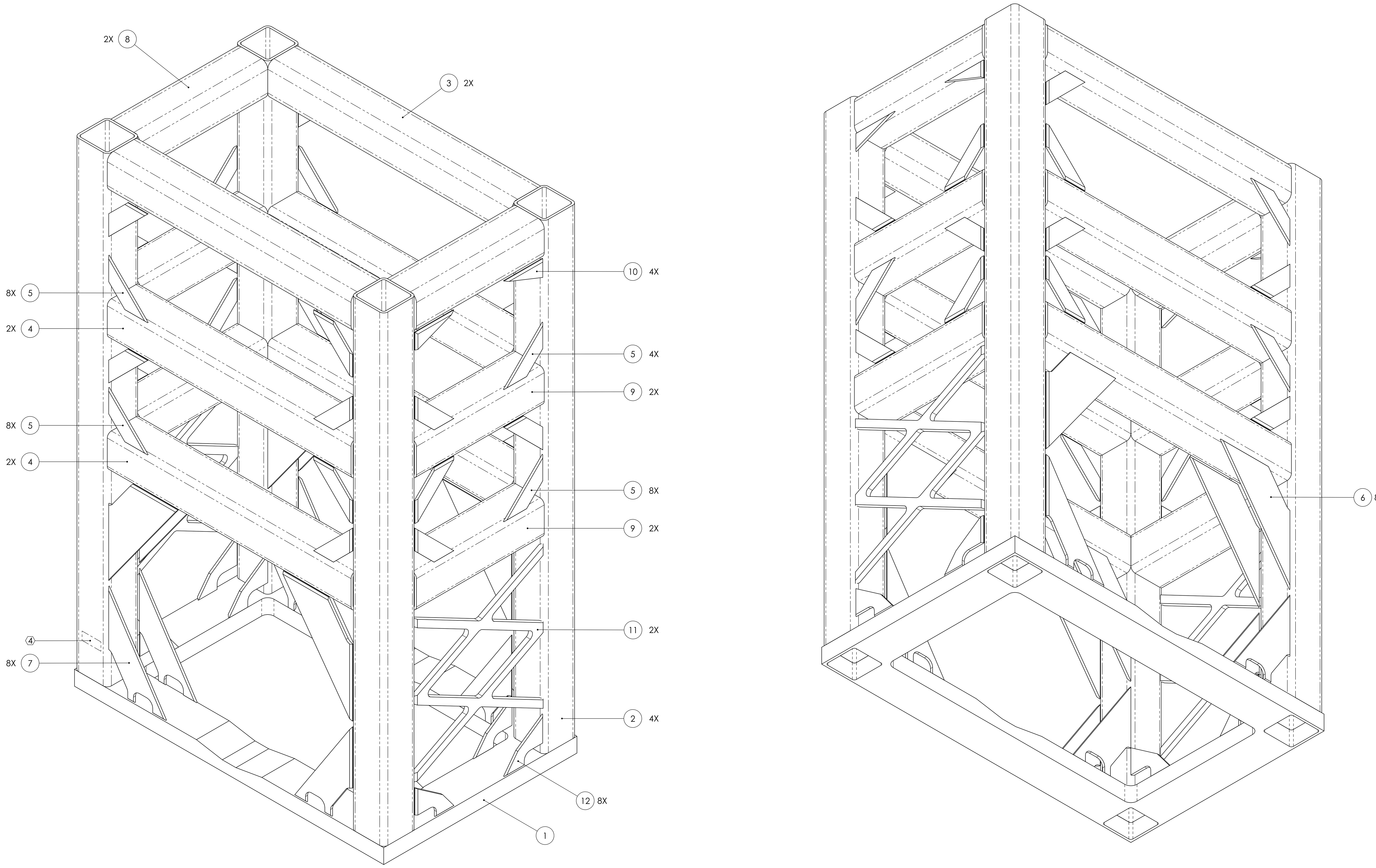
REV.	DATE	DCN #	DRAWING TREE #
v1	3 MAR 2009	E080446	E080191
v2	2 DEC 2009	E0900446	E080191
-	-	-	-



WELDMENT ISOMETRIC VIEWS

ITEM NO.	PART NUMBER	DESCRIPTION	MATERIAL	REQ	SPARE	TOTAL
12	D070577	SIDE GUSSET	304 SSTL	8	0	8
11	D070578	SIDE STRUT	304 SSTL	2	0	2
10	D070582	TOP GUSSET, SHORT	304 SSTL	4	0	4
9	D070584	SIDE CROSS BEAM, THIN	304 SSTL	4	0	4
8	D080282	SIDE CROSS BEAM, THICK	304 SSTL	2	0	2
7	D070576	LOWER FRONT GUSSET	304 SSTL	8	0	8
6	D070579	UPPER FRONT GUSSET	304 SSTL	8	0	8
5	D070580	TOP GUSSET	304 SSTL	28	0	28
4	D070583	FRONT CROSS BEAM, THIN	304 SSTL	4	0	4
3	D080283	FRONT CROSS BEAM, THICK	304 SSTL	2	0	2
2	D070581	LEG	304 SSTL	4	0	4
1	D070575	BASE PLATE	304 SSTL	1	0	1

PARTS LIST

ADDITIONAL NOTES:
5. PRIOR TO WELDING, ALL PARTS SHALL BE CLEANED, VACUUM BAKED, AND SEALED IN BAGS FOR DELIVERY TO THE WELDER.
6. ALL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH LIGO E0900048.
(7) HOLE THROUGH OUTER WALL OF TUBE ONLY.
(8) HOLE THROUGH INNER WALL OF TUBE ONLY.
(9) HOLE THROUGH BOTH WALLS OF TUBE.
(10) DO NOT DEBURR OR PERFORM OTHER SECONDARY OPERATIONS.

NOTES: (UNLESS OTHERWISE SPECIFIED)
1. REMOVE ALL SHARP EDGES, R.02 MIN.
2. DO NOT SCALE FROM DRAWING.
3. ALL MACHINING FLUIDS SHALL BE WATER SOLUBLE AND FREE OF SULFUR, CHLORINE AND SILICONE, SUCH AS CINCINNATI MILACRON'S CIMTECH 410 (SSTL)
(4) SCRIBE, ENGRAVE, OR MECHANICALLY STAMP (NO INKS OR DYES) DRAWING PART NUMBER AND REVISION ON NOTED SURFACE FOLLOWED ON THE NEXT LINE BY A THREE DIGIT SERIAL NUMBER. SERIAL NUMBERS START AT 001 FOR THE FIRST ARTICLE AND PROCEED CONSECUTIVELY. USE .07" HIGH CHARACTERS. EXAMPLE: DXXXXXXX-VY, S/N 001. A VIBRATORY TOOL MAY BE USED.

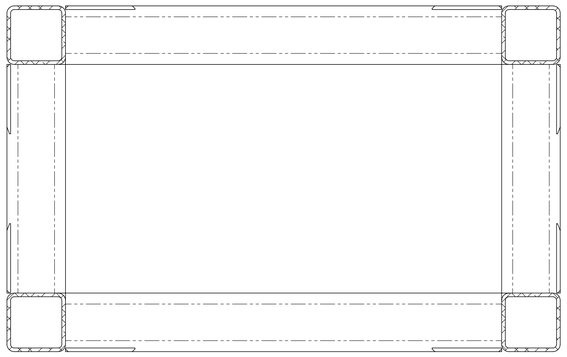
DIMENSIONS ARE IN INCHES [MM]
TOLERANCES:
.XX ± .01
.XXX ± .005
ANGULAR ± 0.1°

MATERIAL: --
FINISH: N/A µinch

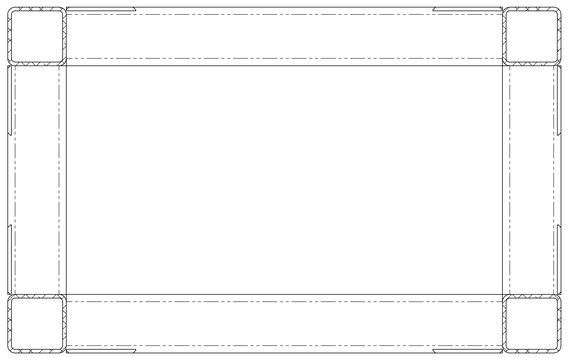
	NAME	DATE
DESIGNER	D. BRIDGES	3 MAR 2009
DRAWN	D. BRIDGES	8 DEC 2009
CHECKED	M. MEYER	10 DEC 2009

