



DOCUMENT CHANGE NOTICE (DCN)

DOCUMENT No. (DOC-REV-GP. ID)	TITLE	NEW REV.
D970506-A-D	LOS2 Structure Assembly (Beamsplitter)	B
D970545-A-D	LOS2 Bracket, Sensor/Actuator	B
D970546-A-D	LOS2 Safety Stop Bracket, Front	B
D970547-A-D	LOS2 Safety Stop Bracket, Rear	B
D970548-A-D	LOS2 Bracket, Side Sensor/Actuator, Left	B
D970549-A-D	LOS2 Adapter Plate	B
D970570-A-D	LOS2 Bracket, Side Sensor/Actuator, Right	B

CHANGE DESCRIPTION (FROM/TO):

1) D970506 sheet 1:

Changed dimensioning scheme for vertical locating of the upper two sensor/actuator brackets (items 6).

2) D970506 sheet 1:

Changed tolerance on vertical locating dimension of the side sensor/actuator brackets (item 9 & item 10) from +/- .03 to +/- .06.

3) D970545 through D970570:

Removed vent holes and added vent slots.

4) D970548 & D970570:

Increased outer radii of the OSEM holding feature from .71 to .85.

REASON FOR CHANGE: 1) To insure required locating accuracy of items 6. 2) Necessary due to 1). 3) To improve venting, avoid air traps. 4) Added material to accomodate loosened tolerance in 2).

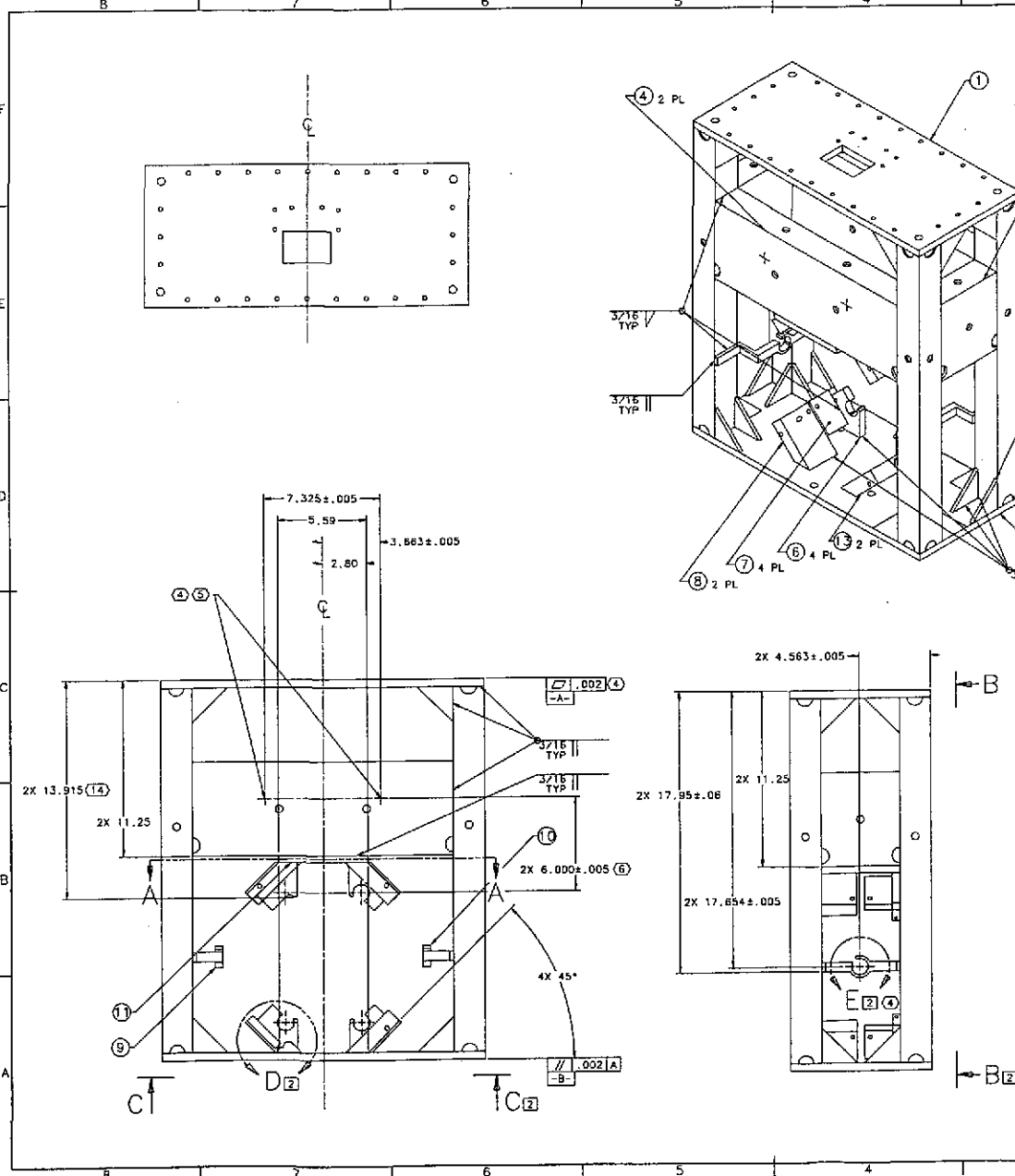
ACTION: Incorporate change Attach DCN to drawing(s) Other action (specify):

DISPOSITION OF HARDWARE (IDENTIFY SERIAL NUMBERS)	DCN DISTRIBUTION (X=incl. docs)
<input type="checkbox"/> No hardware affected (record change only)	Althouse Barish Coles
<input type="checkbox"/> List S/Ns which comply already:	x Coyne Lazzarini Lindquist
<input type="checkbox"/> List S/Ns to be reworked or scrapped:	Sanders Shoemaker Stapfer
<input checked="" type="checkbox"/> List S/Ns to be built with this change: all	Tyler Weiss Whitcomb
<input type="checkbox"/> List S/Ns to be retested per this change:	Billingsley Camp
<input type="checkbox"/>	x Conley Eliason
<input type="checkbox"/>	x Fine
<input type="checkbox"/>	x Hazel Romie
<input type="checkbox"/>	

SAFETY, COST, SCHEDULE, REQUIREMENTS IMPACT? No Yes (If yes, enter Change Request number)

APPROVALS:	DATE	OTHER APPROVALS (specify)	DATE
ORIGINATOR: C. Conley	8-25-98		
TASK LEADER: <i>M. Fine</i>	8-26-98		
GROUP LEADER: <i>Keith Taylor</i>	8/26/98		
DCC RELEASE: <i>DEB</i>			

