

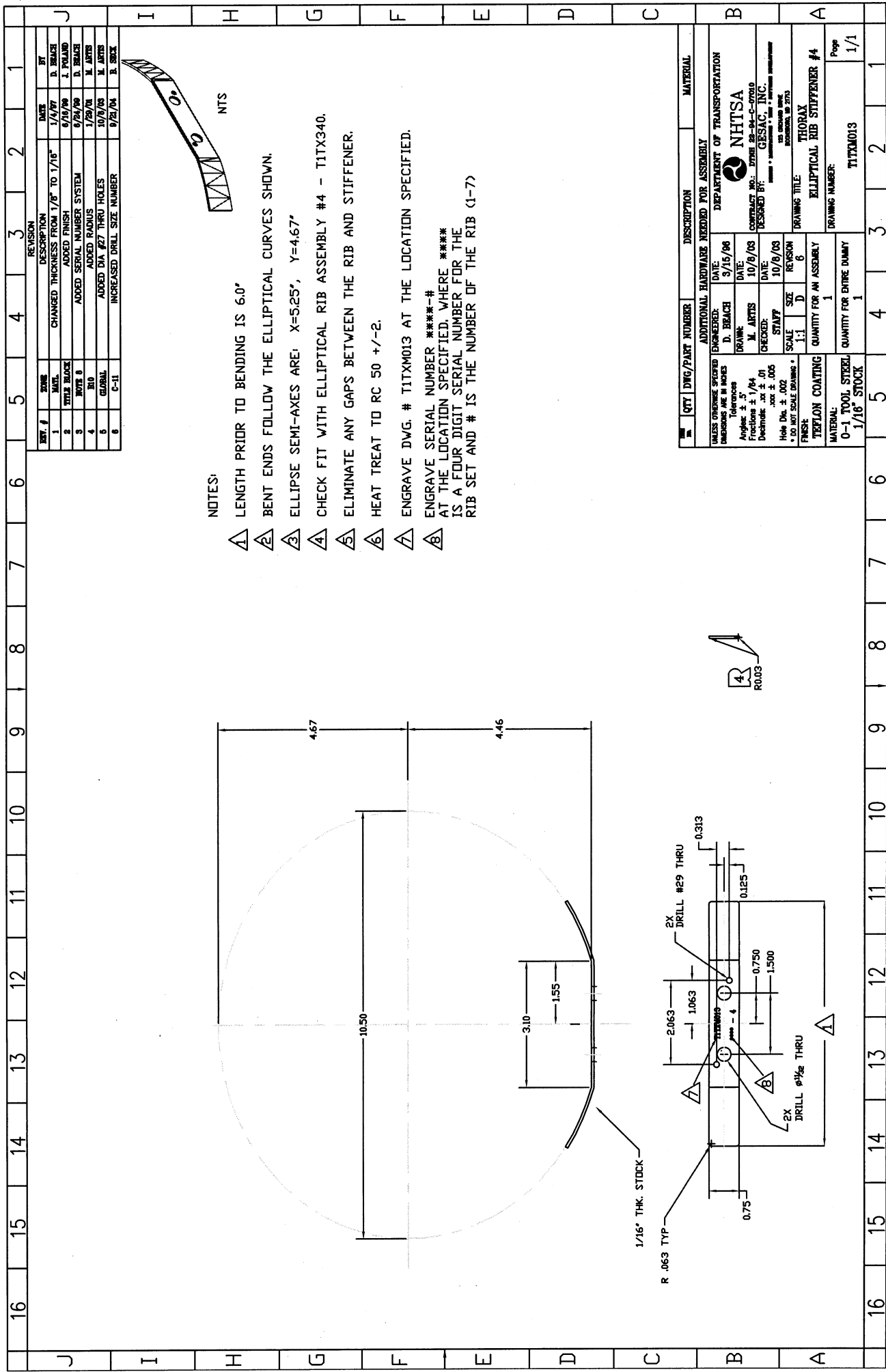
REV. #	ZONE	DESCRIPTION	DATE	BY
1	0-10	CHANGED LENGTHS OF RIB MOUNTING BOLTS	12/9/97	D. BRACE
2	0-20	DELETED SPINE WIRE COVER FROM RIB #4. UPDATED NOTES	5/24/98	D. BRACE
3	GLOBAL	ORDERED PARTS LIST ALPHANUMERICALLY	6/10/98	J. POLARD
4	GLOBAL	MADE THORX ALPHA UPDATES	4/11/01	M. ARTS
5	GLOBAL	ADDED ITEM 14 IN PARTS LIST	10/9/01	M. ARTS
6	GLOBAL	RIB 4 & 5 SPINE-TO-RIB ATTACH BOLTS CHANGED TO L-3/8"	11/28/01	M. ARTS
7	GLOBAL	ADDED ITEM 15 IN PARTS LIST	11/28/01	M. ARTS
8	GLOBAL	REDRAWN AS EXPLODED ASSEMBLY W/INT REVISIONS	12/10/04	B. SECK
9	GLOBAL	AND UPDATED PARTS LIST	12/10/04	R. SECK
10	GLOBAL	ADDED S-STYLE CAGE CLIP ON BOLTS TO HARDWARE LIST	3/28/05	J. McDONALD
11	GLOBAL	CHANGED #10-S2 PLANGED BRGSS TO #10-S2 BRGSS	3/28/05	J. McDONALD
12	GLOBAL	ADDED TITUMID7 (LIFT STRAP) WITH AN ASSEMBLY NOTE	3/28/05	J. McDONALD

QTY	DWG/PART NUMBER	DESCRIPTION	MATERIAL
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES Tolerances Angles: ± .5° Fractions: ± 1/64 Decimals: .xx ± .01 Surface Finish: 125			
FINISH: * DO NOT SCALE DIMENSIONS *			
DRAWING TITLE: THORAX MECHANICAL ASSEMBLY			
DRAWING NUMBER: TITUM000-1			
QUANTITY FOR AN ASSEMBLY: 1			
QUANTITY FOR ENTIRE DUMMY: 1			
Page: 1/2			

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<p>NOTES:</p> <p>△ THE #10-32 CLIP-ON NUTS ARE PLACED ON THE FRONT ENDS OF RIBS #1, #2, #4, #5, AND #7 TO PROVIDE AN ATTACHMENT POINT FOR THE BIB ASSEMBLY.</p> <p>△ THE SHOULDER AND SPINE ASSEMBLIES ARE SHOWN FOR REFERENCE PURPOSES ONLY.</p> <p>△ THE WIRES FROM THE HEAD ACCELEROMETERS AND NECK SPRING LOAD CELLS ARE BUNDLED TOGETHER AND STRAIN RELIEVED AT ONE OF THE SIDES OF THE UPPER THORACIC SPINE BACK PLATE (T1SPM123).</p> <p>△ THE HEAD TILT SENSOR, NECK ROTARY POTENTIOMETER, AND FACE LOAD CELLS WIRES ARE STRAIN RELIEVED ON THE OTHER SIDE OF THE UPPER THORACIC SPINE BACK PLATE.</p> <p>△ THE SIZE CABLE CLAMP USED FOR STRAIN RELIEF IS DETERMINED FROM THE NUMBER OF WIRES/INSTRUMENTS INSTALLED.</p> <p>△ THE UPPER ABDOMEN ASSEMBLY HAS NOT BEEN SHOWN FOR CLARITY.</p> <p>△ THE UPPER ABDOMEN BAG HAS THREE GROMMETED HOLES ON EACH SIDE OF THE FRONT FACE, WHICH BOLT TO RIBS #5, #6, AND #7. THE BAG MATERIAL IS SANDWICHED BETWEEN THE RIBS AND THE BIB MATERIAL DURING THE ASSEMBLY.</p> <p>△ THE CRUX UNITS ARE CONNECTED TO THE ENDS OF RIBS #3 AND #6. THE U-JOINT IS ATTACHED TO THE END OF EACH CRUX UNIT, AND USING THE CRUX INSERTION TOOL MECHANICAL ASSEMBLY (T1CX1000), THE U-JOINT IS PASSED THROUGH THE HOLE IN THE END OF THE RIB, (FOR RIB #6 ONLY). IT IS THEN PASSED THROUGH THE UPPER ABDOMEN CENTER GROMMET, THEN THROUGH THE BIB ASSEMBLY. THE U-JOINT IS SECURED IN PLACE BY THE RIB ATTACHMENT BOLT.</p> <p>△ THE MID-STERNUM GROUND STRAP (T1NM012) CONNECTS THE MID-STERNUM ASSEMBLY (T1SM005) TO RIB #4 (T1TXM340). ONE END IS ATTACHED TO THE MID-STERNUM USING A # 8-32 BH.S.C.S (SEE DWG T1TXM10), AND THE OTHER END TO RIB #4 USING ITEM 12 ON THIS PARTS LISTS.</p> <p>△ THE THORACIC GROUND STRAP (T1NM013) CONNECTS RIB # 4 (T1TXM340) TO RIB # 5 (T1TXM350) USING TWO 5/16-20 FLANGED BH.S.C.S.</p> <p>△ THE REINFORCED RUBBER WASHERS (ITEM 16) ARE ASSEMBLED BETWEEN RIB # 1 (T1TXM310) AND THE SHOULDER UPPER STERNAL PLATE (T1SHM018).</p> <p>△ INSERT RIB 1 AND RIB 1 STIFFENER THROUGH THE SMALL LOOP OF THE LIFT STRAP BEFORE ASSEMBLING TO THE SPINE.</p>																																																																																																																																																																																																																															
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NOTES:

- ① LENGTH PRIOR TO BENDING IS 6.0'
- ② BENT ENDS FOLLOW THE ELLIPTICAL CURVES SHOWN.
- ③ ELLIPSE SEMI-AXES ARE: X=5.25", Y=4.67'
- ④ CHECK FIT WITH ELLIPTICAL RIB ASSEMBLY #4 - T1TX340.
- ⑤ ELIMINATE ANY GAPS BETWEEN THE RIB AND STIFFENER.
- ⑥ HEAT TREAT TO RC 50 +/-2.
- ⑦ ENGRAVE DWG. # T1TXM013 AT THE LOCATION SPECIFIED.
- ⑧ ENGRAVE SERIAL NUMBER *****# AT THE LOCATION SPECIFIED. WHERE ***** IS A FOUR DIGIT SERIAL NUMBER FOR THE RIB SET AND # IS THE NUMBER OF THE RIB (1-7)

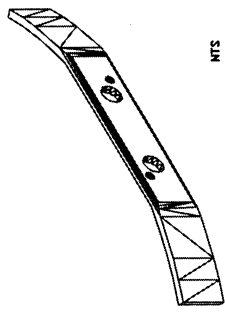
REV. #	DATE	DESCRIPTION	BY
1	1/4/97	CHANGED THICKNESS FROM 1/8" TO 1/16"	D. BEACH
2	9/19/98	ADDED FINISH	J. POLAND
3	9/24/98	ADDED SERIAL NUMBER SYSTEM	D. BEACH
4	1/29/98	ADDED RADIUS	M. ARTS
5	10/9/03	ADDED DIA #27 THRU HOLES	M. ARTS
6	9/24/04	INCREASED DRILL SIZE NUMBER	B. SECK

QTY	DWG/PART NUMBER	DESCRIPTION	MATERIAL
1	T1TXM013	ELLIPTICAL RIB STIFFENER #4	THORAX
1	T1TXM013	ELLIPTICAL RIB STIFFENER #4	THORAX

QTY FOR AN ASSEMBLY	QTY FOR ENTIRE DUMMY	Page
1	1	1/1

UNLESS OTHERWISE SPECIFIED	ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY
DIMENSIONS ARE IN INCHES	DEPARTMENT OF TRANSPORTATION
Angles: ± .5°	NHTSA
Fractions: 1/64	CONTRACT NO.: DTMB 98-M-C-0700
Decimals: .xx ± .01	DESIGNED BY: GESAC, INC.
Hole Dia: ± .002	155 BROADWAY, NEW YORK, NY 10013
DO NOT SCALE DRAWING	SCALE: 1:1
FINISH: TEFLON COATING	DATE: 3/15/08
	ENGINEER: D. BEACH
	DRAWN: M. ARTS
	CHECKED: M. ARTS
	DATE: 10/9/03
	SCALE: 1:1
	SIZE: D
	REVISION: 6

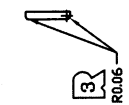
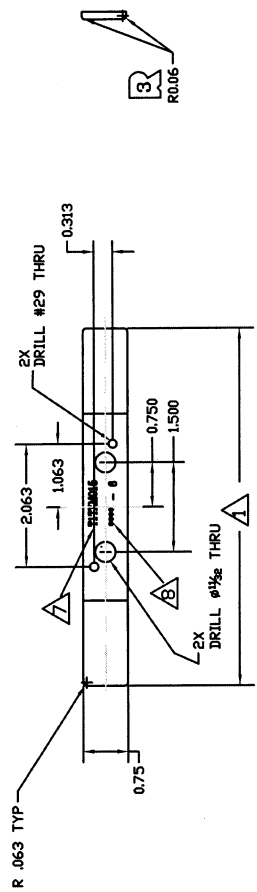
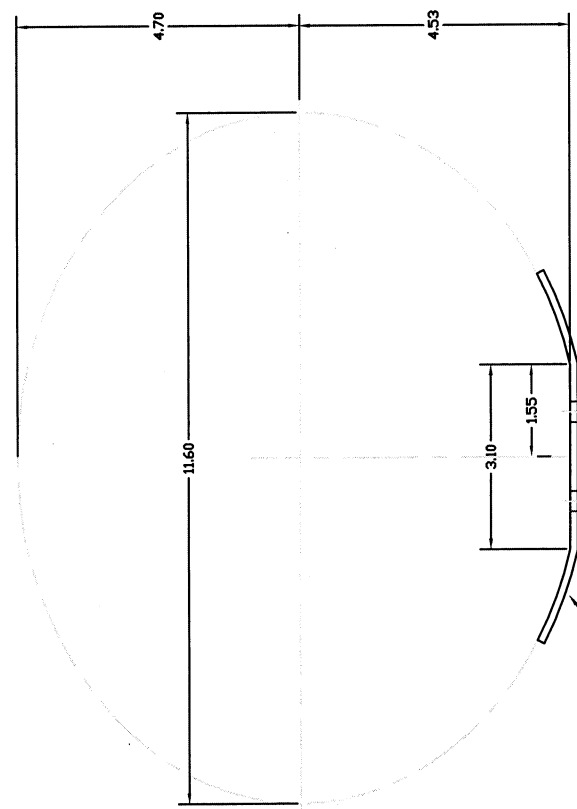
16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
J	J	J	J	J	J	J	J	J	J	J	J	J	J	J	J
I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G
F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A



