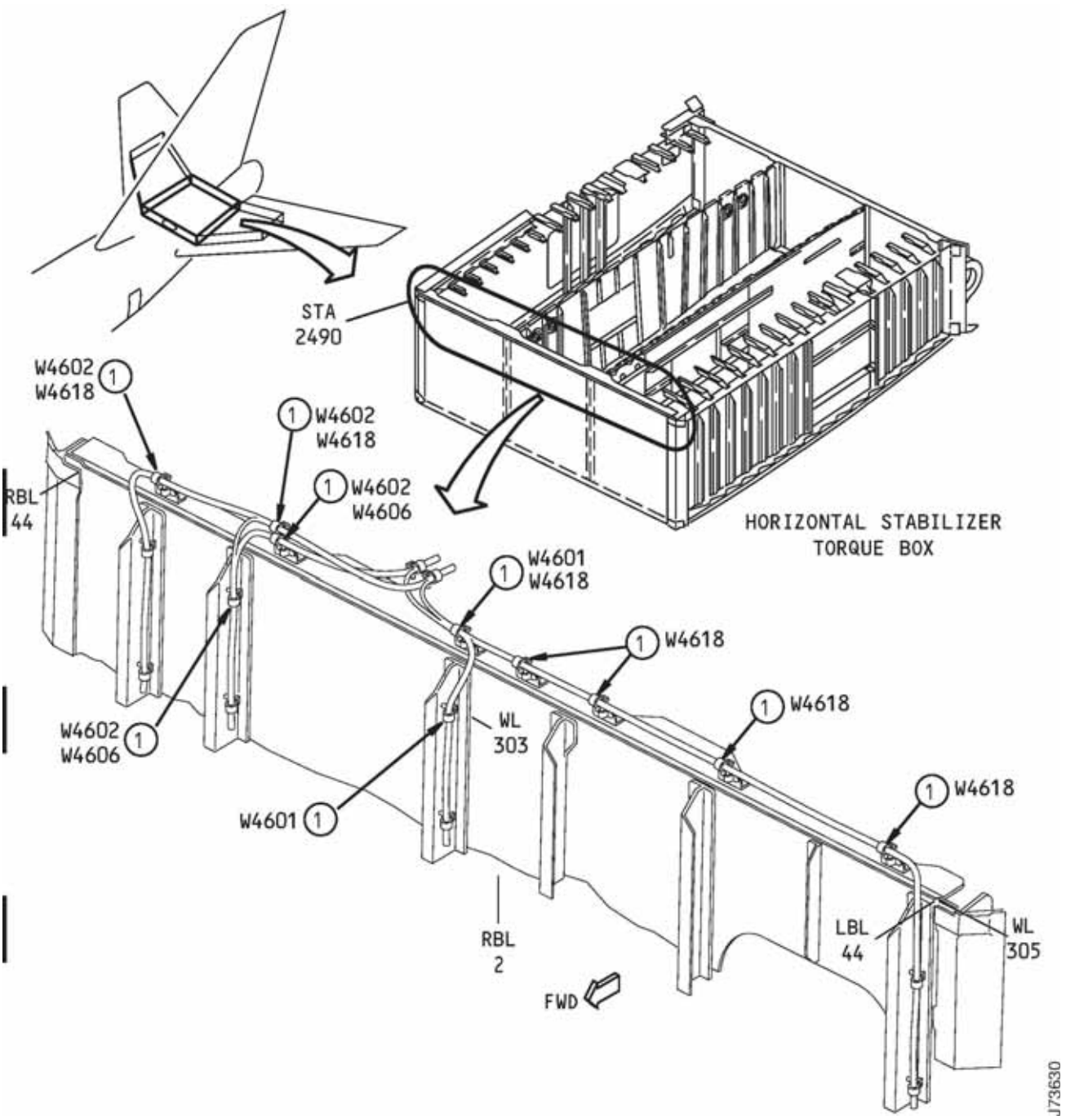



**FIGURE 21: FRONT SPAR - HORIZONTAL STABILIZER - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 1 OF 2)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | CLAMP | - | 10 | Get access. Find the existing clamp on the specified wire bundle at the location specified by the circle symbol. (a) |
| (a) The actual configuration of the airplane can be different than the configuration in the figure. Some airplanes may not have a clamp installed on the specified wire bundle at the location specified by the circle symbol. If a clamp is not installed on the specified wire bundle at the location specified by the circle symbol, it is not necessary to install a sleeve and a new clamp at that location. | | | | | |

**FIGURE 21: FRONT SPAR - HORIZONTAL STABILIZER - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 2 OF 2)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-21, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2.**

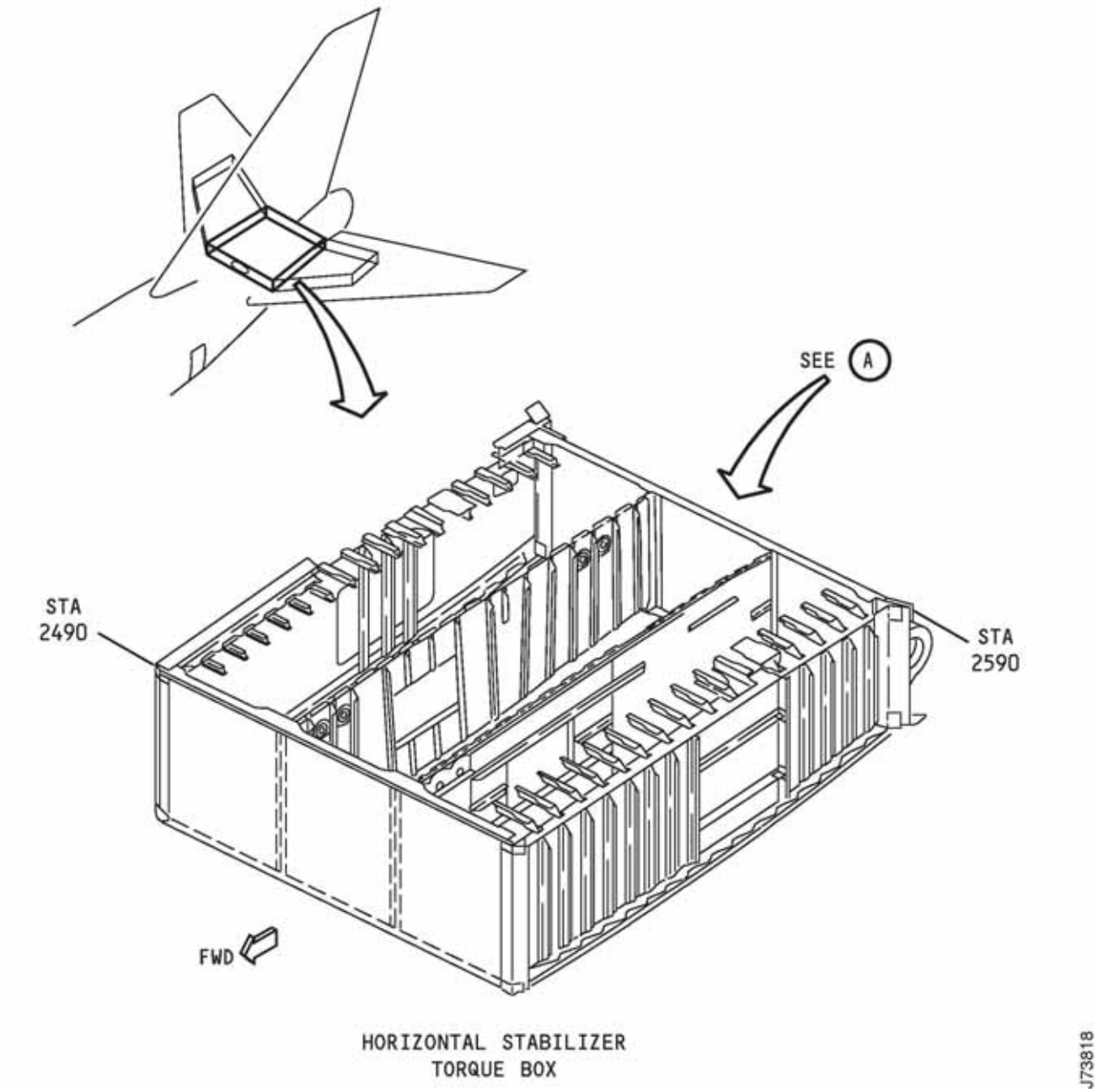



**FIGURE 22: REAR SPAR - HORIZONTAL STABILIZER - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 1 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

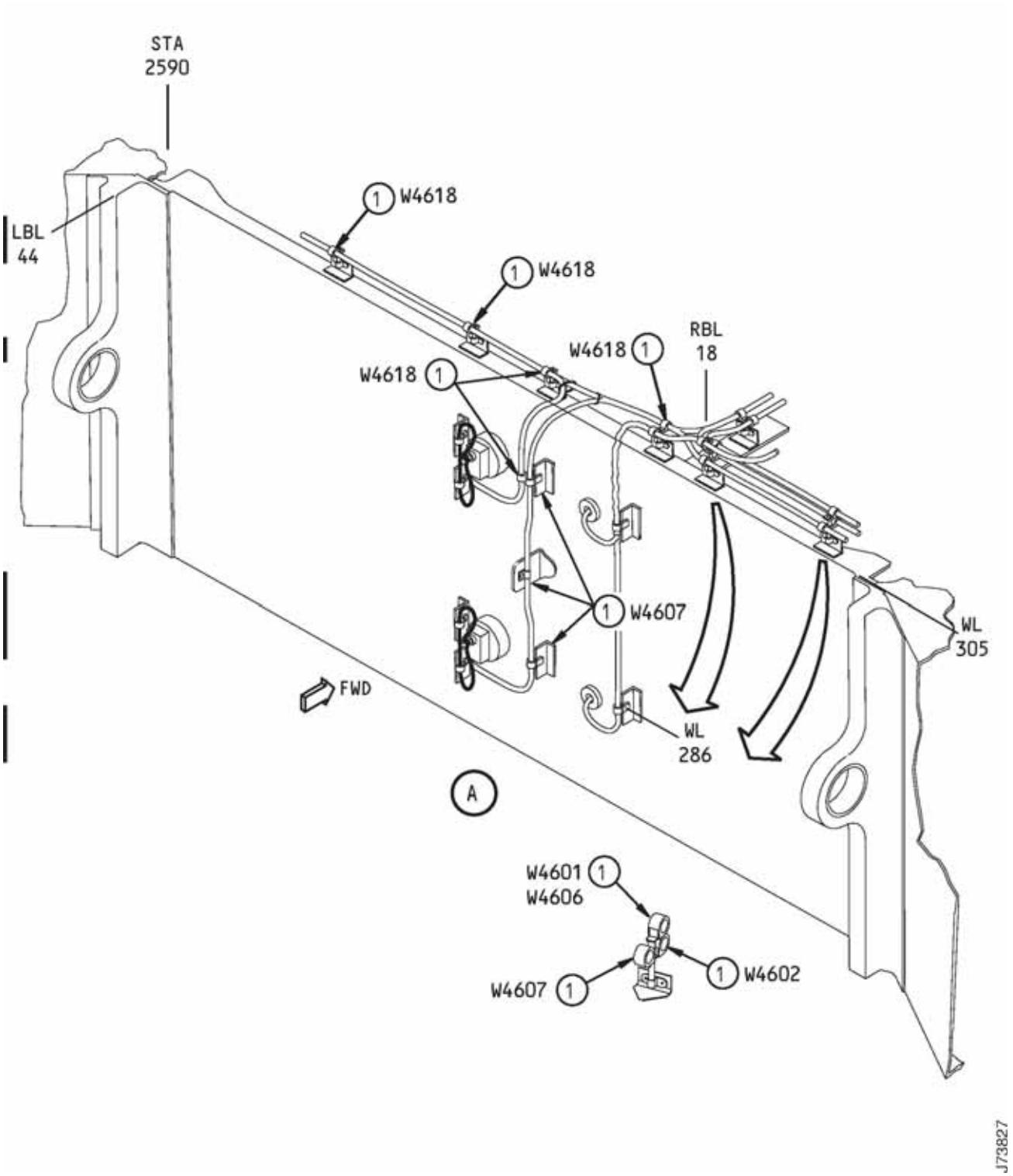



**FIGURE 22: REAR SPAR - HORIZONTAL STABILIZER - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 2 OF 3)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

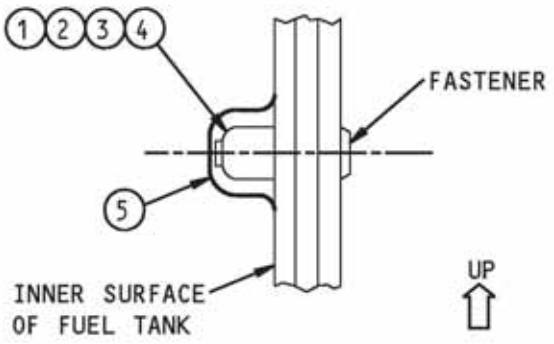
The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | CLAMP | - | 14 | Get access. Find the existing clamp on the specified wire bundle at the location specified by the circle symbol. (a) |
| (a) The actual configuration of the airplane can be different than the configuration in the figure. Some airplanes may not have a clamp installed on the specified wire bundle at the location specified by the circle symbol. If a clamp is not installed on the specified wire bundle at the location specified by the circle symbol, it is not necessary to install a sleeve and a new clamp at that location. | | | | | |

**FIGURE 22: REAR SPAR - HORIZONTAL STABILIZER - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 3 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 1-45.**




TYPICAL SEALANT APPLICATION

J738841

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each airplane.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Remove | DEBRIS | - | - | The debris around the areas to be sealed must be removed. |
| 2 | Apply | SOLVENT | BMS 11-7 (SOLVENTS IN SOPM 20-30-93 optional) | - | Use a BMS 15-5 wiper wet with solvent. (a)(g) |
| | Clean | FASTENERS | - | 1 | Use a non-metallic bristle brush. |
| | Remove | SOLVENTS | - | - | The remaining solvent must be removed while wet with a clean, dry BMS 15-5 wiper. |
| 3 | Apply | SOLVENT | BMS 11-7 (SOLVENTS IN SOPM 20-30-93 optional) | - | Use a BMS 15-5 wiper wet with solvent. (b)(g) |
| | Clean | FASTENERS | - | 1 | Use a non-metallic bristle brush. (c) |
| | Remove | SOLVENTS | - | - | The remaining solvent must be removed while wet with a clean, dry BMS 15-5 wiper. |
| 4 | Apply | SEALANT | BMS 5-45, CLASS A-2, GRADE 1 (ALTERNATIVE FUEL TANK SEALANTS IN 747-100/200/300 AMM 28-11-00 or ALTERNATIVE FUEL TANK SEALANTS IN 747-400 AMM 51-31-01 optional) | - | Precoat sealant. (d)(e) |

**FIGURE 23: SEAL OF THE FASTENERS**
**(SHEET 1 OF 2)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 5 | Apply | SEALANT | BMS 5-45, CLASS B-2, GRADE 1 (ALTERNATIVE FUEL TANK SEALANTS IN 747-100/200/300 AMM 28-11-00 or ALTERNATIVE FUEL TANK SEALANTS IN 747-400 AMM 51-31-01 optional) | - | Fillet sealant. (d)(f) |
| (a) Make sure that an area approximately 0.5 inch from the base of the fastener is clean. The cleaned area must be larger than the area that must have sealant. | | | | | |
| (b) This step must be done immediately before the first layer of sealant is applied. | | | | | |
| (c) Make sure that the wiper has no visible soil remaining after the area is cleaned. | | | | | |
| (d) Make sure to use the sealants specified in this table. | | | | | |
| (e) Make sure to apply the precoat sealant on the fastener. Refer to 747-400 AMM 28-11-00 or 747-100/200/300 AMM 28-11-00 as an accepted procedure. | | | | | |
| (f) Make sure to apply the fillet sealant on the fastener. Refer to 747-400 AMM 28-11-00 or 747-100/200/300 AMM 28-11-00 as an accepted procedure. | | | | | |
| (g) Refer to SOPM 20-30-93 as an accepted procedure for selection of solvents. | | | | | |

**FIGURE 23: SEAL OF THE FASTENERS**
**(SHEET 2 OF 2)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 1-9, 16-45.**

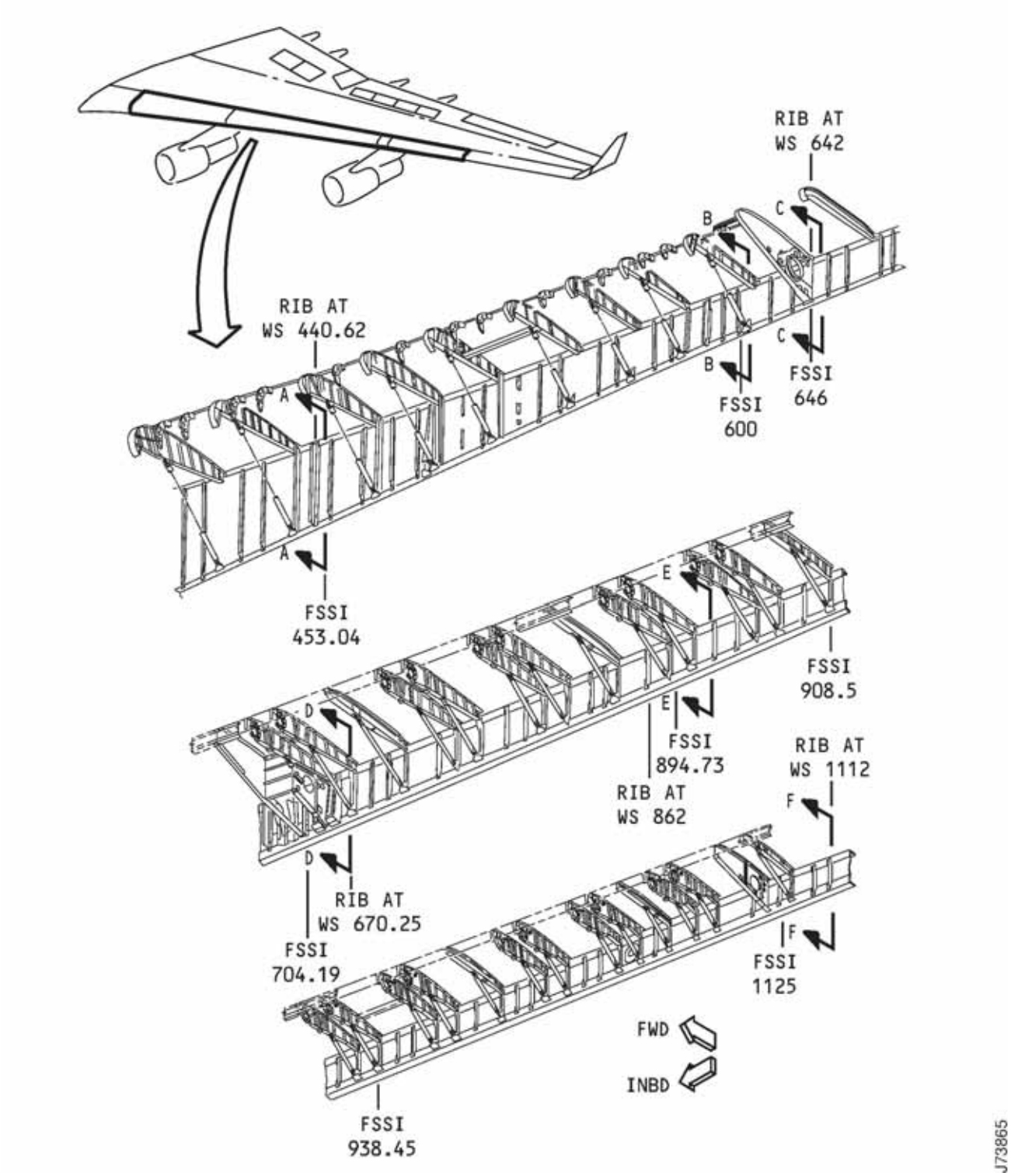



**FIGURE 24: FRONT SPAR - NUMBER ONE AND NUMBER TWO MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 1 OF 8)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

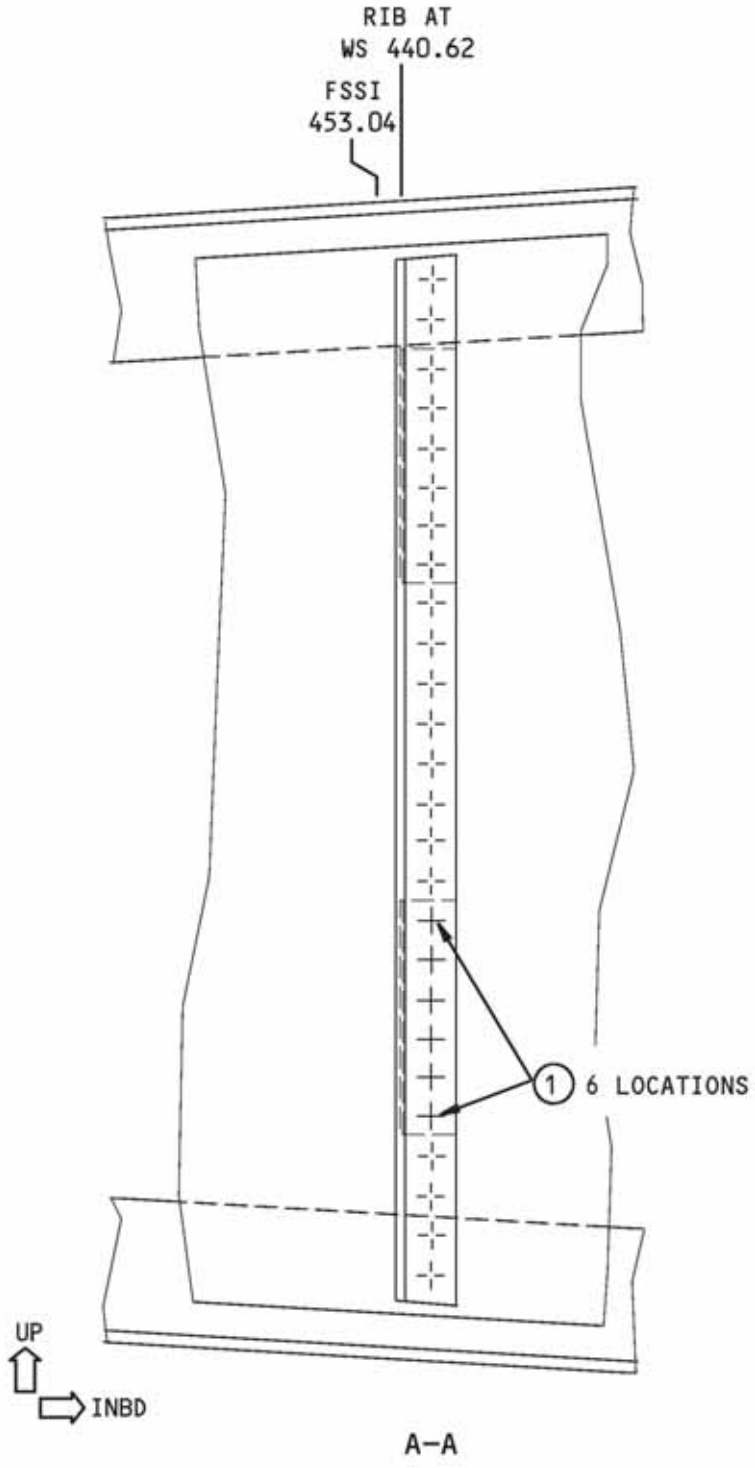



**FIGURE 24: FRONT SPAR - NUMBER ONE AND NUMBER TWO MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 2 OF 8)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

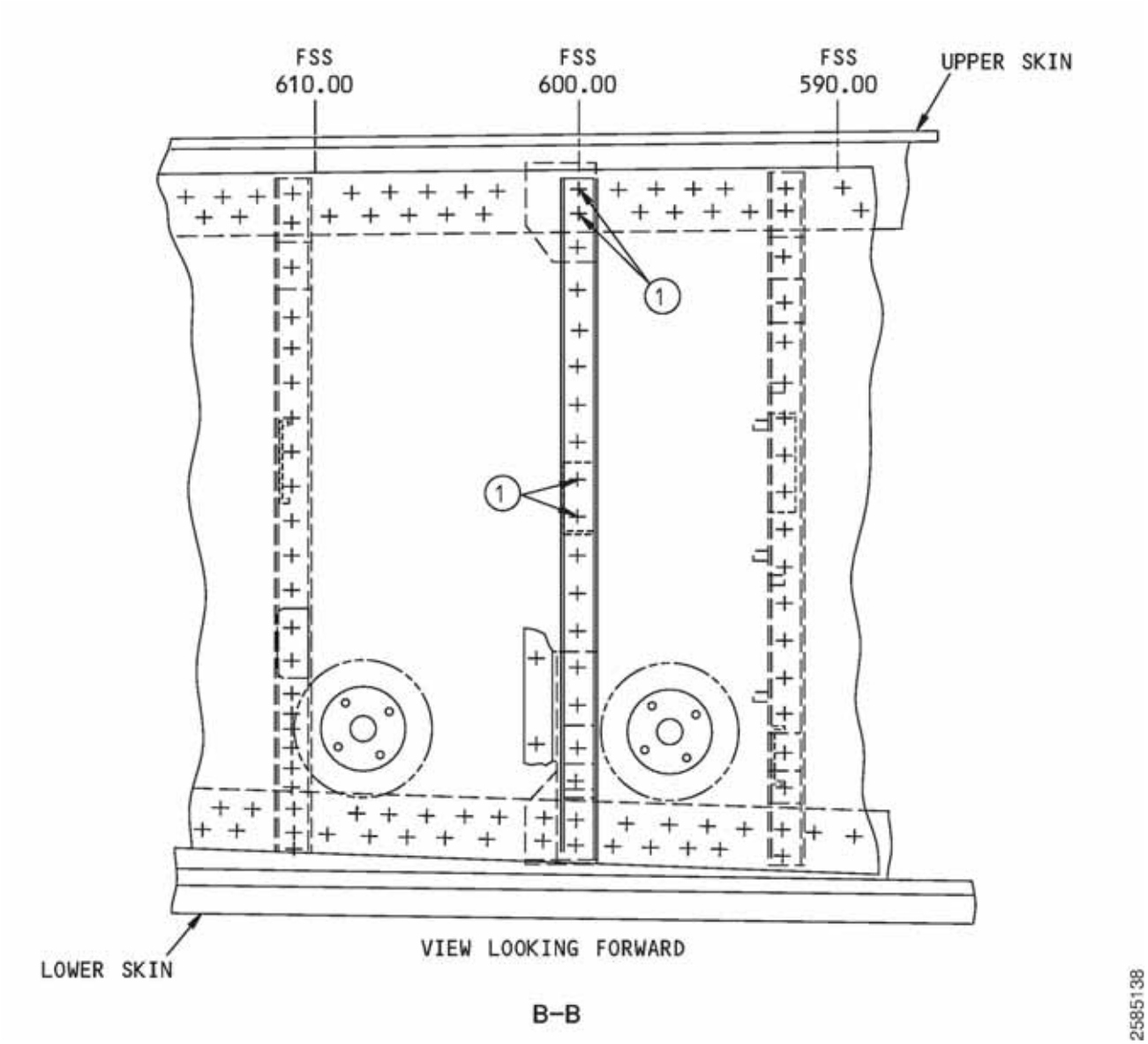



**FIGURE 24: FRONT SPAR - NUMBER ONE AND NUMBER TWO MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 3 OF 8)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

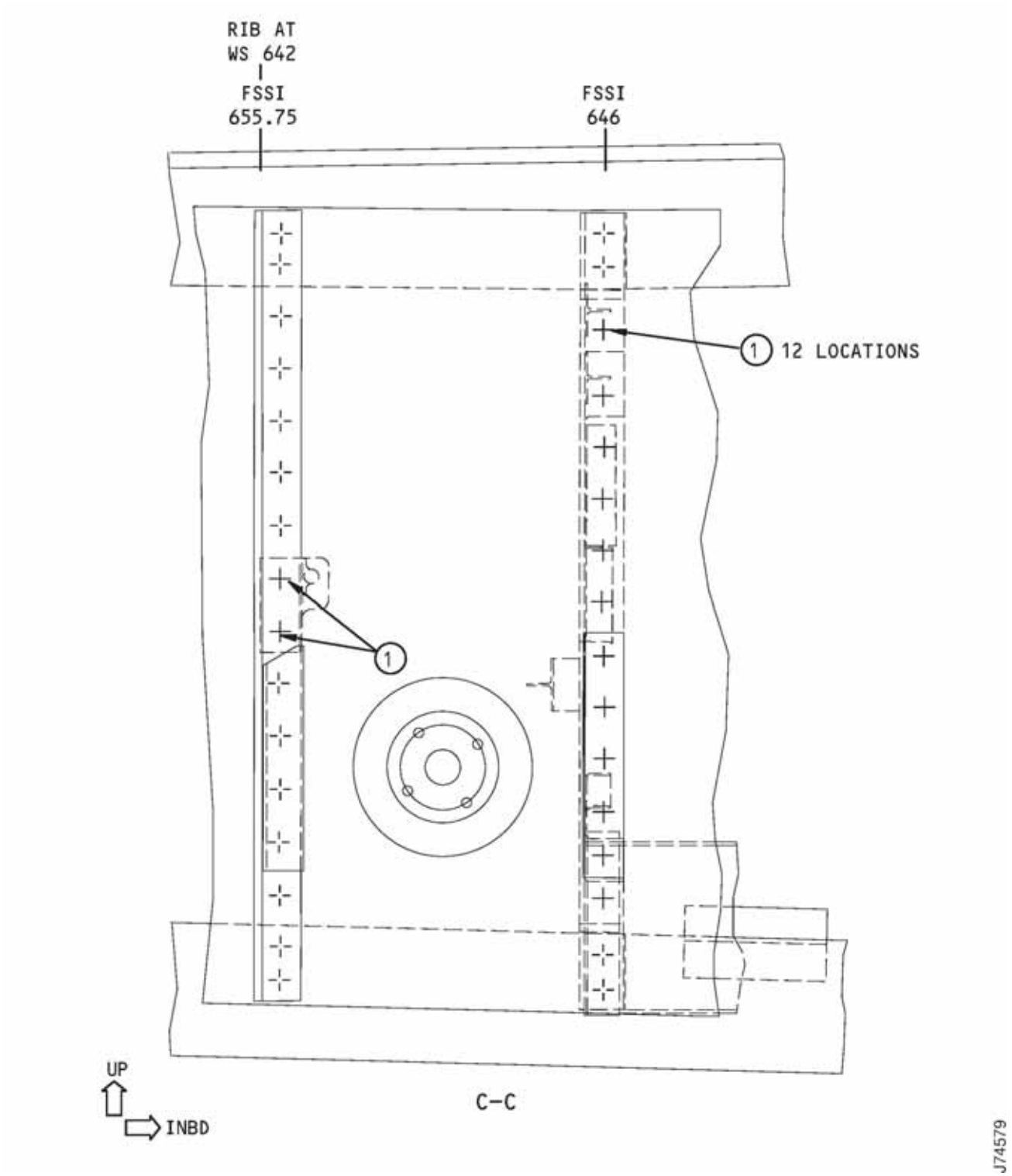



**FIGURE 24: FRONT SPAR - NUMBER ONE AND NUMBER TWO MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 4 OF 8)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

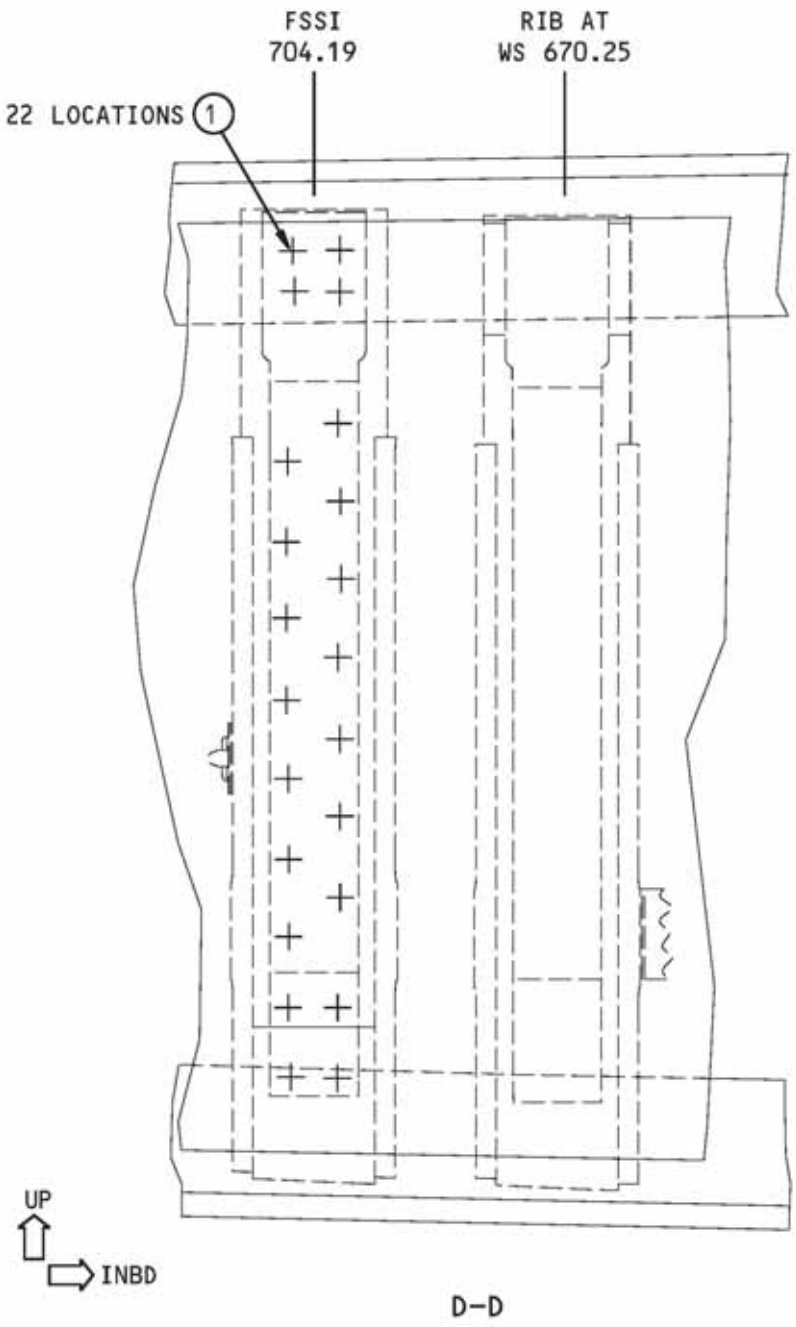



**FIGURE 24: FRONT SPAR - NUMBER ONE AND NUMBER TWO MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 5 OF 8)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

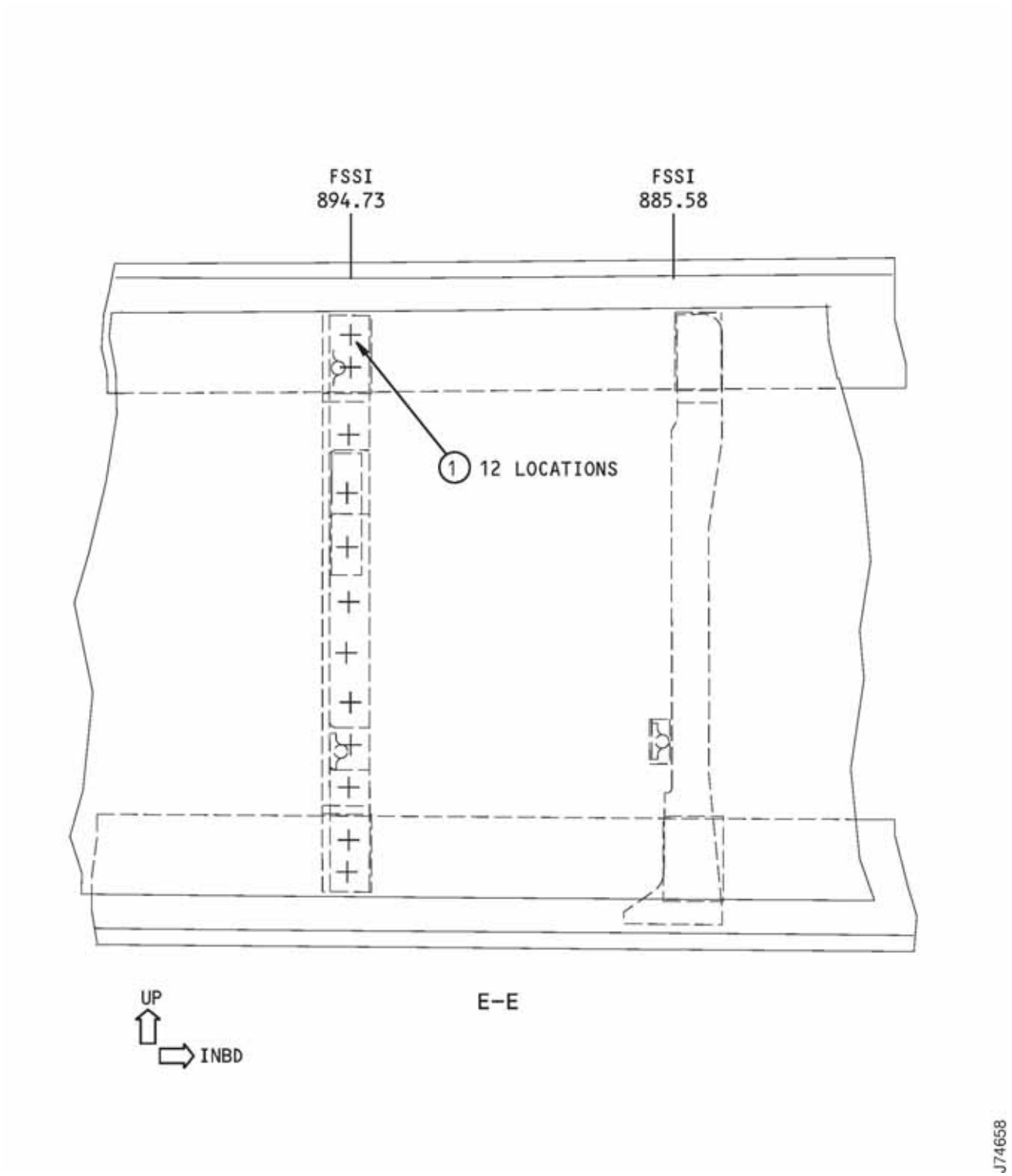



**FIGURE 24: FRONT SPAR - NUMBER ONE AND NUMBER TWO MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 6 OF 8)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

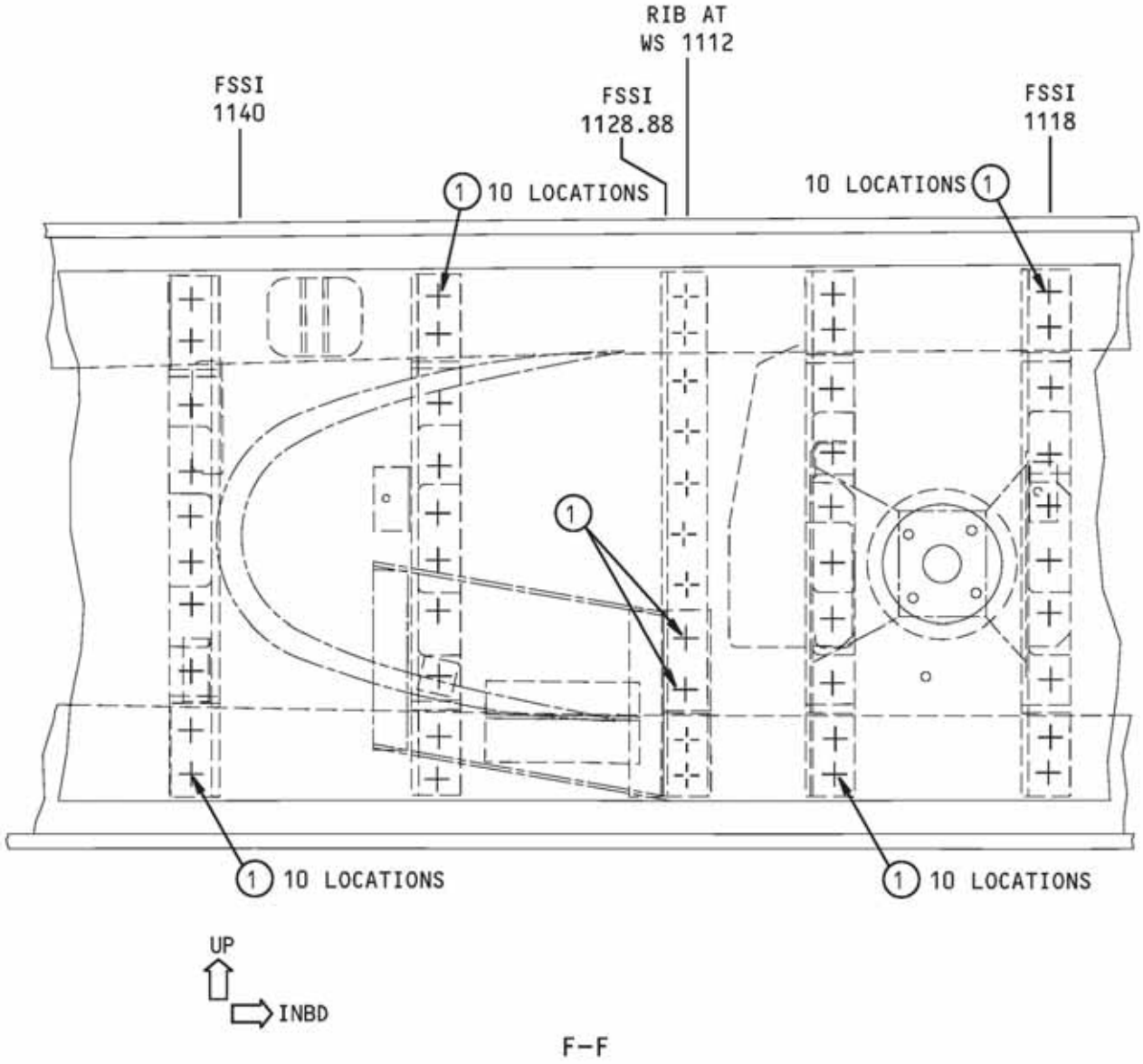



**FIGURE 24: FRONT SPAR - NUMBER ONE AND NUMBER TWO MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 7 OF 8)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | FASTENERS | - | 100 | Get access. Find the location of the fasteners that must be sealed. |

**FIGURE 24: FRONT SPAR - NUMBER ONE AND NUMBER TWO MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 8 OF 8)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 10-15.**

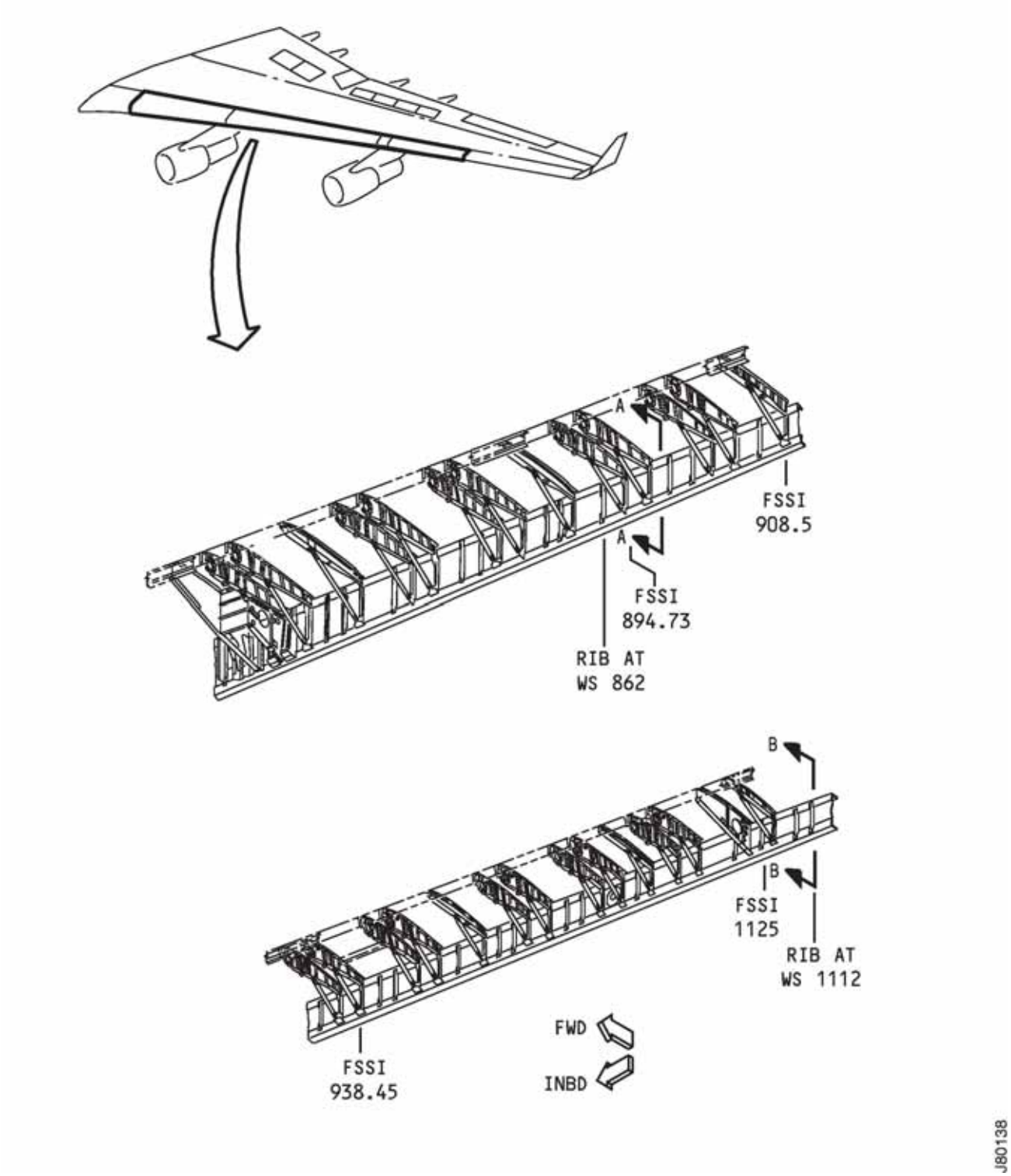



**FIGURE 25: FRONT SPAR - NUMBER ONE AND NUMBER TWO MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 1 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

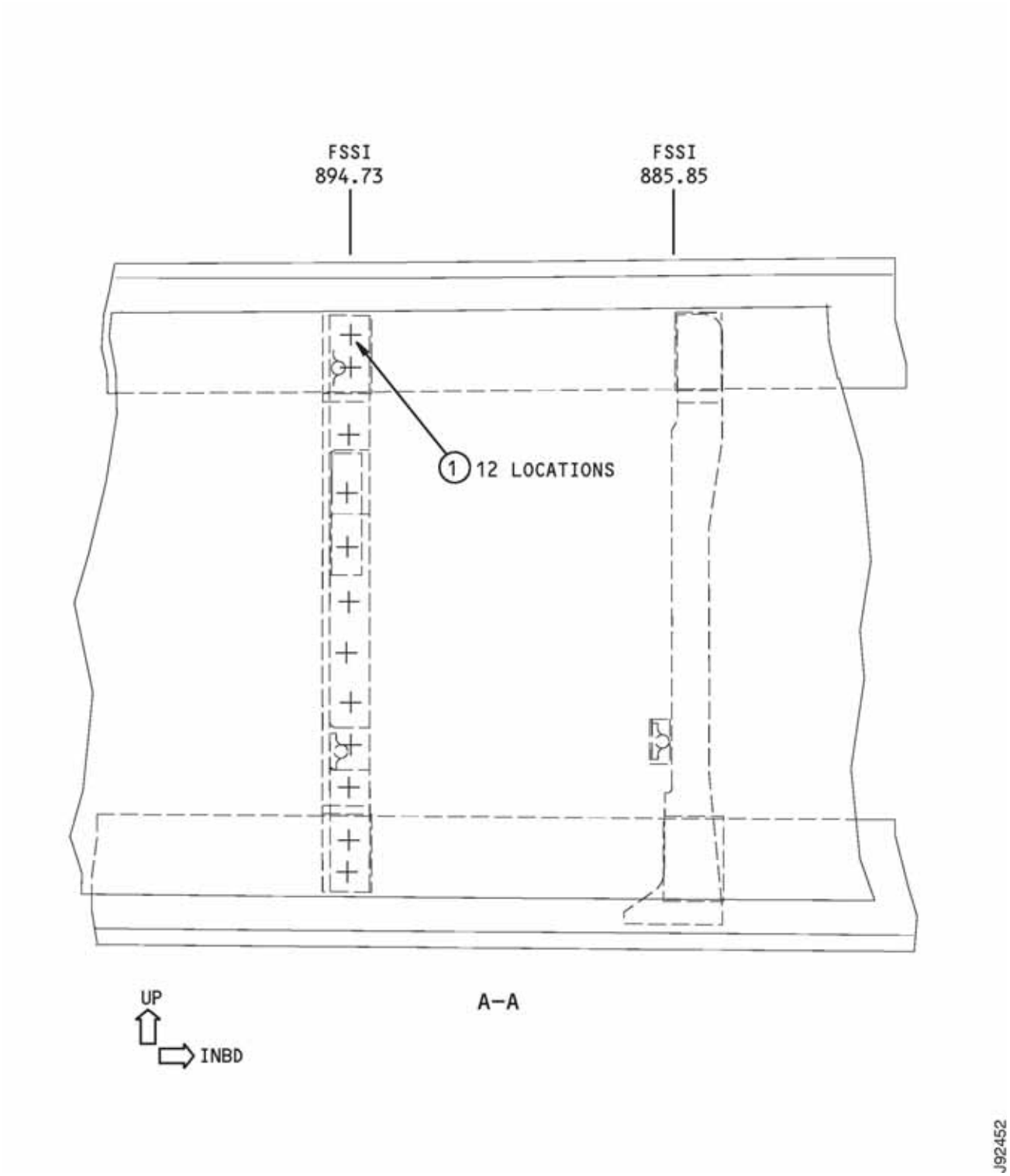



**FIGURE 25: FRONT SPAR - NUMBER ONE AND NUMBER TWO MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 2 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

