

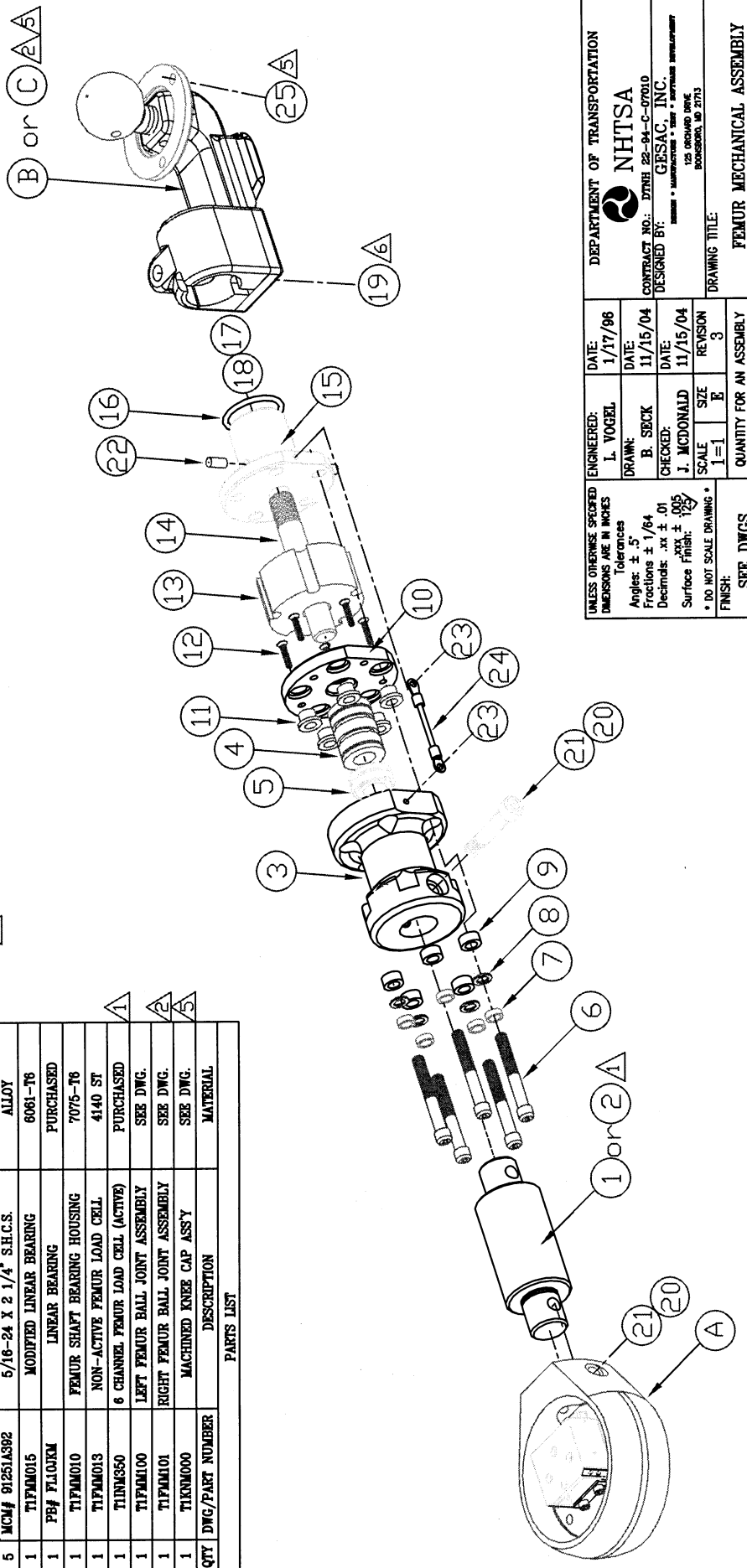
REV. #	ZONE	DESCRIPTION	DATE	BY
1	GLOBAL	UPDATED HARDWARE LIST	5/12/99	D. BRACH
2	GLOBAL	UPDATED FOR THOR ALPHA NEW BEARING HOUSING TO ASSEMBLY	4/27/01	J. POLAND
3	GLOBAL	ADDED NOTE 3 AND 4	4/27/01	J. POLAND
3	GLOBAL	UPDATED WITH NT REVISIONS AND EXPLODED THE ASSEMBLY	1/5/05	J. McDONALD

NOTES:

- 1 THE FEMUR IS ASSEMBLED WITH EITHER THE NON-ACTIVE OR THE ACTIVE LOAD CELL.
- 2 THE RIGHT AND THE LEFT FEMUR ASSEMBLY ARE IDENTICAL WITH THE EXCEPTION OF THE FEMUR BALL JOINT ASSEMBLY.
- 3 THOR FEMUR ASSEMBLY IS ALSO DESIGNED TO BE RETROFITTED TO THE HYBRID III UPPER FEMUR JOINT.
- 4 REFER TO THOR CERTIFICATION MANUAL FOR PERFORMANCE SPECIFICATIONS.
- 5 T1FMM100 & 101 ARE TO BE ASSEMBLED TO THE PELVIS BEFORE INSTALLING THE PELVIS SKIN. ASSEMBLE THE FEMUR BALL JOINT TO THE ACETABULAR CUP OF THE PELVIS ASSEMBLY USING ITEM 25.
- 6 ASSEMBLE THE FEMUR TO THE FEMUR BALL JOINT USING ITEM 19.

QTY	DWG/PART NUMBER	DESCRIPTION	MATERIAL
1	T1FMM015	MODIFIED LINEAR BEARING	6061-T6
1	T1FMM010	FEMUR SHAFT BEARING HOUSING	7075-T6
1	T1FMM013	NON-ACTIVE FEMUR LOAD CELL	4140 ST
1	T1FMM010	6 CHANNEL FEMUR LOAD CELL (ACTIVE)	SEE DWG.
1	T1FMM100	LEFT FEMUR BALL JOINT ASSEMBLY	SEE DWG.
1	T1FMM101	RIGHT FEMUR BALL JOINT ASSEMBLY	SEE DWG.
1	T1FMM000	MACHINED KNEE CAP ASSY	MATERIAL

PARTS LIST



ENGINEERED:	DATE:	REVISION
L. VOGEL	1/17/96	1
B. SECK	11/15/04	2
J. McDONALD	11/15/04	3

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

Tolerances
Angles: ± .5°
Fractions: ± 1/64
Decimals: .XX ± .01
Surface Finish: 125

* DO NOT SCALE DRAWING *

FINISH: SEE DWGS.

MATERIAL: SEE DWGS.

QUANTITY FOR AN ASSEMBLY: 1

QUANTITY FOR ENTIRE DUMMY: 2

DRAWING TITLE: FEMUR MECHANICAL ASSEMBLY

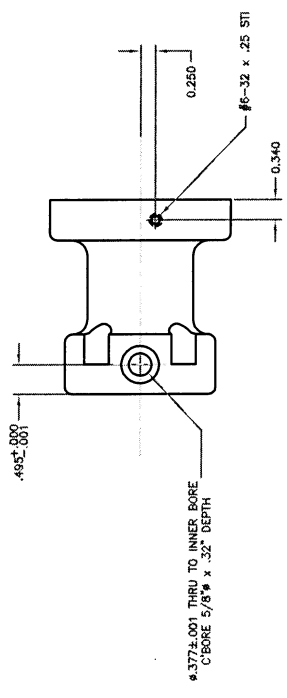
DRAWING NUMBER: T1FMM000

Page: 1/1

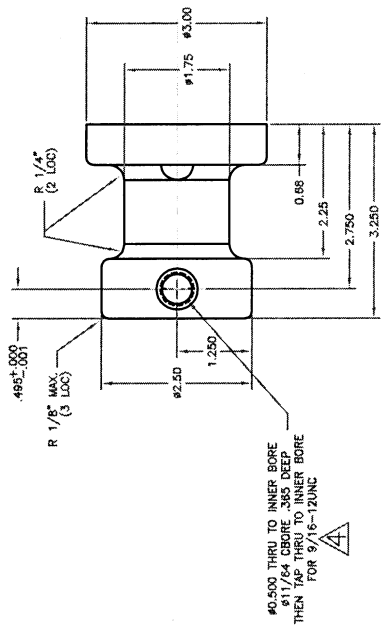
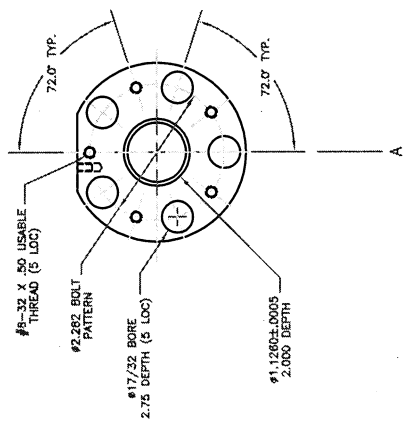
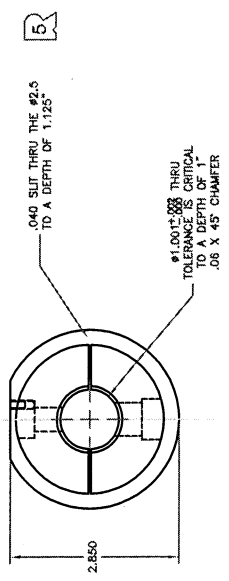
DEPARTMENT OF TRANSPORTATION
NHTSA
CONTRACT NO.: DTNH 22-94-C-07010
DESIGNED BY: GESAC, INC.
125 ORLAND DRIVE
BOEBSBURY, MD 21713

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
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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

REV. #	ZONE	DESCRIPTION	DATE	BY
1		SHORTENED TO ACCEPT HILL LOAD CELL	12/09/98	LW
2		CLARIFIED TOLERANCES AND DIMENSIONS	3/6/97	JP
3		CHANGED PLACES TO LOC. ADDED FINISH	8/1/98	J. POLAND
4		CHANGED DIAMETER TOLERANCE 1.000 ±.002 TO 1.001 ±.002	11/9/00	J. McARDL
5		ADDED .04 SLIT 1.125" DEEP	11/9/00	J. McARDL
6		REMOVED THE 1/8" DIA. THRU HOLE	11/9/00	J. McARDL
7		ADDED A HELICOIL FOR THE 3/8-16 TAPPED HOLE	11/9/00	J. McARDL
8		ELIMINATED HELICOIL AND ADDED MOD. FOR 3/8-16 INSERT	10/11/01	J. POLAND
9		ADDED FLAT & #8-32 FOR GROUND CABLE	09/02/04	J. McARDL



SECTION A - A



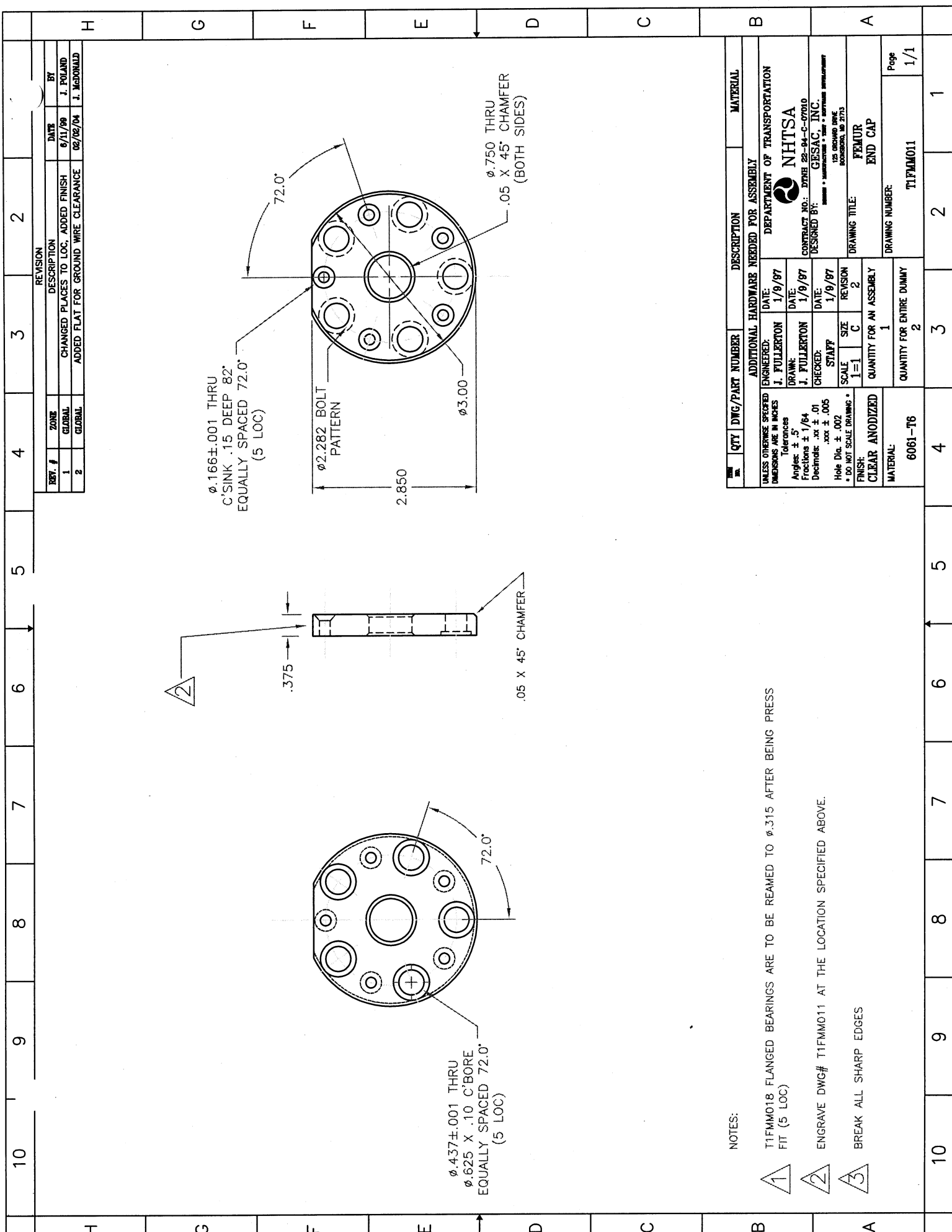
NOTES:

- DEBUR AND REMOVE ALL SHARP EDGES.
- SOME HIDDEN LINES HAVE BEEN OMITTED FOR CLARITY
- ENGRAVE DWG# T1PMM010 AT THE LOCATION SPECIFIED ABOVE.
- REDUCE THE HEIGHT OF THE 3/8-16 X .5" HEAVY DUTY INSERT TO .36" & INSTALL FLUSH WITH THE INSTALLATION SURFACE.