REV. DATE	DRAWN BY	CHKD BY	DESCRIPTION
A 8-17-98	C. Conley	B. Coyne	E980078-00/INITIAL RELEASE
B 8-23-98	C. Conley		E980230-00



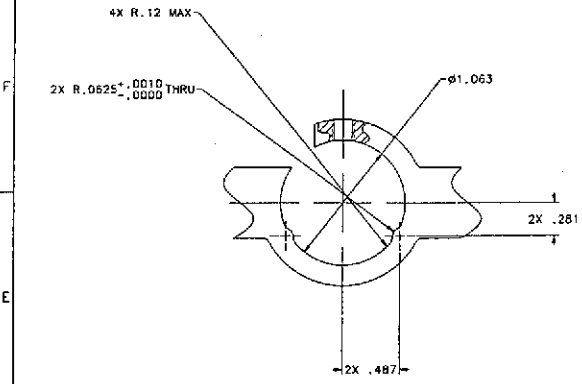
- NOTES: (UNLESS OTHERWISE SPECIFIED)
1. INTERPRET DRAWING PER ANSI Y14.5M-1982.
 2. BREAK ALL SHARP EDGES.
 3. SPECIFICATIONS FOR THE CONSTRUCTION OF THIS ASSEMBLY ARE DETAILED IN THE "LARGE OPTIC SUSPENSION STRUCTURAL FABRICATION SPECIFICATION" (LIGO E970038).
 4. NOTED FEATURES TO BE MACHINED AFTER ANNEALING.
 5. SIZE OF CROSSHAIR MARKS TO BE APPROXIMATELY AS SHOWN. ETCH OR SCRIBE ON FACE OF STRUCTURE AFTER ANNEALING. MAXIMUM WIDTH .01, MAXIMUM DEPTH .02.
 6. APPLY CROSSHAIRS AFTER ANNEALING. SEE VIEW B-B FOR LOCATIONS AND MACHINING DETAILS OF FEATURES ON ITEMS 6 (SENSOR/ACTUATOR BRACKET). FROM WHICH CROSSHAIRS ARE VERTICALLY LOCATED.
 7. WHEREVER APPLICABLE, PARTS AND FEATURES ARE LOCATED RELATIVE TO ITEM 1 (TOP PLATE).
 8. SIDE FACE OF ITEM 2 (BOTTOM PLATE).
 9. REFERENCE TO SIDE FACE OF ITEM 1 (TOP PLATE).
 10. TOOLING BALL TO BE MOUNTED ON DRILLING FIXTURE TO NOTED RELATIVE DIMENSIONS.
 11. GUSSET THICKNESSES ARE NOT TO SCALE IN DRAWING VIEWS.
 12. RELIEF SLOTS ON ITEMS 6 THROUGH 11 NOT SHOWN.
 13. INTERFACE BETWEEN ITEMS 4 (STIFFENER) AND 11 (ADAPTER PLATE); NOMINAL PIECE PART DIMENSIONS MAY NEED TO BE MODIFIED TO ASSURE FULL PENETRATION WELD AND FLUSH ALIGNMENT ±.05, OF ADAPTER PLATE TO STIFFENERS.
 14. ITEM 6 (SENSOR/ACTUATOR BRACKET) IS SHOWN IN THE UNMACHINED CONDITION FOR LOCATING DIMENSION.

ELECTRONIC COPY

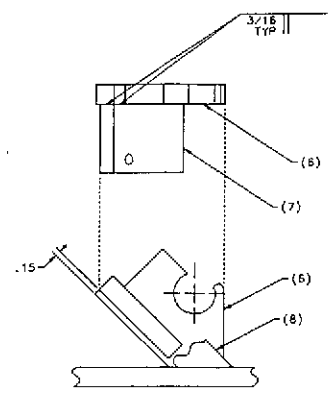
QTY	PART NO.	DESCRIPTION	UNIT
2	D970546-2	BRACKET, SAFETY STOP, FRONT	13
32		GUSSET, 2.25 x 2.25 x 45°, .12 THK	12
		(11)	304 STAINLESS STEEL
1	D970549	ADAPTER PLATE	11
1	D970550	BRACKET, SENSOR/ACTUATOR, RIGHT SIDE	10
1	D970548	BRACKET, SENSOR/ACTUATOR, LEFT SIDE	8
2	D970546-1	BRACKET, SAFETY STOP, FRONT	9
2	D970546	BRACKET, SAFETY STOP, REAR	8
2	D970547	BRACKET, SENSOR/ACTUATOR, REAR	8
1	D970543	FRONT STIFFENER	3
1	D970544	REAR STIFFENER	3
1	D970504	TOP PLATE	7
1	D970541	BOTTOM PLATE	7

DATE	8-17-98	TITLE	LIGO PROJECT
DRWN	C. Conley	SCALE	1:1
CHKD		SHEET	1 of 6
ENGR		UNLESS OTHERWISE SPECIFIED:	
APPD		DIMENSION LIMITS ARE (inch/len)	
		TOLERANCES ARE:	
		X.XXX: ± 0.01	
		X.XX: ± 0.03	
		X.X: ± 0.1	
		NEXT ASSEMBLY: D970505	

