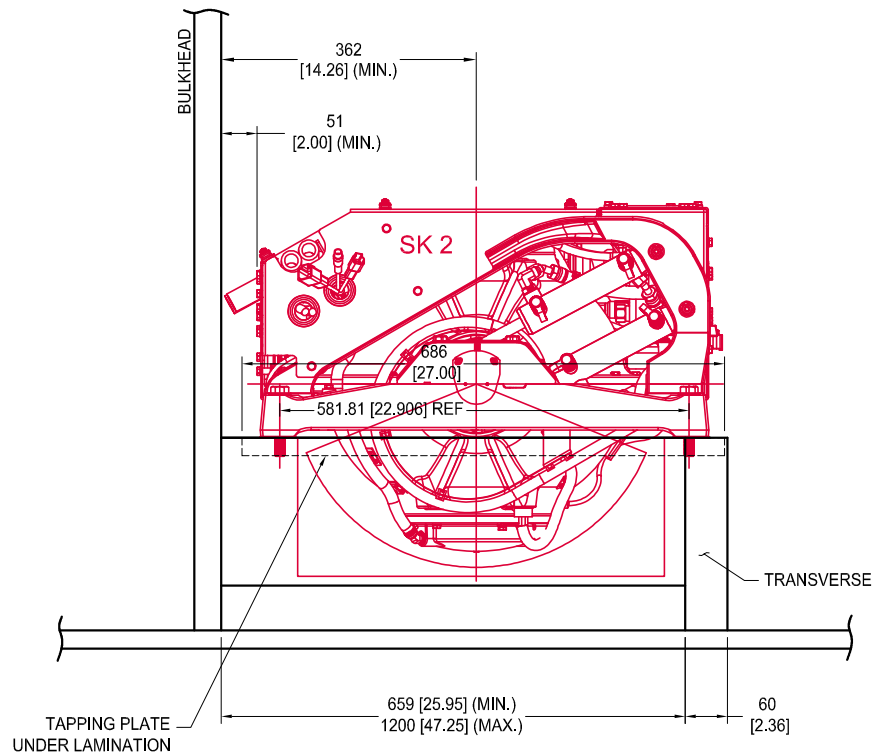


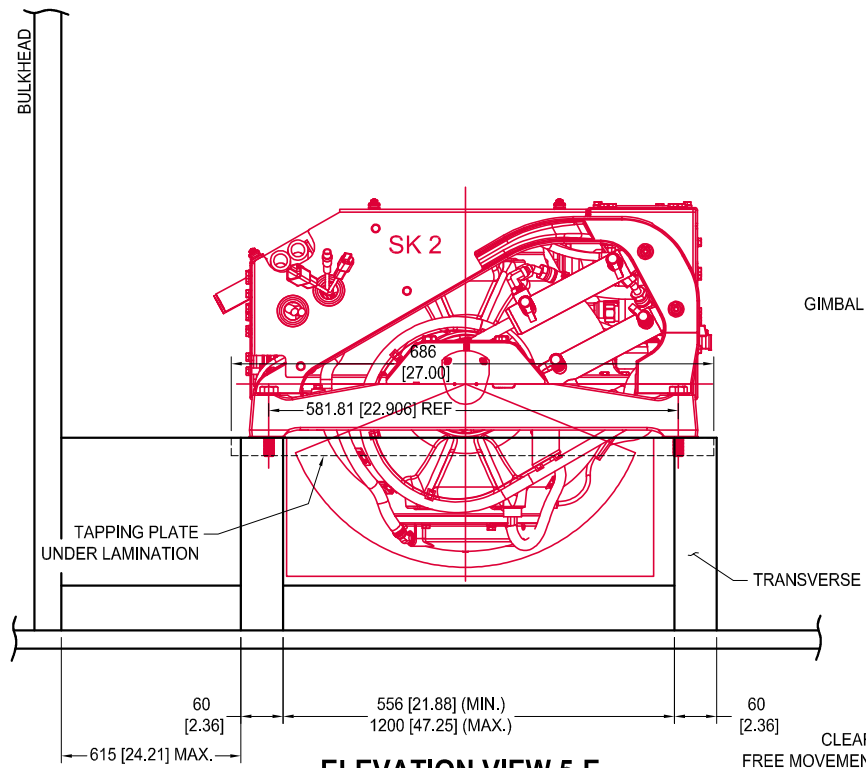
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INSTALLATION OVERVIEW	INSTALLATION METHOD	PAGE #
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	Laminated Transverse Beam	4
	Lamination Schedules	5-7
Aluminum Bracket	TT1 Torx Tube	8-10
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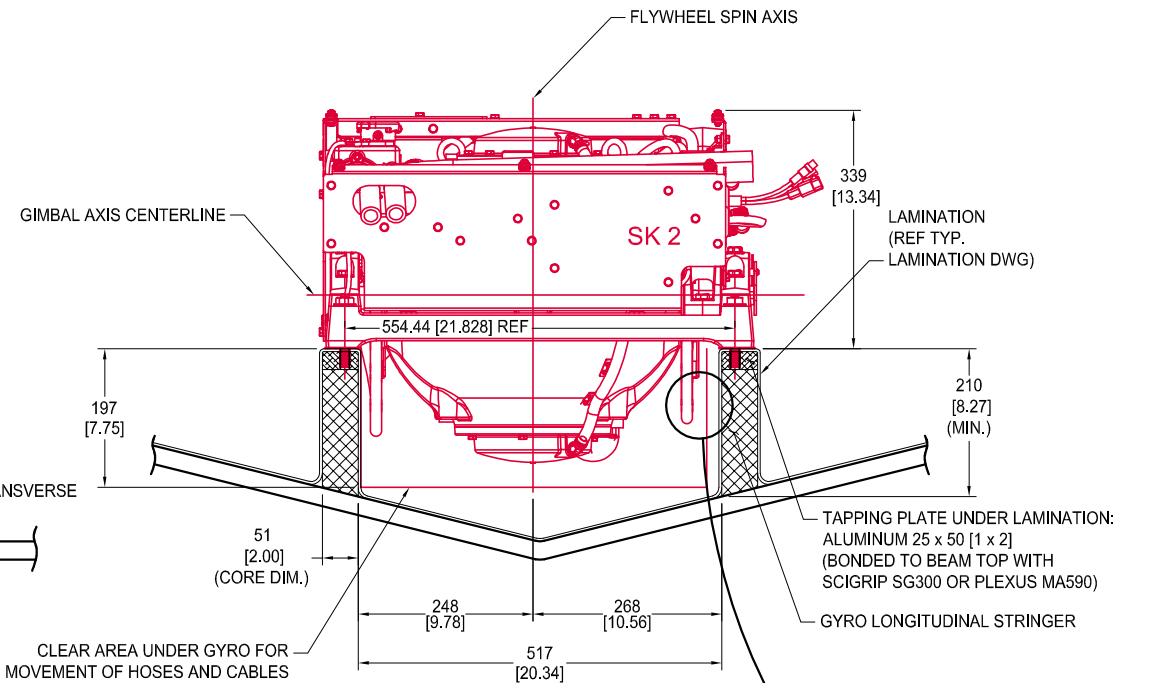
REV. NO.	ECN NO.	ZONE	DESCRIPTION	DATE	APPRVD.
1	—		W/ NEW PAGES (SH. 3 & 11)	02/24/2022	



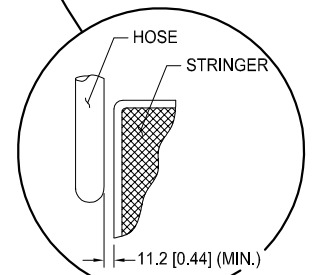
**ELEVATION VIEW 7-E**  
(LAMINATED FRP MOLDED METHOD 1-A NEAR BULKHEAD)



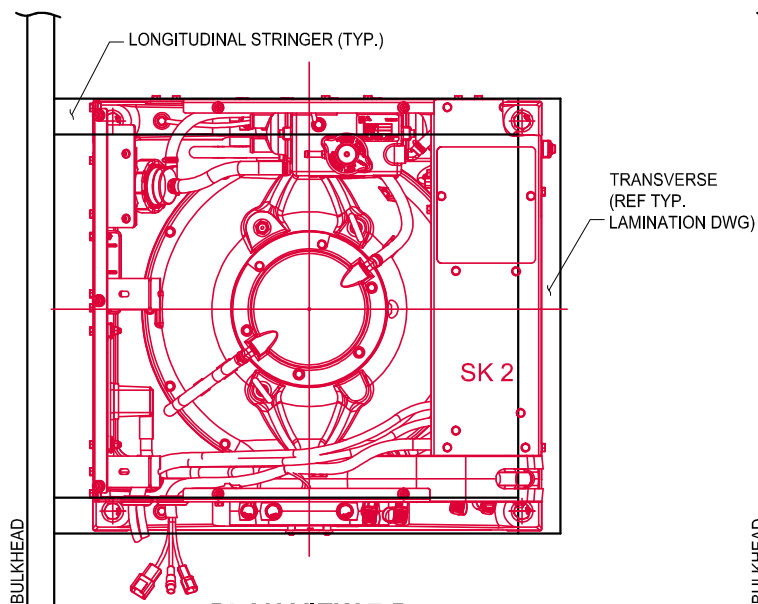
**ELEVATION VIEW 5-E**  
(LAMINATED FRP MOLDED METHOD 1-A FAR FROM BULKHEAD)



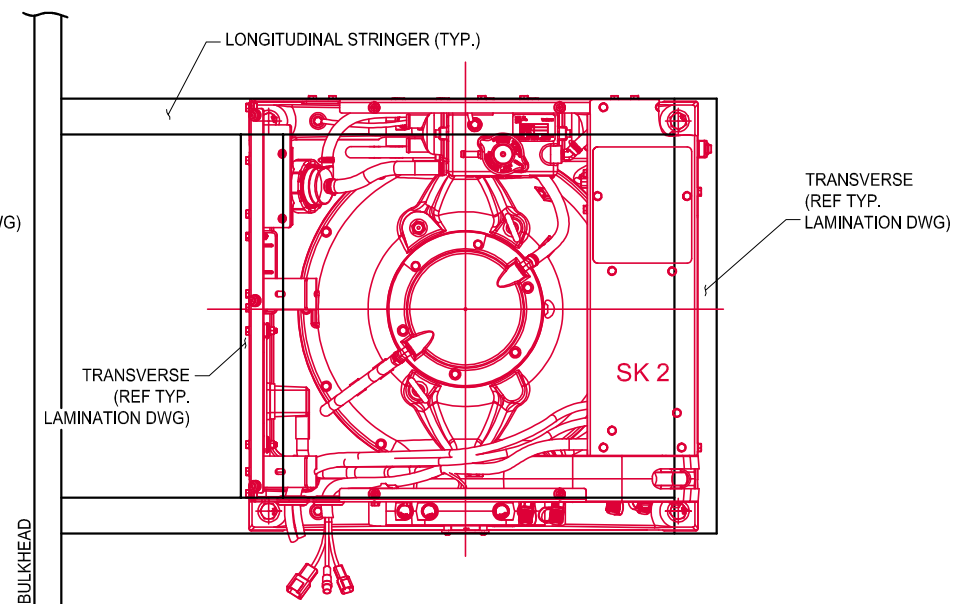
**SECTION 2-E**  
(LAMINATED FRP MOLDED METHOD 1-A)