QTY	DWG/PART NUMBER	DESCRIPTION	MATERIAL
1	MSC # 00060244	#8-32 X .207 HELICOIL INSERT	PURCHASED
1	MSC # 62480608	3/8-16 X .5" HEAVY DUTY INSERT	PURCHASED

ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY	
ENGINEERED:	DATE: 12/09/98
DRAWN:	J. VOGEL
CHECKED:	J. FULLERTON
SCALE:	1" = 1"
SIZE:	D
REVISION:	9
QUANTITY FOR AN ASSEMBLY:	1
QUANTITY FOR ENTIRE DUMMY:	2
MATERIAL:	7075-T6

DEPARTMENT OF TRANSPORTATION
NHTSA
 CONTRACT NO.: DTMB 28-94-C-07610
 DESIGNED BY: GESAC, INC.
 DRAWING TITLE: SHAFT BEARING HOUSING
 DRAWING NUMBER: T1PMM010
 Page 1/1



REV. #	ZONE	DESCRIPTION	DATE	BY
1	GLOBAL	CHANGED PLACES TO LOC, ADDED FINISH	6/11/99	J. POLAND
2	GLOBAL	ADDED FLAT FOR GROUND WIRE CLEARANCE	02/02/04	J. McDONALD

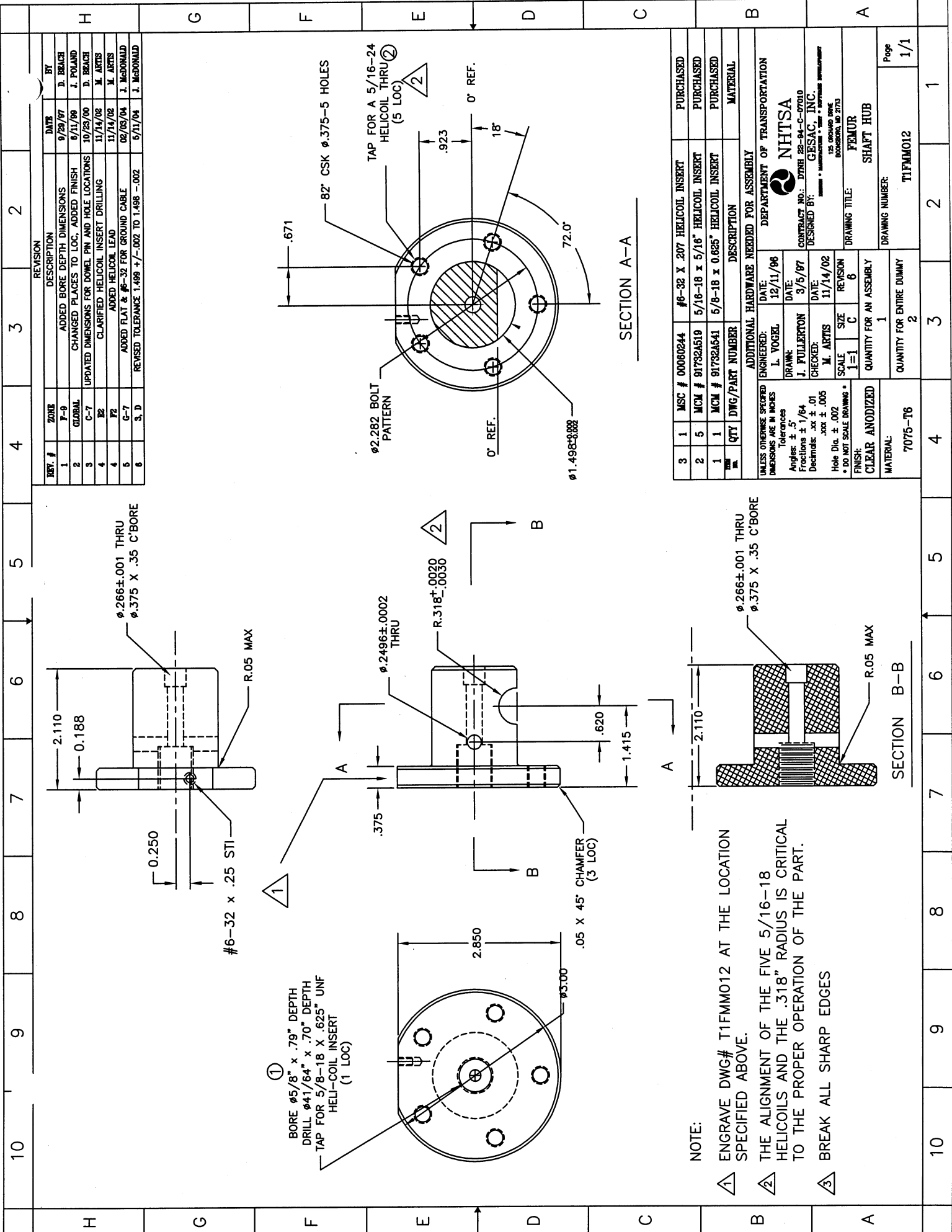
QTY	DWG/PART NUMBER	DESCRIPTION	MATERIAL
1	6061-T6	ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY	NHTSA
2	6061-T6	DEPARTMENT OF TRANSPORTATION	CONTRACT NO.: DTNH 22-94-C-0010
3	6061-T6	DESIGNED BY: GESAC, INC.	125 BROADWAY, NEW YORK, NY 10038
4	6061-T6	DATE: 1/9/97	DRAWING TITLE: FEMUR
5	6061-T6	ENGINEERED: J. FULLERTON	END CAP
6	6061-T6	DRAWN: J. FULLERTON	DRAWING NUMBER: T1FMM011
7	6061-T6	CHECKED: STAFF	QUANTITY FOR ENTIRE DUMMY: 1
8	6061-T6	SCALE: 1=1	QUANTITY FOR AN ASSEMBLY: 2
9	6061-T6	FINISH: CLEAR ANODIZED	REVISION: 2
10	6061-T6	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	

NOTES:

1 T1FMM018 FLANGED BEARINGS ARE TO BE REAMED TO $\phi .315$ AFTER BEING PRESS FIT (5 LOC)

2 ENGRAVE DWG# T1FMM011 AT THE LOCATION SPECIFIED ABOVE.

3 BREAK ALL SHARP EDGES



REV. #	ZONE	DESCRIPTION	DATE	BY
1	P-9	ADDED BORE DEPTH DIMENSIONS	9/29/97	D. BEACH
2	GLOBAL	CHANGED PLACES TO LOC, ADDED FINISH	6/11/99	J. POLAND
3	C-7	UPDATED DIMENSIONS FOR DOWEL PIN AND HOLE LOCATIONS	10/23/00	D. BEACH
4	B2	CLARIFIED DIMENSIONS FOR HELICOIL INSERT DRILLING	11/14/02	M. ARTIS
4	F2	ADDED HELICOIL LEAD	11/14/02	M. ARTIS
5	G-7	ADDED FLAT & #6-32 FOR GROUND CABLE	02/03/04	J. McDONALD
6	S, D	REVISED TOLERANCE 1.499 +/- .002 TO 1.498 -.002	07/11/04	J. McDONALD

QTY	DWG/PART NUMBER	DESCRIPTION	MATERIAL	
3	1	MSC # 00060244	#6-32 X .207 HELICOIL INSERT	PURCHASED
2	5	MCM # 91732A519	5/16-18 X 5/16" HELICOIL INSERT	PURCHASED
1	1	MCM # 91732A541	5/8-18 X 0.625" HELICOIL INSERT	PURCHASED

UNLESS OTHERWISE SPECIFIED		ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY	
ENGINEERED:	DATE:	ENGINEERED:	DATE:
L. VOGEL	12/11/96		
J. FULLERTON	3/5/97		
M. ARTIS	11/14/02		
SCALE	SIZE	REVISION	
1=1	C	6	
QUANTITY FOR AN ASSEMBLY		DRAWING TITLE:	
1		FEMUR	
QUANTITY FOR ENTIRE DUMMY		DRAWING NUMBER:	
2		T1FMM012	
MATERIAL:		Page	
7075-T6		1/1	

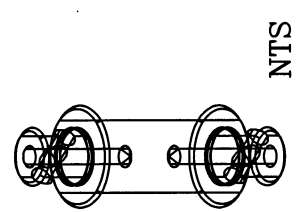
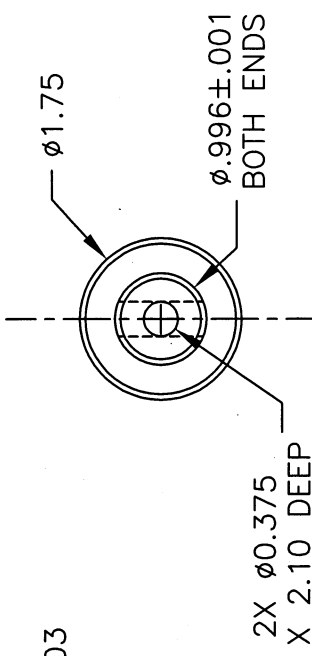
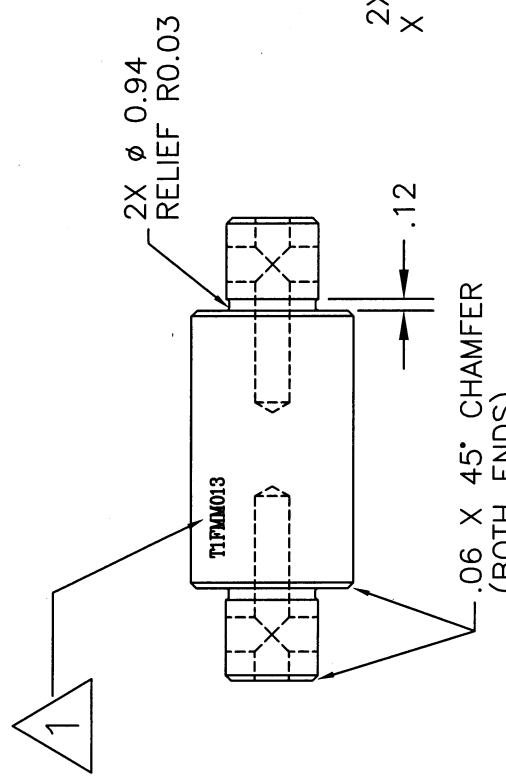
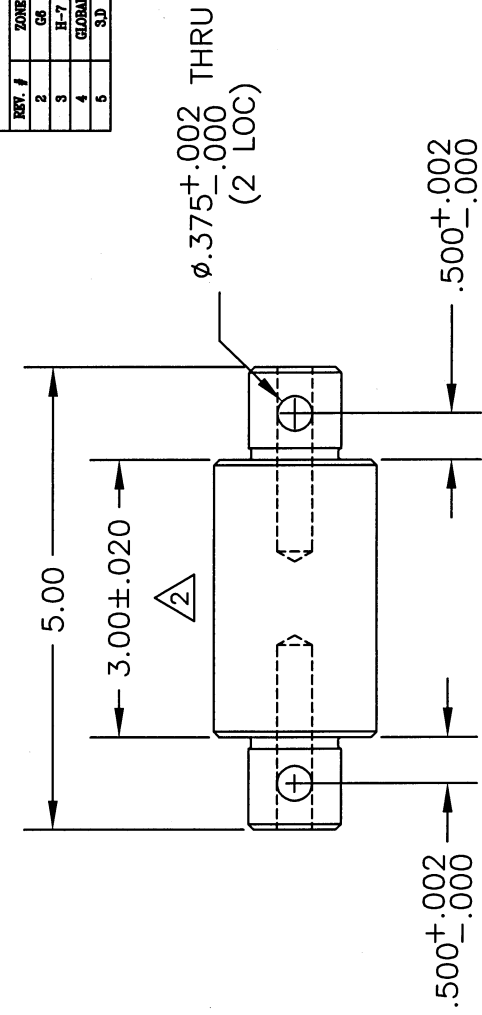
NHTSA
 DEPARTMENT OF TRANSPORTATION
 CONTRACT NO.: DTMB 22-94-C-07010
 DESIGNED BY: GESAC, INC.
125 GROUND LEVEL
 BOSTON, MA 02105

NOTE:
 ① ENGRAVE DWG# T1FMM012 AT THE LOCATION SPECIFIED ABOVE.
 ② THE ALIGNMENT OF THE FIVE 5/16-18 HELICOILS AND THE .318" RADIUS IS CRITICAL TO THE PROPER OPERATION OF THE PART.
 ③ BREAK ALL SHARP EDGES

SECTION A-A

SECTION B-B

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



REV. #	ZONE	DESCRIPTION	DATE	BY
2	GB	TIGHTENED TOLERANCES FOR HOLES	2/14/97	JLP
3	R-7	MODIFIED DIMENSION TOLERANCE AND ADDED NOTE #2	4/9/99	D. BRACE
4	GLOBAL	CHANGED PLACES TO LOC. ADDED FINISH	6/11/99	J. POLAND
5	S.D.	ADDED .375 X 2.1 HOLE ADJUSTING MASS TO 1045g	9/05/04	J. McDONALD

QTY	DWG/PART NUMBER	DESCRIPTION	MATERIAL
4	T1FMM013	NON-ACTIVE LOAD CELL	4140
1		QUANTITY FOR AN ASSEMBLY	
2		QUANTITY FOR ENTIRE DUMMY	
3			
4			
5			
6			
7			
8			
9			
10			

ENGINEERED:	DATE:	ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY
L. VOGEL	12/11/98	DEPARTMENT OF TRANSPORTATION
DRAWN:	DATE:	NHTSA
L. VOGEL	12/11/98	CONTRACT NO.: DTMB 22-94-C-07010
CHECKED:	DATE:	DESIGNED BY: GESAC, INC.
J. FULLERTON	2/14/97	125 ORCHARD DRIVE ROCKFORD, IL 61153
SCALE:	SIZE:	DRAWING TITLE: FEMUR
1=1	C	NON-ACTIVE LOAD CELL
REVISION:	5	DRAWING NUMBER: T1FMM013
1		Page 1/1

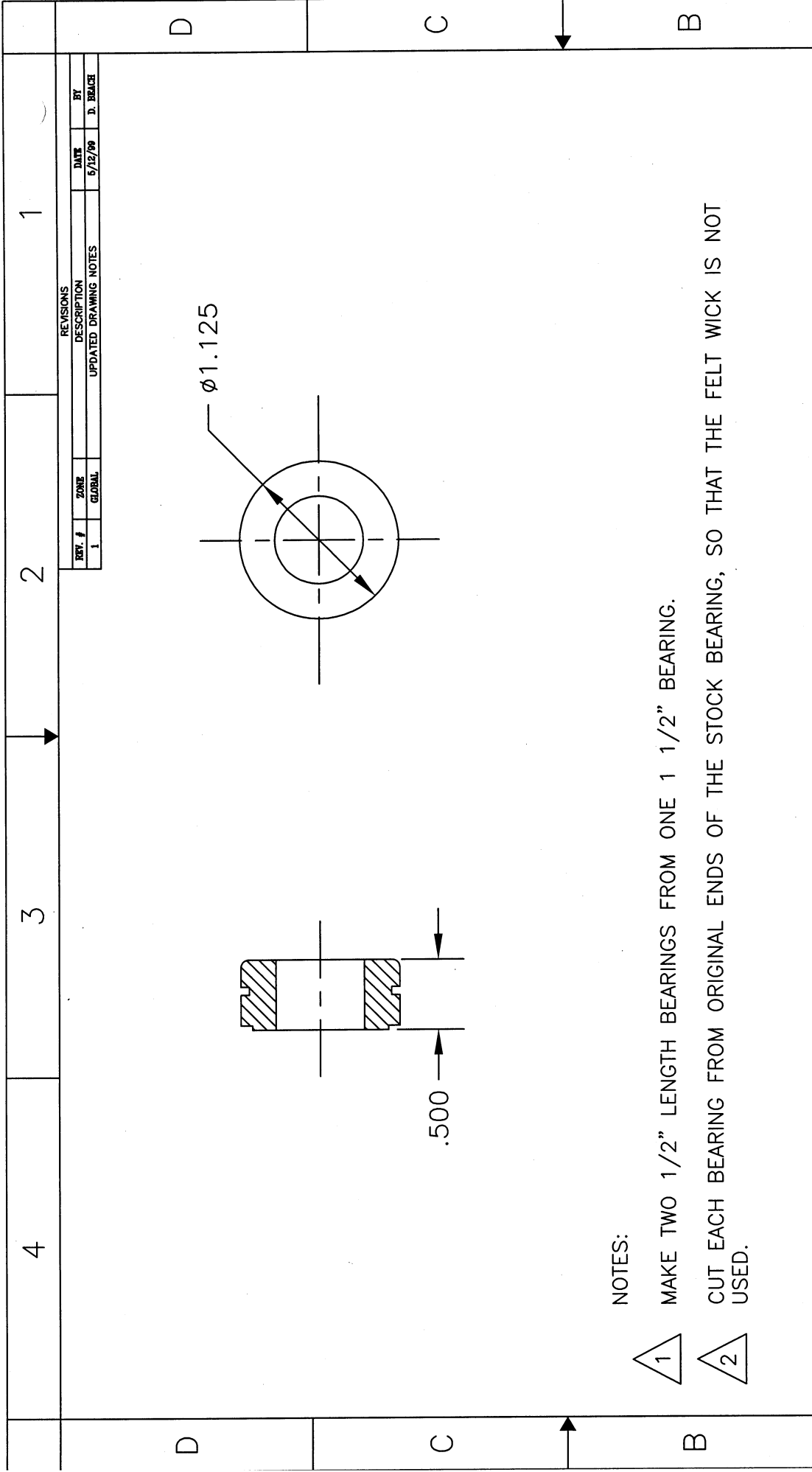
NOTE:

1 ENGRAVE THE DWG# T1FMM013 AT THE LOCATION SPECIFIED ABOVE.

2 NON-CRITICAL DIMENSION - TURN OTHER DIMENSIONS FIRST

3 BREAK ALL SHARP EDGES

8	7	6	5	4	3	2	1																																																				
D	C	B	A																																																								
<table border="1"> <thead> <tr> <th>REV. #</th> <th>ZONE</th> <th>DESCRIPTION</th> <th>DATE</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td>1</td> <td></td> <td>CORRECTED DUROMETER NOTE</td> <td>6/12/06</td> <td>D. BRACKER</td> </tr> <tr> <td>2</td> <td></td> <td>CHANGED PART# 8637K32</td> <td>6/9/04</td> <td>J. REDDHEAD</td> </tr> </tbody> </table>								REV. #	ZONE	DESCRIPTION	DATE	BY	1		CORRECTED DUROMETER NOTE	6/12/06	D. BRACKER	2		CHANGED PART# 8637K32	6/9/04	J. REDDHEAD																																					
REV. #	ZONE	DESCRIPTION	DATE	BY																																																							
1		CORRECTED DUROMETER NOTE	6/12/06	D. BRACKER																																																							
2		CHANGED PART# 8637K32	6/9/04	J. REDDHEAD																																																							
<p>NOTE:</p> <p>MATERIAL: NEOPRENE RUBBER TUBE - 75 SHORE A (REFERENCE PART MCM# 8637K32)</p>																																																											
<table border="1"> <thead> <tr> <th>QTY</th> <th>DWG/PART NUMBER</th> <th>DESCRIPTION</th> <th>MATERIAL</th> </tr> </thead> <tbody> <tr> <td>1</td> <td></td> <td>ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY</td> <td></td> </tr> <tr> <td></td> <td>ENGINEERED:</td> <td>DATE: 12/12/06</td> <td>DEPARTMENT OF TRANSPORTATION</td> </tr> <tr> <td></td> <td>L. VOGEL</td> <td>DATE: 12/12/06</td> <td>NHTSA</td> </tr> <tr> <td></td> <td>DRAWN:</td> <td>DATE: 12/12/06</td> <td>CONTRACT NO.: DTFR 33-04-1-000</td> </tr> <tr> <td></td> <td>L. VOGEL</td> <td>DATE: 12/12/06</td> <td>DESIGNED BY: GESSAG, INC.</td> </tr> <tr> <td></td> <td>CHECKED:</td> <td>DATE: 1/10/07</td> <td>125 NEWBOLD DRIVE</td> </tr> <tr> <td></td> <td>J. FULLERTON</td> <td>DATE: 1/10/07</td> <td>ROCKFORD, IL 61103</td> </tr> <tr> <td></td> <td>SCALE:</td> <td>SIZE: 2</td> <td>DRAWING TITLE: COMPLIANCE BUSHING</td> </tr> <tr> <td></td> <td>1=1</td> <td>B</td> <td>REVISION: 2</td> </tr> <tr> <td></td> <td>QUANTITY FOR AN ASSEMBLY</td> <td>1</td> <td>DRAWING NUMBER: T17MM014</td> </tr> <tr> <td></td> <td>QUANTITY FOR ENTIRE DUMMY</td> <td>2</td> <td>Page: 1/1</td> </tr> <tr> <td></td> <td>SEE NOTE 1</td> <td></td> <td></td> </tr> </tbody> </table>								QTY	DWG/PART NUMBER	DESCRIPTION	MATERIAL	1		ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY			ENGINEERED:	DATE: 12/12/06	DEPARTMENT OF TRANSPORTATION		L. VOGEL	DATE: 12/12/06	NHTSA		DRAWN:	DATE: 12/12/06	CONTRACT NO.: DTFR 33-04-1-000		L. VOGEL	DATE: 12/12/06	DESIGNED BY: GESSAG, INC.		CHECKED:	DATE: 1/10/07	125 NEWBOLD DRIVE		J. FULLERTON	DATE: 1/10/07	ROCKFORD, IL 61103		SCALE:	SIZE: 2	DRAWING TITLE: COMPLIANCE BUSHING		1=1	B	REVISION: 2		QUANTITY FOR AN ASSEMBLY	1	DRAWING NUMBER: T17MM014		QUANTITY FOR ENTIRE DUMMY	2	Page: 1/1		SEE NOTE 1		
QTY	DWG/PART NUMBER	DESCRIPTION	MATERIAL																																																								
1		ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY																																																									
	ENGINEERED:	DATE: 12/12/06	DEPARTMENT OF TRANSPORTATION																																																								
	L. VOGEL	DATE: 12/12/06	NHTSA																																																								
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D	C	B	A																																																								



NOTES:

- 1
- 2

MAKE TWO 1/2" LENGTH BEARINGS FROM ONE 1 1/2" BEARING.
 CUT EACH BEARING FROM ORIGINAL ENDS OF THE STOCK BEARING, SO THAT THE FELT WICK IS NOT USED.

REV. #	ZONE	DATE	BY
1	GLOBAL	6/12/96	D. BEALCE

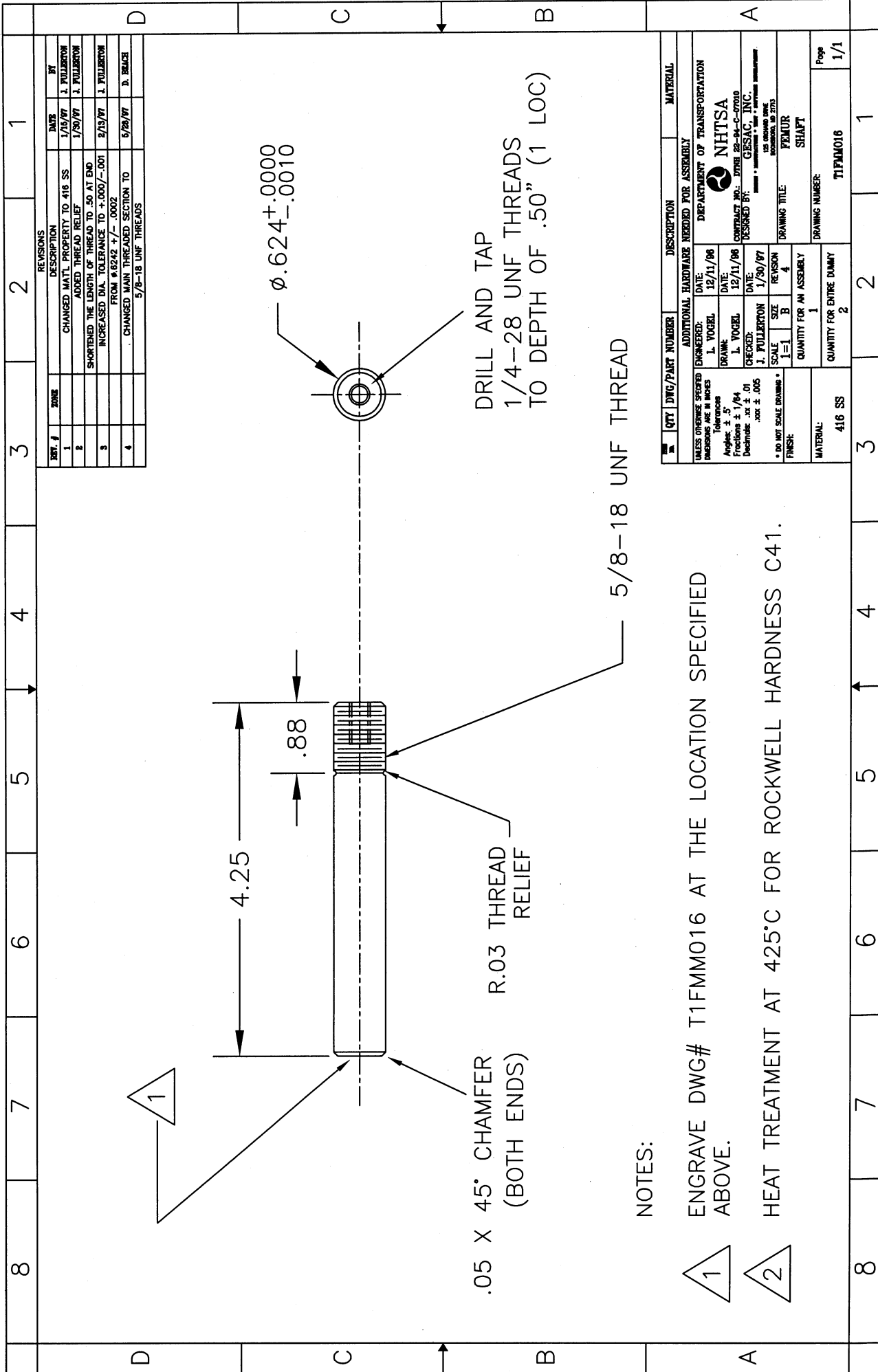
REVISIONS
 DESCRIPTION
 UPDATED DRAWING NOTES

QTY	PB #	DWG/PART NUMBER	LINEAR BEARING (0.625" BORE)	DESCRIPTION	PURCHASED MATERIAL
1					

ENGINEERED:	DATE:	DEPARTMENT OF TRANSPORTATION
L. VOGEL	12/11/96	NHTSA
DRAWN:	DATE:	CONTRACT NO.: DTMB 22-94-C-07010
L. VOGEL	12/11/96	DESIGNED BY: GESAC, INC.
CHECKED:	DATE:	125 BRIDGE BLVD
J. FULLERTON	1/10/97	ROXBORO, NH 07873
SCALE:	SIZE:	DRAWING TITLE: FEMUR
1=1	A	MODIFIED LINEAR BEARING
QUANTITY FOR AN ASSEMBLY		DRAWING NUMBER:
1		T1FMM015
QUANTITY FOR ENTIRE DUMMY		Page
2		1/1

MATERIAL:
 SEE NOTES

D	C	B	A
4	3	2	1
D	C	B	A
4	3	2	1



REV. #	ZONE	DESCRIPTION	DATE	BY
1		CHANGED MATL PROPERTY TO 416 SS	1/15/97	J. FULLERTON
2		ADDED THREAD RELIEF	1/30/97	J. FULLERTON
3		SHORTENED THE LENGTH OF THREAD TO .50 AT END		
4		INCREASED DIA. TOLERANCE TO +.000/- .001 FROM #6242 +/- .0002	2/19/97	J. FULLERTON
5		CHANGED MAIN THREADED SECTION TO 5/8-18 UNF THREADS	6/26/97	D. BEJAC

QTY	DWG/PART NUMBER	DESCRIPTION	MATERIAL
416 SS	T1FMM016	DRILL AND TAP 1/4-28 UNF THREADS TO DEPTH OF .50" (1 LOC)	416 SS

UNLESS OTHERWISE SPECIFIED		ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY	
ENGINEERED:	DATE:	ENGINEERED:	DATE:
L. VOGEL	12/11/96		
J. FULLERTON	1/30/97		

DEPARTMENT OF TRANSPORTATION	
NHTSA	
CONTRACT NO.:	DTFR63-93-C-0000
DESIGNED BY:	GESMAC, INC.
125 GARDNER AVE ROCKFORD, IL 61153	

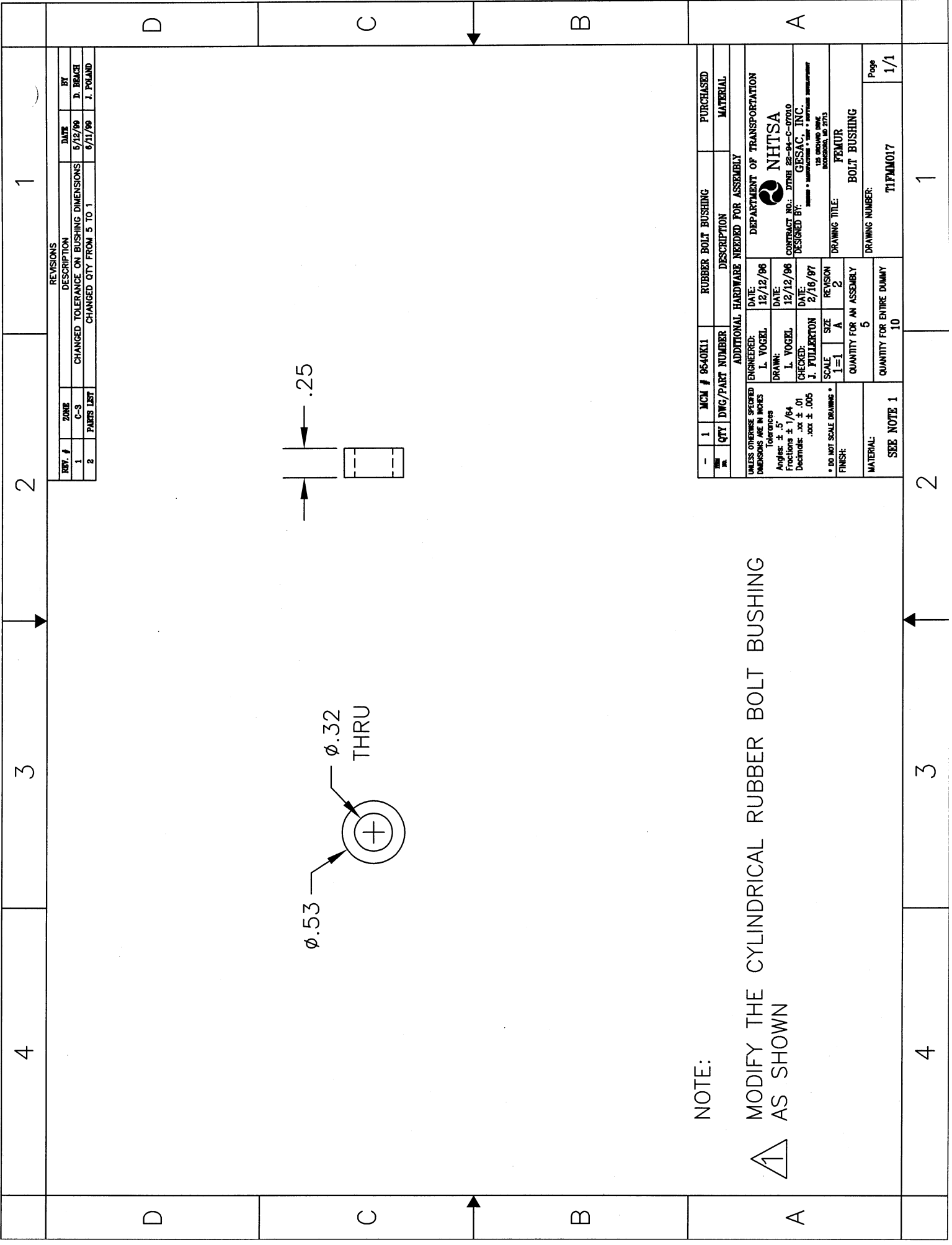
QUANTITY FOR AN ASSEMBLY		QUANTITY FOR ENTIRE DUMMY	
1	2	1	2
1	2	1	2

DRAWING NUMBER:		PAGE	
T1FMM016		1/1	

NOTES:

1 ENGRAVE DWG# T1FMM016 AT THE LOCATION SPECIFIED ABOVE.

2 HEAT TREATMENT AT 425°C FOR ROCKWELL HARDNESS C41.



NOTE:



MODIFY THE CYLINDRICAL RUBBER BOLT BUSHING AS SHOWN

REVISIONS				
REV. #	ZONE	DESCRIPTION	DATE	BY
1	C-3	CHANGED TOLERANCE ON BUSHING DIMENSIONS	5/12/99	D. BRACE
2	PAPER LIST	CHANGED QTY FROM 5 TO 1	6/11/99	J. POLAND

1	MCM # 9540K11	RUBBER BOLT BUSHING	PURCHASED
QTY	DWG/PART NUMBER	DESCRIPTION	MATERIAL
ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY			
ENGINEERED:	L. VOGEL	DATE:	12/12/96
DRAWN:	L. VOGEL	DATE:	12/12/96
CHECKED:	J. FULLERTON	DATE:	2/16/97
SCALE	1=1	SIZE	A
REVISION	2	QUANTITY FOR AN ASSEMBLY	5
FINISH:	SEE NOTE 1		
MATERIAL:	BOLT BUSHING		
QUANTITY FOR ENTIRE DUMMY	10		
DRAWING NUMBER:	TIFM017		
Page	1/1		

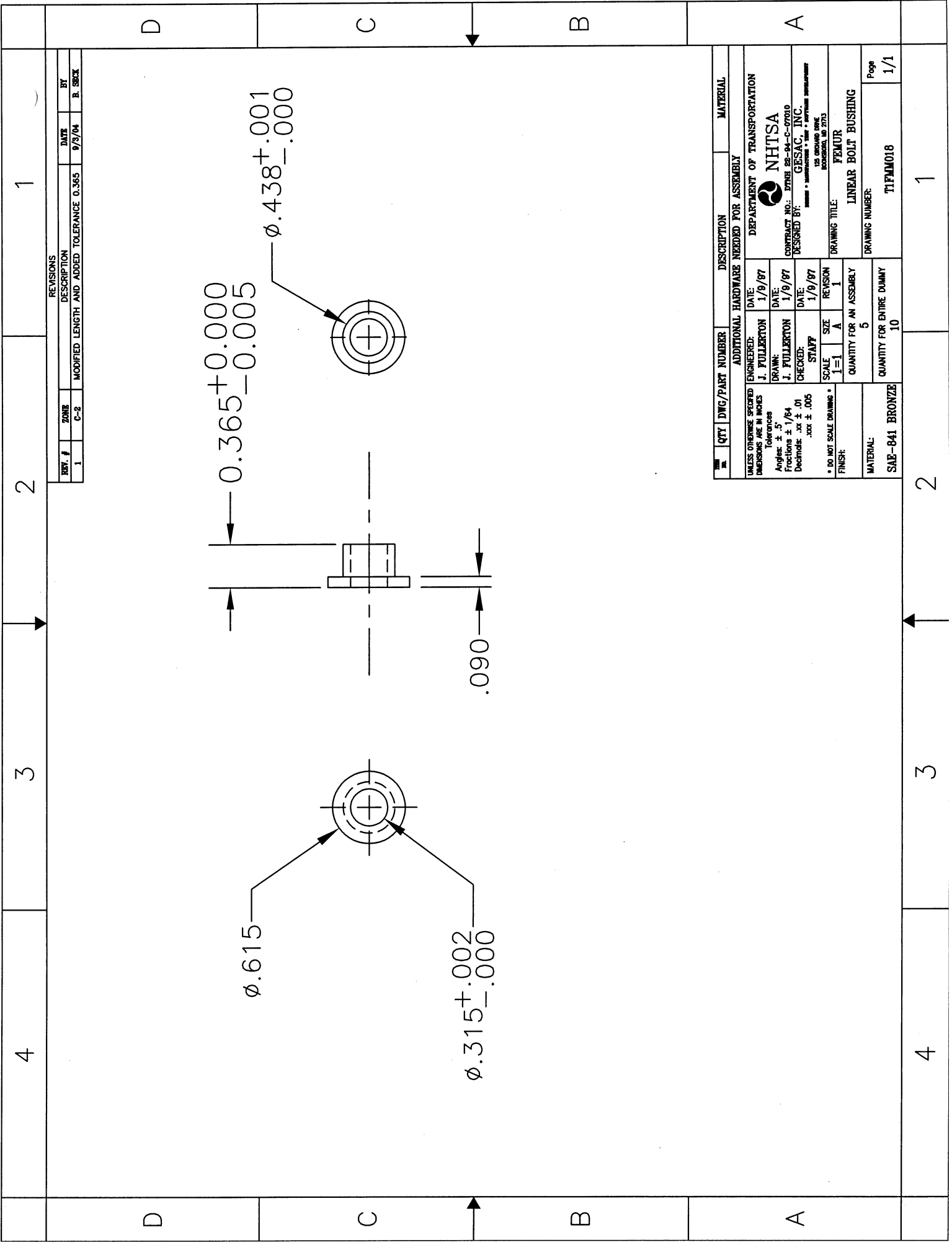
DEPARTMENT OF TRANSPORTATION
NHTSA
 CONTRACT NO.: DTNH 22-94-C-07010
 DESIGNED BY: GESAC, INC.
 125 BROADWAY, NEW YORK, NY 10038