LIGO
CALIFORNIA INSTITUTE OF TECHNOLOGY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

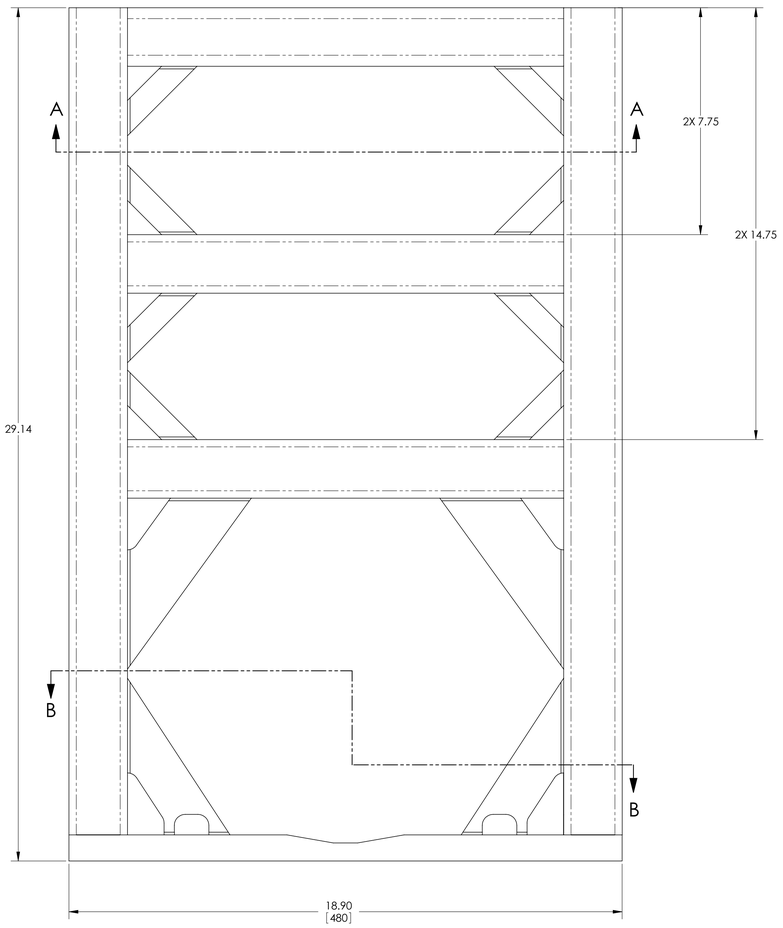
SYSTEM: ADVANCED LIGO
SUB-SYSTEM: SUS
NEXT ASSY: HLTS STRUCTURE
PART NAME: HLTS STRUCTURAL WELDMENT
SIZE: E
DWG. NO. D070442
REV. v2
SCALE: 1:2
PROJECTION:
SHEET 1 OF 8