MTS

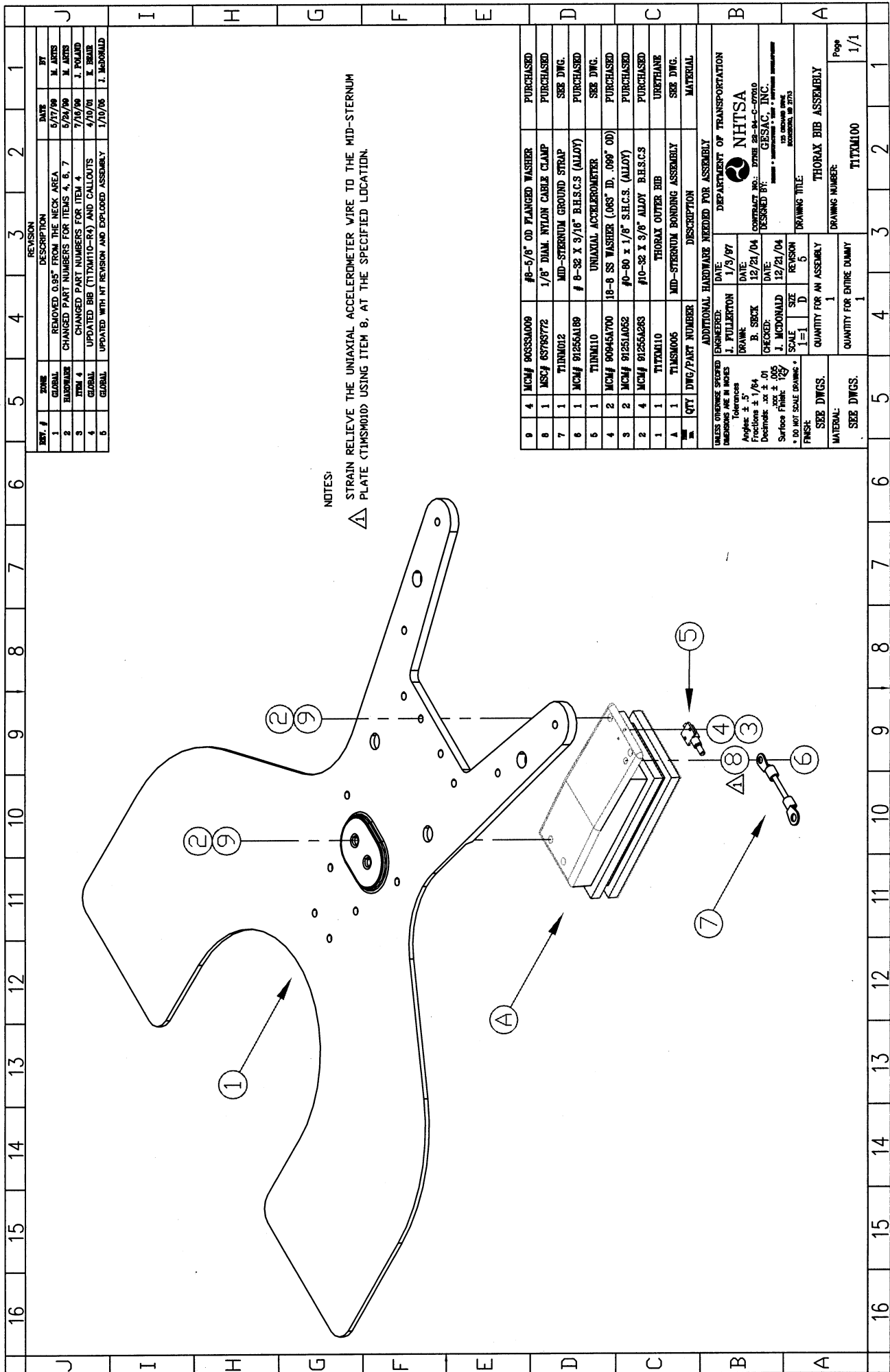
NOTES:

- 1 LENGTH PRIOR TO BENDING IS 6.0'
- 2 BENT ENDS FOLLOW THE ELLIPTICAL CURVES SHOWN.
- 3 SEMI-AXES ARE: X=5.80', Y=4.70'
- 4 CHECK FIT WITH ELLIPTICAL RIB ASSEMBLY #6 - TITXM360
- 5 ELIMINATE ANY GAPS BETWEEN THE RIB AND STIFFENER.
- 6 HEAT TREAT TO RC 50 +/-2
- 7 ENGRAVE DWG. # TITXM015 AT THE LOCATION SPECIFIED.
- 8 ENGRAVE SERIAL NUMBER ***** AT THE LOCATION SPECIFIED. WHERE ***** IS A FOUR DIGIT SERIAL NUMBER FOR THE RIB SET AND # IS THE NUMBER OF THE RIB (1-7)



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES Tolerances Angles ± .5° Fractions ± 1/64 Decimals .xx ± .01 Hole Dia. ± .002 * TO ANY SCALE DRAWING *	ENGINEERED: D. BEACH	DATE: 9/19/06	ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY	MATERIAL
DRAWN: M. ARTIS	DATE: 10/9/06	DEPARTMENT OF TRANSPORTATION		
CHECKED: STAFF	DATE: 10/9/06	NHTSA		
SCALE: 1=1	REVISION: 5	CONTRACT NO.: STTR 03-A-C-0010		
FINISH: TEFLON COATING	QUANTITY FOR AN ASSEMBLY: 1	DESIGNED BY: GESAC, INC.		
	QUANTITY FOR ENTIRE DUMMY: 1	DATE: 9/21/04		
		DRAWING TITLE: THORAX		
		DRAWING NUMBER: TITXM015		
		Page: 1/1		

8	7	6	5	4	3	2	1																																	
D		C		B		A																																		
<p>NOTE:</p> <p>1 CUT THE NYLON WEBBING TO A LENGTH OF 13.5" AND OVERLAP AS DIMENSIONED.</p> <p>2 STITCH THE NYLON WEBBING USING KEVLAR THREAD AS DIMENSIONED.</p>																																								
<p>UNLESS OTHERWISE SPECIFIED</p> <p>DIMENSIONS ARE IN INCHES</p> <p>Tolerance</p> <p>Angles: ± .5°</p> <p>Fractions: ± 1/64</p> <p>Decimals: ± .01</p> <p>Hole Dia: ± .005</p> <p>± TO NOT SCALE DRAWING</p> <p>FINISH:</p>																																								
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QTY	DWG/PART NUMBER	DESCRIPTION	PURCHASED																																					
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ENGINEERED:	DATE:	DEPARTMENT OF TRANSPORTATION																																						
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CHECKED:	DATE:	CONTRACT NO.: DTMB 28-94-C-0760																																						
STAFF	4/6/06	DESIGNED BY: CERSAC, INC.																																						
SCALE:	SIZE:	1:1 B N/C																																						
REVISION:		125 ORIGINAL DATE																																						
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1		DRAWING NUMBER: TITXM017																																						
QUANTITY FOR ENTIRE DUMMY:		Page: 1/1																																						
1																																								
<p>MATERIAL:</p> <p>SEE HARDWARE LIST</p>																																								
8	7	6	5	4	3	2	1																																	



NOTES:
 ⚠ STRAIN RELIEVE THE UNIAXIAL ACCELEROMETER WIRE TO THE MID-STERNUM PLATE (TIMSM010) USING ITEM 8, AT THE SPECIFIED LOCATION.

REVISION		DATE	BY
1	GLOBAL	5/17/99	M. ACTS
2	GLOBAL	5/24/99	M. ACTS
3	ITEM 4	7/19/99	J. POLJAD
4	GLOBAL	4/19/01	K. BRAR
5	GLOBAL	1/10/06	J. McDONALD

QTY	DWG/PART NUMBER	DESCRIPTION	MATERIAL
4	MCW# 90553A009	#8-5/8" OD FLANGED WASHER	PURCHASED
8	MSC# 6378772	1/8" DIAM. NYLON CABLE CLAMP	PURCHASED
7	TINM012	MD-STERNUM GROUND STRAP	SEE DWG.
6	MCW# 91255A189	# 8-32 X 3/16" B.E.S.C.S (ALLOY)	PURCHASED
6	TINM10	UNIAXIAL ACCELEROMETER	SEE DWG.
4	MCW# 90945A700	18-8 SS WASHER (.063" ID, .069" OD)	PURCHASED
3	MCW# 91251A052	#0-80 x 1/8" S.H.C.S. (ALLOY)	PURCHASED
2	MCW# 91255A263	#10-32 X 3/8" ALLOY B.E.S.C.S	PURCHASED
1	TITXM10	THORAX OUTER BIB	URETHANE
1	TIMS006	MD-STERNUM BONDING ASSEMBLY	SEE DWG.

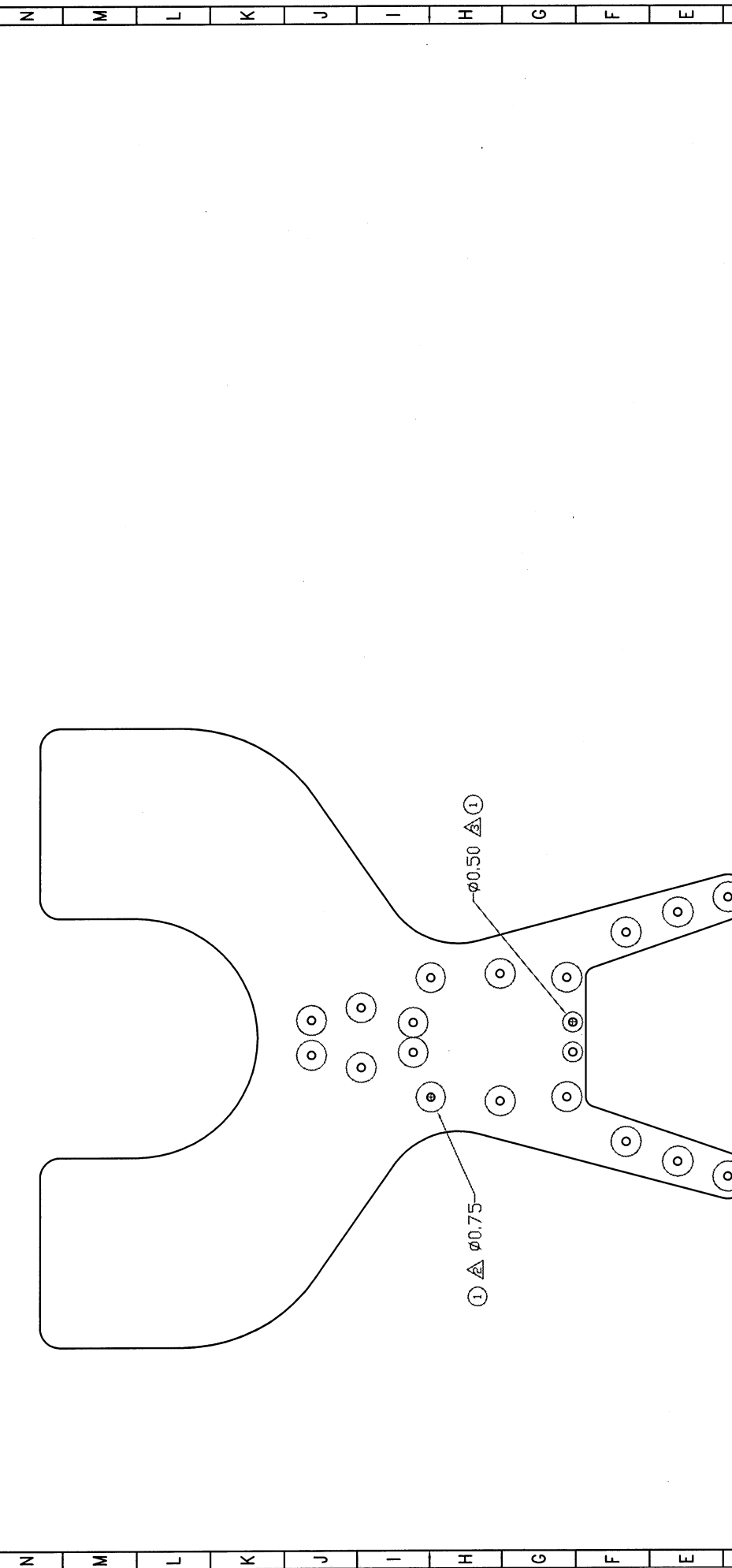
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		DATE: 1/3/07	
Engineered:	J. PULLERTON	Drawn:	B. SOCK
Tolerances:	Fractions ± 1/64	Checked:	J. McDONALD
Decimals: .xx ± .01	Surface Finish: 125	Scale:	1=1 D
FINISH:	* DO NOT SCALE DRAWING *	Revision:	6
SEE DWGS.	QUANTITY FOR AN ASSEMBLY	Quantity:	1
MATERIAL:	QUANTITY FOR ENTIRE DUMMY	Quantity:	1
SEE DWGS.		Page:	1/1

ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY
 DEPARTMENT OF TRANSPORTATION
NHTSA
 CONTRACT NO.: DTRC 98-C-07010
 DESIGNED BY: GISSAC, INC.
 12500 WILSON BLVD
 ROCKVILLE, MD 20850

DRAWING TITLE: THORAX BIB ASSEMBLY
 DRAWING NUMBER: TITXM100

22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

REV. #	ZONE	DESCRIPTION	DATE	BY
1	GLOBAL	RE-DIMENSION DRAWING REMOVED 0.95" FROM THE NECK AREA	5/17/06	M. ARTS
2	P-20	EDIT NOTE 1	6/16/06	J. POLAND
3	NOTE 1	CHANGE REFERENCE TO P/N	7/26/06	J. POLAND
4	GLOBAL	CHANGED GEOMETRY/RE-DIMENSION	4/10/01	K. BRAUR
5	GLOBAL	CHANGED GEOMETRY/MATERIAL	2/17/04	J. McDONALD
20	GLOBAL	SUPERCEDES AND IDENTICAL TO REV 5	6/04/04	J. McDONALD