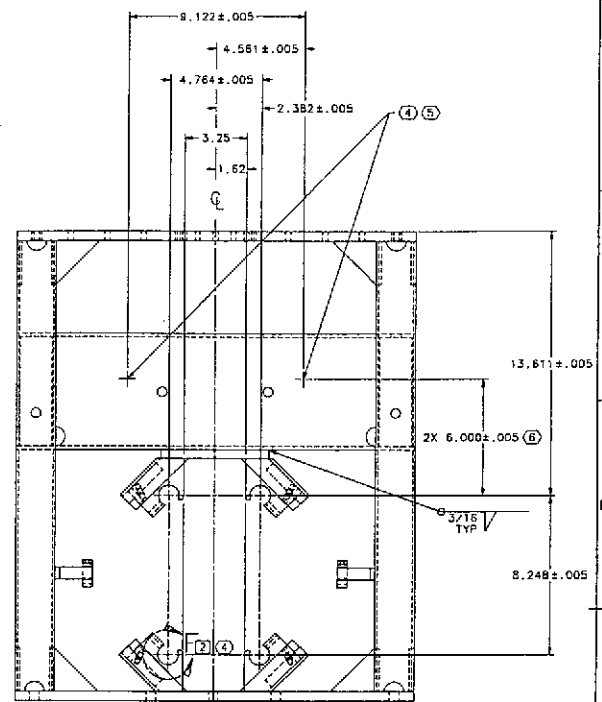
8 7 6 5 4 3 2 1



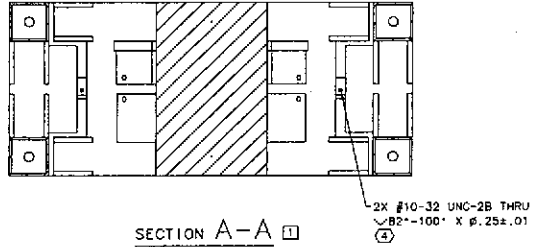
DETAIL E (1) (4)
MACHINED SENSOR/ACTUATOR RECEPTACLE, 2 PL



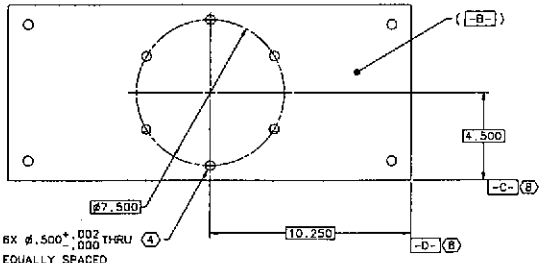
DETAIL D (1)
WELDMENT OF ITEM 6 (SENSOR/ACTUATOR BRACKET)
AND ITEM B (REAR SAFETY STOP BRACKET), 4 PL



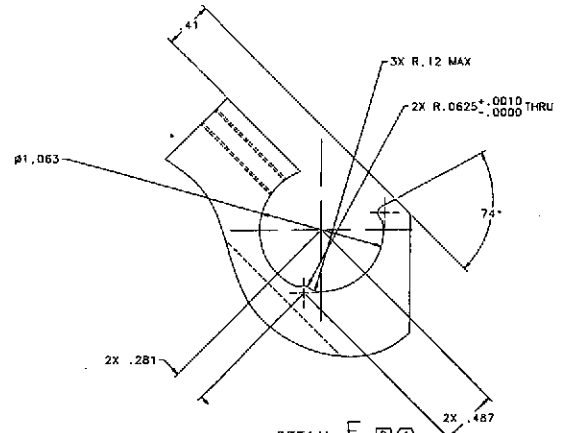
VIEW B-B (1)



SECTION A-A (1)



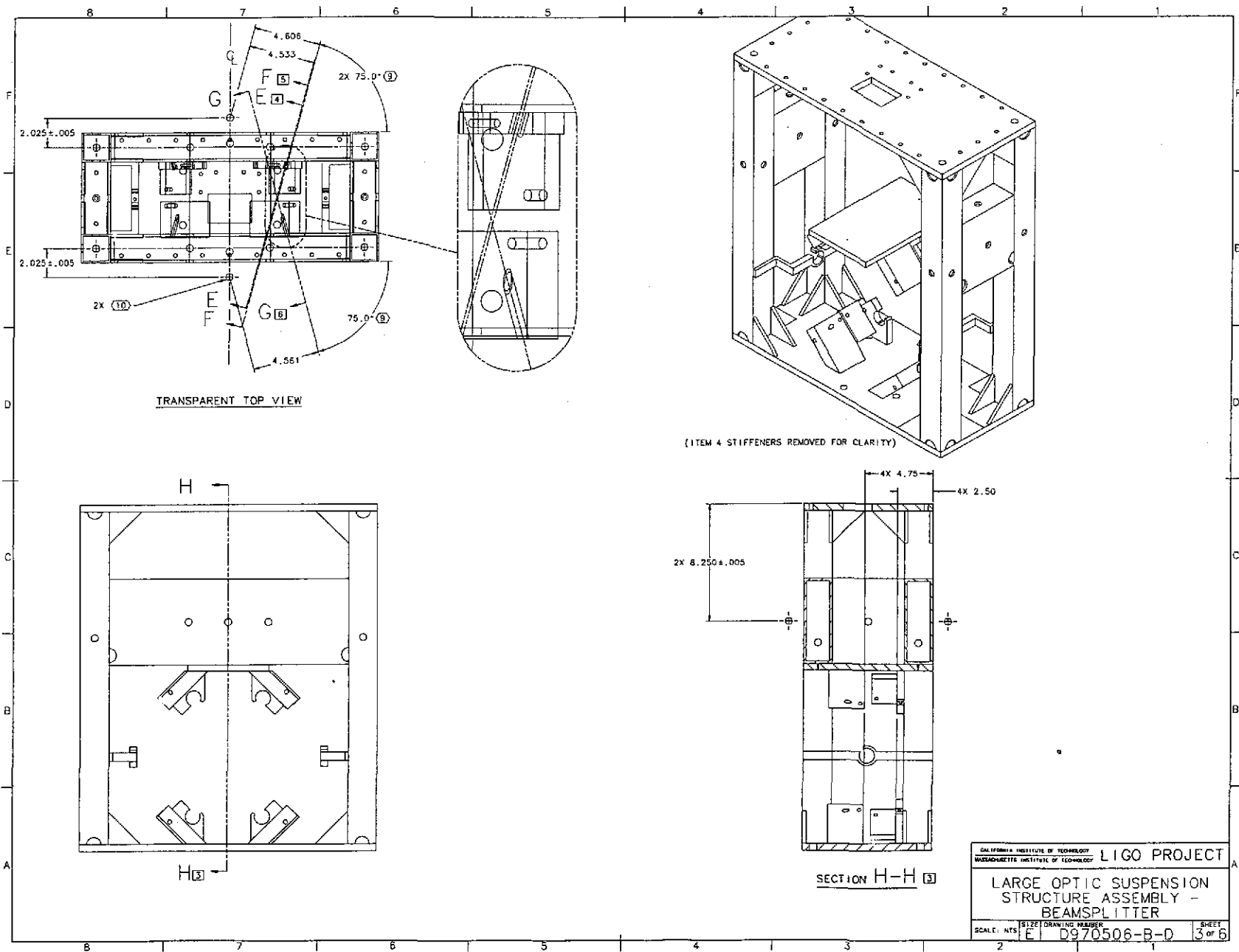
VIEW C-C (1)