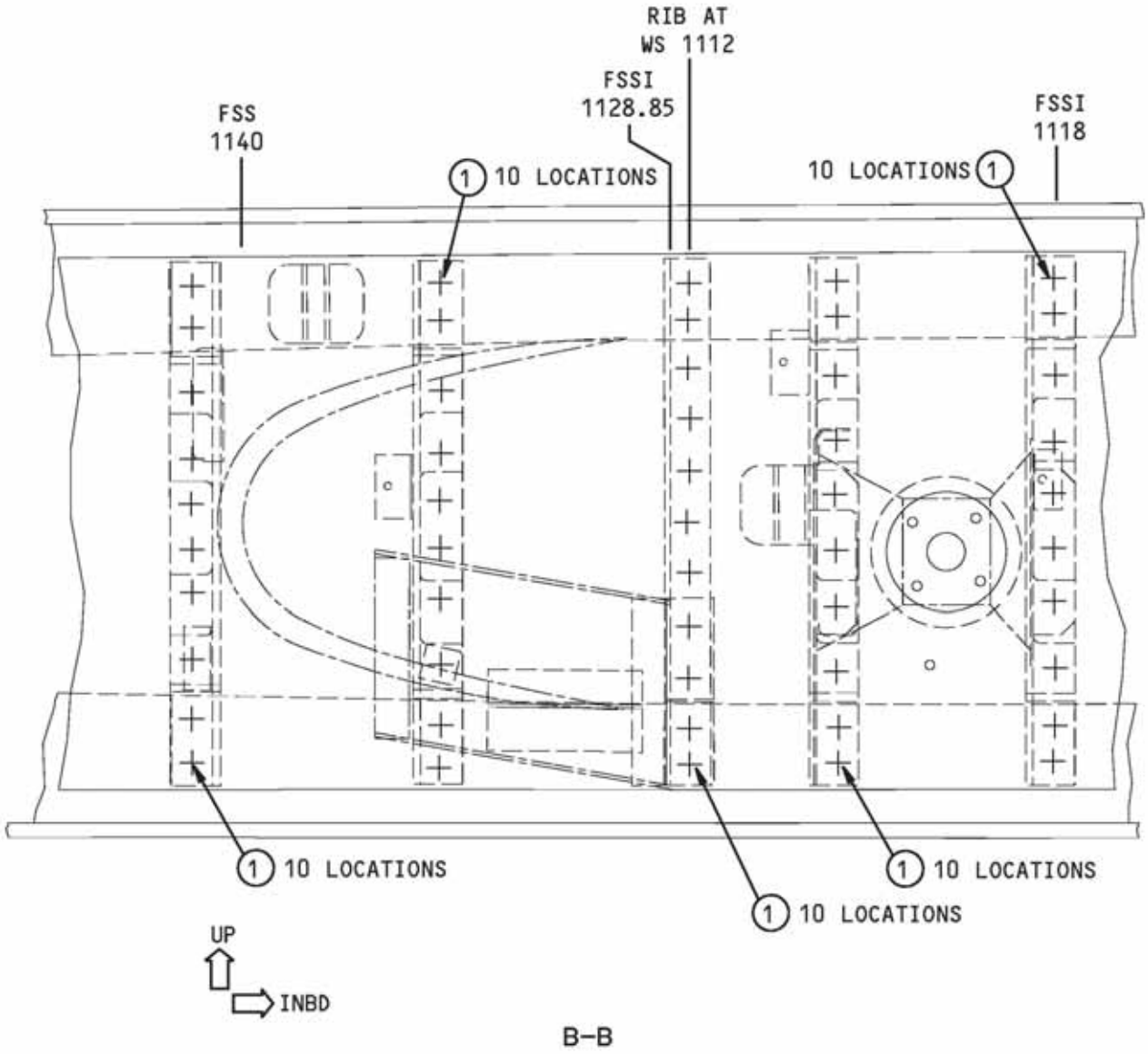



**FIGURE 25: FRONT SPAR - NUMBER ONE AND NUMBER TWO MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 3 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | FASTENERS | - | 62 | Get access. Find the location of the fasteners that must be sealed. |

**FIGURE 25: FRONT SPAR - NUMBER ONE AND NUMBER TWO MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 4 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 1-9, 16-45.**

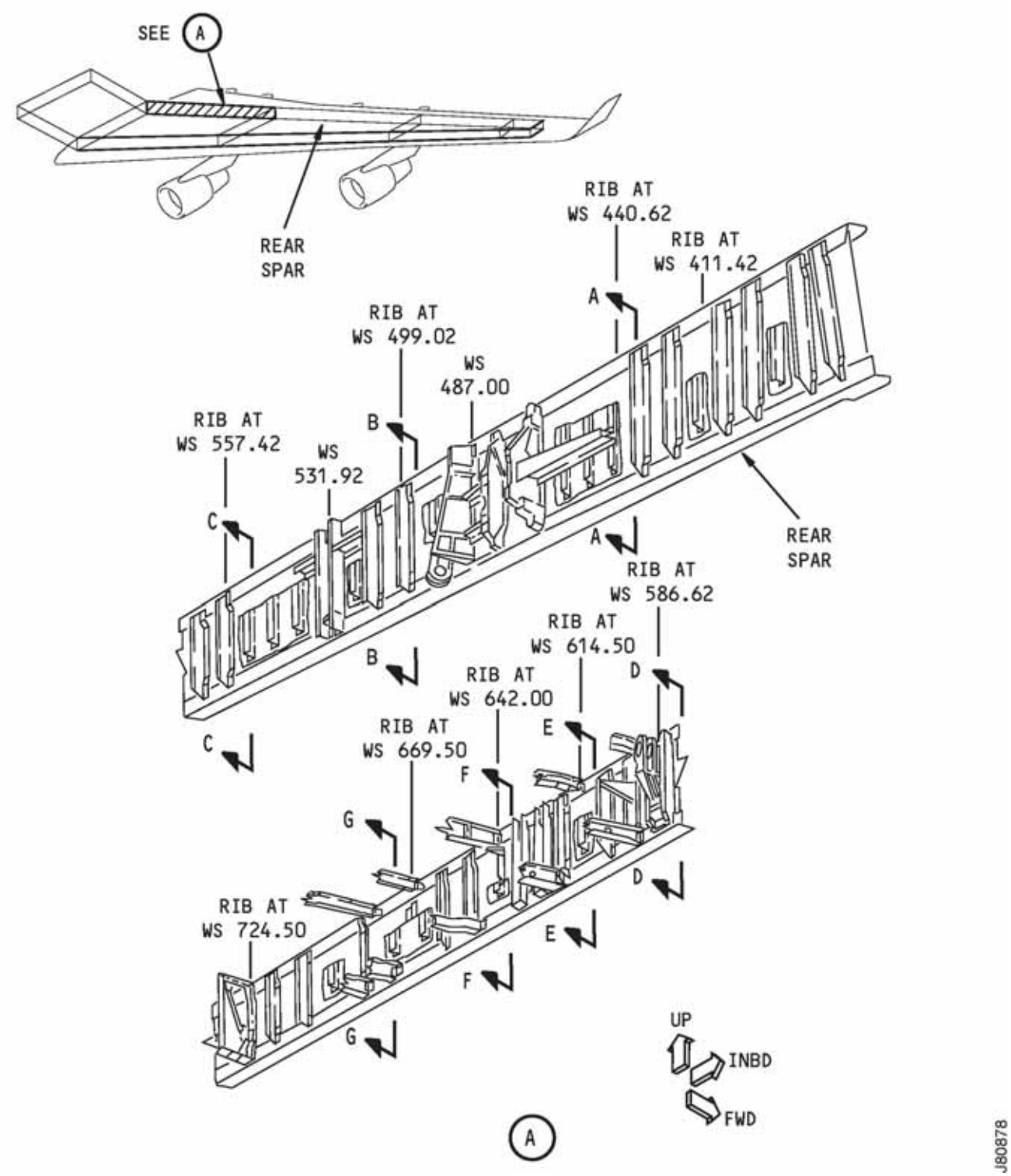



**FIGURE 26: REAR SPAR - NUMBER ONE AND NUMBER TWO MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 1 OF 9)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

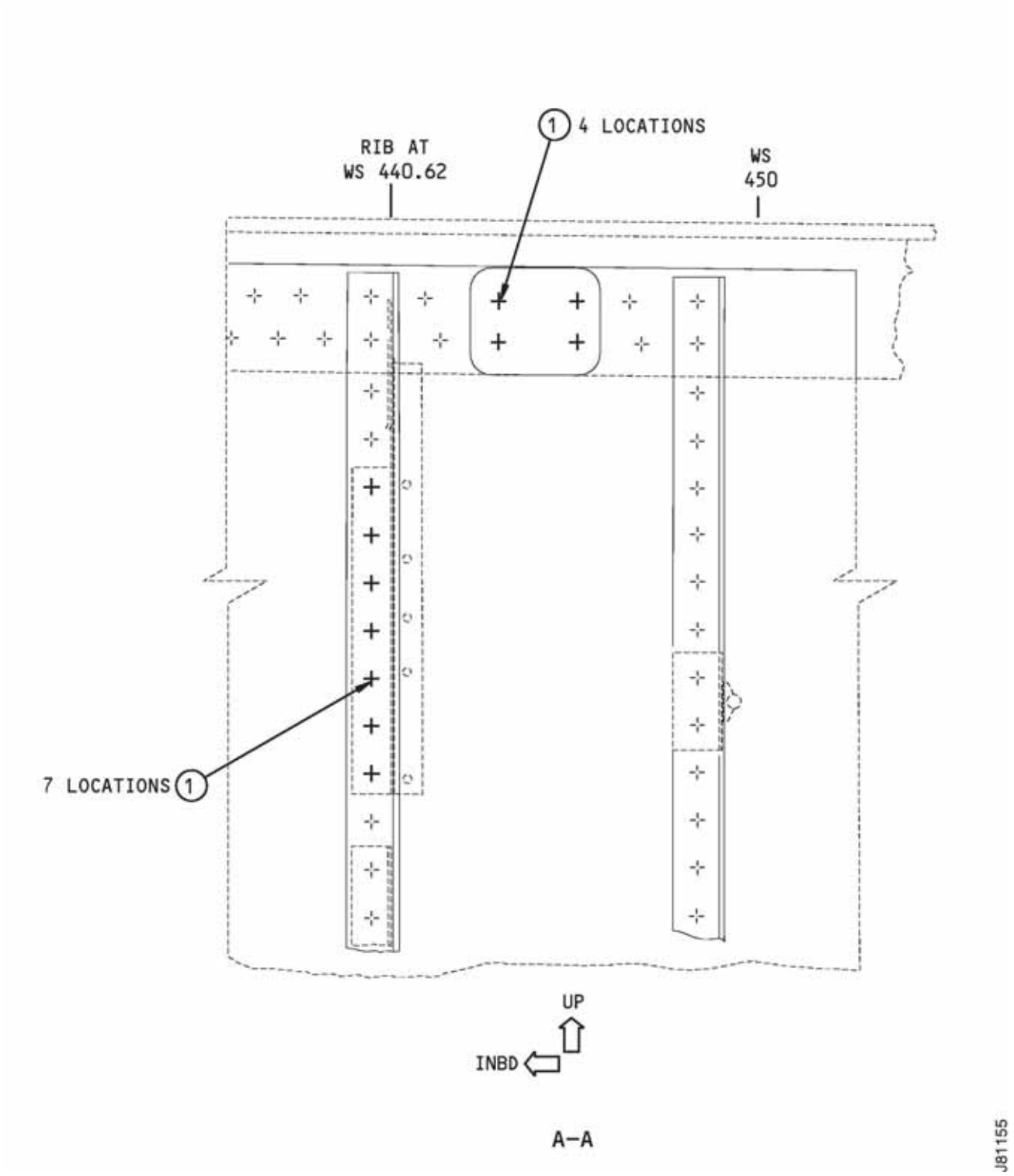



**FIGURE 26: REAR SPAR - NUMBER ONE AND NUMBER TWO MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 2 OF 9)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

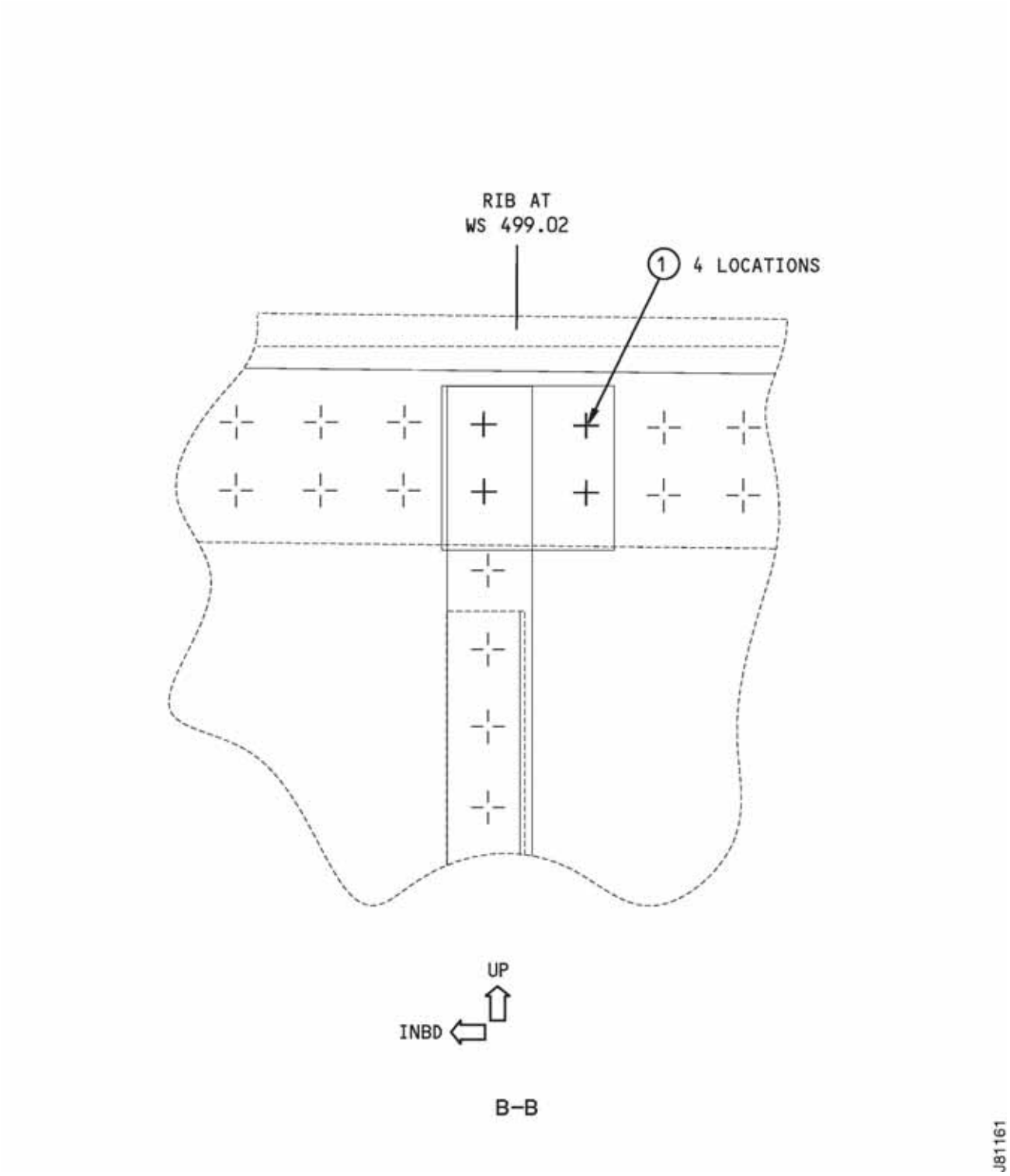



**FIGURE 26: REAR SPAR - NUMBER ONE AND NUMBER TWO MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 3 OF 9)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

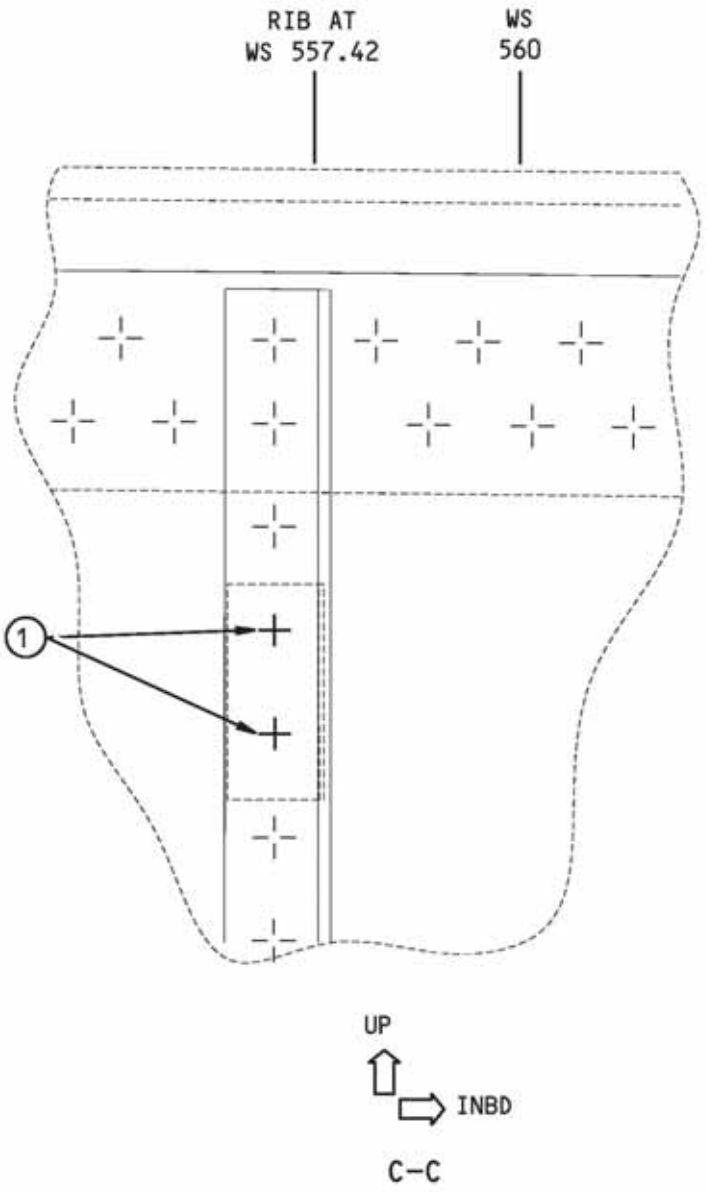



**FIGURE 26: REAR SPAR - NUMBER ONE AND NUMBER TWO MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 4 OF 9)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

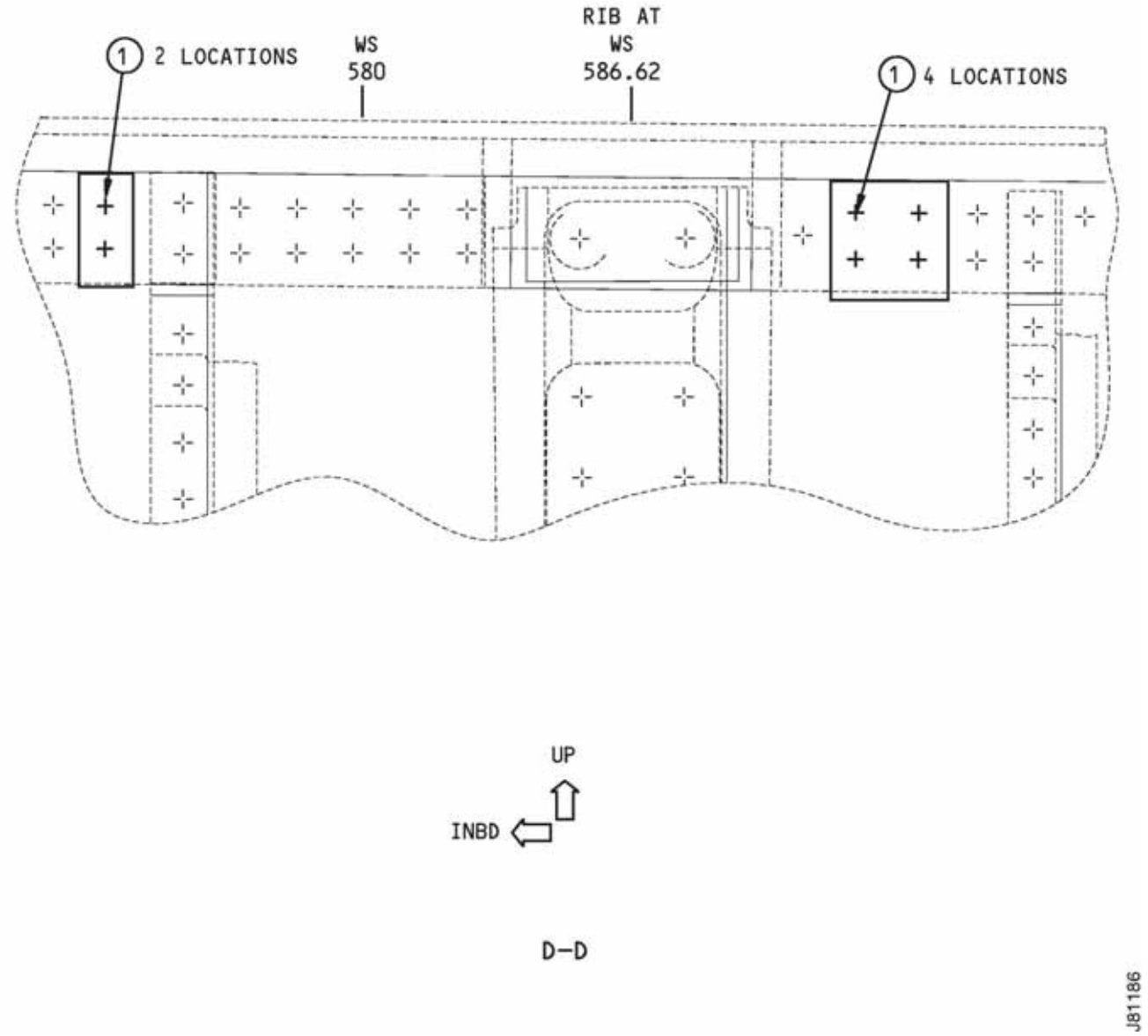



**FIGURE 26: REAR SPAR - NUMBER ONE AND NUMBER TWO MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 5 OF 9)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

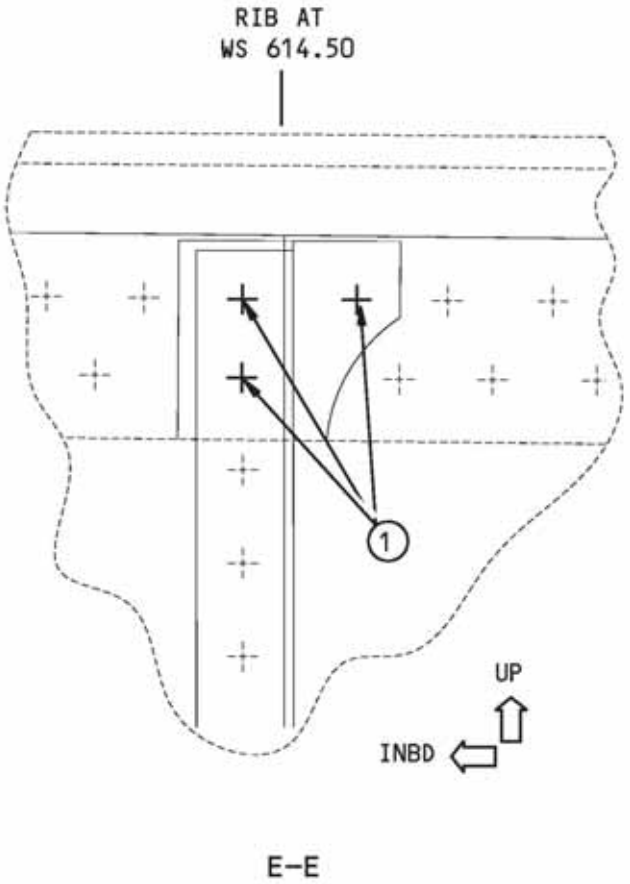



**FIGURE 26: REAR SPAR - NUMBER ONE AND NUMBER TWO MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 6 OF 9)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

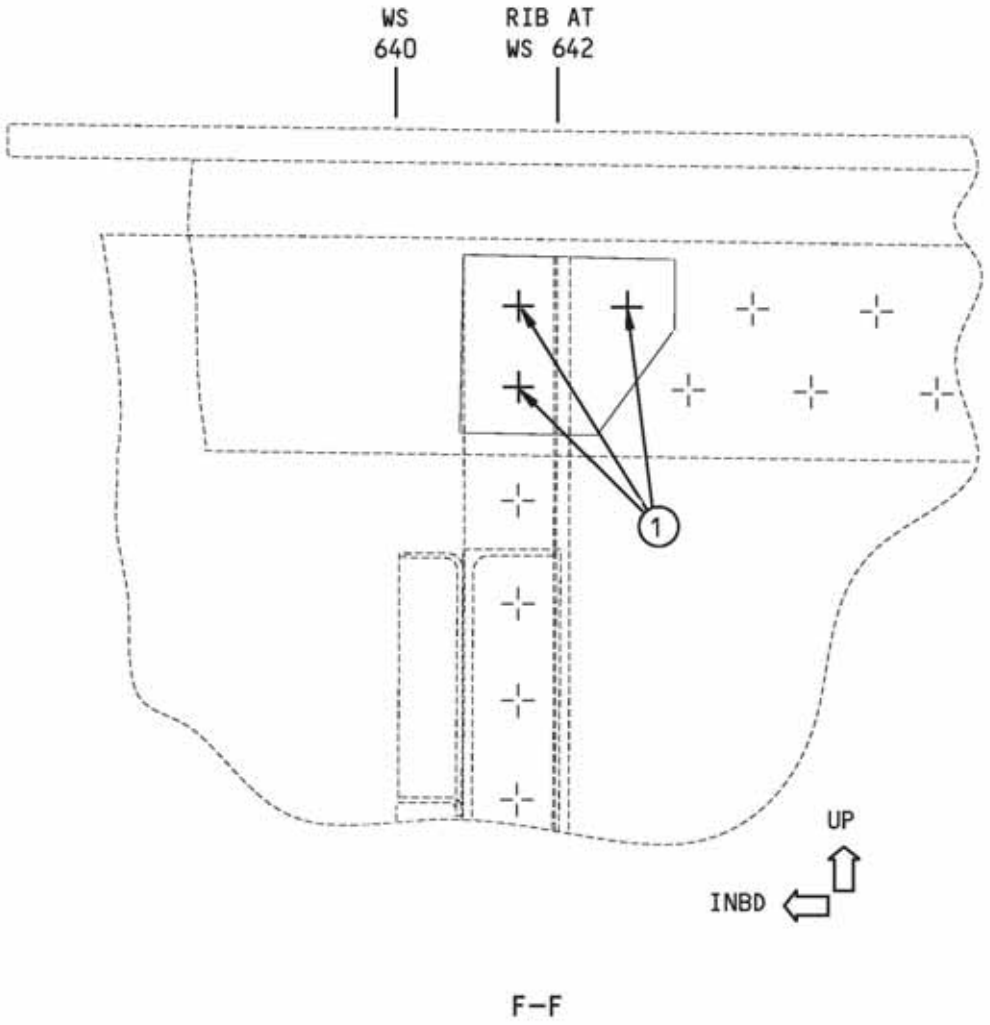



**FIGURE 26: REAR SPAR - NUMBER ONE AND NUMBER TWO MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 7 OF 9)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

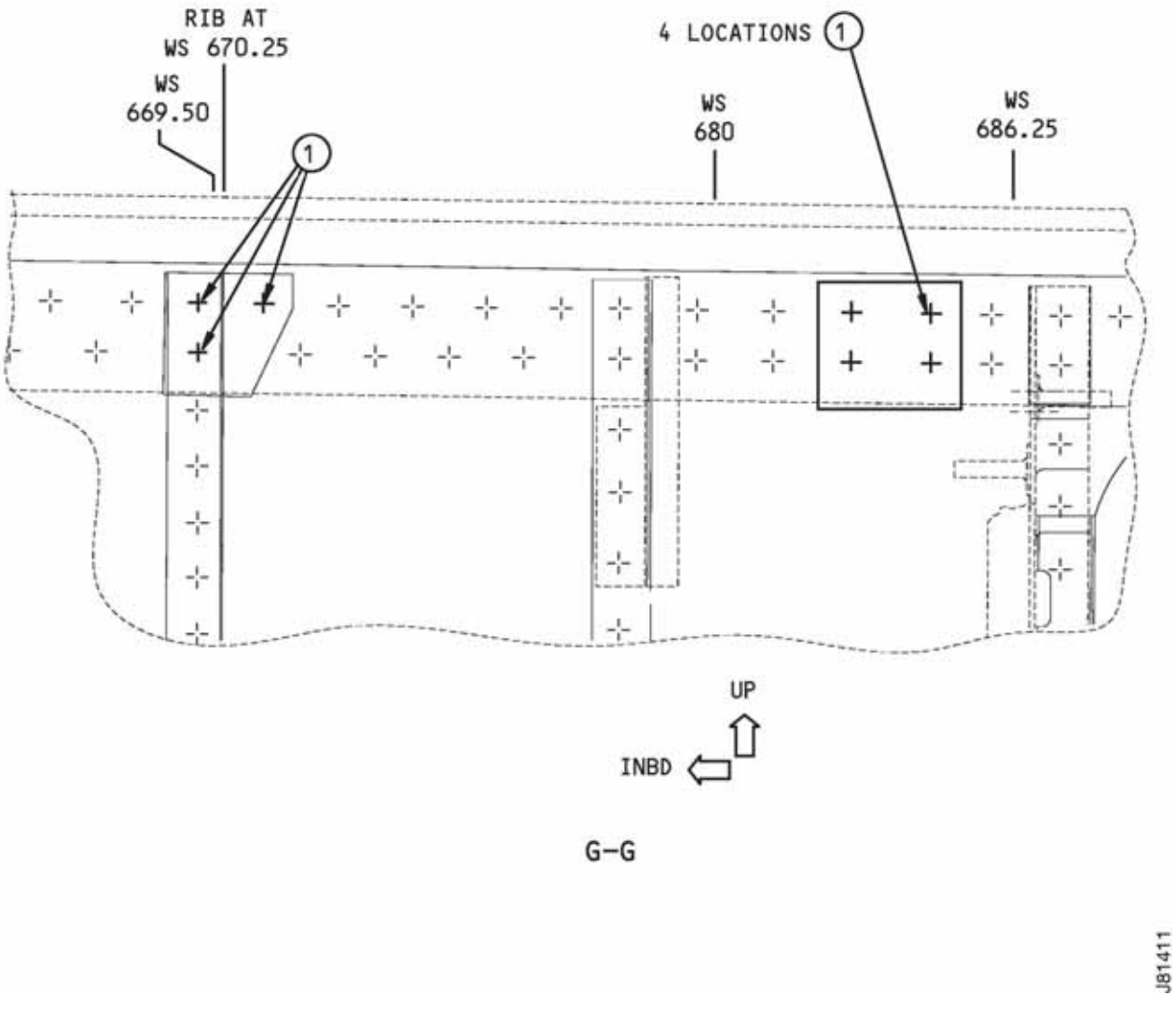



**FIGURE 26: REAR SPAR - NUMBER ONE AND NUMBER TWO MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 8 OF 9)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | FASTENERS | - | 36 | Get access. Find the location of the fasteners that must be sealed. |

**FIGURE 26: REAR SPAR - NUMBER ONE AND NUMBER TWO MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 9 OF 9)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 1-9, 16-45.**

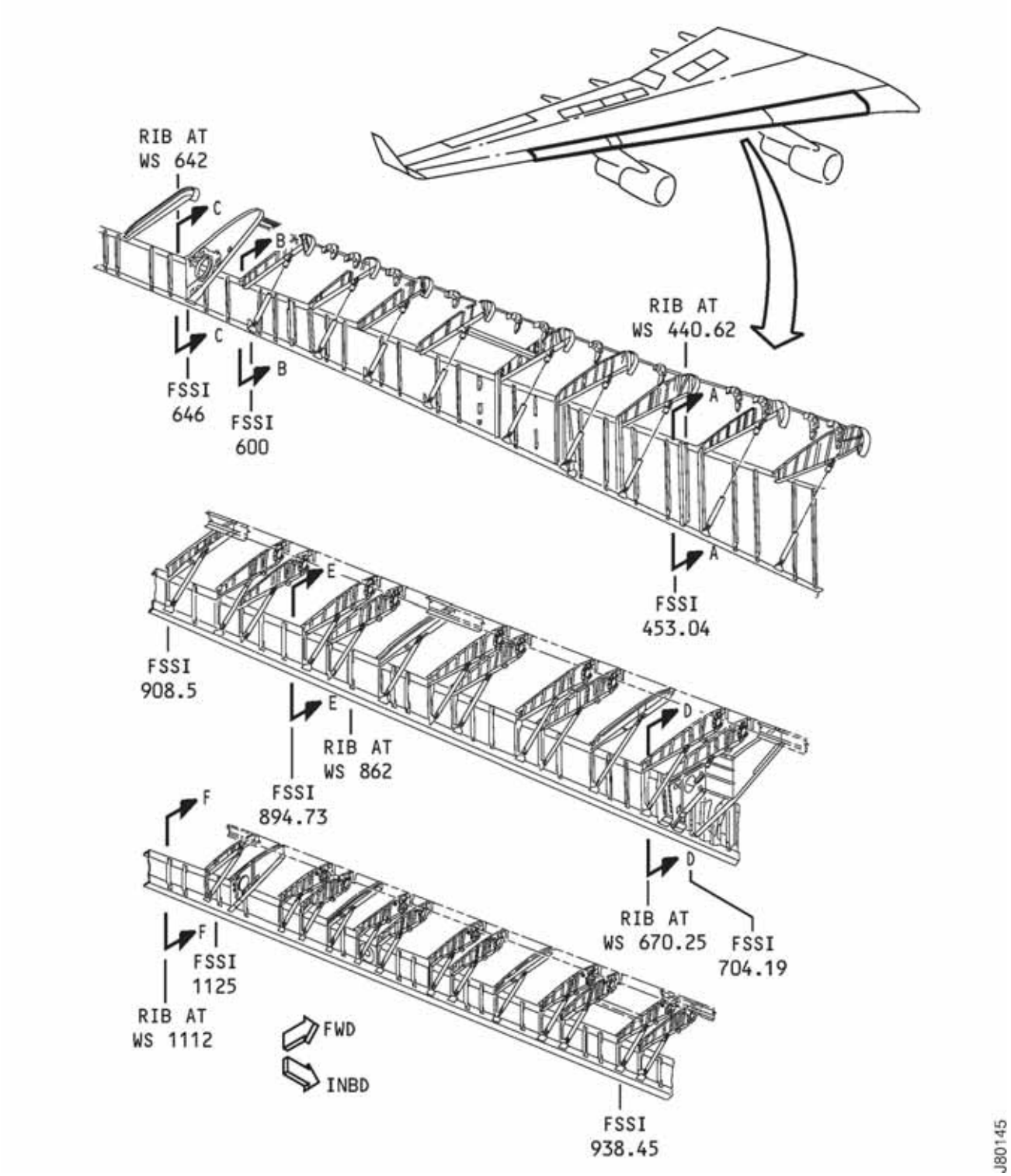



**FIGURE 27: FRONT SPAR - NUMBER THREE AND NUMBER FOUR MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 1 OF 8)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

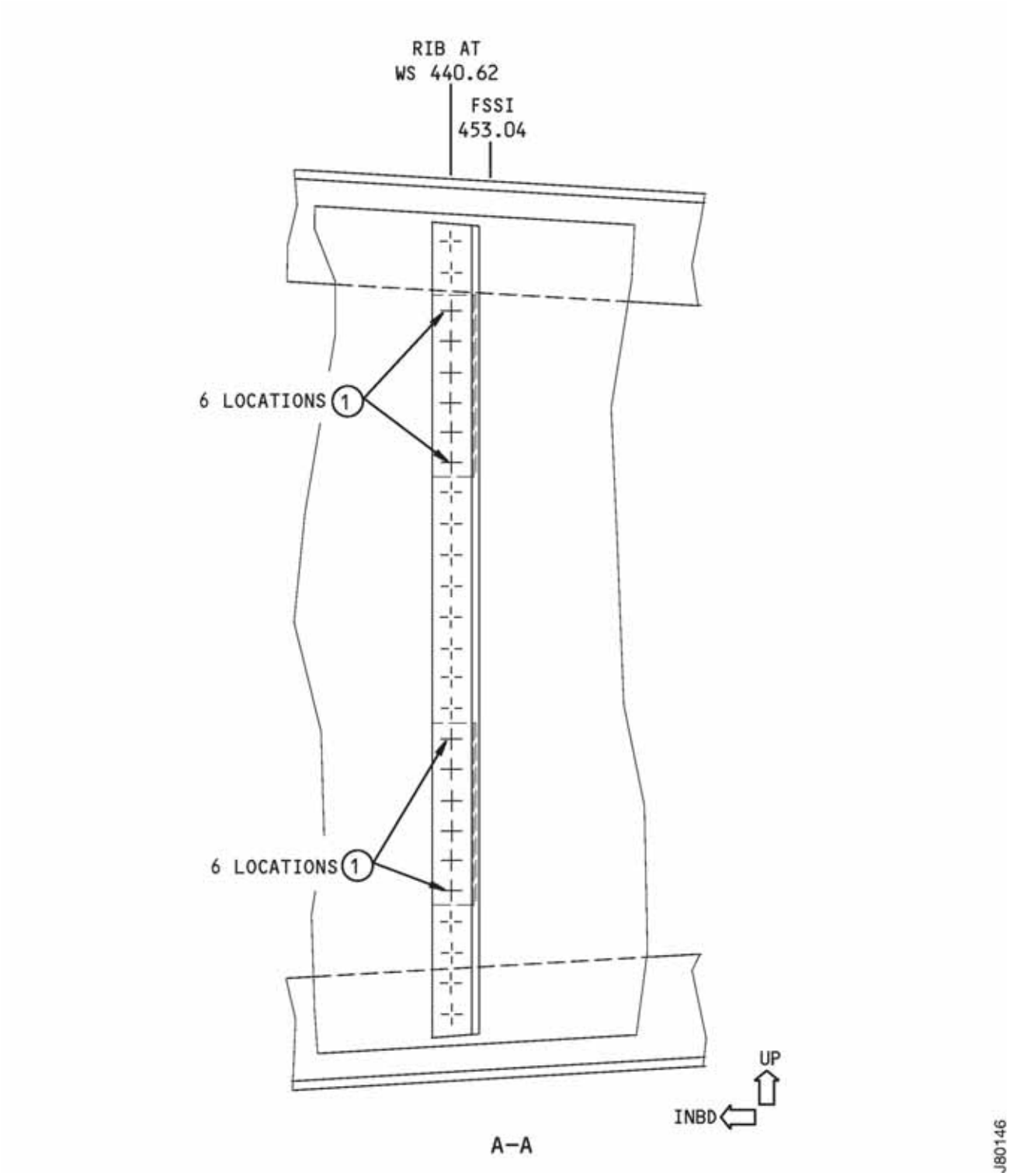



**FIGURE 27: FRONT SPAR - NUMBER THREE AND NUMBER FOUR MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 2 OF 8)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

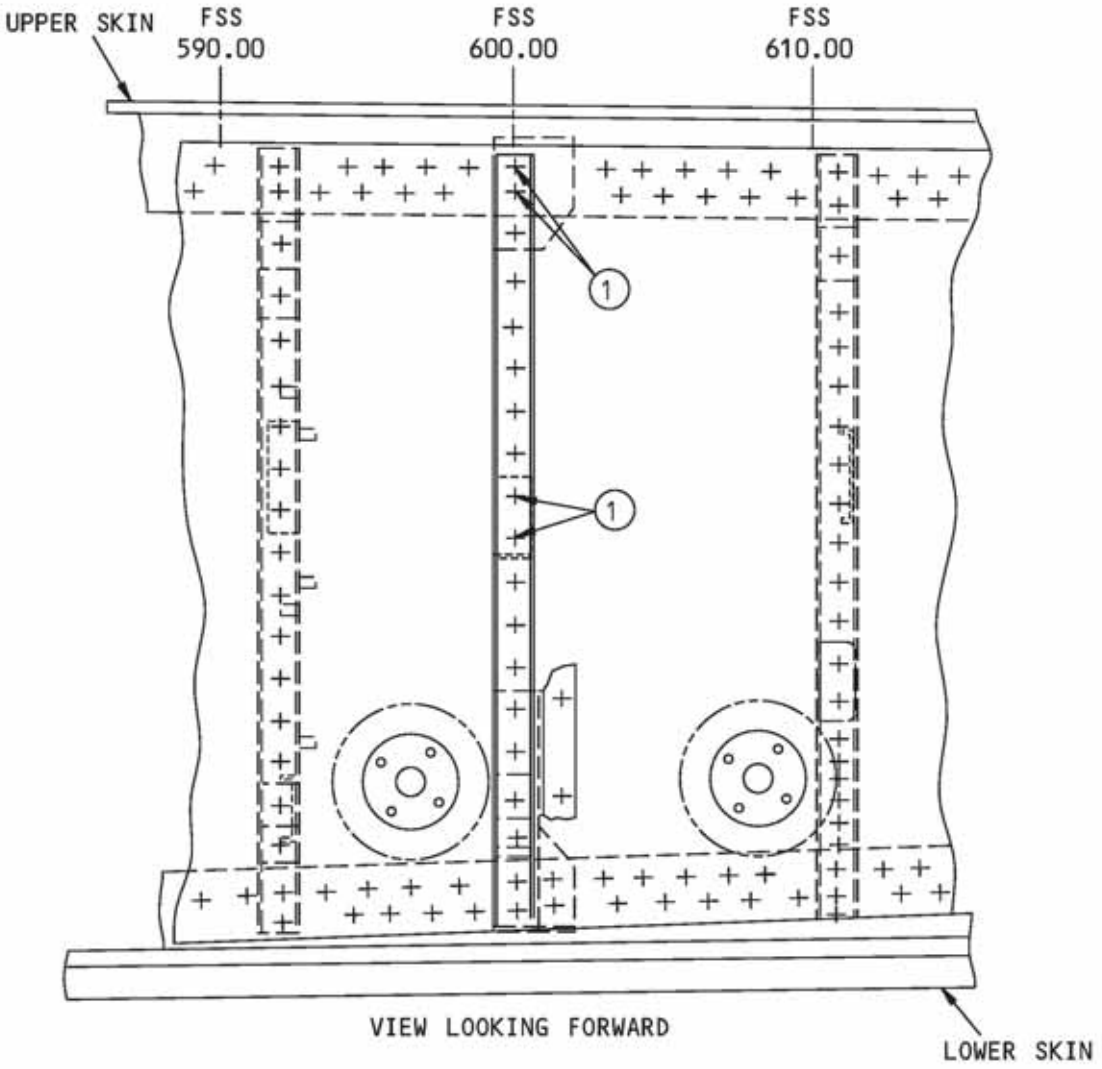



**FIGURE 27: FRONT SPAR - NUMBER THREE AND NUMBER FOUR MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 3 OF 8)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

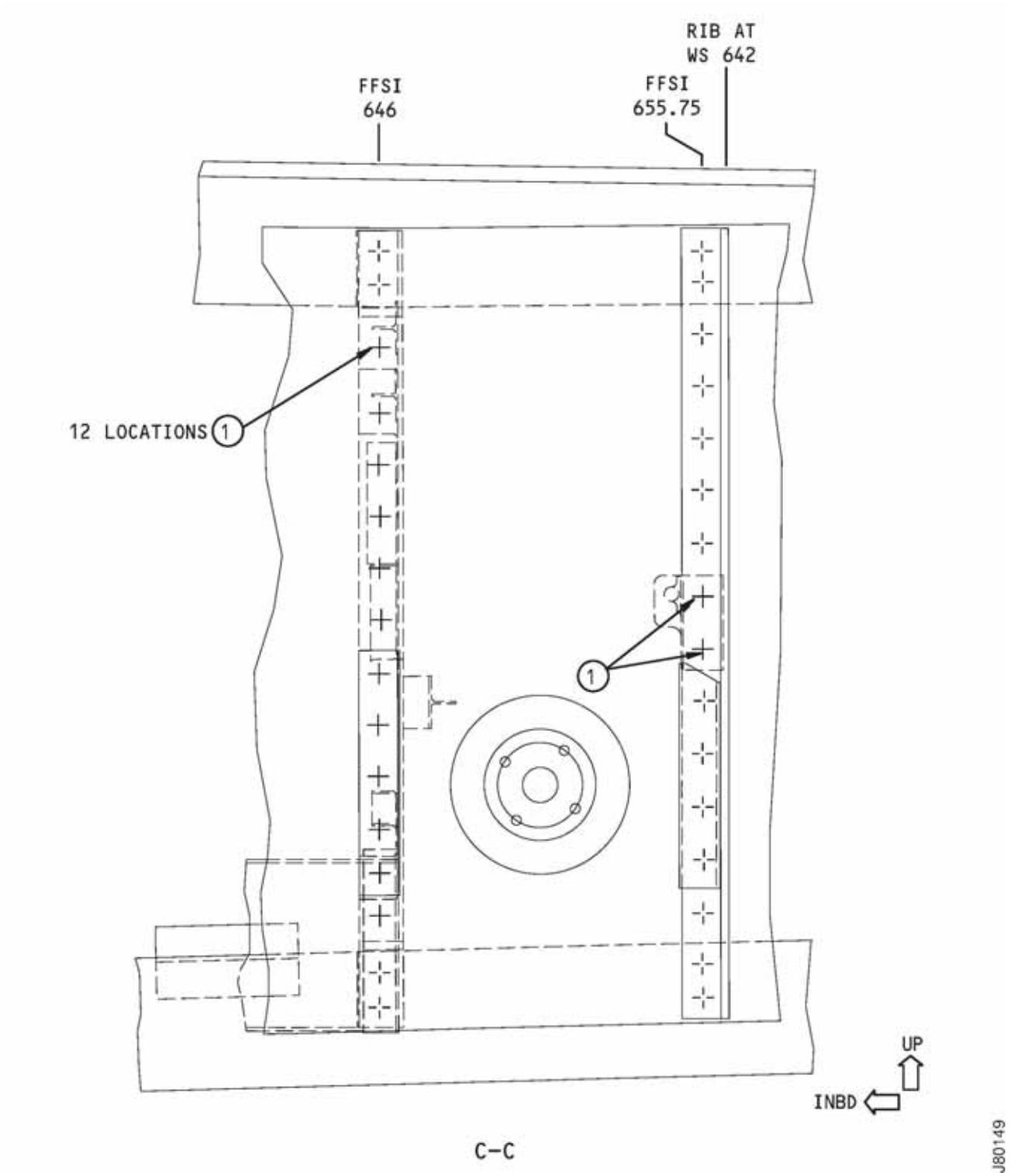



**FIGURE 27: FRONT SPAR - NUMBER THREE AND NUMBER FOUR MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 4 OF 8)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