REV. #	QTY	MCM#	DWG/PART NUMBER	DESCRIPTION	MATERIAL
1	-	9318T15		.0065" THREAD DIA. .0118" SQUARE	NYLON

ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY	
ENGINEERED:	DATE: 5/5/03
J. McDONALD	
DRAWN:	DATE: 5/5/03
J. McDONALD	
CHECKED:	DATE: 4/10/01
STAFF	
SCALE	REVISION
1=1	B0
QUANTITY FOR AN ASSEMBLY	
1	
QUANTITY FOR ENTIRE DUMMY	
1	

UNLESS OTHERWISE SPECIFIED	
DIMENSIONS ARE IN INCHES	
Tolerances	
Angles:	± .5°
Fractions:	± 1/64
Decimals:	.xx ± .01
	.xxx ± .005
Hide Dia.:	± .002
* DO NOT SCALE DRAWING *	
FINISH:	

MATERIAL	
SEE NOTES	

DRAWING INFORMATION	
DEPARTMENT OF TRANSPORTATION	
NHTSA	
CONTRACT NO.: DTN81 22-94-C-07010	
DESIGNED BY: GESAC INC.	
125 ORCHARD DRIVE ROCKHURST, MD 27133	
DRAWING TITLE:	THORAX OUTER BIB
DRAWING NUMBER:	T1TXM110
Page	1/2

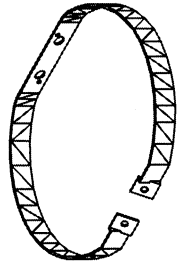
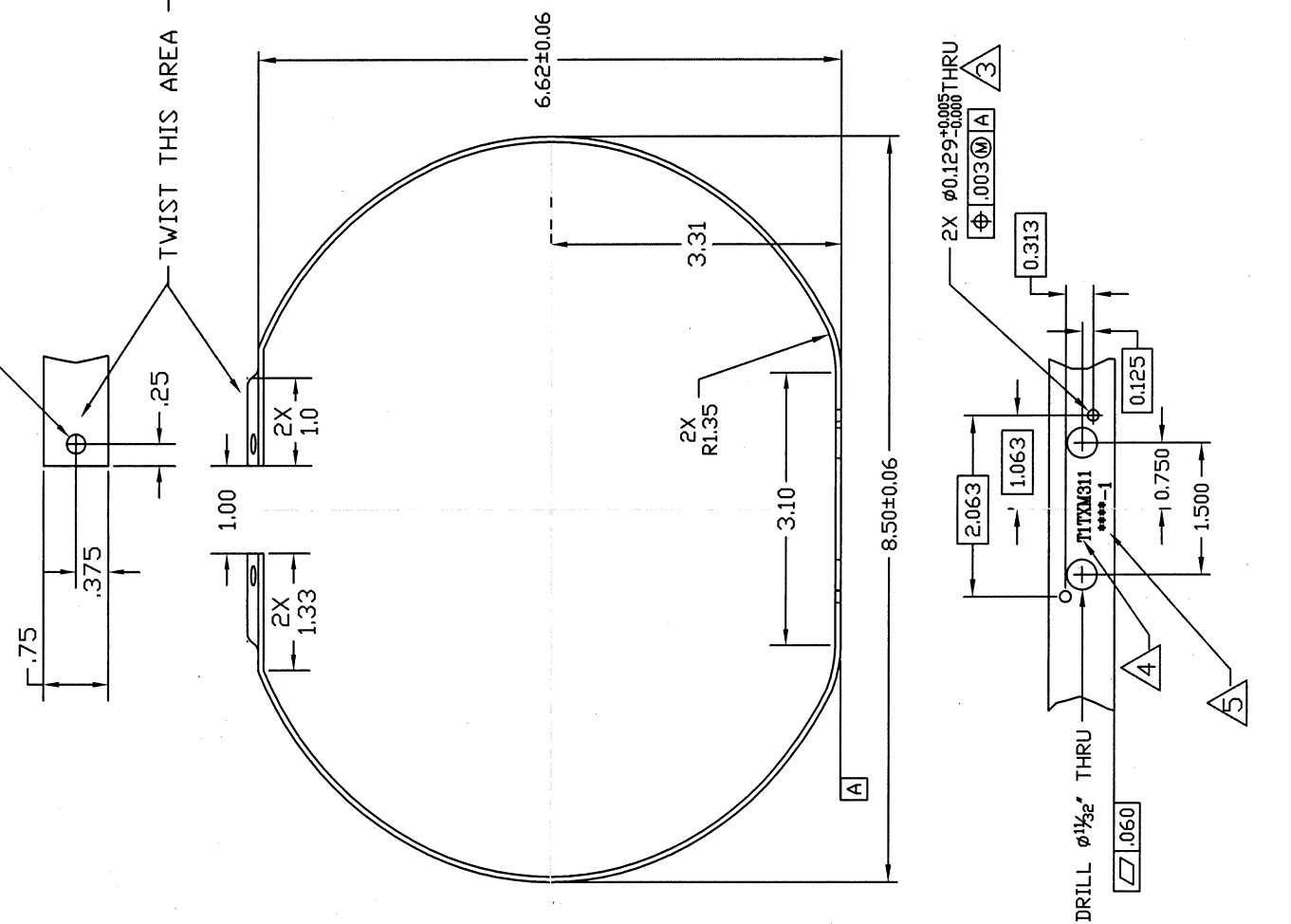
NOTES:
 1 MATERIAL: 1/8" MONDOTHANE SHORE 80 A +/-5
 2 CAST IN PLACE .75" OD NYLON MESH
 3 CAST IN PLACE .50" OD NYLON MESH
 4 PART AVAILABLE UPON REQUEST FROM NHTSA

P O N M L K J I H G F E D C B A

22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

10	9	8	7	6	5	4	3	2	1
H	G	F	E	D	C	B	A		

DRILL #3 WIRE THRU (2 LOC)



NOTES:

- 1 MAKE RIB FROM 1070 ANNEALED SPRING STEEL 0.062 THICK x 0.75" WIDE.
- 2 ELLIPTICAL SHAPE SEMI-AXIS OUTSIDE DIMENSIONS ARE: X:4.25" Y:3.67"
- 3 AFTER RIB IS FORMED - PRIOR TO HEAT-TREATING, ORIENT THE RIB SO THAT THE HOLE PATTERN IS AS SHOWN.
- 4 ENGRAVE DWG. # T1TXM311 AT THE LOCATION SPECIFIED.
- 5 ENGRAVE SERIAL NUMBER ****-# AT THE LOCATION SPECIFIED. WHERE **** IS A FOUR DIGIT SERIAL NUMBER FOR THE RIB SET AND # IS THE NUMBER OF THE RIB (1-7)
- 6 HEAT TREAT TO Rc 43-47
- A COAT THE RIB TO THE FOLLOWING SPECS.
-BLACK ZINC
-MIL SPEC ASTM B633-98e1; TYPE II; SC3 BLACK

REV. #	ZONE	DESCRIPTION	DATE	BY
1	NOTE 6	ADDED SERIAL NUMBER DESIGNATION	5/24/99	D. BEACH
2	GLOBAL	ADDED DIA. 136 HOLES AND REVISED NOTE 3	10/7/03	M. ARTIS
3	GLOBAL	RE-NUMBERED NOTES	10/7/03	M. ARTIS
	C-6	MODIFIED GEOMETRIC SPECIFICATIONS	9/2/04	B. SREK
	GLOBAL	ADDED FLATNESS, WIDTH AND DEPTH TOLERANCE	9/23/04	J. McDONALD

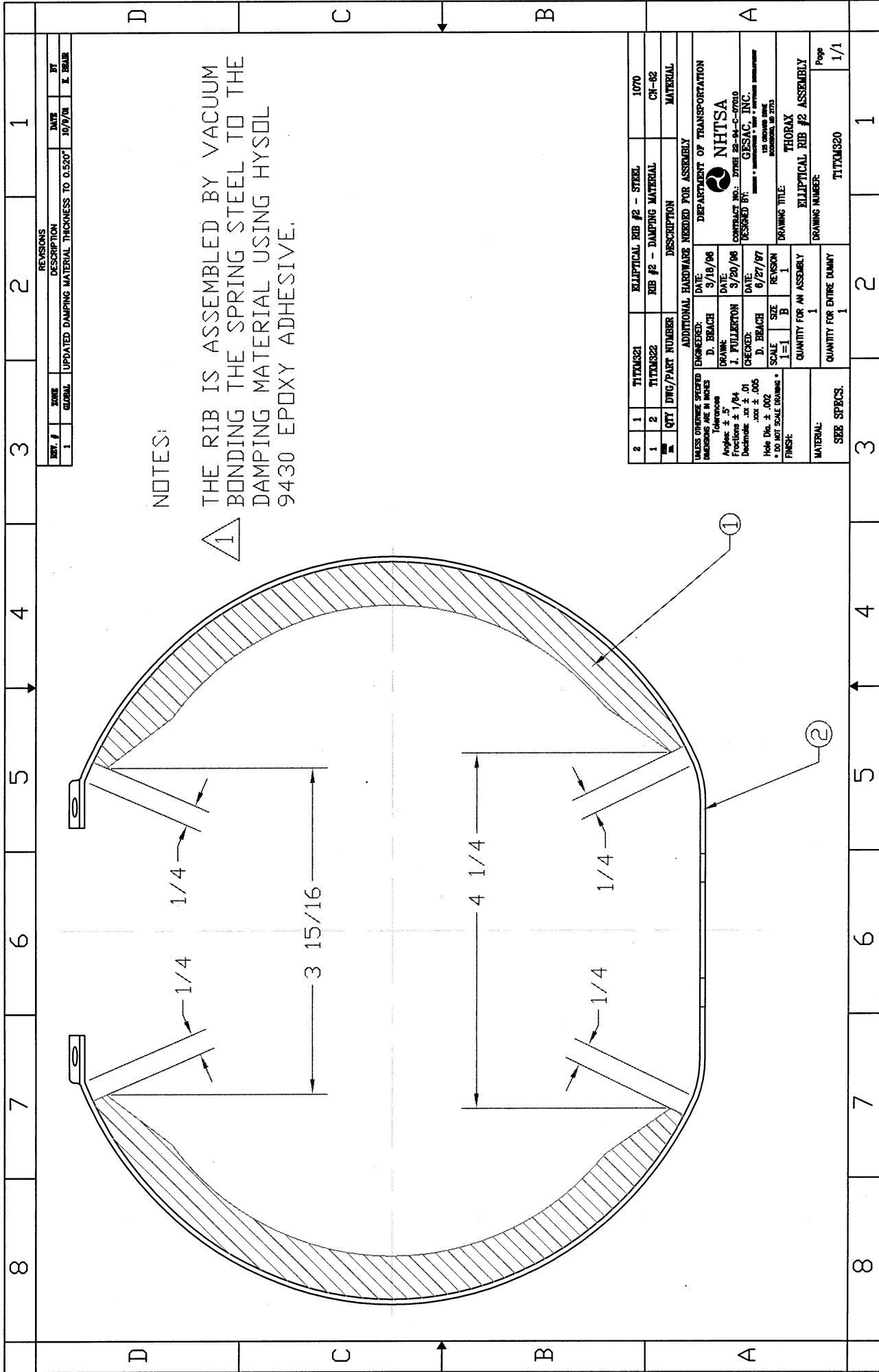
QTY	DWG/PART NUMBER	DESCRIPTION	MATERIAL
1	T1TXM311	ELLIPTICAL RIB #1 - STEEL	STEEL
1	T1TXM311	ELLIPTICAL RIB #1 - STEEL	STEEL

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	ENGINEERED:	DATE:	ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY
Tolerances Angles: ± .5° Fractions: ± 1/64 Decimals: .xx ± .01 .xxx ± .005	Y. ZHAO	3/4/96	DEPARTMENT OF TRANSPORTATION
	M. ARTIS	10/7/03	NHTSA
	R. ROSE	10/7/03	CONTRACT NO.: DTNH 22-94-C-07040
			DESIGNED BY: GESAC, INC.
			125 ORLAND DRIVE ROCKFORD, IL 61153
	SCALE: 1=1	SIZE: C	DRAWING TITLE: THORAX
			ELLIPTICAL RIB #1 - STEEL
	FINISH: REFER TO NOTE 7	REVISION: 3	DRAWING NUMBER: T1TXM311
			QUANTITY FOR AN ASSEMBLY: 1
			QUANTITY FOR ENTIRE DUMMY: 1
			Page: 1/1

8	7	6	5	4	3	2	1												
<table border="1"> <thead> <tr> <th colspan="3">REVISIONS</th> </tr> <tr> <th>REV. #</th> <th>DATE</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>08/07/98</td> <td>J. DRUMMOND</td> </tr> <tr> <td>2</td> <td>11/15/94</td> <td>L. McDONALD</td> </tr> </tbody> </table>								REVISIONS			REV. #	DATE	BY	1	08/07/98	J. DRUMMOND	2	11/15/94	L. McDONALD
REVISIONS																			
REV. #	DATE	BY																	
1	08/07/98	J. DRUMMOND																	
2	11/15/94	L. McDONALD																	
<p>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES</p> <p>FINISH: * DO NOT SCALE DRAWING *</p> <p>SCALE: 1=1</p> <p>QUANTITY FOR AN ASSEMBLY: 2</p> <p>QUANTITY FOR ENTIRE DUMMY: 2</p> <p>MATERIAL: EAR CN-62</p>																			
<p>ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY: NONE</p> <p>ENGINEERED: D. BRANCH DATE: 03/19/96</p> <p>DRAWN: J. FULLERTON DATE: 03/20/96</p> <p>CHECKED: D. BRANCH DATE: 06/30/97</p> <p>SIZE: B</p> <p>REVISION: 2</p> <p>DEPARTMENT OF TRANSPORTATION</p> <p>NHTSA</p> <p>CONTRACT NO.: DERE 98-94-C-0700</p> <p>DESIGNED BY: GESAC, INC.</p> <p>122 ORLAND DRIVE, ROCKFORD, IL 61153</p> <p>DRAWING TITLE: THORAX ELLIPTICAL RIB #1 - DAMPING MATERIAL</p> <p>DRAWING NUMBER: TITXM812</p> <p>Page: 1/1</p>																			
8	7	6	5	4	3	2	1												