**MINIMAL CLEARANCE FOR CABLES / HOSES (TYP.)**



**PLAN VIEW 7-B**  
(LAMINATED FRP MOLDED METHOD 1-A NEAR BULKHEAD)




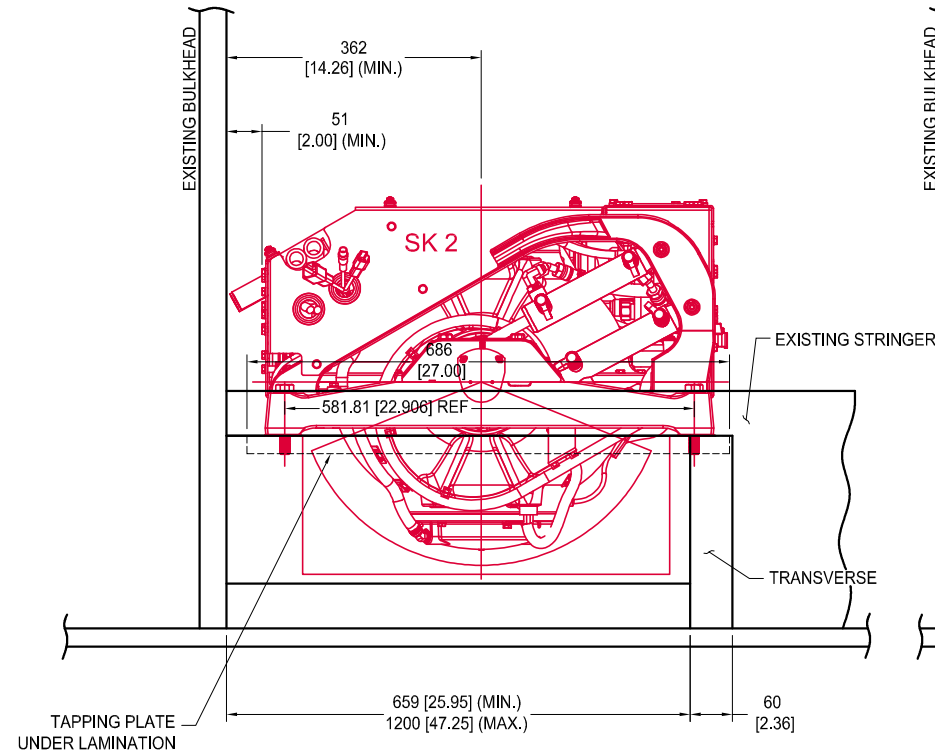
**PLAN VIEW 5-B**  
(LAMINATED FRP MOLDED METHOD 1-A FAR FROM BULKHEAD)

**1-A**

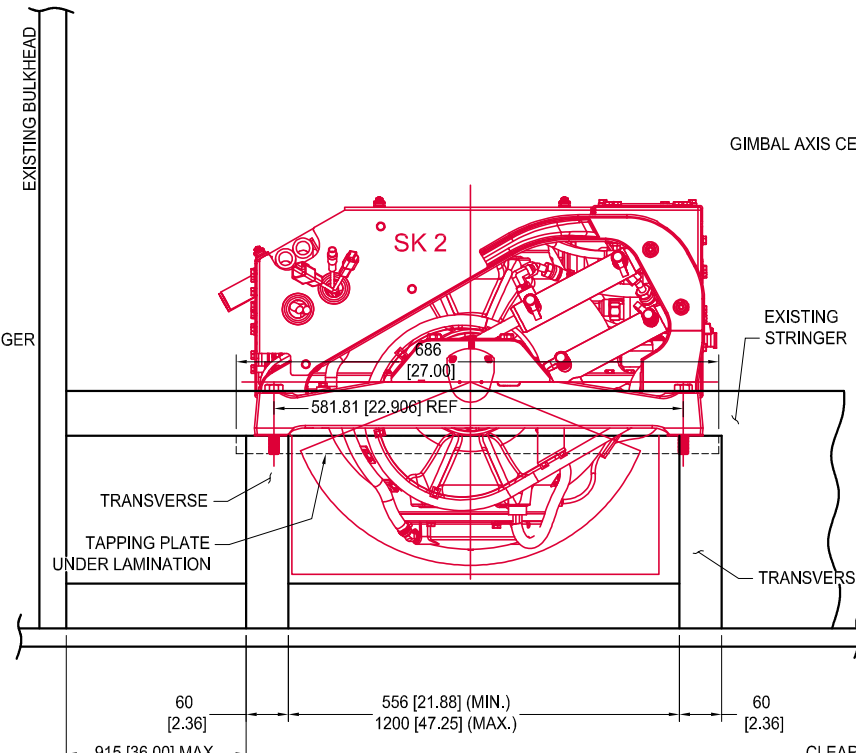
**SEAKEEPER 2 GYRO, BOLT-IN LAMINATED FRP MOLDED**

FOR INFORMATION ONLY TO ILLUSTRATE  
TYPICAL GYRO INSTALLATION  
-NOT FOR DESIGN-  
-NO GUARANTEE IS EXPRESSED OR IMPLIED-

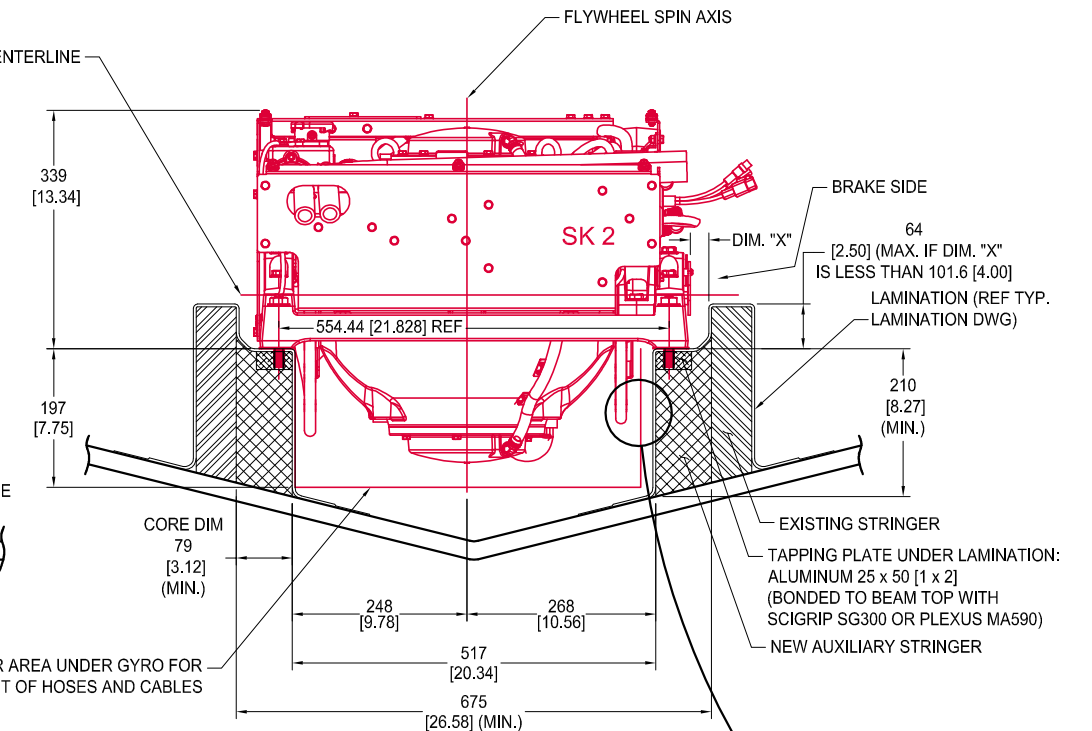
<u>PROPRIETARY AND CONFIDENTIAL</u>			 <b>SEAKEEPER®</b>		
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF SEAKEEPER INCORPORATED. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF SEAKEEPER IS PROHIBITED.			Seakeeper Inc. 44425 Pecan Court, Suite 151 California, MD 20619		
NAME:			SK2 GYRO, BOLT-IN LAMINATED FRP MOLDED		
DRAWN:	RLK	DATE:	24FEB2022	DWG NUMBER:	90590
ENG APPR:	JC	DATE:	24FEB2022	REV. NO:	1
PROD APPR:		DATE:			1 OF 11



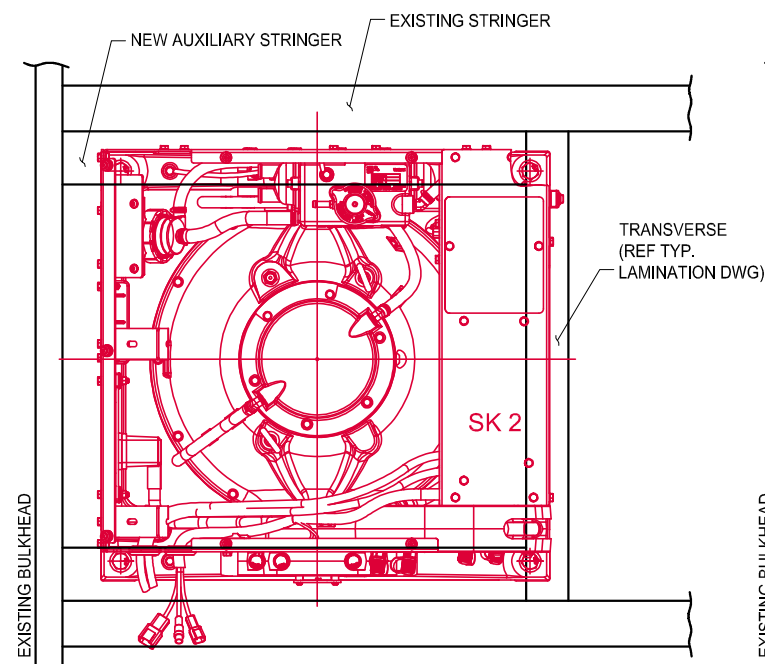
**ELEVATION VIEW 7-E**  
(LAMINATED FRP REFITTED METHOD 1-B NEAR BULKHEAD)