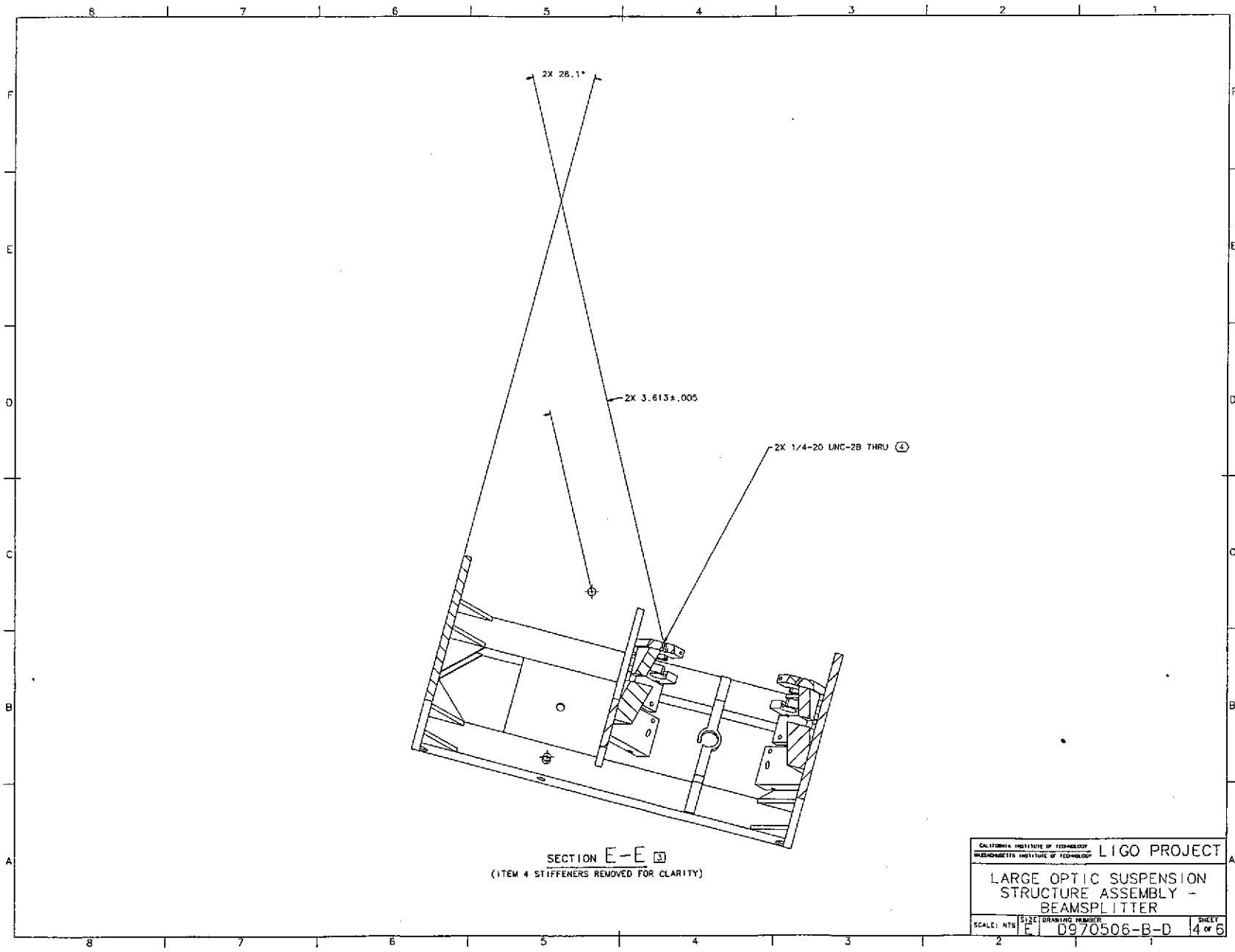


DETAIL F (2) (4)
MACHINED SENSOR/ACTUATOR RECEPTACLE, 4 PL

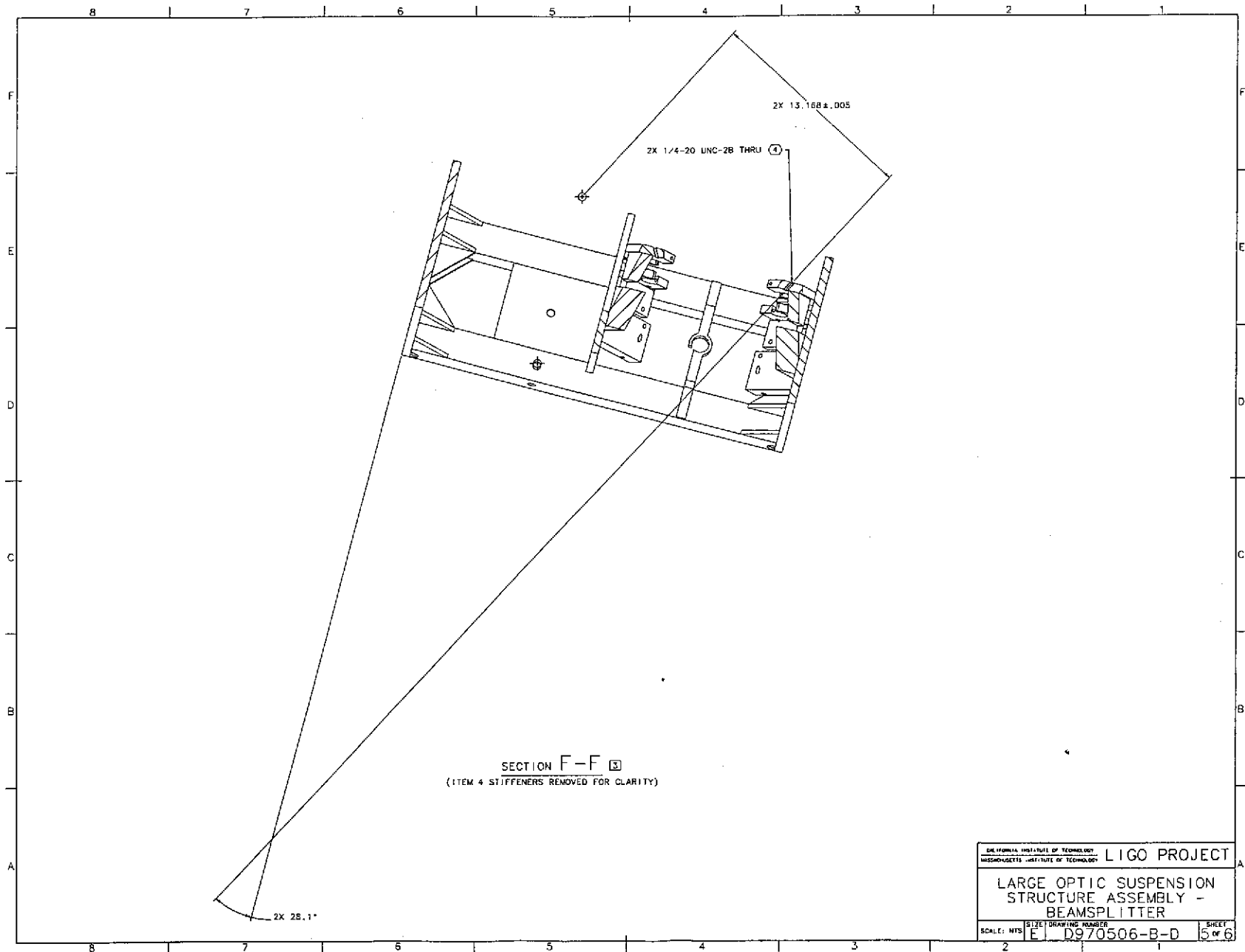
CALIFORNIA INSTITUTE OF TECHNOLOGY		LIGO PROJECT	
MICHIGAN STATE UNIVERSITY		MICHIGAN STATE UNIVERSITY	
LARGE OPTIC SUSPENSION STRUCTURE ASSEMBLY - BEAMSPLITTER			
SCALE: NTS	SIZE: E	DRAWING NUMBER: D970506-B-D	SHEET: 2 OF 6