DRAWING TITLE: FEMUR
 BOLT BUSHING
 DRAWING NUMBER: TIFM017
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4 3 2 1

A B C D

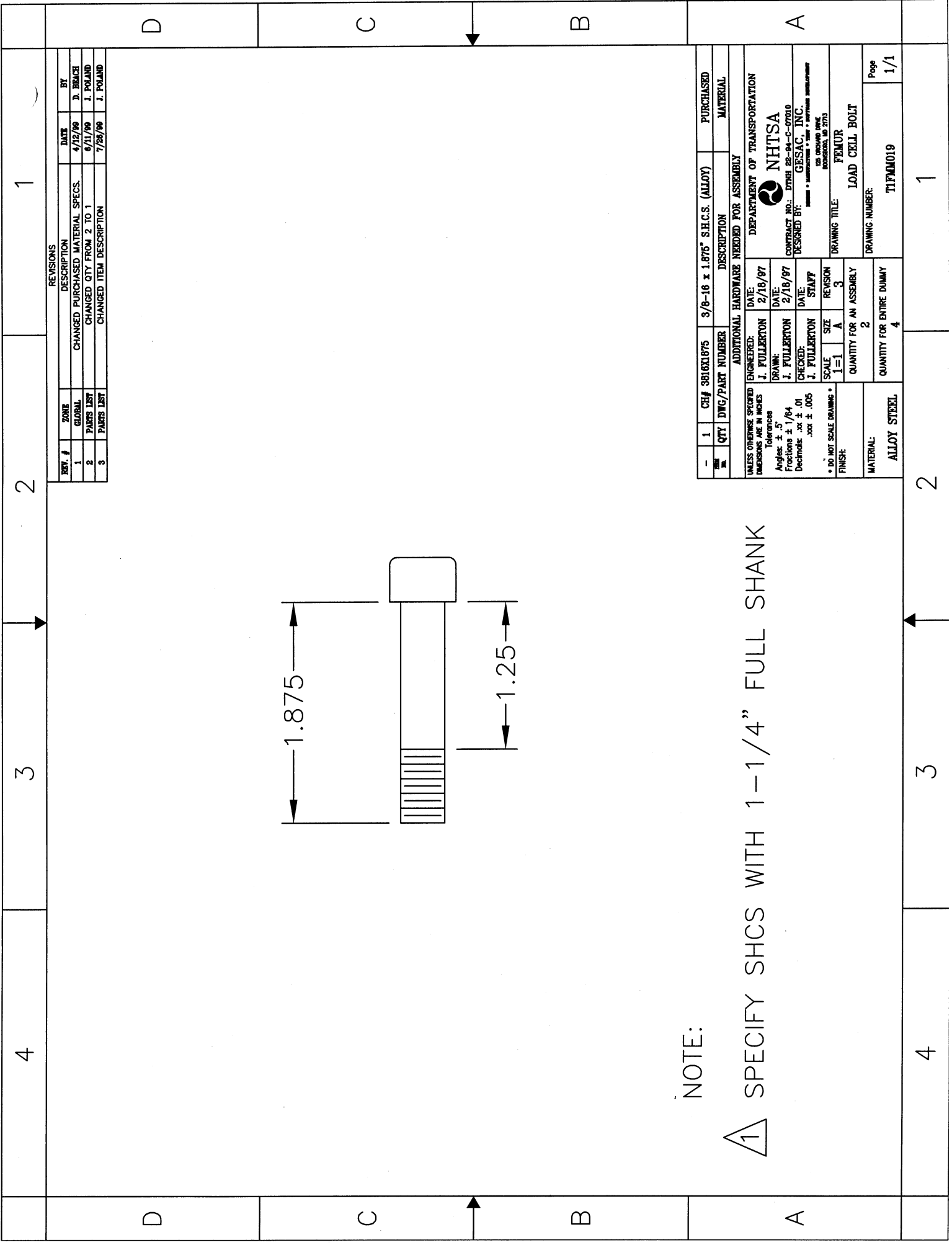
1 2 3 4



REVISIONS		
REV. #	ZONE	DESCRIPTION
1	C-2	MODIFIED LENGTH AND ADDED TOLERANCE 0.365

DATE	BY
9/3/04	B. SECK

QTY	DWG/PART NUMBER	DESCRIPTION	MATERIAL
1		LINEAR BOLT BUSHING	SAE-841 BRONZE
ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY ENGINEERED: J. FULLERTON DATE: 1/9/97 DRAWN: J. FULLERTON DATE: 1/9/97 CHECKED: STAFF DATE: 1/9/97 SCALE: 1=1 SIZE: A QUANTITY FOR AN ASSEMBLY: 5 QUANTITY FOR ENTIRE DUMMY: 10			
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES Tolerances: Angles: ± .5° Fractions: ± 1/64 Decimals: .xx ± .01 .xxx ± .005 * DO NOT SCALE DRAWING * FINISH:			
DEPARTMENT OF TRANSPORTATION NHTSA CONTRACT NO.: DTFR 28-94-C-07010 DESIGNED BY: GESAC, INC. <small>125 GROUND FLOOR BOSTON, MA 02113</small> DRAWING TITLE: FEMUR DRAWING NUMBER: T1FAM018 Page 1/1			



NOTE:

① SPECIFY SHCS WITH 1-1/4" FULL SHANK

REVISIONS				
REV. #	ZONE	DESCRIPTION	DATE	BY
1	GLOBAL	CHANGED PURCHASED MATERIAL SPECS.	4/12/99	D. BRACE
2	PARTS LIST	CHANGED QTY FROM 2 TO 1	6/11/99	J. POLAND
3	PARTS LIST	CHANGED ITEM DESCRIPTION	7/28/99	J. POLAND

1	QTY	CH#	3/8-16 x 1.875	S.H.C.S. (ALLOY)	3/8-16 x 1.875	PURCHASED MATERIAL	
ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY							
UNLESS OTHERWISE SPECIFIED		ENGINEERED:	J. FULLERTON	DATE:	2/18/97	DEPARTMENT OF TRANSPORTATION	
DIMENSIONS ARE IN INCHES		DRAWN:	J. FULLERTON	DATE:	2/18/97	NHTSA	
Tolerances		CHECKED:	J. FULLERTON	DATE:	2/18/97	CONTRACT NO.: DTNH 22-94-C-07010	
Angles: ± .5°		SCALE	1=1	SIZE	A	DESIGNED BY: GESAC, INC.	
Fractions: ± 1/64		FINISH:	* DO NOT SCALE DRAWING *				125 BROADWAY, NEW YORK, NY 10038
Decimals: .xx ± .01		QUANTITY FOR AN ASSEMBLY	2				DRAWING TITLE: FEMUR
.xxx ± .005		QUANTITY FOR ENTIRE DUMMY	4				DRAWING NUMBER: T1FM019
MATERIAL: ALLOY STEEL							Page 1/1

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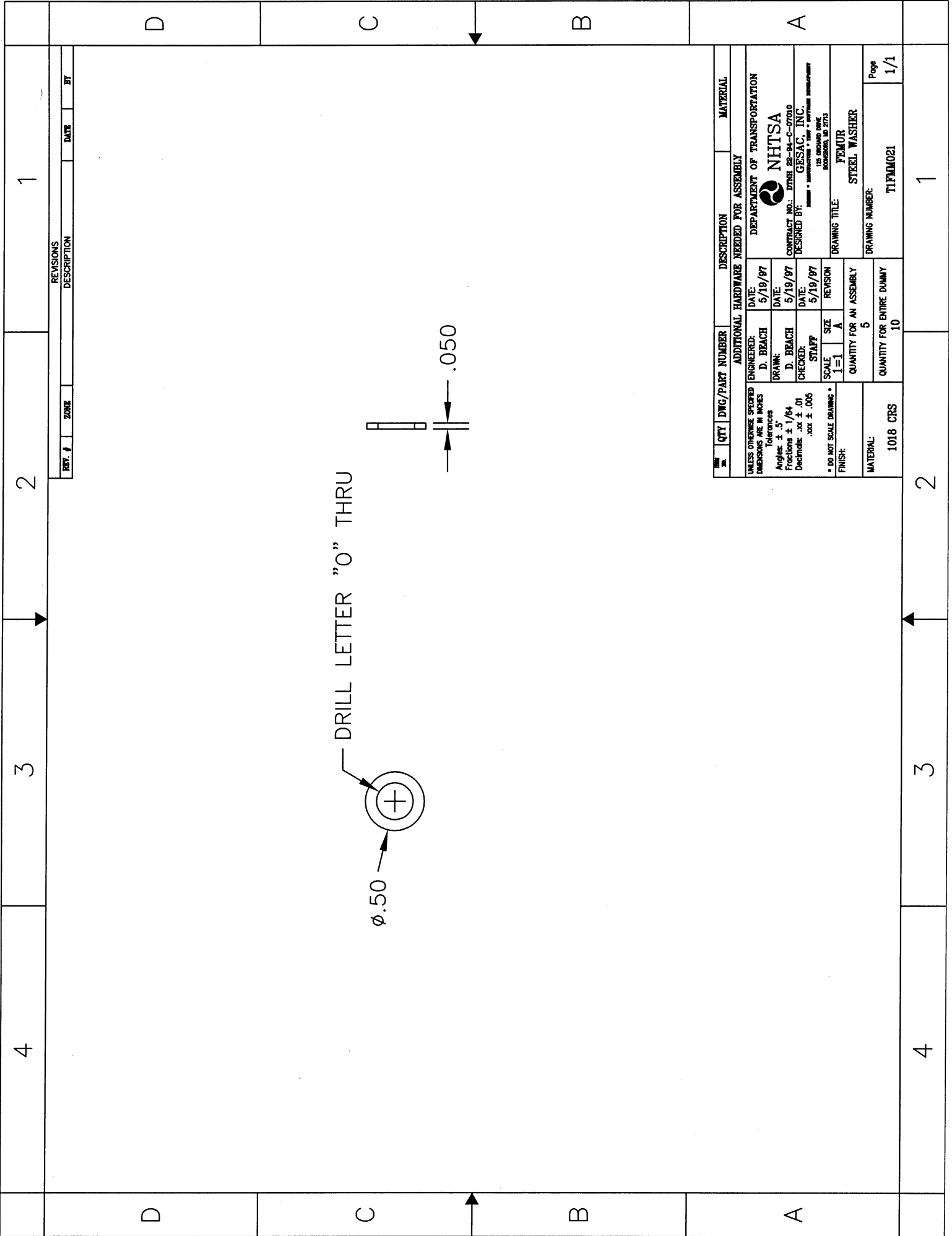
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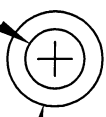
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DRILL LETTER "O" THRU



0.50



0.50

QTY	DWG/PART NUMBER	DESCRIPTION	MATERIAL
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES			
Tolerances			
Angles: ± .5°			
Fractions: ± 1/64			
Decimals: .xx ± .01			
.xxx ± .005			
* DO NOT SCALE DRAWING *			
FINISH:			
SCALE: 1=1			
SIZE: A			
QUANTITY FOR AN ASSEMBLY: 5			
QUANTITY FOR ENTIRE DUMMY: 10			
MATERIAL: 1018 CRS			
ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY			
DATE: 5/19/97			
ENGINEERED: D. BEACH			
DEPARTMENT OF TRANSPORTATION			
NHTSA			
CONTRACT NO.: DTMB 22-94-C-07010			
DESIGNED BY: GESAC, INC.			
125 BROADWAY, NEW YORK, NY 10038			
DRAWING TITLE: FEMUR			
STEEL WASHER			
DRAWING NUMBER: T1FAM021			
Page: 1/1			

REV. #	ZONE	DATE	BY
1			

REVISIONS DESCRIPTION

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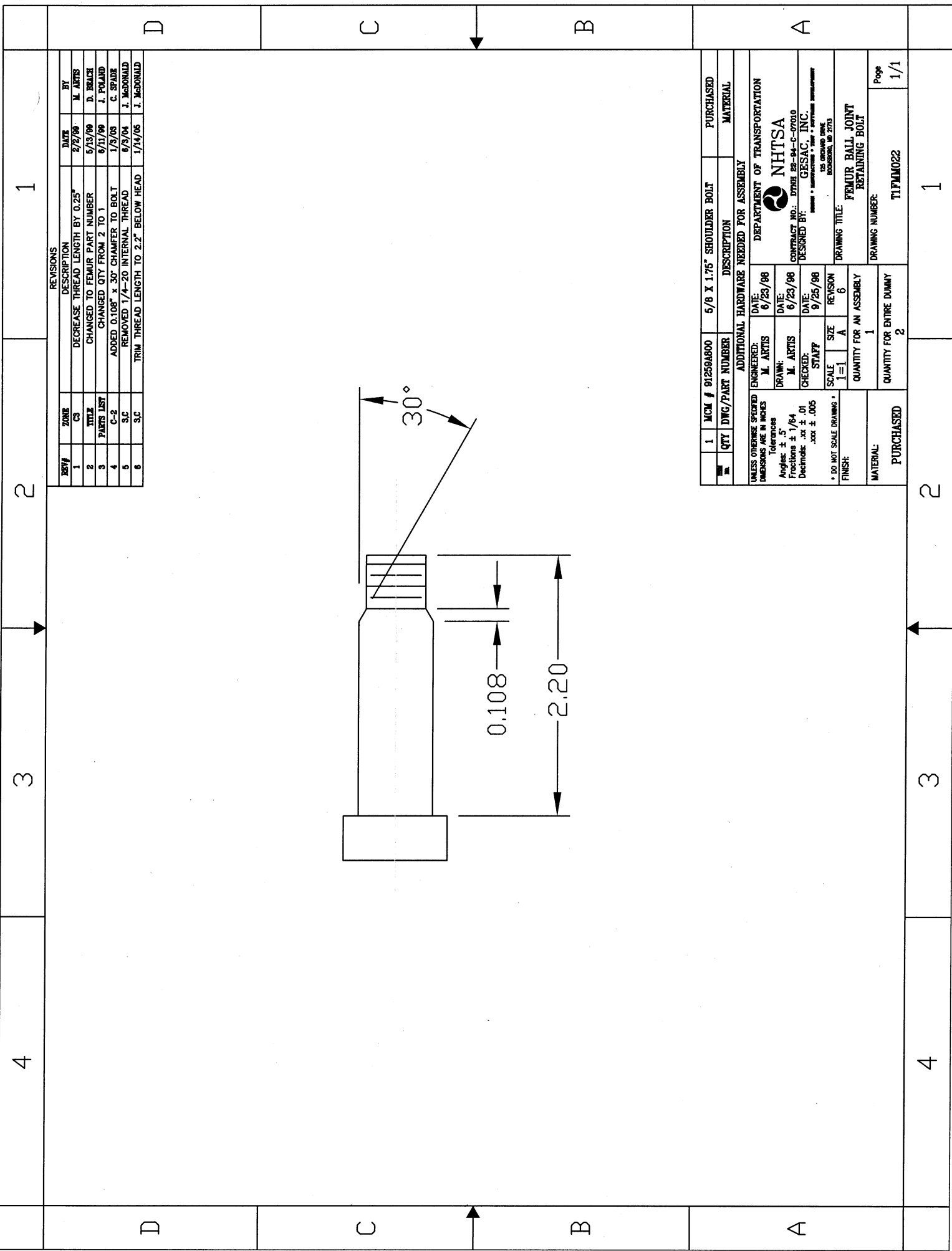
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REV#	ZONE	DESCRIPTION	DATE	BY
1	C3	DECREASE THREAD LENGTH BY 0.25"	2/2/99	M. ARTIS
2		CHANGED TO FEMUR PART NUMBER	5/13/99	D. BRUCE
3	PARTS LIST	CHANGED QTY FROM 2 TO 1	6/11/99	J. POLAND
4	C-2	ADDED 0.108" x 30° CHAMFER TO BOLT	1/9/08	C. SPADIE
5	S-C	REMOVED 1/4"-20 INTERNAL THREAD	6/3/04	J. McDONALD
6	S-C	TRIM THREAD LENGTH TO 2.2" BELOW HEAD	1/14/06	J. McDONALD