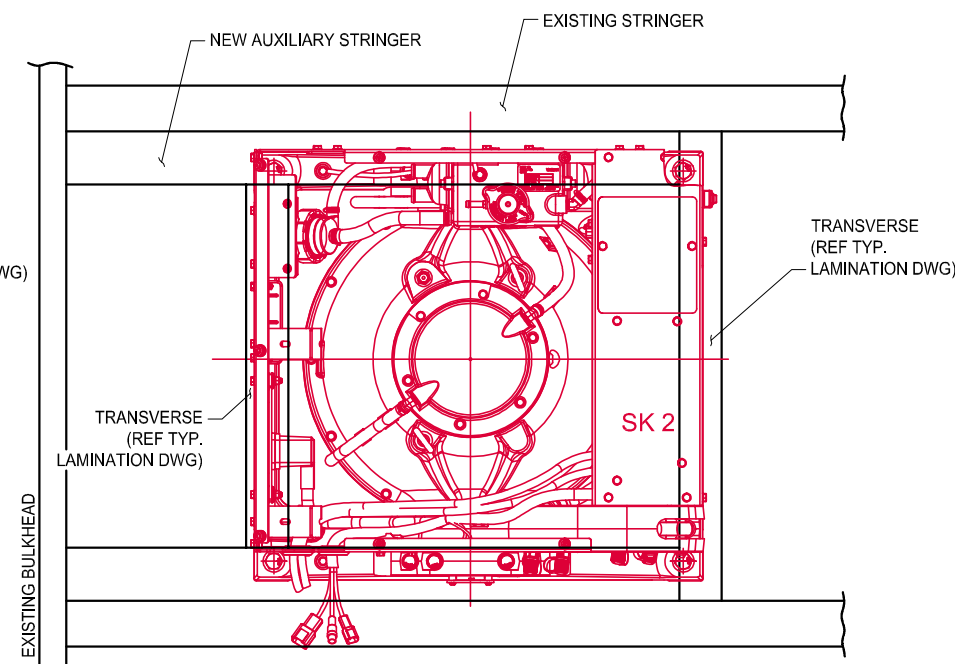
**ELEVATION VIEW 5-E**  
(LAMINATED FRP REFITTED METHOD 1-B FAR FROM BULKHEAD)



**SECTION 2-E**  
(LAMINATED FRP REFITTED METHOD 1-B)



**PLAN VIEW 7-B**  
(LAMINATED FRP REFITTED METHOD 1-B NEAR BULKHEAD)




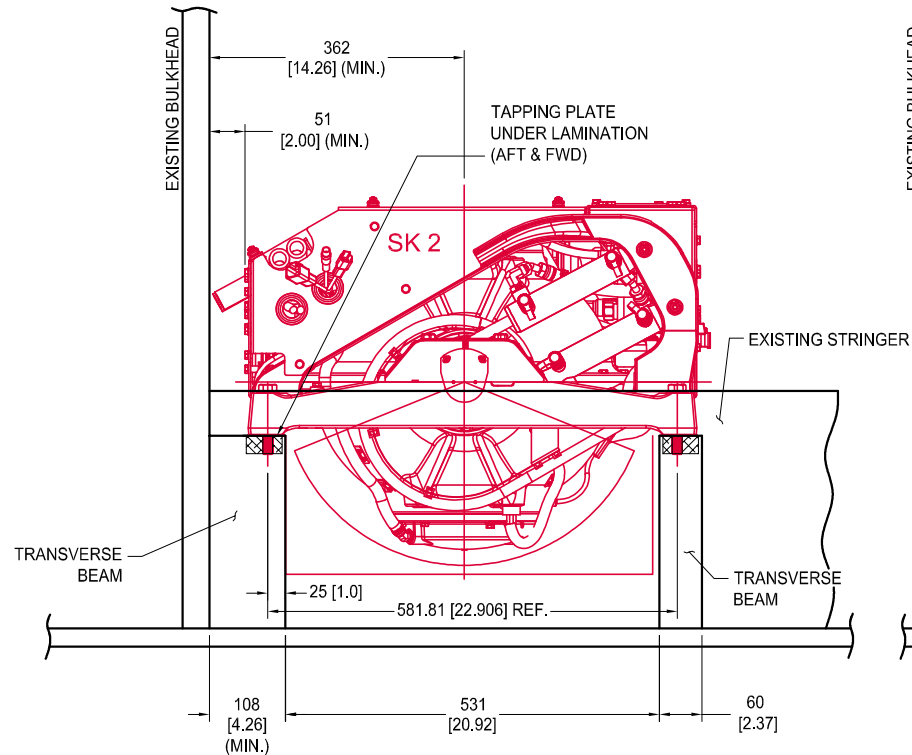
**PLAN VIEW 5-B**  
(LAMINATED FRP REFITTED METHOD 1-B FAR FROM BULKHEAD)

**1-B**

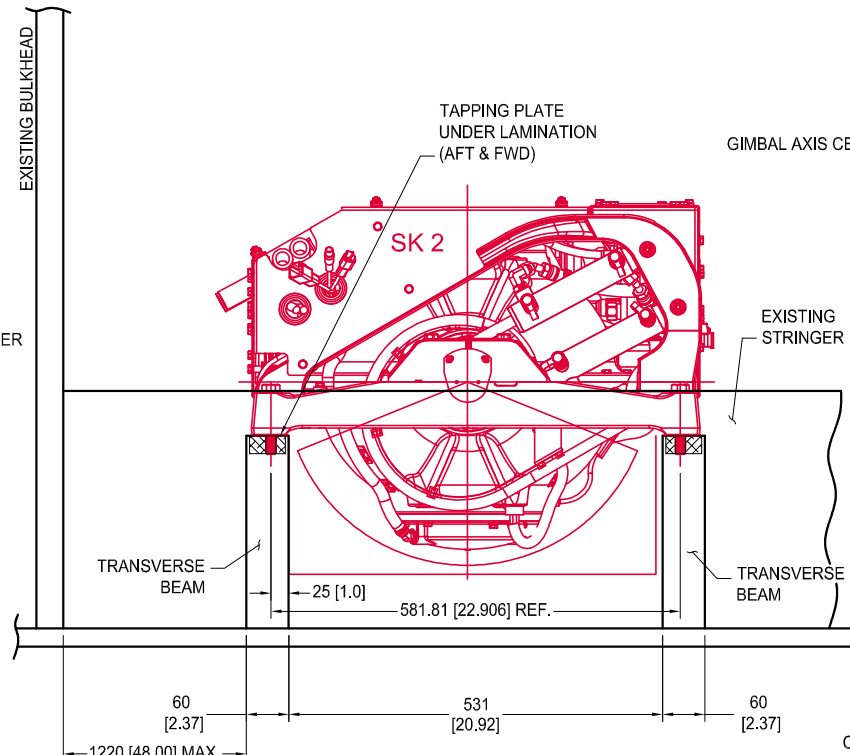
**SEAKEEPER 2 GYRO, BOLT-IN  
LAMINATED FRP REFITTED**

FOR INFORMATION ONLY TO ILLUSTRATE  
TYPICAL GYRO INSTALLATION  
-NOT FOR DESIGN-  
-NO GUARANTEE IS EXPRESSED OR IMPLIED-

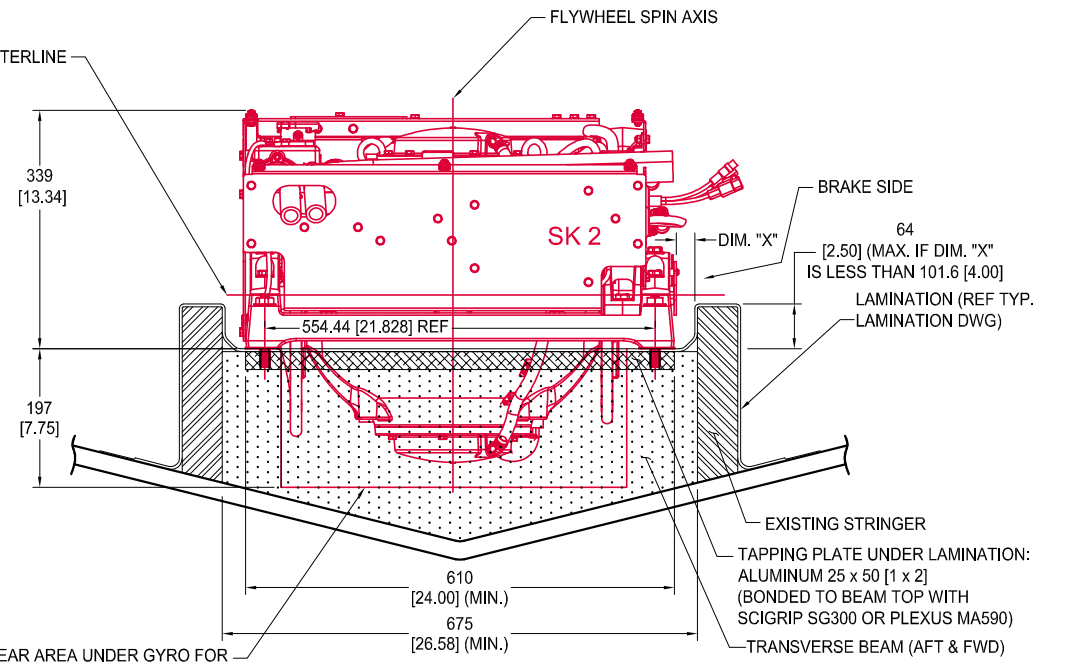
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NAME:		SK2 GYRO, BOLT-IN LAMINATED FRP REFITTED	
DRAWN:	RLK	DATE:	24FEB2022
ENG APPR:	JC	DATE:	24FEB2022
PROD APPR:		DWG NUMBER:	90590
		REV:	NO 1 SHEET NO: 1 2 OF 11



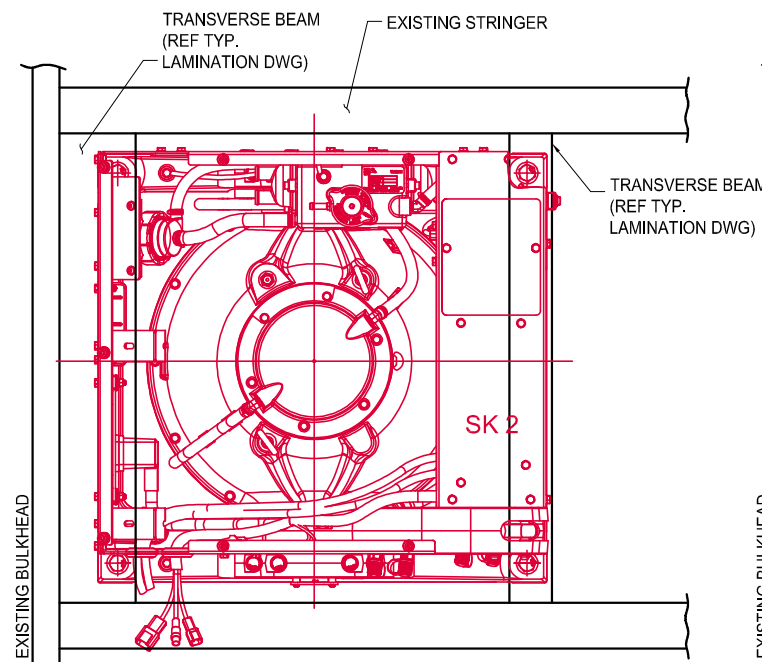
**ELEVATION VIEW 7-E**  
(LAMINATED TRANSVERSE BEAM METHOD 1-C NEAR BULKHEAD)