NOTES:

1 DAMPING MATERIAL
(REFERENCE EAR ISODAMP CN-62)



NOTES:

1 THE RIB IS ASSEMBLED BY VACUUM BONDING THE SPRING STEEL TO THE DAMPING MATERIAL USING HYSOL 9430 EPOXY ADHESIVE.

REV. #	ZONE	DESCRIPTION	DATE	BY
1	GLOBAL	UPDATED DAMPING MATERIAL THICKNESS TO 0.520"	10/19/04	E. BRUBB

QTY	DMG/PART NUMBER	DESCRIPTION	MATERIAL
2	1	TITM321	ELLIPTICAL RIB #2 - STEEL
	2	TITM322	RIB #2 - DAMPING MATERIAL
			CN-62

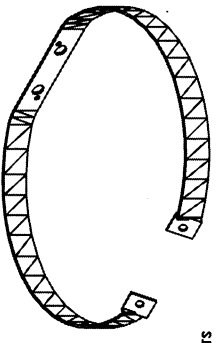
ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY	
ENGINEERED:	DATE: 9/18/96
D. BEACHE	DATE: 9/20/96
DRAWN:	DATE: 9/20/96
J. FULLERTON	DATE: 6/27/97
CHECKED:	DATE: 6/27/97
D. BEACHE	DATE: 6/27/97
SCALE:	SIZE: B
1=1	REVISION: 1

UNLESS OTHERWISE SPECIFIED	
DIMENSIONS ARE IN INCHES	
Tolerances	
Angles:	± .5°
Fractions:	± 1/64
Decimals:	± .005
Hole Dia.:	± .002
* DO NOT SCALE DRAWING *	
FINISH:	

DEPARTMENT OF TRANSPORTATION	
NHTSA	
CONTRACT NO.: DTMB 96-C-0700	
DESIGNED BY: GRESAC, INC.	
125 OAKVIEW DRIVE	
BOONVILLE, MO 67003	
DRAWING TITLE: THORAX	
ELLIPTICAL RIB #2 ASSEMBLY	
DRAWING NUMBER:	TITM320
QUANTITY FOR AN ASSEMBLY:	1
QUANTITY FOR ENTIRE DUMMY:	1
MATERIAL:	SEE SPECS.

10	9	8	7	6	5	4	3	2	1
H	G	F	E	D	C	B	A		

REV. #	ZONE	DESCRIPTION	DATE	BY
1	GLOBAL	ADDED NOTE 6 FOR SERIAL NUMBER	5/24/99	D. BRACH
2	GLOBAL	ADDED DIA. 136 HOLES AND REVISED NOTE 3	10/7/03	M. ARTIS
3	GLOBAL	RE-NUMBERED NOTES	10/7/03	M. ARTIS
	C-6	MODIFIED GEOMETRIC SPECIFICATIONS AND UPDATED GEOMETRY	9/21/04	B. SRECK
	GLOBAL	ADDED FLATNESS, WIDTH AND DEPTH TOLERANCE	9/21/04	J. McDONALD



NTS

NOTES:
 1 MAKE RIB FROM 1070 ANNEALED SPRING STEEL
 0.062 THICK X 0.75" WIDE.

2 ELLIPTICAL SHAPE SEMI-AXIS OUTSIDE
 DIMENSIONS ARE: X:4.50" Y:4.10"

3 AFTER RIB IS FORMED - PRIOR TO HEAT-TREATING,
 ORIENT THE RIB SO THAT THE HOLE PATTERN IS
 AS SHOWN.

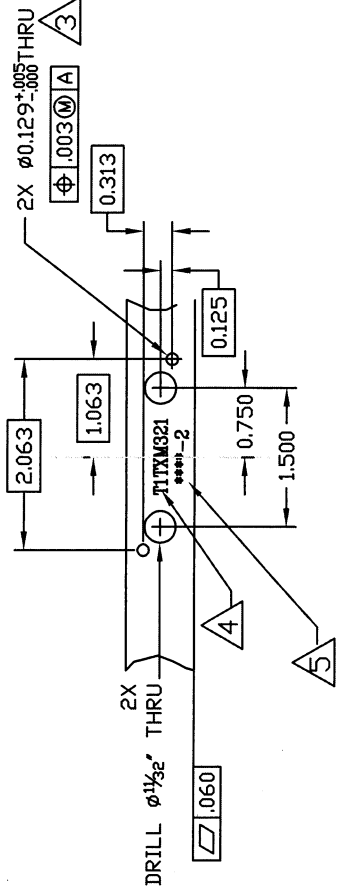
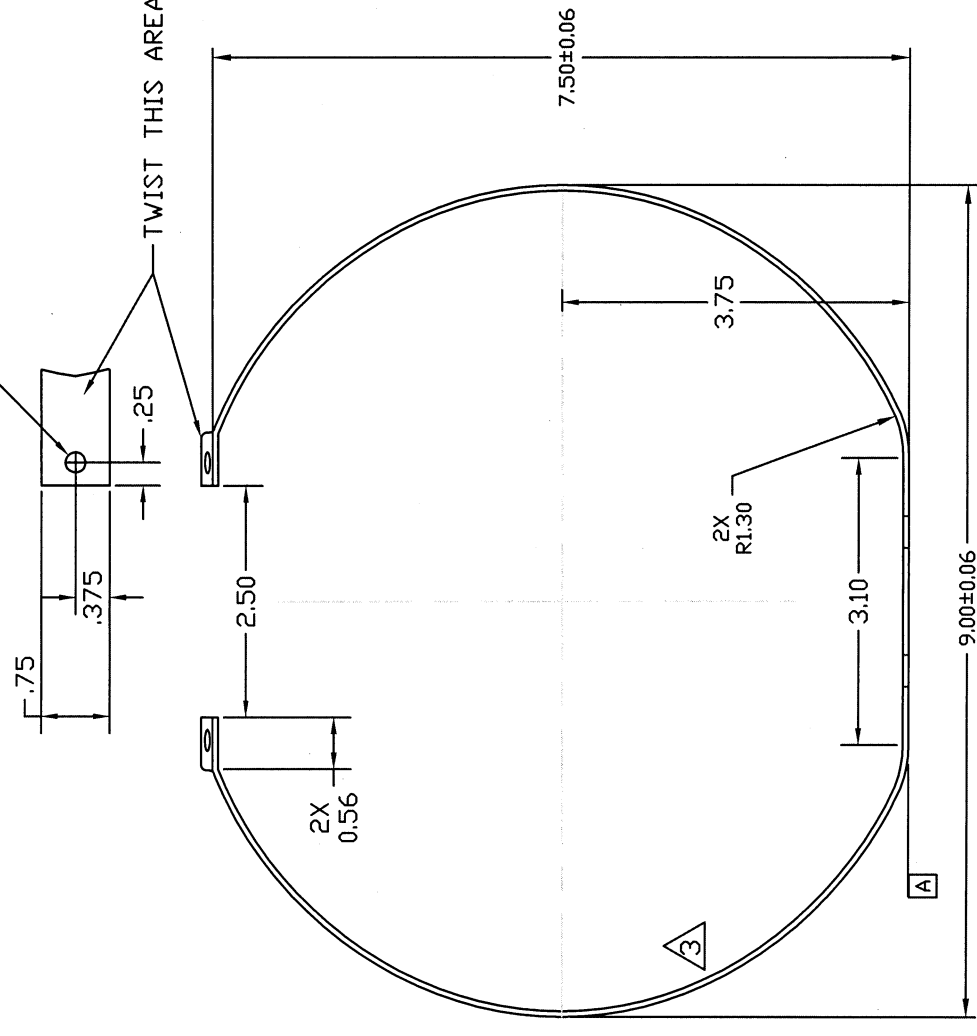
4 ENGRAVE DWG. # T1TXM321 AT THE LOCATION
 SPECIFIED.

5 ENGRAVE SERIAL NUMBER ****-# AT THE
 LOCATION SPECIFIED, WHERE **** IS A FOUR
 DIGIT SERIAL NUMBER FOR THE RIB SET AND
 # IS THE NUMBER OF THE RIB (1-7)

6 HEAT TREAT TO Rc 43-47
 COAT THE RIB TO THE FOLLOWING SPECS.
 -BLACK ZINC
 -MIL SPEC ASTM B633-98e1; TYPE II; SC3 BLACK

DRILL #3 WIRE THRU (2 LOC)

TWIST THIS AREA - SEE 3

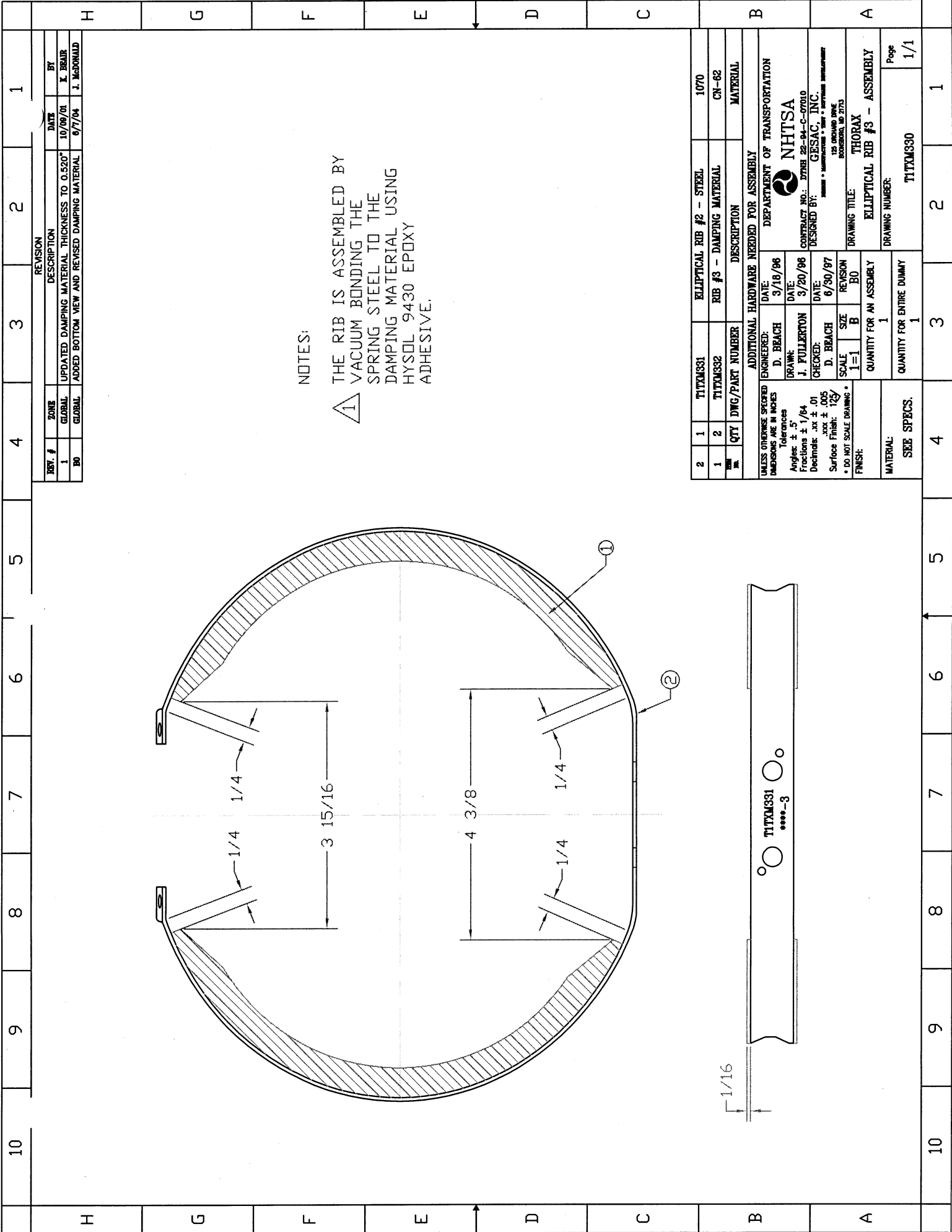


QTY	DWG/PART NUMBER	DESCRIPTION	MATERIAL
1	T1TXM321	ELLIPTICAL RIB #2 - STEEL	1070 SPRING STEEL
1	T1TXM321	QUANTITY FOR ENTIRE DUMMY	
1	T1TXM321	QUANTITY FOR ENTIRE DUMMY	
1	T1TXM321	QUANTITY FOR ENTIRE DUMMY	
1	T1TXM321	QUANTITY FOR ENTIRE DUMMY	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY	DATE	DATE
Tolerances Angles: ± .5° Fractions: ± 1/64 Decimals: .xx ± .01 .xxx ± .005	ENGINEERED: Y. ZHAO DRAWN: M. ARTIS CHECKED: STAFF	3/5/96 10/7/03 10/7/03	10/7/03
Hole Dia. ± .002 * DO NOT SCALE DRAWING *	SCALE: 1=1 SIZE: C	REVISION: 3	
FINISH: REFER TO NOTE 7	QUANTITY FOR AN ASSEMBLY: 1		
MATERIAL: 1070 SPRING STEEL			

DEPARTMENT OF TRANSPORTATION	CONTRACT NO.	DESIGNED BY	DRAWING TITLE
NHTSA	DTMB 22-94-C-07010	GESAC, INC.	THORAX
			ELLIPTICAL RIB #2 - STEEL
			DRAWING NUMBER: T1TXM321
			Page 1/1