1	MCM # 91259A800	5/8 X 1.75" SHOULDER BOLT	PURCHASED
QTY	DWG/PART NUMBER	DESCRIPTION	MATERIAL
ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY			
ENGINEERED:	M. ARTIS	DATE:	6/25/98
DRAWN:	M. ARTIS	DATE:	6/25/98
CHECKED:	J. POLAND	DATE:	9/25/98
SCALE:	1=1	SIZE:	A
FINISH:	* DO NOT SCALE DRAWING *		
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		Tolerances	
Angles: ± .5°		Fractions: ± 1/64	
Decimals: .xx ± .01		.xxx ± .005	
DESIGNED BY:		NHTSA	
CONTRACT NO.:		DTRB 22-94-C-07010	
DESIGNED BY:		GESAC, INC.	
DRAWING TITLE:		FEMUR BALL JOINT RETAINING BOLT	
DRAWING NUMBER:		TIFM022	
QUANTITY FOR AN ASSEMBLY:		1	
QUANTITY FOR ENTIRE DUMMY:		2	
MATERIAL:		PURCHASED	
PAGE:		1/1	

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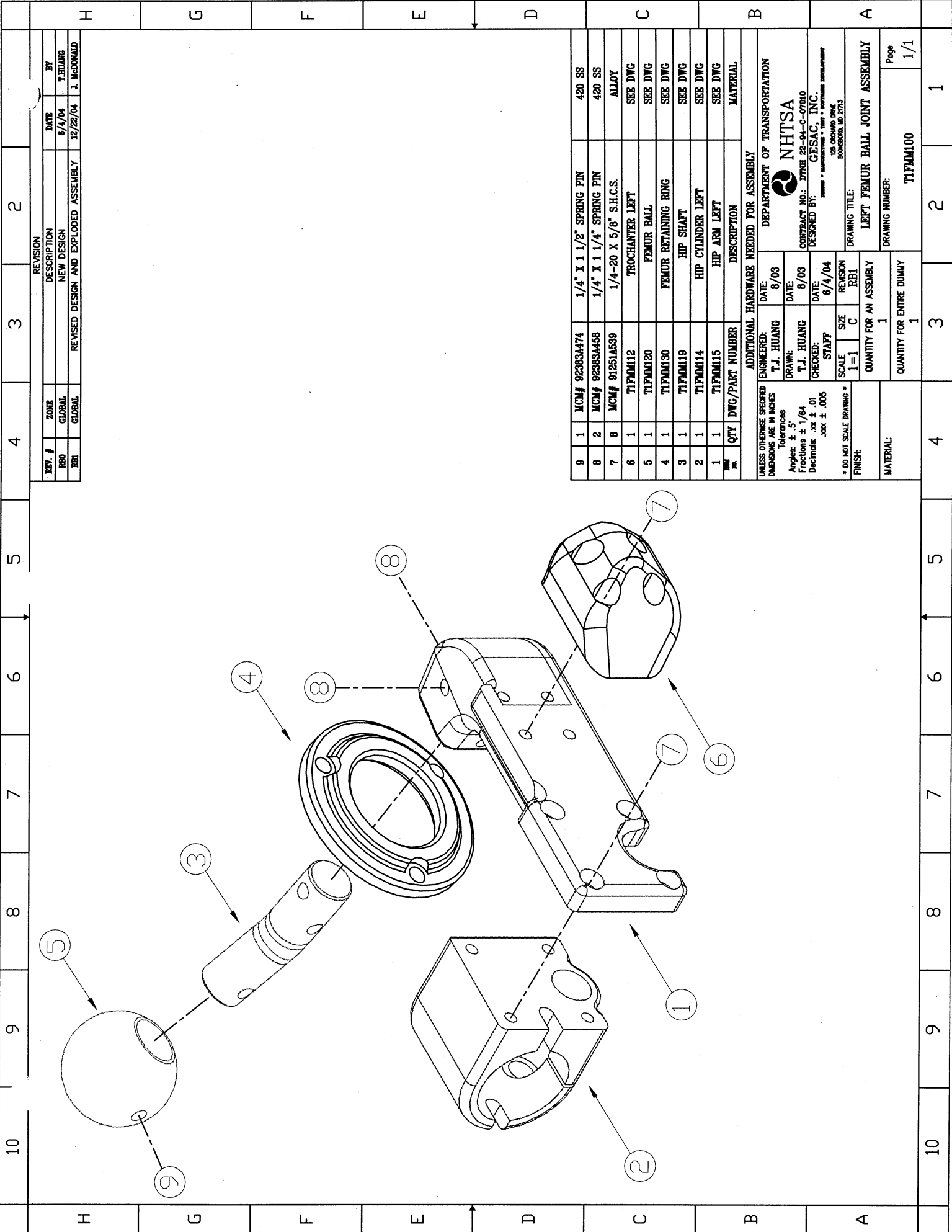
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REV. #	ZONE	REVISION DESCRIPTION	DATE	BY
001	GLOBAL	NEW DESIGN	6/4/04	T. HUANG
002	GLOBAL	REVISED DESIGN AND EXPLODED ASSEMBLY	12/22/04	J. McDONALD

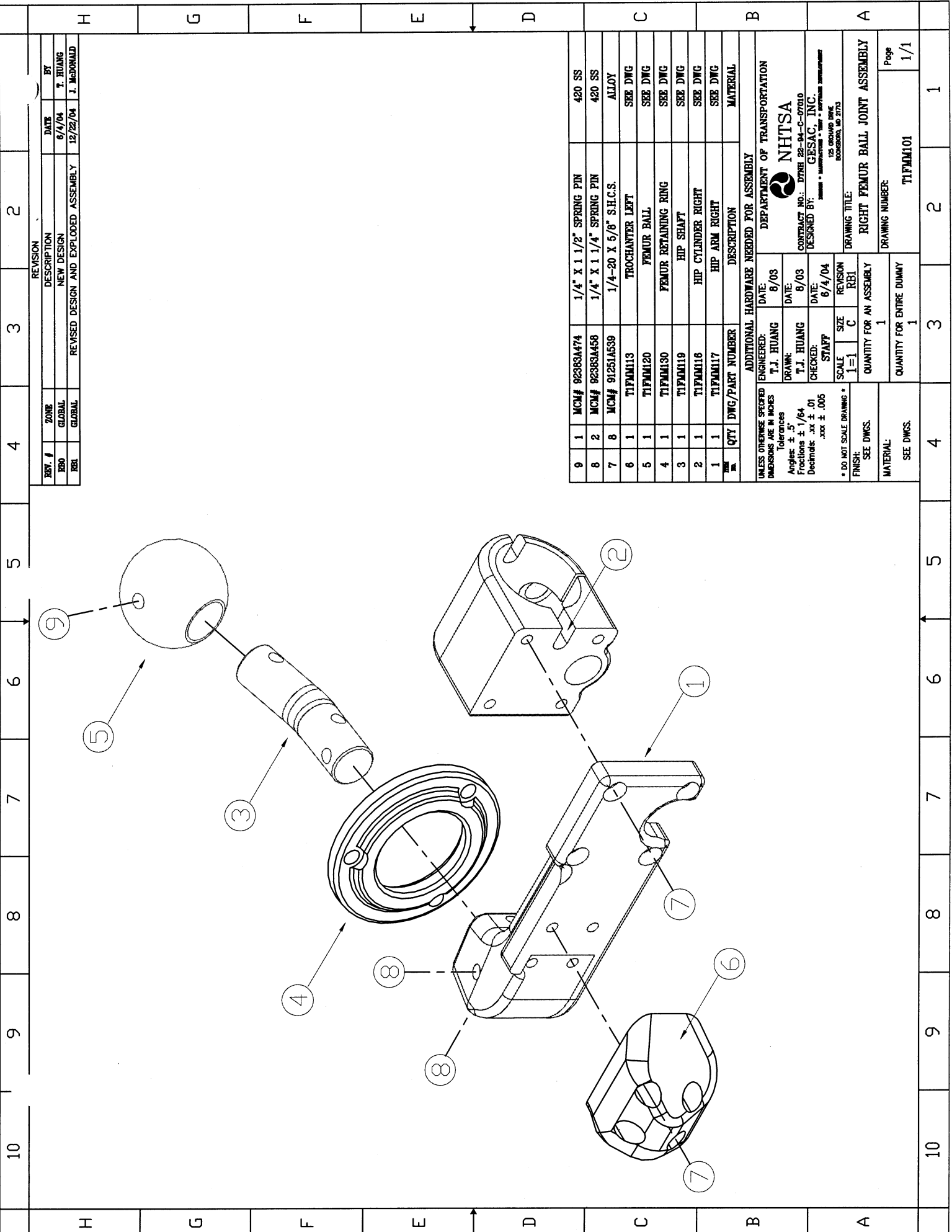
REV. #	ZONE	REVISION DESCRIPTION	DATE	BY
001	GLOBAL	NEW DESIGN	6/4/04	T. HUANG
002	GLOBAL	REVISED DESIGN AND EXPLODED ASSEMBLY	12/22/04	J. McDONALD

QTY	DWG/PART NUMBER	DESCRIPTION	MATERIAL
1	MCM# 92383A474	1/4" X 1 1/2" SPRING PIN	420 SS
2	MCM# 92383A458	1/4" X 1 1/4" SPRING PIN	420 SS
8	MCM# 91251A539	1/4-20 X 5/8" S.H.C.S.	ALLOY
1	TIPMM112	TROCHANTER LEFT	SEE DWG
1	TIPMM120	FEMUR BALL	SEE DWG
1	TIPMM130	FEMUR RETAINING RING	SEE DWG
1	TIPMM119	HIP SHAFT	SEE DWG
1	TIPMM114	HIP CYLINDER LEFT	SEE DWG
1	TIPMM115	HIP ARM LEFT	SEE DWG
1	QTY DWG/PART NUMBER	DESCRIPTION	MATERIAL

ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY	
ENGINEERED:	DATE: 6/03
T.J. HUANG	
DRAWN:	DATE: 6/03
T.J. HUANG	
CHECKED:	DATE: 6/4/04
STAFF:	
SCALE: 1=1	SIZE: C
REVISION: RB1	
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
Decimals: .xxx ± .005	
* DO NOT SCALE DRAWING *	
FINISH:	
MATERIAL:	

DEPARTMENT OF TRANSPORTATION	
NHTSA	
CONTRACT NO.: DTMB 28-94-C-07010	
DESIGNED BY: GESAC, INC.	
125 ORCHARD DRIVE, BOSSBORO, MD 21775	
DRAWING TITLE: LEFT FEMUR BALL JOINT ASSEMBLY	
DRAWING NUMBER: TIPMM100	Page 1/1



REV #	ZONE	DESCRIPTION	DATE	BY
000	GLOBAL	NEW DESIGN	6/4/04	T. HUANG
001	GLOBAL	REVISED DESIGN AND EXPLODED ASSEMBLY	12/22/04	J. McDONALD

QTY	DWG/PART NUMBER	DESCRIPTION	MATERIAL
1	MCM# 92383A474	1/4" X 1 1/2" SPRING PIN	420 SS
2	MCM# 92383A456	1/4" X 1 1/4" SPRING PIN	420 SS
8	MCM# 91251A539	1/4"-20 X 5/8" S.H.C.S.	ALLOY
1	TIPMM113	TROCHANTER LEFT	SEE DWG
1	TIPMM120	FEMUR BALL	SEE DWG
1	TIPMM130	FEMUR RETAINING RING	SEE DWG
1	TIPMM119	HIP SHAFT	SEE DWG
1	TIPMM116	HIP CYLINDER RIGHT	SEE DWG
1	TIPMM117	HIP ARM RIGHT	SEE DWG

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
Tolerances
Angles: ± .5°
Fractions: ± 1/64
Decimals: .xx ± .01
.xxx ± .005

* DO NOT SCALE DRAWING *
FINISH: SEE DWGS.

ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY

ENGINEERED: T.J. HUANG DATE: 8/03
DRAWN: T.J. HUANG DATE: 8/03
CHECKED: STAFF DATE: 6/4/04

SCALE: 1=1 SIZE: C
REVISION: R01

QUANTITY FOR AN ASSEMBLY: 1
QUANTITY FOR ENTIRE DUMMY: 1

DEPARTMENT OF TRANSPORTATION
NHTSA
CONTRACT NO.: DTMB 22-04-C-07010
DESIGNED BY: GESAC, INC.
125 GROUND ONE
BOZEMAN, MD 21715