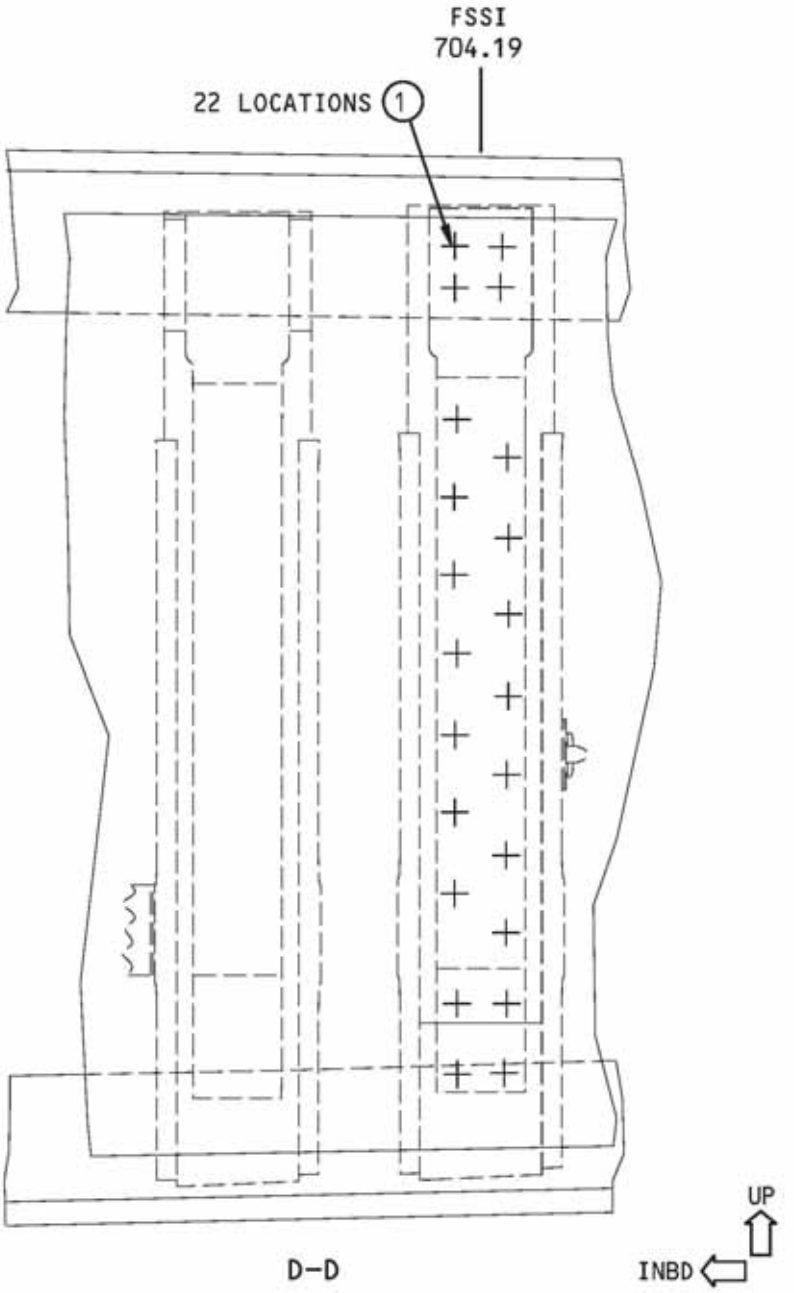



**FIGURE 27: FRONT SPAR - NUMBER THREE AND NUMBER FOUR MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 5 OF 8)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

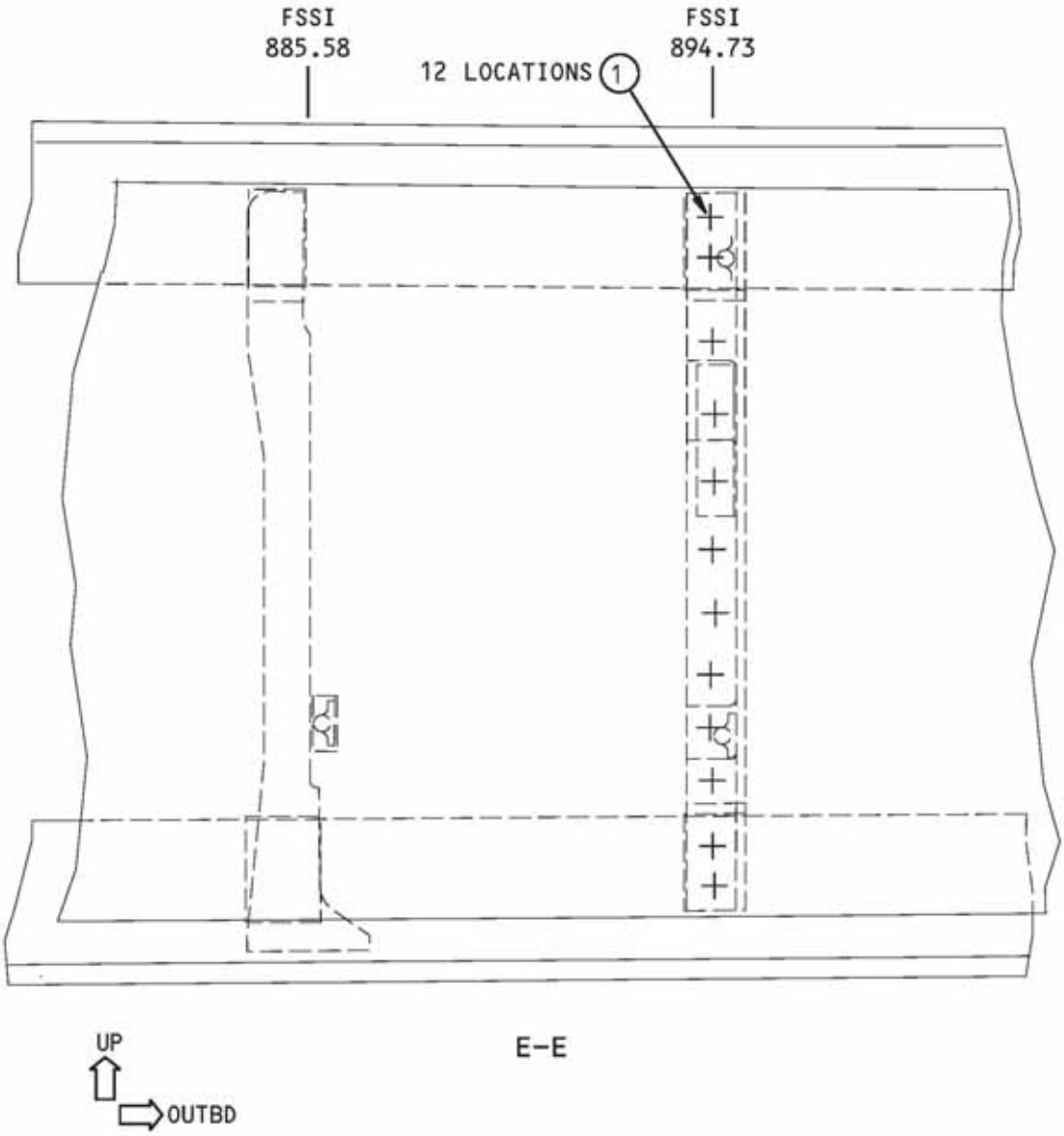



**FIGURE 27: FRONT SPAR - NUMBER THREE AND NUMBER FOUR MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 6 OF 8)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

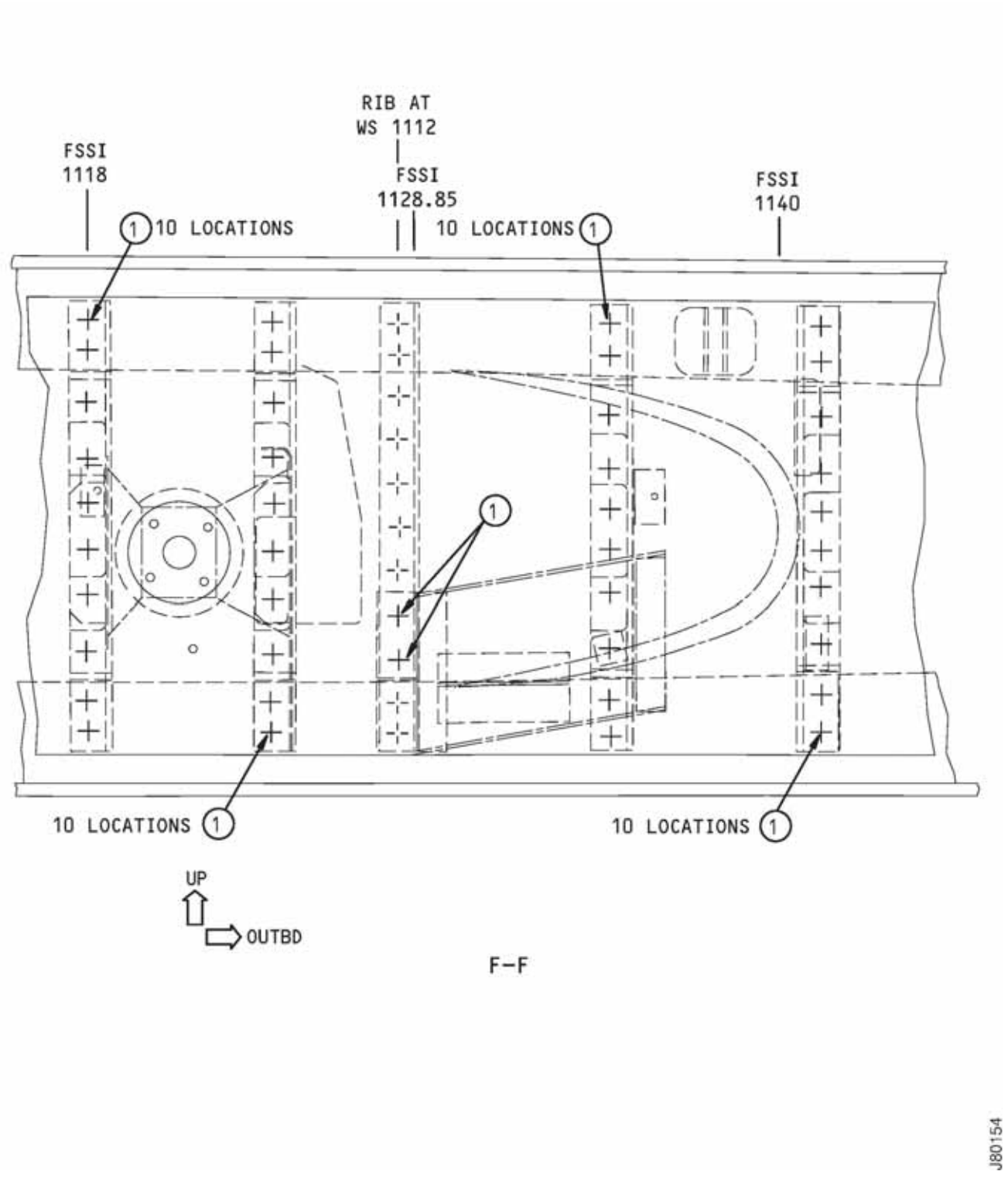



**FIGURE 27: FRONT SPAR - NUMBER THREE AND NUMBER FOUR MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 7 OF 8)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | FASTENERS | - | 106 | Get access. Find the location of the fasteners that must be sealed. |

**FIGURE 27: FRONT SPAR - NUMBER THREE AND NUMBER FOUR MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 8 OF 8)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 10-15.**

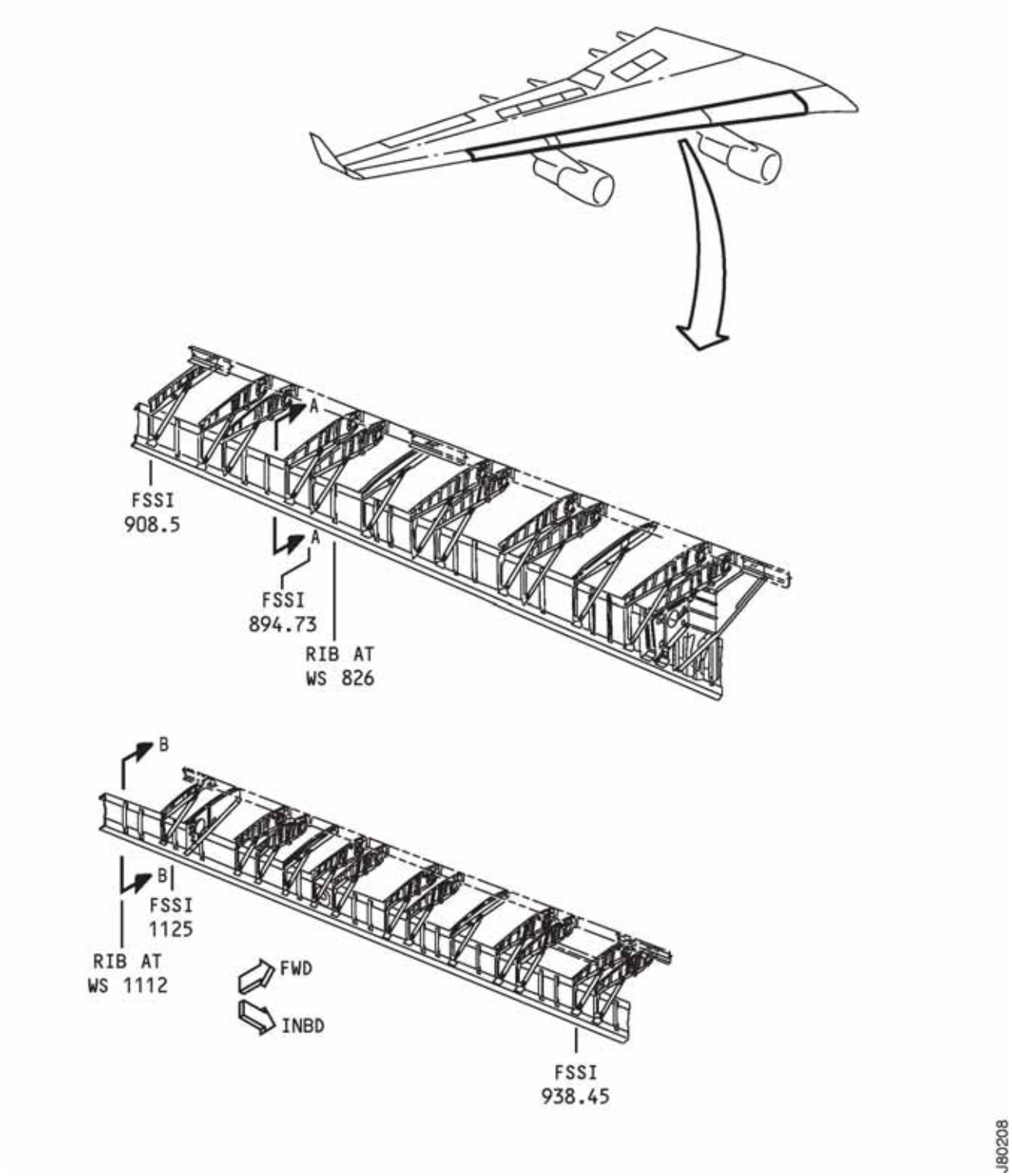



**FIGURE 28: FRONT SPAR - NUMBER THREE AND NUMBER FOUR MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 1 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

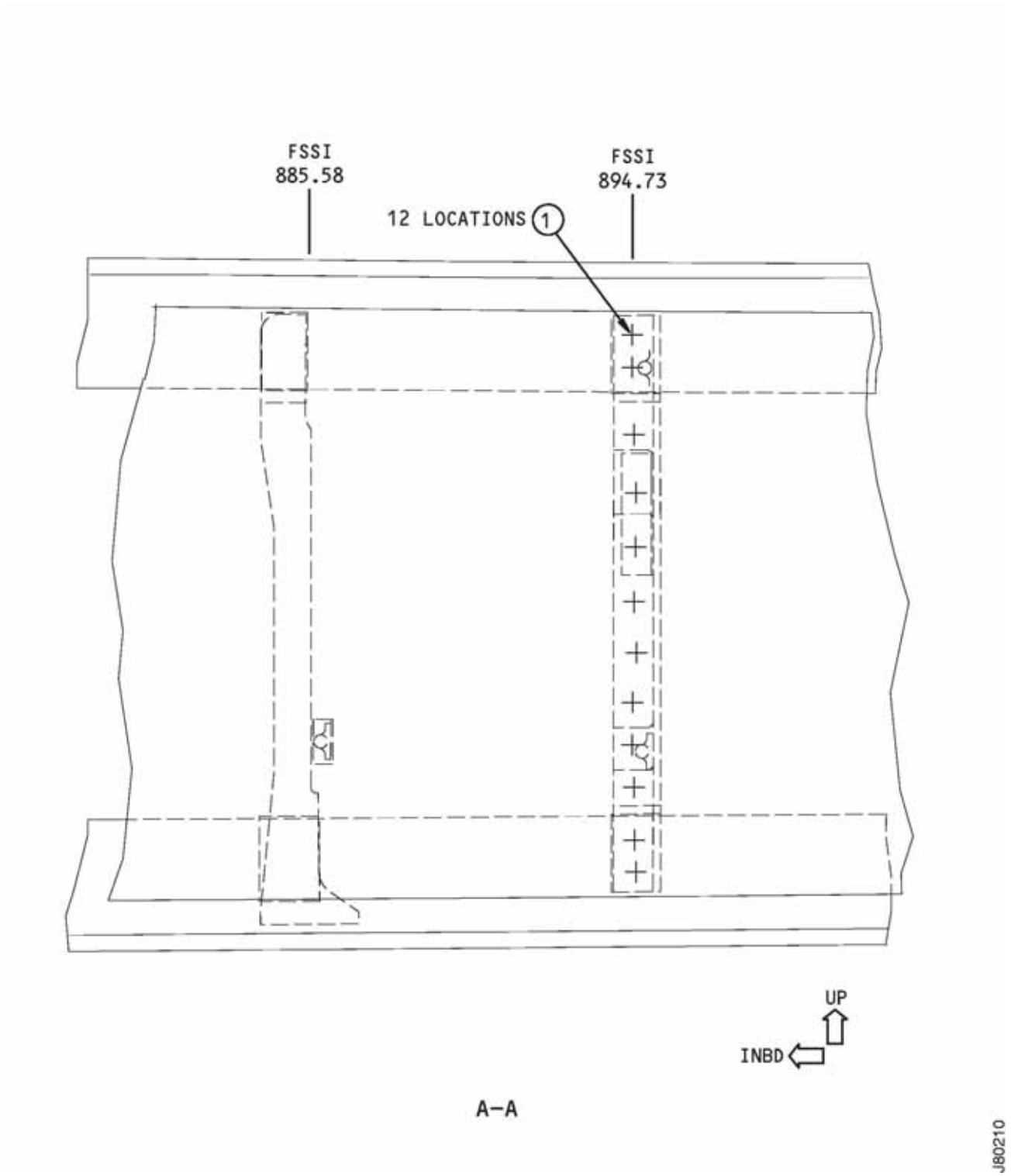



**FIGURE 28: FRONT SPAR - NUMBER THREE AND NUMBER FOUR MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 2 OF 4)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

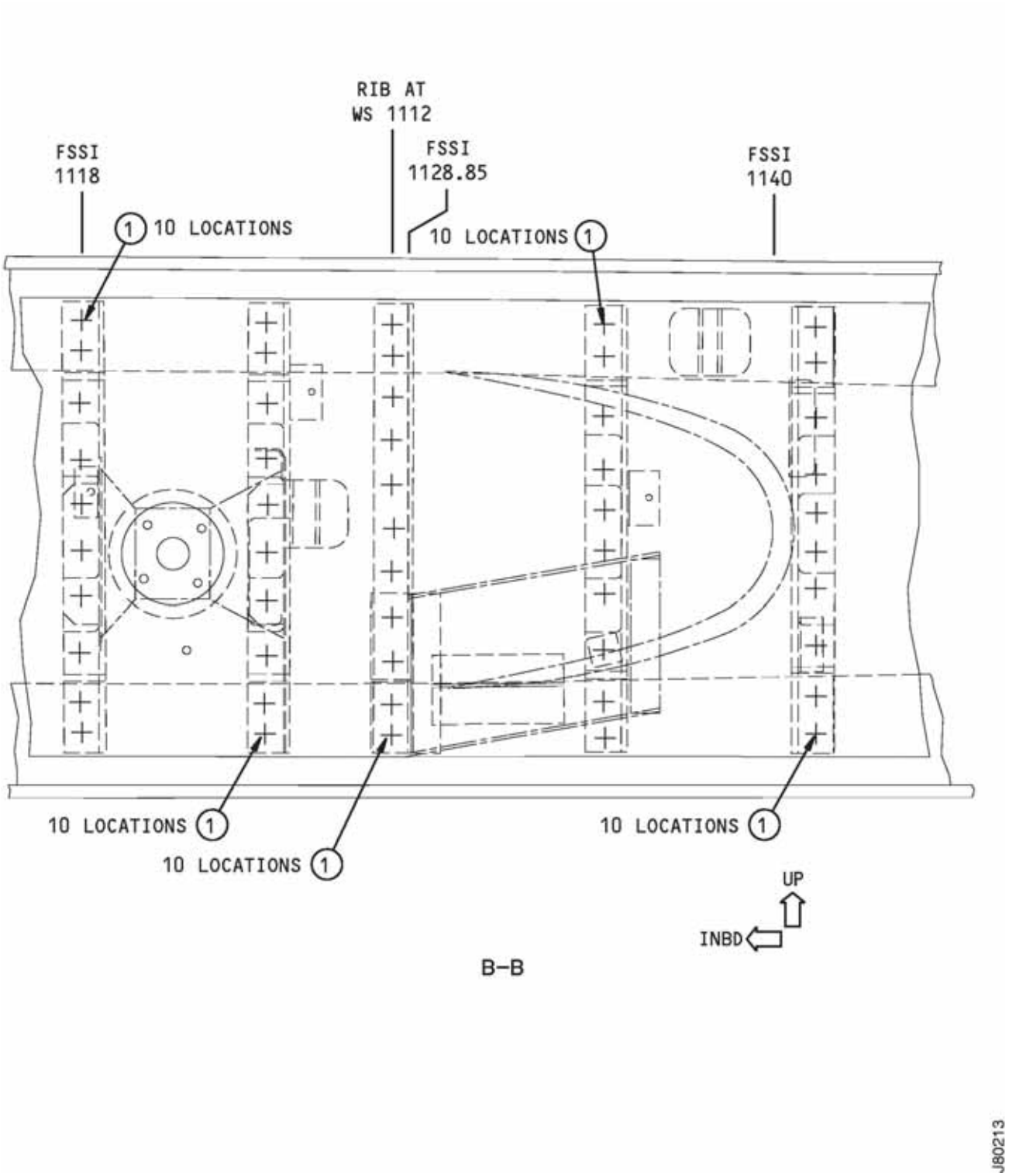



**FIGURE 28: FRONT SPAR - NUMBER THREE AND NUMBER FOUR MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 3 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | FASTENERS | - | 62 | Get access. Find the location of the fasteners that must be sealed. |

**FIGURE 28: FRONT SPAR - NUMBER THREE AND NUMBER FOUR MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 4 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 1-9, 16-45.**

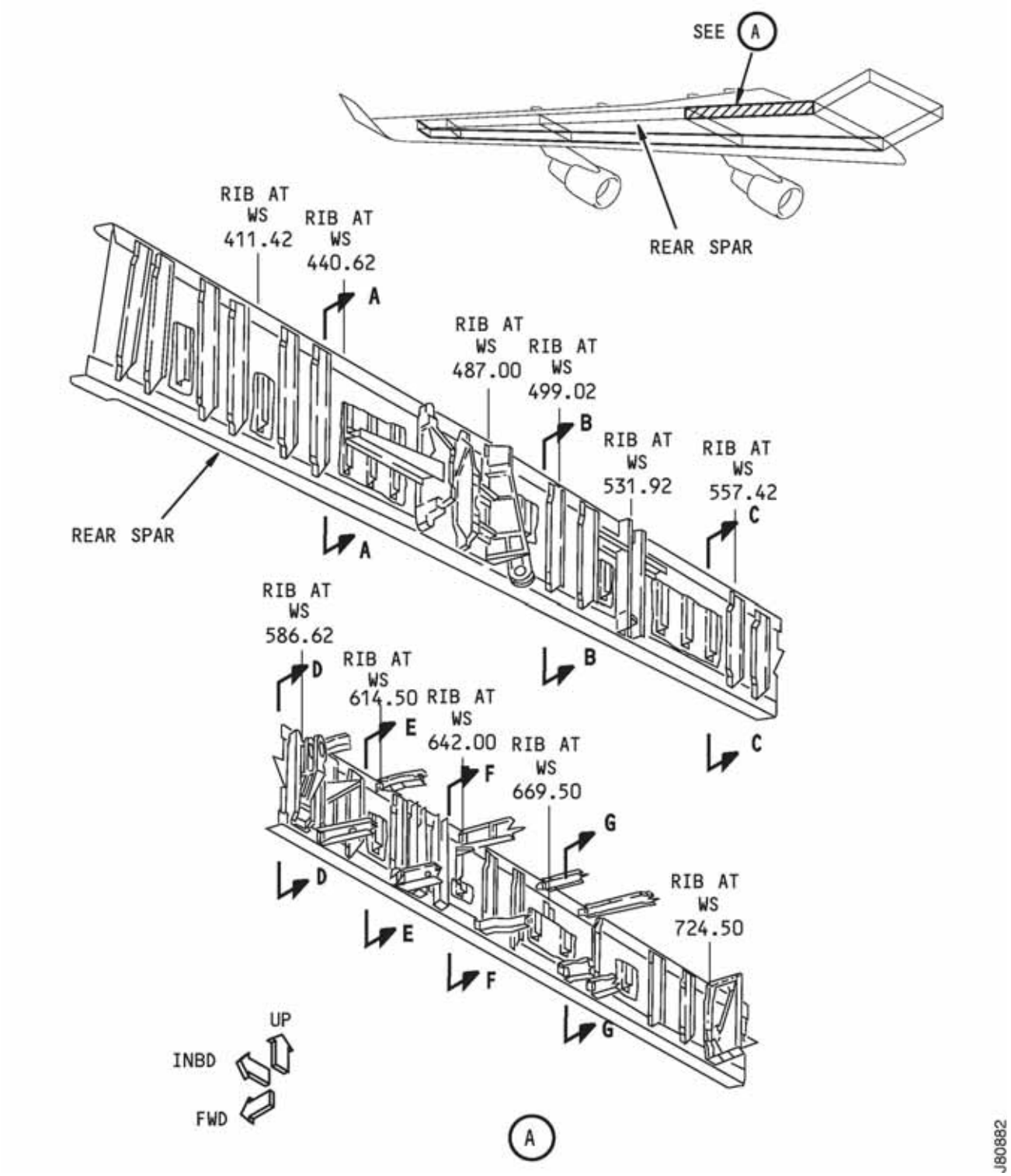



**FIGURE 29: REAR SPAR - NUMBER THREE AND NUMBER FOUR MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 1 OF 9)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

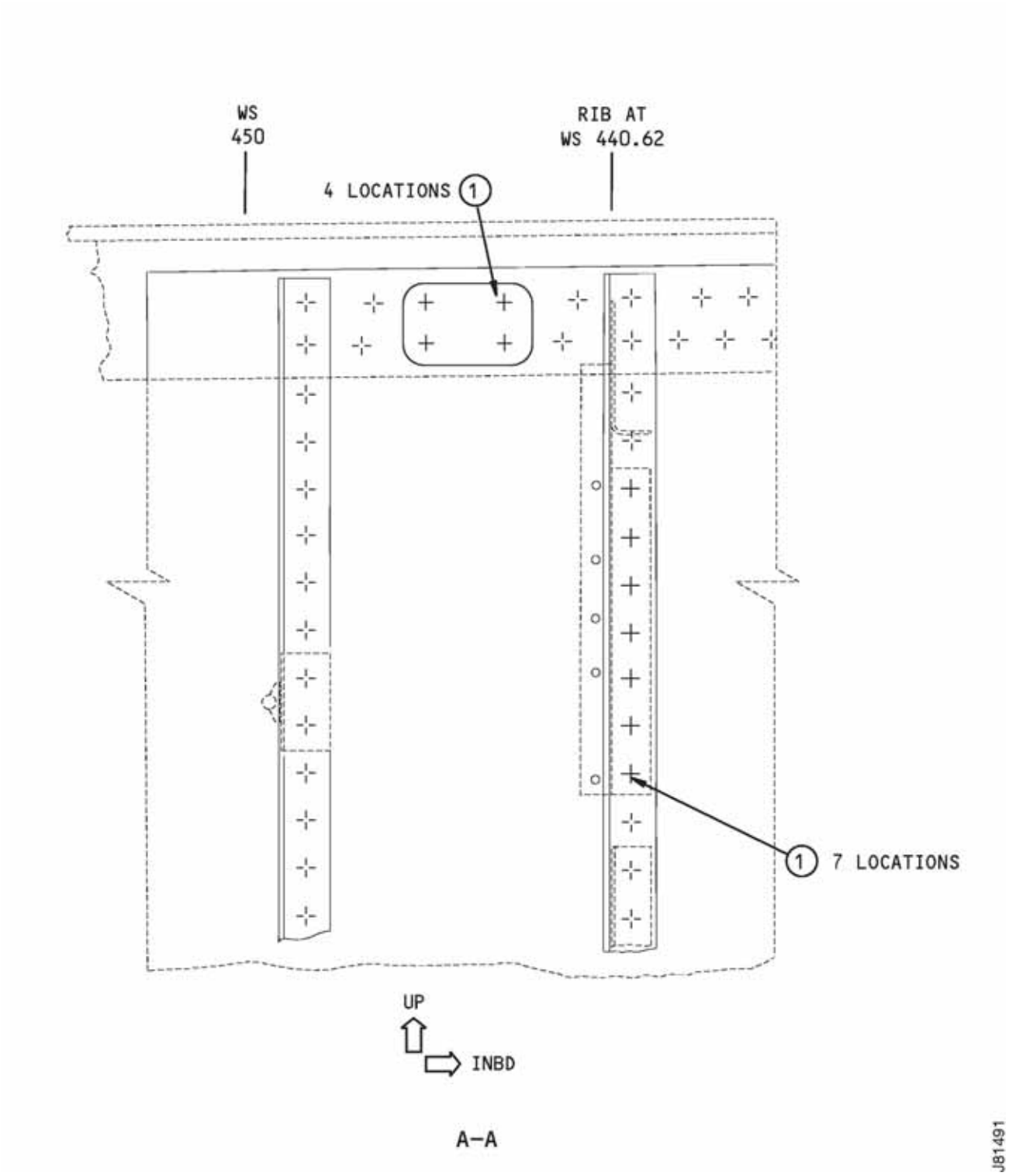



**FIGURE 29: REAR SPAR - NUMBER THREE AND NUMBER FOUR MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 2 OF 9)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

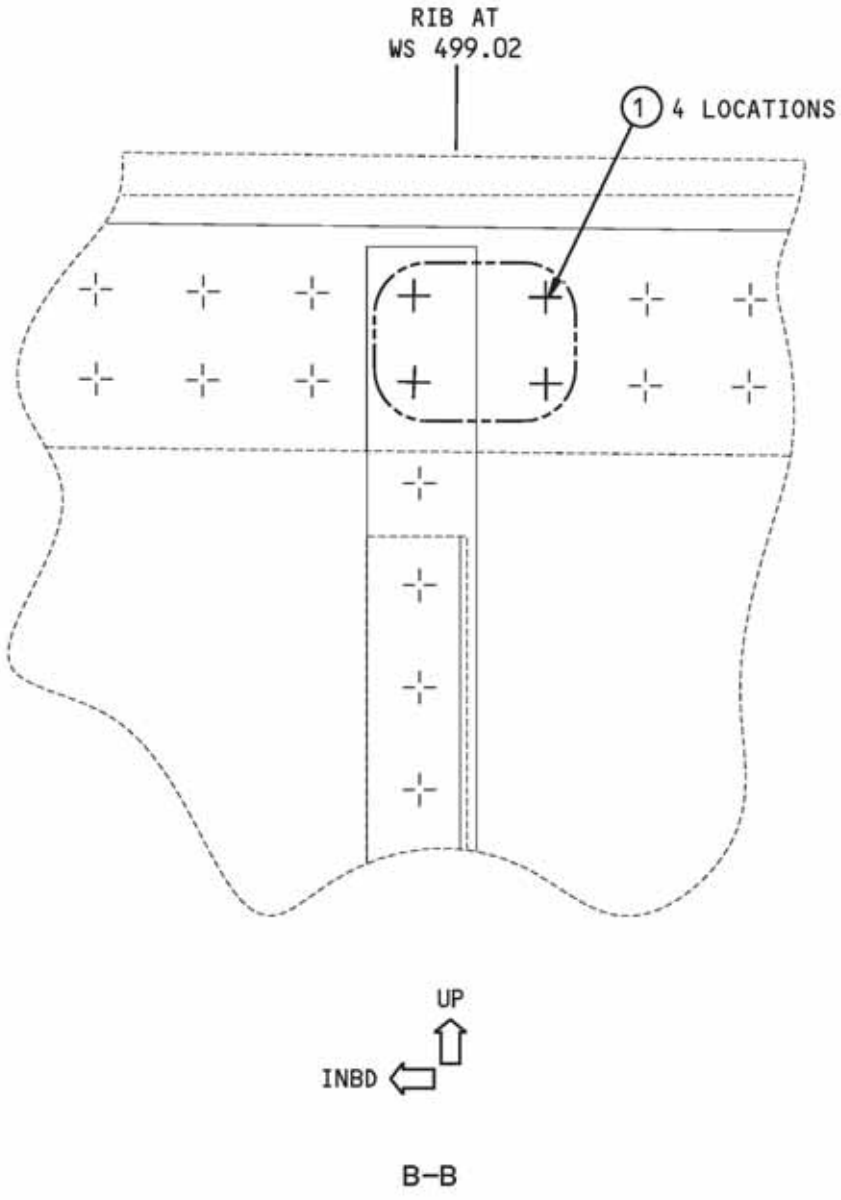



**FIGURE 29: REAR SPAR - NUMBER THREE AND NUMBER FOUR MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 3 OF 9)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

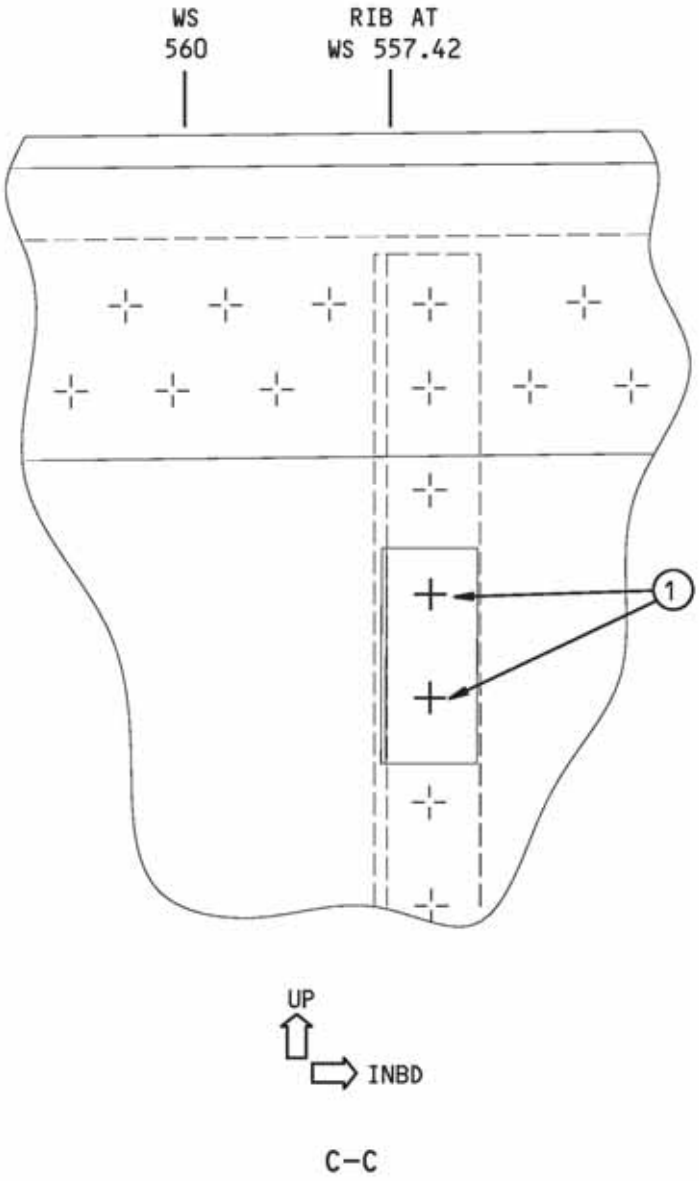



**FIGURE 29: REAR SPAR - NUMBER THREE AND NUMBER FOUR MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 4 OF 9)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

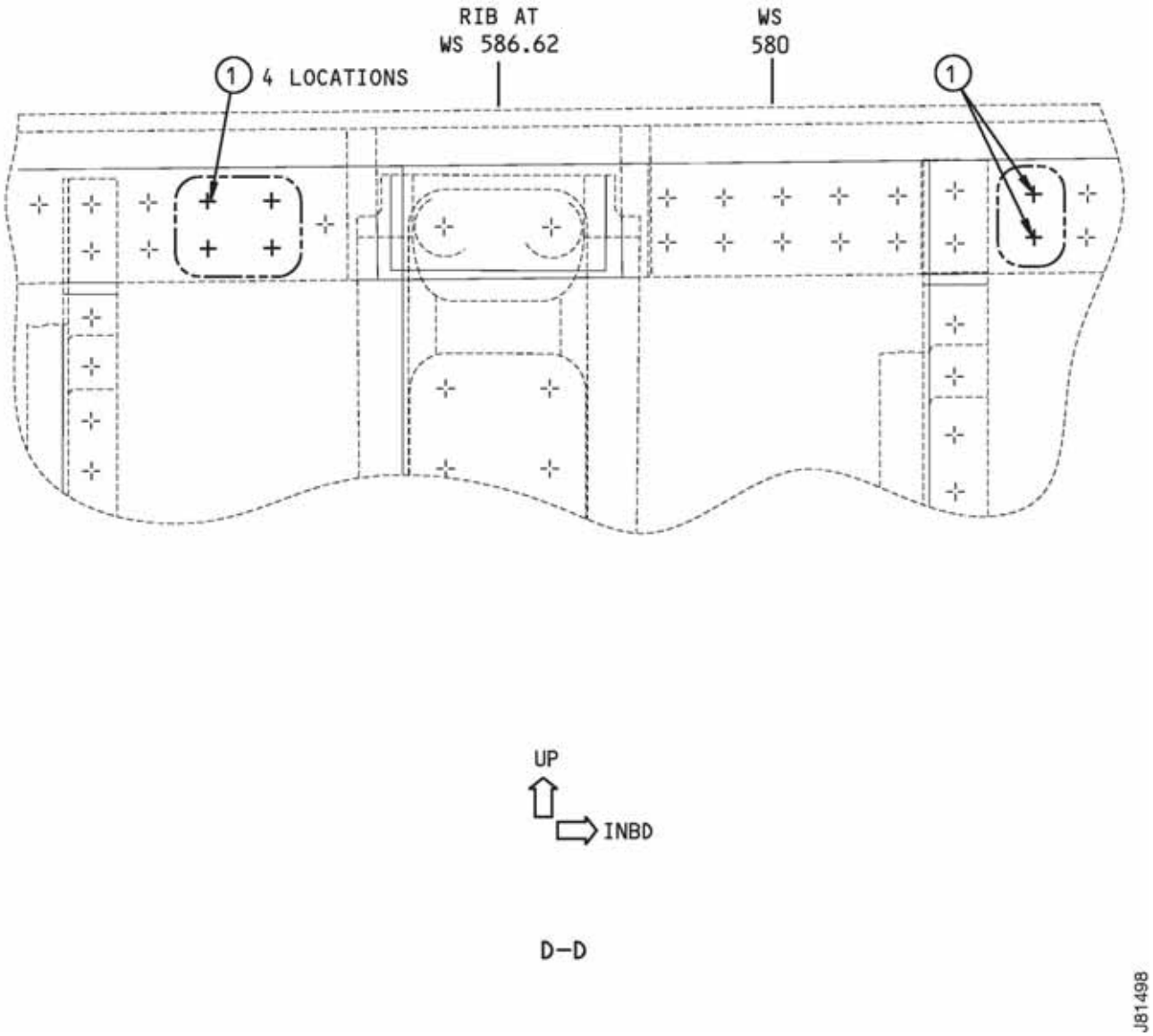



**FIGURE 29: REAR SPAR - NUMBER THREE AND NUMBER FOUR MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 5 OF 9)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

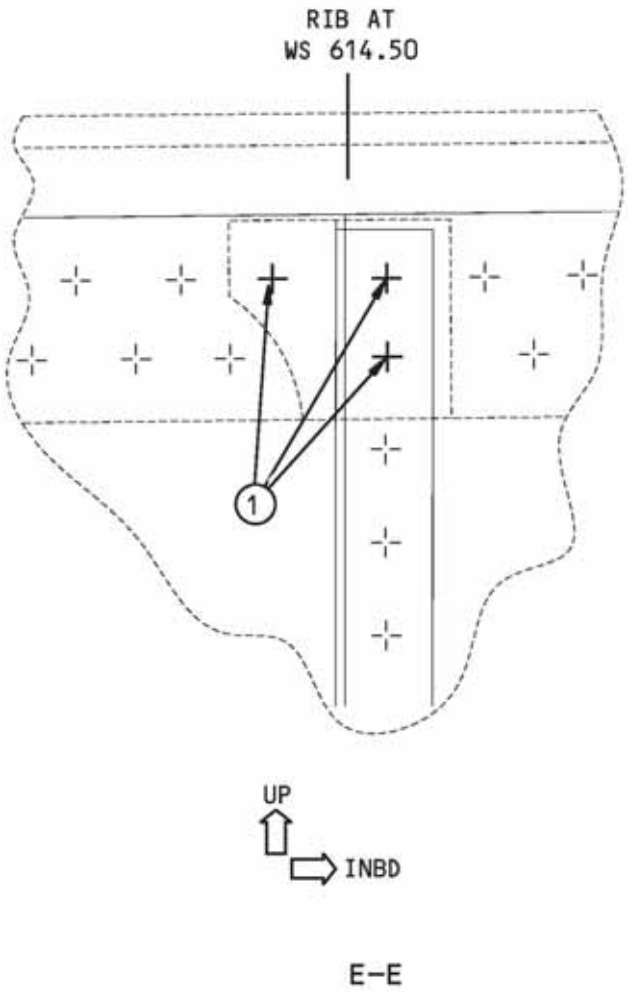



**FIGURE 29: REAR SPAR - NUMBER THREE AND NUMBER FOUR MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 6 OF 9)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

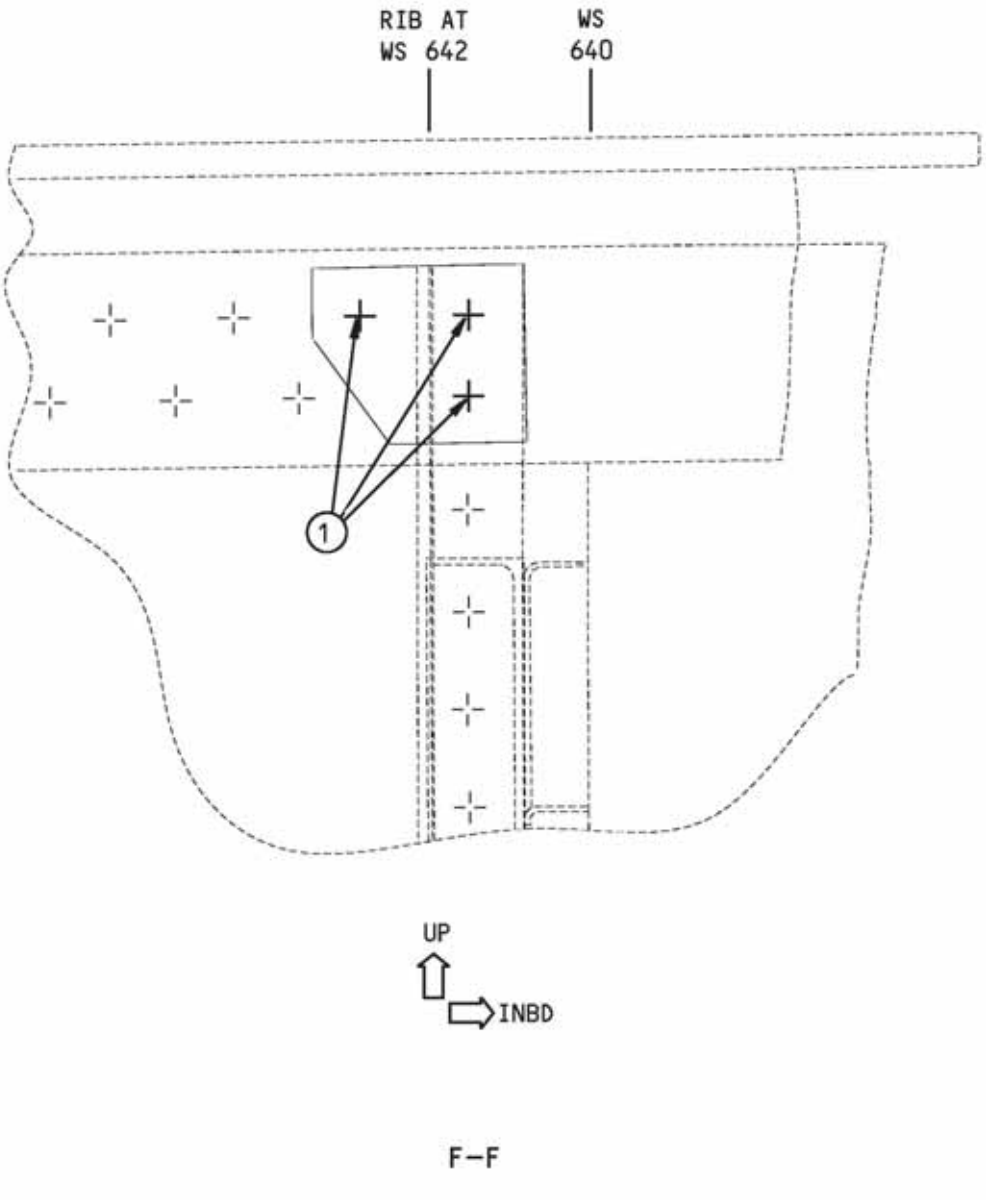



**FIGURE 29: REAR SPAR - NUMBER THREE AND NUMBER FOUR MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 7 OF 9)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

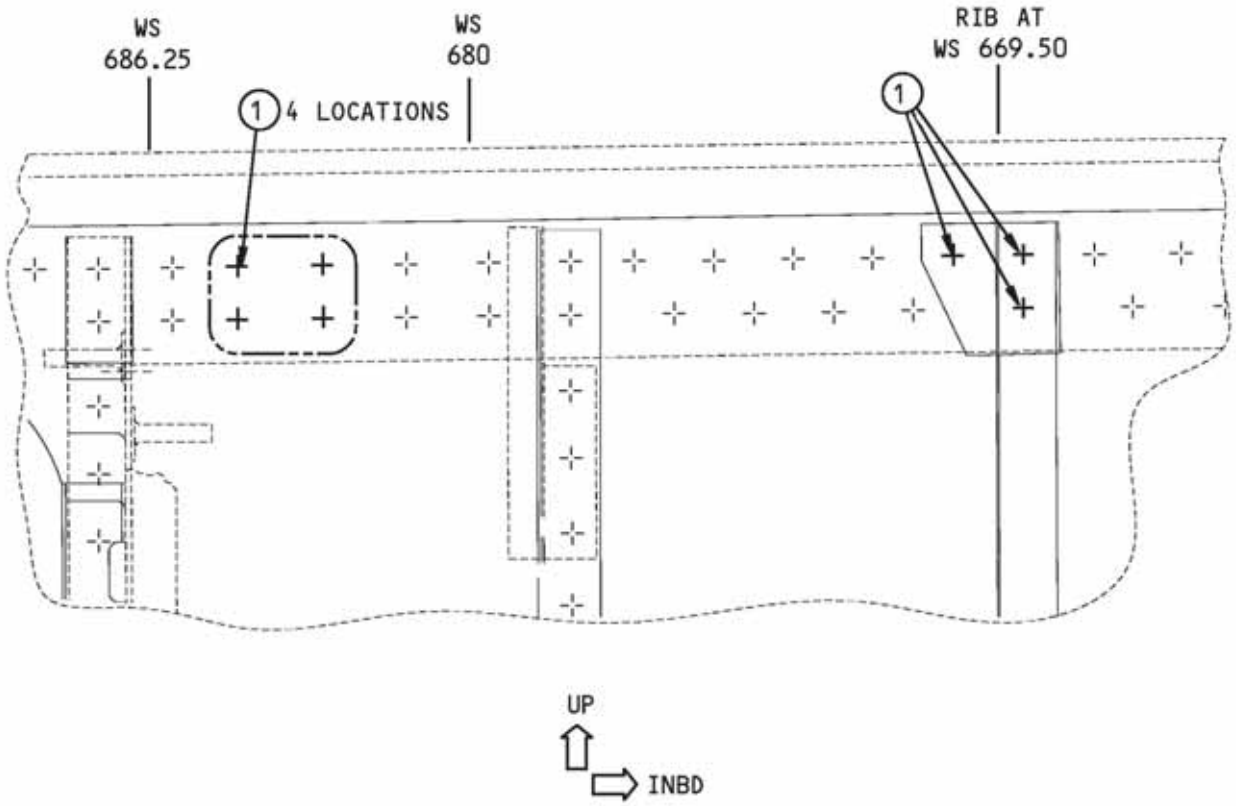



**FIGURE 29: REAR SPAR - NUMBER THREE AND NUMBER FOUR MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 8 OF 9)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | FASTENERS | - | 36 | Get access. Find the location of the fasteners that must be sealed. |