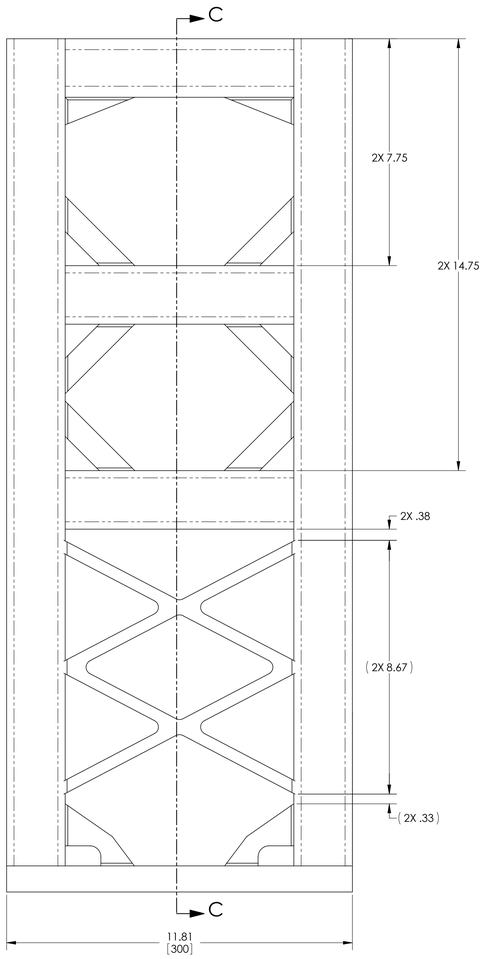


SECTION A-A

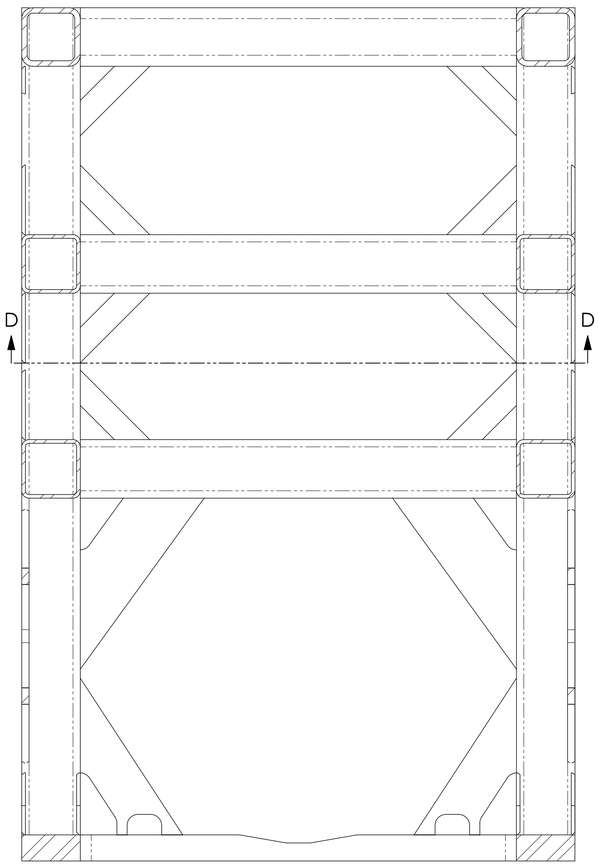


SECTION D-D

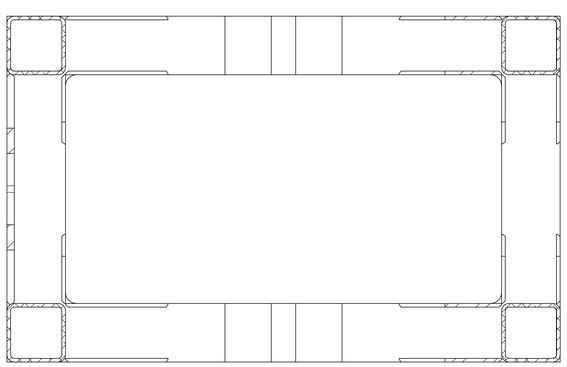




WELDMENT LAYOUT



SECTION C-C



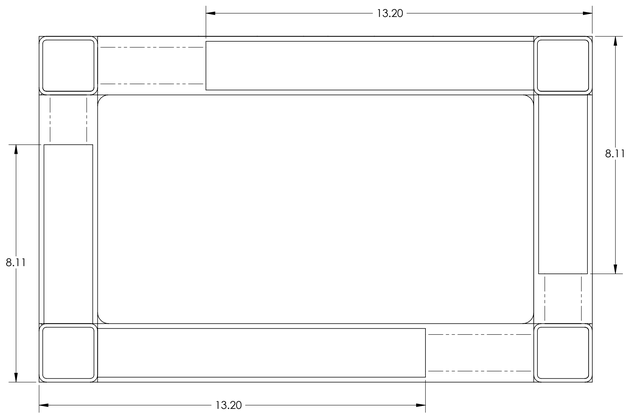
SECTION B-B

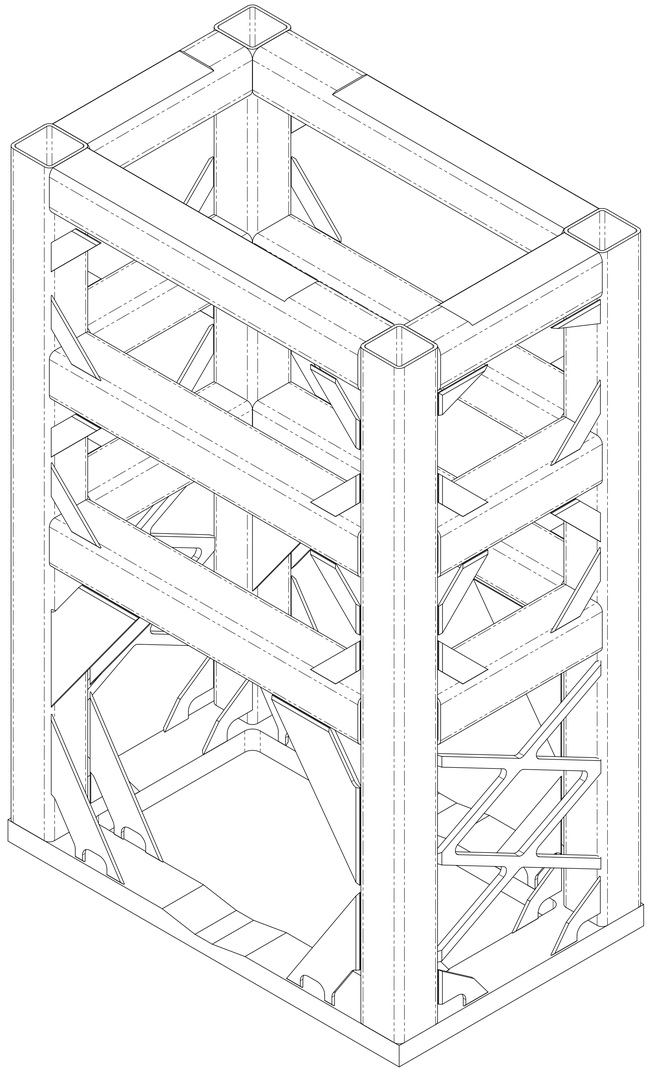
ADDITIONAL NOTES:
5. PRIOR TO WELDING, ALL PARTS SHALL BE CLEANED, VACUUM BAKED, AND SEALED IN ACCORDANCE WITH LIGO E0900135 TO THE WELDER.
6. ALL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH LIGO E0900048.
7. HOLE THROUGH OUTER WALL OF TUBE ONLY.
8. HOLE THROUGH INNER WALL OF TUBE ONLY.
9. HOLE THROUGH BOTH WALLS OF TUBE.
10. DO NOT DEBURR OR PERFORM OTHER SECONDARY OPERATIONS.

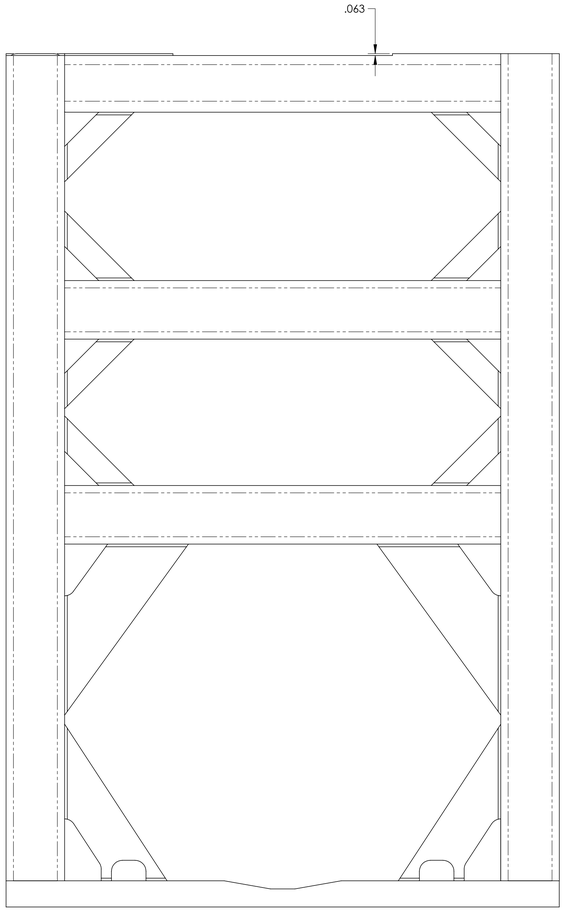
LIGO CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY

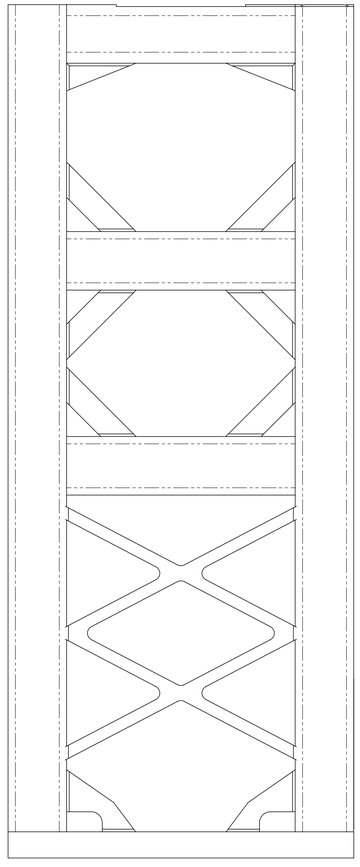
SIZE: E | DWG. NO.: D070442 | REV: v2

SCALE: 1:2 | PROJECTION: | SHEET 2 OF 8









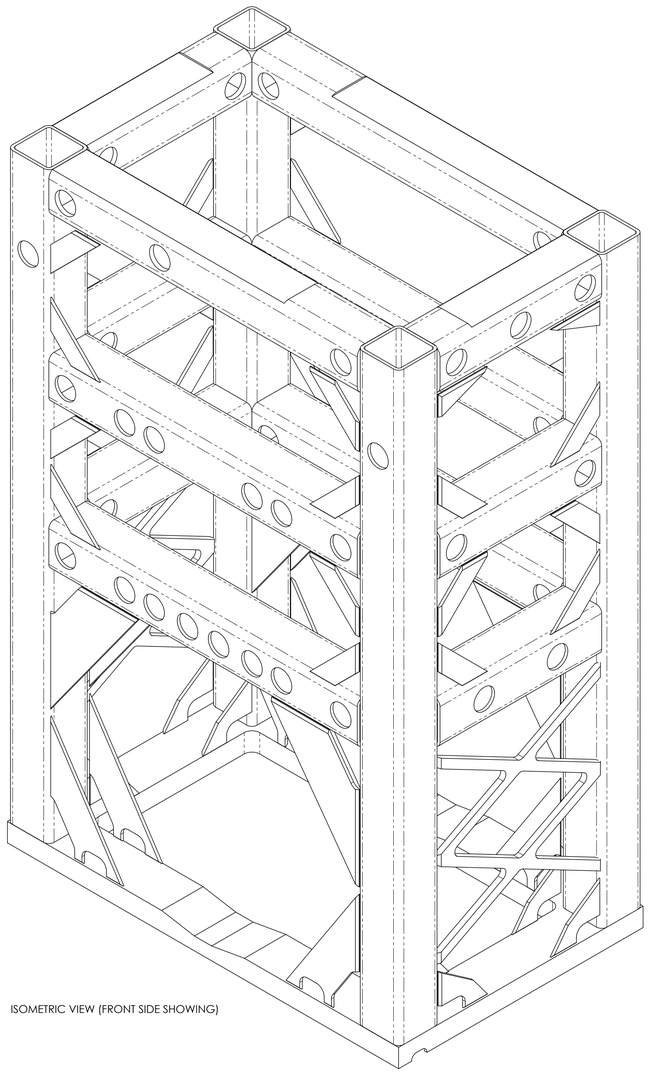
MACHINING LAYOUT

ADDITIONAL NOTES:
5. PRIOR TO WELDING, ALL PARTS SHALL BE CLEANED, VACUUM BAKED, AND SEALED IN BAGS FOR DELIVERY TO THE WELDER
6. ALL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH LIGO E0900048.
(A) HOLE THROUGH OUTER WALL OF TUBE ONLY.
(B) HOLE THROUGH INNER WALL OF TUBE ONLY.
(X) HOLE THROUGH BOTH WALLS OF TUBE.
(W) DO NOT DEBURR OR PERFORM OTHER SECONDARY OPERATIONS.