8 7 6 5 4 3 2 1



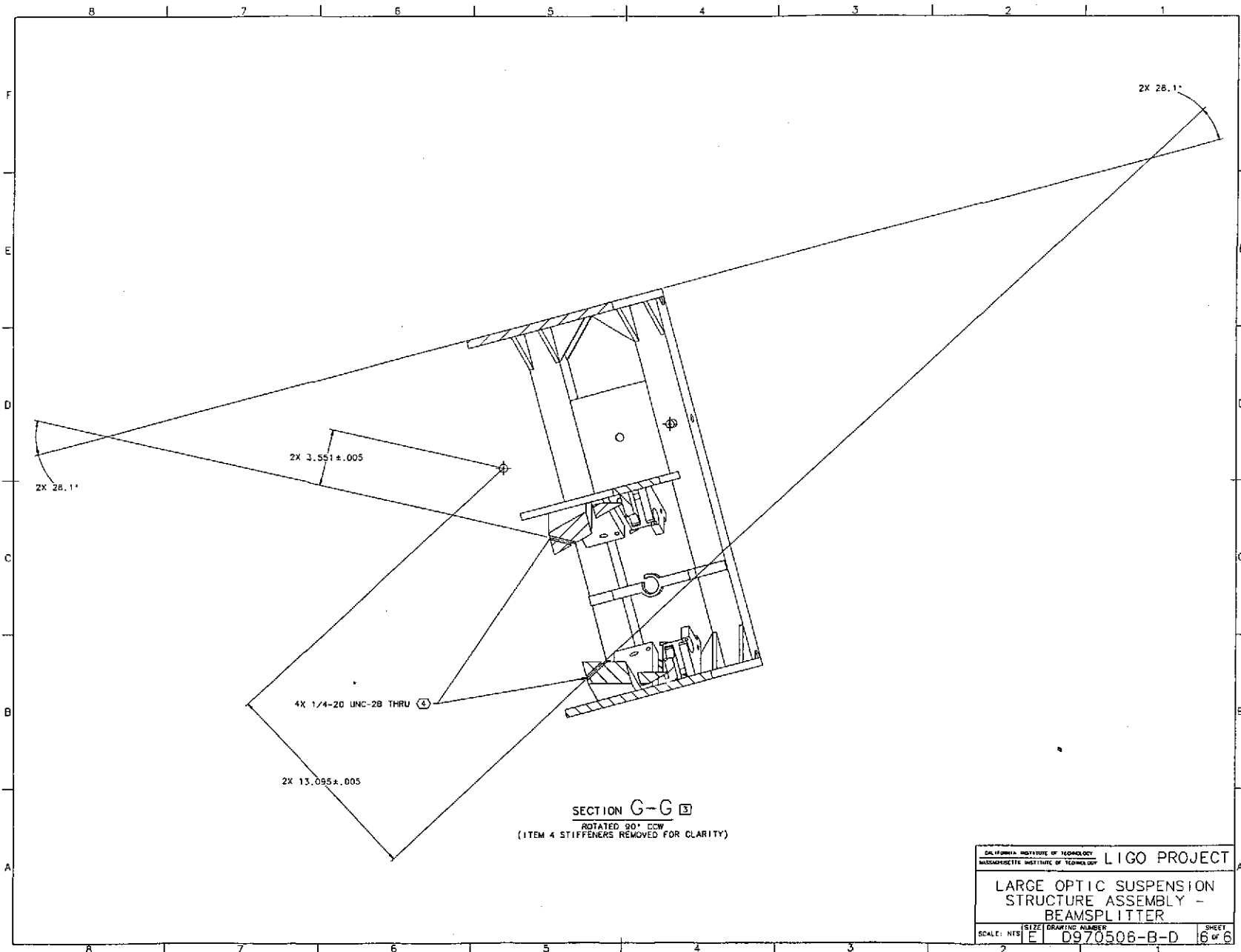


CALIFORNIA INSTITUTE OF TECHNOLOGY		LIGO PROJECT	
MICHIGAN STATE UNIVERSITY OF TECHNOLOGY			
LARGE OPTIC SUSPENSION STRUCTURE ASSEMBLY - BEAMSPLITTER			
SCALE: NTS	SIZE: E	DRAWING NUMBER: D970506-B-D	SHEET: 4 OF 6



SECTION F-F \square
 (ITEM 4 STIFFENERS REMOVED FOR CLARITY)