**FIGURE 29: REAR SPAR - NUMBER THREE AND NUMBER FOUR MAIN FUEL TANKS - LOCATION OF THE FASTENERS**
**(SHEET 9 OF 9)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-21, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2.**

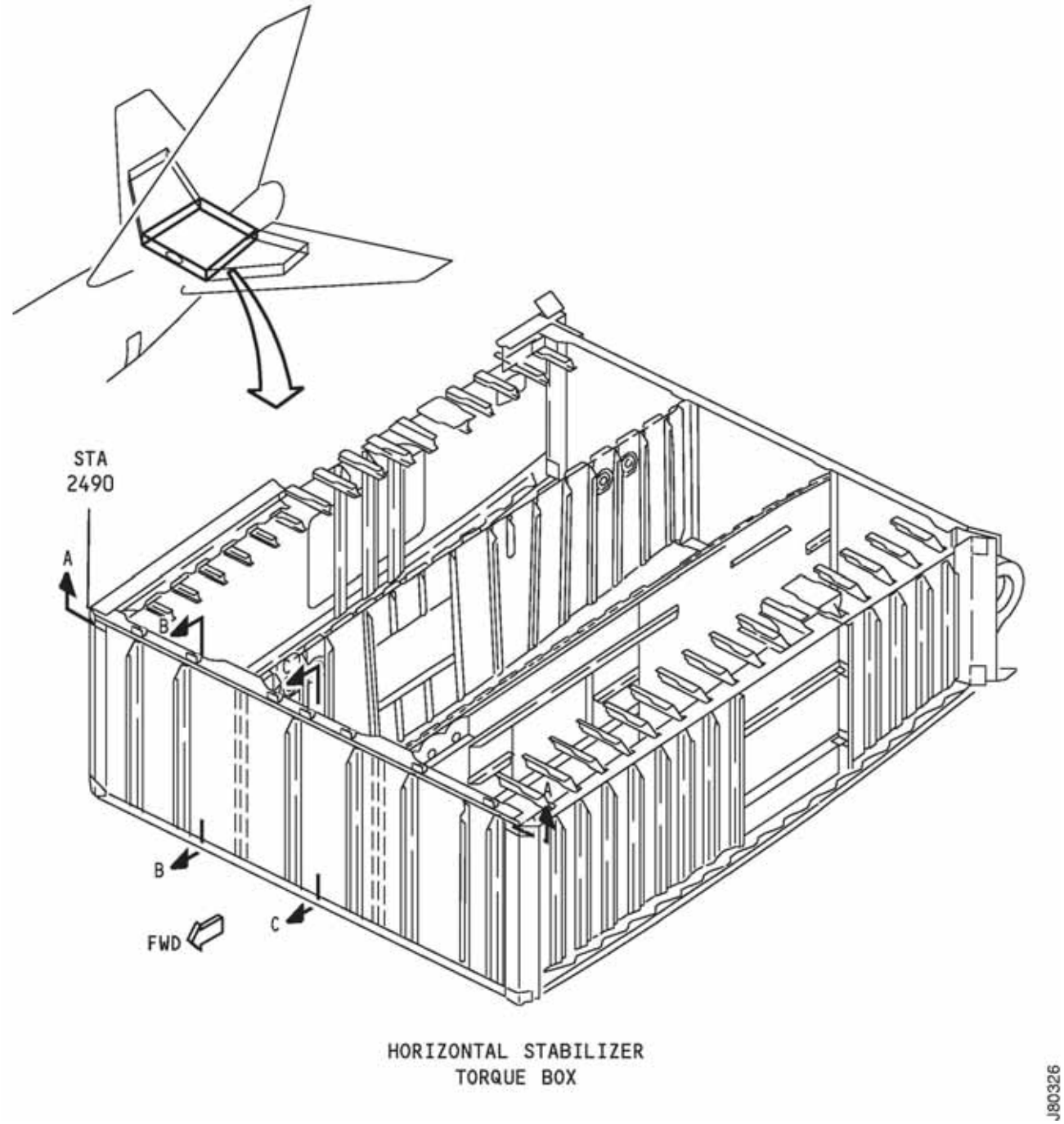



**FIGURE 30: FRONT SPAR - HORIZONTAL STABILIZER FUEL TANK - LOCATION OF THE FASTENERS (SHEET 1 OF 5)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

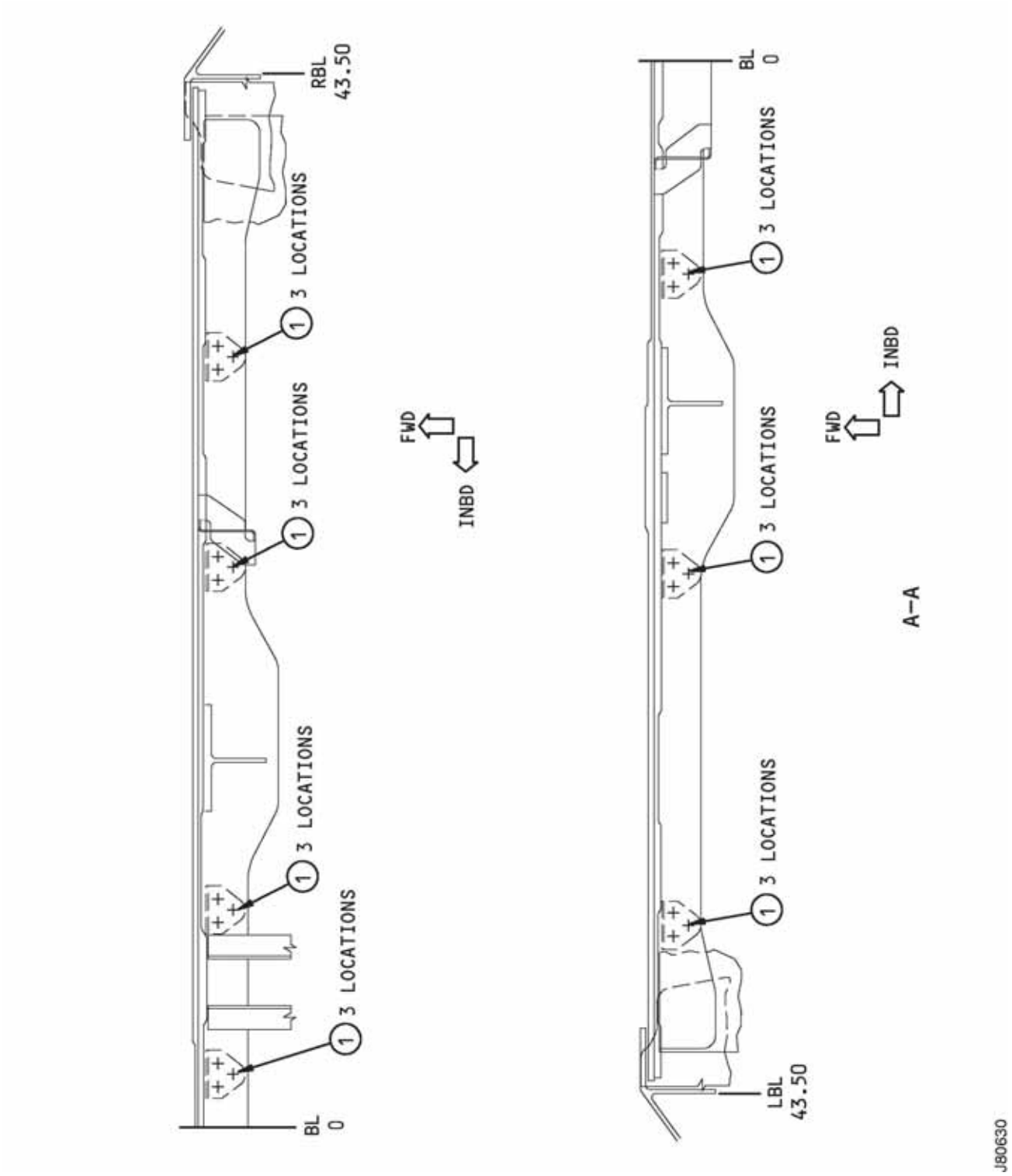



**FIGURE 30: FRONT SPAR - HORIZONTAL STABILIZER FUEL TANK - LOCATION OF THE FASTENERS (SHEET 2 OF 5)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

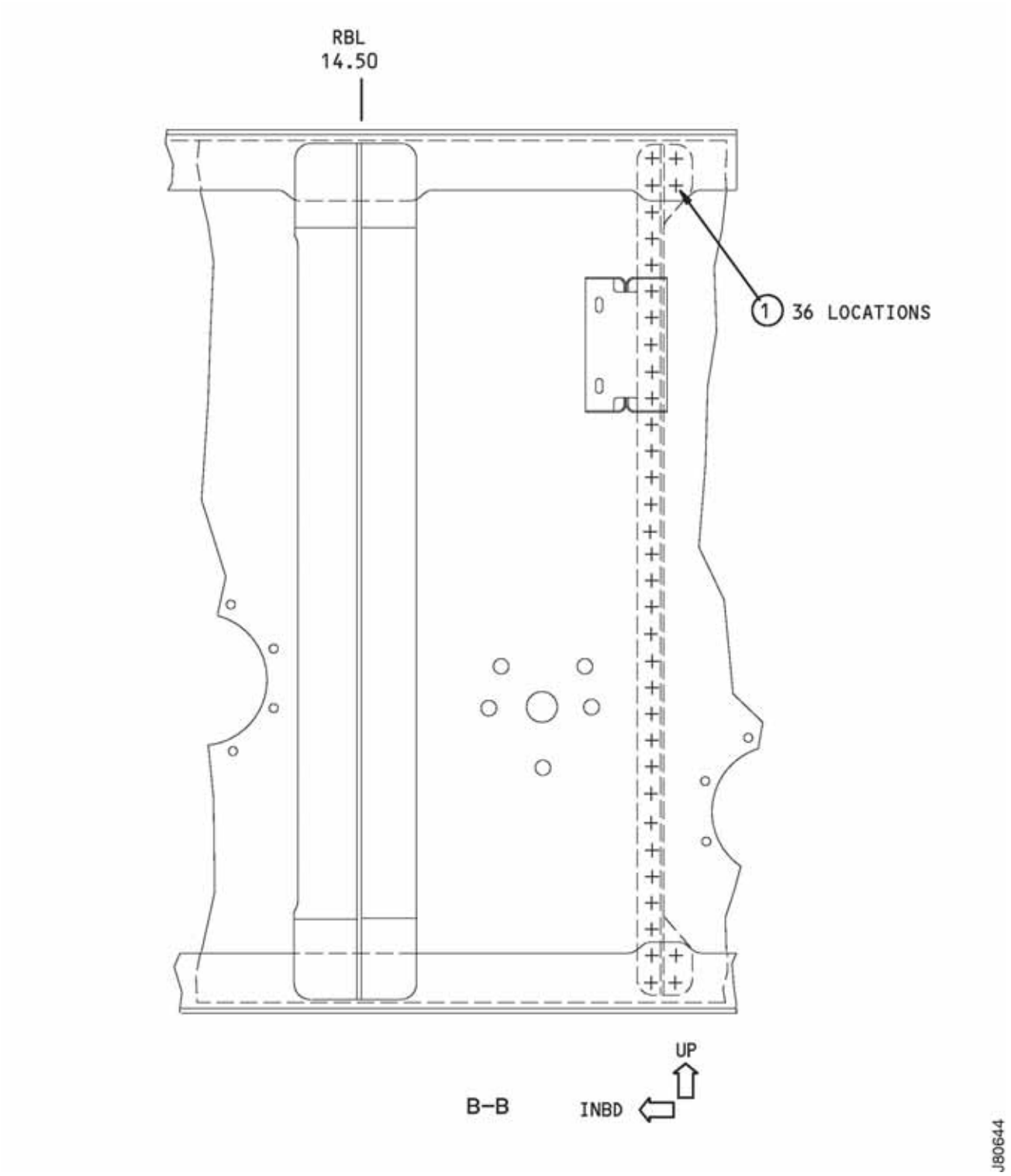



**FIGURE 30: FRONT SPAR - HORIZONTAL STABILIZER FUEL TANK - LOCATION OF THE FASTENERS (SHEET 3 OF 5)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

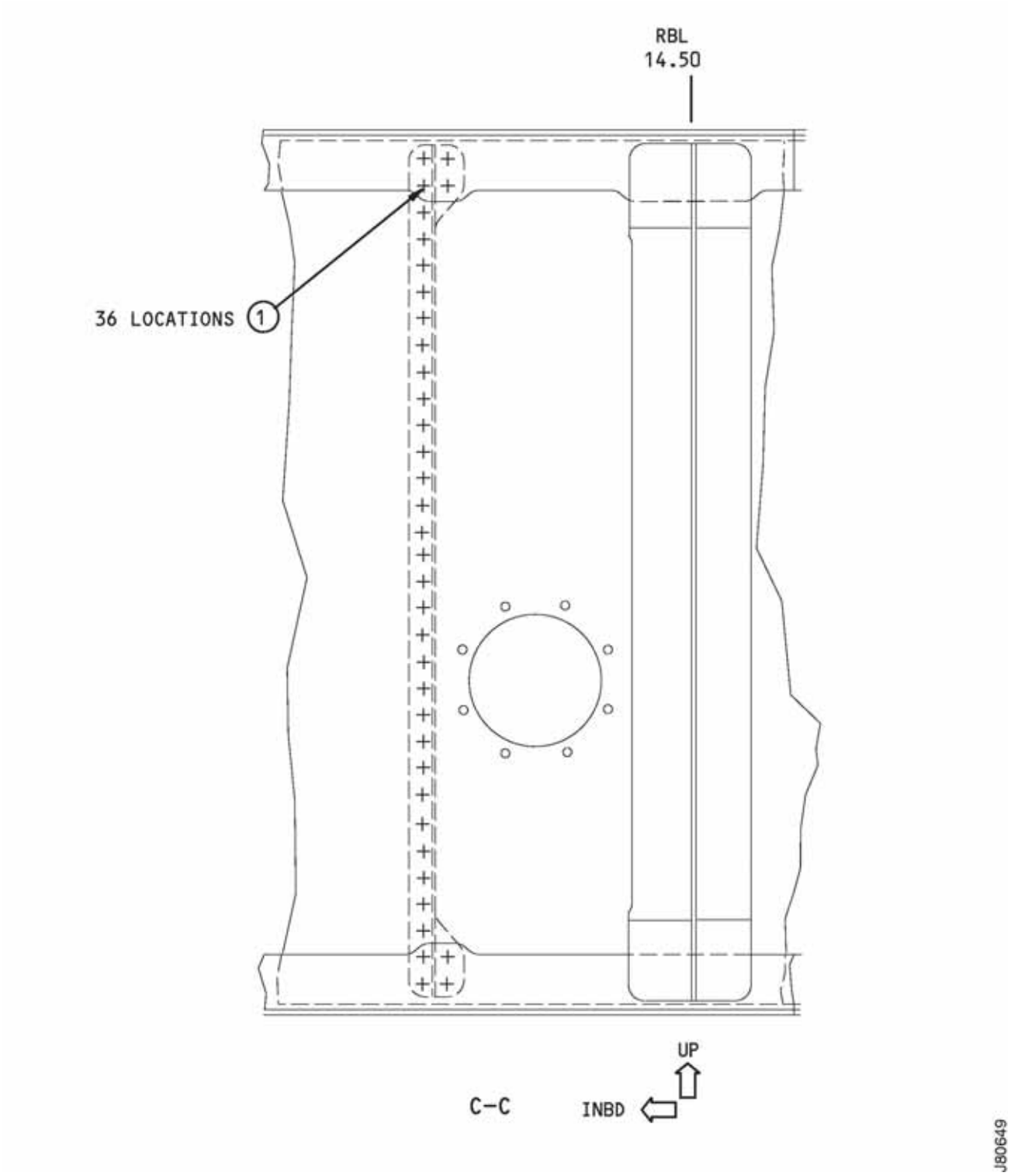



**FIGURE 30: FRONT SPAR - HORIZONTAL STABILIZER FUEL TANK - LOCATION OF THE FASTENERS (SHEET 4 OF 5)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | FASTENERS | - | 93 | Get access. Find the location of the fasteners that must be sealed. |

**FIGURE 30: FRONT SPAR - HORIZONTAL STABILIZER FUEL TANK - LOCATION OF THE FASTENERS (SHEET 5 OF 5)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-21, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2.**

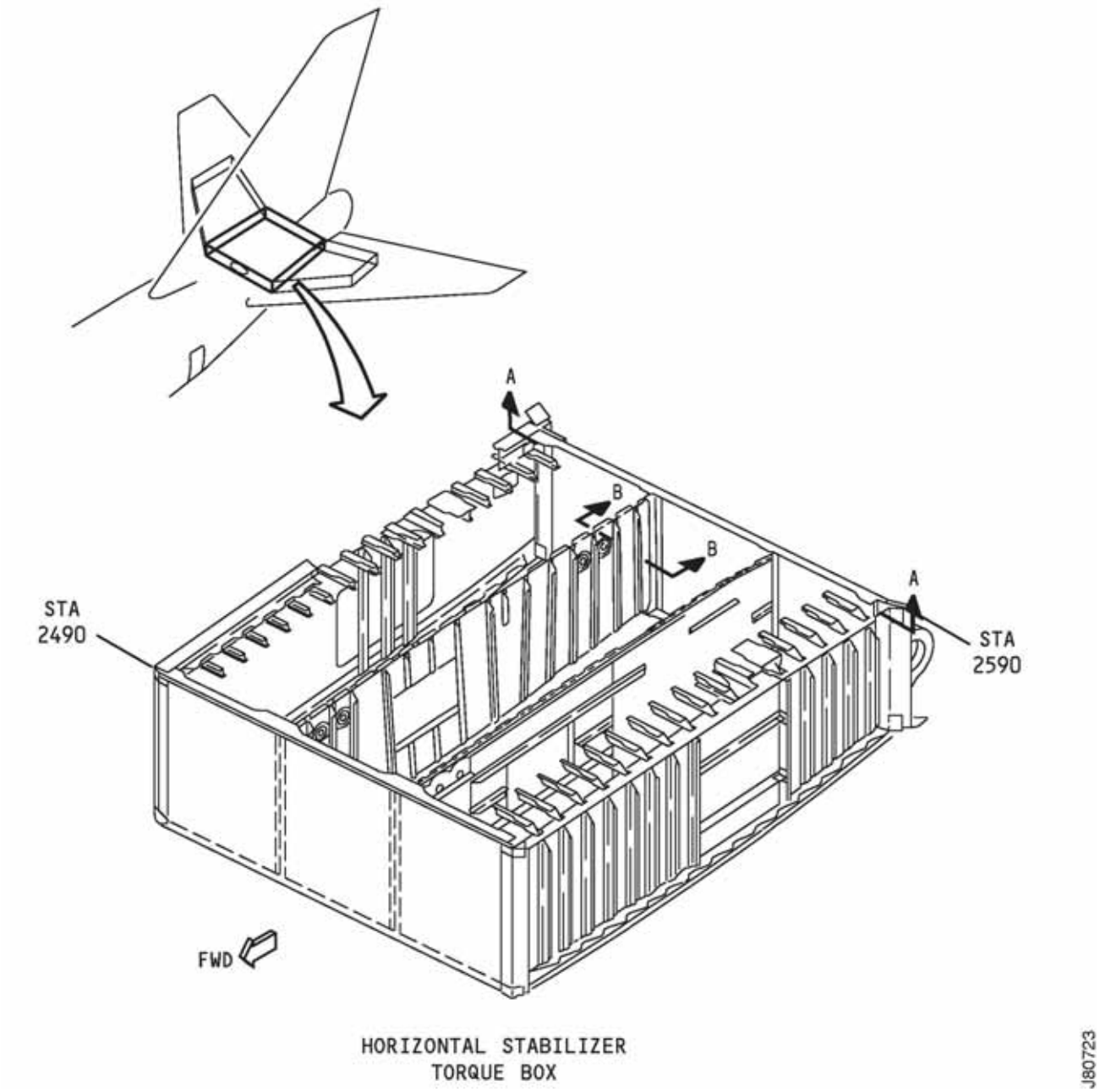



**FIGURE 31: REAR SPAR - HORIZONTAL STABILIZER FUEL TANK - LOCATION OF THE FASTENERS (SHEET 1 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

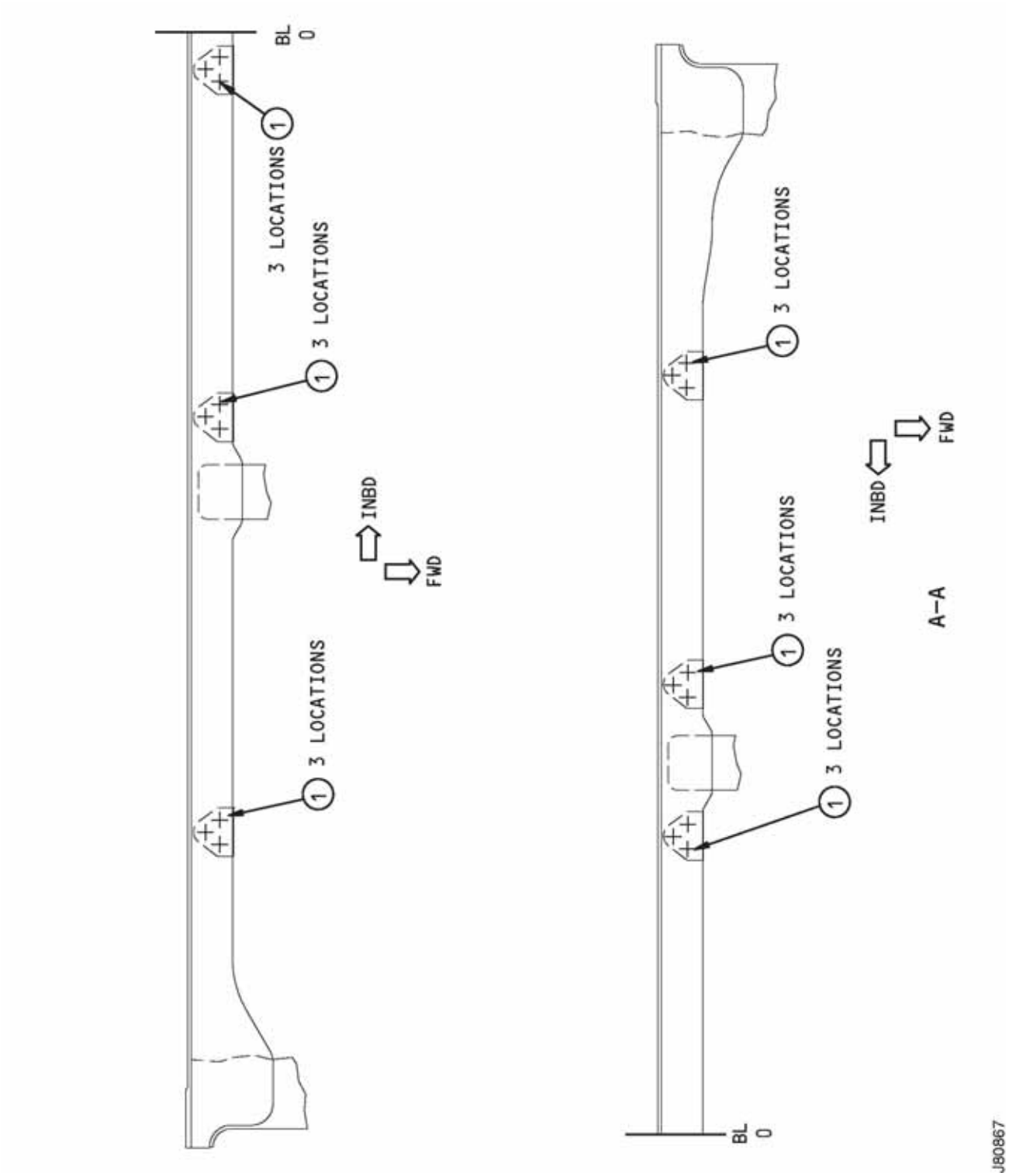



**FIGURE 31: REAR SPAR - HORIZONTAL STABILIZER FUEL TANK - LOCATION OF THE FASTENERS (SHEET 2 OF 4)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

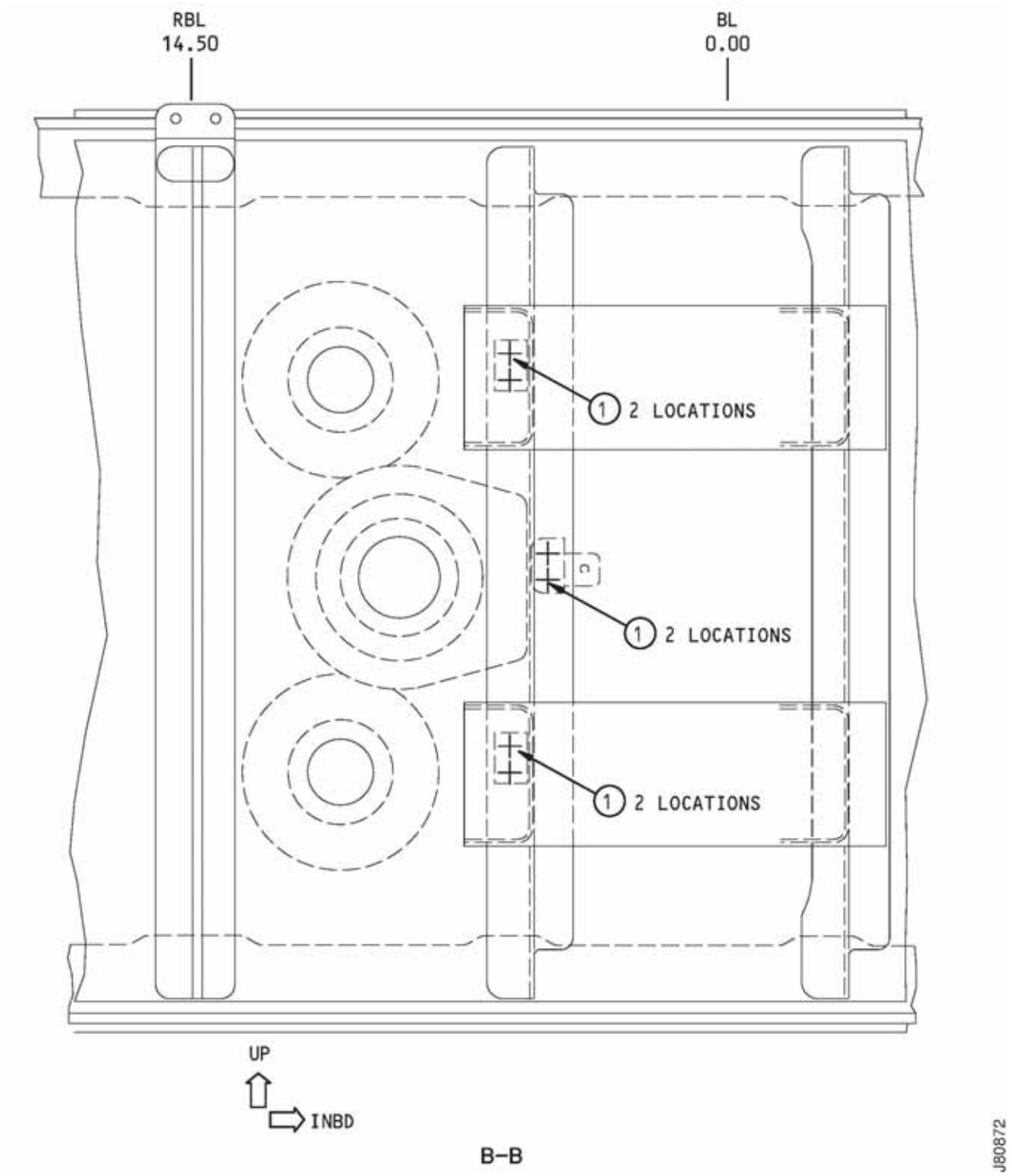



**FIGURE 31: REAR SPAR - HORIZONTAL STABILIZER FUEL TANK - LOCATION OF THE FASTENERS (SHEET 3 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | FASTENERS | - | 24 | Get access. Find the location of the fasteners that must be sealed. |

**FIGURE 31: REAR SPAR - HORIZONTAL STABILIZER FUEL TANK - LOCATION OF THE FASTENERS (SHEET 4 OF 4)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 17, 20, 22, 26-27, 31.**

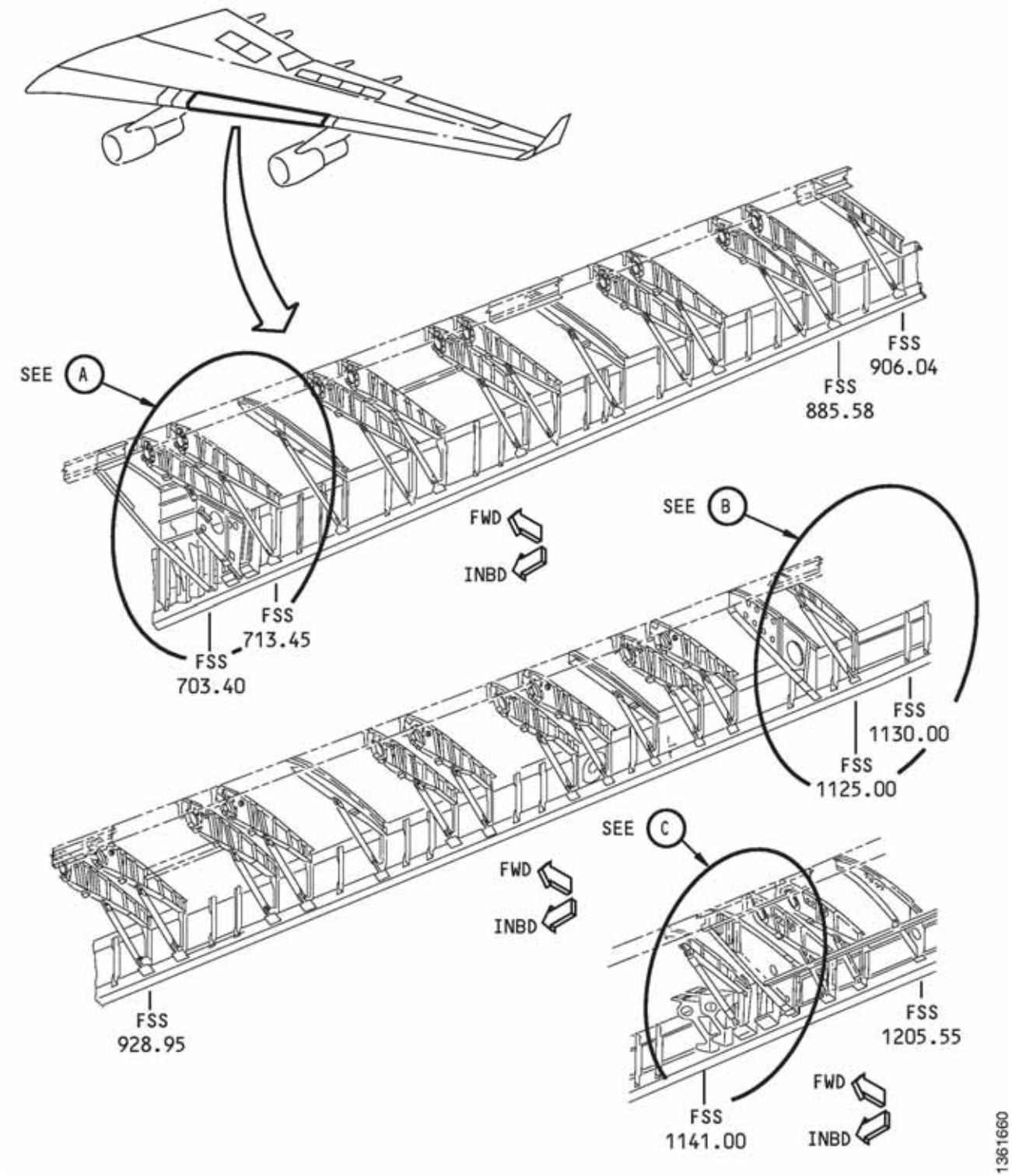



**FIGURE 32: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 1 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

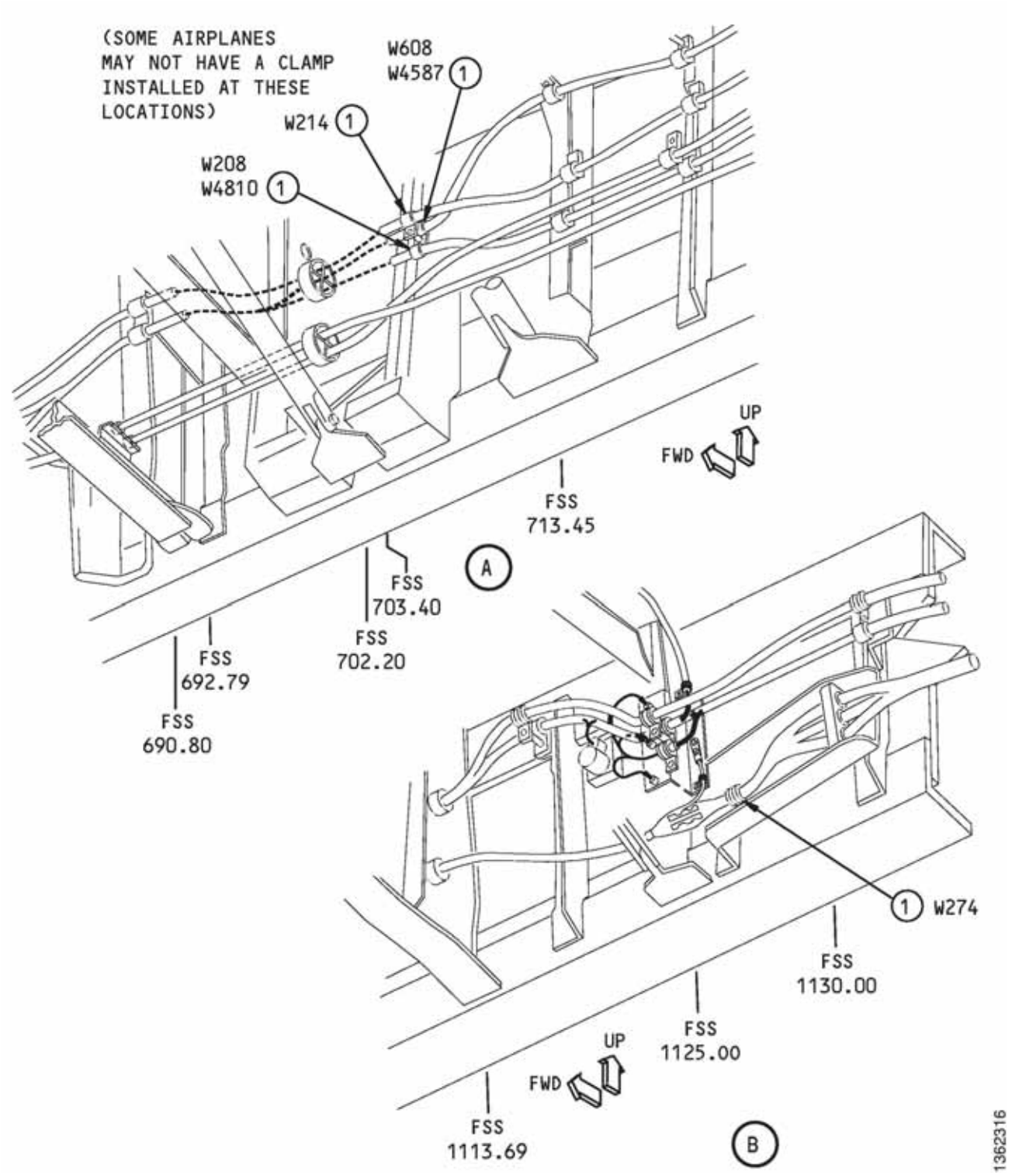
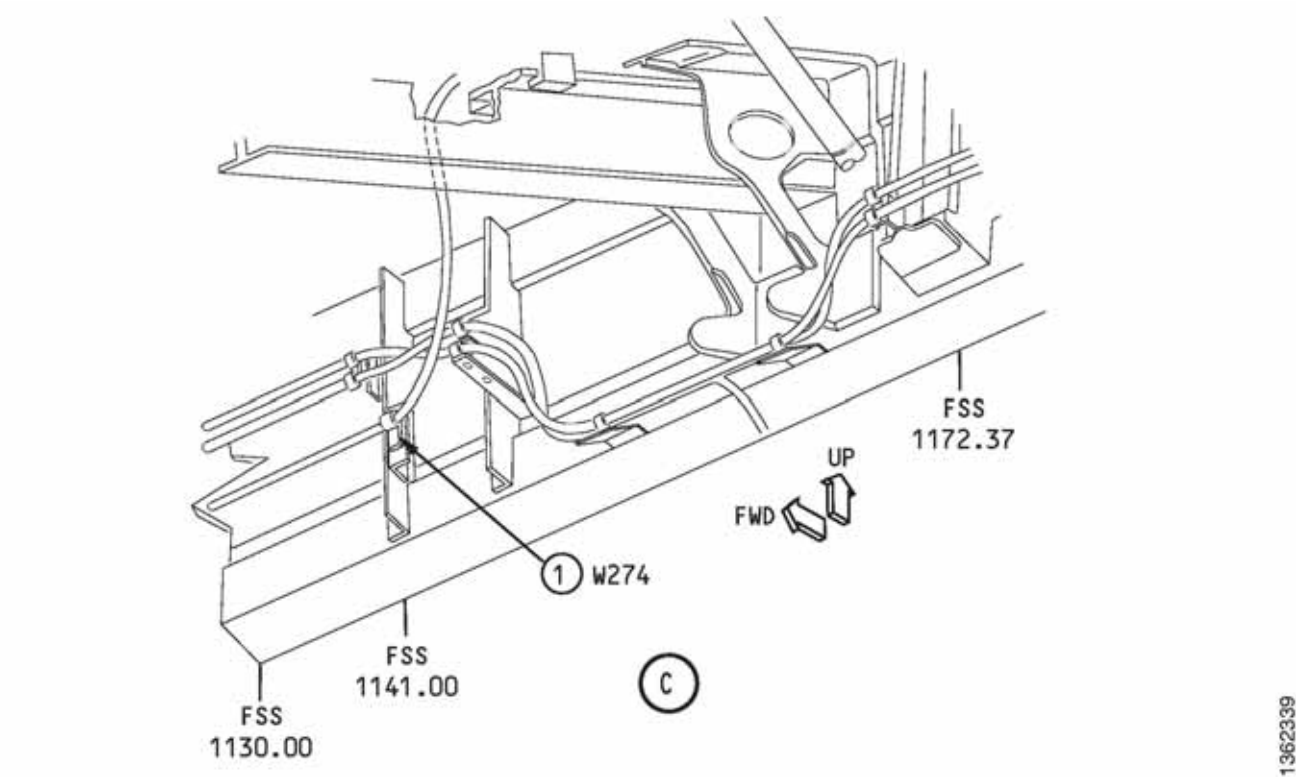



**FIGURE 32: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 2 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.




The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | CLAMP | - | 5 | Get access. Find the existing clamp on the specified wire bundle at the location specified by the circle symbol. (a) |
| (a) The actual configuration of the airplane can be different than the configuration in the figure. Some airplanes may not have a clamp installed on the specified wire bundle at the location specified by the circle symbol. If a clamp is not installed on the specified wire bundle at the location specified by the circle symbol, it is not necessary to install a sleeve and a new clamp at that location. | | | | | |

**FIGURE 32: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 3 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 2, 7, 17, 19-22, 24, 26-27, 29, 31, 36, 38-42, 44-45.**

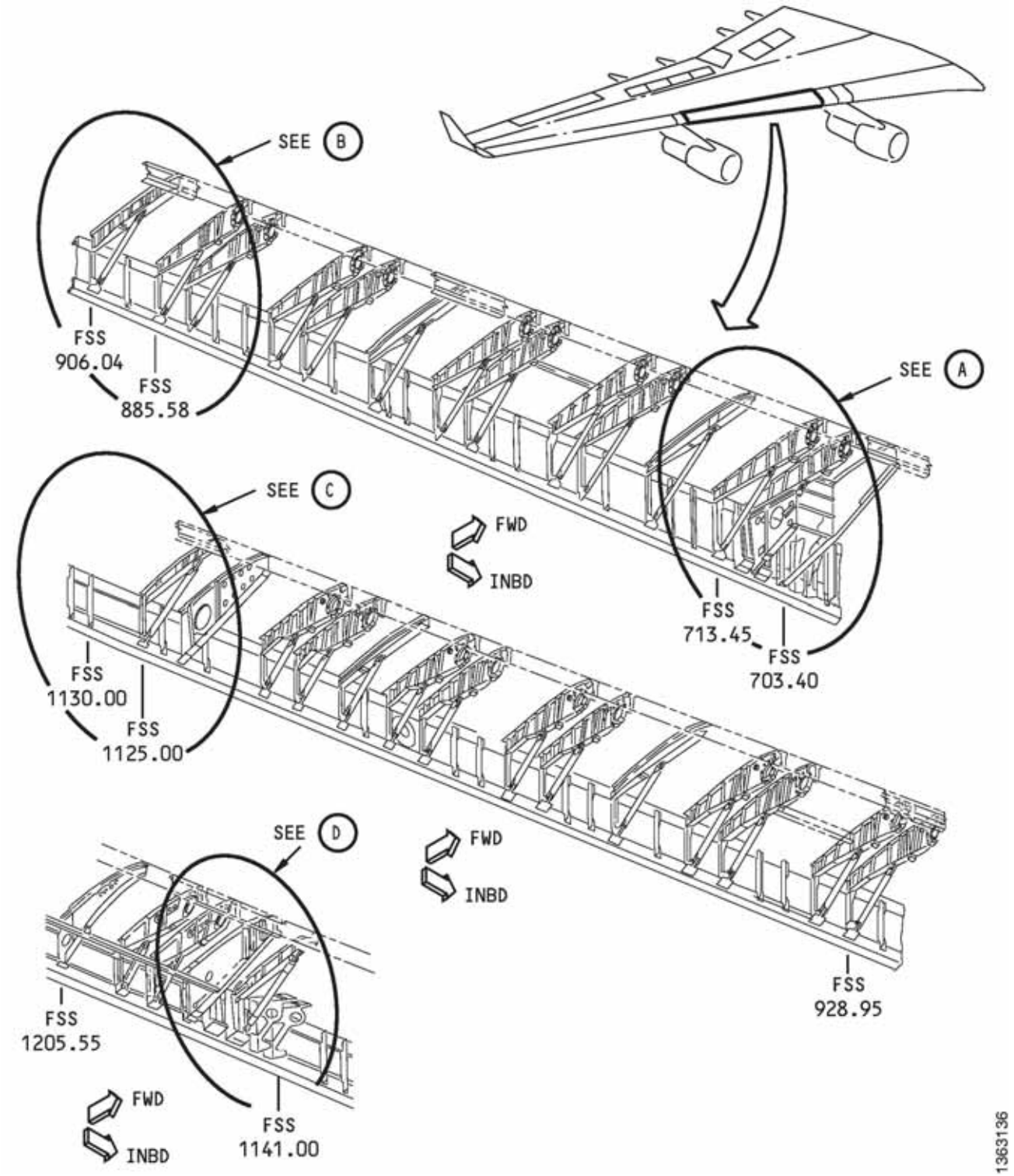



**FIGURE 33: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 1 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

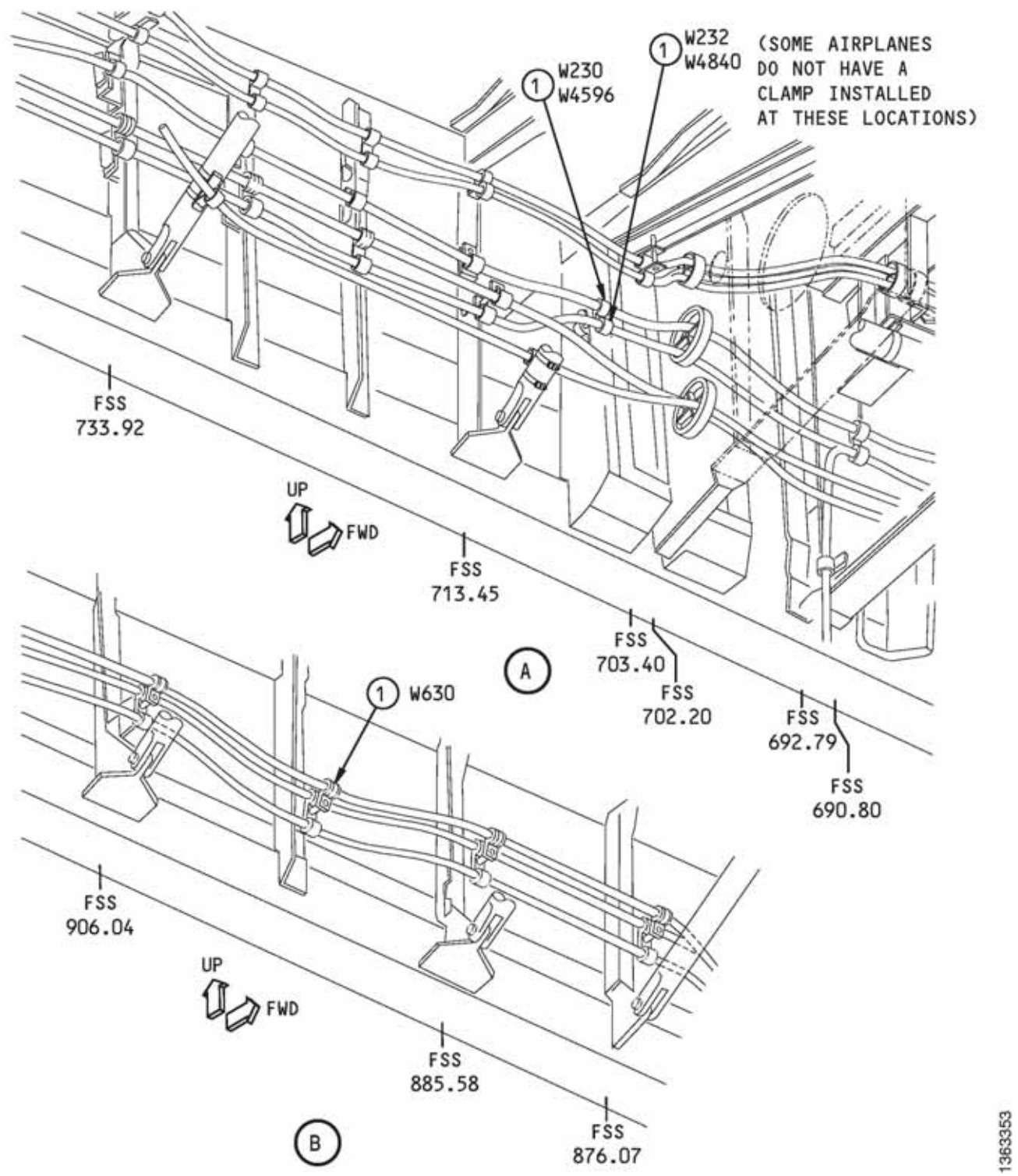



**FIGURE 33: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 2 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