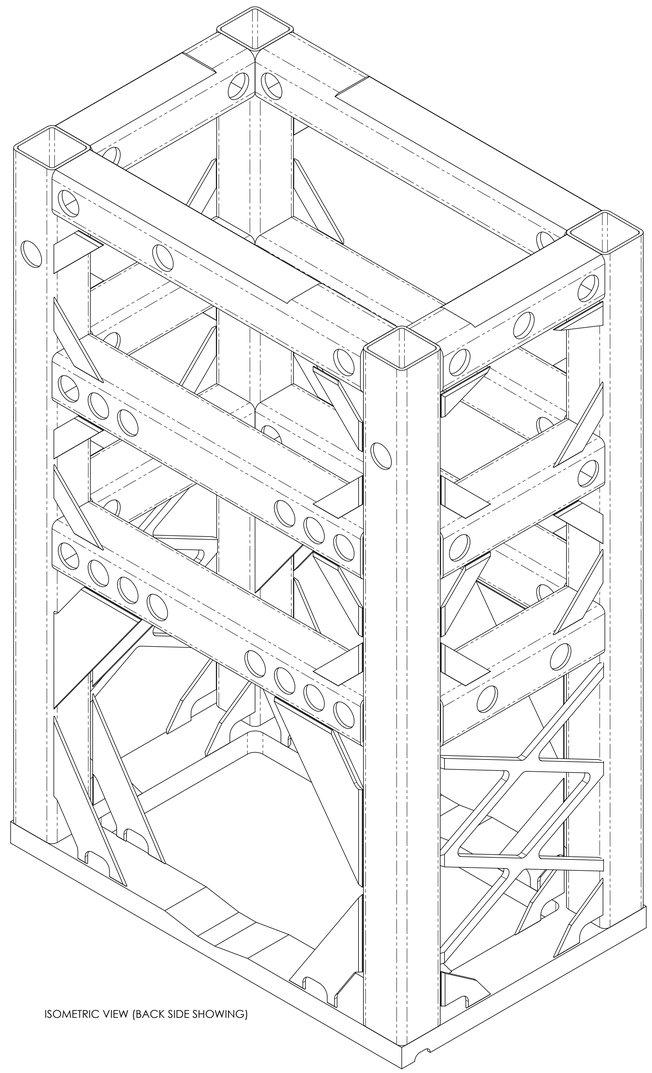
LIGO CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY

SIZE: E | DWG. NO.: D070442 | REV.: V2

SCALE: 1:2 | PROJECTION: | SHEET 3 OF 8



ISOMETRIC VIEW (FRONT SIDE SHOWING)



ISOMETRIC VIEW (BACK SIDE SHOWING)

ISOMETRIC VIEWS FOR LARGE HOLE PLACEMENT

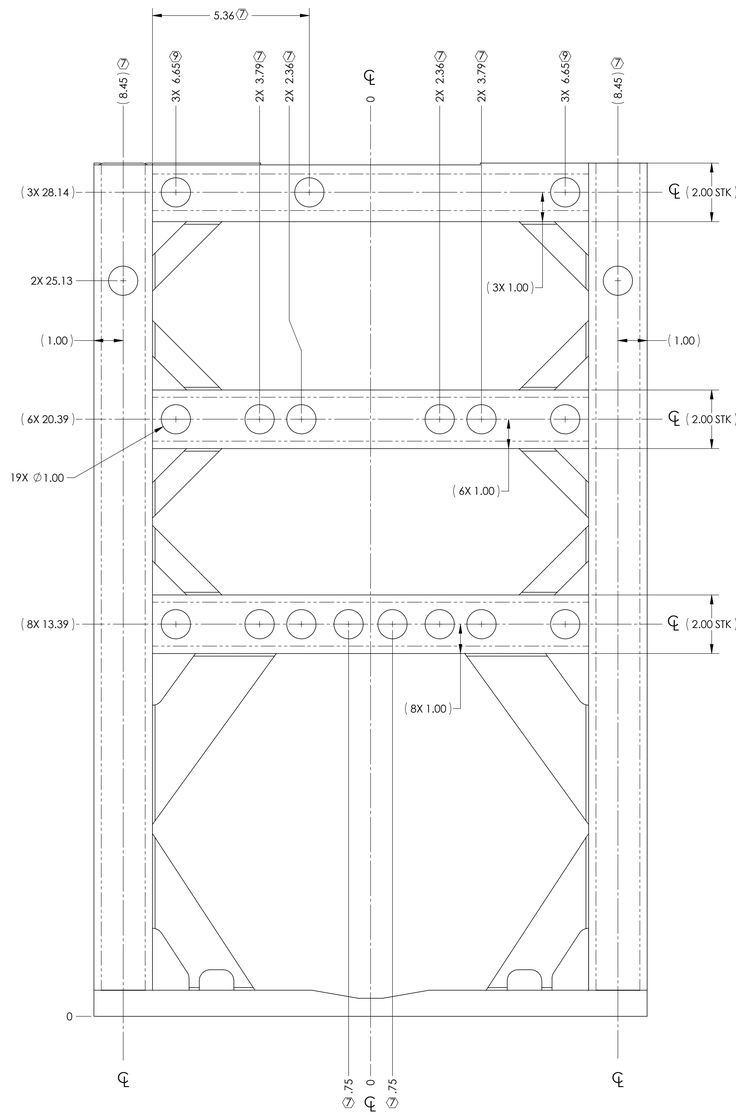
ADDITIONAL NOTES:
5. BEFORE WELDING, ALL PARTS SHALL BE CLEANED, VACUUM BAKED, AND SEALED IN BAGS FOR DELIVERY TO THE WELDER.
6. ALL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH LIGO E0900048.

(7) HOLE THROUGH OUTER WALL OF TUBE ONLY.
(8) HOLE THROUGH INNER WALL OF TUBE ONLY.
(9) HOLE THROUGH BOTH WALLS OF TUBE.
(10) DO NOT DEBURR OR PERFORM OTHER SECONDARY OPERATIONS.

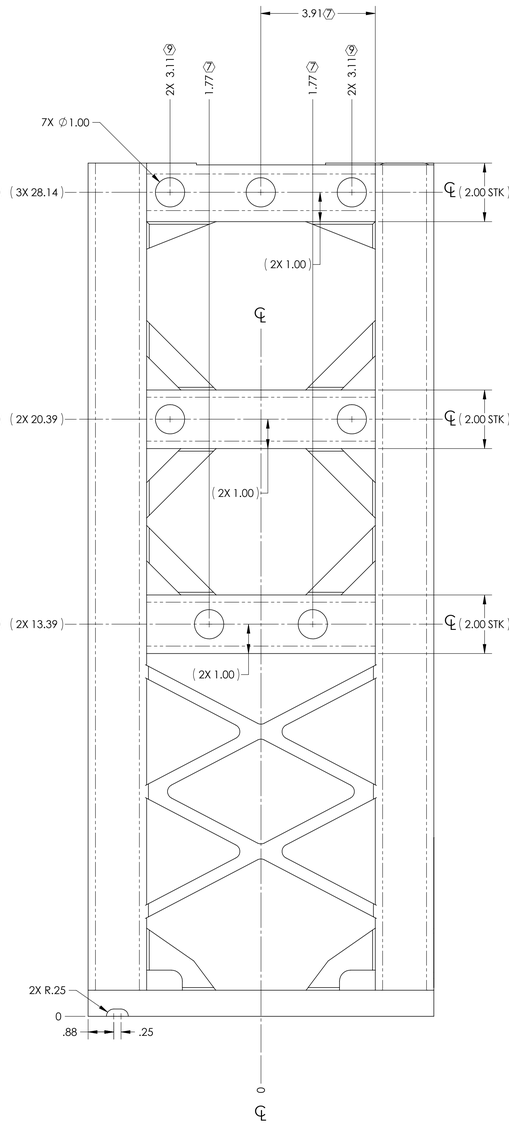
LIGO CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY

SIZE E | DWG. NO. D070442 | REV. v2

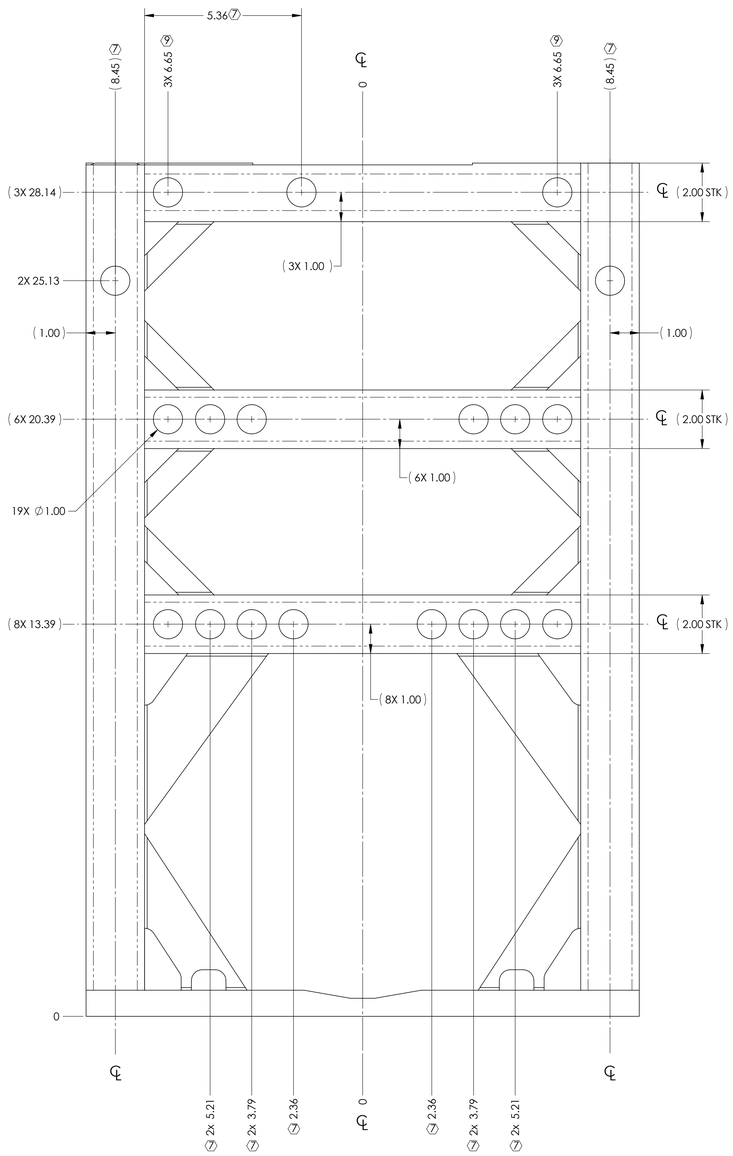
SCALE: 1/2 | PROJECTION: | SHEET 4 OF 8



FRONT VIEW



LEFT AND RIGHT VIEW



BACK VIEW

LARGE HOLE LAYOUT

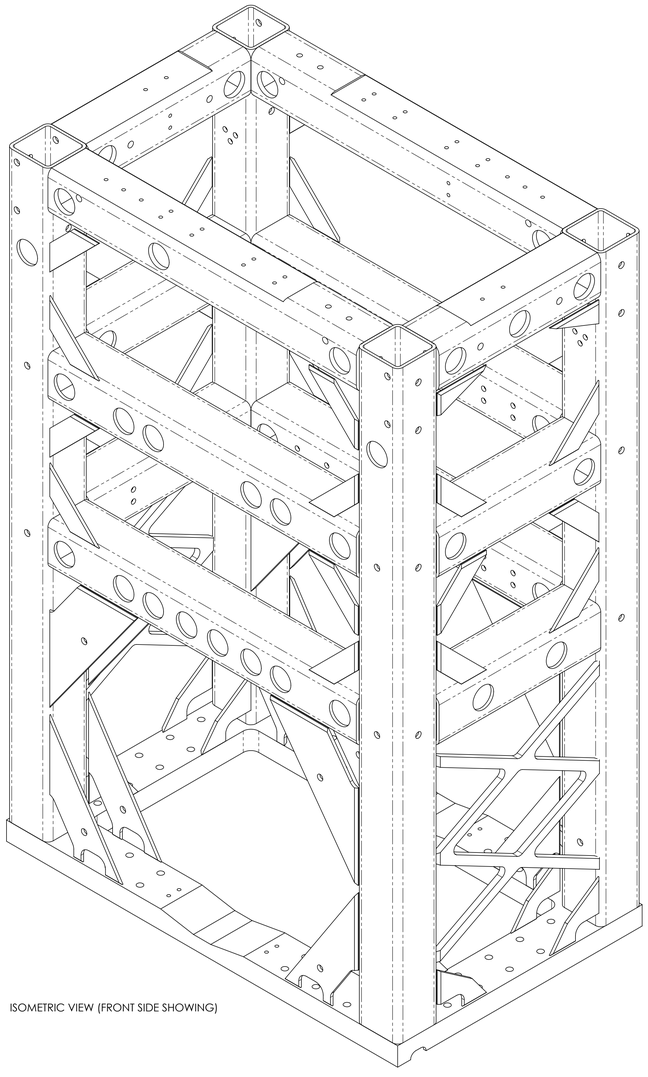
ADDITIONAL NOTES:
5. PRIOR TO WELDING, ALL PARTS SHALL BE CLEANED, VACUUM BAKED, AND SEALED IN BAGS FOR DELIVERY TO THE WELDER.
6. ALL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH LIGO E0900048.
Ⓩ HOLE THROUGH OUTER WALL OF TUBE ONLY.
Ⓨ HOLE THROUGH INNER WALL OF TUBE ONLY.
Ⓧ HOLE THROUGH BOTH WALLS OF TUBE.
Ⓦ DO NOT DEBURR OR PERFORM OTHER SECONDARY OPERATIONS.

LIGO CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY

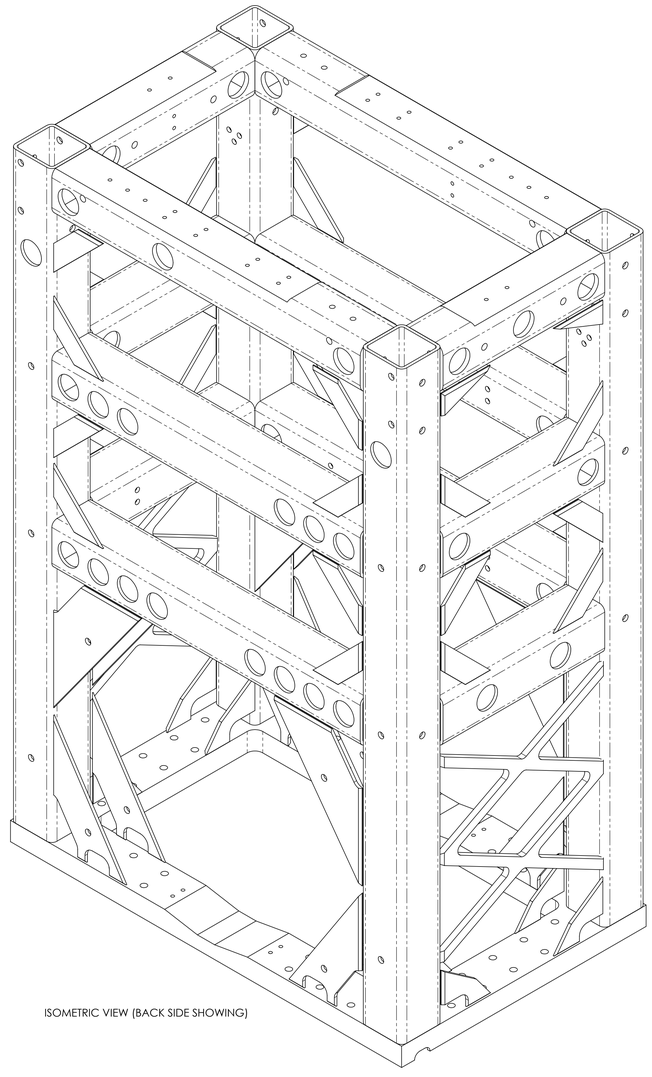
SIZE: E | DWG. NO.: D070442 | REV: V2

SCALE: 1/2 | PROJECTION: | SHEET 5 OF 8

D070442_Actionized_LIGO_SUS_HLTS_Structural_Weldment - PART PDM REV - V2, DRAWING PDM REV - V2.000



ISOMETRIC VIEW (FRONT SIDE SHOWING)



ISOMETRIC VIEW (BACK SIDE SHOWING)

ISOMETRIC VIEWS FOR SMALL HOLE PLACEMENT

ADDITIONAL NOTES:
1. PRIOR TO WELDING, ALL PARTS SHALL BE CLEANED, VACUUM BAKED, AND SEALED IN BAGS FOR DELIVERY TO THE WELDER.
2. ALL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH LIGO E090048.

