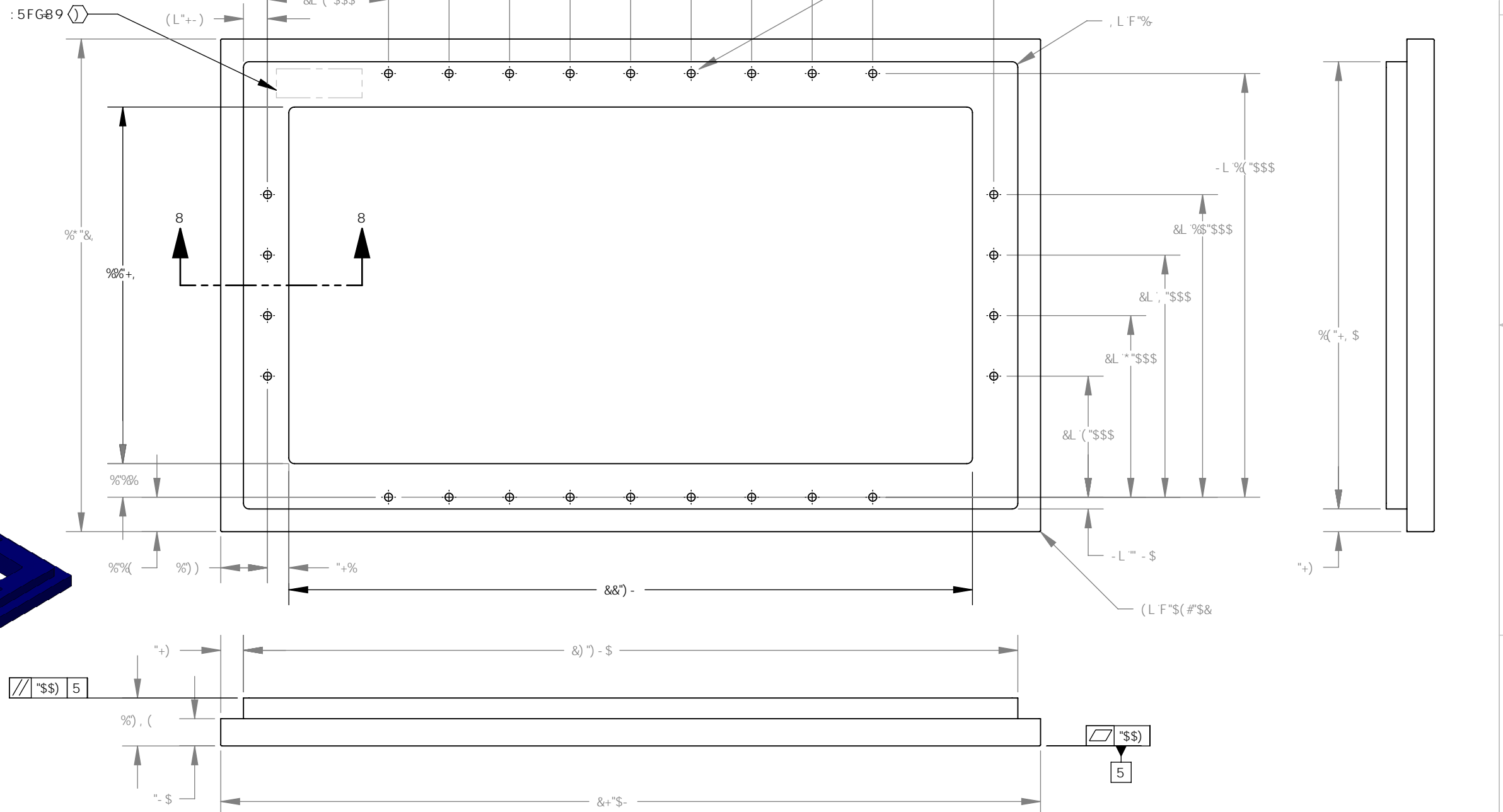
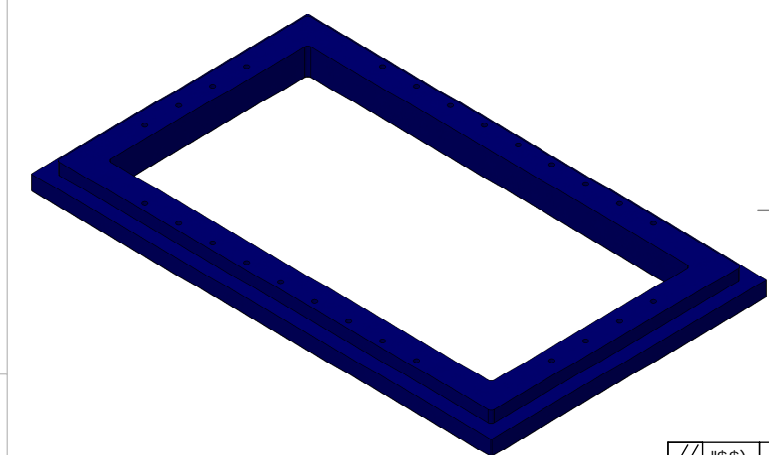
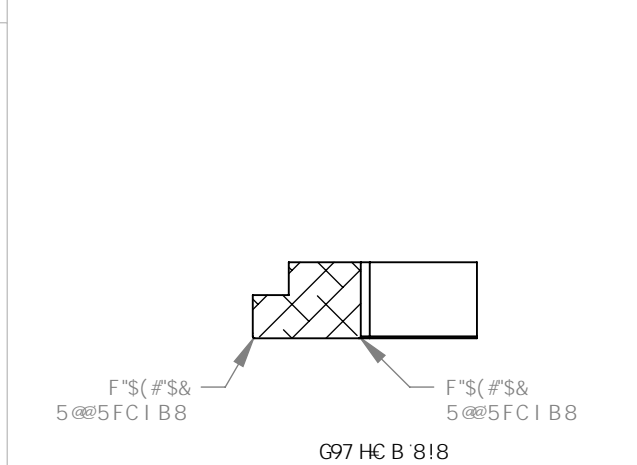