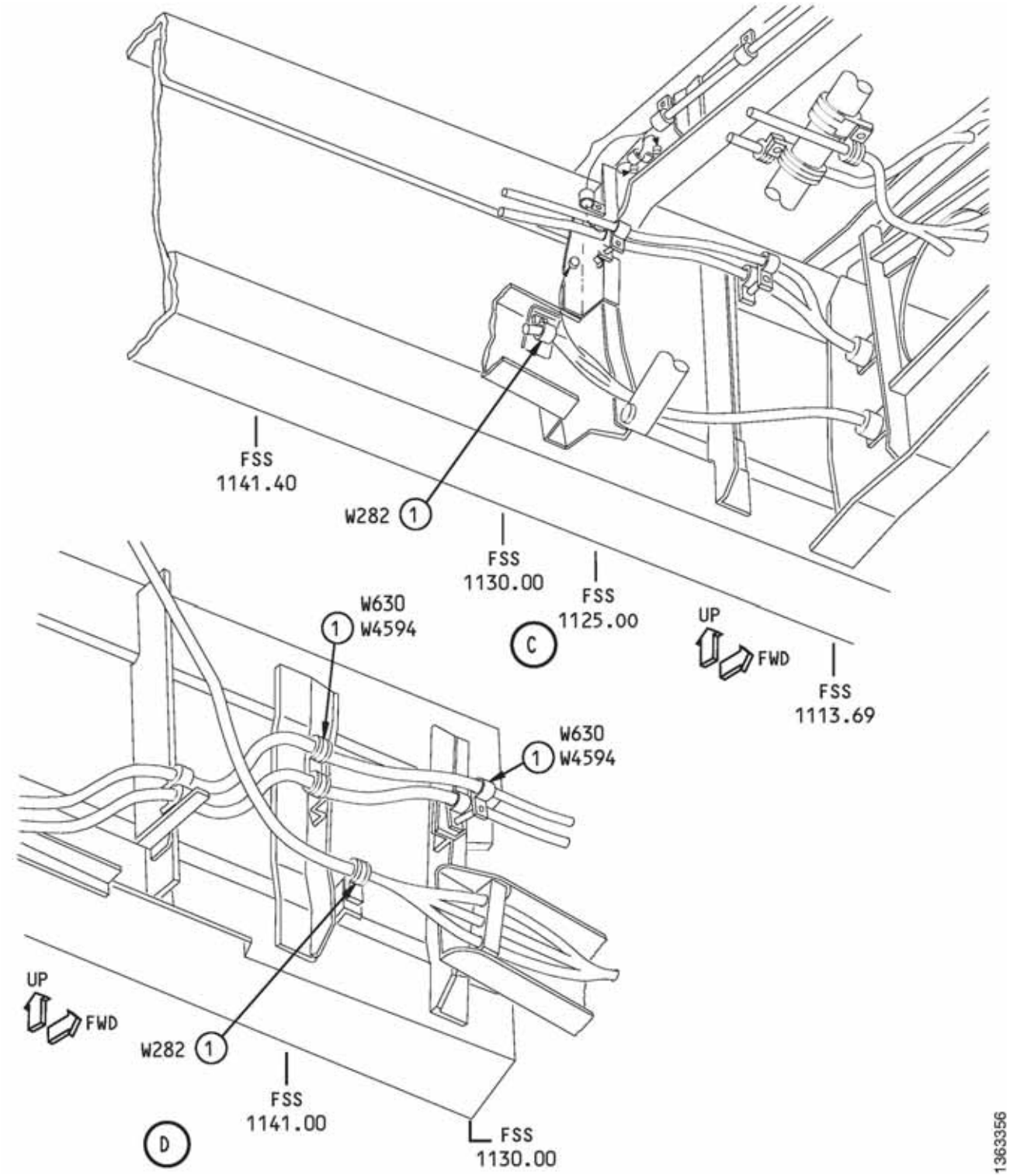



**FIGURE 33: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 3 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | CLAMP | - | 7 | Get access. Find the existing clamp on the specified wire bundle at the location specified by the circle symbol. (a) |
| (a) The actual configuration of the airplane can be different than the configuration in the figure. Some airplanes may not have a clamp installed on the specified wire bundle at the location specified by the circle symbol. If a clamp is not installed on the specified wire bundle at the location specified by the circle symbol, it is not necessary to install a sleeve and a new clamp at that location. | | | | | |

**FIGURE 33: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 4 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 5, 8, 23, 25, 28, 30, 32-35, 37, 43.**

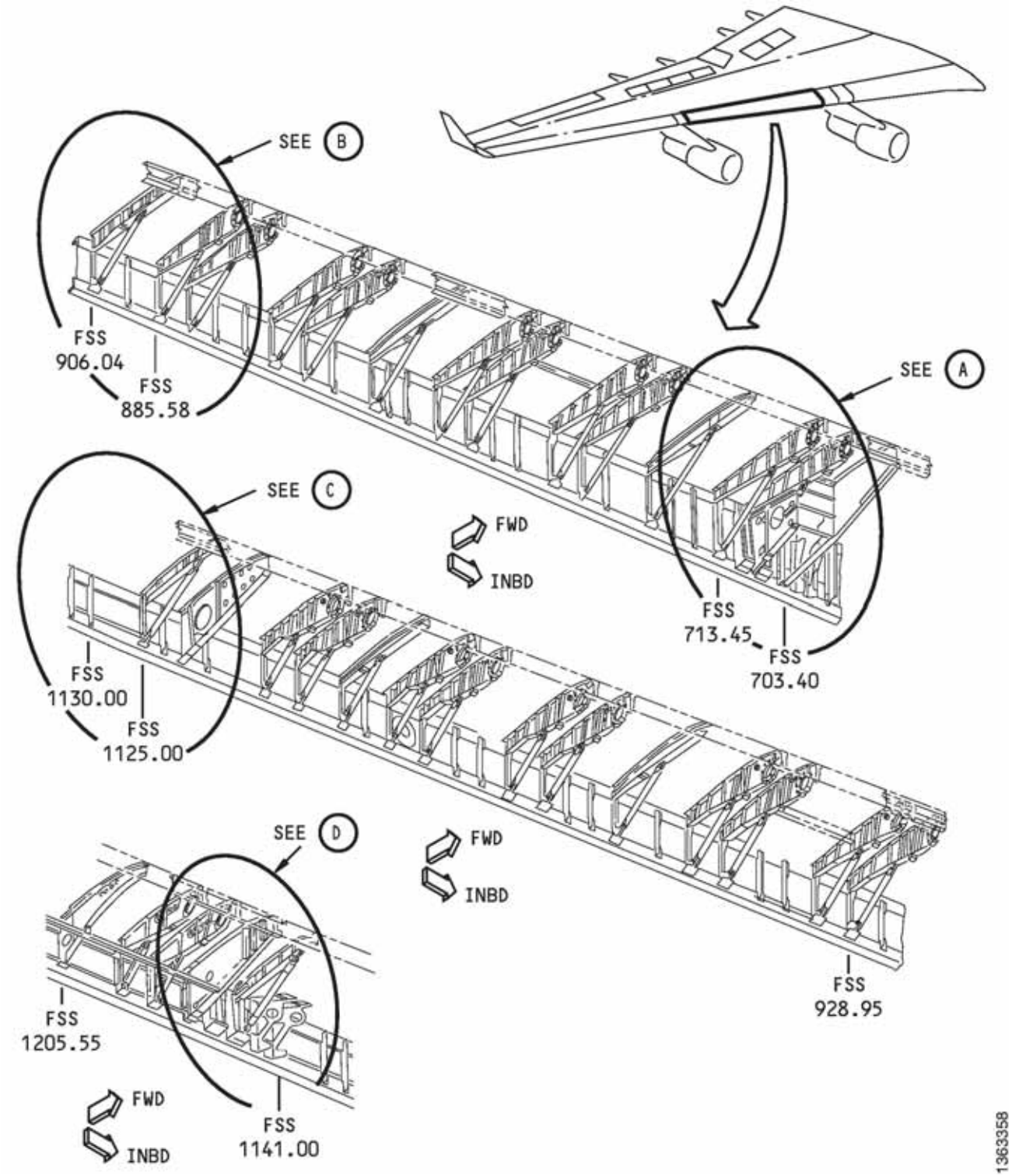



**FIGURE 34: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 1 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

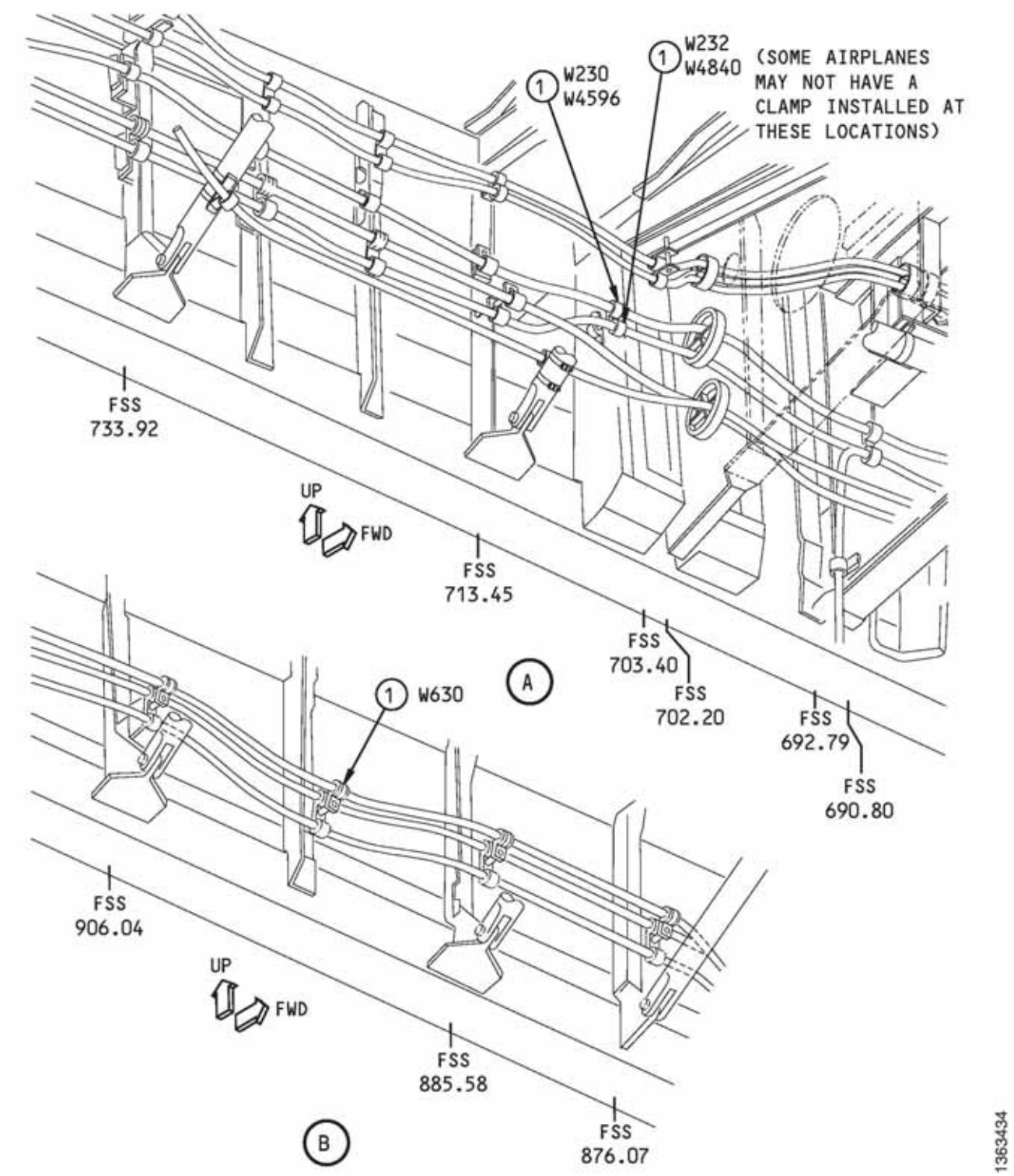



**FIGURE 34: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 2 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

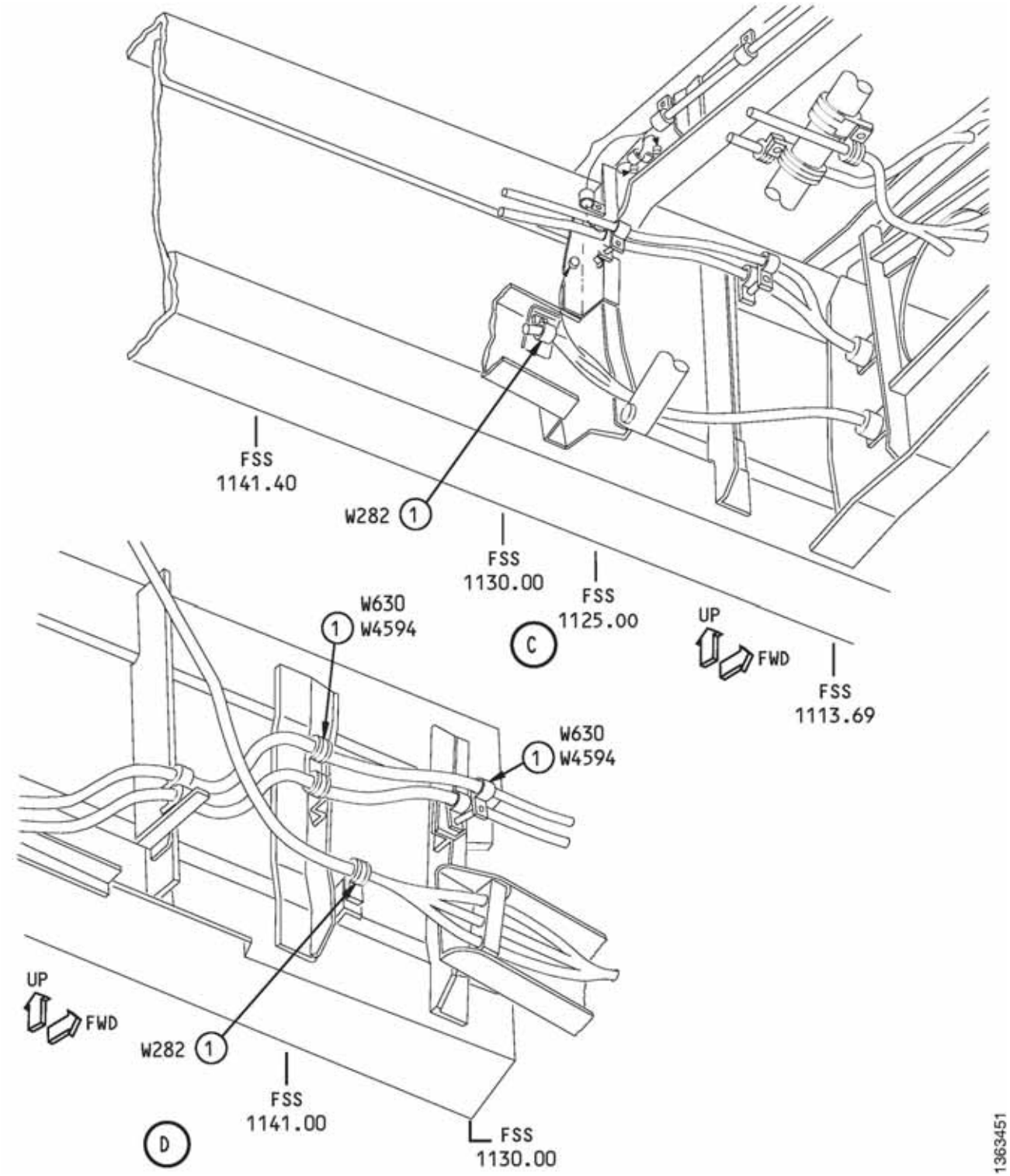



**FIGURE 34: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 3 OF 4)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | CLAMP | - | 7 | Get access. Find the existing clamp on the specified wire bundle at the location specified by the circle symbol. (a) |
| (a) The actual configuration of the airplane can be different than the configuration in the figure. Some airplanes may not have a clamp installed on the specified wire bundle at the location specified by the circle symbol. If a clamp is not installed on the specified wire bundle at the location specified by the circle symbol, it is not necessary to install a sleeve and a new clamp at that location. | | | | | |

**FIGURE 34: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 4 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 18.**

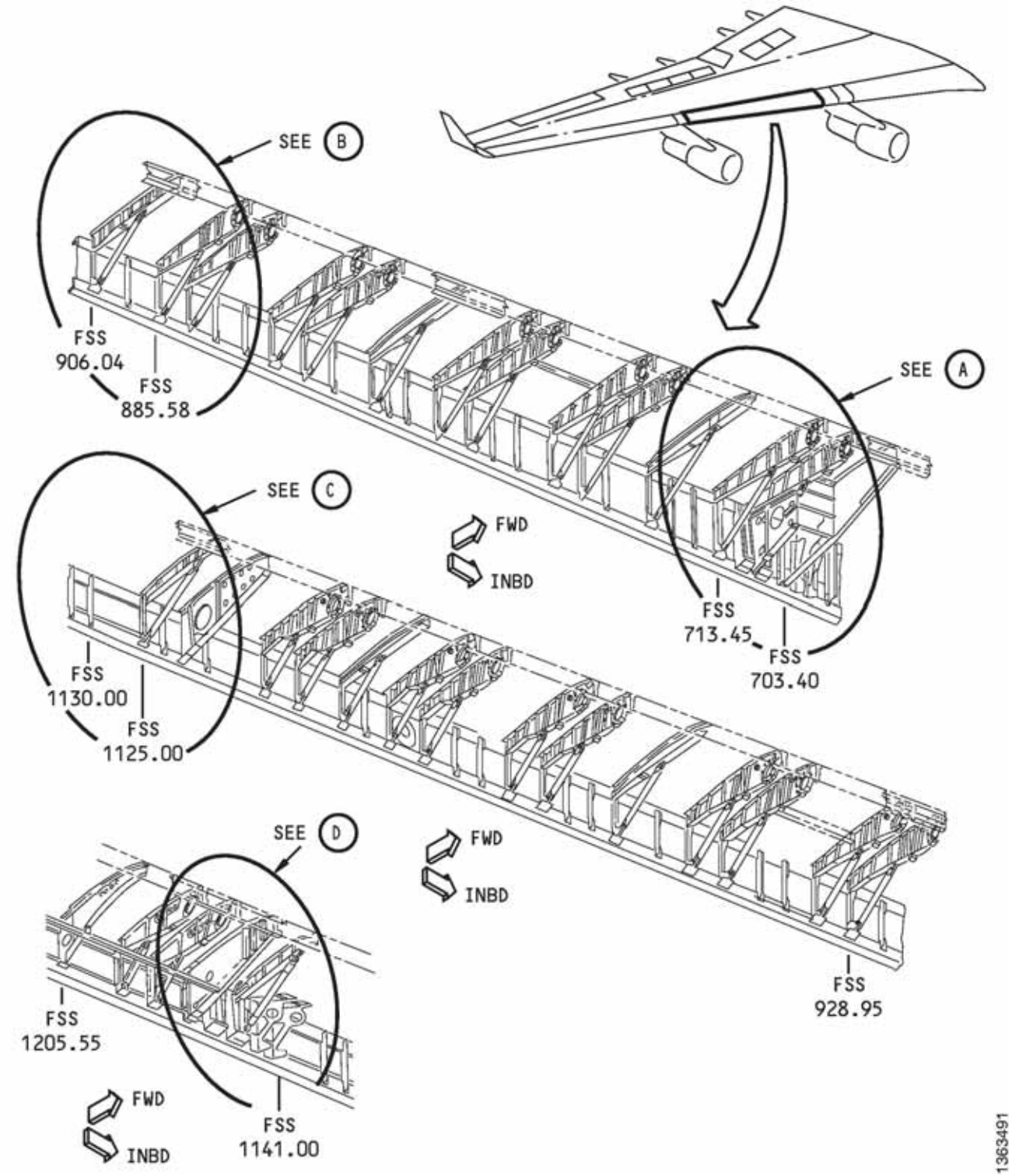



**FIGURE 35: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 1 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

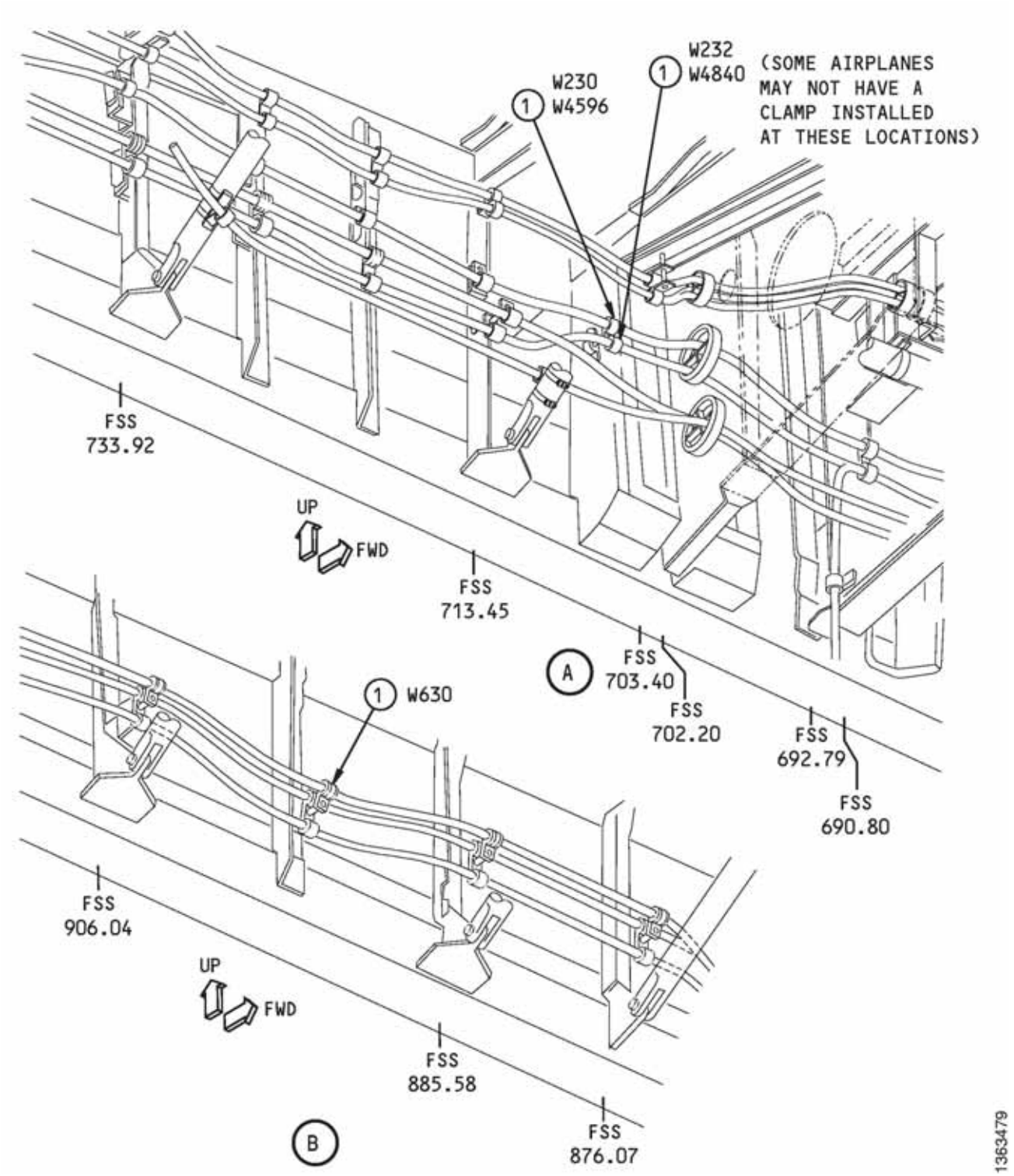



**FIGURE 35: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 2 OF 4)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

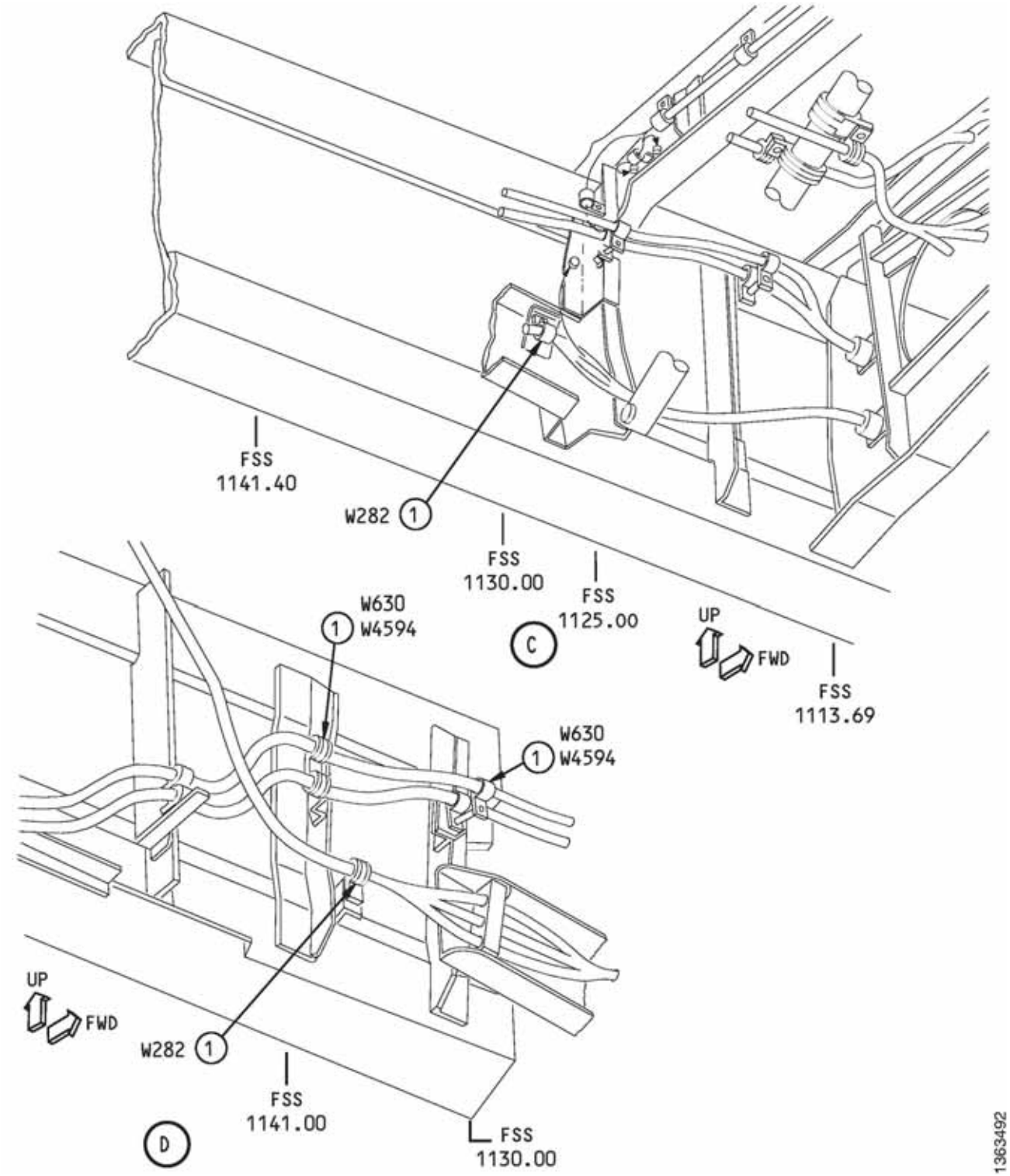



**FIGURE 35: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 3 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | CLAMP | - | 7 | Get access. Find the existing clamp on the specified wire bundle at the location specified by the circle symbol. (a) |
| (a) The actual configuration of the airplane can be different than the configuration in the figure. Some airplanes may not have a clamp installed on the specified wire bundle at the location specified by the circle symbol. If a clamp is not installed on the specified wire bundle at the location specified by the circle symbol, it is not necessary to install a sleeve and a new clamp at that location. | | | | | |

**FIGURE 35: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 4 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 5.**

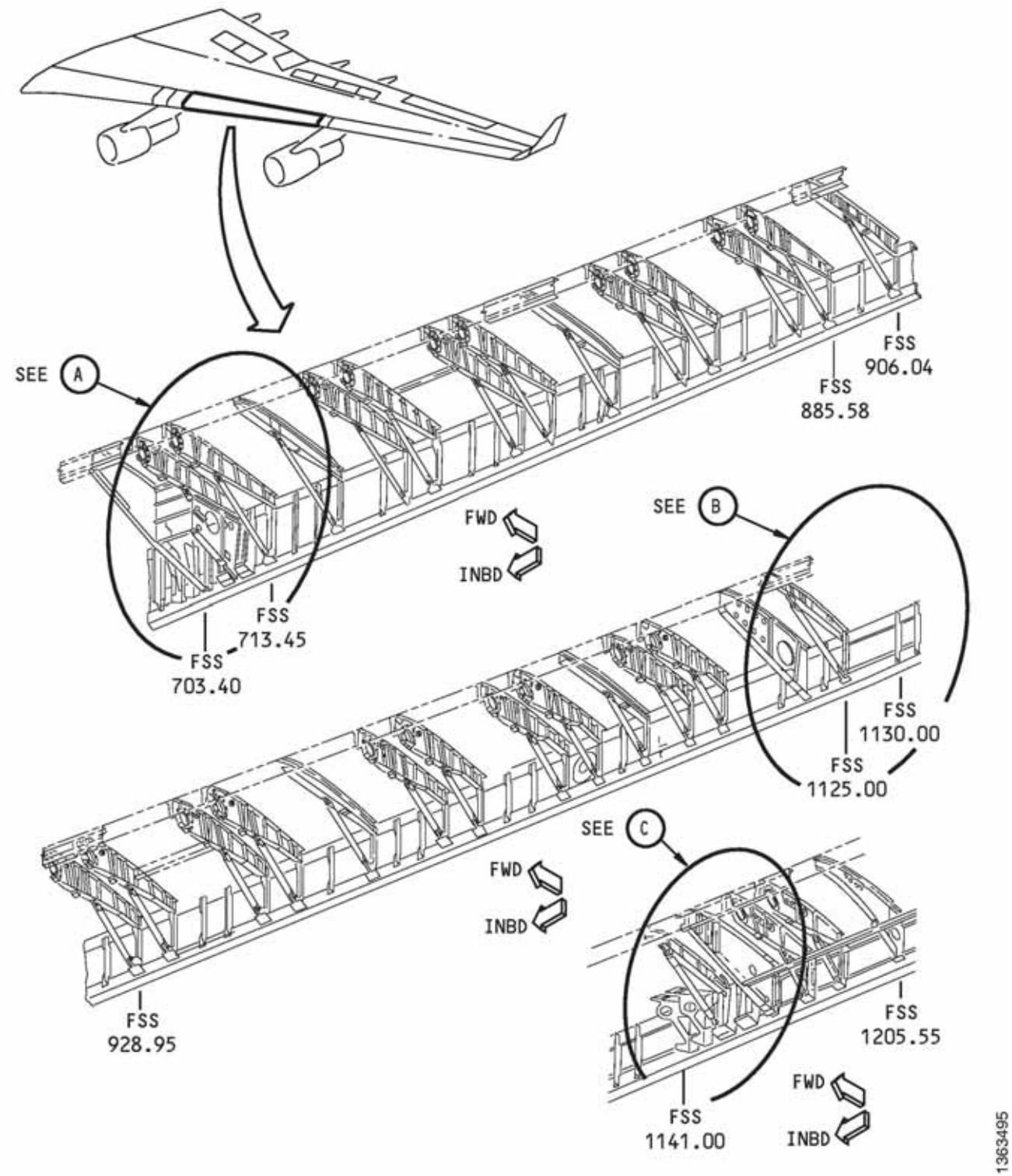



**FIGURE 36: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 1 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

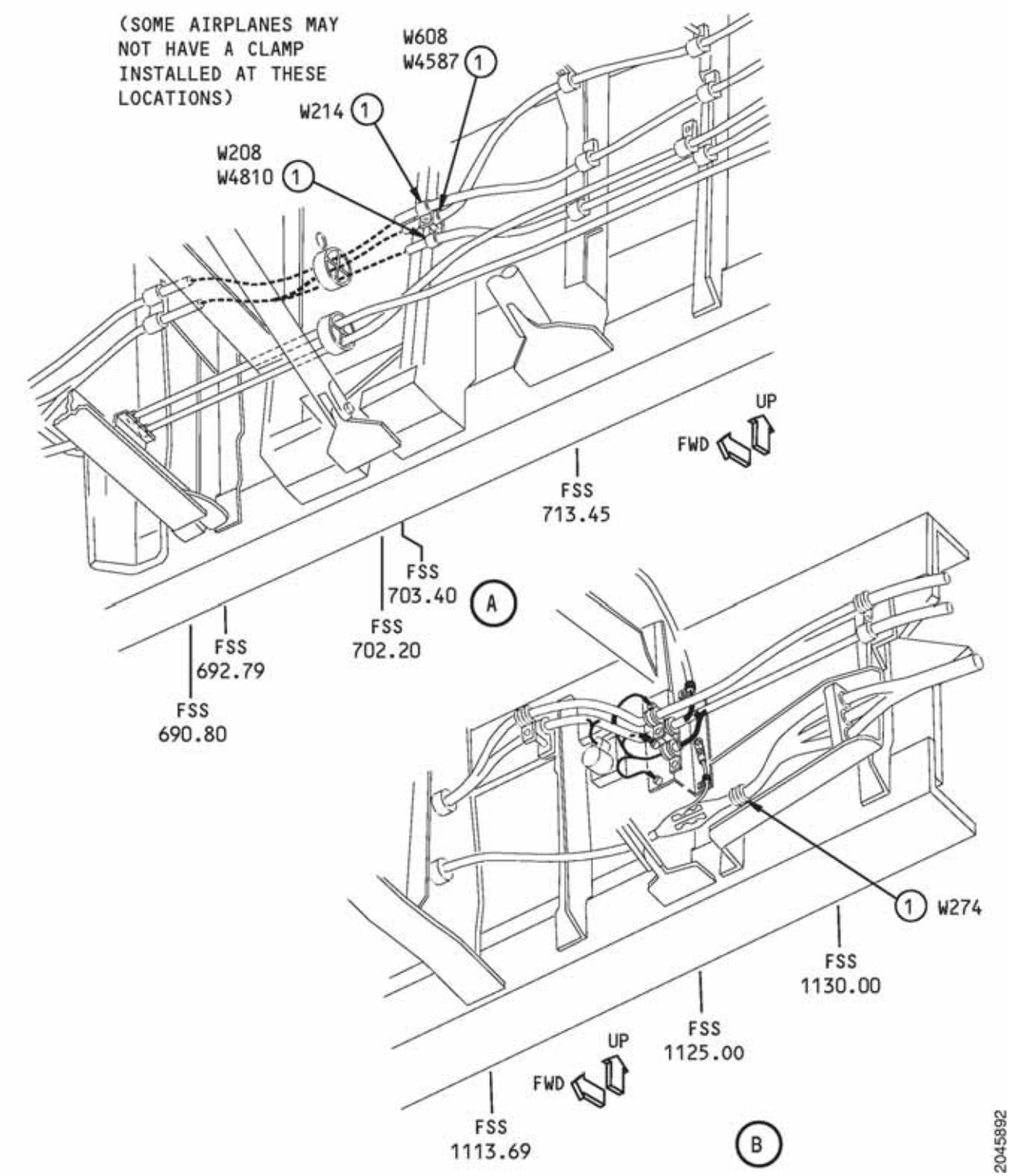
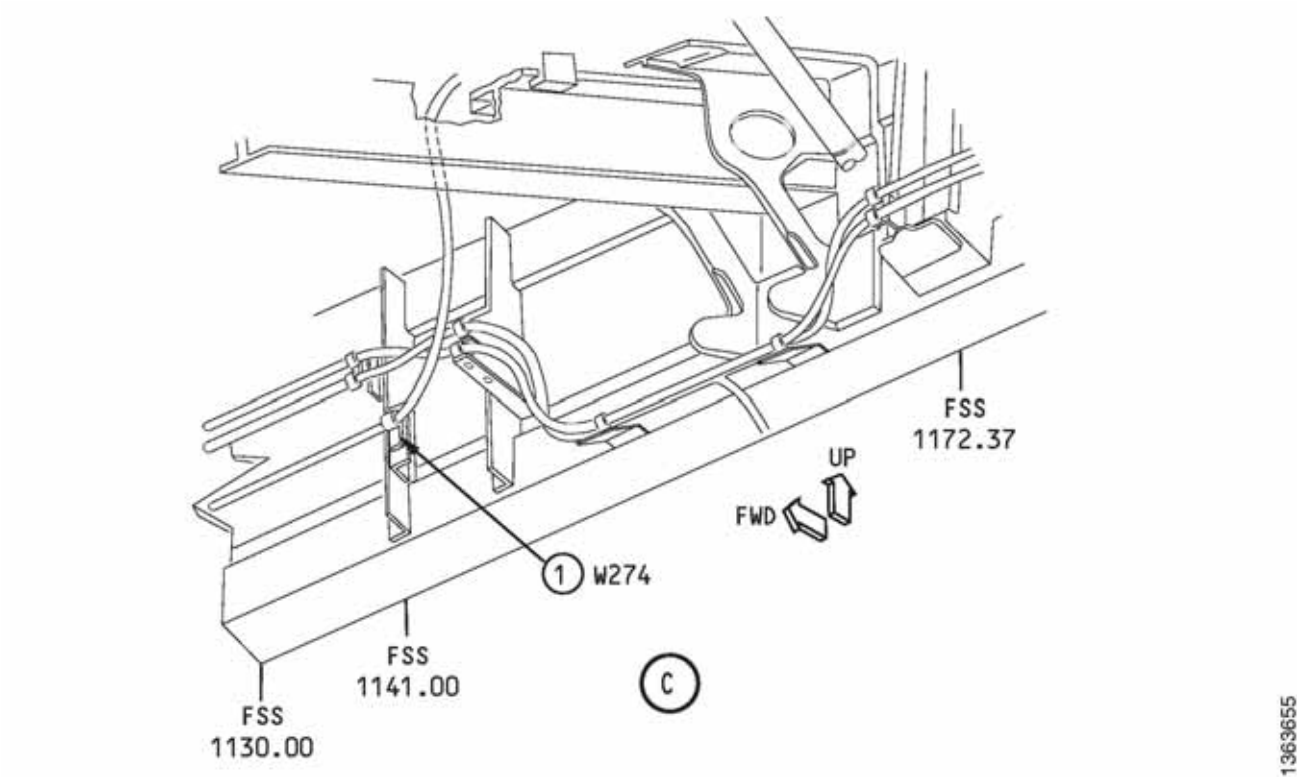



**FIGURE 36: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 2 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.




The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | CLAMP | - | 5 | Get access. Find the existing clamp on the specified wire bundle at the location specified by the circle symbol. (a) |
| (a) The actual configuration of the airplane can be different than the configuration in the figure. Some airplanes may not have a clamp installed on the specified wire bundle at the location specified by the circle symbol. If a clamp is not installed on the specified wire bundle at the location specified by the circle symbol, it is not necessary to install a sleeve and a new clamp at that location. | | | | | |

**FIGURE 36: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 3 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 2, 7, 36, 40-42.**

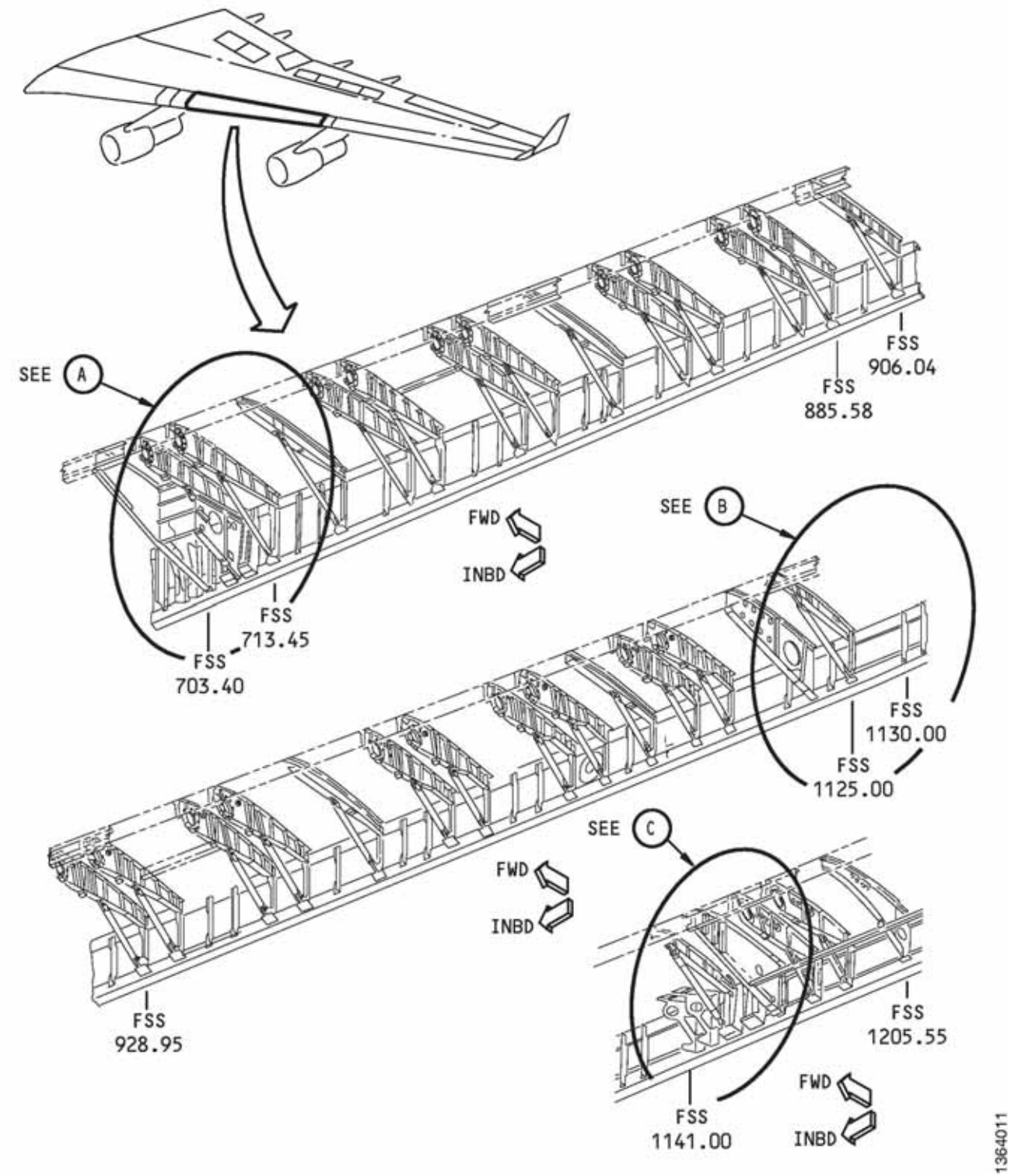



**FIGURE 37: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 1 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

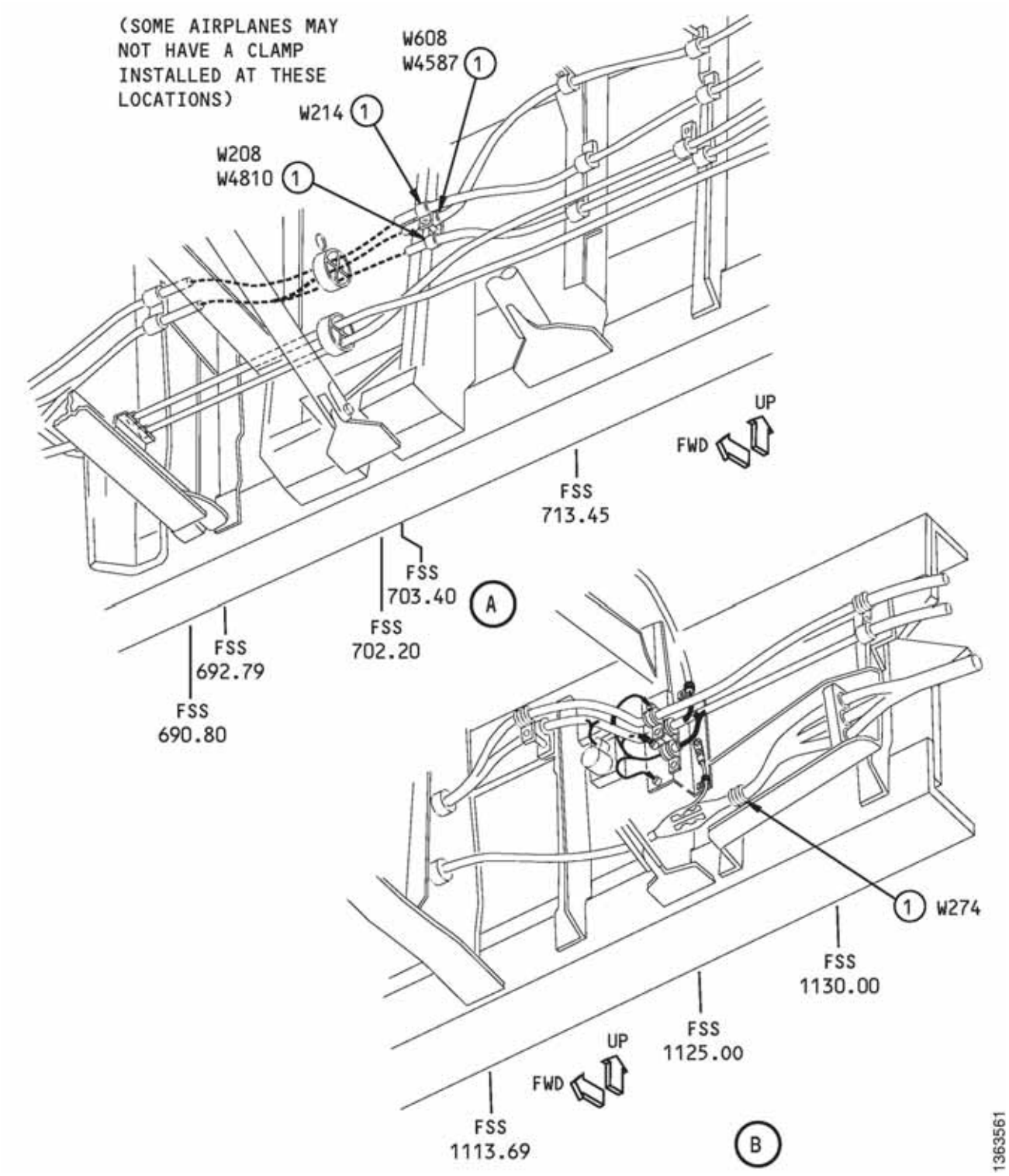
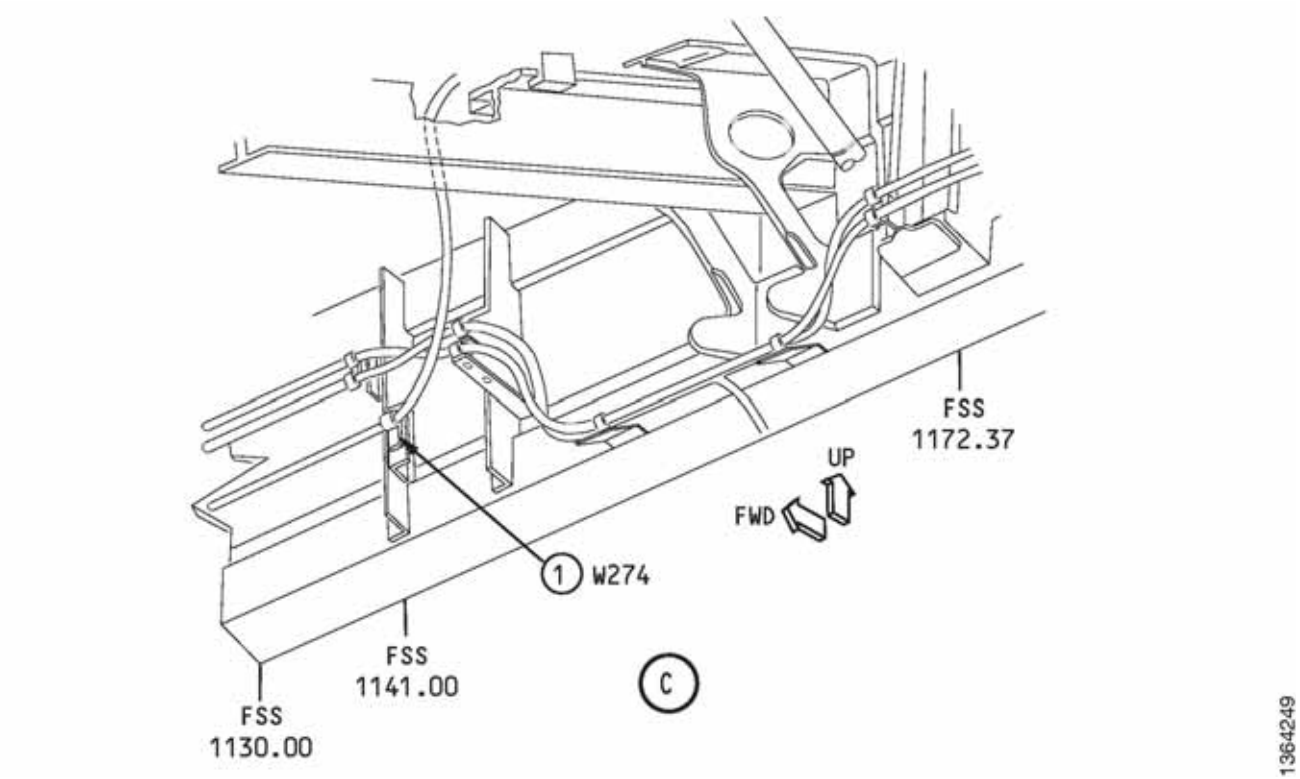



**FIGURE 37: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 2 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.