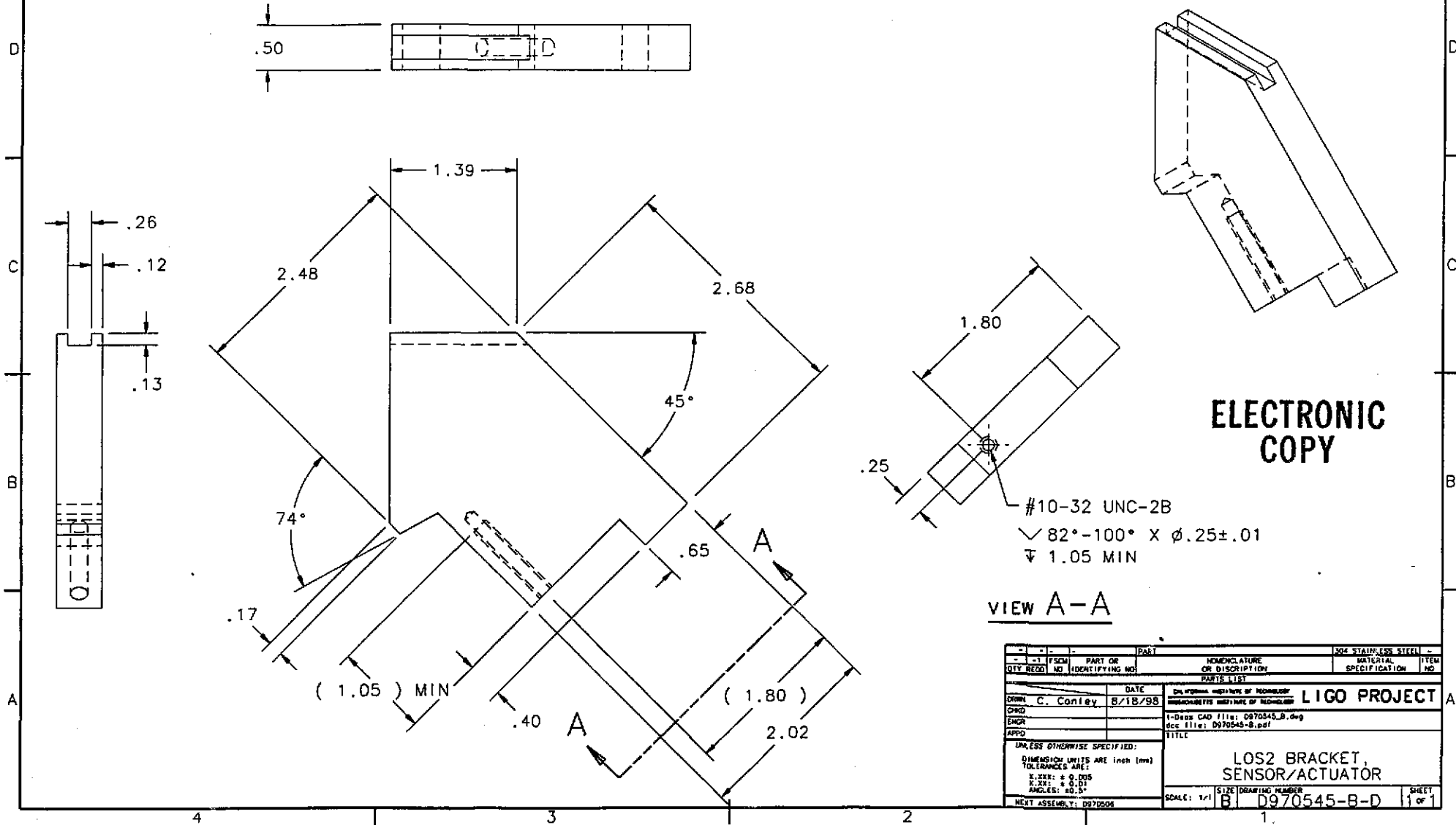
<small>CALIFORNIA INSTITUTE OF TECHNOLOGY</small> <small>MASSACHUSETTS INSTITUTE OF TECHNOLOGY</small>		LIGO PROJECT	
LARGE OPTIC SUSPENSION STRUCTURE ASSEMBLY - BEAMSPLITTER			
<small>SCALE: NTS</small>	<small>SIZE</small>	<small>DRAWING NUMBER</small>	<small>SHEET</small>
	E	D970506-B-D	5 of 6



CALIFORNIA INSTITUTE OF TECHNOLOGY		LIGO PROJECT	
MASSACHUSETTS INSTITUTE OF TECHNOLOGY			
LARGE OPTIC SUSPENSION STRUCTURE ASSEMBLY - BEAMSPLITTER			
SCALE: NTS	SIZE: E	DRAWING NUMBER: 0970506-B-D	SHEET: 6 of 6

NOTES: (UNLESS OTHERWISE SPECIFIED)
1. BREAK ALL SHARP EDGES.

REV	DATE	DRAWN BY	CHECKED	INSP	DESCRIPTION
A	8/18/98	C. Conley	D. Coyne		E980078-00/INITIAL RELEASE
B	8/23/98	C. Conley			E980230-00/REPLACED VENTING FEATURES

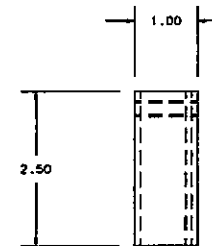
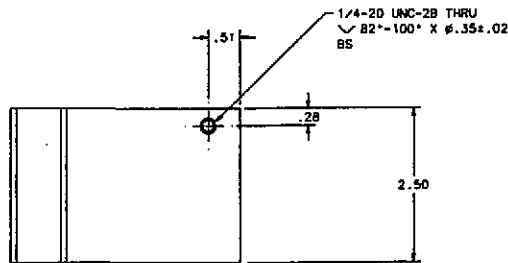
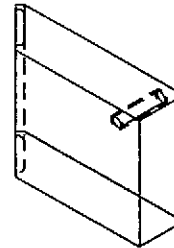
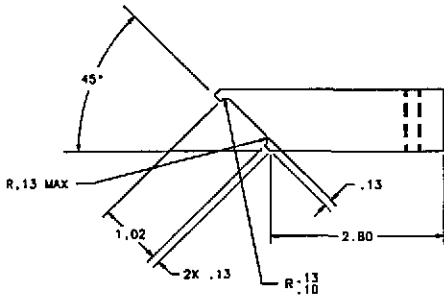


VIEW A-A

QTY		REQD	NO	IDENTIFYING NO	PART OR DISCRIPTION	PART	304 STAINLESS STEEL	MATERIAL SPECIFICATION	ITEM NO
PARTS LIST									
DRAWN		C. Conley		DATE		8/18/98		LIGO PROJECT	
ENGR				DATE				1-Dense CAD file: D970545_B.dwg doc file: D970545-B.pdf	
APPRO				DATE				TITLE	
UNLESS OTHERWISE SPECIFIED:		DIMENSIONS UNITS ARE inch (mm)		TOLERANCES ARE:		X.XXX: ± 0.005		X.XX: ± 0.01	
				ANGLES: ± 0.5°					
NEXT ASSEMBLY:		D970506		SCALE: 1/1		SIZE: B1		DRAWING NUMBER: D970545-B-D	
								SHEET 1 of 1	

NOTES: (UNLESS OTHERWISE SPECIFIED)
1. BREAK ALL SHARP EDGES.