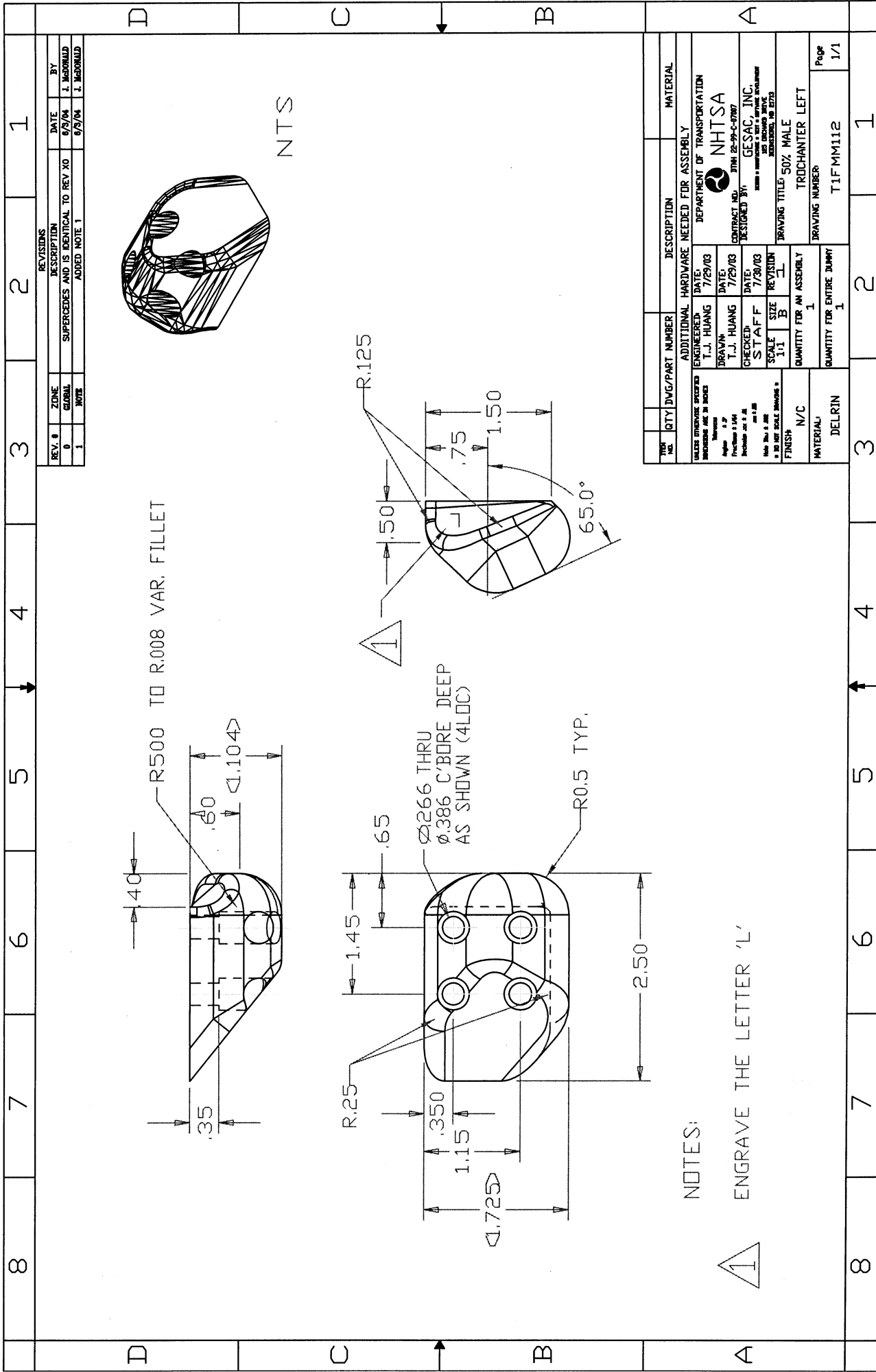
DRAWING TITLE: RIGHT FEMUR BALL JOINT ASSEMBLY
DRAWING NUMBER: TIPMM101

10 9 8 7 6 5 4 3 2

H G F E D C B A

10 9 8 7 6 5 4 3 2 1

Page 1/1



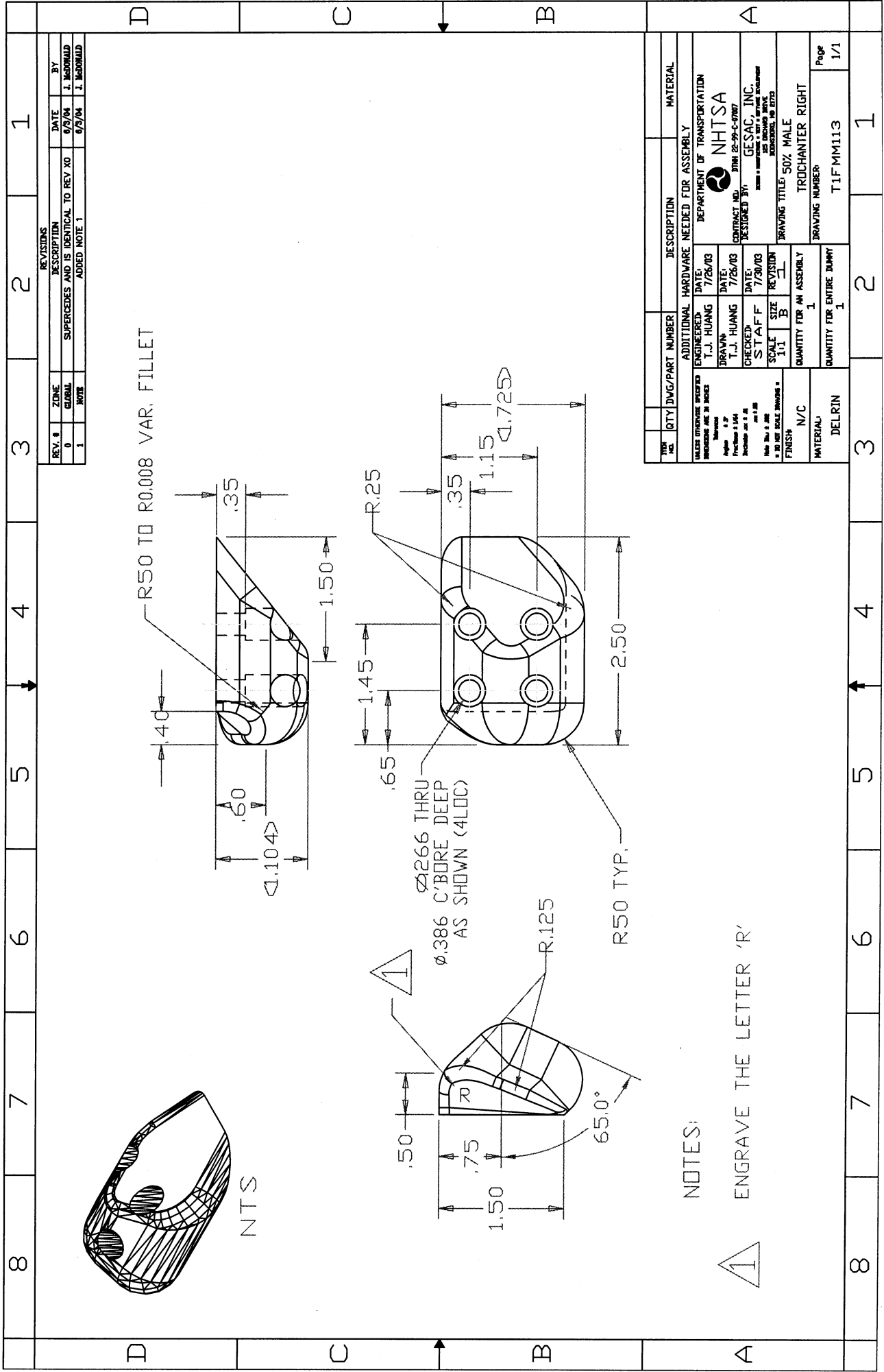
REV. #	ZONE	DESCRIPTION	DATE	BY
0	GLOBAL	SUPERCEDES AND IS IDENTICAL TO REV X0	9/29/04	J. McDONALD
1	NOTE	ADDED NOTE 1	9/29/04	J. McDONALD

TYPE	QTY	DWG/PART NUMBER	DESCRIPTION	MATERIAL
ADDITIONAL			HARDWARE NEEDED FOR ASSEMBLY	
ENGINEERED		T.J. HUANG	DATE: 7/29/03	
DRAWN		T.J. HUANG	DATE: 7/29/03	
CHECKED		STAFF	DATE: 7/30/03	
SCALE		1:1	REVISION	
FINISH		N/C	QUANTITY FOR AN ASSEMBLY	
			QUANTITY FOR ENTIRE DUMMY	
			DRAWING NUMBER	
			TROCHANTER LEFT	
			TIFMM112	
			Page	1/1

NOTES:



ENGRAVE THE LETTER 'L'

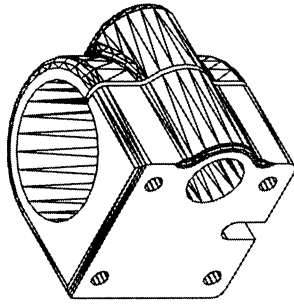


REV. #		ZONE	DESCRIPTION	DATE	BY
0			SUPERCEDES AND IS IDENTICAL TO REV. X0	6/9/04	J. MADONLUD
1			ADDED NOTE 1	6/9/04	J. MADONLUD

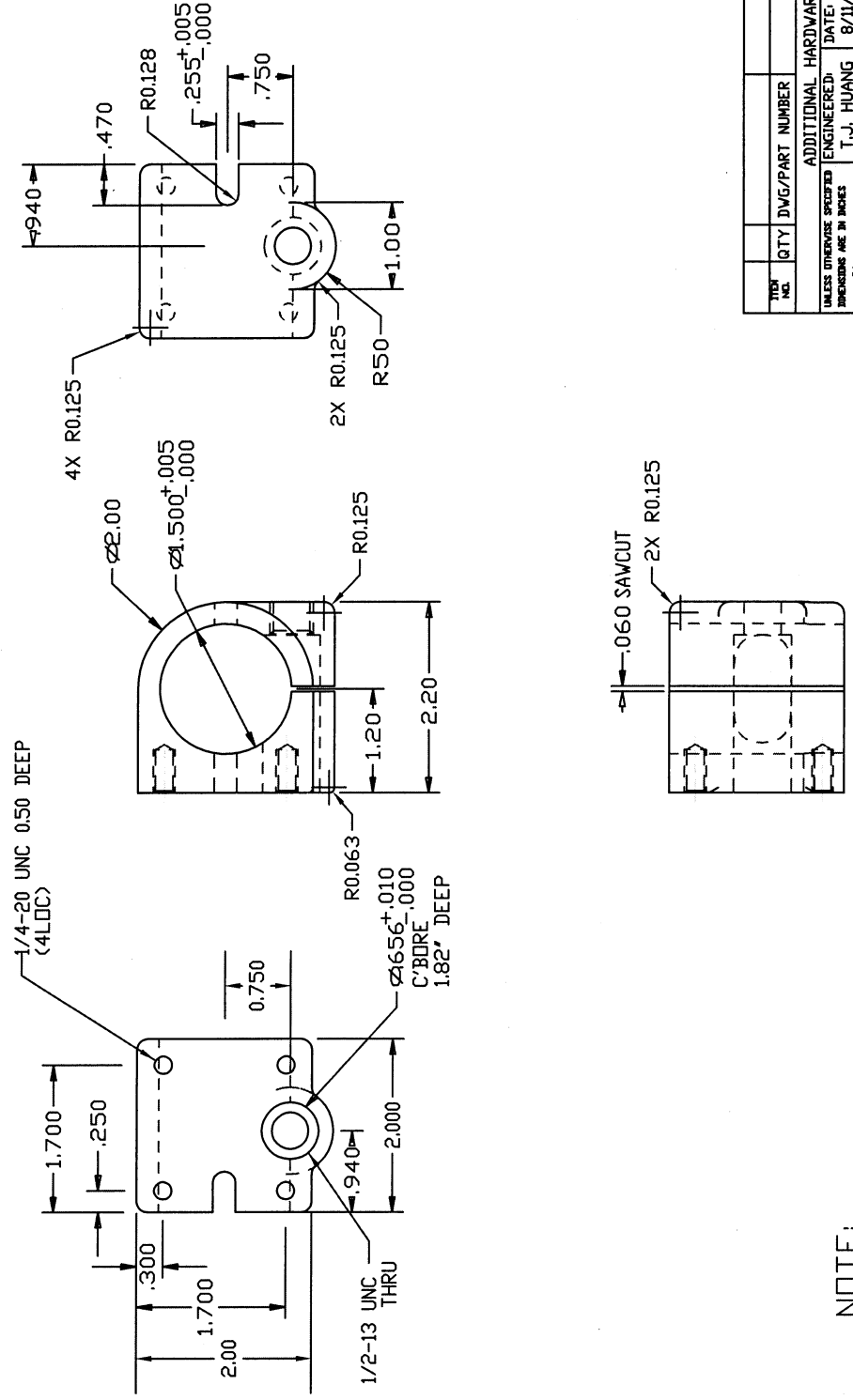
TRN NO.	QTY	DWG/PART NUMBER	DESCRIPTION	MATERIAL
			ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY	
		ENGINEERED BY: T.-J. HUANG	DATE: 7/26/03	DEPARTMENT OF TRANSPORTATION
		DRAWN BY: T.-J. HUANG	DATE: 7/26/03	NHTSA
		CHECKED BY: STAFF	DATE: 7/30/03	CONTRACT NO. DTNH 22-99-2-0707
		SCALE: 1:1	SIZE: B	DESIGNED BY: GESAC, INC.
		FINISH: N/C	QUANTITY FOR AN ASSEMBLY: 1	TRACING TITLE: 50% MALE
		MATERIAL: DELRIN	QUANTITY FOR ENTIRE DUMMY: 1	TRACHTANTER RIGHT
				TRACING NUMBER: TIFMM113
				Page: 1/1

NOTES:
 ▲ ENGRAVE THE LETTER 'R'

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



NOTE:

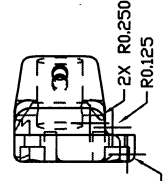
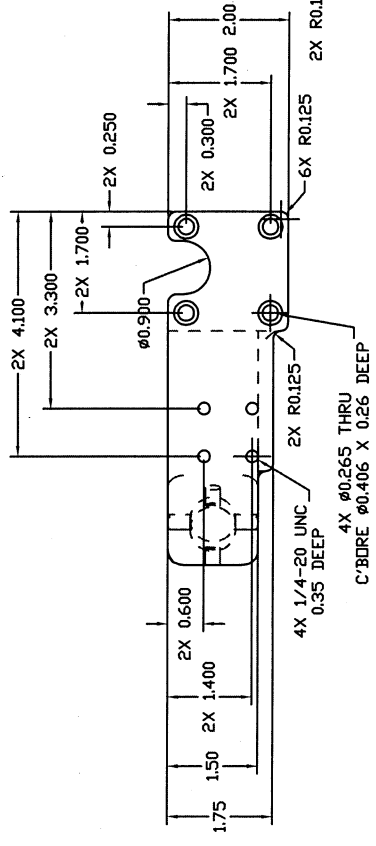
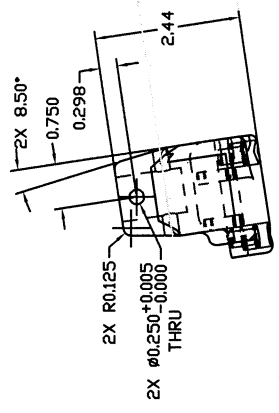
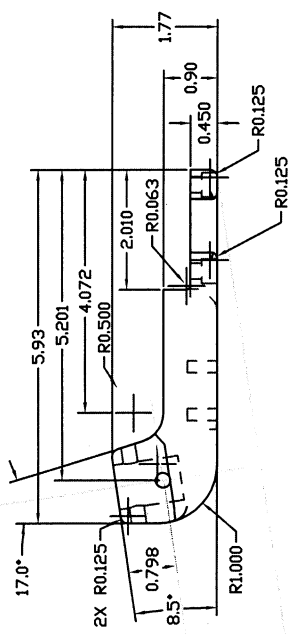
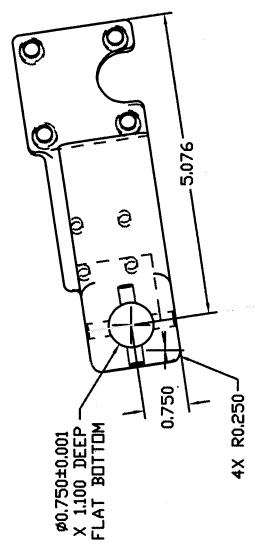
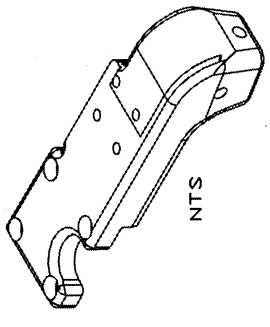
1. BREAK ALL SHARP EDGES

REV. #	ZONE	DESCRIPTION	DATE	BY
0	GLOBAL	SUPERCEDES AND IS IDENTICAL TO REV X0	6/9/04	J. McDONALD
1	GLOBAL	ADDED BLACK TEFLON FINISH	6/17/04	J. McDONALD
2	GLOBAL	REMOVE CHAMFER, ADD RADI ON PART EDGES	11/17/04	J. McDONALD

QTY	DWG/PART NUMBER	DESCRIPTION	MATERIAL
1018 CRS		ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES			
ENGINEERED: T.J. HUANG		DATE: 8/11/03	
DRAWN: T.J. HUANG		DATE: 8/11/03	
CHECKED: T.J. HUANG		DATE: 8/11/03	
STAFF		SCALE	SIZE
1:1		C	C
FINISH: BLACK TEFLON			
MATERIAL: 1018 CRS			
QUANTITY FOR AN ASSEMBLY: 1			
QUANTITY FOR ENTIRE DUMMY: 1			
DRAWING NUMBER: T1FMM114		DRAWING TITLE: 50% MALE HIP CYLINDER LEFT	
DESIGNED BY: GESAC, INC.		CONTRACT NO. JINH 26-99-C-07007	
DESIGNED BY: GESAC, INC. 18300 W. BURNETT BLVD. SUITE 100 W. BURNETT, MO 63173			

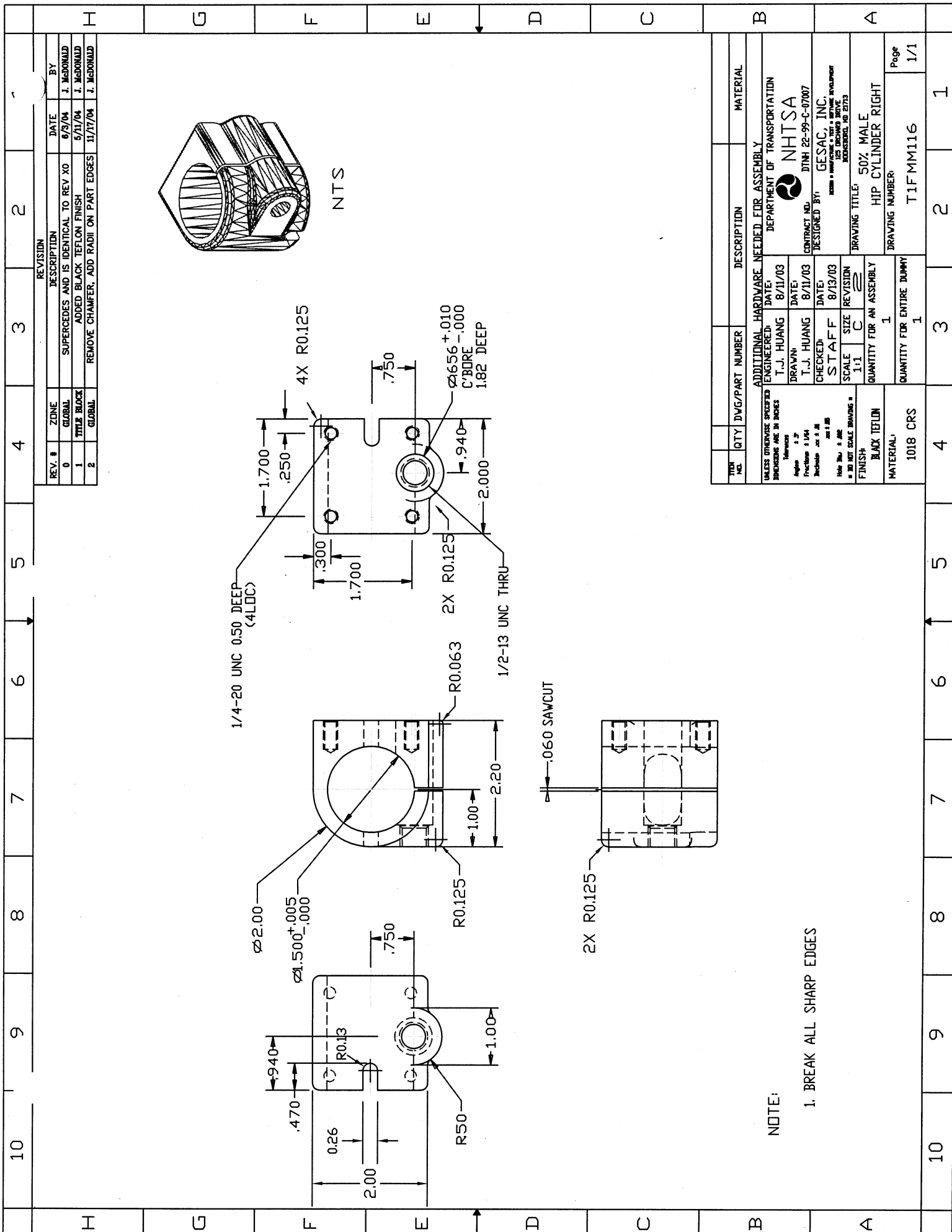
H	G	F	E	D	C	B	A	10	9	8	7	6	5	4	3	2	1
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REV. #	ZONE	DESCRIPTION	DATE	BY
1	GLOBAL	REMOVED HEAT TREATING NOTE & ADDED FINISH	7/7/04	M. ARTIS
2	GLOBAL	REDESIGNED PART TO INCREASE HIP JOINT RDM	11/17/04	J. McDONALD
3	GLOBAL	CHANGED THREAD DEPTH FROM 0.45 TO 0.35	12/28/2004	J. McDONALD
4	GLOBAL	CHANGED 2.000 TO 2.010, SPECIFY HORN DEPTH	1/7/05	J. McDONALD



- NOTES:
- BREAK ALL SHARP EDGES.
 - PLUG 0.75 AND 1/4-20 HOLES BEFORE APPLYING SURFACE FINISH.