The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | CLAMP | - | 5 | Get access. Find the existing clamp on the specified wire bundle at the location specified by the circle symbol. (a) |
| (a) The actual configuration of the airplane can be different than the configuration in the figure. Some airplanes may not have a clamp installed on the specified wire bundle at the location specified by the circle symbol. If a clamp is not installed on the specified wire bundle at the location specified by the circle symbol, it is not necessary to install a sleeve and a new clamp at that location. | | | | | |

**FIGURE 37: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 3 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 18-19, 21, 24, 29, 38-39, 44.**

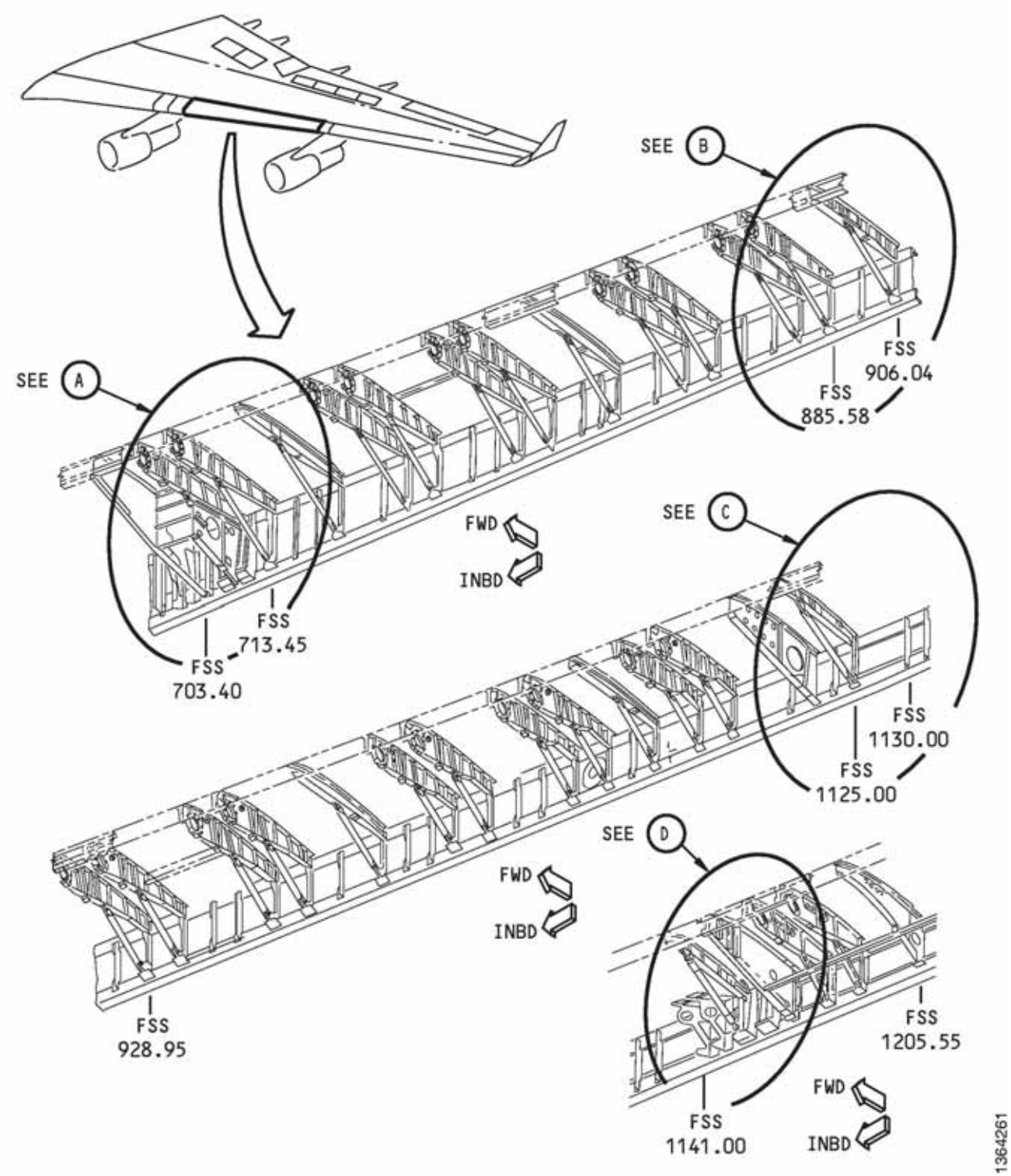



**FIGURE 38: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 1 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

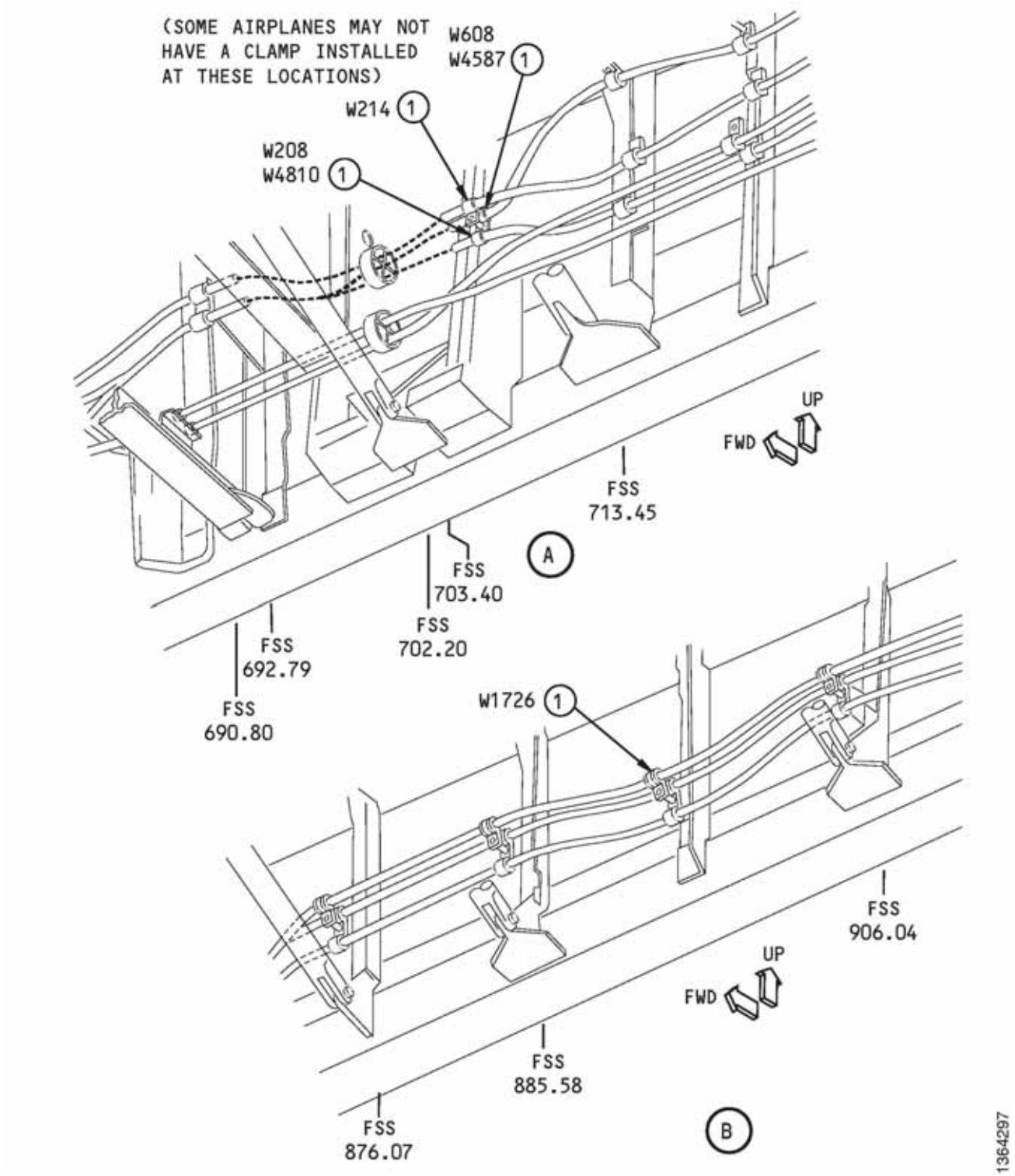



**FIGURE 38: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 2 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

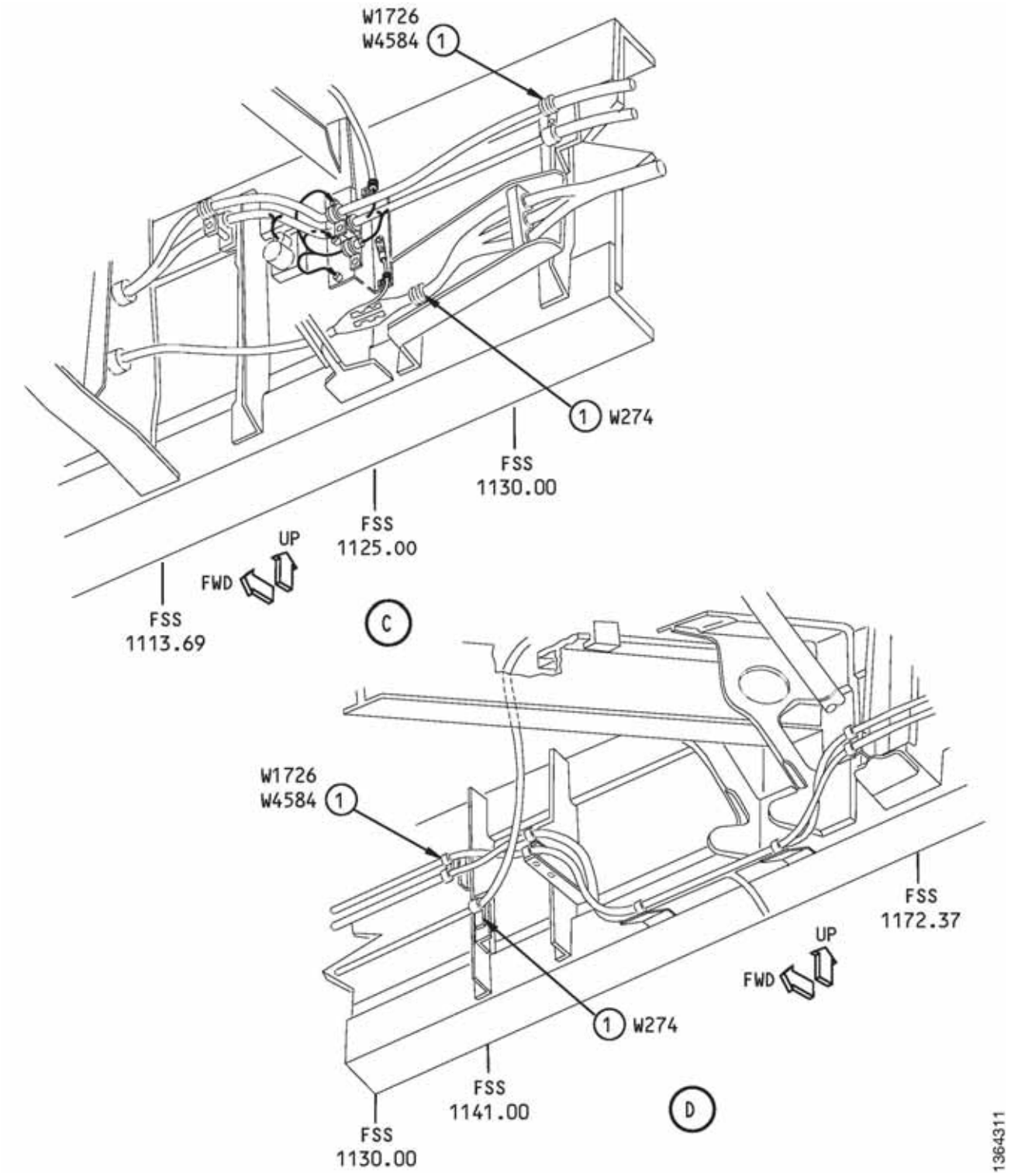



**FIGURE 38: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 3 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | CLAMP | - | 8 | Get access. Find the existing clamp on the specified wire bundle at the location specified by the circle symbol. (a) |
| (a) The actual configuration of the airplane can be different than the configuration in the figure. Some airplanes may not have a clamp installed on the specified wire bundle at the location specified by the circle symbol. If a clamp is not installed on the specified wire bundle at the location specified by the circle symbol, it is not necessary to install a sleeve and a new clamp at that location. | | | | | |

**FIGURE 38: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 4 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 28, 43.**

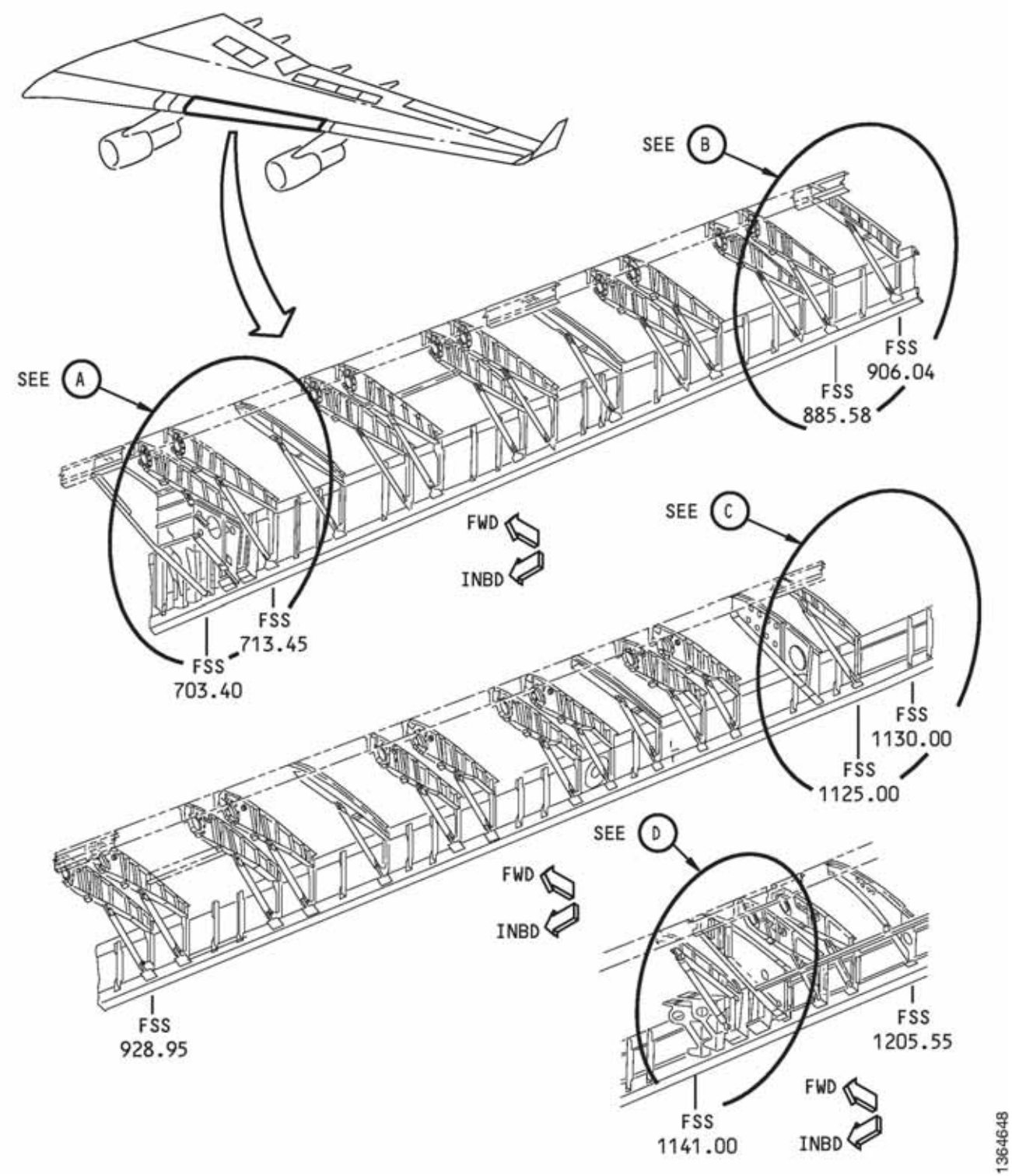



**FIGURE 39: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 1 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

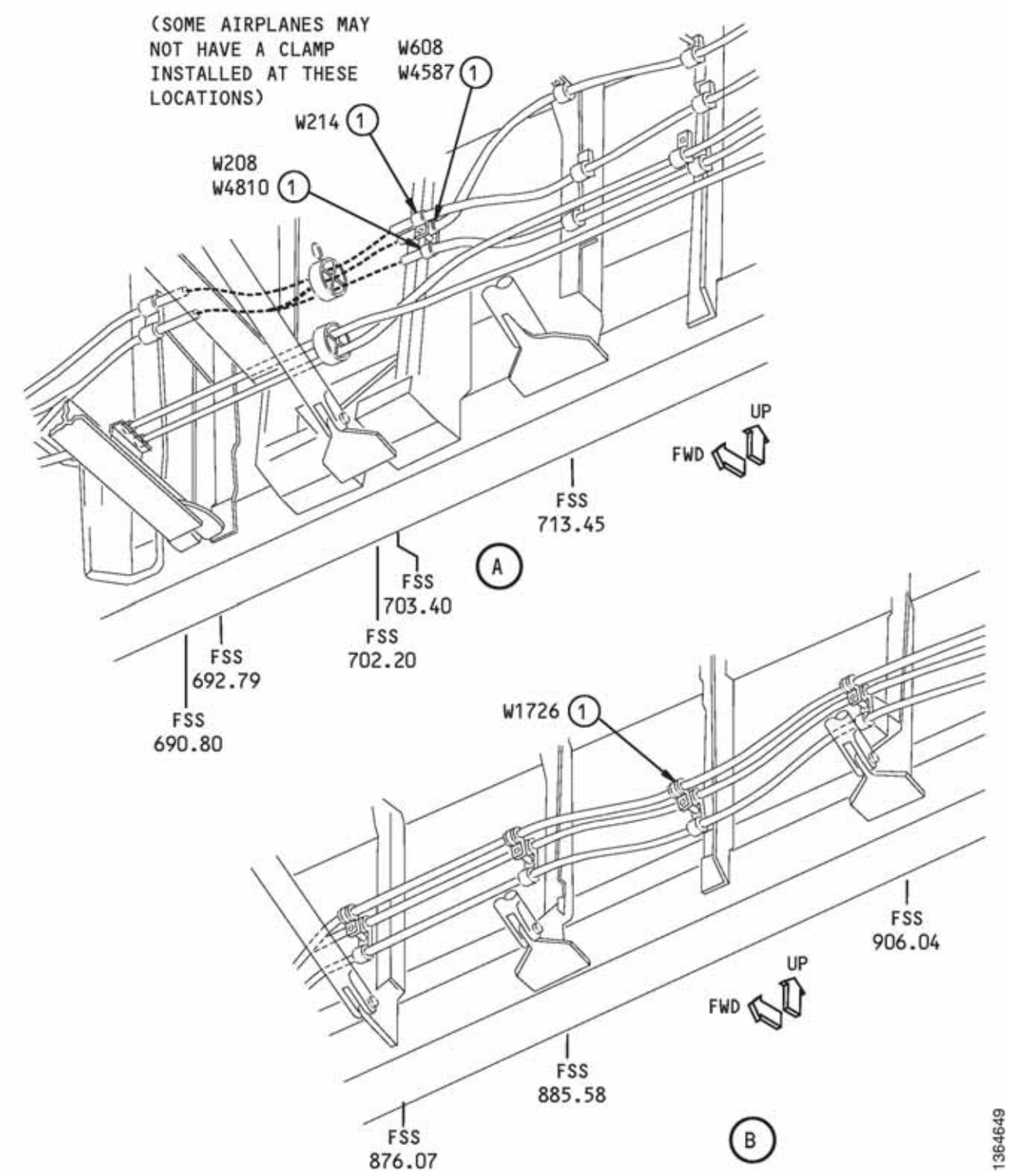



**FIGURE 39: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 2 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

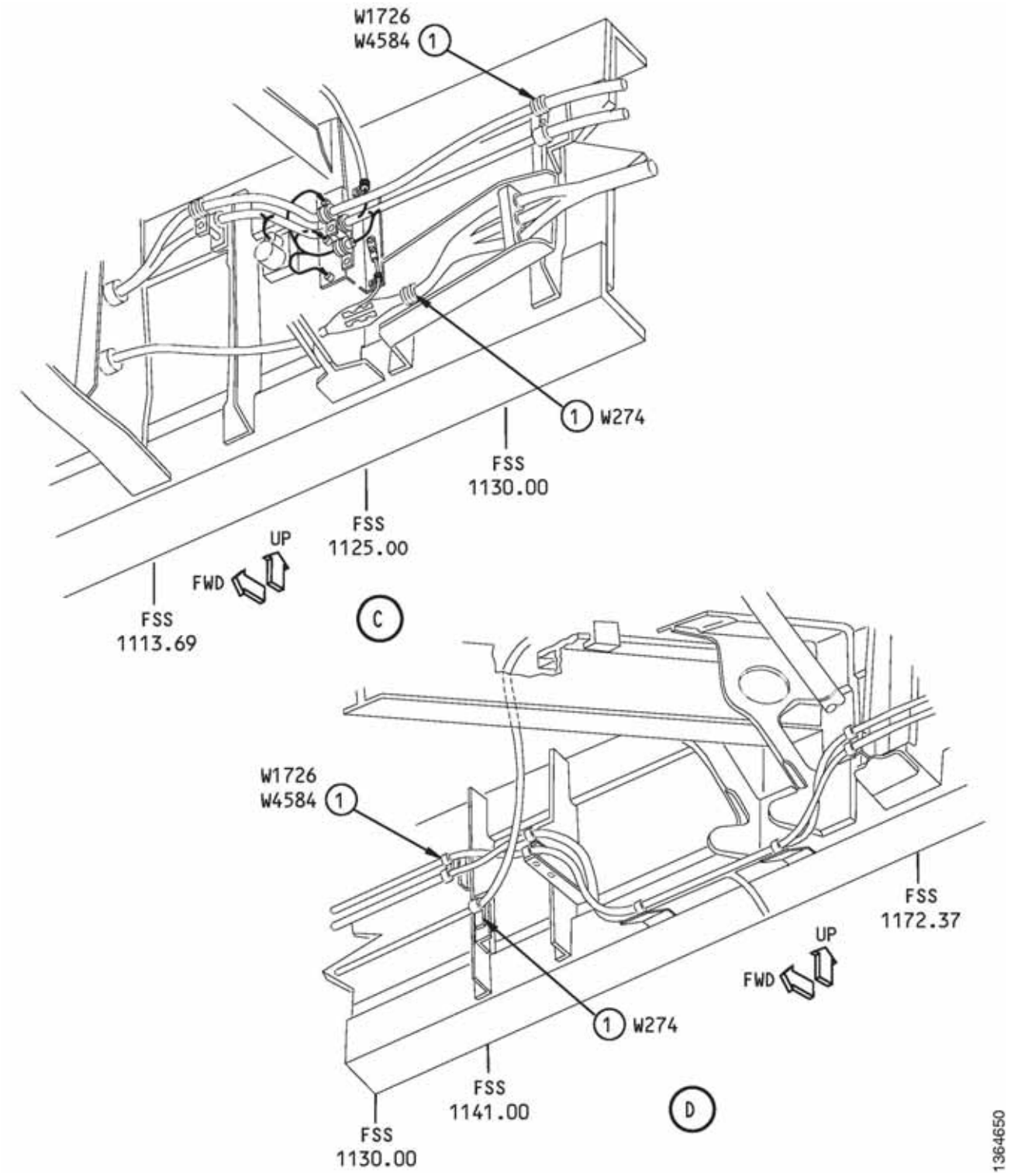



**FIGURE 39: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 3 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | CLAMP | - | 8 | Get access. Find the existing clamp on the specified wire bundle at the location specified by the circle symbol. (a) |
| (a) The actual configuration of the airplane can be different than the configuration in the figure. Some airplanes may not have a clamp installed on the specified wire bundle at the location specified by the circle symbol. If a clamp is not installed on the specified wire bundle at the location specified by the circle symbol, it is not necessary to install a sleeve and a new clamp at that location. | | | | | |

**FIGURE 39: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 4 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 45.**

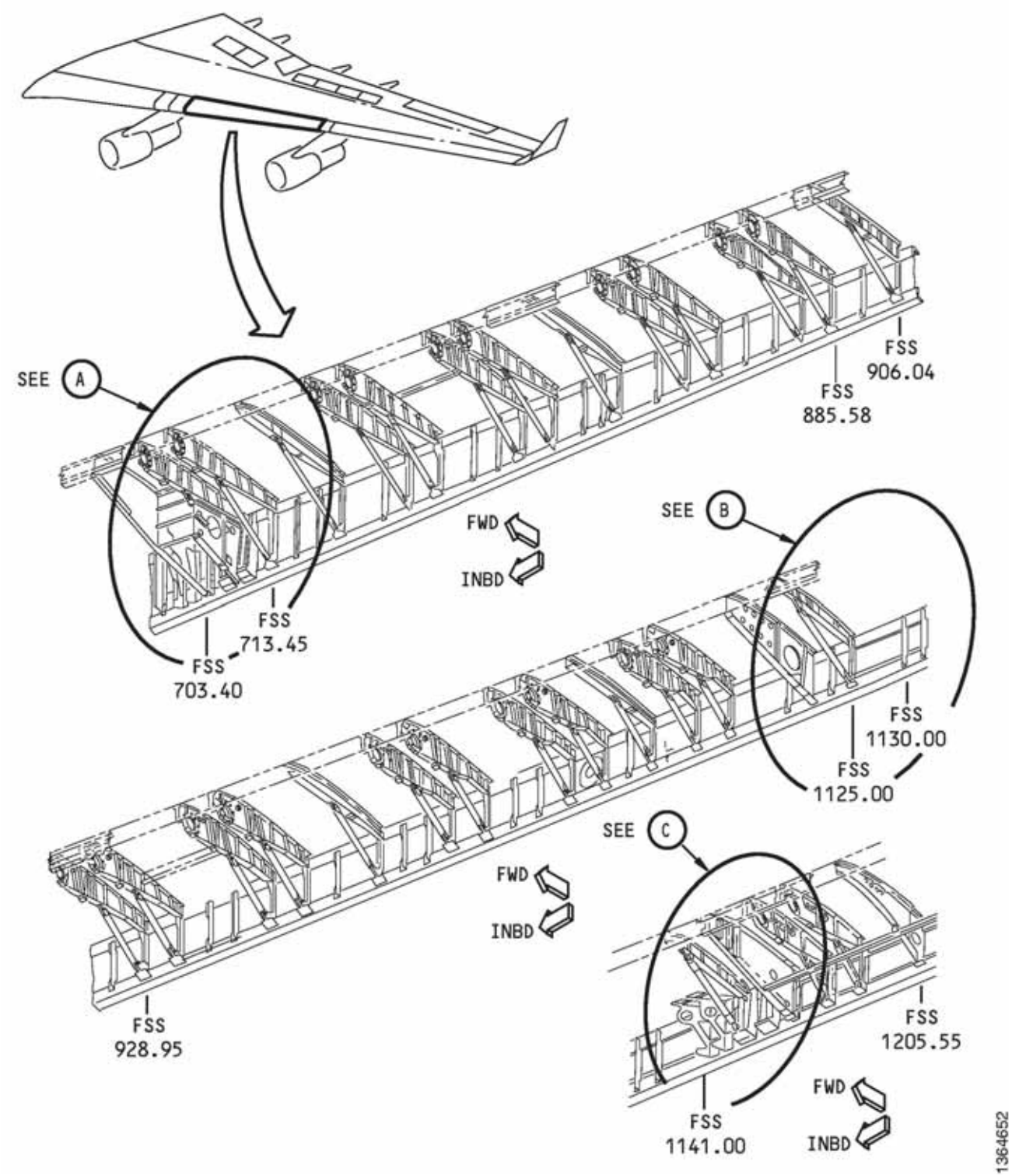



**FIGURE 40: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 1 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

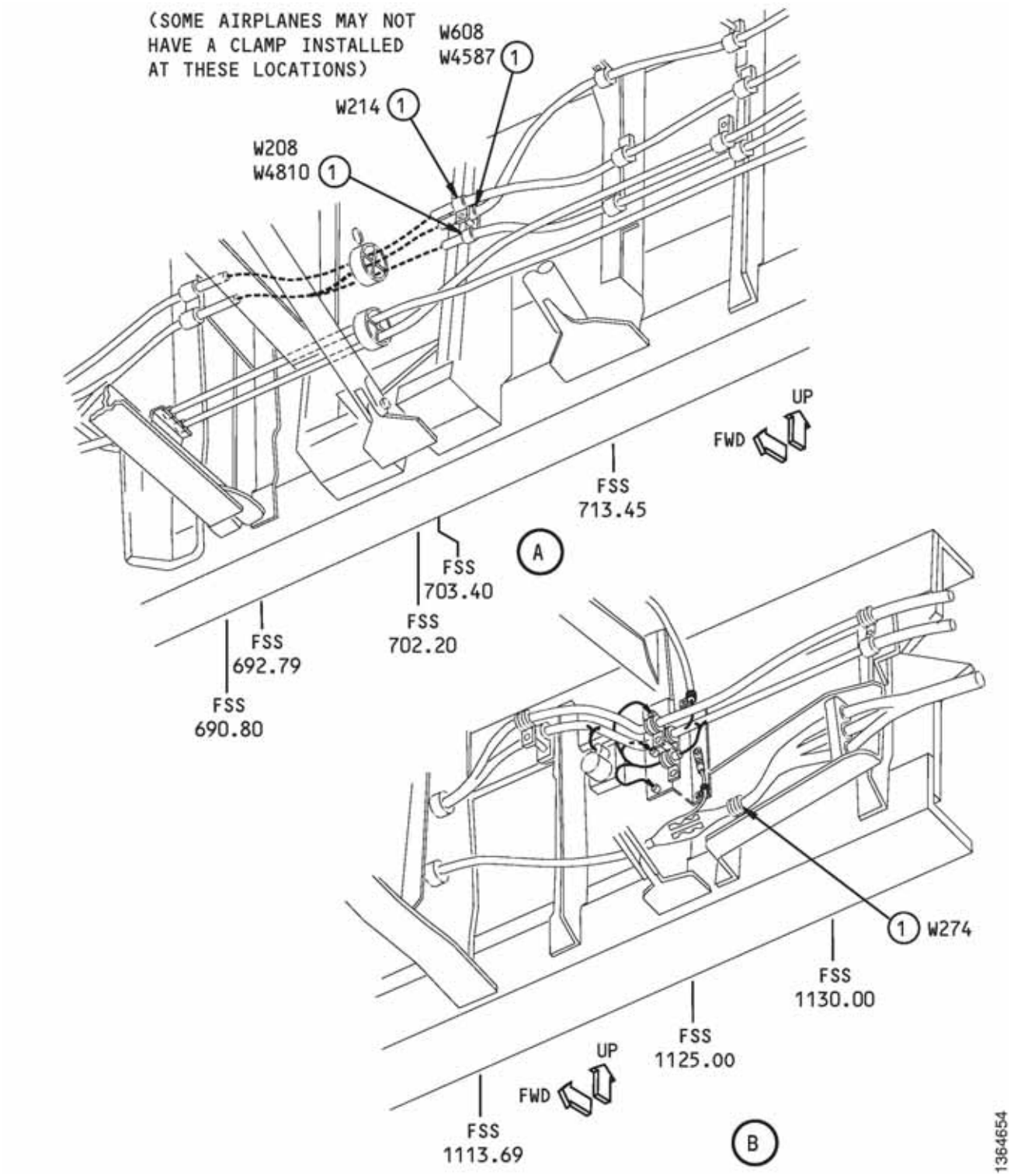
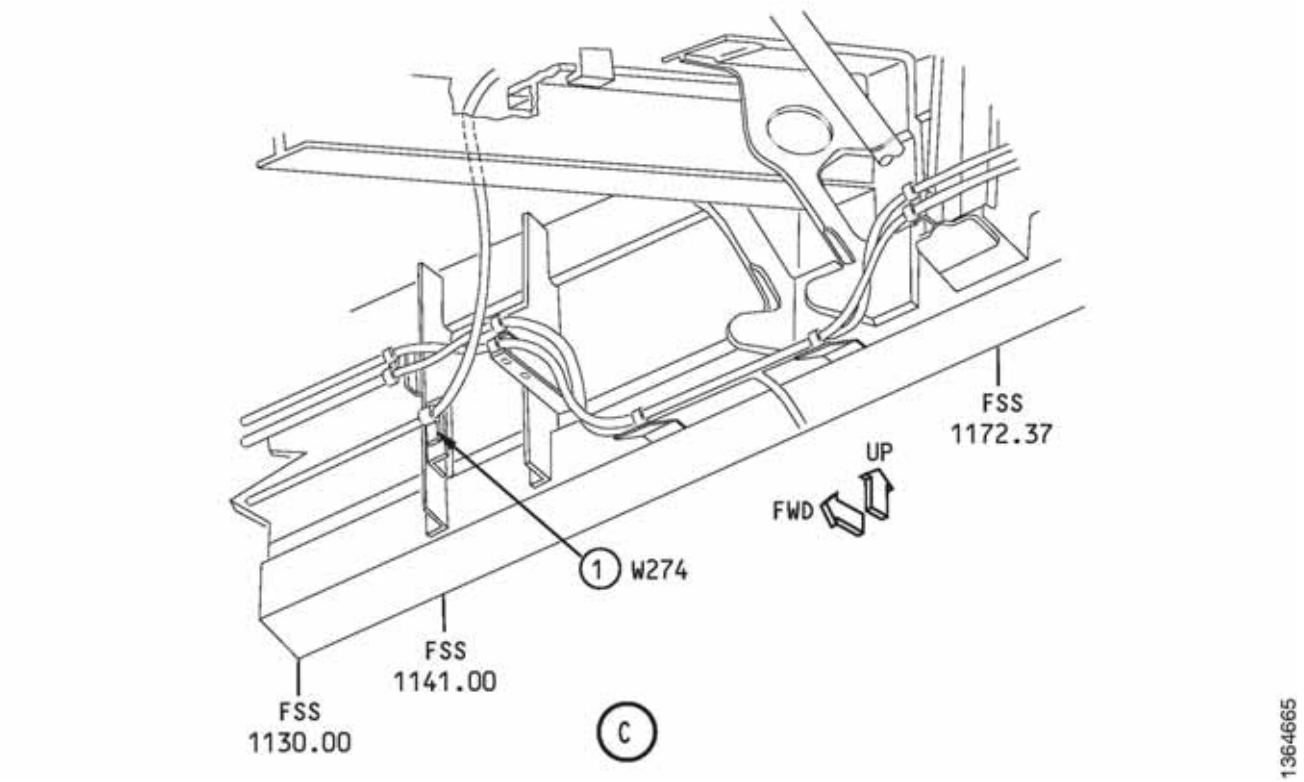



**FIGURE 40: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 2 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.




The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | CLAMP | - | 5 | Get access. Find the existing clamp on the specified wire bundle at the location specified by the circle symbol. (a) |
| (a) The actual configuration of the airplane can be different than the configuration in the figure. Some airplanes may not have a clamp installed on the specified wire bundle at the location specified by the circle symbol. If a clamp is not installed on the specified wire bundle at the location specified by the circle symbol, it is not necessary to install a sleeve and a new clamp at that location. | | | | | |

**FIGURE 40: FRONT SPAR - FRONT SPAR STATION 704 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 3 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 11.**

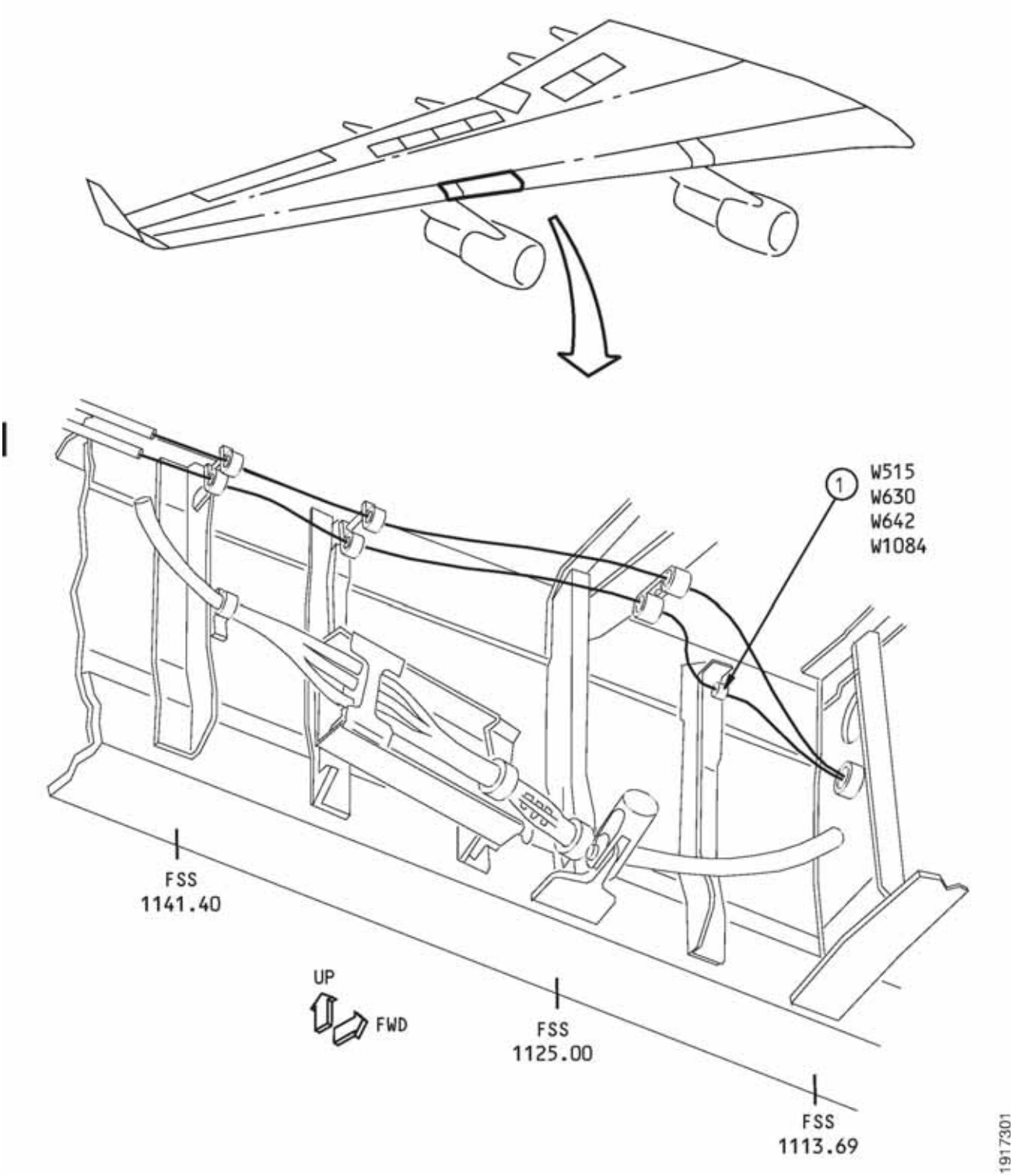



**FIGURE 41: FRONT SPAR - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 1 OF 2)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for this location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | CLAMP | - | 1 | Get access. Find the existing clamp on the specified wire bundle at the location specified by the circle symbol. (a) |
| (a) The actual configuration of the airplane can be different than the configuration in the figure. Some airplanes may not have a clamp installed on the specified wire bundle at the location specified by the circle symbol. If a clamp is not installed on the specified wire bundle at the location specified by the circle symbol, it is not necessary to install a sleeve and a new clamp at that location. | | | | | |

**FIGURE 41: FRONT SPAR - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 2 OF 2)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 18.**

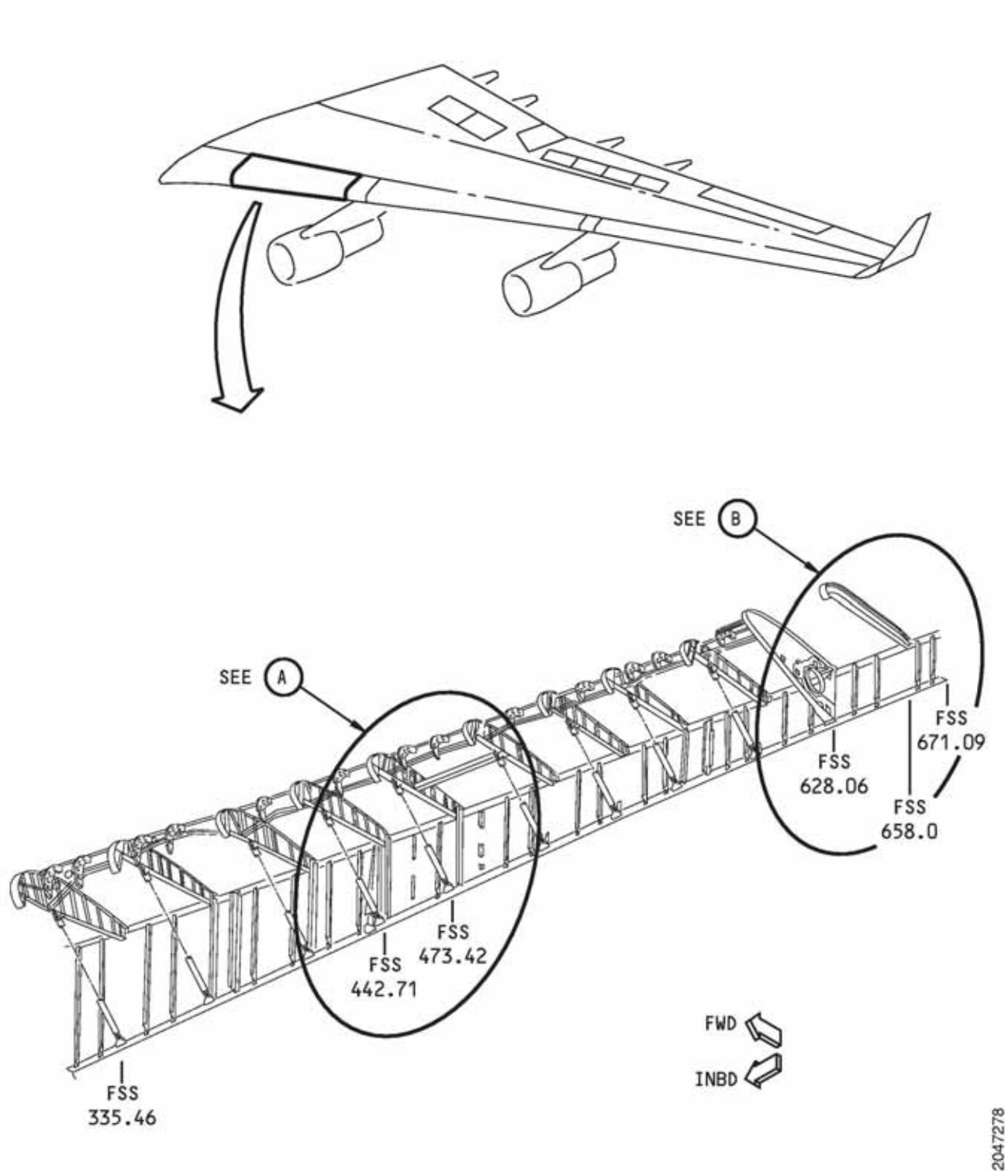



**FIGURE 42: FRONT SPAR - FRONT SPAR STATION 453 TO FRONT SPAR STATION 655 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 1 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

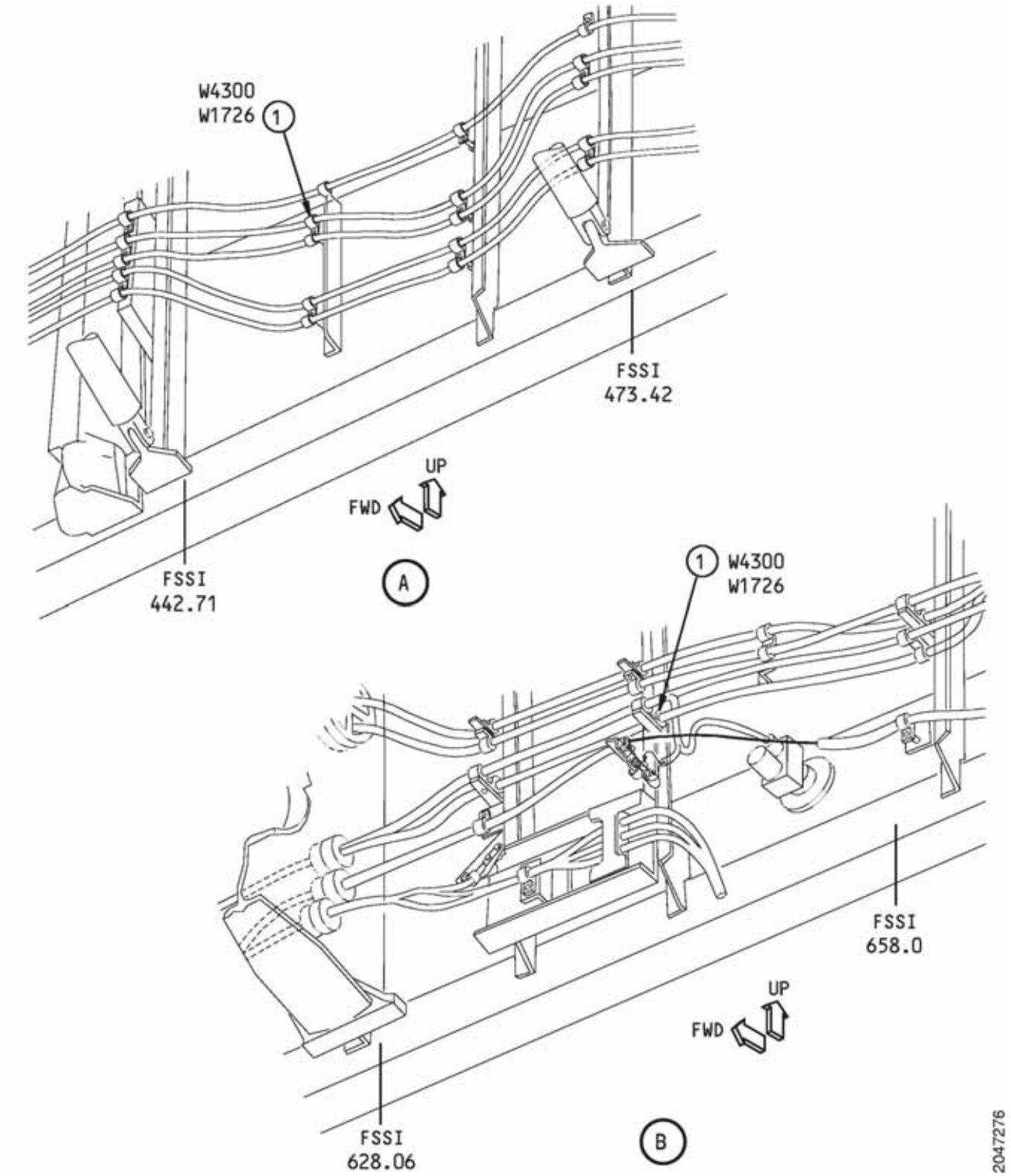



**FIGURE 42: FRONT SPAR - FRONT SPAR STATION 453 TO FRONT SPAR STATION 655 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS**
**(SHEET 2 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for this location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | CLAMP | - | 2 | Get access. Find the existing clamp on the specified wire bundle at the location specified by the circle symbol. (a) |
| (a) The actual configuration of the airplane can be different than the configuration in the figure. Some airplanes may not have a clamp installed on the specified wire bundle at the location specified by the circle symbol. If a clamp is not installed on the specified wire bundle at the location specified by the circle symbol, it is not necessary to install a sleeve and a new clamp at that location. | | | | | |

**FIGURE 42: FRONT SPAR - FRONT SPAR STATION 453 TO FRONT SPAR STATION 655 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS**
**(SHEET 3 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 18.**

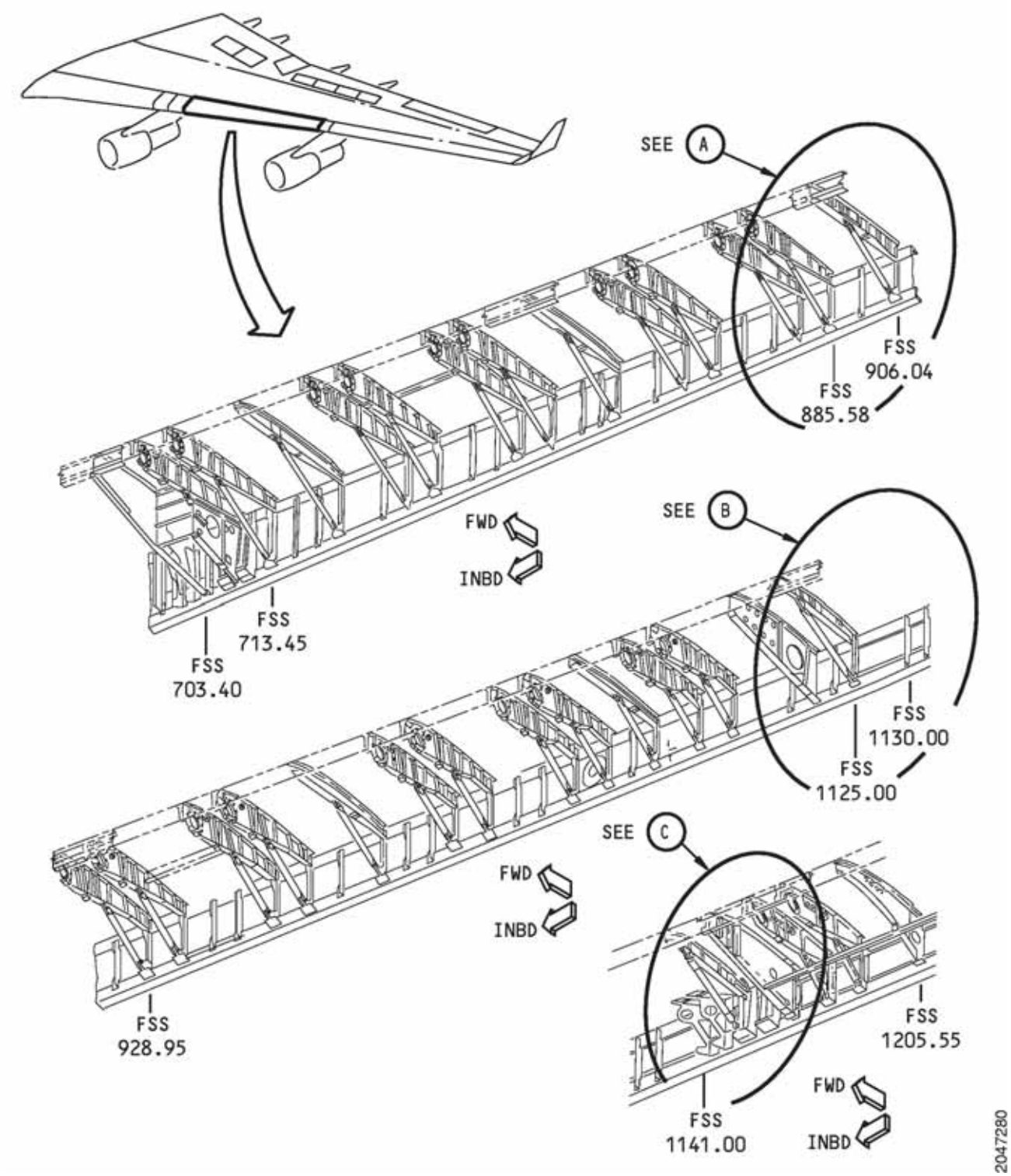



**FIGURE 43: FRONT SPAR - FRONT SPAR STATION 885 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 1 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