REV	DATE	DRAWN BY	DESIGNED	CHK	DESCRIPTION
A	8/10/98	C. Conley	D. Coyne		E980218-00/INITIAL RELEASE
B	8/23/98	C. Conley			E980230-00/VENTING FEATURE ADDED



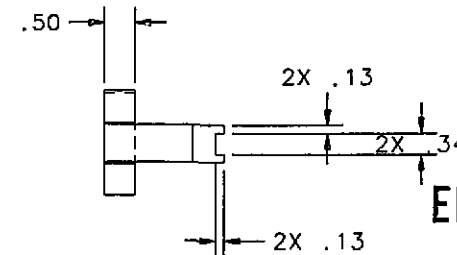
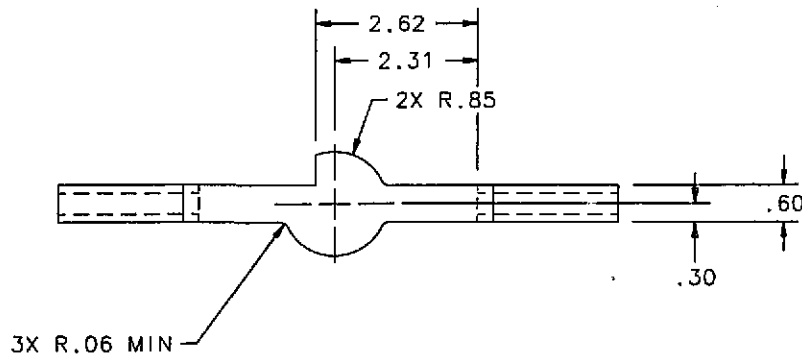
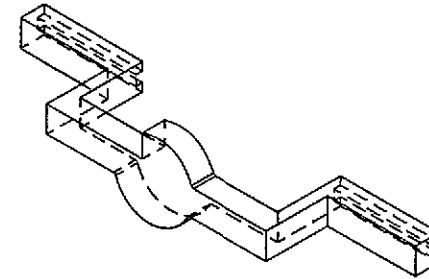
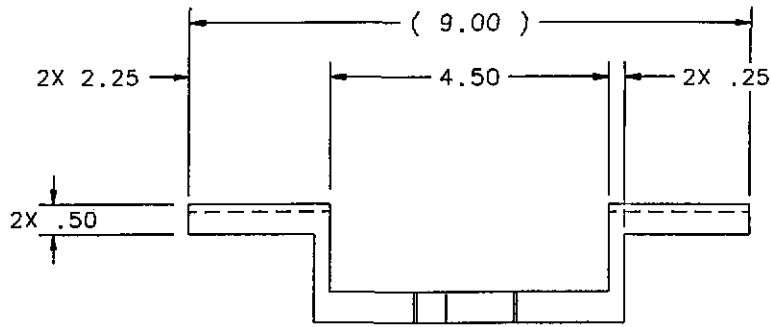
**ELECTRONIC
COPY**

D970546-1
D970546-2 IS MIRROR IMAGE

QTY	REQD	NO	PART OR IDENTIFYING NO	PART	DESCRIPTION OR DISPOSITION	MATERIAL SPECIFICATION	ITEM NO
PARTS LIST							
DRAWN: C. Conley				DATE: 8/10/98		CALCULATED WEIGHT OF MODEL: LIGO PROJECT	
ENGR:				CHECKED BY: D. Coyne		I-Date CAD file: D970546_B.dwg	
APPD:				SEC file: D970546-B.pdf		TITLE: LOS2 SAFETY STOP BRACKET FRONT	
UNLESS OTHERWISE SPECIFIED:							
DIMENSION UNITS ARE inch (mm)							
TOLERANCES ARE:							
X.XXX: ± 0.005							
X.XX: ± 0.01							
ANGLES: ± 0.5°							
NEXT ASSEMBLY: D970506							
SCALE: NTS						SIZE: B	DRAWING NUMBER: D970546-B-D
						SHEET: 1	OF 1

NOTES: (UNLESS OTHERWISE SPECIFIED)
 1. BREAK ALL SHARP EDGES.

REV	DATE	DRAWN BY	CHECKED	DOC	DESCRIPTION
A	8/18/98	C. Conley	D. Coyne		E980078-DD/INITIAL RELEASE
B	8/23/98	C. Conley			E980230-DD/REPLACED VENTING FEATURES



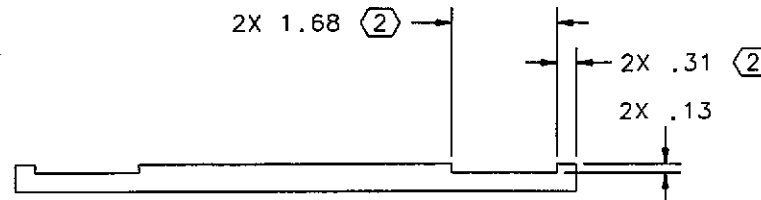
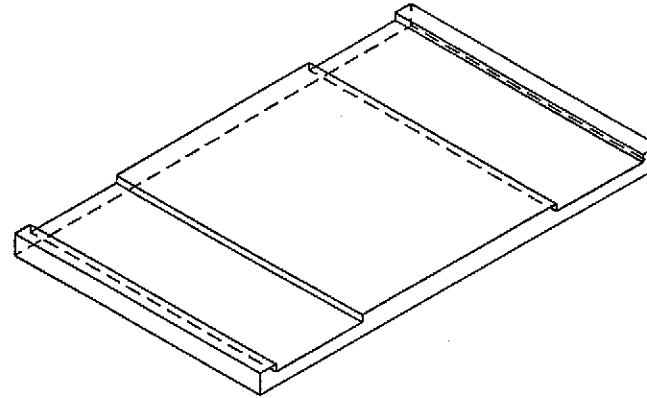
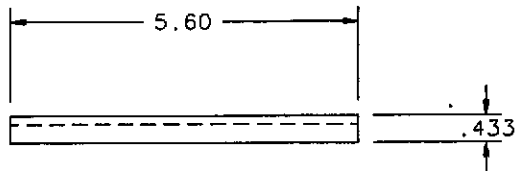
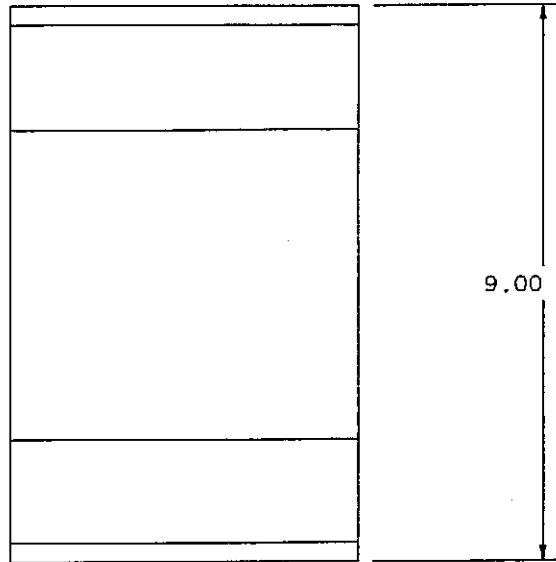
ELECTRONIC COPY

QTY	REQD	PART NO	IDENTIFICATION NO	PART OR IDENTIFICATION NO	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION	ITEM NO
					LIGO PROJECT		
DRAWN C. Conley					DATE 8/21/98	1-Desig CAD file: D970548_B.doc	
ENGR					doc file: D970548-B.pdf		
APPRO					TITLE		
UNLESS OTHERWISE SPECIFIED:					LOS2 BRACKET, SIDE SENSOR/ACTUATOR, LEFT		
DIMENSION UNITS ARE inch (mm)					SCALE: MTS		
TOLERANCES ARE:					FILE DRAWING NUMBER		
X.XXX: ± 0.008					B 0970548-B-D		
X.XX: ± 0.01					SHEET		
ANGLES: 30.0°					1 of 1		
NEXT ASSEMBLY: D076506							

NOTES: (UNLESS OTHERWISE SPECIFIED)
1. BREAK ALL SHARP EDGES.