8	7	6	5	4	3	2	1														
<table border="1"> <tr> <td colspan="2">REV. /</td> <td>ZONE</td> <td colspan="2">DESCRIPTION</td> <td>DATE</td> <td>BY</td> </tr> <tr> <td>1</td> <td></td> <td>P-2</td> <td colspan="2">CHANGED THICKNESS FROM .58 TO .52</td> <td>06/20/08</td> <td>J. MCQUINN</td> </tr> </table>								REV. /		ZONE	DESCRIPTION		DATE	BY	1		P-2	CHANGED THICKNESS FROM .58 TO .52		06/20/08	J. MCQUINN
REV. /		ZONE	DESCRIPTION		DATE	BY															
1		P-2	CHANGED THICKNESS FROM .58 TO .52		06/20/08	J. MCQUINN															
<p>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES</p> <p>Tolerances Angles ± .5° Fractions ± 1/64 Decimals .01 ± .01 Hole Dia. ± .002 * DO NOT SCALE DIMENSIONS *</p> <p>FINISH:</p>																					
<p>QTY / DWG/PART NUMBER DESCRIPTION MATERIAL</p> <p>1 / EAR CN-62</p>																					
<p>ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY</p> <p>ENGINEERED: D. BRACE DATE: 05/19/08</p> <p>DRAWN: J. FULLERTON DATE: 05/20/08</p> <p>CHECKED: D. BRACE DATE: 06/30/07</p> <p>SCALE SIZE REVISION</p> <p>1=1 B 1</p> <p>QUANTITY FOR AN ASSEMBLY: 2</p> <p>QUANTITY FOR ENTIRE DUMMY: 2</p>																					
<p>DEPARTMENT OF TRANSPORTATION</p> <p>NHTSA</p> <p>CONTRACT NO.: DTFR 98-04-0700</p> <p>DESIGNED BY: GSSAC, INC.</p> <p>125 GARDNER ST.</p> <p>INDIANAPOLIS, IN 46213</p>																					
<p>DRAWING TITLE: THORAX</p> <p>ELLIPTICAL RIB #2 - DAMPING MATERIAL</p> <p>DRAWING NUMBER: TITXM922</p> <p>Page 1/1</p>																					
<p>NOTES:</p> <p>1 DAMPING MATERIAL (REFERENCE EAR ISODAMP CN-62)</p>																					
8	7	6	5	4	3	2	1														



NOTES:

1 THE RIB IS ASSEMBLED BY VACUUM BONDING THE SPRING STEEL TO THE DAMPING MATERIAL USING HYSOL 9430 EPOXY ADHESIVE.

REV. #	ZONE	DESCRIPTION	DATE	BY
1	GLOBAL	UPDATED DAMPING MATERIAL THICKNESS TO 0.520"	10/08/01	K. BEAR
2	GLOBAL	ADDED BOTTOM VIEW AND REVISED DAMPING MATERIAL	9/7/04	J. BERNARD

REV. #	ZONE	DESCRIPTION	DATE	BY
1	GLOBAL	UPDATED DAMPING MATERIAL THICKNESS TO 0.520"	10/08/01	K. BEAR
2	GLOBAL	ADDED BOTTOM VIEW AND REVISED DAMPING MATERIAL	9/7/04	J. BERNARD

QTY	DWG/PART NUMBER	DESCRIPTION	MATERIAL
2	TITM331	ELLIPTICAL RIB #2 - STEEL	1070
1	TITM332	RIB #3 - DAMPING MATERIAL	CN-62

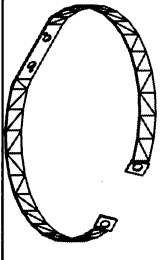
ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY	
ENGINEERED:	D. BEACH
DATE:	9/18/96
DRAWN:	J. FULLERTON
DATE:	9/20/96
CHECKED:	D. BEACH
DATE:	6/30/97
SCALE	1=1
SIZE	B
REVISION	B0
QUANTITY FOR AN ASSEMBLY	1
QUANTITY FOR ENTIRE DUMMY	1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	
Tolerances	
Angles	± .5°
Fractions	± 1/64
Decimals	.XX ± .01
Surface Finish	125/
* DO NOT SCALE DRAWING *	
FINISH:	

DEPARTMENT OF TRANSPORTATION	
NHTSA	
CONTRACT NO.: DTMB 22-94-C-07010	
DESIGNED BY: GESAC, INC.	
125 ORCHARD DRIVE ROCKFORD, IL 61153	
DRAWING TITLE:	THORAX
DRAWING NUMBER:	ELLIPTICAL RIB #3 - ASSEMBLY
Page	1/1

10	9	8	7	6	5	4	3	2	1
H	G	F	E	D	C	B	A		

REV. #	ZONE	DESCRIPTION	DATE	BY
1	D-4	CORRECTED ENGRAVING NOTE	1/26/06	D. BRACH
2		ADDED NOTE 6 FOR SERIAL NUMBER	5/24/06	D. BRACH
3	GLOBAL	ADDED DIA. 136 HOLES AND REVISED NOTE 3	10/7/08	M. ARTIS
		RE-NUMBERED NOTES	10/7/08	M. ARTIS
4	C-6	MODIFIED GEOMETRIC SPECS. AND UPDATED GEOMETRY	9/21/04	B. SBICK
	GLOBAL	ADDED FLATNESS, WIDTH AND DEPTH TOLERANCE	9/21/04	J. McDONALD



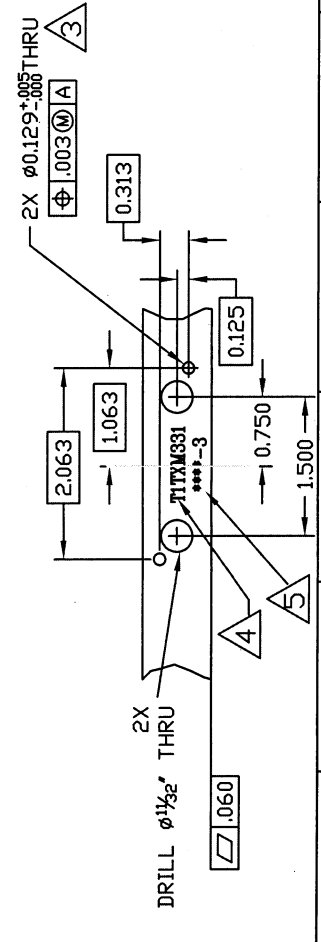
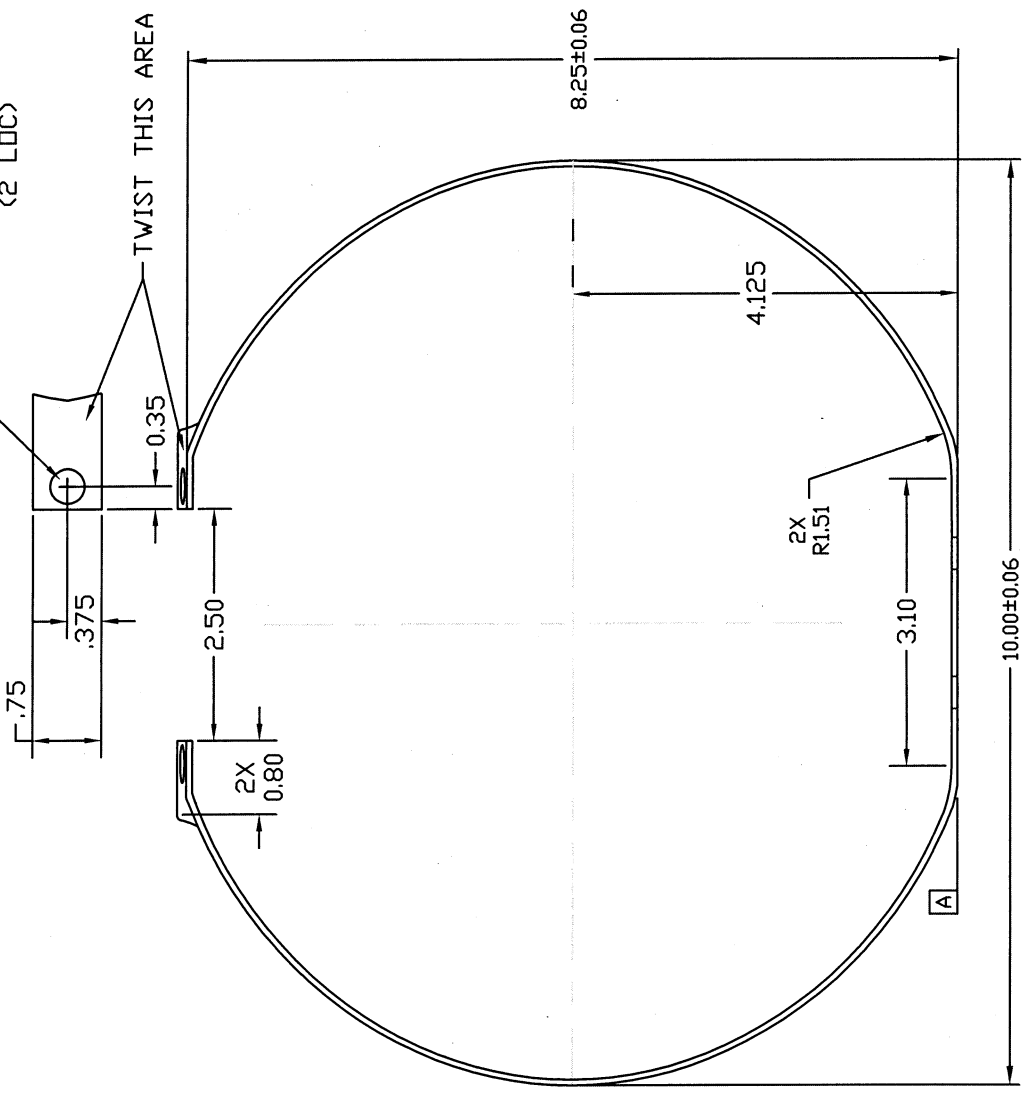
NTS

3 TWIST THIS AREA - SEE 3

NOTES:

- 1 MAKE RIB FROM 1070 ANNEALED SPRING STEEL 0.062 THICK x 0.75" WIDE.
- 2 ELLIPTICAL SHAPE SEMI-AXIS OUTSIDE DIMENSIONS ARE: X:5.00" Y:4.43"
- 3 AFTER RIB IS FORMED - PRIOR TO HEAT-TREATING, ORIENT THE RIB SO THAT THE HOLE PATTERN IS AS SHOWN.
- 4 THEN TWIST THE RIB AT THE 0.80" FLAT AREA BY BENDING THE BOTTOM OUTWARD BY 17°.
- 5 ENGRAVE DWG. # TITXM331 AT THE LOCATION SPECIFIED.
- 6 ENGRAVE SERIAL NUMBER *****# AT THE LOCATION SPECIFIED, WHERE ***** IS A FOUR DIGIT SERIAL NUMBER FOR THE RIB SET AND # IS THE NUMBER OF THE RIB (1-7)
- 7 HEAT TREAT TO Rc 43-47
- 8 COAT THE RIB TO THE FOLLOWING SPECS. -BLACK ZINC -MIL SPEC ASTM B633-98e1; TYPE II; SC3 BLACK

0.375"φ THRU HOLE (2 LOC)

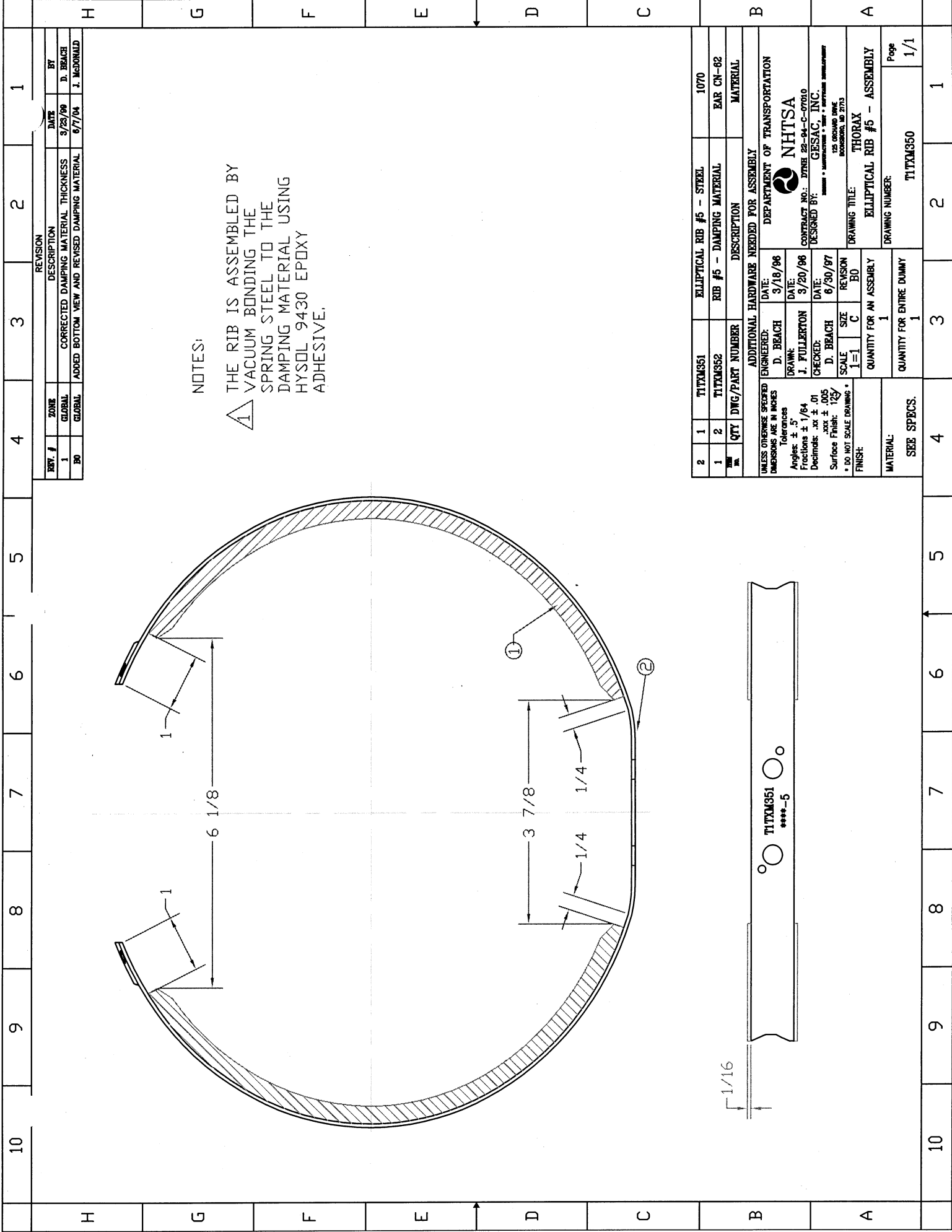


QTY	DWG/PART NUMBER	DESCRIPTION	MATERIAL
1		ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES			
ENGINEERED:	Y. ZHAO	DATE:	9/4/06
DRAWN:	M. ARTIS	DATE:	10/8/08
CHECKED:		DATE:	10/8/08
SCALE:	1=1	SIZE:	C
FINISH:		REVISION:	4
REFER TO NOTE 7		QUANTITY FOR AN ASSEMBLY	1
MATERIAL:	1070 SPRING STEEL	QUANTITY FOR ENTIRE DUMMY	1
		DRAWING NUMBER:	TITXM331
		Page	1/1