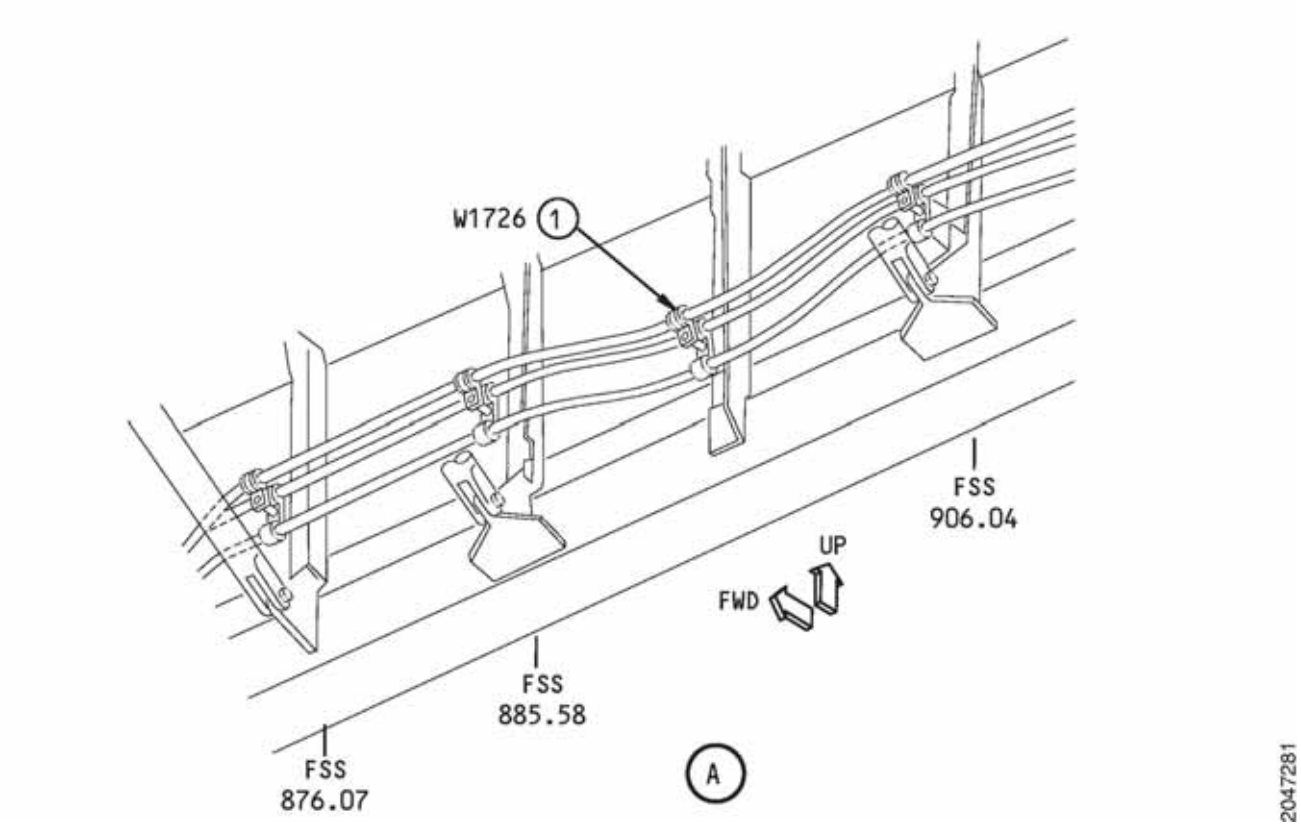



**FIGURE 43: FRONT SPAR - FRONT SPAR STATION 885 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 2 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

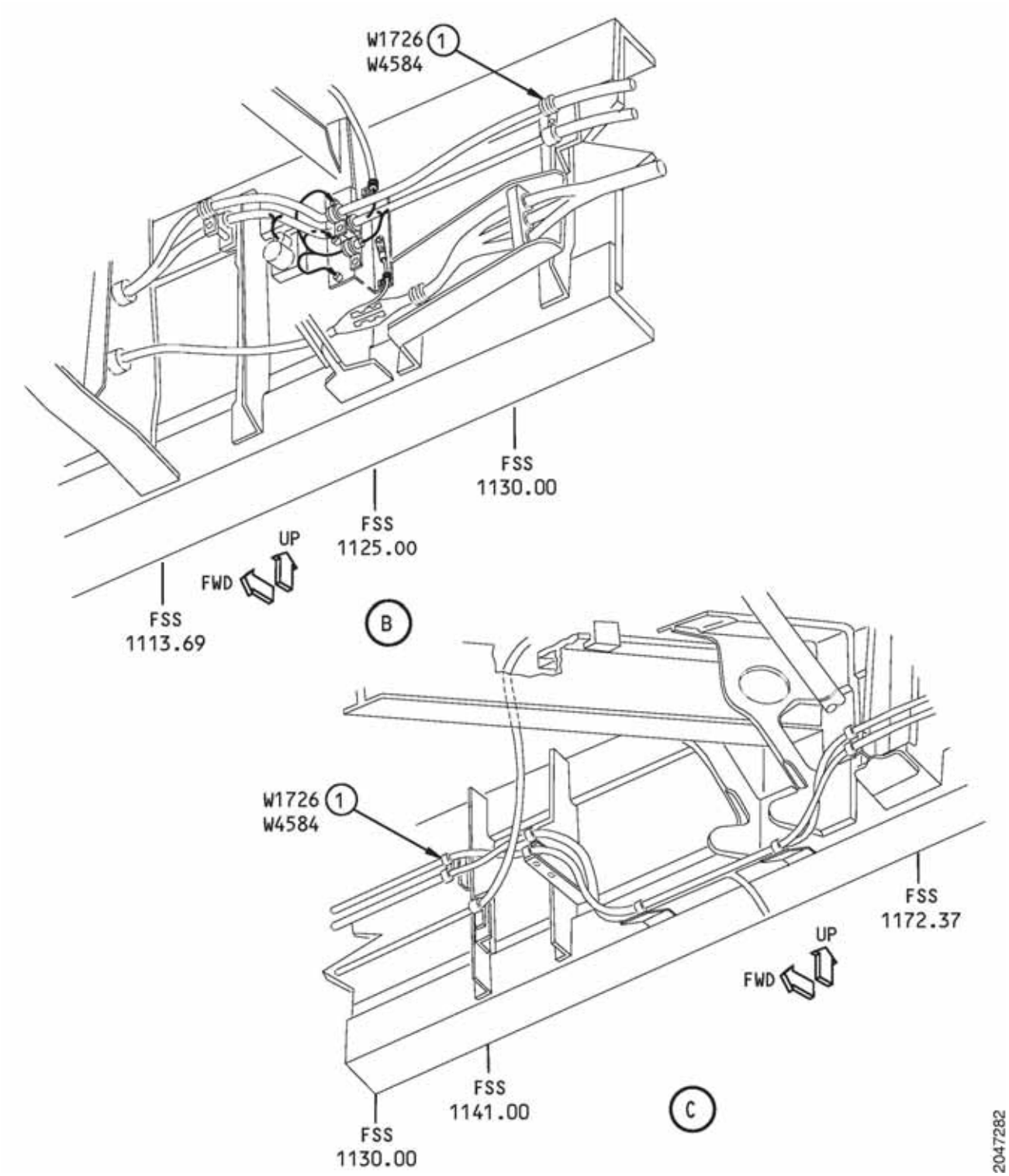



**FIGURE 43: FRONT SPAR - FRONT SPAR STATION 885 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 3 OF 4)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for this location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | CLAMP | - | 3 | Get access. Find the existing clamp on the specified wire bundle at the location specified by the circle symbol. (a) |
| (a) The actual configuration of the airplane can be different than the configuration in the figure. Some airplanes may not have a clamp installed on the specified wire bundle at the location specified by the circle symbol. If a clamp is not installed on the specified wire bundle at the location specified by the circle symbol, it is not necessary to install a sleeve and a new clamp at that location. | | | | | |

**FIGURE 43: FRONT SPAR - FRONT SPAR STATION 885 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 4 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 18.**

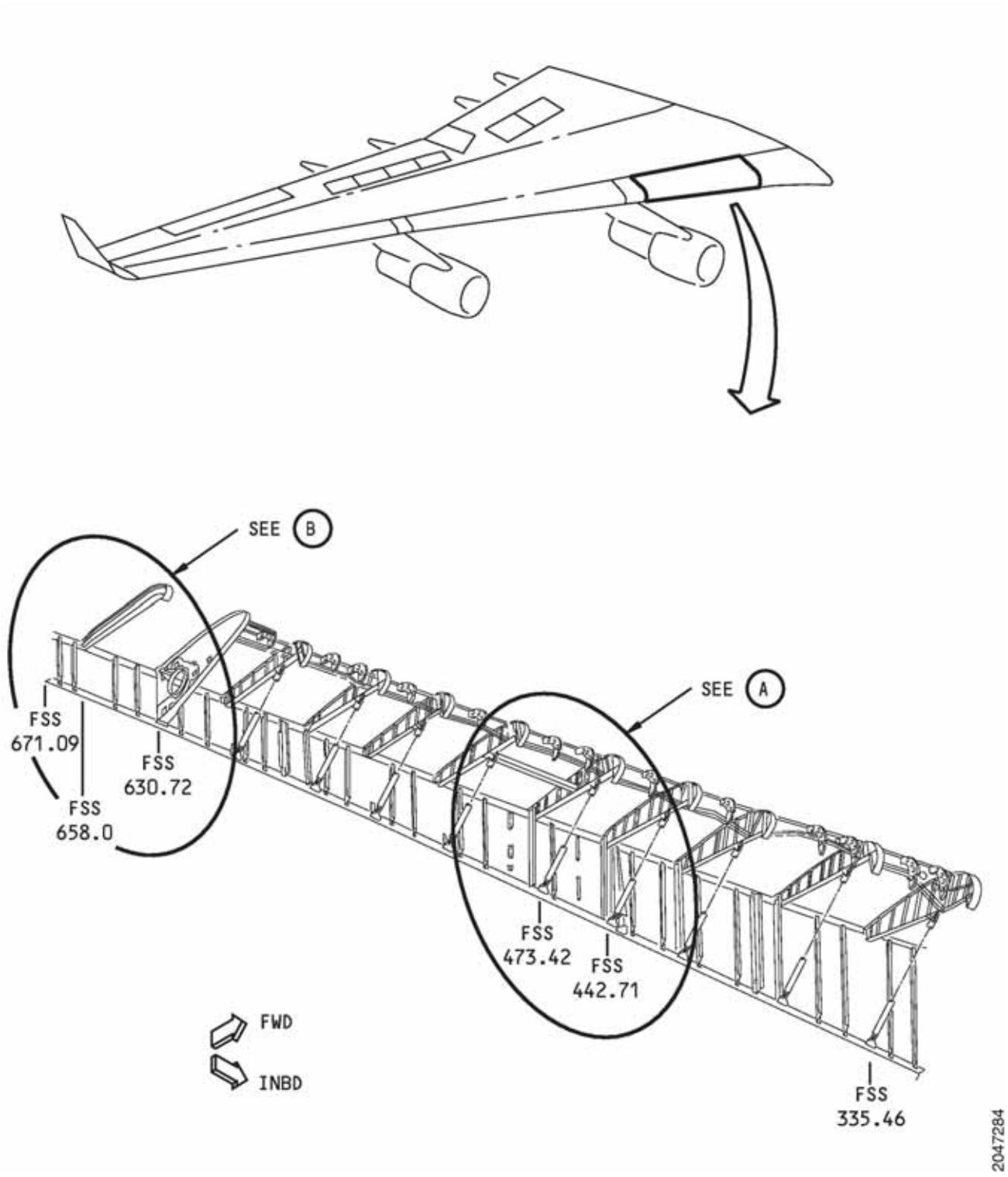



**FIGURE 44: FRONT SPAR - FRONT SPAR STATION 453 TO FRONT SPAR STATION 655 - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMP (SHEET 1 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

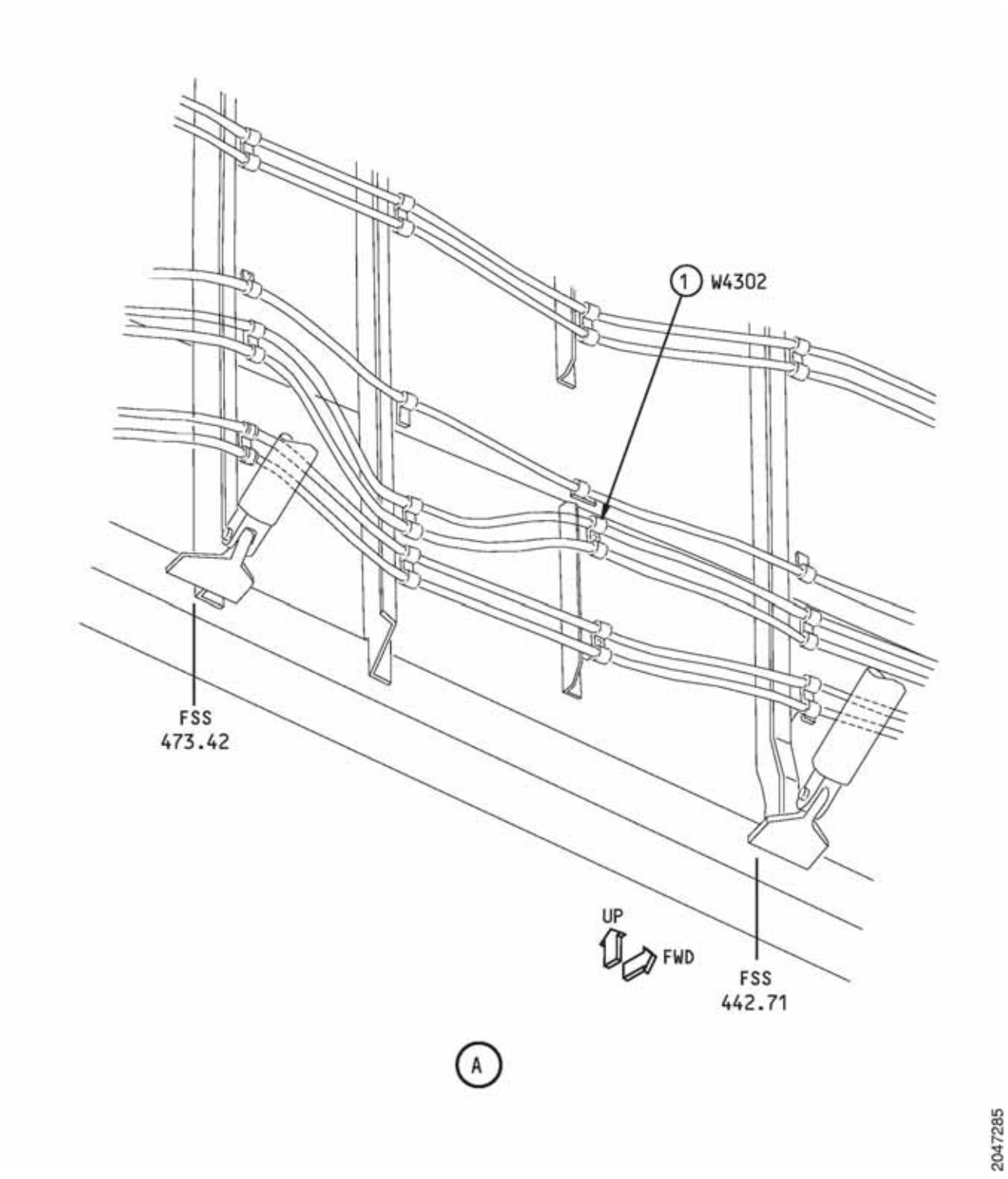
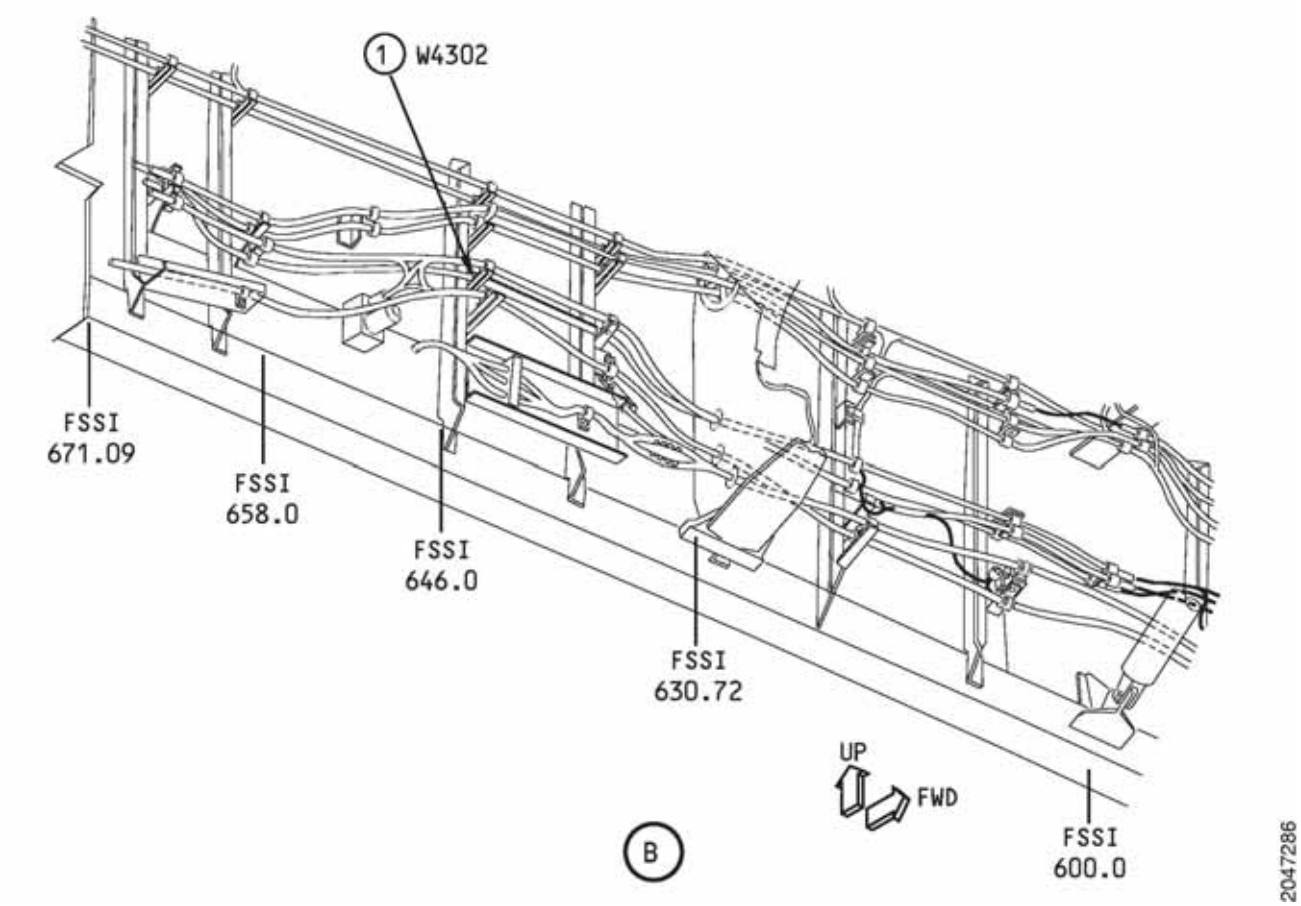



**FIGURE 44: FRONT SPAR - FRONT SPAR STATION 453 TO FRONT SPAR STATION 655 - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMP (SHEET 2 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.




The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for this location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | CLAMP | - | 2 | Get access. Find the existing clamp on the specified wire bundle at the location specified by the circle symbol. (a) |
| (a) The actual configuration of the airplane can be different than the configuration in the figure. Some airplanes may not have a clamp installed on the specified wire bundle at the location specified by the circle symbol. If a clamp is not installed on the specified wire bundle at the location specified by the circle symbol, it is not necessary to install a sleeve and a new clamp at that location. | | | | | |

**FIGURE 44: FRONT SPAR - FRONT SPAR STATION 453 TO FRONT SPAR STATION 655 - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMP (SHEET 3 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 32.**

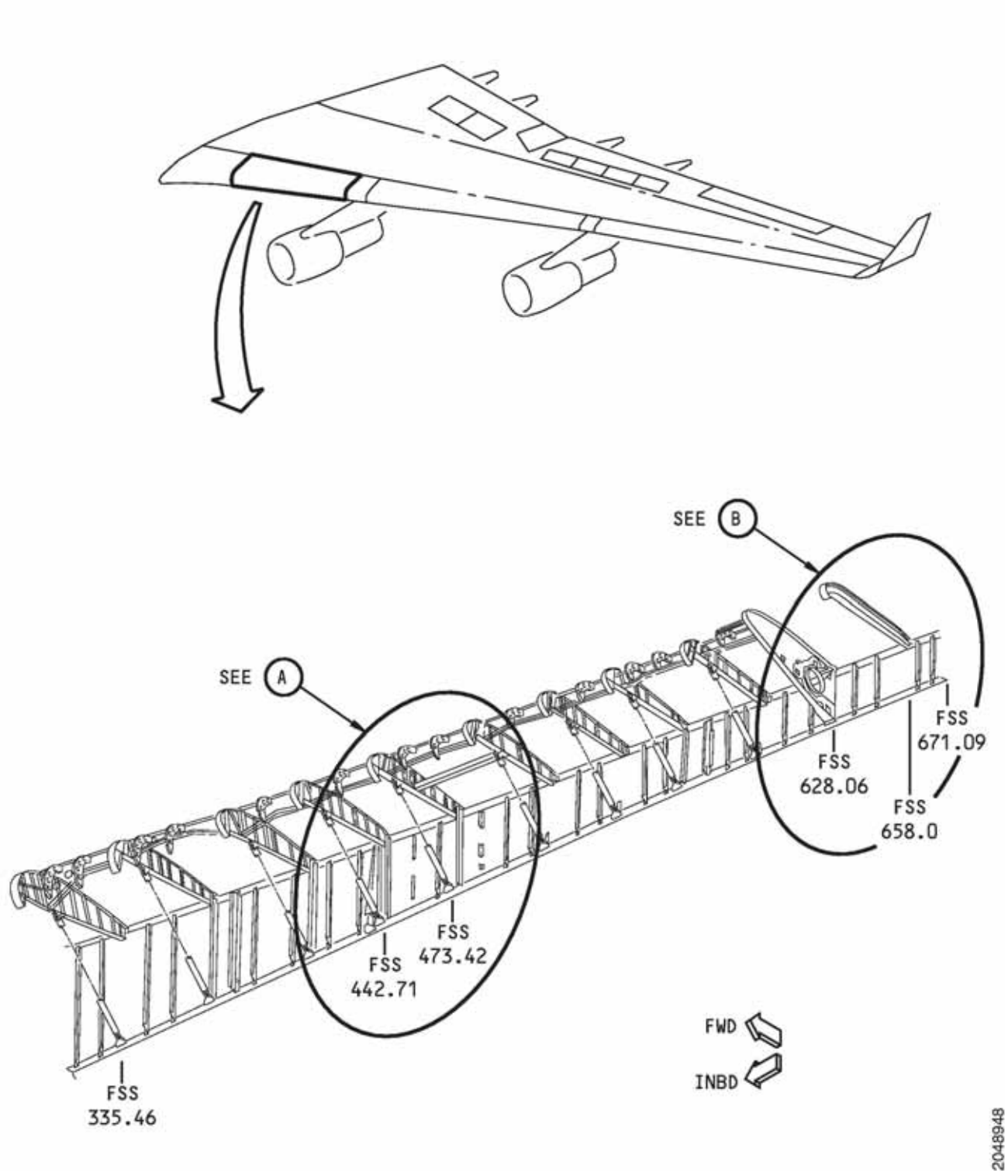



**FIGURE 45: FRONT SPAR - FRONT SPAR STATION 453 TO FRONT SPAR STATION 655 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 1 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

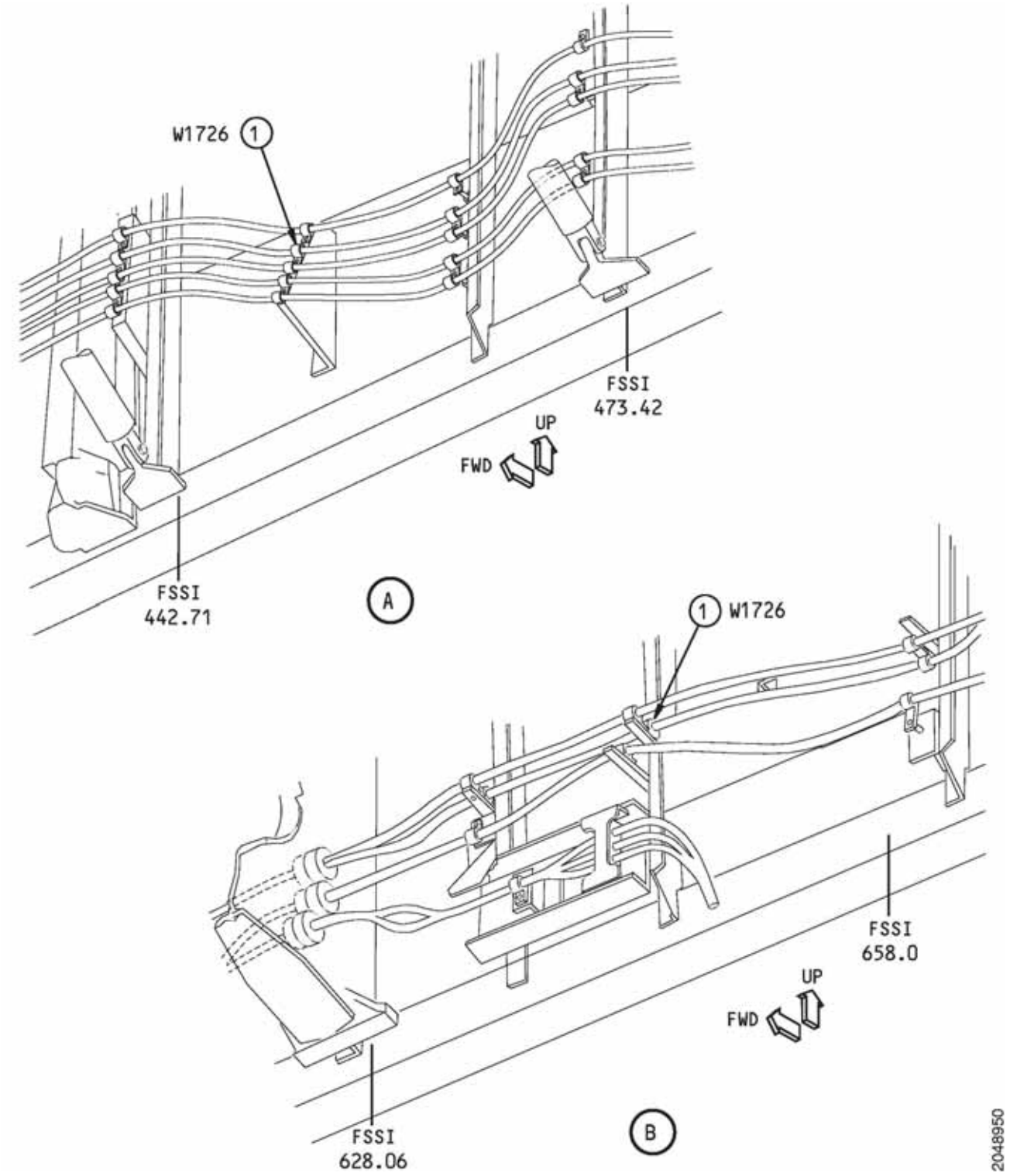



**FIGURE 45: FRONT SPAR - FRONT SPAR STATION 453 TO FRONT SPAR STATION 655 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS**
**(SHEET 2 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for this location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | CLAMP | - | 2 | Get access. Find the existing clamp on the specified wire bundle at the location specified by the circle symbol. (a) |
| (a) The actual configuration of the airplane can be different than the configuration in the figure. Some airplanes may not have a clamp installed on the specified wire bundle at the location specified by the circle symbol. If a clamp is not installed on the specified wire bundle at the location specified by the circle symbol, it is not necessary to install a sleeve and a new clamp at that location. | | | | | |

**FIGURE 45: FRONT SPAR - FRONT SPAR STATION 453 TO FRONT SPAR STATION 655 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS**
**(SHEET 3 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 32.**

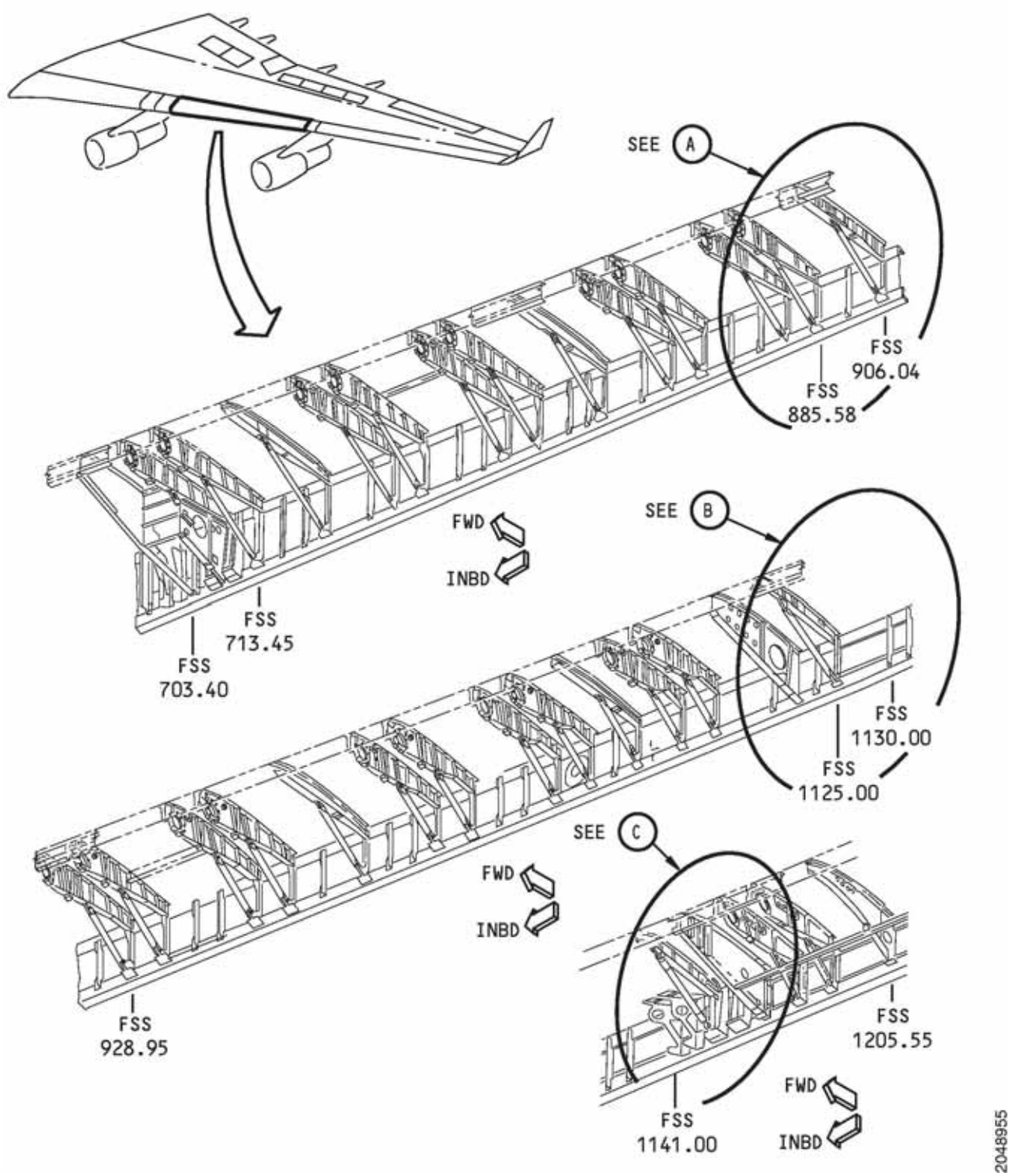



**FIGURE 46: FRONT SPAR - FRONT SPAR STATION 885 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 1 OF 4)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

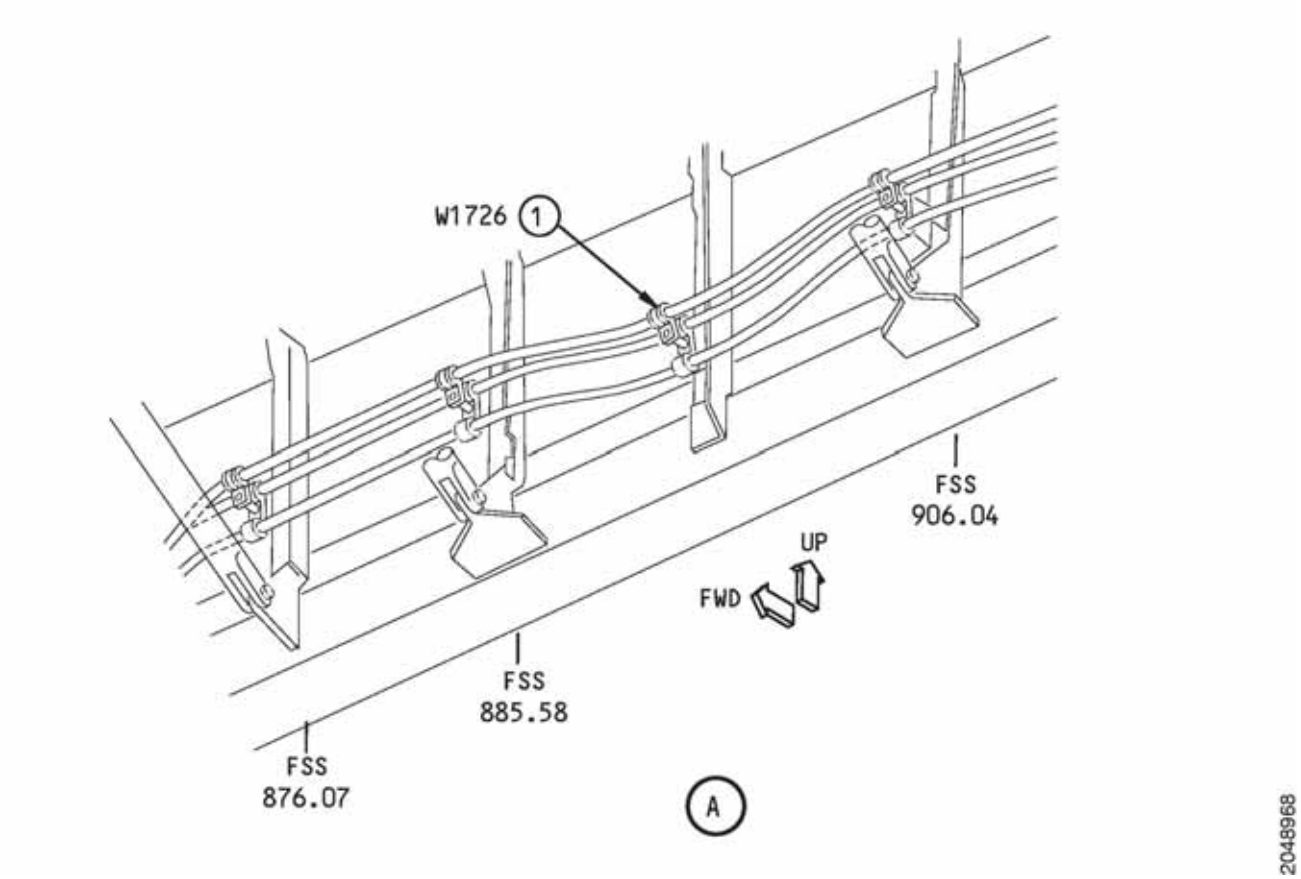



**FIGURE 46: FRONT SPAR - FRONT SPAR STATION 885 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 2 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

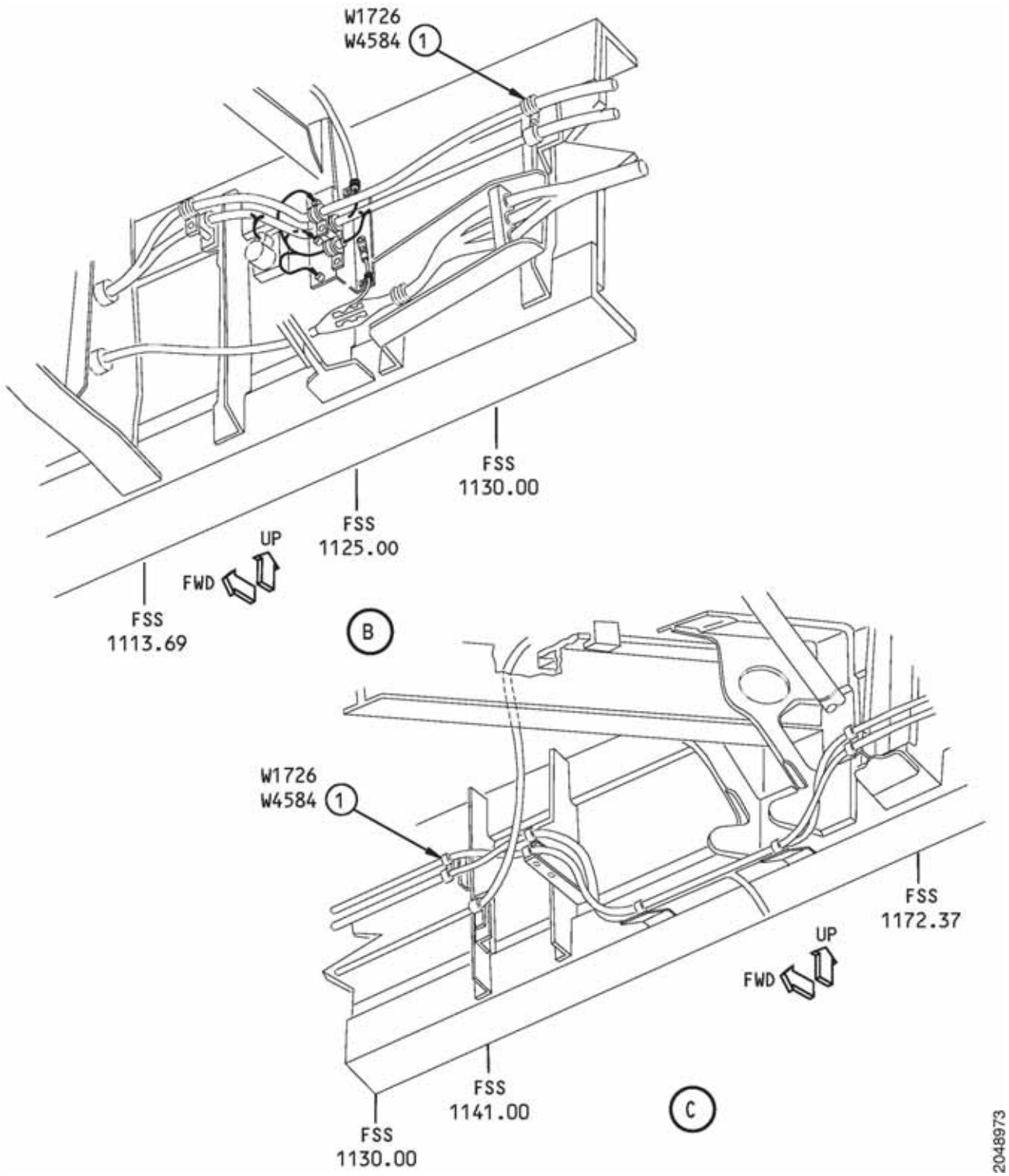



**FIGURE 46: FRONT SPAR - FRONT SPAR STATION 885 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 3 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for this location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | CLAMP | - | 3 | Get access. Find the existing clamp on the specified wire bundle at the location specified by the circle symbol. (a) |
| (a) The actual configuration of the airplane can be different than the configuration in the figure. Some airplanes may not have a clamp installed on the specified wire bundle at the location specified by the circle symbol. If a clamp is not installed on the specified wire bundle at the location specified by the circle symbol, it is not necessary to install a sleeve and a new clamp at that location. | | | | | |

**FIGURE 46: FRONT SPAR - FRONT SPAR STATION 885 TO FRONT SPAR STATION 1141 - LEFT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 4 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-21, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2.**

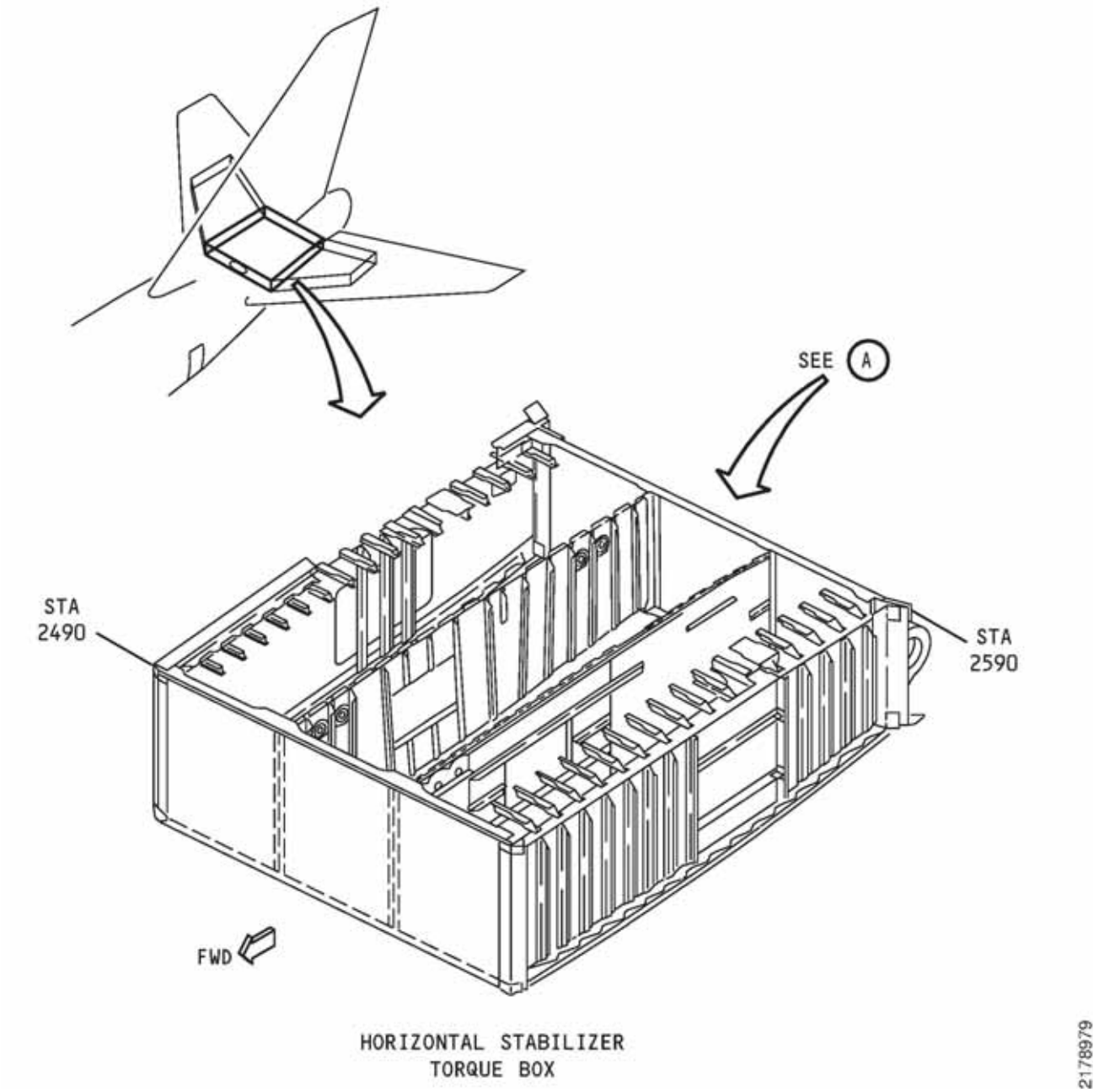



**FIGURE 47: REAR SPAR - HORIZONTAL STABILIZER - LOCATION OF THE WIRE BUNDLE W4607 CLAMP (SHEET 1 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

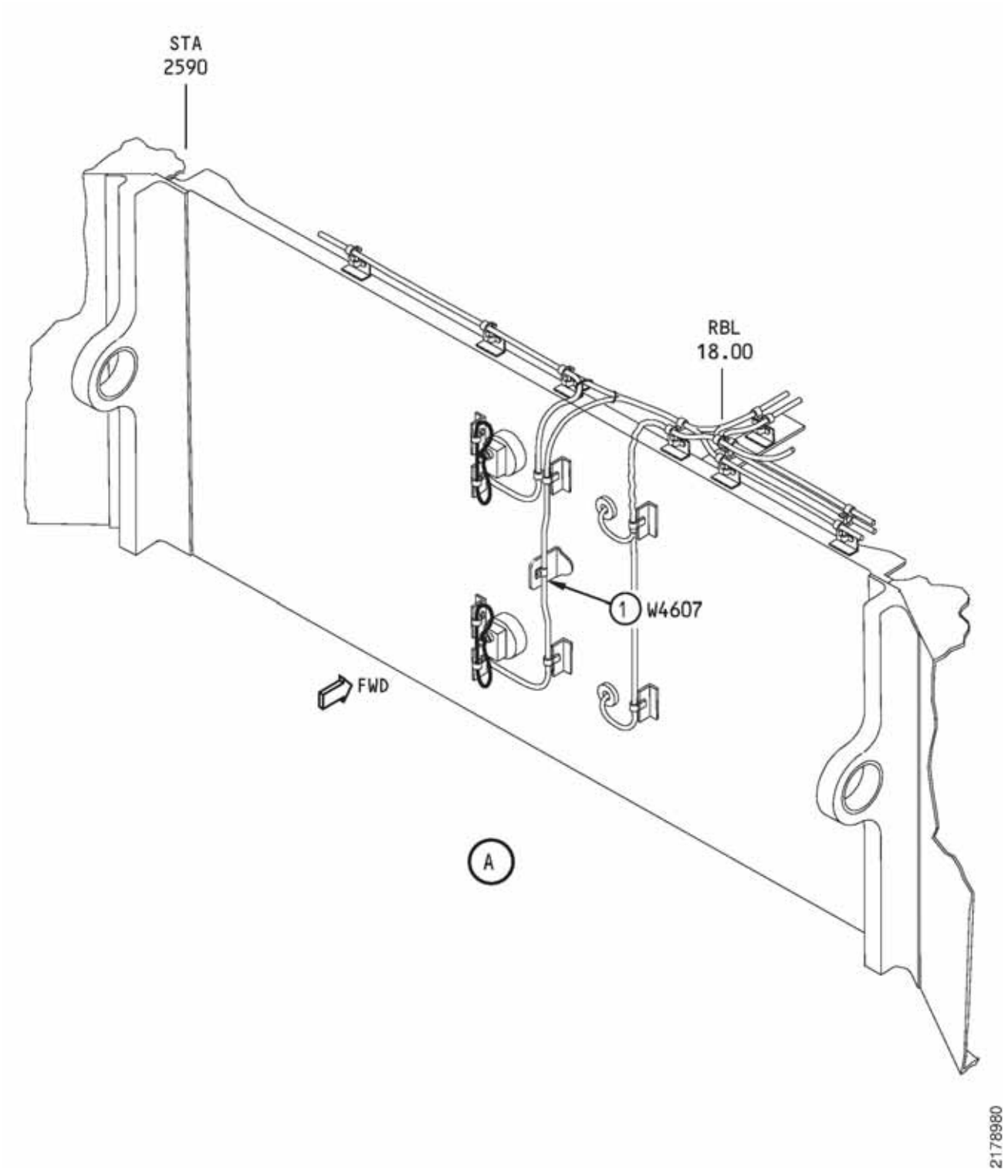



**FIGURE 47: REAR SPAR - HORIZONTAL STABILIZER - LOCATION OF THE WIRE BUNDLE W4607 CLAMP (SHEET 2 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for this location.