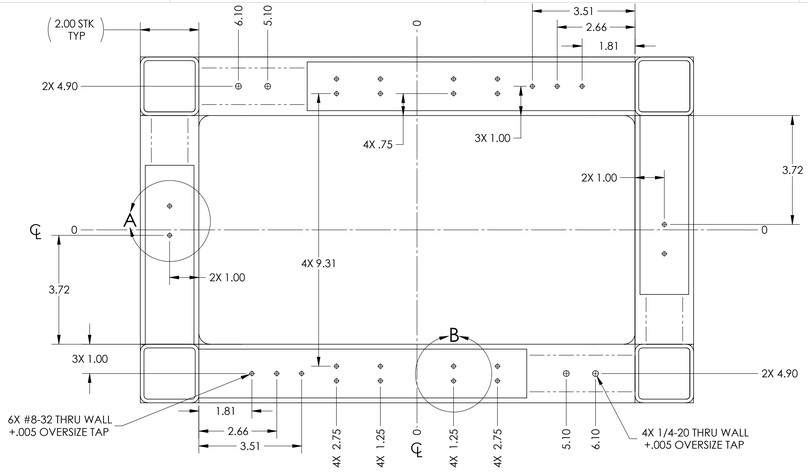
A HOLE THROUGH OUTER WALL OF TUBE ONLY.
B HOLE THROUGH INNER WALL OF TUBE ONLY.
C HOLE THROUGH BOTH WALLS OF TUBE.
D DO NOT DEBURR OR PERFORM OTHER SECONDARY OPERATIONS.

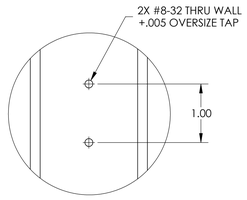
LIGO CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY

SIZE E | DWG. NO. D070442 | REV. v2

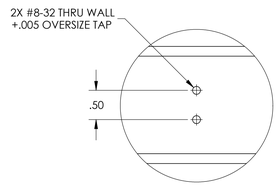
SCALE: 1:2 | PROJECTION: | SHEET 6 OF 8

D070442_Advanced_LIGO_SUS_NLTS_Structural_Weldment_PART PDM REV-V2_DRAWING PDM REV-V2.000