QTY	DWG/PART NUMBER	DESCRIPTION	MATERIAL
1018	CRS	1	BLACK TEFLON
1	1	QUANTITY FOR ENTIRE ASSEMBLY	
1	1	QUANTITY FOR ENTIRE DUMMY	
1	1	TRAVING NUMBER	50% MALE HIP ARM LEFT
1/1			T1FMM115
1			Page 1 of 1
1			Scale: 1:1
1			Checked: T.J. HUANG
1			Drawn: T.J. HUANG
1			Engineered: T.J. HUANG
1			Additional Hardware Needed for Assembly
1			Department of Transportation
1			NHTSA
1			Contract No. DOT-H-99-C-0007
1			Designed by: GESAC, INC.
1			1000 North 17th Street, Suite 1000, Philadelphia, PA 19103
1			Traving Title: 50% MALE HIP ARM LEFT

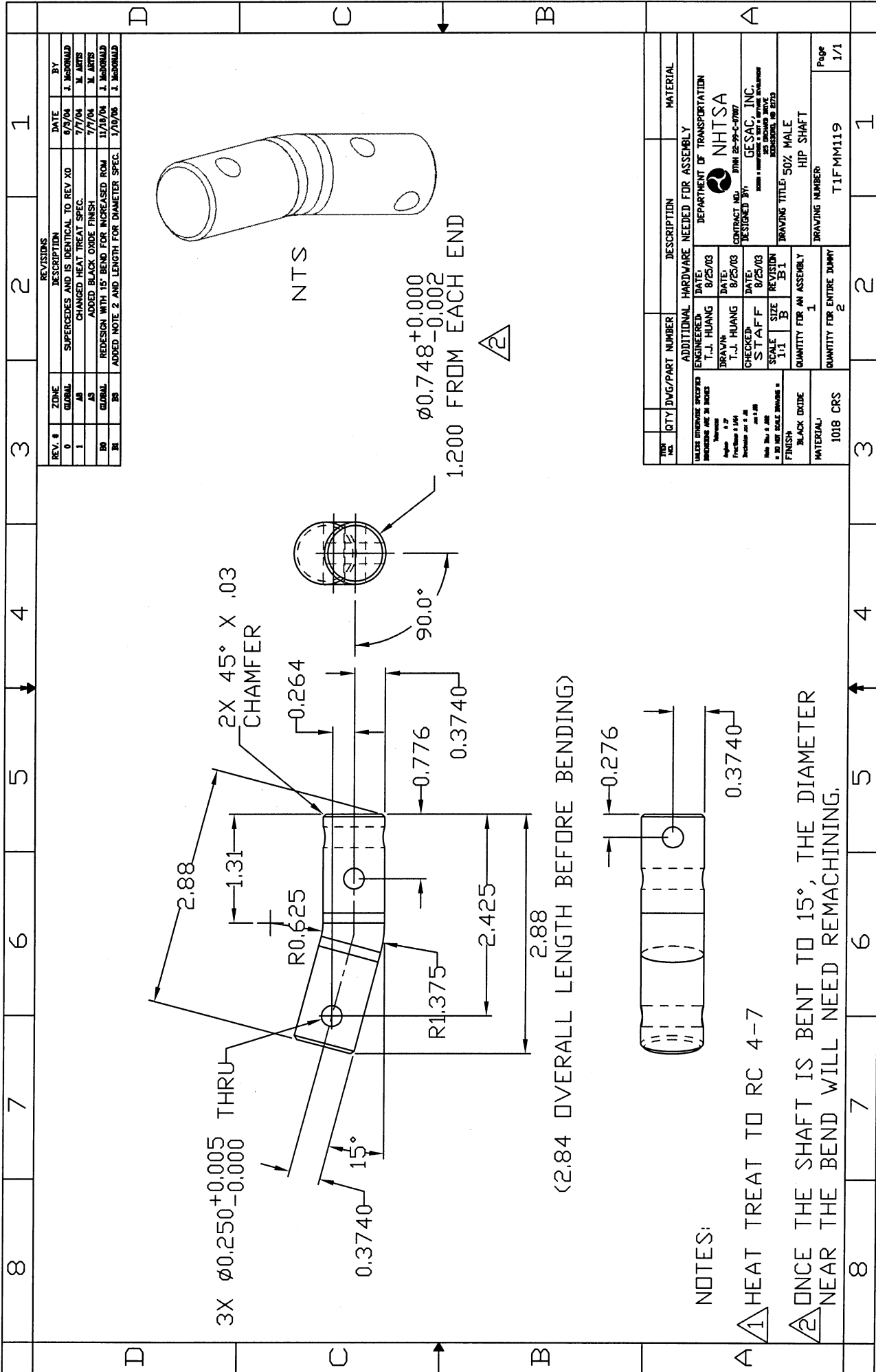


REV. #	ZONE	DESCRIPTION	DATE	BY
0	GLOBAL	SUPERCEDES AND IS IDENTICAL TO REV X0	6/9/04	J. McDONALD
1	TITLE BLOCK	ADDED BLACK TEFLON FINISH	5/11/04	J. McDONALD
2	GLOBAL	REMOVE CHAMFER, ADD RADI ON PART EDGES	11/17/04	J. McDONALD

NOTE:
1. BREAK ALL SHARP EDGES

ITEM NO.	QTY	DWG/PART NUMBER	DESCRIPTION	MATERIAL
ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY DEPARTMENT OF TRANSPORTATION NHTSA CONTRACT NO. DTNH 22-99-C-07007 DESIGNED BY: GESAC, INC. <small>GESAC - MANUFACTURING & TEST & SERVICE DEVELOPMENT 1525 DICKENS DRIVE FREDERICK, MD 21753</small>				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		ENGINEERED BY: T.J. HUANG	DATE: 8/11/03	
Tolerances: Angles ± 1° Fractions ± 1/48 Inclusive Dec ± .005 Hole Dia ± .005		DRAWN BY: T.J. HUANG	DATE: 8/11/03	
FINISH: BLACK TEFLON		CHECKED BY: STAFF	DATE: 8/13/03	
MATERIAL: 1018 CRS		SCALE: 1:1	SIZE: C	
QUANTITY FOR AN ASSEMBLY: 1		REVISION: 1		
QUANTITY FOR ENTIRE DUMMY: 1				
10	4	3	2	1
9	5	6	7	8
8	6	7	8	9
7	7	8	9	10
6	8	9	10	
5	9			
4	10			
3				
2				
1				

J	I	H	G	F	E	D	C	B	A	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
<p>REV. # ZONE DESCRIPTION DATE BY</p> <p>1 GLOBAL REMOVED HEAT TREATING NOTE & ADDED FINISH 7/7/04 M. ARTIS</p> <p>20 GLOBAL REDESIGNED PART TO INCREASE HIP JOINT RDN 11/7/04 J. McDONALD</p> <p>21 9.C CHANGED THREAD DEPTH FROM 0.65 TO 0.35 12/28/2004 J. McDONALD</p> <p>22 11.G & 6.J CHANGED 2.00 TO 2.00 . SPECIFY 1.00 DEPTH 1/7/05 J. McDONALD</p>																									
<p>NTS</p>																									
<p>ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY</p> <p>ENGINEERED: T.J. HUANG DATE: 8/11/03</p> <p>DRAWN: T.J. HUANG DATE: 8/11/03</p> <p>CHECKED: STAFF DATE: 8/14/03</p> <p>SCALE: 1:1 SIZE: D</p> <p>FINISH: BLACK TEFLON</p> <p>QUANTITY FOR AN ASSEMBLY: 1</p> <p>QUANTITY FOR ENTIRE DUMMY: 1</p> <p>MATERIAL: 1018 CRS</p>																									
<p>DESCRIPTION: DEPARTMENT OF TRANSPORTATION</p> <p>NHTSA</p> <p>CONTRACT NO: DTNH 22-99-C-07007</p> <p>DESIGNED BY: GESAC, INC.</p> <p>DRAWING TITLE: 50% MALE HIP ARM RIGHT</p> <p>DRAWING NUMBER: T1FMM117</p> <p>Page: 1/1</p>																									
<p>NOTES:</p> <p>1. BREAK ALL SHARP EDGES.</p> <p>2. PLUG ALL HOLES BEFORE APPLYING SURFACE FINISH.</p>																									
J	I	H	G	F	E	D	C	B	A	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1



REV. #	ZONE	DESCRIPTION	DATE	BY
0	GLOBAL	SUPERCEDES AND IS IDENTICAL TO REV X0	6/2/04	J. McDONALD
1	AS	CHANGED HEAT TREAT SPEC.	7/7/04	M. ARTS
	AS	ADDED BLACK OXIDE FINISH	7/7/04	M. ARTS
10	GLOBAL	REDESIGN WITH 15° BEND FOR INCREASED ROM	11/18/04	J. McDONALD
11	BS	ADDED NOTE 2 AND LENGTH FOR DIAMETER SPEC.	1/10/06	J. McDONALD

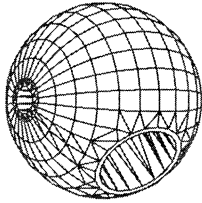
TYPE	QTY	DWG/PART NUMBER	DESCRIPTION	MATERIAL
ADDITIONAL			HARDWARE NEEDED FOR ASSEMBLY	
ENGINEERED	T.J. HUANG	DATE: 8/25/03	DEPARTMENT OF TRANSPORTATION	
DRAWN	T.J. HUANG	DATE: 8/25/03	NHTSA	
CHECKED	STAFF	DATE: 8/25/03	CONTRACT NO. DTML 22-25-C-0707	
SCALE	1:1	SIZE B	DESIGNED BY: GESAC, INC.	
REVISION	B1		DATE: 11/18/04	
QUANTITY FOR AN ASSEMBLY	1		DRAWING TITLE: 50% MALE	
QUANTITY FOR ENTIRE DUMMY	2		DRAWING NUMBER: TIFMM119	
MATERIAL:	1018 CRS			Page 1/1

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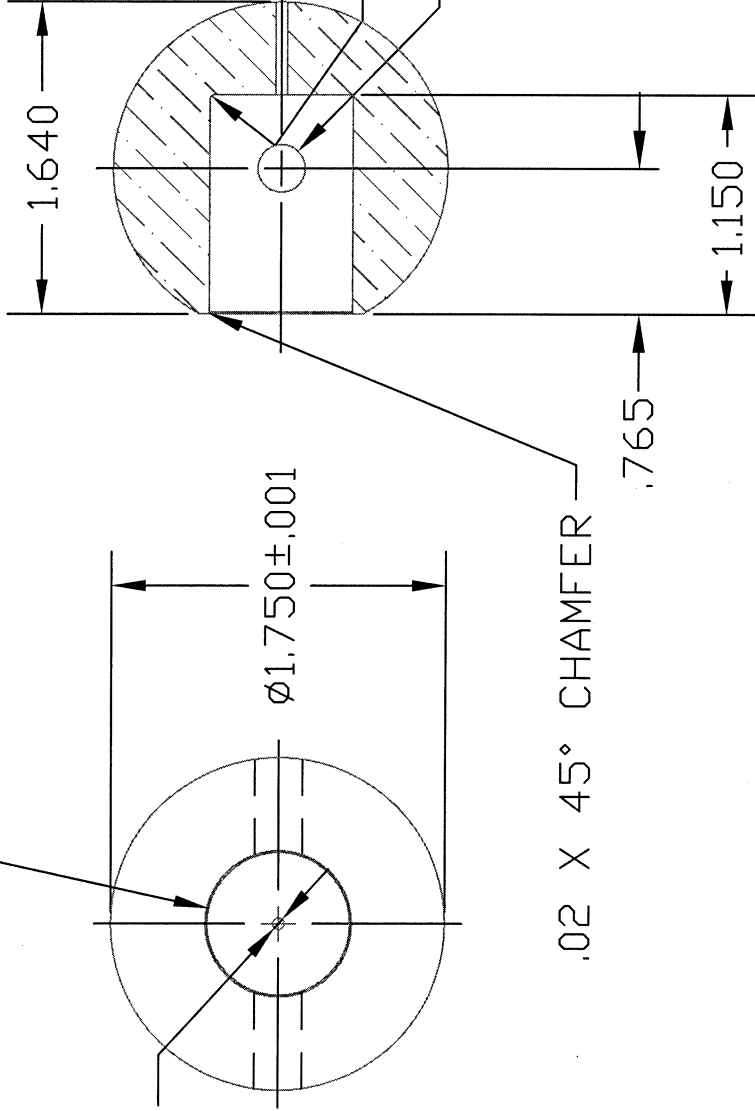
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$\phi .7500 \pm .0005$ C'BORE AS SHOWN

$\phi .062^{+.004}_{-.002}$ THRU

$\phi 1.750 \pm .001$



NOTE

1 PART MUST BE FREE FROM BURRS AND SHARP EDGES

2 REFERENCE GENERAL MOTORS PROVING GROUNDS DWG# 78051-257 (HYBRID III)

REV. #	ZONE	DESCRIPTION	DATE	BY
1	GLOBAL	ADDED ARROWHEAD AND LEADING ZERO TO DIMENSIONS	8/11/98	J. POLAND
2	C2	ADDED DOWEL PIN THROUGH HOLE	12/13/98	J. MADONALD