NHTSA
DEPARTMENT OF TRANSPORTATION
CONTRACT NO.: DTMB 22-94-C-07010
DESIGNED BY: GESAC, INC.
135 ORCHARD BLVD
BOSSBORO, MD 21713

DRAWING TITLE: THORAX
ELLIPTICAL RIB #3 - STEEL

8	7	6	5	4	3	2	1																		
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REV. #		DATE	DESCRIPTION	DATE	BY																				
1	B-2	04/07/96	CHANGED THICKNESS FROM .58 TO .52"	04/07/96	I. BEAUCHAMP																				
2	B-2	08/30/96	CHANGED WIDTH FROM .75 TO .875	07/7/96	I. BEAUCHAMP																				
<p>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES Tolerances Angles $\pm .5^\circ$ Fractions $\pm 1/64$ Decimals $\pm .01$ Hole Dia. $\pm .002$ * DO NOT SCALE DRAWING *</p> <p>FINISH:</p>																									
<table border="1"> <thead> <tr> <th>QTY</th> <th>DMG/PART NUMBER</th> <th>DESCRIPTION</th> <th>MATERIAL</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>EAR CN-62</td> <td>QUANTITY FOR AN ASSEMBLY</td> <td>THORAX</td> </tr> <tr> <td>2</td> <td></td> <td>QUANTITY FOR ENTIRE DUMMY</td> <td>ELLIPTICAL RIB #3 -- DAMPING MATERIAL</td> </tr> </tbody> </table>								QTY	DMG/PART NUMBER	DESCRIPTION	MATERIAL	2	EAR CN-62	QUANTITY FOR AN ASSEMBLY	THORAX	2		QUANTITY FOR ENTIRE DUMMY	ELLIPTICAL RIB #3 -- DAMPING MATERIAL						
QTY	DMG/PART NUMBER	DESCRIPTION	MATERIAL																						
2	EAR CN-62	QUANTITY FOR AN ASSEMBLY	THORAX																						
2		QUANTITY FOR ENTIRE DUMMY	ELLIPTICAL RIB #3 -- DAMPING MATERIAL																						
<p>NOTES:</p> <p>1 DAMPING MATERIAL (REFERENCE EAR ISODAMP CN-62)</p>																									
8	7	6	5	4	3	2	1																		



NOTES:

- 1 THE RIB IS ASSEMBLED BY VACUUM BONDING THE SPRING STEEL TO THE DAMPING MATERIAL USING HYSOL 9430 EPOXY ADHESIVE.

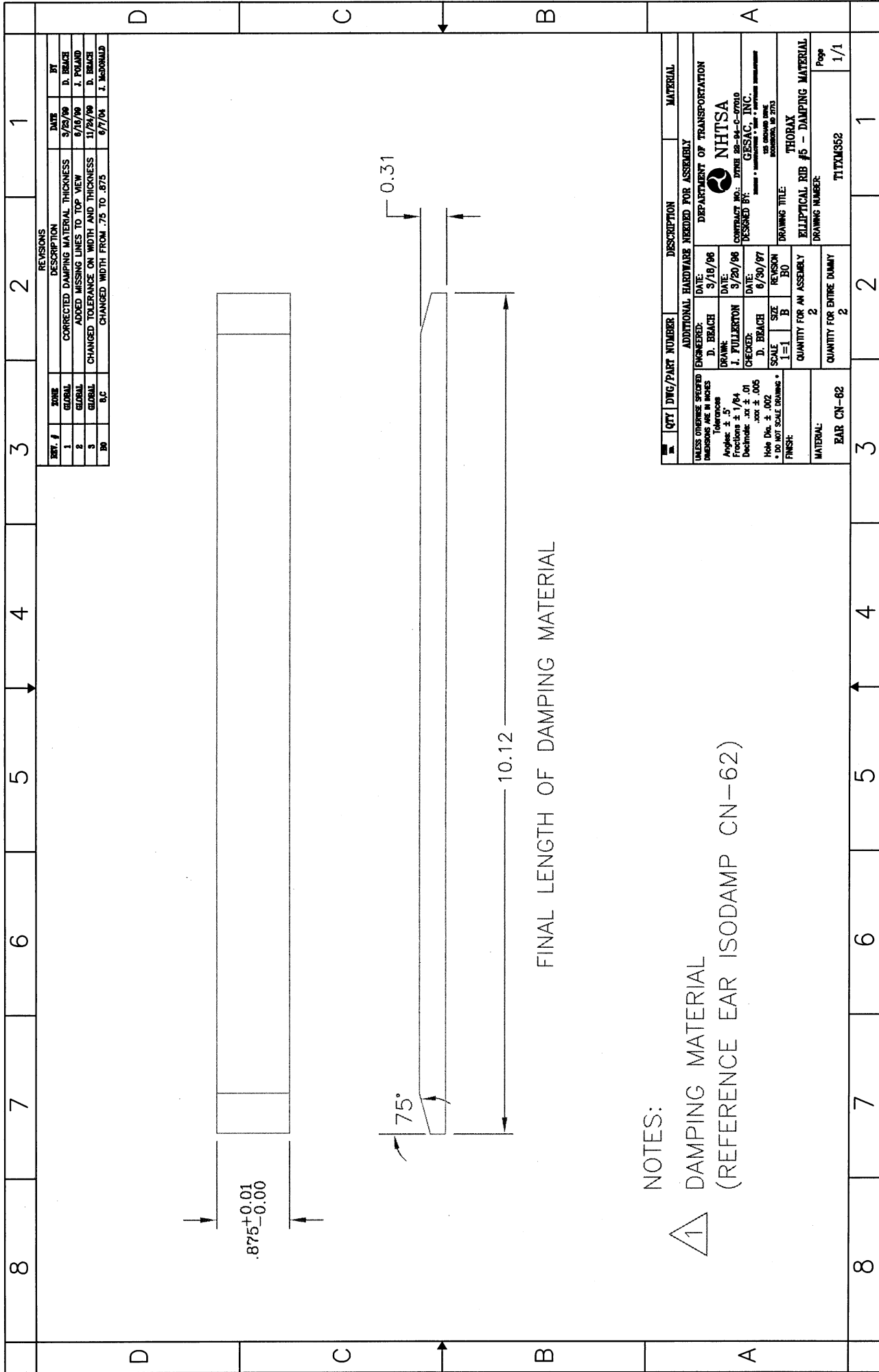
REV. #	ZONE	DESCRIPTION	DATE	BY
1	GLOBAL	CORRECTED DAMPING MATERIAL THICKNESS	9/28/96	D. BEACH
2	GLOBAL	ADDED BOTTOM VIEW AND REVISED DAMPING MATERIAL	6/7/04	J. McDONALD

REV. #	ZONE	DESCRIPTION	DATE	BY
1	GLOBAL	CORRECTED DAMPING MATERIAL THICKNESS	9/28/96	D. BEACH
2	GLOBAL	ADDED BOTTOM VIEW AND REVISED DAMPING MATERIAL	6/7/04	J. McDONALD

2	1	TITXM351	ELLIPTICAL RIB #5 - STEEL	1070
1	2	TITXM352	RIB #5 - DAMPING MATERIAL	BAR CN-62
1	QTY	DWG/PART NUMBER	DESCRIPTION	MATERIAL

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		ENGINEERED:	DATE:
Tolerances		D. BEACH	3/16/98
Angles: ± .5°		DRAWN:	DATE:
Fractions ± 1/64		J. FULLERTON	9/20/96
Decimals: .xx ± .01		CHECKED:	DATE:
.xxx ± .005		D. BEACH	6/30/97
Surface Finish: 125/		SCALE	SIZE
* DO NOT SCALE DRAWING *		1=1	C
FINISH:		BO	REVISION
MATERIAL:		1	QUANTITY FOR AN ASSEMBLY
SEE SPECS.		1	QUANTITY FOR ENTIRE DUMMY

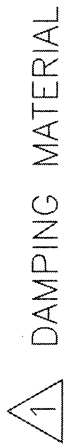
ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY		DEPARTMENT OF TRANSPORTATION	
		NHTSA	
		CONTRACT NO.: DTMB 22-94-C-07610	
		DESIGNED BY: GRESAC, INC.	
		125 ORCHARD DRIVE ROCKFORD, IL 61113	
DRAWING TITLE:		THORAX	
ELLIPTICAL RIB #5 - ASSEMBLY			
DRAWING NUMBER:		TITXM350	
Page		1/1	



REV #	ZONE	DESCRIPTION	DATE	BY
1	GENERAL	CORRECTED DAMPING MATERIAL THICKNESS	3/23/96	D. BEACH
2	GENERAL	ADDED MISSING LINES TO TOP VIEW	9/18/96	J. FULLERTON
3	GENERAL	CHANGED TOLERANCE ON WIDTH AND THICKNESS	11/24/96	D. BEACH
30	8/C	CHANGED WIDTH FROM .75 TO .875	9/7/04	J. McDONALD

REVISIONS

NOTES:



DAMPING MATERIAL
(REFERENCE EAR ISODAMP CN-62)

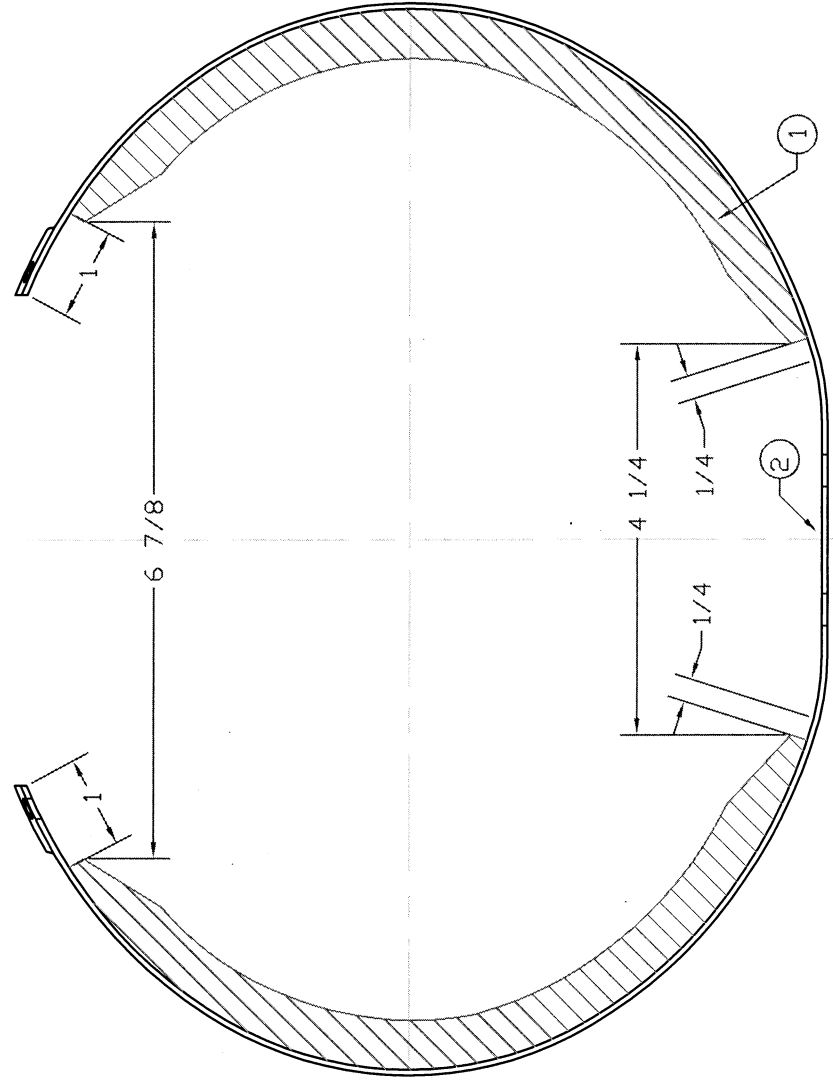
FINAL LENGTH OF DAMPING MATERIAL

QTY	DWG/PART NUMBER	DESCRIPTION	MATERIAL
3	BAR CN-62	QUANTITY FOR AN ASSEMBLY	BAR CN-62
2		QUANTITY FOR ENTIRE DUMMY	TITUMS62
1		QUANTITY FOR ENTIRE DUMMY	

ENGINEERED:	DATE:	ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY
D. BEACH	9/18/96	DEPARTMENT OF TRANSPORTATION
DRAWN:	DATE:	NHTSA
J. FULLERTON	9/20/96	CONTRACT NO.: DTMB 62-84-C-0010
CHECKED:	DATE:	DESIGNED BY: GIBSAC, INC.
D. BEACH	9/30/97	125 ORANGE AVE.
		ROCKFORD, IL 61153
SCALE:	SIZE:	DRAWING TITLE:
1=1	B	ELLIPTICAL RIB #5 - DAMPING MATERIAL
	B0	DRAWING NUMBER:
		TITUMS62
		Page
		1/1

10	9	8	7	6	5	4	3	2	1
H	G	F	E	D	C	B	A		

REV. #	ZONE	DESCRIPTION	DATE	BY
1	GLOBAL	UPDATED DAMPING MATERIAL THICKNESS TO 0.520"	10/9/01	K. BEAR
2	GLOBAL	ADDED BOTTOM VIEW AND REVISED DAMPING MATERIAL	9/7/04	J. McDONALD

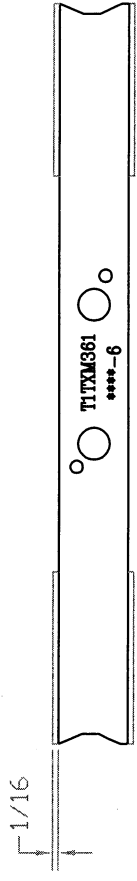


NOTES:
 1 THE RIB IS ASSEMBLED BY VACUUM BONDING THE SPRING STEEL TO THE DAMPING MATERIAL USING HYSOL 9430 EPOXY ADHESIVE.