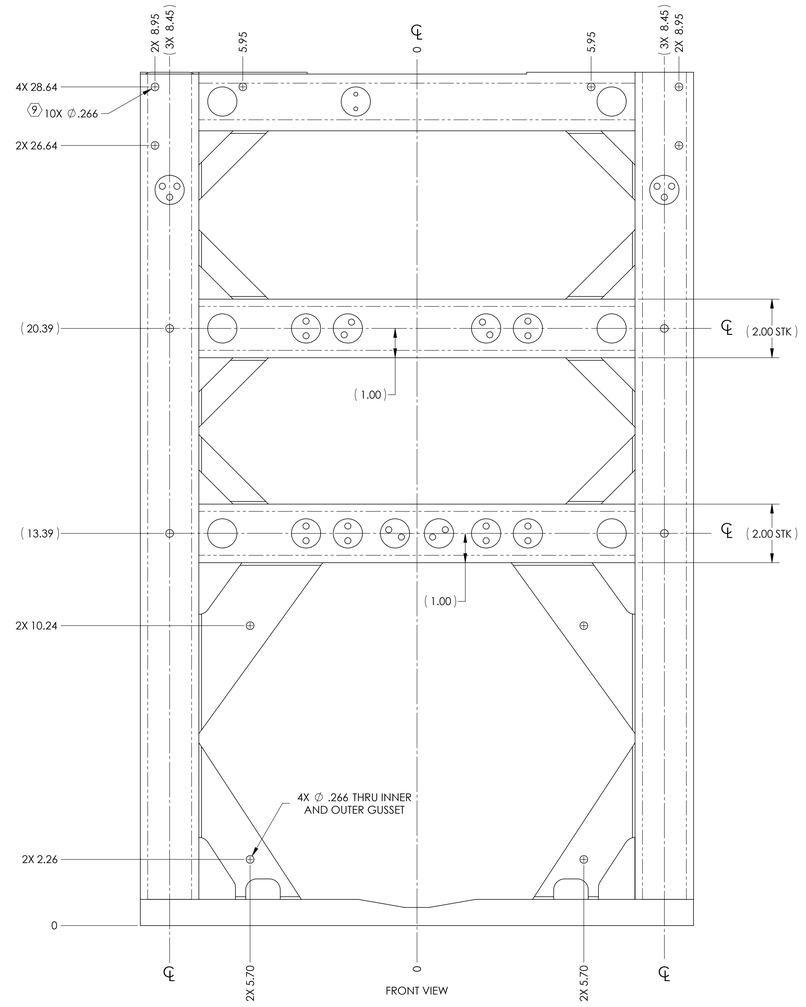




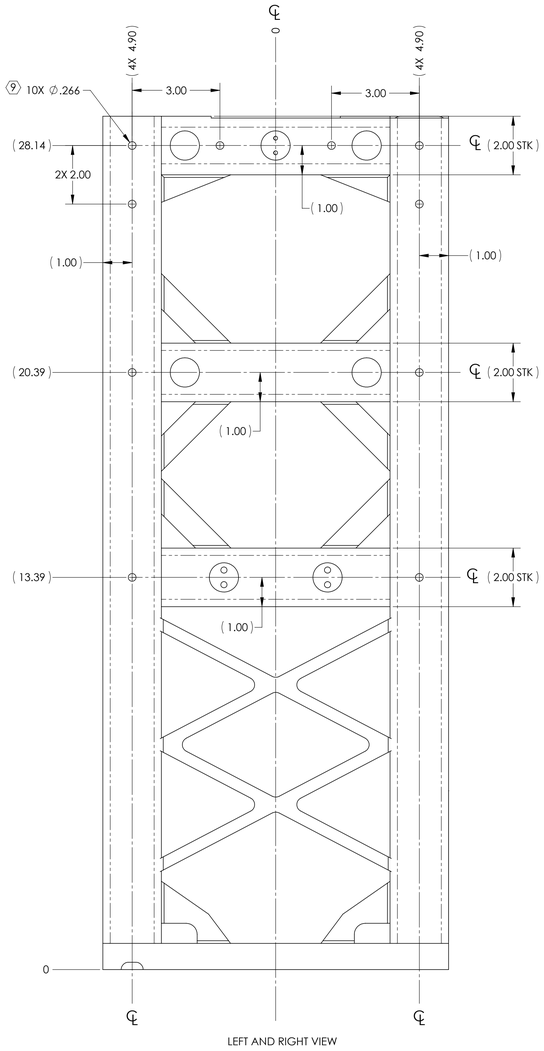
DETAIL A
SCALE 1 : 1
2 PLACES



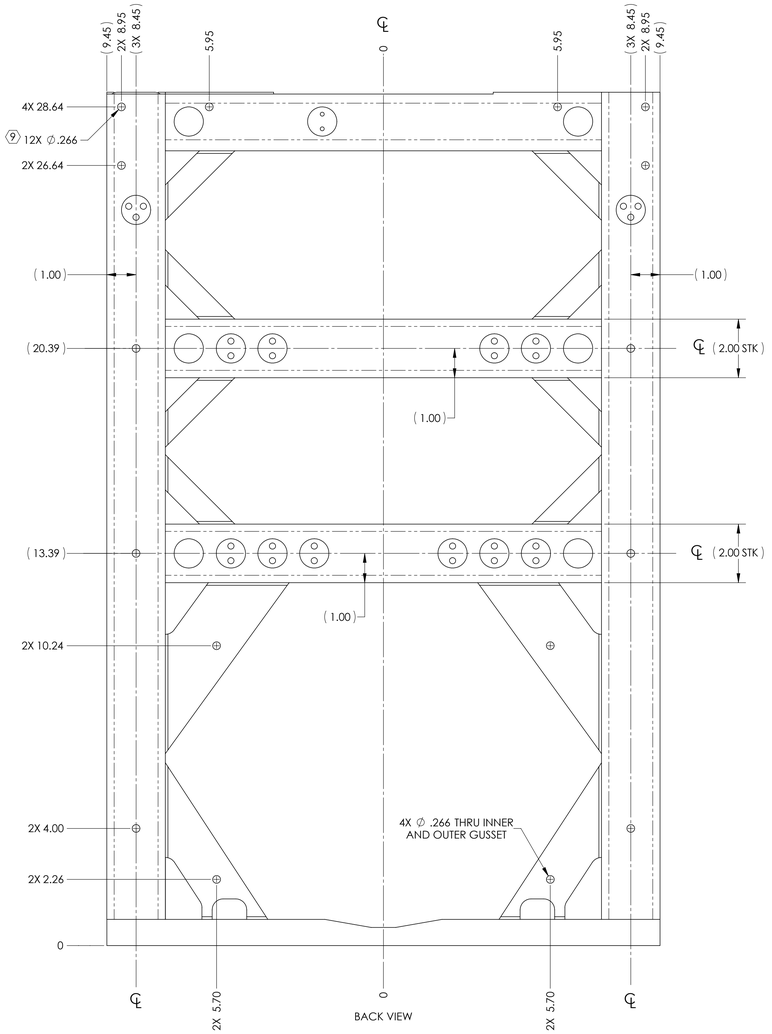
DETAIL B
SCALE 1 : 1
8 PLACES



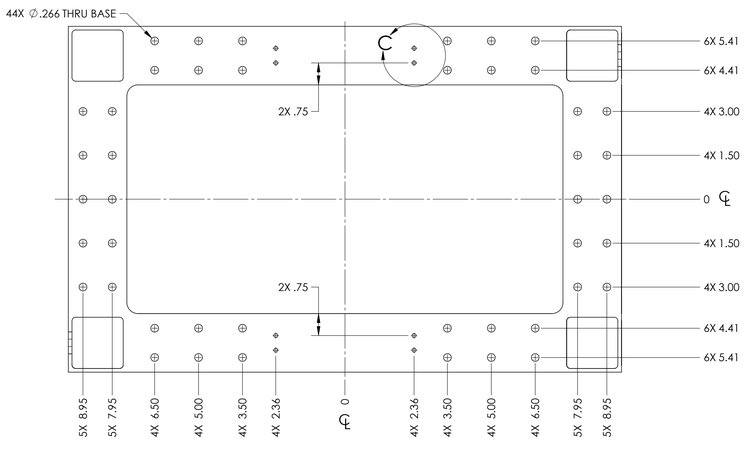
FRONT VIEW



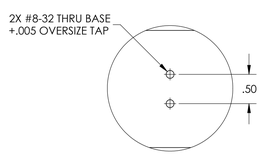
LEFT AND RIGHT VIEW



BACK VIEW



SMALL HOLE LAYOUT



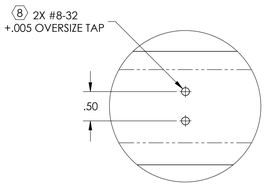
DETAIL C
SCALE 1 : 1
4 PLACES

ADDITIONAL NOTES:
3. PRIOR TO WELDING, ALL PARTS SHALL BE CLEANED, VACUUM BAKED, AND SEALED IN BAGS FOR DELIVERY TO THE WELDER.
4. ALL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH LIGO E0900048.
(7) HOLE THROUGH OUTER WALL OF TUBE ONLY.
(8) HOLE THROUGH INNER WALL OF TUBE ONLY.
(9) HOLE THROUGH BOTH WALLS OF TUBE.
(10) DO NOT DEBURR OR PERFORM OTHER SECONDARY OPERATIONS.

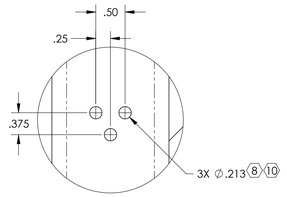
LIGO CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY

SIZE	DWG. NO.	REV.
E	D070442	V2

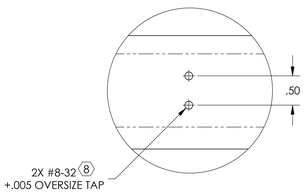
SCALE: 1/2 PROJECTION: SHEET 7 OF 8



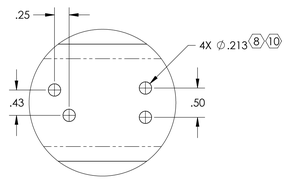
DETAIL D
SCALE 1 : 1



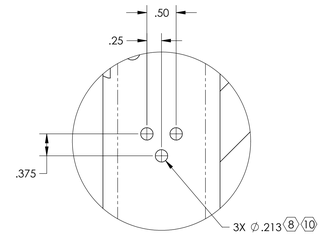
DETAIL F
SCALE 1 : 1
2 PLACES



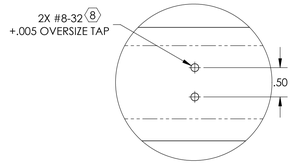
DETAIL G
SCALE 1 : 1



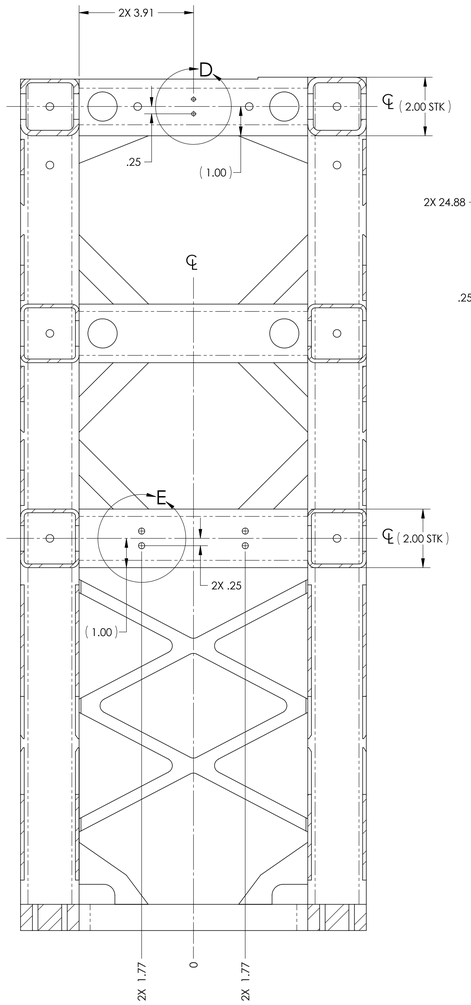
DETAIL J
SCALE 1 : 1



DETAIL M
SCALE 1 : 1
2 PLACES

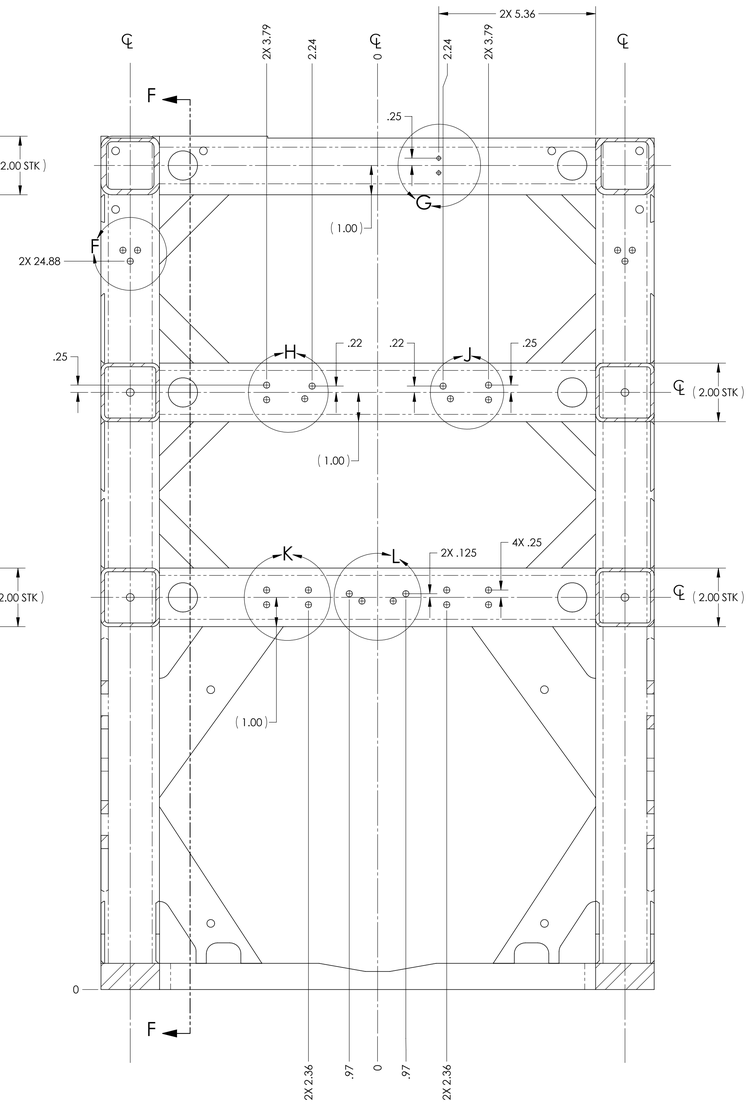


DETAIL N
SCALE 1 : 1



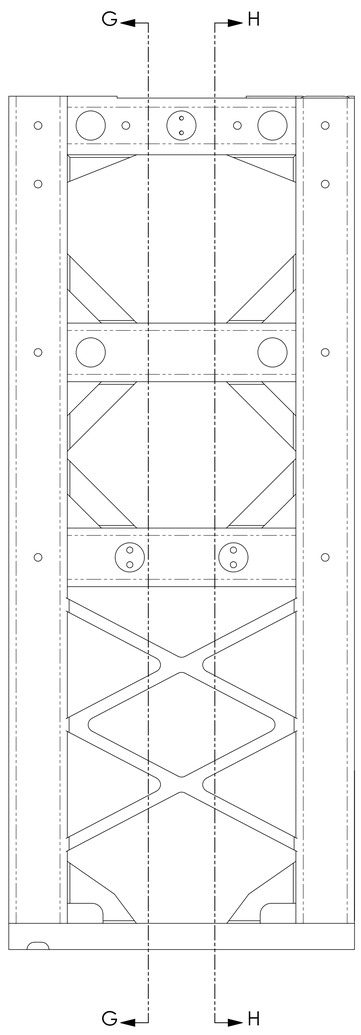
SECTION F-F

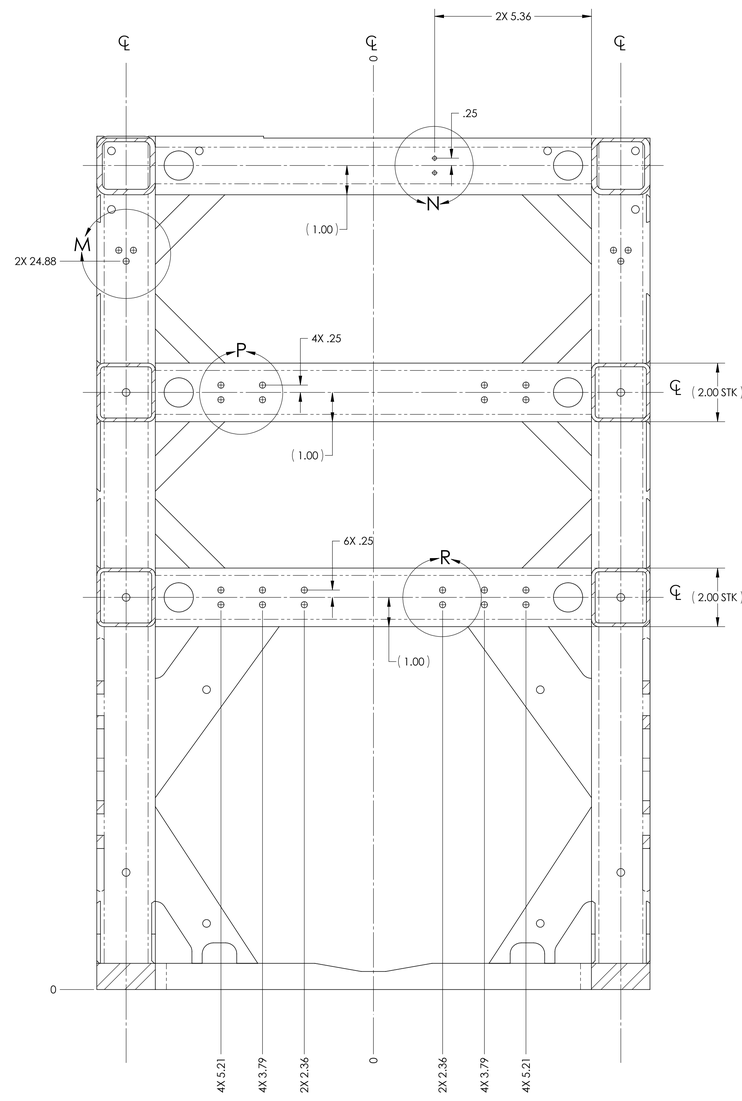
LEFT AND RIGHT INSIDE VIEW



SECTION G-G

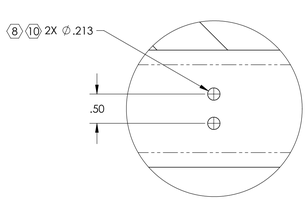
FRONT INSIDE VIEW



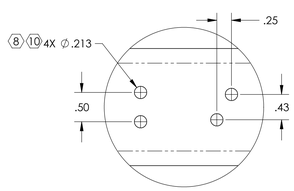


SECTION H-H

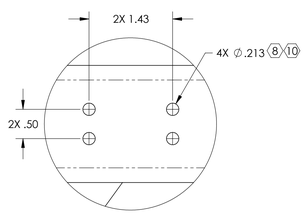
BACK INSIDE VIEW



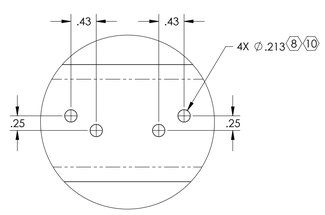
DETAIL E
SCALE 1 : 1
2 PLACES



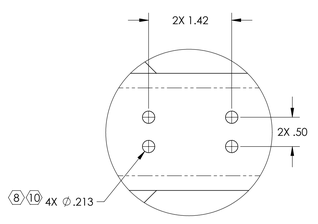
DETAIL H
SCALE 1 : 1



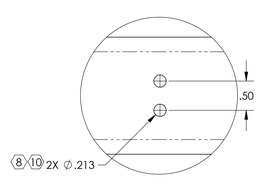
DETAIL K
SCALE 1 : 1
2 PLACES



DETAIL L
SCALE 1 : 1



DETAIL P
SCALE 1 : 1
2 PLACES



DETAIL R
SCALE 1 : 1
6 PLACES

ADDITIONAL NOTES:
5. PRIOR TO WELDING, ALL PARTS SHALL BE CLEANED, VACUUM BAKED, AND SEALED IN BAGS FOR DELIVERY TO THE WELDER.
6. ALL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH LIGO E0900048.
7 HOLE THROUGH OUTER WALL OF TUBE ONLY.
8 HOLE THROUGH INNER WALL OF TUBE ONLY.
9 HOLE THROUGH BOTH WALLS OF TUBE.
10 DO NOT DEBURR OR PERFORM OTHER SECONDARY OPERATIONS.

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MASSACHUSETTS INSTITUTE OF TECHNOLOGY
IGR, GLASGOW UNIVERSITY GEO 600 GROUP

SIZE E | DWG. NO. D070442 | REV. V2
SCALE: 1/2 | PROJECTION: | SHEET 8 OF 8