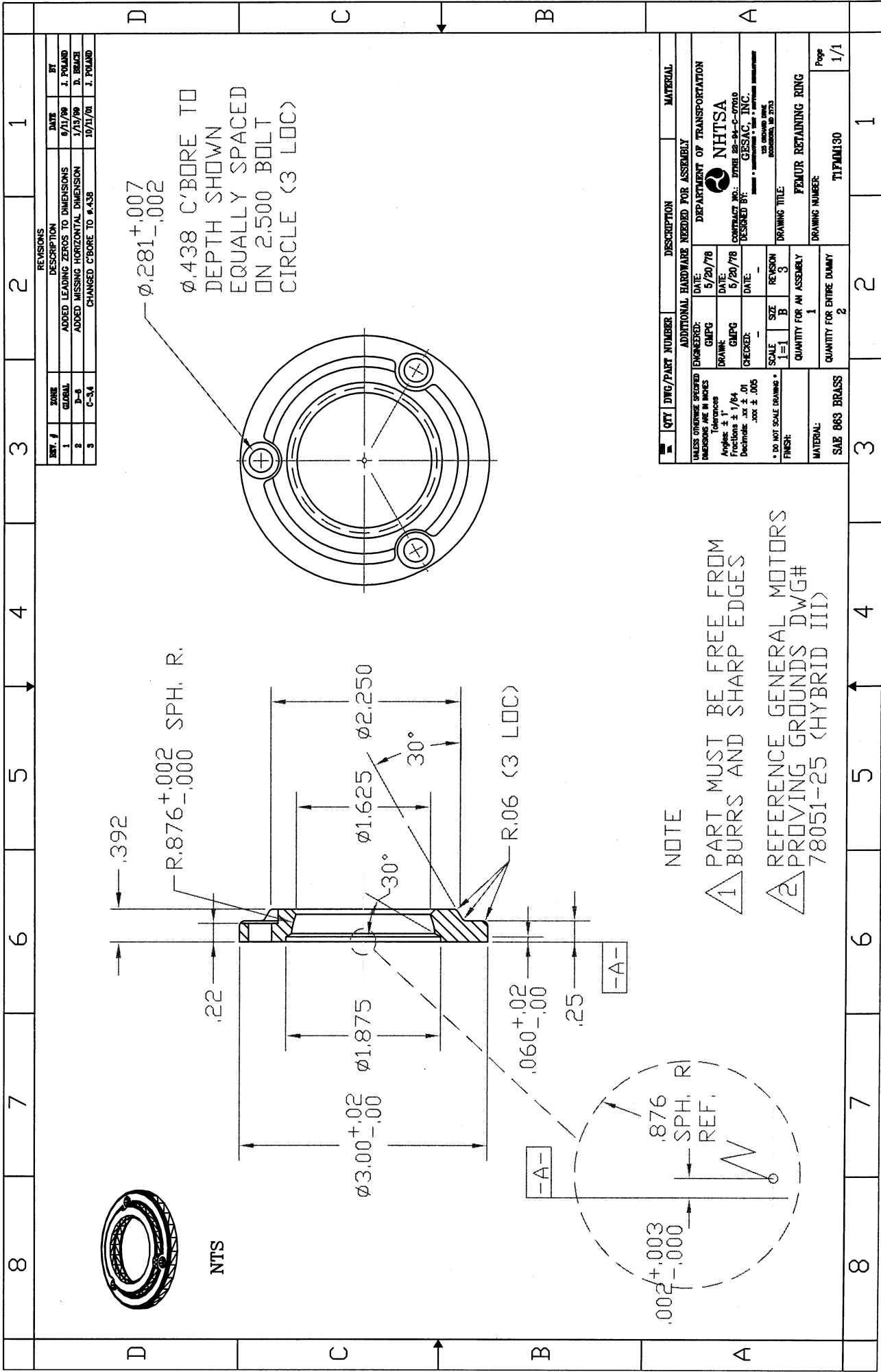
QTY	DWG/PART NUMBER	DESCRIPTION	MATERIAL
		ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY	
	ENGINEERED: GMPG	DATE: 5/20/78	DEPARTMENT OF TRANSPORTATION
	DRAWN: GMPG	DATE: 5/20/78	NHTSA
	CHECKED: GMPG	DATE: 5/20/78	CONTRACT NO.: DTMB 82-84-C-07010
			DESIGNED BY: GESAC, INC.
			125 ORLANDO BLVD. BOEBSSEN, MD 2713
	SCALE: 1=1	SIZE: A	REVISION: 2
	FINISH: ALUMINUM BRONZE	QUANTITY FOR AN ASSEMBLY: 1	DRAWING TITLE: FEMUR BALL
		QUANTITY FOR ENTIRE DUMMY: 2	DRAWING NUMBER: TIFMM120
			Page: 1/1

4

3

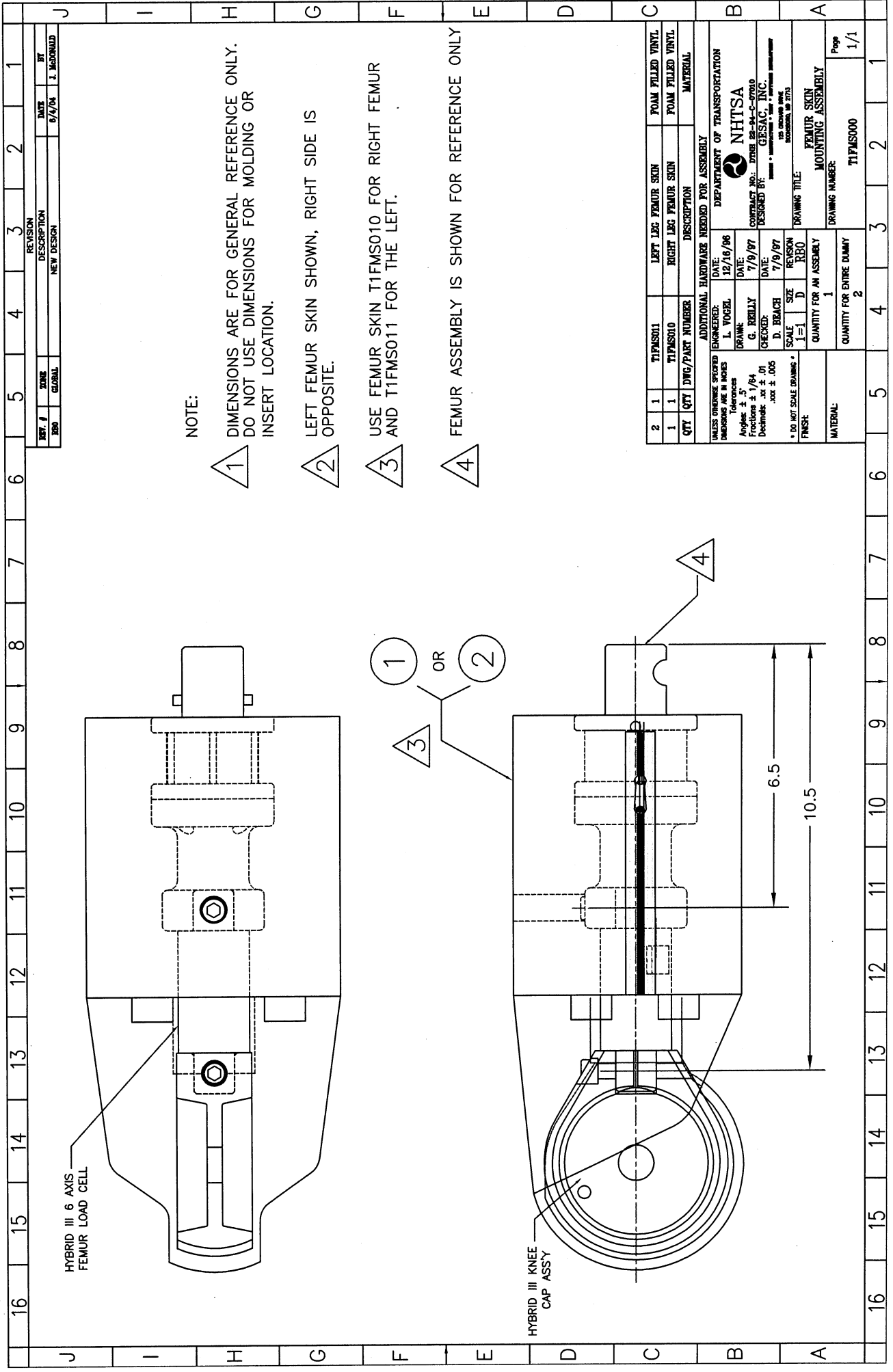
2

1



REVISIONS			
REV. #	DATE	DESCRIPTION	BY
1	9/11/78	ADDED LEADING ZEROS TO DIMENSIONS	J. FOLAND
2	1/25/78	ADDED MISSING HORIZONTAL DIMENSION	D. BRUCE
3	10/11/78	CHANGED C'BORE TO #.438	J. FOLAND

QTY	DWG/PART NUMBER	DESCRIPTION	MATERIAL
1		ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES			
Tolerances			
Angles: ± 1°			
Fractions: ± 1/64			
Decimals: .001			
Holes: ± .005			
* DO NOT SCALE DRAWING *			
FINISH:			
SCALE: 1" = 1" B			
REVISION: 3			
DATE: 5/20/78			
ENGINEERED BY: GMPC			
DRAWN BY: GMPC			
CHECKED BY: GMPC			
DATE: 5/20/78			
DEPARTMENT OF TRANSFORMATION			
NHTSA			
CONTRACT NO.: DTRE 83-1-4-0700			
DESIGNED BY: GESSAC, INC.			
125 GROUND RING			
BOSTON, MA 02133			
DRAWING TITLE: FEMUR RETAINING RING			
QUANTITY FOR AN ASSEMBLY: 1			
QUANTITY FOR ENTIRE DUMMY: 2			
MATERIAL: SAE 863 BRASS			
DRAWING NUMBER: T1FM130			
Page: 1/1			



NOTE:

1 DIMENSIONS ARE FOR GENERAL REFERENCE ONLY. DO NOT USE DIMENSIONS FOR MOLDING OR INSERT LOCATION.

2 LEFT FEMUR SKIN SHOWN, RIGHT SIDE IS OPPOSITE.

3 USE FEMUR SKIN T1FMS010 FOR RIGHT FEMUR AND T1FMS011 FOR THE LEFT.

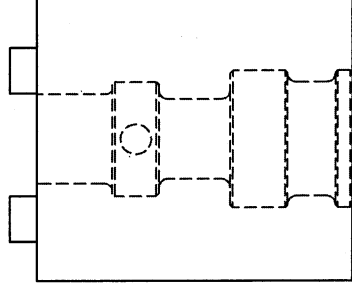
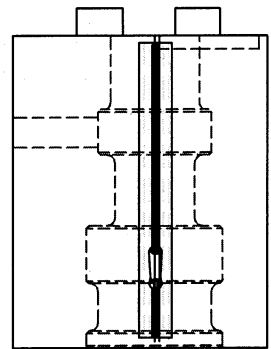
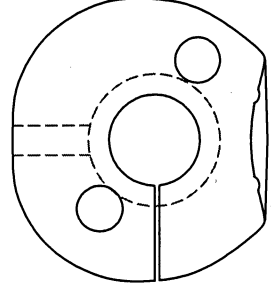
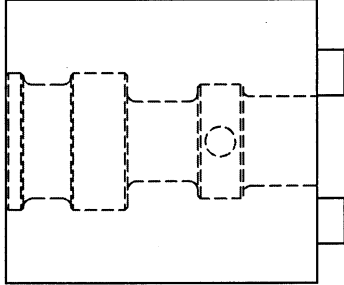
4 FEMUR ASSEMBLY IS SHOWN FOR REFERENCE ONLY

REV. #	ZONE	GLOBAL	REVISION DESCRIPTION	DATE	BY
1	GLOBAL		NEW DESIGN	9/9/04	J. BARNUM

2	1	T1FMS011	LEFT LEG FEMUR SKIN	FOAM FILLED VINYL
1	1	T1FMS010	RIGHT LEG FEMUR SKIN	FOAM FILLED VINYL
QTY	DWG/PART NUMBER	DESCRIPTION	MATERIAL	
ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY				
UNLESS OTHERWISE SPECIFIED		ENGINEERED:	DATE:	DEPARTMENT OF TRANSPORTATION
DIMENSIONS ARE IN INCHES		L. VOGEL	12/16/06	NHTSA
Tolerances		DRAWN:	DATE:	
Angles ± .5°		G. REBILLY	7/9/97	
Fractions ± 1/64		CHECKED:	DATE:	CONTRACT NO.: DTRC 63-02-000
Decimals .001		D. BRACH	7/9/97	DESIGNED BY: GESSAC, INC.
.002 ± .005		SCALE	SIZE	125 ORLAND AVE
* DO NOT SCALE DRAWING *		SCALE	REVISION	ROCKFORD, IL 61153
FINISH:		1=D	RBO	
MATERIAL:		DRAWING TITLE: FEMUR SKIN MOUNTING ASSEMBLY		
QUANTITY FOR AN ASSEMBLY		DRAWING NUMBER: T1FMS000		
1		Popo 1/1		
QUANTITY FOR ENTIRE DUMMY		1		
2		2		

22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	
P	O	N	M	L	K	J	I	H	G	F	E	D	C	B	A							

REV. #	ZONE	REVISION	DATE	BY
100	GLOBAL	NEW DESIGN	6/1/94	J.MCDONALD



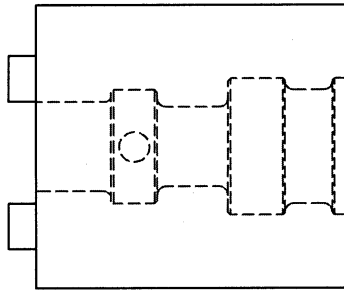
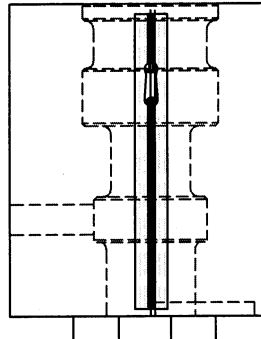
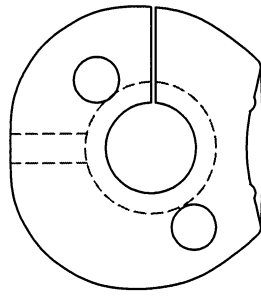
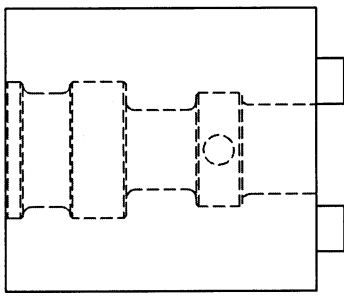
NOTES:

- 1 THE OUTER SKIN MATERIAL IS VINYL AND THE FILLER MATERIAL IS A 3 lb/in³ POLYURETHANE EXPANDABLE FOAM.
- 2 MATERIAL: LAKESIDE PLASTICS, INC LA-123 FLESH-TONE
- 3 PART IS AVAILABLE BY REQUEST FROM NHTSA.
- 4 FEMUR SKIN IS SPLIT ALONG THE SIDE AS SHOWN AND A ZIPPER IS BONDED TO THE OUTSIDE OF THE SKIN.
- 5 THIS DRAWING IS ONLY A REPRESENTATION OF THE SKIN AND IS NOT MEANT TO BE SCALED
- 6 THE ZIPPER IS PURCHASED FROM LENZIP CORP: LENGTH= 6.5", BLACK POLYESTER, MESH= #9 METAL (BRASS), ZIPPER TYPE= SEPARATING STYLE, SLIDER TYPE= 30-D (AUTO-LOCK).

1	1	QTY	DWG/PART NUMBER	SEE NOTE	DESCRIPTION	PURCHASE MATERIAL
ADDITIONAL HARDWARE NEEDED FOR ASSEMBLY UNLESS OTHERWISE SPECIFIED: DATE: 5/4/96 DIMENSIONS ARE IN INCHES: D. BEACH Tolerances: DRAWN: G. REILLY DATE: 7/9/97 Angles: ± .5° CHECKED: D. BEACH DATE: 7/9/97 Fractions: ± 1/64 SCALE: SIZE REVISION Decimals: .xx ± .01 1=1 E RBO .xxx ± .005 * DO NOT SCALE DRAWING * FINISH: QUANTITY FOR AN ASSEMBLY: 1 MATERIAL: QUANTITY FOR ENTIRE DUMMY: 1						
DEPARTMENT OF TRANSPORTATION NHTSA CONTRACT NO.: DTMB 82-94-C-07010 DESIGNED BY: GESAC, INC. <small>125 ORCHARD DRIVE BOSSERT, MD 21775</small> DRAWING TITLE: FEMUR SKIN RIGHT LEG DRAWING NUMBER: T1FM5010 Page 1/1						

22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	
P	O	N	M	L	K	J	I	H	G	F	E	D	C	B	A							

REV. #	ZONE	REVISION	DATE	BY
001	GLOBAL	NEW DESIGN	6/4/04	J.MCDONALD



NOTES:

- 1 THE OUTER SKIN MATERIAL IS VINYL AND THE FILLER MATERIAL IS A 3 lb/in³ POLYURETHANE EXPANDABLE FOAM.
- 2 MATERIAL: LAKESIDE PLASTICS, INC LA-123 FLESHSTONE
- 3 PART IS AVAILABLE BY REQUEST FROM NHTSA.
- 4 FEMUR SKIN IS SPLIT ALONG THE SIDE AS SHOWN AND A ZIPPER IS BONDED TO THE OUTSIDE OF THE SKIN.
- 5 THIS DRAWING IS ONLY A REPRESENTATION OF THE SKIN AND IS NOT MEANT TO BE SCALED
- 6 THE ZIPPER IS PURCHASED FROM LENZIP CORP. LENGTH= 6.5", BLACK POLYESTER, MESH= #9 METAL (BRASS), ZIPPER TYPE= SEPARATING STYLE, SLIDER TYPE= 30-D (AUTO-LOCK).

1	1	SEE NOTE	PURCHASED
2	QTY	DWG/PART NUMBER	DESCRIPTION
MATERIAL			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES			
Tolerances			
Angles: ± .5°			
Fractions: ± 1/64			
Decimals: .xx ± .01			
.xxx ± .005			
* DO NOT SCALE DRAWING *			
FINISH:			
SCALE: 1=1			
SIZE: E			
REVISION: RBO			
QUANTITY FOR AN ASSEMBLY: 1			
MATERIAL: FEMUR SKIN LEFT LEG			
DRAWING TITLE: FEMUR SKIN LEFT LEG			
DRAWING NUMBER: TTFMS011			
Page: 1/1			



DEPARTMENT OF TRANSPORTATION
 NHTSA
 CONTRACT NO.: DTN1 22-94-C-07010
 DESIGNED BY: GESAC, INC.
 125 ORCHARD DRIVE
 BOZEMAN, MD 2715