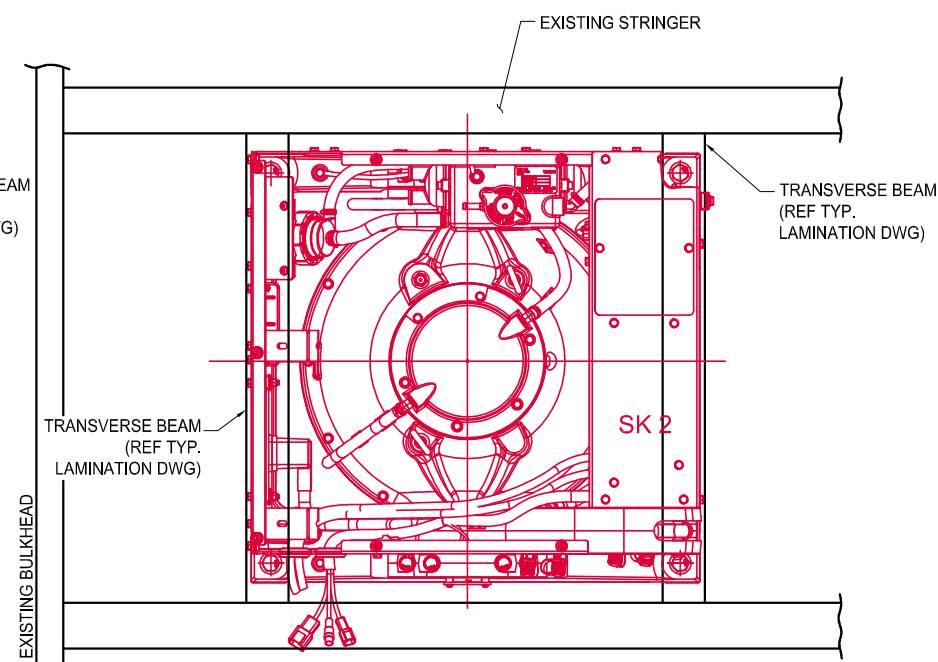
**ELEVATION VIEW 5-E**  
(LAMINATED TRANSVERSE BEAM METHOD 1-C FAR FROM BULKHEAD)



**SECTION 2-E**  
(LAMINATED TRANSVERSE BEAM METHOD 1-C)



**PLAN VIEW 7-B**  
(LAMINATED TRANSVERSE BEAM METHOD 1-C NEAR BULKHEAD)




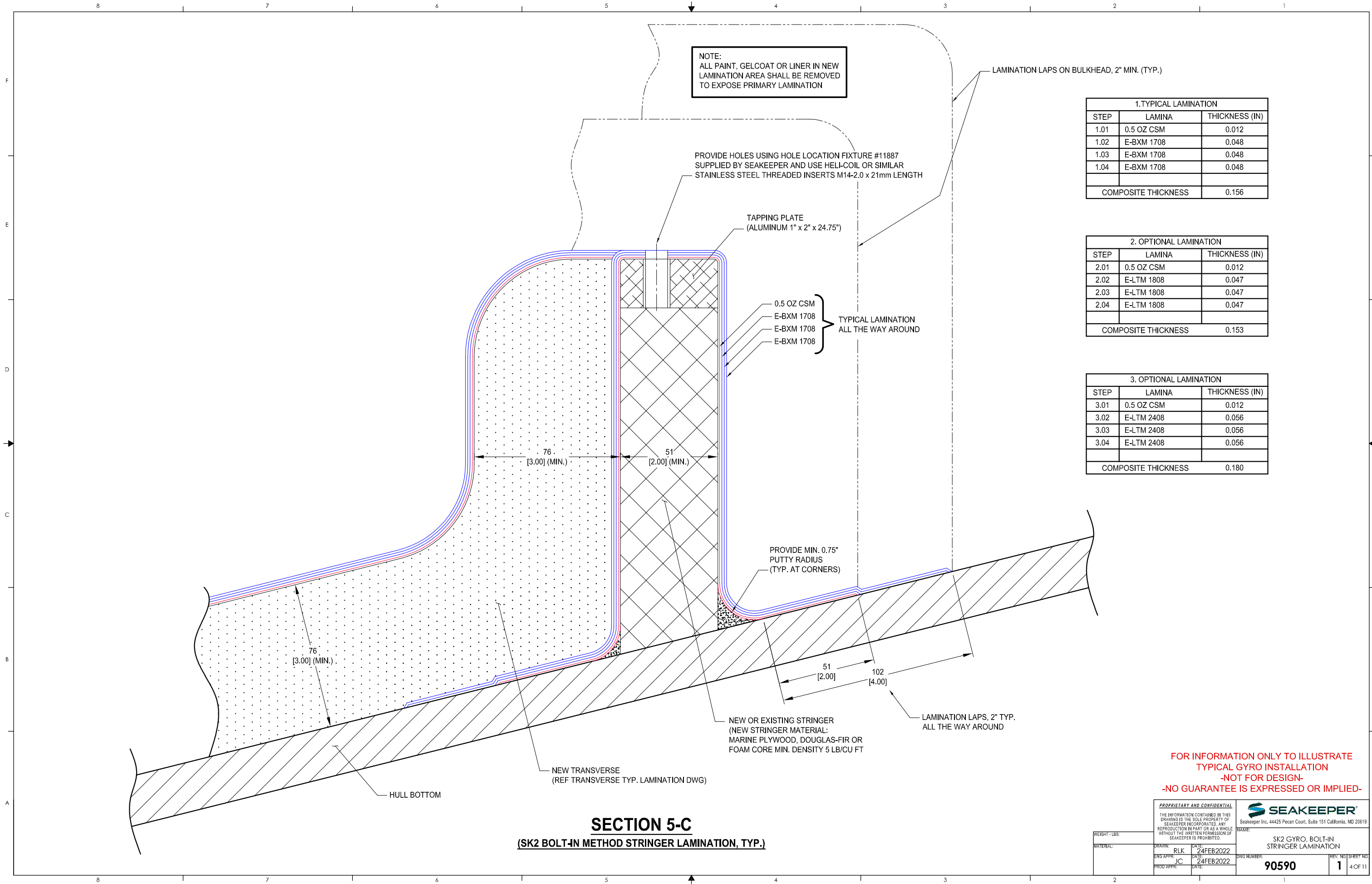
**PLAN VIEW 5-B**  
(LAMINATED TRANSVERSE BEAM METHOD 1-C FAR FROM BULKHEAD)

**1-C**

**SEAKEEPER 2 GYRO, BOLT-IN  
LAMINATED TRANSVERSE BEAM**

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TYPICAL GYRO INSTALLATION  
-NOT FOR DESIGN-  
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NAME:		SK2 GYRO, BOLT-IN LAMINATED TRANSVERSE BEAM	
DRAWN:	RLK	DATE:	24FEB2022
ENG APPR:	JC	DATE:	24FEB2022
DWG NUMBER:		90590	
REV. NO.		1	
SHEET NO.		3 OF 11	



NOTE:  
ALL PAINT, GELCOAT OR LINER IN NEW  
LAMINATION AREA SHALL BE REMOVED  
TO EXPOSE PRIMARY LAMINATION

PROVIDE HOLES USING HOLE LOCATION FIXTURE #11887  
SUPPLIED BY SEAKEEPER AND USE HELI-COIL OR SIMILAR  
STAINLESS STEEL THREADED INSERTS M14-2.0 x 21mm LENGTH

TAPPING PLATE  
(ALUMINUM 1" x 2" x 24.75")

0.5 OZ CSM  
E-BXM 1708  
E-BXM 1708  
E-BXM 1708

TYPICAL LAMINATION  
ALL THE WAY AROUND

PROVIDE MIN. 0.75"  
PUTTY RADIUS  
(TYP. AT CORNERS)

NEW OR EXISTING STRINGER  
(NEW STRINGER MATERIAL:  
MARINE PLYWOOD, DOUGLAS-FIR OR  
FOAM CORE MIN. DENSITY 5 LB/CU FT

NEW TRANSVERSE  
(REF TRANSVERSE TYP. LAMINATION DWG)

HULL BOTTOM

LAMINATION LAPS ON BULKHEAD, 2" MIN. (TYP.)

1.TYPICAL LAMINATION		
STEP	LAMINA	THICKNESS (IN)
1.01	0.5 OZ CSM	0.012
1.02	E-BXM 1708	0.048
1.03	E-BXM 1708	0.048
1.04	E-BXM 1708	0.048
COMPOSITE THICKNESS		0.156

2. OPTIONAL LAMINATION		
STEP	LAMINA	THICKNESS (IN)
2.01	0.5 OZ CSM	0.012
2.02	E-LTM 1808	0.047
2.03	E-LTM 1808	0.047
2.04	E-LTM 1808	0.047
COMPOSITE THICKNESS		0.153

3. OPTIONAL LAMINATION		
STEP	LAMINA	THICKNESS (IN)
3.01	0.5 OZ CSM	0.012
3.02	E-LTM 2408	0.056
3.03	E-LTM 2408	0.056
3.04	E-LTM 2408	0.056
COMPOSITE THICKNESS		0.180

LAMINATION LAPS, 2" TYP.  
ALL THE WAY AROUND

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**SECTION 5-C**  
**(SK2 BOLT-IN METHOD STRINGER LAMINATION, TYP.)**

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**SEAKEEPER**

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WEIGHT - LBS:

MATERIAL:

DRAWN: RLK

ENG APPR: JC

PROD APPR:

DATE: 24FEB2022

DATE: 24FEB2022

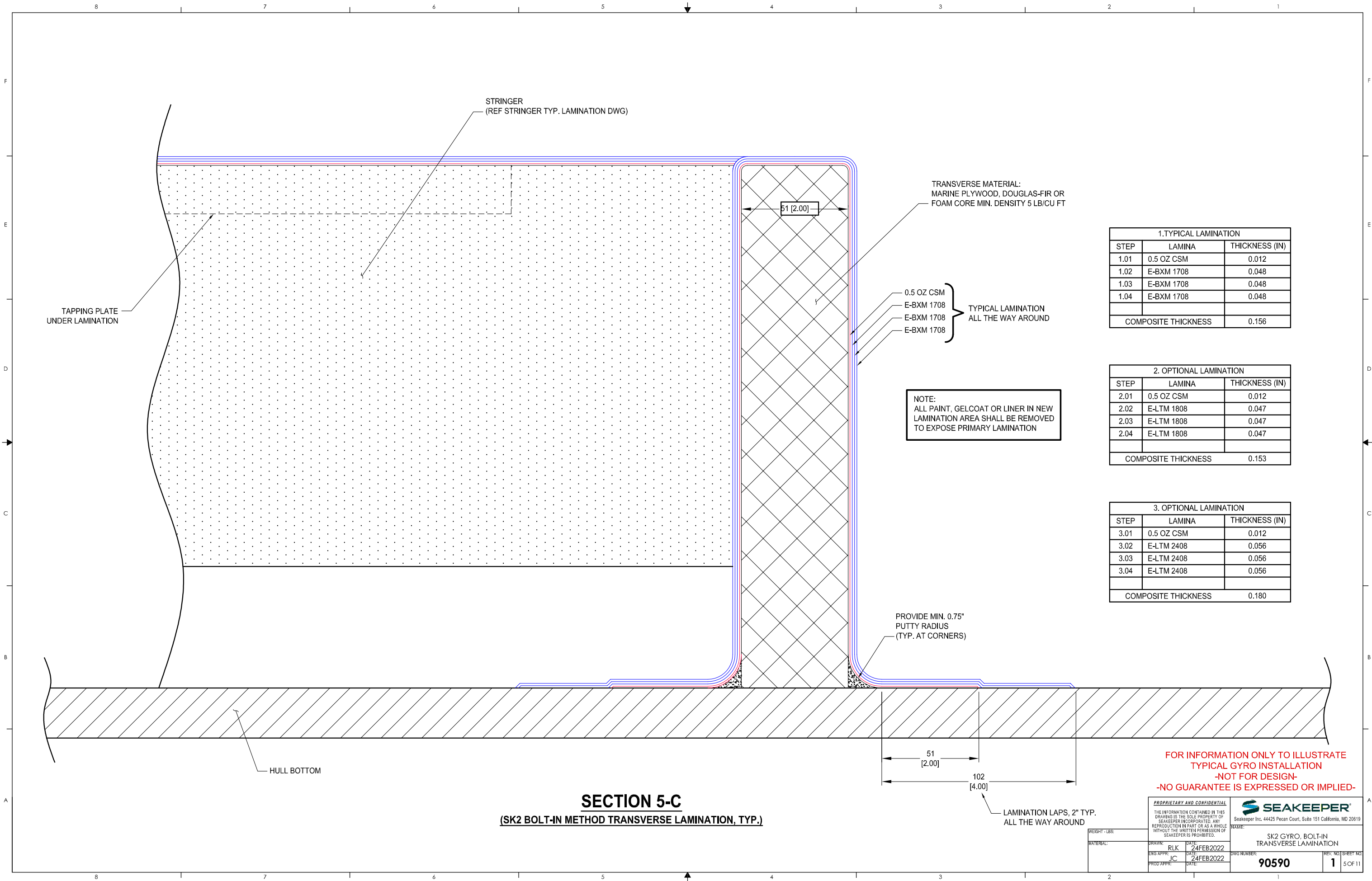
DATE:

NAME: SK2 GYRO, BOLT-IN  
STRINGER LAMINATION

DWG NUMBER: 90590

REV: NO.1 SHEET NO. 1 4 OF 11





1.TYPICAL LAMINATION		
STEP	LAMINA	THICKNESS (IN)
1.01	0.5 OZ CSM	0.012
1.02	E-BXM 1708	0.048
1.03	E-BXM 1708	0.048
1.04	E-BXM 1708	0.048
COMPOSITE THICKNESS		0.156

2. OPTIONAL LAMINATION		
STEP	LAMINA	THICKNESS (IN)
2.01	0.5 OZ CSM	0.012
2.02	E-LTM 1808	0.047
2.03	E-LTM 1808	0.047
2.04	E-LTM 1808	0.047
COMPOSITE THICKNESS		0.153

3. OPTIONAL LAMINATION		
STEP	LAMINA	THICKNESS (IN)
3.01	0.5 OZ CSM	0.012
3.02	E-LTM 2408	0.056
3.03	E-LTM 2408	0.056
3.04	E-LTM 2408	0.056
COMPOSITE THICKNESS		0.180

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**SEAKEEPER**<sup>®</sup>

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NAME:

SK2 GYRO, BOLT-IN TRANSVERSE LAMINATION

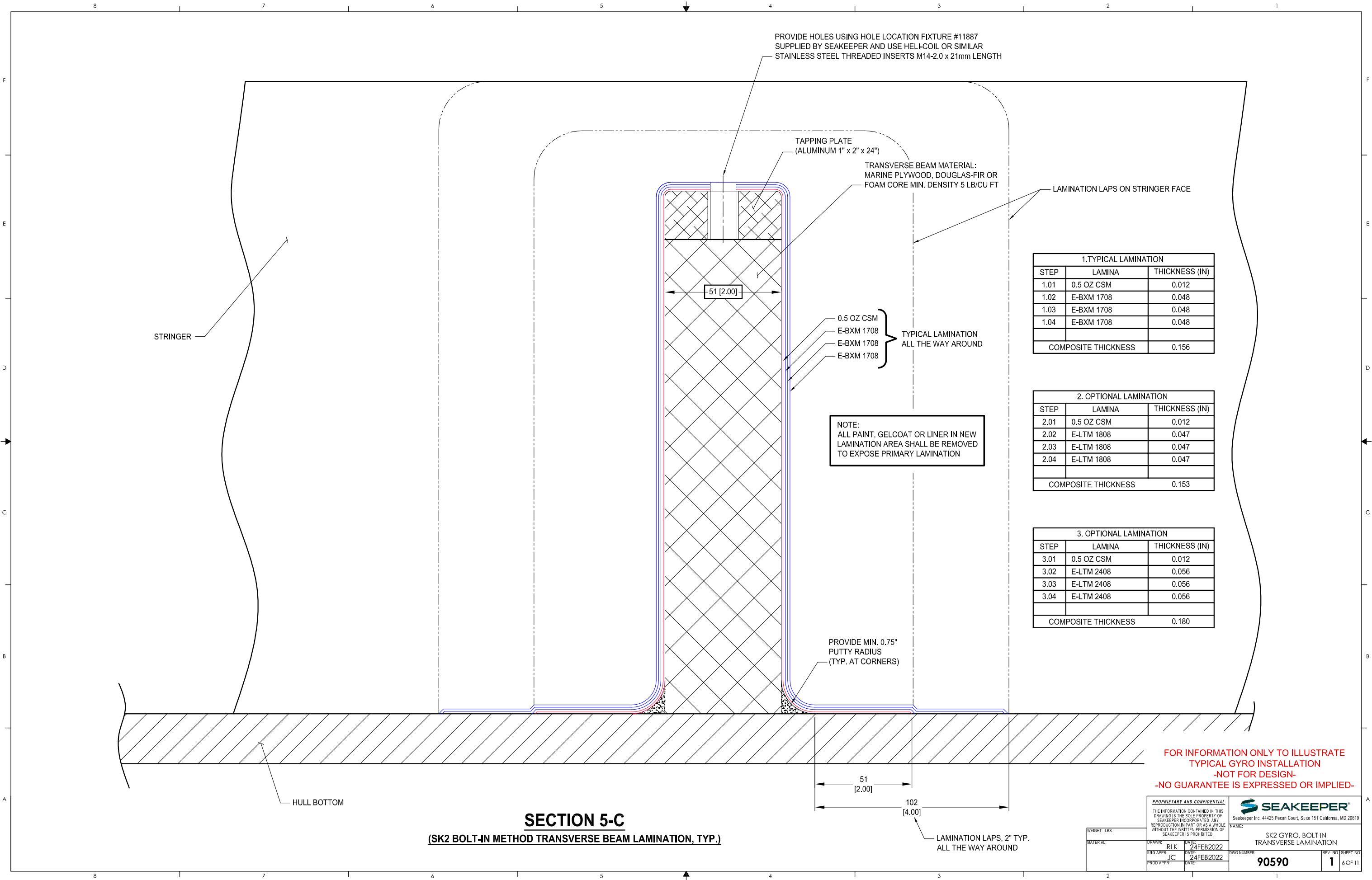
DRAWN: RLK DATE: 24FEB2022

ENG APPR: JC DATE: 24FEB2022

PROD APPR: DATE:

DWG NUMBER: 90590

REV: NO 1 SHEET NO: 5 OF 11



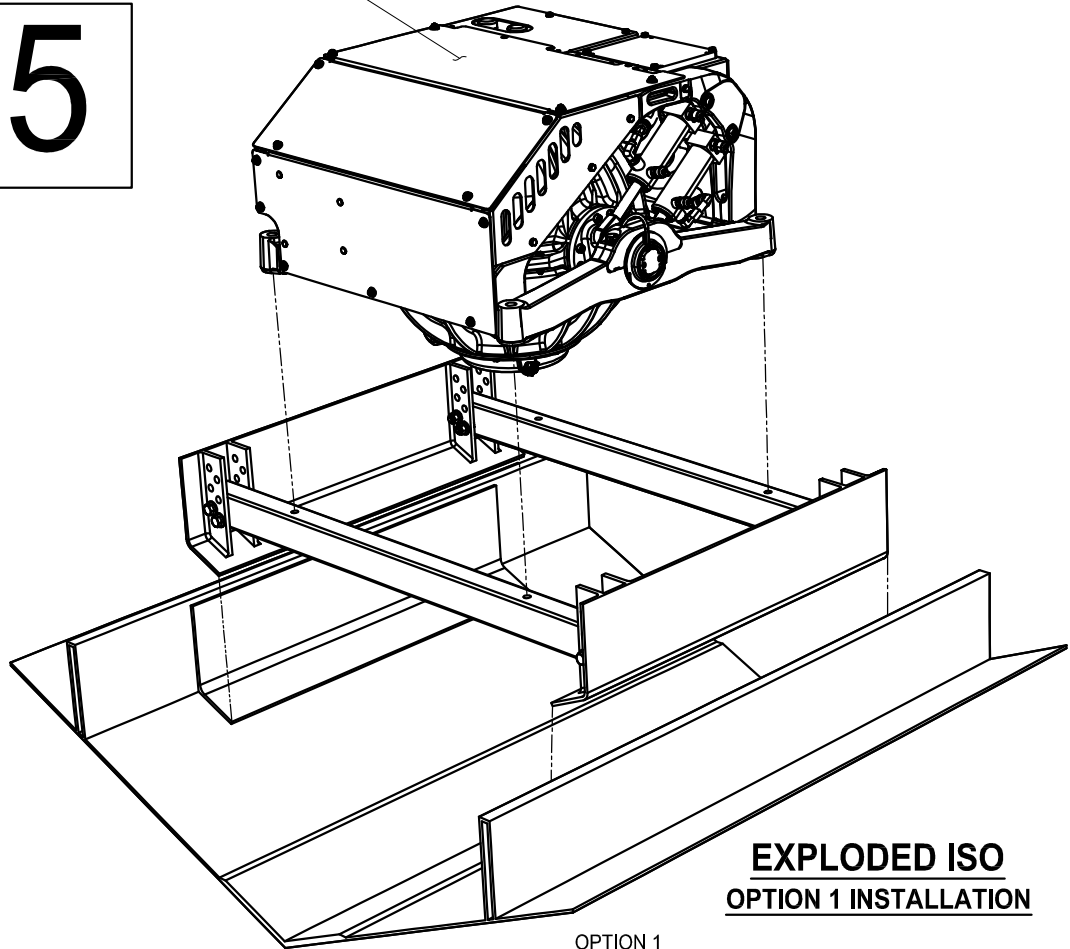






5

SEAKEEPER 2



**EXPLODED ISO  
OPTION 1 INSTALLATION**

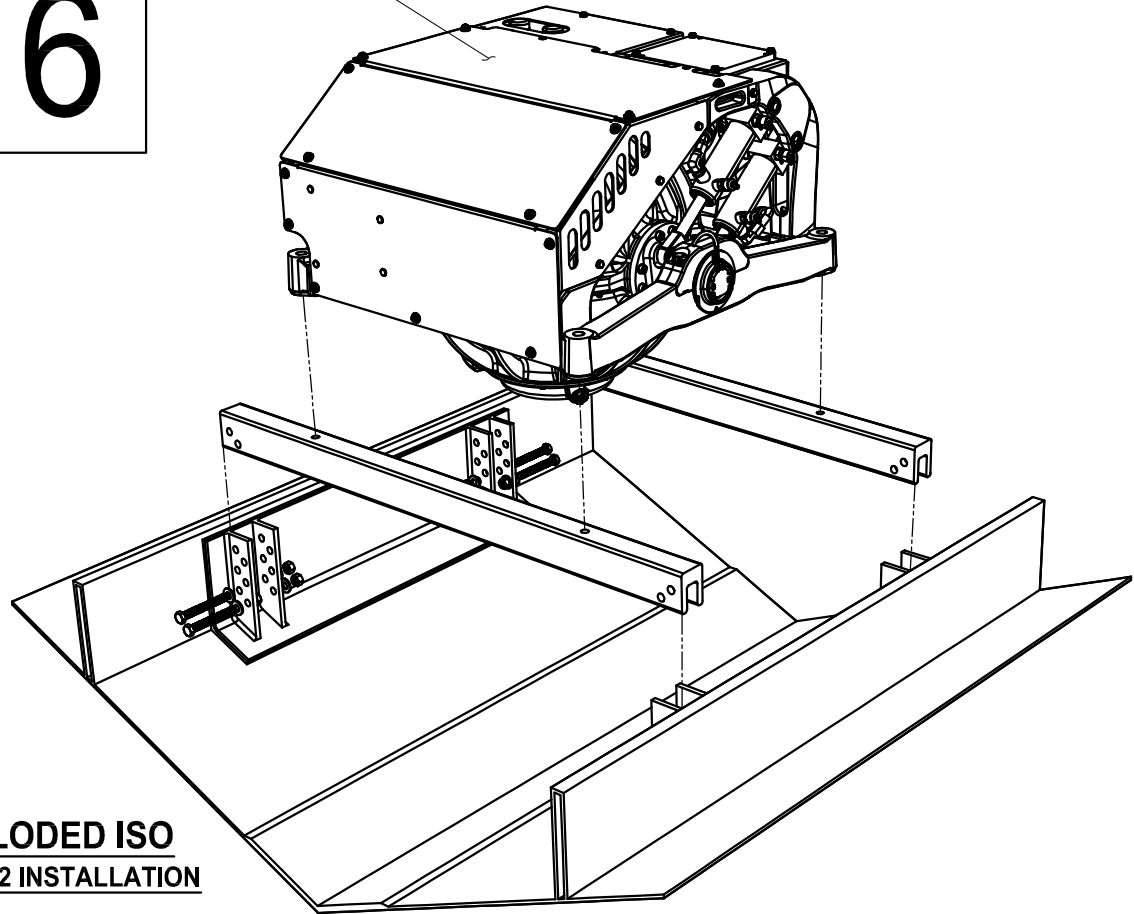
OPTION 1

ASSEMBLE ALL COMPONENTS OUTSIDE OF THE VESSEL AND LOWER INTO HULL.  
AFTER DRY FIT AND TRANSVERSE HOLE DRILLING, ASSEMBLE ALL FOUR PIECES.  
REFER TO BOLTING DETAIL.  
TORQUE BOLTS TO 45 FT-LBS.

APPLY PLEXUS MA590 OR SCIGRIP SG300 - TROWEL ON USING 0.5" V-GROOVE TOOL.  
SET FOUNDATIONS IN PLACE - ENSURING GLUE SQUEEZE OUT - ADD 45 DEGREE BEVEL TO OUTER EDGES OF PLATE AND BACKFILL WHERE VOIDS ARE PRESENT.  
SECURE BRACKET INTO JIG TO CONFIRM SET WILL BE PLANAR.  
USE SEAKEEPER TEMPLATE TO MARK AND DRILL MOUNTING HOLES (Ø 14.5mm FOR HELICOIL INSTALLATION).  
USE MCMASTER #91732A671 HELICOILS (M14-2 x 21mm).  
INSTALL UNIT IN ACCORDANCE WITH SEAKEEPER INSTALLATION MANUAL.

6

SEAKEEPER 2



**EXPLODED ISO  
OPTION 2 INSTALLATION**

OPTION 2

GLUE FOUNDATIONS IN PLACE THEN BOLT IN TRANSVERSE AFTERWARDS.  
AFTER DRY FIT AND TRANSVERSE HOLE DRILLING, GLUE FOUNDATIONS INTO PLACE.  
APPLY PLEXUS MA590 OR SCIGRIP SG300 - TROWEL ON USING 0.5" V-GROOVE TOOL.

SET FOUNDATIONS IN PLACE - ENSURING GLUE SQUEEZE OUT - ADD 45 DEGREE BEVEL TO OUTER EDGES OF PLATE AND BACKFILL WHERE VOIDS ARE PRESENT.  
SECURE FOUNDATIONS INTO JIG TO CONFIRM SET WILL BE PLANAR.  
PLACE TRANSVERSES AND BOLT HAND TIGHT.  
USE SEAKEEPER TEMPLATE TO ENSURE PLANAR ALIGNMENT THEN MARK HOLES.  
TORQUE BOLTS TO 45 FT-LBS.  
DRILL SEAKEEPER MOUNTING HOLES (Ø 14.5mm FOR HELICOIL INSTALLATION).  
USE MCMASTER #91732A671 HELICOILS (M14-2 x 21mm).  
INSTALL UNIT IN ACCORDANCE WITH SEAKEEPER INSTALLATION MANUAL.

UPPER BOLT - MCMASTER #92186A728  
1/2"-13 PARTIALLY THREADED x 4" 316 STAINLESS

LOWER BOLT - MCMASTER #93190A728  
1/2"-13 FULLY THREADED x 4" 316 STAINLESS

WASHER - MCMASTER #91950A033  
SAE 1/2" 316 STAINLESS

TT2 TORX TUBE FOR SEAKEEPER 2

TT2 BRACKET

NUT - MCMASTER #94819A055  
1/2" - 13 THREAD 316 STAINLESS  
APPLY LOC-TITE 272 PERMANENT  
THREADLOCKER ON ALL NUTS

SECURE INNER NUT ON  
BOTTOM BOLT TO REDUCE VIBRATION

**BOLTING DETAIL**

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TYPICAL GYRO INSTALLATION  
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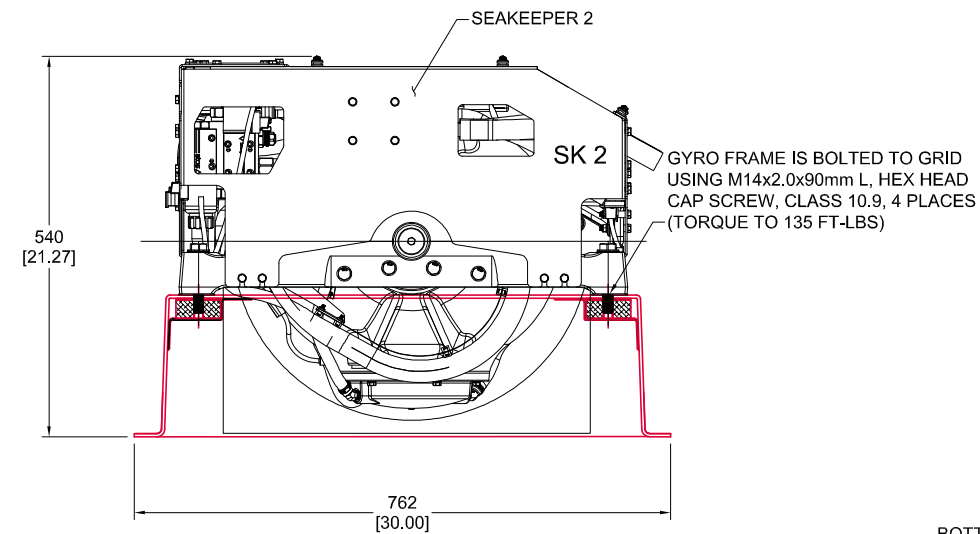
SEAKEEPER  
Seakeeper Inc, 44425 Pecan Court, Suite 151 California, MD 20619

NAME: TT2 TORX TUBE  
INSTALLATION DRAWING  
DWG NUMBER: 90590  
REV: 03 SHEET NO: 1 9 OF 11

WEIGHT - LBS:

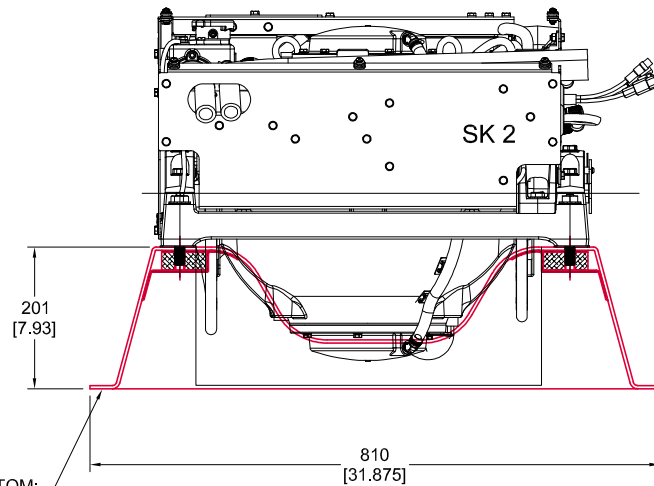
MATERIAL:

DRAWN: RLK  
ENG APPR: JC  
PROD APPR: JC  
DATE: 24FEB2022



**ELEVATION**

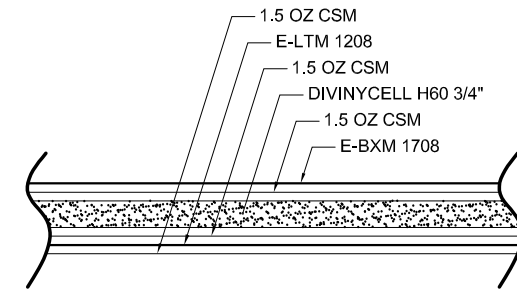
BOTTOM:  
NO GELCOAT OR PAINT  
(TO BE BONDED ON DECK / SEE NOTE 1)