2	1	TITXM361	ELLIPTICAL RIB #6 - STEEL	1070
1	2	TITXM362	RIB #6 - DAMPING MATERIAL	CN-82
1	QTY	DWG/PART NUMBER	DESCRIPTION	MATERIAL

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		ENGINEERED: D. BEACH	DATE: 3/16/98
Tolerances		DRAWN: J. FULLERTON	DATE: 3/20/98
Angles: ± .5°		CHECKED: D. BEACH	DATE: 6/30/97
Fractions ± 1/64		SCALE: 1=1	SIZE: C
Decimals: .xx ± .005		REVISION: BO	
Surface Finish: 125		QUANTITY FOR AN ASSEMBLY: 1	
* DO NOT SCALE DRAWING *		QUANTITY FOR ENTIRE DUMMY: 1	
FINISH:			

ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY		DEPARTMENT OF TRANSPORTATION	
		NHTSA	
		CONTRACT NO.: DTMB 22-94-C-07010	
		DESIGNED BY: GESAC, INC.	
		125 ORCHARD DRIVE BOSTON, MA 02130	
DRAWING TITLE: THORAX		DRAWING NUMBER: TITXM360	
ELLIPTICAL RIB #6 - ASSEMBLY		Page: 1/1	

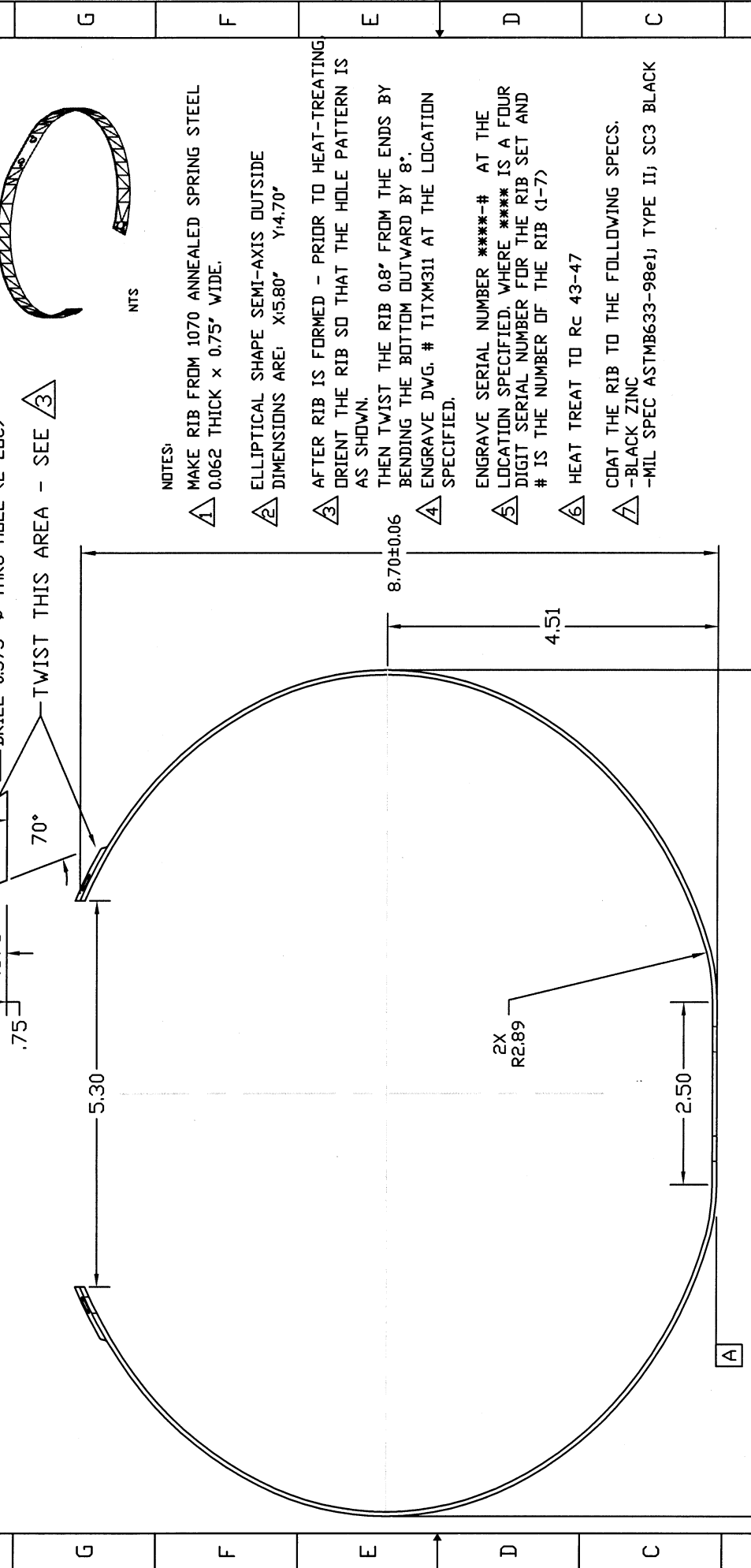


○ ○ TITXM361 ○ ○
 -----6

10	9	8	7	6	5	4	3	2	1
H	G	F	E	D	C	B	A		

10 9 8 7 6 5 4 3 2 1

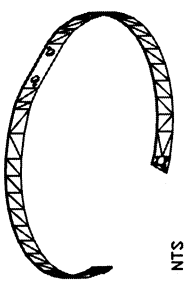
REV. #	ZONE	DESCRIPTION	DATE	BY
1	NOTE 6	ADDED NOTE 6 FOR SERIAL NUMBER	5/24/00	D. BRACH
2	GLOBAL	ADDED DIA. 136 HOLES AND REVISED NOTE 3	10/7/03	M. ARTIS
3	GLOBAL	RE-NUMBERED NOTES	10/7/03	M. ARTIS
4	GLOBAL	MODIFIED GEOMETRIC SPECS. AND UPDATED GEOMETRY	9/23/04	R. BRACH
5	GLOBAL	ADDED FLATNESS, WIDTH AND DEPTH TOLERANCE	9/23/04	J. McARDOLL



QTY	DWG/PART NUMBER	DESCRIPTION	MATERIAL																																																				
1070	TITXN361	ELLIPTICAL RIB #6 - STEEL	THORAX																																																				
<table border="1"> <tr> <td>UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES</td> <td>ENGINEERED:</td> <td>DATE:</td> <td>DEPARTMENT OF TRANSPORTATION</td> </tr> <tr> <td>Tolerances</td> <td>Y. ZHAO</td> <td>9/5/96</td> <td>NHTSA</td> </tr> <tr> <td>Angles: ± 5°</td> <td>DRAWN:</td> <td>DATE:</td> <td>CONTRACT NO.: DTMB 22-94-C-07010</td> </tr> <tr> <td>Fractions ± 1/64</td> <td>M. ARTIS</td> <td>10/7/03</td> <td>DESIGNED BY: GESAC, INC.</td> </tr> <tr> <td>Decimals: .xx ± .01</td> <td>CHECKED:</td> <td>DATE:</td> <td>123 ORLAND DRIVE</td> </tr> <tr> <td>.xxx ± .005</td> <td>STAFF</td> <td>10/7/03</td> <td>ROCKFORD, IL 61113</td> </tr> <tr> <td>Hole Dia. ± .002</td> <td>SCALE</td> <td>SIZE</td> <td>REVISION</td> </tr> <tr> <td>DO NOT SCALE DRAWING</td> <td>1=1</td> <td>C</td> <td>3</td> </tr> <tr> <td>FINISH:</td> <td>QUANTITY FOR AN ASSEMBLY</td> <td>1</td> <td></td> </tr> <tr> <td>REFER TO NOTE 7</td> <td>QUANTITY FOR ENTIRE DUMMY</td> <td>1</td> <td></td> </tr> <tr> <td>MATERIAL:</td> <td></td> <td></td> <td></td> </tr> <tr> <td>1070</td> <td></td> <td></td> <td></td> </tr> <tr> <td>SPRING STEEL</td> <td></td> <td></td> <td></td> </tr> </table>				UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	ENGINEERED:	DATE:	DEPARTMENT OF TRANSPORTATION	Tolerances	Y. ZHAO	9/5/96	NHTSA	Angles: ± 5°	DRAWN:	DATE:	CONTRACT NO.: DTMB 22-94-C-07010	Fractions ± 1/64	M. ARTIS	10/7/03	DESIGNED BY: GESAC, INC.	Decimals: .xx ± .01	CHECKED:	DATE:	123 ORLAND DRIVE	.xxx ± .005	STAFF	10/7/03	ROCKFORD, IL 61113	Hole Dia. ± .002	SCALE	SIZE	REVISION	DO NOT SCALE DRAWING	1=1	C	3	FINISH:	QUANTITY FOR AN ASSEMBLY	1		REFER TO NOTE 7	QUANTITY FOR ENTIRE DUMMY	1		MATERIAL:				1070				SPRING STEEL			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	ENGINEERED:	DATE:	DEPARTMENT OF TRANSPORTATION																																																				
Tolerances	Y. ZHAO	9/5/96	NHTSA																																																				
Angles: ± 5°	DRAWN:	DATE:	CONTRACT NO.: DTMB 22-94-C-07010																																																				
Fractions ± 1/64	M. ARTIS	10/7/03	DESIGNED BY: GESAC, INC.																																																				
Decimals: .xx ± .01	CHECKED:	DATE:	123 ORLAND DRIVE																																																				
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1070																																																							
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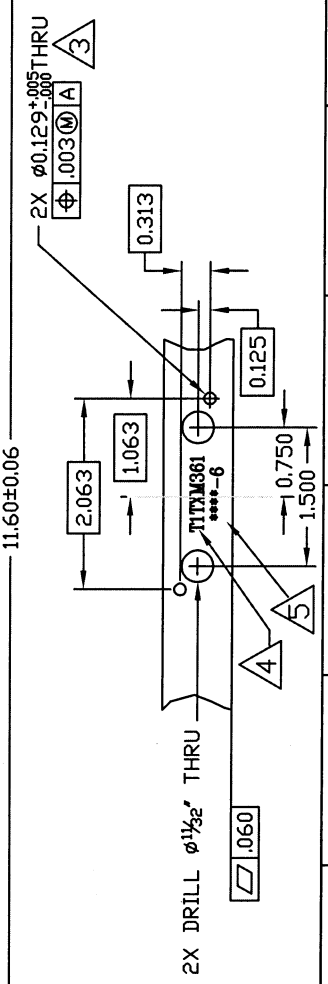
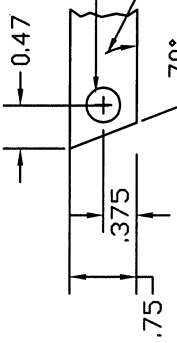
REV. #	ZONE	DESCRIPTION	DATE	BY
1	NOTE 6	ADDED NOTE 6 FOR SERIAL NUMBER	5/24/00	D. BRACH
2	GLOBAL	ADDED DIA. 136 HOLES AND REVISED NOTE 3	10/7/03	M. ARTIS
3	GLOBAL	RE-NUMBERED NOTES	10/7/03	M. ARTIS
4	GLOBAL	MODIFIED GEOMETRIC SPECS. AND UPDATED GEOMETRY	9/23/04	R. BRACH
5	GLOBAL	ADDED FLATNESS, WIDTH AND DEPTH TOLERANCE	9/23/04	J. McARDOLL

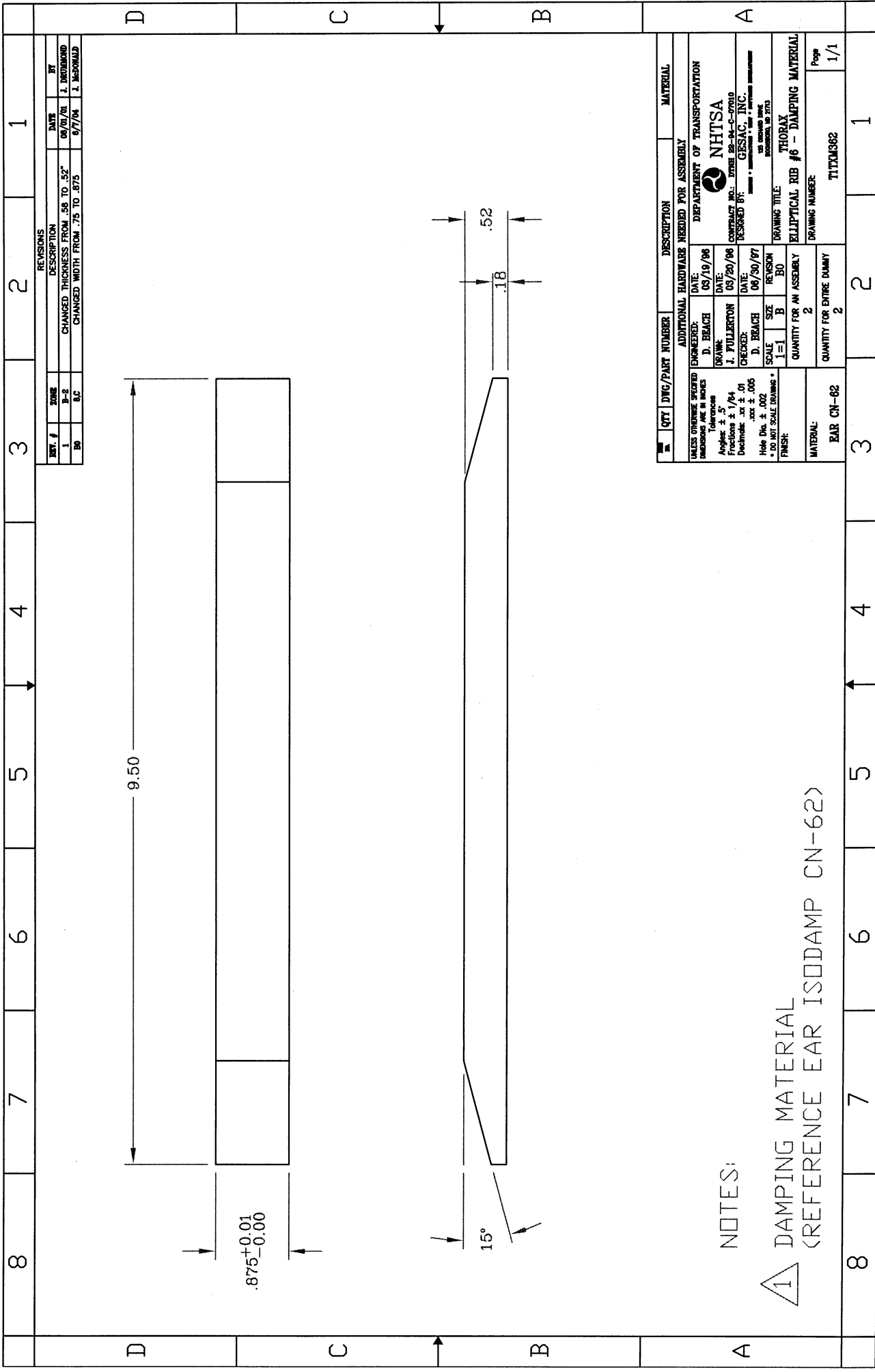
- NOTES:
- 1 MAKE RIB FROM 1070 ANNEALED SPRING STEEL 0.062 THICK x 0.75" WIDE.
 - 2 ELLIPTICAL SHAPE SEMI-AXIS OUTSIDE DIMENSIONS ARE: X:5.80" Y:4.70"
 - 3 AFTER RIB IS FORMED - PRIOR TO HEAT-TREATING ORIENT THE RIB SO THAT THE HOLE PATTERN IS AS SHOWN.
 - 4 THEN TWIST THE RIB 0.8" FROM THE ENDS BY BENDING THE BOTTOM OUTWARD BY 8°.
 - 5 ENGRAVE DWG. # TITXN361 AT THE LOCATION SPECIFIED.
 - 6 ENGRAVE SERIAL NUMBER *****# AT THE LOCATION SPECIFIED. WHERE ***** IS A FOUR DIGIT SERIAL NUMBER FOR THE RIB SET AND # IS THE NUMBER OF THE RIB (1-7)
 - 7 HEAT TREAT TO Rc 43-47
 - 8 COAT THE RIB TO THE FOLLOWING SPECS. -BLACK ZINC -MIL SPEC ASTM633-98e1, TYPE II, SC3 BLACK