| STEP | TASK | NAME | IDENTIFICATION | QTY | MORE DATA |
|---|---|---|---|---|---|
| 1 | Locate | CLAMP | - | 1 | Do a general visual inspection to make sure that the wire bundle clamp at the location specified by the circle symbol is installed. (a) |
| (a) The actual configuration of the airplane can be different than the configuration in the figure. Some airplanes may not have the clamp installed on the specified wire bundle at the location specified by the circle symbol. If the clamp is not installed on the specified wire bundle at the location specified by the circle symbol, it is not necessary to install a sleeve and a new clamp at that location. | | | | | |

**FIGURE 47: REAR SPAR - HORIZONTAL STABILIZER - LOCATION OF THE WIRE BUNDLE W4607 CLAMP (SHEET 3 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 1-9, 16-45.**

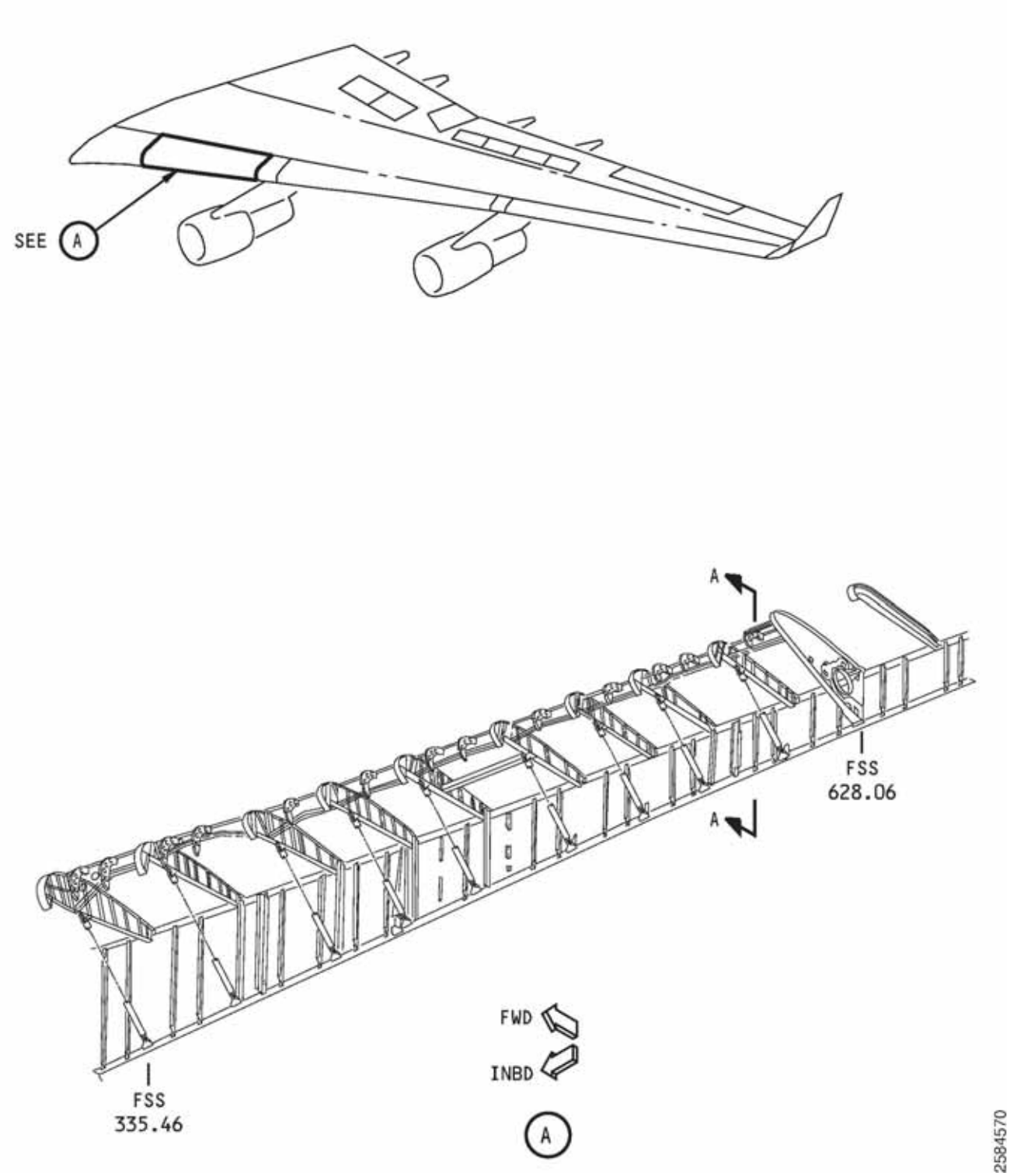



**FIGURE 48: FRONT SPAR - STATION 600 LEFT WING - ADDITIONAL FASTENERS FILLET SEAL APPLICATION**
**(SHEET 1 OF 5)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

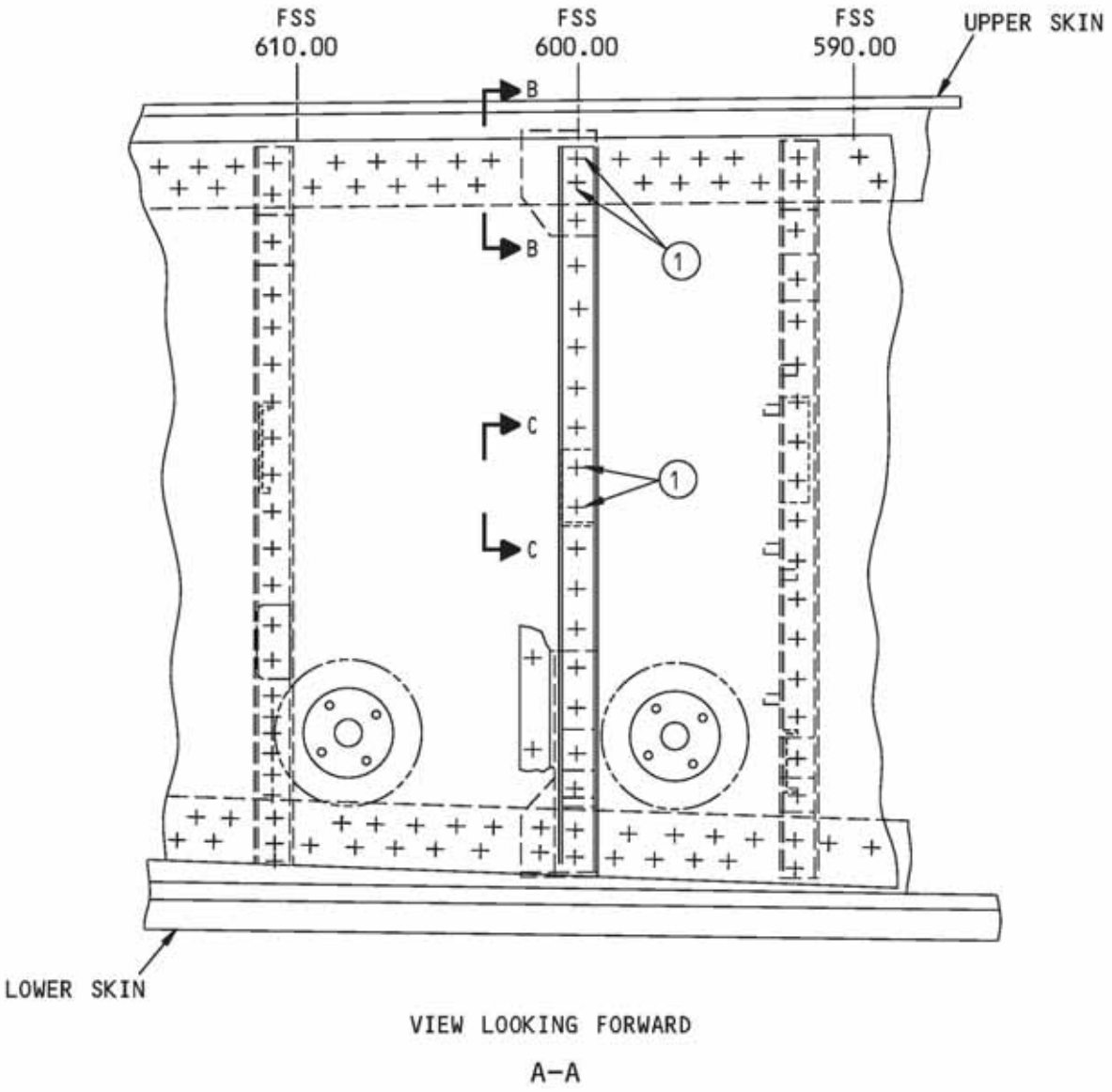
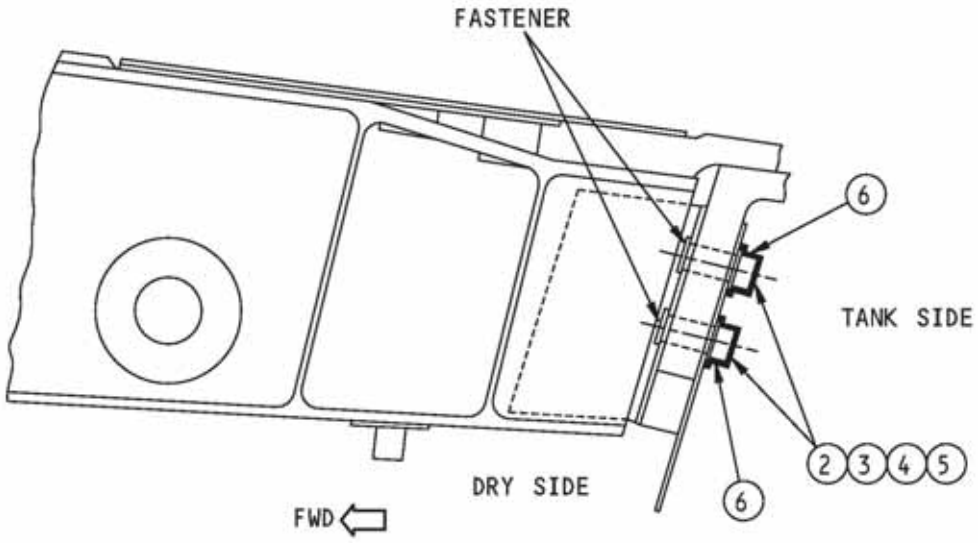
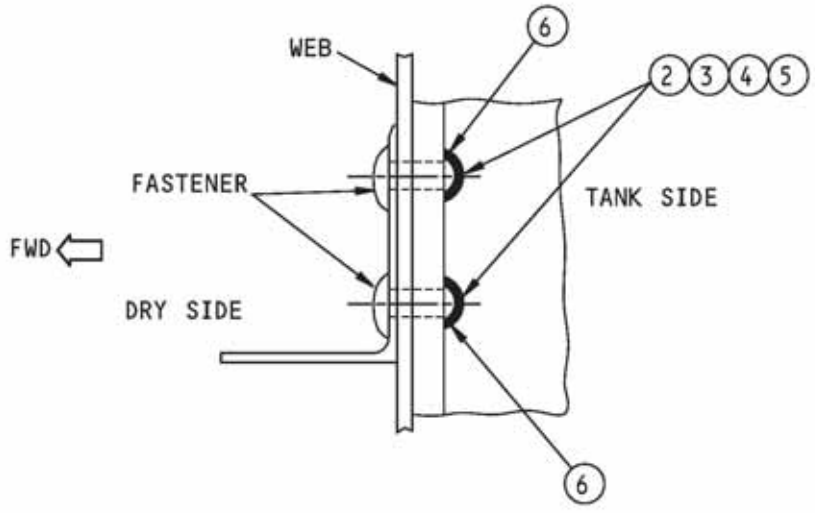



**FIGURE 48: FRONT SPAR - STATION 600 LEFT WING - ADDITIONAL FASTENERS FILLET SEAL APPLICATION**
**(SHEET 2 OF 5)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.




B–B




C–C

2678515

**FIGURE 48: FRONT SPAR - STATION 600 LEFT WING - ADDITIONAL FASTENERS FILLET SEAL APPLICATION**
**(SHEET 3 OF 5)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for this location.

| Step | Task | Name | Identification | Qty | More Data |
|---|---|---|---|---|---|
| 1 | Locate | FASTENERS | - | 4 | Get access. Find the location of the fasteners that must be sealed. |
| 2 | Remove | DEBRIS | - | - | The debris around the areas to be sealed must be removed. |
| 3 | Apply | SOLVENT | BMS 11-7 (SOLVENTS IN SOPM 20-30-93 optional) | - | Use BMS 15-5 wiper wet with solvent. (a)(g) |
| | Clean | FASTENERS | - | - | Use a non-metallic bristle brush. |
| | Remove | SOLVENT | - | - | The remaining solvent must be removed while wet with a clean, dry BMS 15-5 wiper. |
| 4 | Apply | SOLVENT | BMS 11-7 (SOLVENTS IN SOPM 20-30-93 optional) | - | Use a BMS 15-5 wiper wet with solvent. (b)(g) |
| | Clean | FASTENERS | - | - | Use a non-metallic bristle brush. (c) |
| | Remove | SOLVENT | - | - | The remaining solvent must be removed while wet with a clean, dry BMS 15-5 wiper. |
| 5 | Apply | SEALANT | BMS 5-45, CLASS A-2 GRADE 1 (ALTERNATIVE FUEL TANK SEALANTS IN 747-400 AMM 51-31-01 optional) | - | Precoat sealant. (d)(e) |
| 6 | Apply | SEALANT | BMS 5-45, CLASS B-2, GRADE 1 (ALTERNATIVE FUEL TANK SEALANTS IN 747-400 AMM 51-31-01 optional) | - | Fillet sealant. (d)(f) |

**FIGURE 48: FRONT SPAR - STATION 600 LEFT WING - ADDITIONAL FASTENERS FILLET SEAL APPLICATION**
**(SHEET 4 OF 5)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

| Step | Task | Name | Identification | Qty | More Data |
|---|---|---|---|---|---|
| (a) Make sure that an area approximately 0.5 inch from the base of the fastener is clean. The cleaned area must be larger than the area that must have sealant. | | | | | |
| (b) This step must be done immediately before the first layer of sealant is applied. | | | | | |
| (c) Make sure that the wiper has no visible soil remaining after the area is cleaned. | | | | | |
| (d) Make sure to use the sealants specified in this table. | | | | | |
| (e) Make sure to apply the precoat sealant on the fastener. Refer to 747-400 AMM 28-11-00 as an accepted procedure. | | | | | |
| (f) Make sure to apply the fillet sealant on the fastener. Refer to 747-400 AMM 28-11-00 as an accepted procedure. | | | | | |
| (g) Refer to SOPM 20-30-93 as an accepted procedure for selection of solvent. | | | | | |

**FIGURE 48: FRONT SPAR - STATION 600 LEFT WING - ADDITIONAL FASTENERS FILLET SEAL APPLICATION**
**(SHEET 5 OF 5)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 1-9, 16-45.**

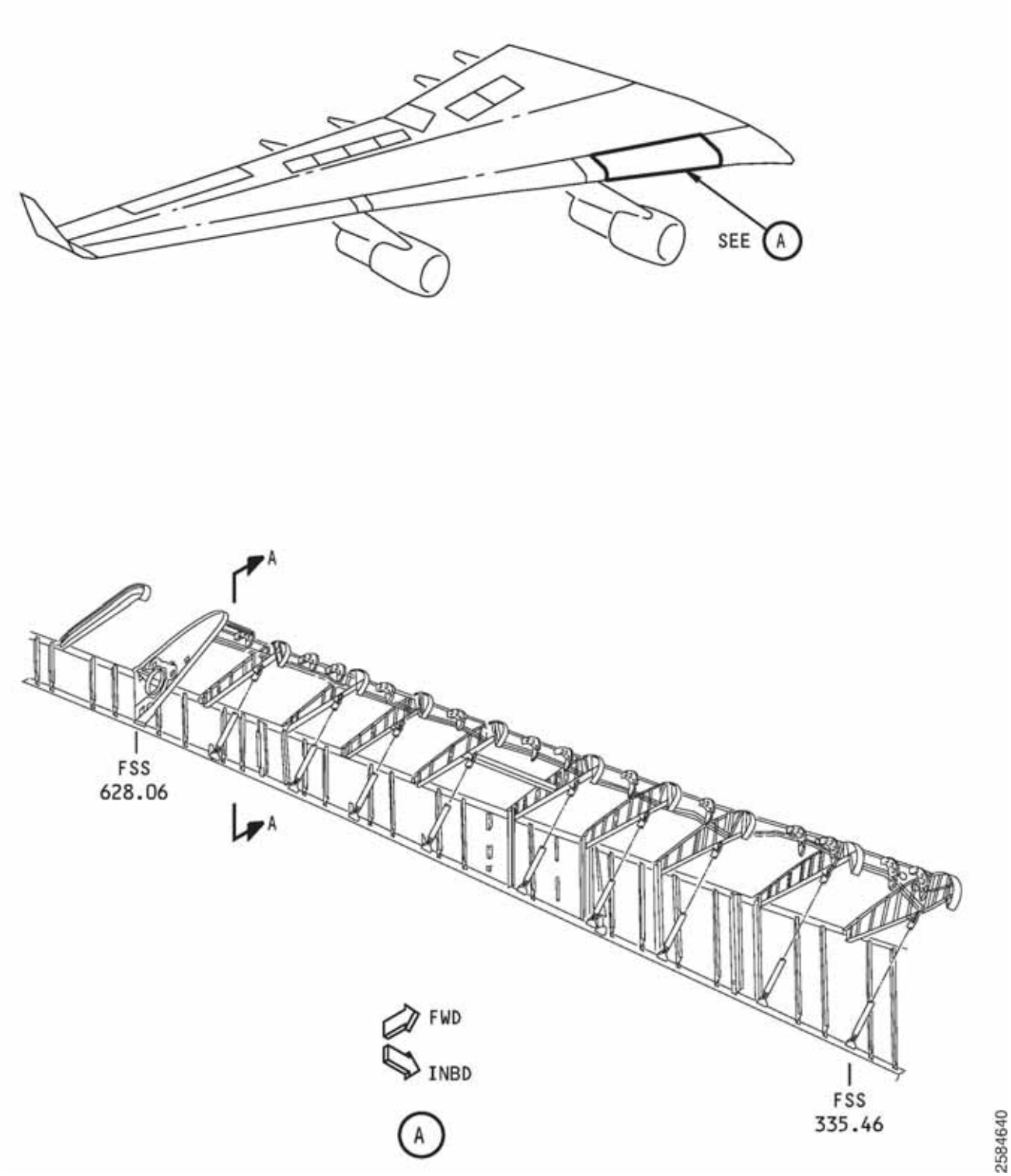



**FIGURE 49: FRONT SPAR - STATION 600 RIGHT WING - ADDITIONAL FASTENERS FILLET SEAL APPLICATION**
**(SHEET 1 OF 5)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

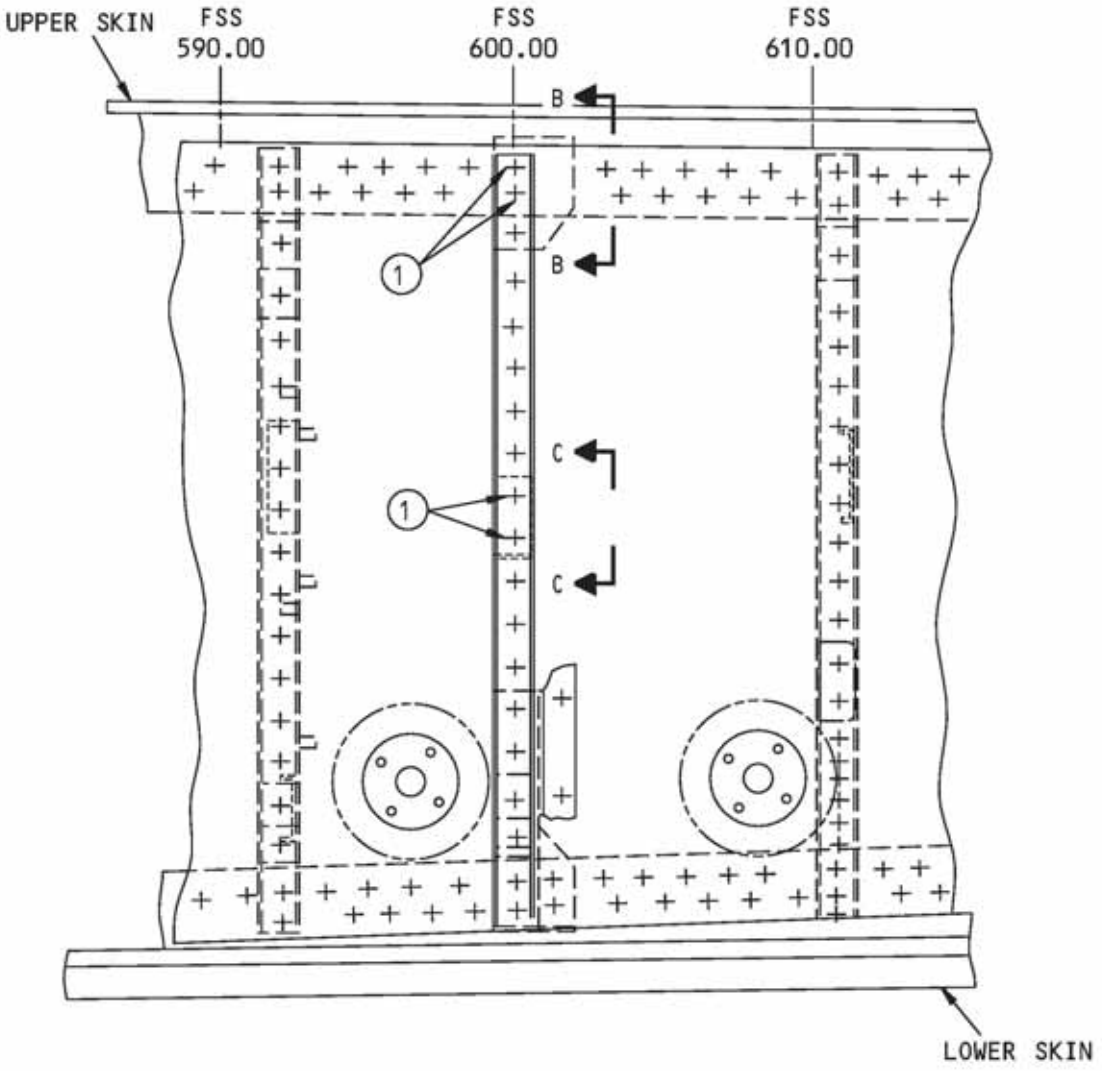



**FIGURE 49: FRONT SPAR - STATION 600 RIGHT WING - ADDITIONAL FASTENERS FILLET SEAL APPLICATION**
**(SHEET 2 OF 5)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

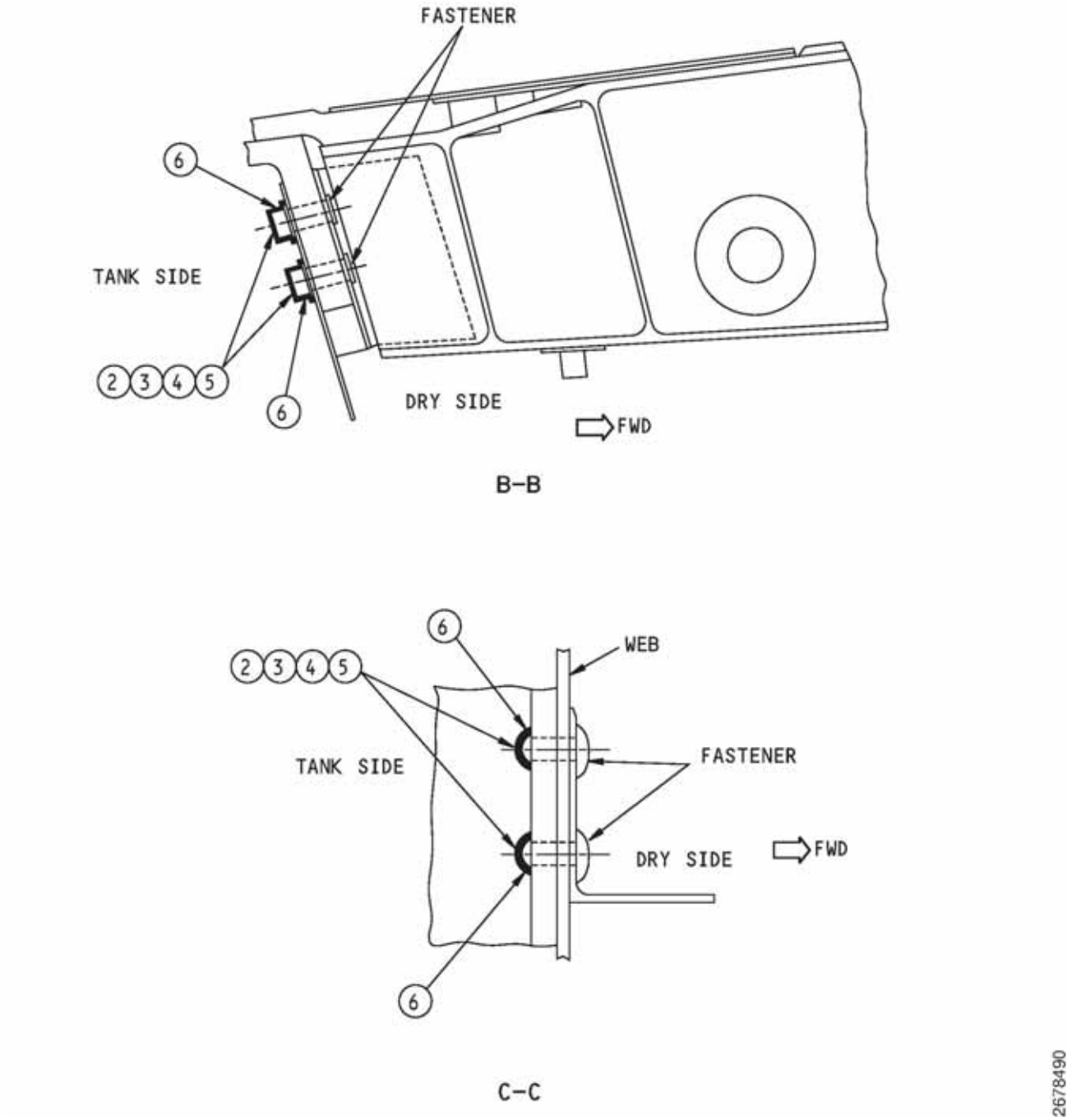



**FIGURE 49: FRONT SPAR - STATION 600 RIGHT WING - ADDITIONAL FASTENERS FILLET SEAL APPLICATION**
**(SHEET 3 OF 5)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for this location.

| Step | Task | Name | Identification | Qty | More Data |
|---|---|---|---|---|---|
| 1 | Locate | FASTENERS | - | 4 | Get access. Find the location of the fasteners that must be sealed. |
| 2 | Remove | DEBRIS | - | - | The debris around the areas to be sealed must be removed. |
| 3 | Apply | SOLVENT | BMS 11-7 (SOLVENTS IN SOPM 20-30-93 optional) | - | Use BMS 15-5 wiper wet with solvent. (a)(g) |
| | Clean | FASTENERS | - | - | Use a non-metallic bristle brush. |
| | Remove | SOLVENT | - | - | The remaining solvent must be removed while wet with a clean, dry BMS 15-5 wiper. |
| 4 | Apply | SOLVENT | BMS 11-7 (SOLVENTS IN SOPM 20-30-93 optional) | - | Use a BMS 15-5 wiper wet with solvent. (b)(g) |
| | Clean | FASTENERS | - | - | Use a non-metallic bristle brush. (c) |
| | Remove | SOLVENT | - | - | The remaining solvent must be removed while wet with a clean, dry BMS 15-5 wiper. |
| 5 | Apply | SEALANT | BMS 5-45, CLASS A-2 GRADE 1 (ALTERNATIVE FUEL TANK SEALANTS IN 747-400 AMM 51-31-01 optional) | - | Precoat sealant. (d)(e) |
| 6 | Apply | SEALANT | BMS 5-45, CLASS B-2, GRADE 1 (ALTERNATIVE FUEL TANK SEALANTS IN 747-400 AMM 51-31-01 optional) | - | Fillet sealant. (d)(f) |

**FIGURE 49: FRONT SPAR - STATION 600 RIGHT WING - ADDITIONAL FASTENERS FILLET SEAL APPLICATION**
**(SHEET 4 OF 5)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

| Step | Task | Name | Identification | Qty | More Data |
|---|---|---|---|---|---|
| (a) Make sure that an area approximately 0.5 inch from the base of the fastener is clean. The cleaned area must be larger than the area that must have sealant. | | | | | |
| (b) This step must be done immediately before the first layer of sealant is applied. | | | | | |
| (c) Make sure that the wiper has no visible soil remaining after the area is cleaned. | | | | | |
| (d) Make sure to use the sealants specified in this table. | | | | | |
| (e) Make sure to apply the precoat sealant on the fastener. Refer to 747-400 AMM 28-11-00 as an accepted procedure. | | | | | |
| (f) Make sure to apply the fillet sealant on the fastener. Refer to 747-400 AMM 28-11-00 as an accepted procedure. | | | | | |
| (g) Refer to SOPM 20-30-93 as an accepted procedure for selection of solvent. | | | | | |

**FIGURE 49: FRONT SPAR - STATION 600 RIGHT WING - ADDITIONAL FASTENERS FILLET SEAL APPLICATION**
**(SHEET 5 OF 5)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 1, 5, 8-9; Group 17, Configuration 1; Group 19-21, Configuration 2; Group 23; Group 24, Configuration 2; Group 27-30; Group 31, 39, Configuration 2; Group 41; Group 42, Configuration 2.**

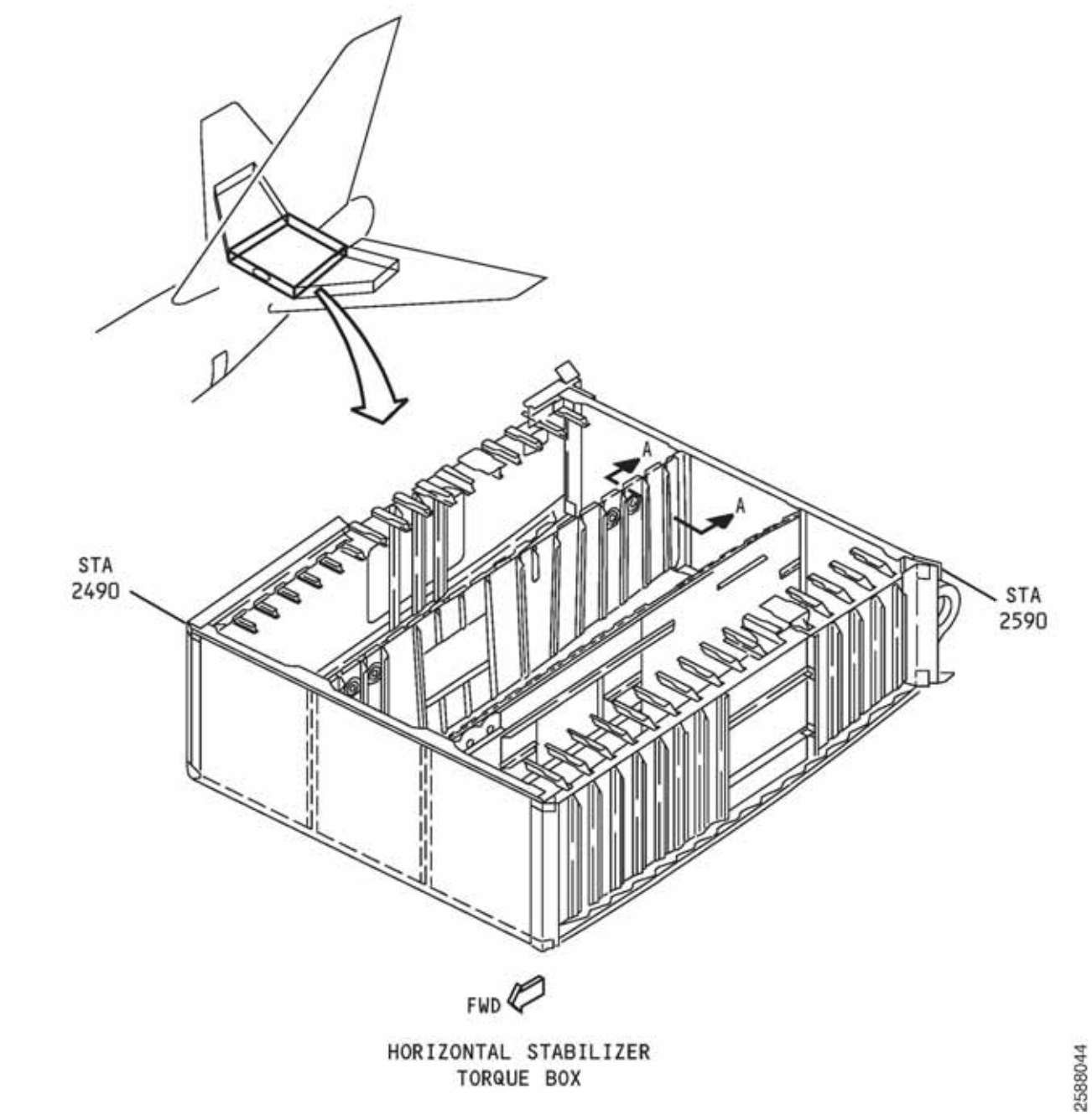



**FIGURE 50: REAR SPAR - HORIZONTAL STABILIZER FUEL TANK - ADDITIONAL FASTENERS FILLET SEAL APPLICATION (SHEET 1 OF 4)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

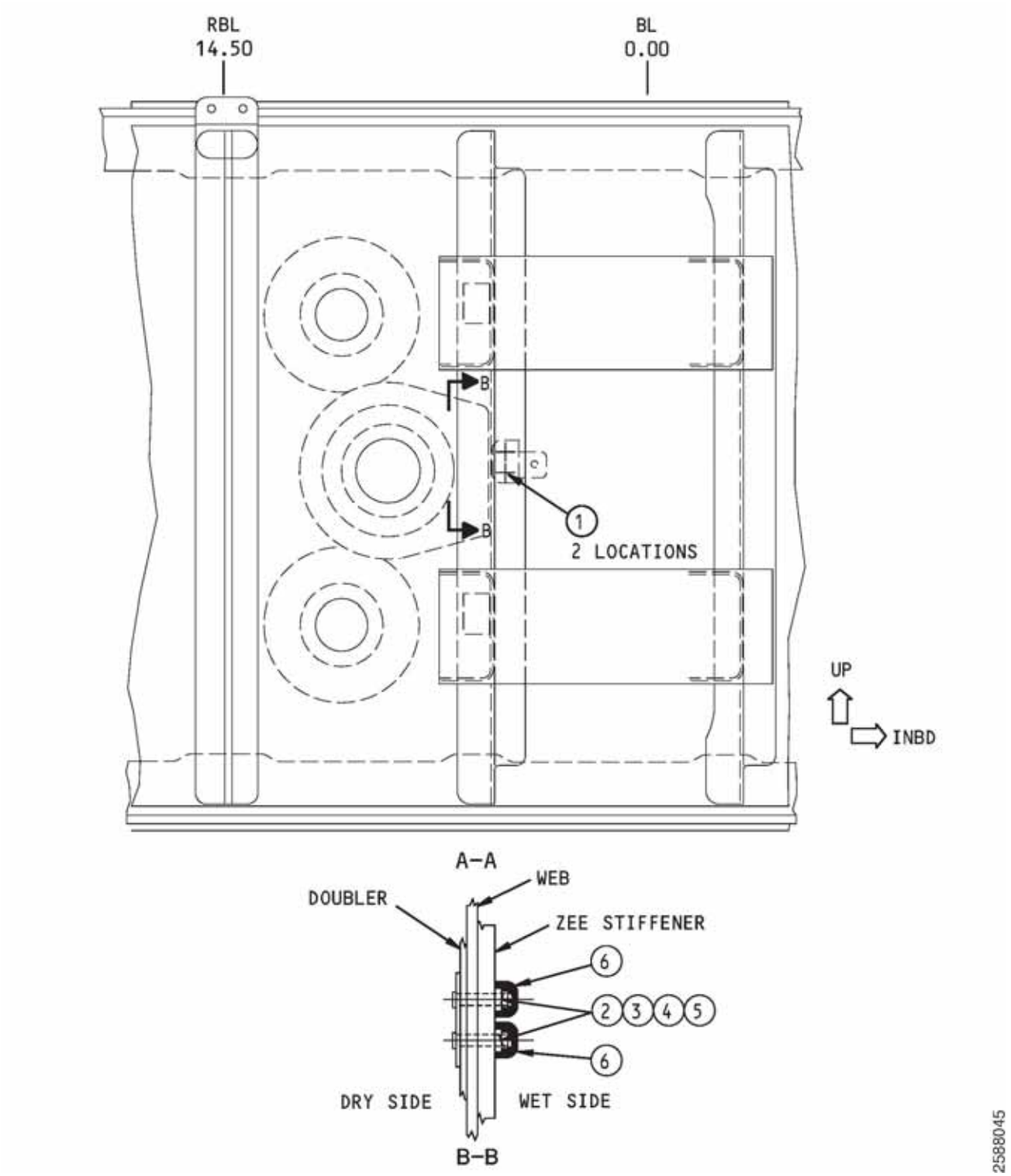



**FIGURE 50: REAR SPAR - HORIZONTAL STABILIZER FUEL TANK - ADDITIONAL FASTENERS FILLET SEAL APPLICATION (SHEET 2 OF 4)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for this location.

| Step | Task | Name | Identification | Qty | More Data |
|---|---|---|---|---|---|
| 1 | Locate | FASTENERS | - | 2 | Get access. Find the location of the fasteners that must be sealed. |
| 2 | Remove | DEBRIS | - | - | The debris around the areas to be sealed must be removed. |
| 3 | Apply | SOLVENT | BMS 11-7 (SOLVENTS IN SOPM 20-30-93 optional) | - | Use BMS 15-5 wiper wet with solvent. (a)(g) |
| | Clean | FASTENERS | - | - | Use a non-metallic bristle brush. |
| | Remove | SOLVENT | - | - | The remaining solvent must be removed while wet with a clean, dry BMS 15-5 wiper. |
| 4 | Apply | SOLVENT | BMS 11-7 (SOLVENTS IN SOPM 20-30-93 optional) | - | Use a BMS 15-5 wiper wet with solvent. (b)(g) |
| | Clean | FASTENERS | - | - | Use a non-metallic bristle brush. (c) |
| | Remove | SOLVENT | - | - | The remaining solvent must be removed while wet with a clean, dry BMS 15-5 wiper. |
| 5 | Apply | SEALANT | BMS 5-45, CLASS A-2 GRADE 1 (ALTERNATIVE FUEL TANK SEALANTS IN 747-400 AMM 51-31-01 optional) | - | Precoat sealant. (d)(e) |
| 6 | Apply | SEALANT | BMS 5-45, CLASS B-2, GRADE 1 (ALTERNATIVE FUEL TANK SEALANTS IN 747-400 AMM 51-31-01 optional) | - | Fillet sealant. (d)(f) |

**FIGURE 50: REAR SPAR - HORIZONTAL STABILIZER FUEL TANK - ADDITIONAL FASTENERS FILLET SEAL APPLICATION**
**(SHEET 3 OF 4)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

| Step | Task | Name | Identification | Qty | More Data |
|---|---|---|---|---|---|
| (a) Make sure that an area approximately 0.5 inch from the base of the fastener is clean. The cleaned area must be larger than the area that must have sealant. | | | | | |
| (b) This step must be done immediately before the first layer of sealant is applied. | | | | | |
| (c) Make sure that the wiper has no visible soil remaining after the area is cleaned. | | | | | |
| (d) Make sure to use the sealants specified in this table. | | | | | |
| (e) Make sure to apply the precoat sealant on the fastener. Refer to 747-400 AMM 28-11-00 as an accepted procedure. | | | | | |
| (f) Make sure to apply the fillet sealant on the fastener. Refer to 747-400 AMM 28-11-00 as an accepted procedure. | | | | | |
| (g) Refer to SOPM 20-30-93 as an accepted procedure for selection of solvent. | | | | | |

**FIGURE 50: REAR SPAR - HORIZONTAL STABILIZER FUEL TANK - ADDITIONAL FASTENERS FILLET SEAL APPLICATION (SHEET 4 OF 4)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

**This Figure applies only to: Group 1-9, 16-45.**

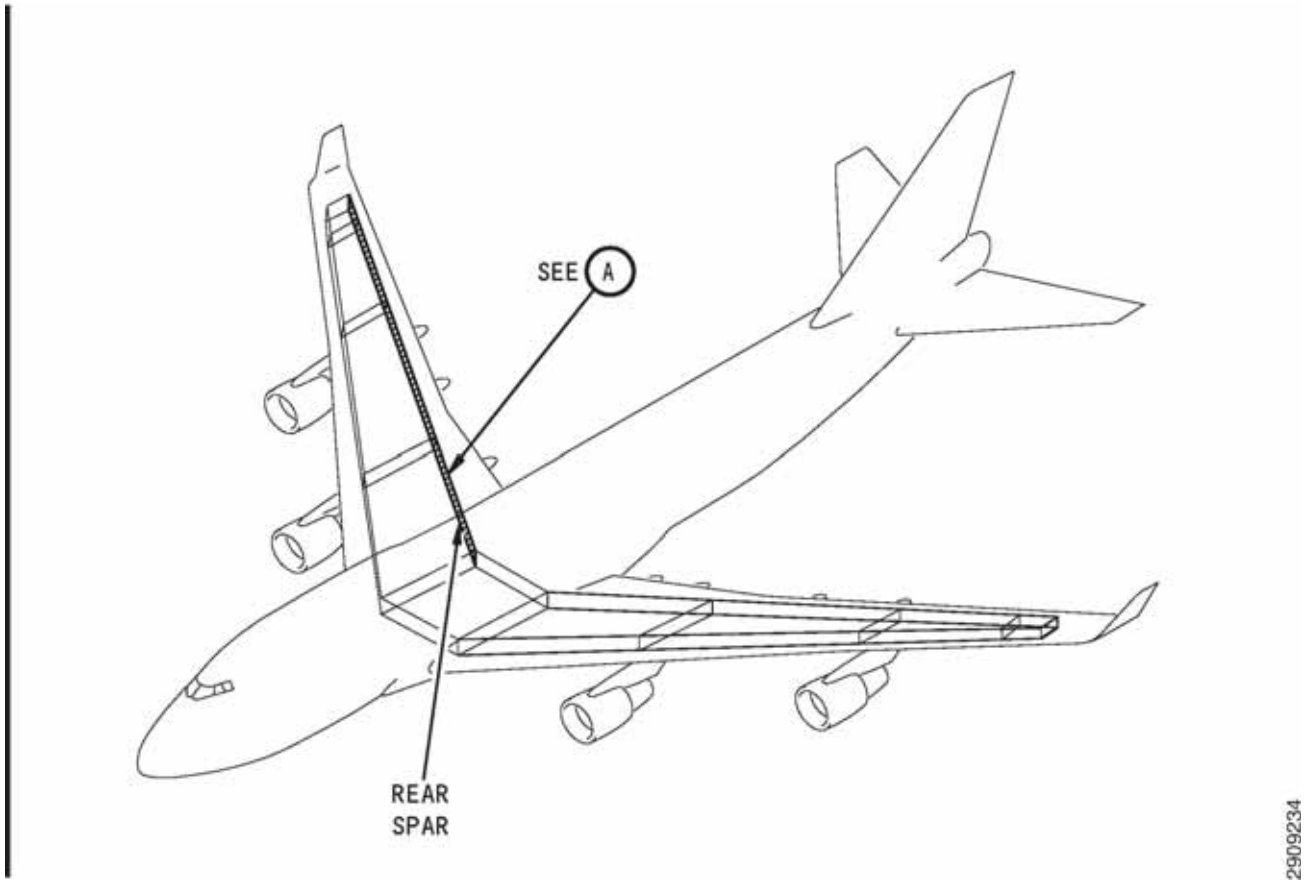



**FIGURE 51: REAR SPAR - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 1 OF 3)**


Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

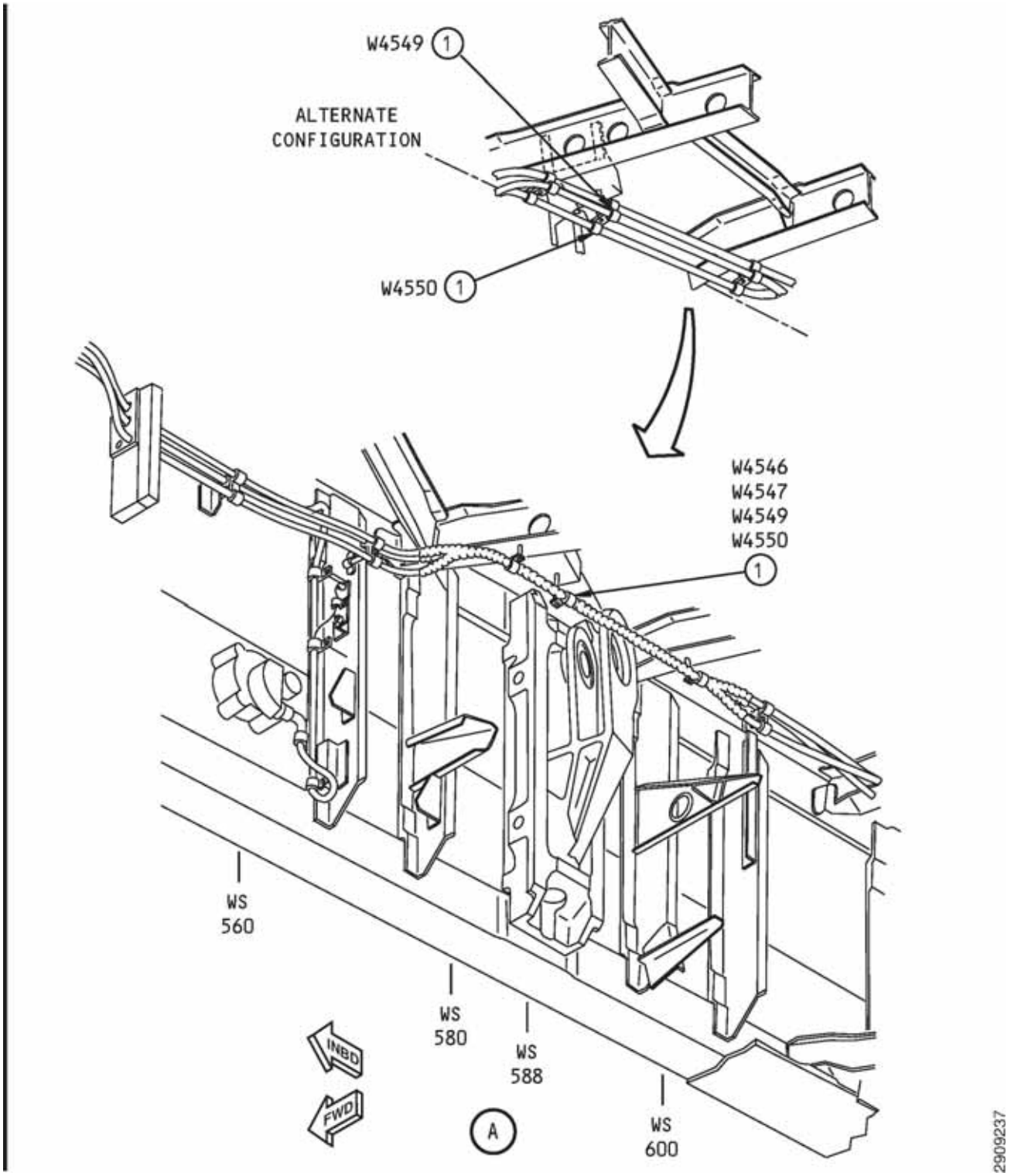



**FIGURE 51: REAR SPAR - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 2 OF 3)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.

The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for each location.

| Step | Task | Name | Identification | Qty | More Data |
|---|---|---|---|---|---|
| 1 | Locate | CLAMP | - | 1 | Get access. Find the existing clamp on the specified wire bundle at the location specified by the circle symbol. (a) |

(a) The actual configuration of the airplane can be different than the configuration in the figure. Some airplanes may not have a clamp installed on the specified wire bundle at the location specified by the circle symbol. If a clamp is not installed on the specified wire bundle at the location specified by the circle symbol, it is not necessary to install a sleeve and a new clamp at that location.

**FIGURE 51: REAR SPAR - RIGHT WING - LOCATION OF THE WIRE BUNDLE CLAMPS (SHEET 3 OF 3)**



Export Controlled ECCN: 9E991 - BOEING PROPRIETARY - Copyright © Unpublished Work - See page 1 for details.