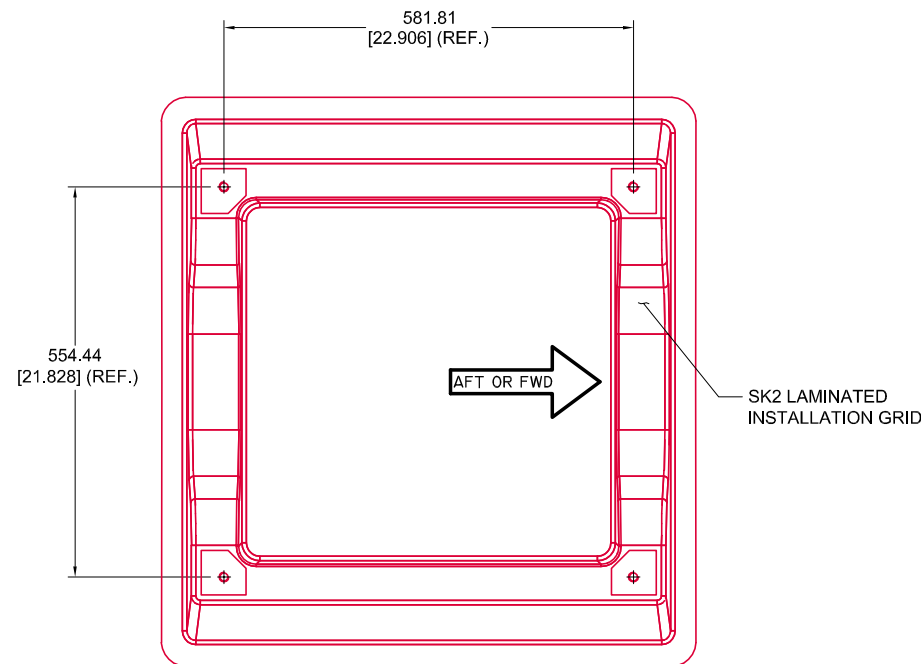
**FRONT VIEW**

**GENERAL NOTES:**

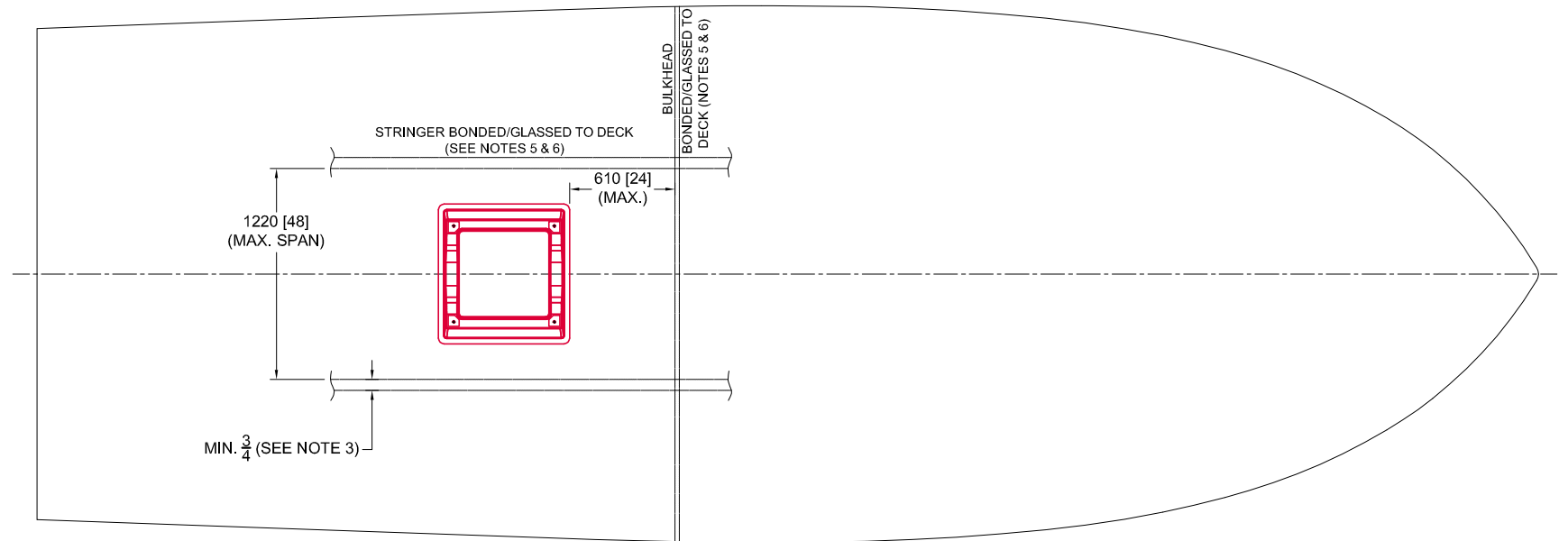
1. SEAKEEPER 2 GRID FOUNDATION SHALL BE BONDED TO DECK SOLE WITH SCIGRIP SG300 OR PLEXUS MA590 ADHESIVE (MIN. TENSILE STRENGTH OF 2000 PSI). ANY PAINT, GELCOAT OR NON-SKID PRESENT IN DECK BOND AREA SHALL BE SANDED TO EXPOSE PRIMARY LAMINATION.
2. SAND GRID BOTTOM SURFACE.
3. BOND ENTIRE GRID BOTTOM SURFACE ENSURING 0.04" TO 0.12" OF BOND THICKNESS.
4. MAXIMUM SPAN IN DECK BASED IN DECK SOLE LAMINATION WITH MINIMAL LAMINATE EQUIVALENT TO 1.5 OZ CSM / E-LTM 1208 / 1.5 OZ CSM / DIVINYCELL CORE H60 3/4" / 1.5 OZ CSM / E-BXM 1708.
5. INSTALLATION CONDITION REQUESTS STRINGERS AND BULKHEAD FULLY BONDED TO DECK USING POLY-BOND B39 OR SIMILAR STRUCTURAL ADHESIVE (MIN. TENSILE STRENGTH OF 1000 PSI).
6. LAMINATION OF STRINGER & BULKHEAD TO DECK USING 2 x E-BXM 1708 TAPE IS HIGHLY RECOMMENDED.