TWIST THIS AREA - SEE 3

DRILL 0.375" Ø THRU HOLE (2 LOC)





REV. #		ZONE	DESCRIPTION	DATE	BY
1		B-2	CHANGED THICKNESS FROM .58 TO .52"	06/05/06	J. DEBORDON
		B-C	CHANGED WIDTH FROM .75 TO .875	07/04	J. DEBORDON

QTY	DWG/PART NUMBER	DESCRIPTION	MATERIAL
2	EAR CN-62	QUANTITY FOR AN ASSEMBLY	THORALY
2		QUANTITY FOR ENTIRE DUMMY	ELLIPITICAL RIB #6 - DAMPING MATERIAL
2			DRAWING NUMBER: TITXM362

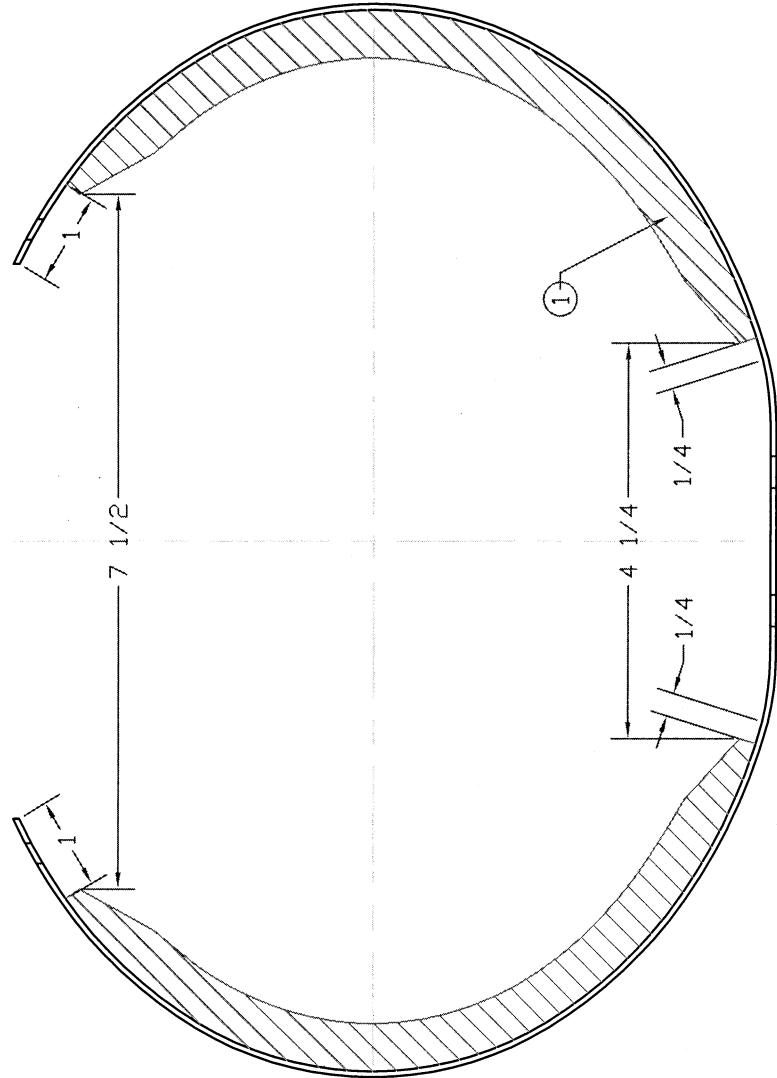
UNLESS OTHERWISE SPECIFIED	ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY	DESCRIPTION	MATERIAL
DIMENSIONS ARE IN INCHES Tolerances Angles: ± .5° Fractions: ± 1/64 Decimals: .xx ± .01 Hole Dia: ± .002 * DO NOT SCALE DIMENSIONS * FINISH:	ENGINEERED: D. BEACH DRAWN: J. FULLERTON CHECKED: D. BEACH SCALE: 1=1	DATE: 06/19/06 DATE: 05/20/06 DATE: 06/30/07 REVISION: B0	DEPARTMENT OF TRANSPORTATION NHTSA CONTRACT NO.: DTMB 04-04-C-07010 DESIGNED BY: GESSAC, INC. 1000 W. WASHINGTON ST. #1000 CHICAGO, IL 60604

NOTES:

1 DAMPING MATERIAL
 (REFERENCE EAR ISODAMP CN-62)

H G F E D C B A

REV. #	ZONE	DESCRIPTION	DATE	BY
1	GLOBAL	UPDATED DAMPING MATERIAL THICKNESS TO 0.520"	10/9/01	K. BEAIR
20	GLOBAL	ADDED BOTTOM VIEW AND REVISED DAMPING MATERIAL	6/7/04	J. McDONALD



NOTES:
 1 THE RIB IS ASSEMBLED BY VACUUM BONDING THE SPRING STEEL TO THE DAMPING MATERIAL USING HYSOL 9430 EPOXY ADHESIVE.

QTY	DWG/PART NUMBER	DESCRIPTION	MATERIAL
2	TITXM871	ELLIPTICAL RIB #7 - STEEL	1070
1	TITXM372	RIB #7 - DAMPING MATERIAL	CN-82

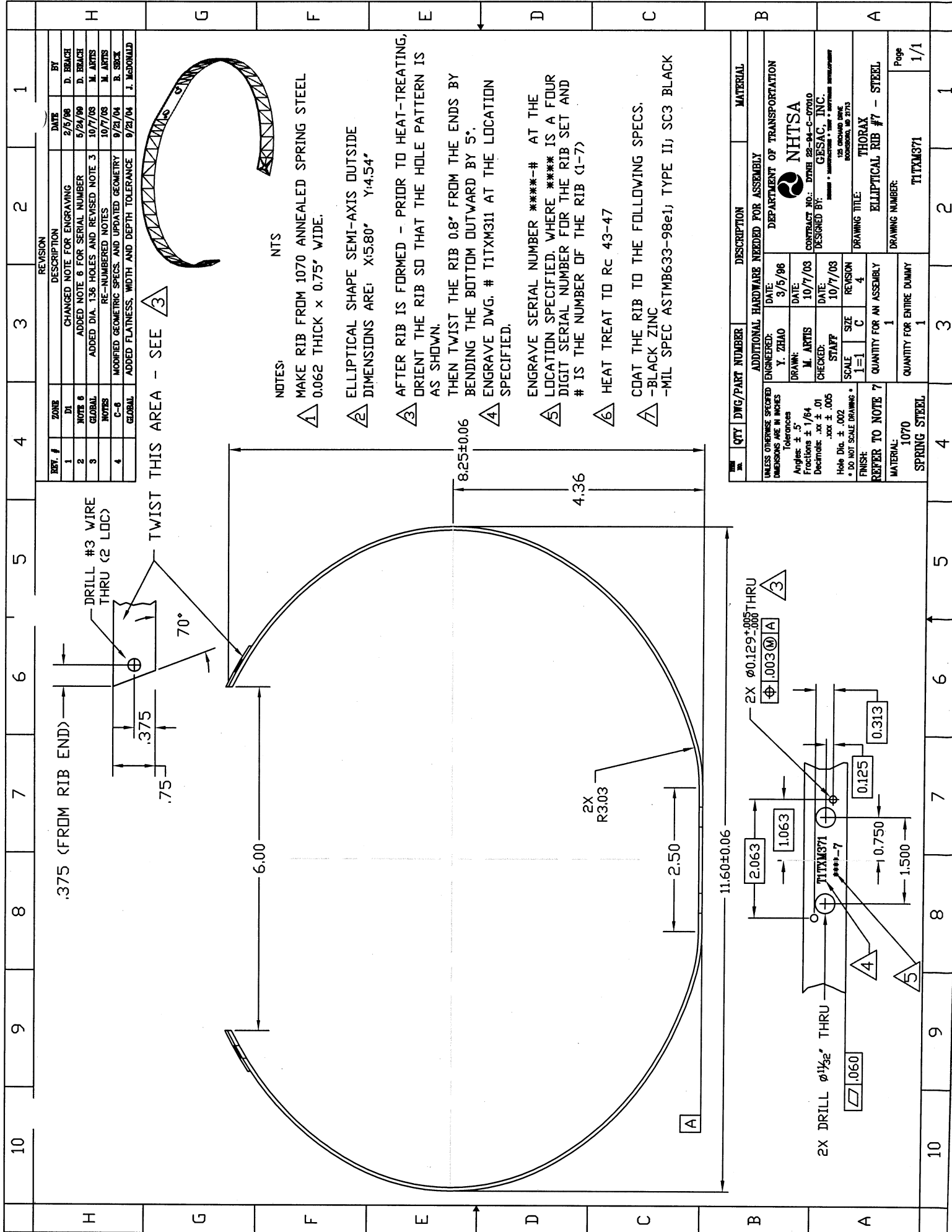
ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY	
ENGINEERED:	DATE: 3/18/96
D. BEACH	
DRAWN:	DATE: 3/20/96
J. FULLERTON	
CHECKED:	DATE: 6/30/97
D. BEACH	
SCALE	SIZE
1=1	C BO
REVISION	
1	
QUANTITY FOR AN ASSEMBLY	
1	
QUANTITY FOR ENTIRE DUMMY	
1	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	
Tolerances	
Angles:	± .5°
Fractions:	± 1/64
Decimals:	.xxx ± .01
Surface Finish:	125/
* DO NOT SCALE DRAWING *	
FINISH:	
MATERIAL:	
SEE SPECS.	

1/16
 TITXM871
 ****-7

H G F E D C B A

10 9 8 7 6 5 4 3 2 1



REV. #	ZONE	DESCRIPTION	DATE	BY
1	D1	CHANGED NOTE 6 FOR ENGRAVING	2/5/98	D. BRACH
2		ADDED NOTE 6 FOR SERIAL NUMBER	5/24/99	D. BRACH
3	GLOBAL	ADDED DIA. 136 HOLES AND REVISED NOTE 3	10/7/03	M. ARTIS
4	C-6	RE-NUMBERED NOTES	10/7/03	M. ARTIS
		MODIFIED GEOMETRIC SPECS. AND UPDATED GEOMETRY	9/24/04	B. SERIK
	GLOBAL	ADDED FLATNESS, WIDTH AND DEPTH TOLERANCE	9/24/04	J. McDONALD

TWIST THIS AREA - SEE 3

NOTES:

- 1 MAKE RIB FROM 1070 ANNEALED SPRING STEEL 0.062 THICK x 0.75" WIDE.
- 2 ELLIPTICAL SHAPE SEMI-AXIS OUTSIDE DIMENSIONS ARE: X:5.80" Y:4.54"
- 3 AFTER RIB IS FORMED - PRIOR TO HEAT-TREATING, ORIENT THE RIB SO THAT THE HOLE PATTERN IS AS SHOWN.
- 4 THEN TWIST THE RIB 0.8" FROM THE ENDS BY BENDING THE BOTTOM OUTWARD BY 5°.
- 5 ENGRAVE DWG. # TITXM311 AT THE LOCATION SPECIFIED.
- 6 ENGRAVE SERIAL NUMBER *****# AT THE LOCATION SPECIFIED, WHERE ***** IS A FOUR DIGIT SERIAL NUMBER FOR THE RIB SET AND # IS THE NUMBER OF THE RIB (1-7)
- 7 HEAT TREAT TO Rc 43-47
- 8 COAT THE RIB TO THE FOLLOWING SPECS.
-BLACK ZINC
-MIL SPEC ASTM633-98e1; TYPE II; SC3 BLACK

QTY	DWG/PAIRT NUMBER	DESCRIPTION	MATERIAL
1		ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY	
	ENGR: Y. ZHAO	DATE: 3/5/98	
	DRAWN: M. ARTIS	DATE: 10/7/03	
	CHECKED: STAFF	DATE: 10/7/03	
	SCALE: 1=1	SIZE: C	
	REVISION: 4		
	QUANTITY FOR AN ASSEMBLY: 1		
	QUANTITY FOR ENTIRE DUMMY: 1		
	DRAWING NUMBER: TITXM371		
	DRAWING TITLE: THORAX ELLIPTICAL RIB #7 - STEEL		
		DESIGNED BY: NHTSA	
		CONTRACT NO.: DTMB 22-94-C-07010	
		DESIGNED BY: GRISAC, INC.	
		125 ORCHARD DRIVE	
		ROCKFORD, IL 61173	
		Page: 1/1	