② SEE NOTE 13 AT ASSEMBLY LEVEL TO ASSURE APPROPRIATE DIMENSION FOR FULL PENETRATION WELD.

REV	DATE	DRAWN BY	CHECKED	DOC	REV/DESCRIPTION
A	B/18/98	C. Conley	D. Coyne		E98007B-00/INITIAL RELEASE
B	B/22/98	C. Conley			E98023D-00/REPLACED VENTING FEATURES

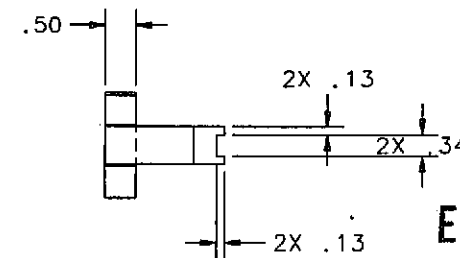
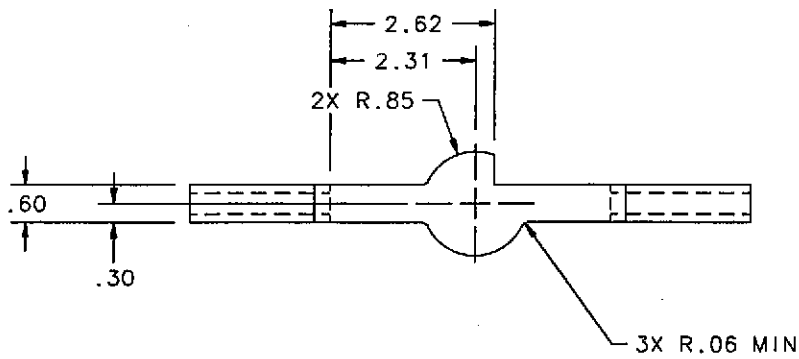
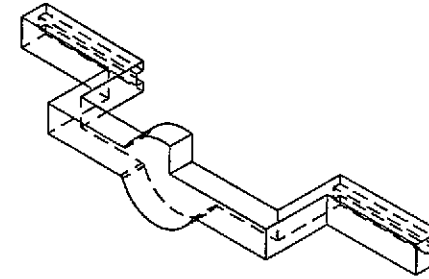
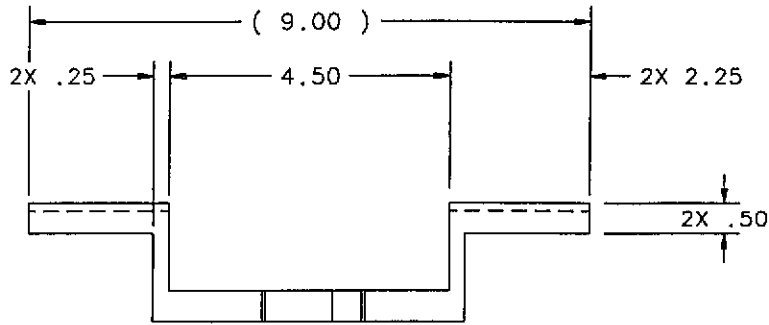


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QTY	FSCM	PART OR IDENTIFYING NO	DATE	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION	ITEM NO
					304 STAINLESS STEEL	
PARTS LIST						
DRWN	C. Conley	DATE	B/18/98	LIGO PROJECT		
CHKD		1-Draw CAD file: D970549_B.dwg				
ENGR		See file: D970549-B.pdf				
APPD		TITLE				
UNLESS OTHERWISE SPECIFIED:				LOS2 STIFFENER ADAPTER PLATE		
DIMENSION UNITS ARE Inch (mm)				SCALE: 1/2		
TOLERANCES ARE:				SIZE DRAWING NUMBER		
F. MAX: ± 0.005				B D970549-B-D		
Z. 25: ± 0.01				SHEET		
ANGLES: ± 0.5°				1 of 1		
NEXT ASSEMBLY: D970506						

NOTES: (UNLESS OTHERWISE SPECIFIED)
 1. BREAK ALL SHARP EDGES.

REV	DATE	DRAWN BY	CHECKED BY	DCR	DESCRIPTION
A	8/18/98	C. Conley	D. Coyne		E980078-00/INITIAL RELEASE
B	8/23/98	C. Conley			E980230-00/REPLACED VENTING FEATURES



ELECTRONIC COPY

QTY	REQD	PSQI NO	PART OR IDENTIFYING NO	PART NOMENCLATURE OR DESCRIPTION	304 STAINLESS STEEL MATERIAL SPECIFICATION	ITEM NO
PARTS LIST						
OWNER		DATE		CALIFORNIA INSTITUTION OF TECHNOLOGY		
C. Conley		8/18/98		LIGO PROJECT		
DRAWN		DATE		CALIFORNIA INSTITUTION OF TECHNOLOGY		
C. Conley		8/18/98		LIGO PROJECT		
ENGR		DATE		CALIFORNIA INSTITUTION OF TECHNOLOGY		
C. Conley		8/18/98		LIGO PROJECT		
APPD		DATE		CALIFORNIA INSTITUTION OF TECHNOLOGY		
C. Conley		8/18/98		LIGO PROJECT		
UNLESS OTHERWISE SPECIFIED:				TITLE		
DIMENSION UNITS ARE Inch (mm)				LOS2 BRACKET, SIDE SENSOR/ACTUATOR, RIGHT		
TOLERANCES ARE:				SCALE: 1/2		
X .XXX: ± 0.000				SIZE DRAWING NUMBER		
X .XX: ± 0.01				B1 D970570-B-D		
X .X: ± 0.05				SHEET		
X: ± 0.1				1 of 1		
ANGLES: ± 0.5°				NEXT ASSEMBLY: 0970008		