**DECK LAMINATION CONDITION  
DESCRIBED IN NOTE 4**



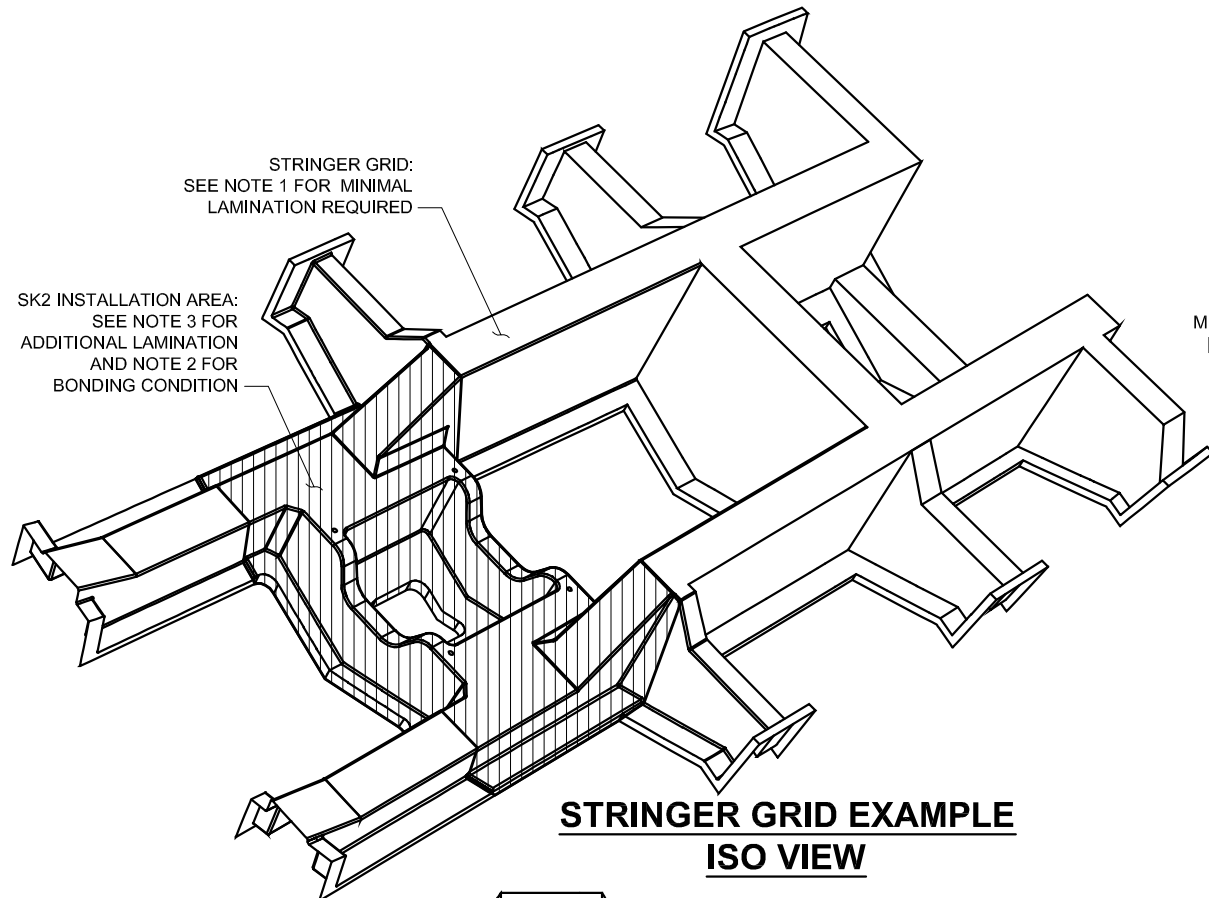
**PLAN VIEW**



**DECK INSTALLATION MINIMUM CONDITION**

FOR INFORMATION ONLY TO ILLUSTRATE  
TYPICAL GYRO INSTALLATION  
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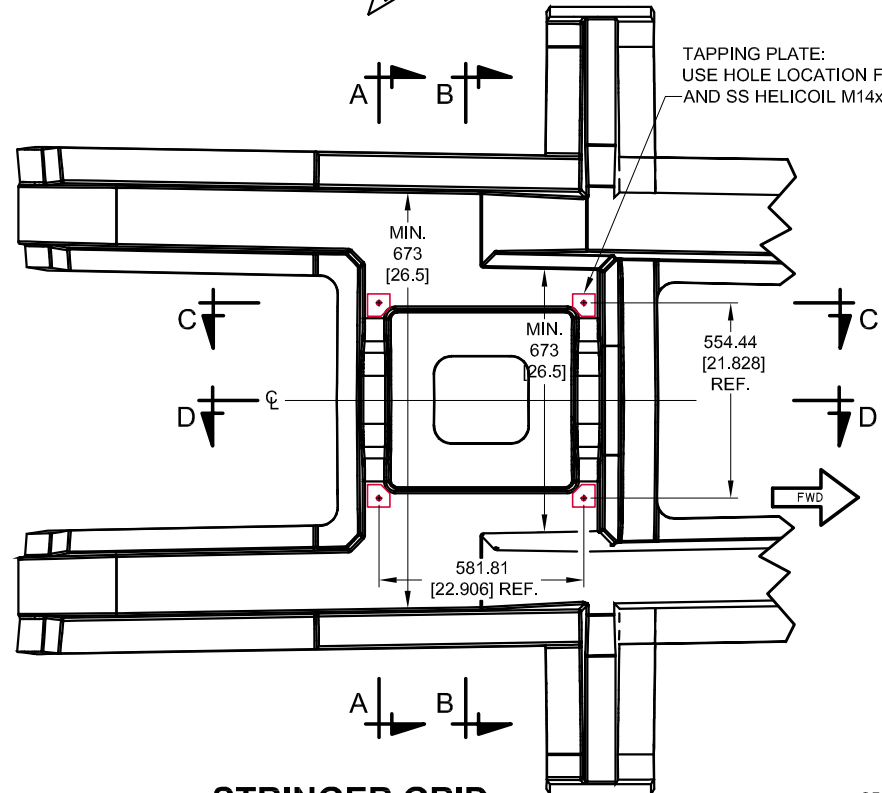
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WEIGHT - LBS:	DRAWN: RLK	DATE: 24FEB2022	DWG NUMBER: 90590
MATERIAL:	ENG APPR: JC	DATE: 24FEB2022	REV. NO. 1
	PROD APPR:	DATE:	10 OF 11



**STRINGER GRID EXAMPLE**  
**ISO VIEW**

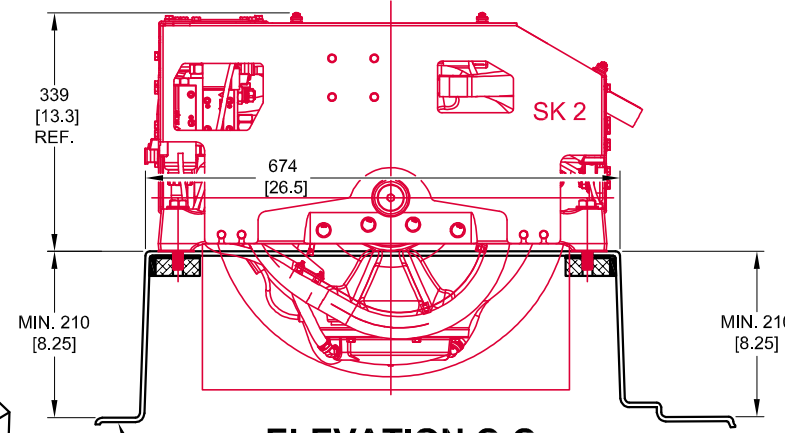
STRINGER GRID:  
SEE NOTE 1 FOR MINIMAL  
LAMINATION REQUIRED

SK2 INSTALLATION AREA:  
SEE NOTE 3 FOR  
ADDITIONAL LAMINATION  
AND NOTE 2 FOR  
BONDING CONDITION



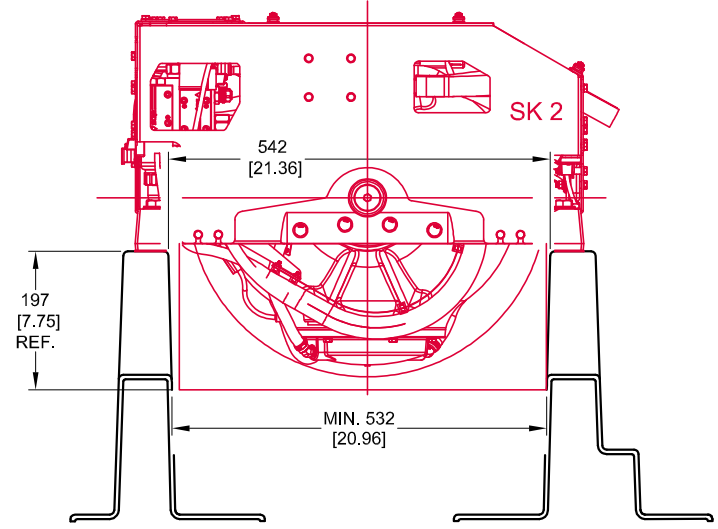
**STRINGER GRID**  
**PLAN VIEW**

TAPPING PLATE:  
USE HOLE LOCATION FIXTURE #11887  
AND SS HELICOIL M14x2.0x24mm

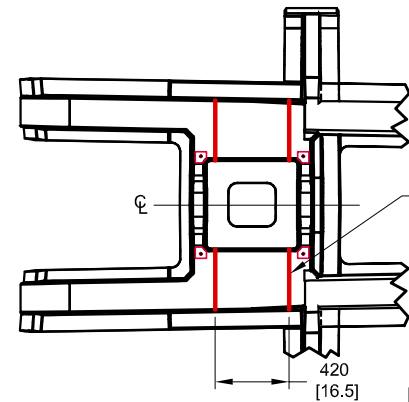


**ELEVATION C-C**

BONDING FLANGE (TYP.):  
SEE NOTE 2

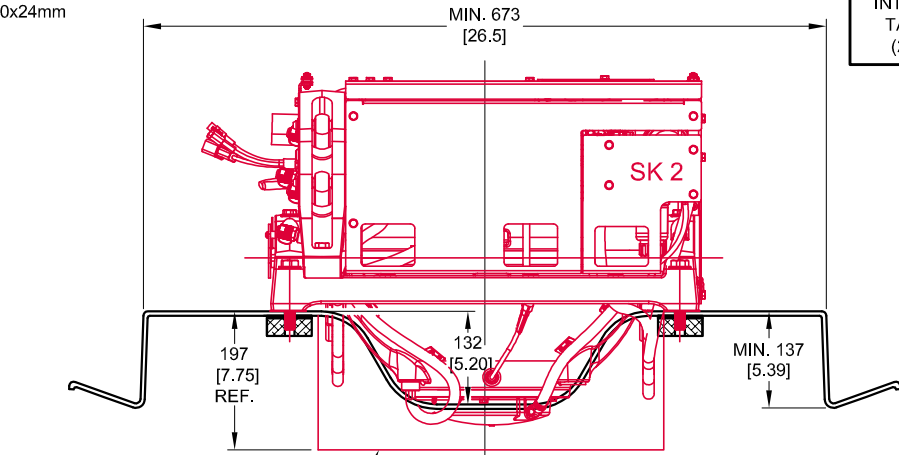


**ELEVATION D-D**



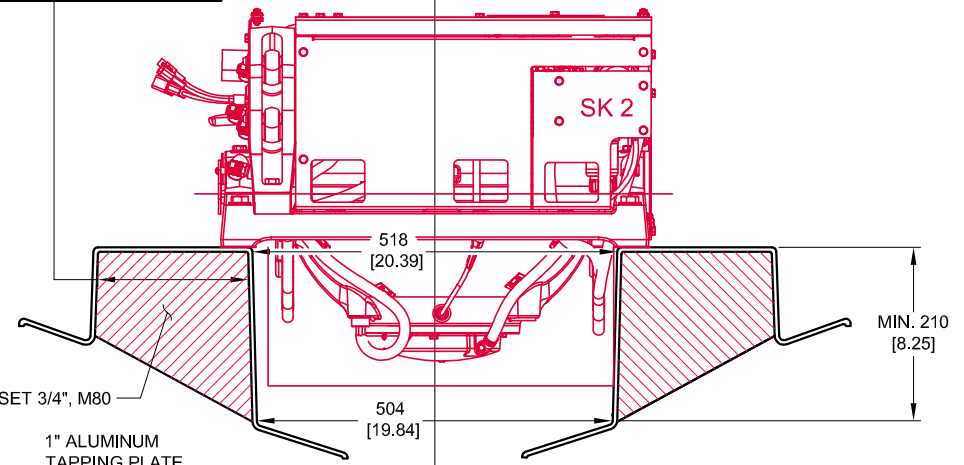
GUSSET 3/4", M80, (4) PLACES:  
SEE SEC. B-B

IF THIS DIMENSION IS GREATER  
THAN 5", INSTALL 3/4" M80 GUSSETS  
INTERNALLY, AND LAMINATED &  
TAPED WITH (2) x E-BXM 1708;  
(2) PCS PORT / (2) PCS STBD



**SECTION A-A**

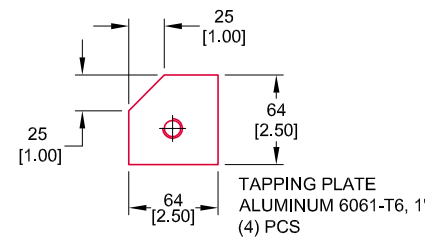
KEEP THIS AREA CLEAR  
FOR HOSE AND CABLE MOVEMENT



**SECTION B-B**  
**LOOKING FWD**

GUSSET 3/4", M80  
1" ALUMINUM  
TAPPING PLATE  
(4) PLACES

TAPPING PLATE TO BE BONDED  
WITH PLEXUS MA590  
AND GLASSED W/ (2) x E-BXM 1708




TAPPING PLATE  
ALUMINUM 6061-T6, 1"  
(4) PCS

**GENERAL NOTES:**

1. STRINGER GRID MINIMAL LAMINATE EQUIVALENT TO 3 OZ CSM AND (2) x E-WMV 2415.
2. STRINGER GRID SHALL BE APPROPRIATELY BONDED TO HULL. SEAKEEPER AREA SHALL BE FULLY BONDED USING SCIGRIP SG300 OR PLEXUS MA590 ADHESIVES WITH MINIMAL THICKNESS OF 1/8".
3. STRINGER GRID IN SEAKEEPER INSTALLATION AREA SHALL RECEIVE ADDITIONAL LAMINATION EQUIVALENT TO 0.5 OZ CSM AND (4) x E-LTM 2408.
4. INSTALLATIONS OUTSIDE OF THE RECOMMENDED REQUIREMENTS NEED TO BE ANALYZED ON A CASE BY CASE BASIS.
5. INSTALL UNIT IN ACCORDANCE WITH SEAKEEPER INSTALLATION MANUAL.

FOR INFORMATION ONLY TO ILLUSTRATE  
TYPICAL GYRO INSTALLATION  
-NOT FOR DESIGN-  
-NO GUARANTEE IS EXPRESSED OR IMPLIED-

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NAME:		SK2 GYRO, BOLT-IN MOLDED STRINGER GRID INSTALLATION	
DRAWN:	DATE:	DWG NUMBER:	REV. NO / SHEET NO.
RLK	05MAY2022	90590	1 / 11 OF 11
ENG APPR:	DATE:		
JC	05MAY2022		
PROD APPR:	DATE:		