8%\$%-%\$5@; C 55C GSC i hdi h: URUXUm-gc Uhc fGdUWffk5A) !<-%ZD5FHD8A F9J .L!\$\$) Z8F5K #B; DBA F9J .L!\$\$

BCHG7CBHBI 98.
G7F69Z9B; F5J9ZCFA 97<5B-75@G5A DfBC #B? CF 8MGL8F5K #B;
D5FHBI A 69F2F9J @CBZ1 Q98Z7<5A 69F CB BCH98 Q F: 579C: D5FH
C@C K 98 CB H: 9@B9K #k: 5H: F99B #; H9F 5@BI A 69F "Q9F 5@BI A 69FG
G5FH5H\$\$%: CF H: 9; FQ5FH7 @95B8 DFC 7 998 7 C B G97 I HJ 9@M I G9
A #A I A \$%< < < 7 < 5F57 H9F Q2 I B @GGH: 9 G99 C: H: 9 D5FH8-7 H6H9
GA 5@9F 7 < 5F57 H9F G' 5 J 6F5HC FMHC C @A 5M691 Q98"
9L5A D@9 8LLLLLLIJ MzHM9LLZG#B LLLZGF&Z<5A) !<-%
5DDFCLA 5H9K 9# <H1&&) +@6"
*5@D5FHG<5@69A 5B1: 57H F98 #B 577CF85B79K #;
@ C Q97 # 7 5HC B 9S- \$\$ * ("

F9J "	85H9	87B:	8F5K #B; HF99,
j %	% : 96 &\$%%	!	!
!	!	!	!
!	!	!	!



BCHG5B8HC@F5B79Gfl B@GGCH:9FK -99Q97 # 98L		LIGO 75@CFB5-BGHH H9C: H97<BC@; M D5FH85A9	
8A 9BGC BG5F9 #B	%B H9FDF9H8F5K #B: D9F 5CA 9MK) 1% - ("	Ci hdi h: URUXUm-gc Uhc fGdUWffk5A) !<-%	
HC @9F 5B7 9G	&F9A C J 95@G<5FD 98: 9QZ "\$S) I "\$%": CF A 57<B 98 D5FHGFCI B8 5@98: 9G	89G: B9F	A "FI N
LL : ± \$%	5DDFCLA 5H9MF "\$S: CF G: 99HA 9H5@D5FHG	8F5: H9F	A "FI N
LLL : ± "\$%	"B C BCHG7 5@9: FCA 8F5K #B:	7<97?9F	6
5B: I @5F ±)" *	("5@9A 57<B #B: @ BGA I Q169: I @MGNB: H97 Z: I @MK 5H9F GC @ 6@9 5B8: F99C: Q @ I F2G@7 C B 9Z5B8 7<@CF B 9'	5DDFCJ 5@	8 %/\$\$%+%
	A 5H9F-5@	B9LH5GGM	j %
	\$%H* '5	8\$- \$%&/-	
	σbW		

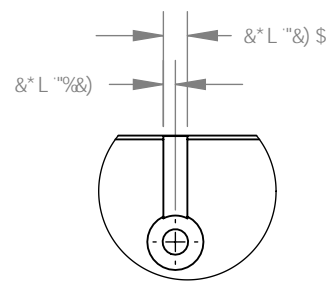
8%\$\$\$%-%\$5@- C S5C GSC | rdi | h: UFUXUmgr: Utr fcdUWYffk5A) !<-%ZD5FHD8A F9J . LI.\$) Z8F5K -B; 'D8A F9J . LI.\$%

8

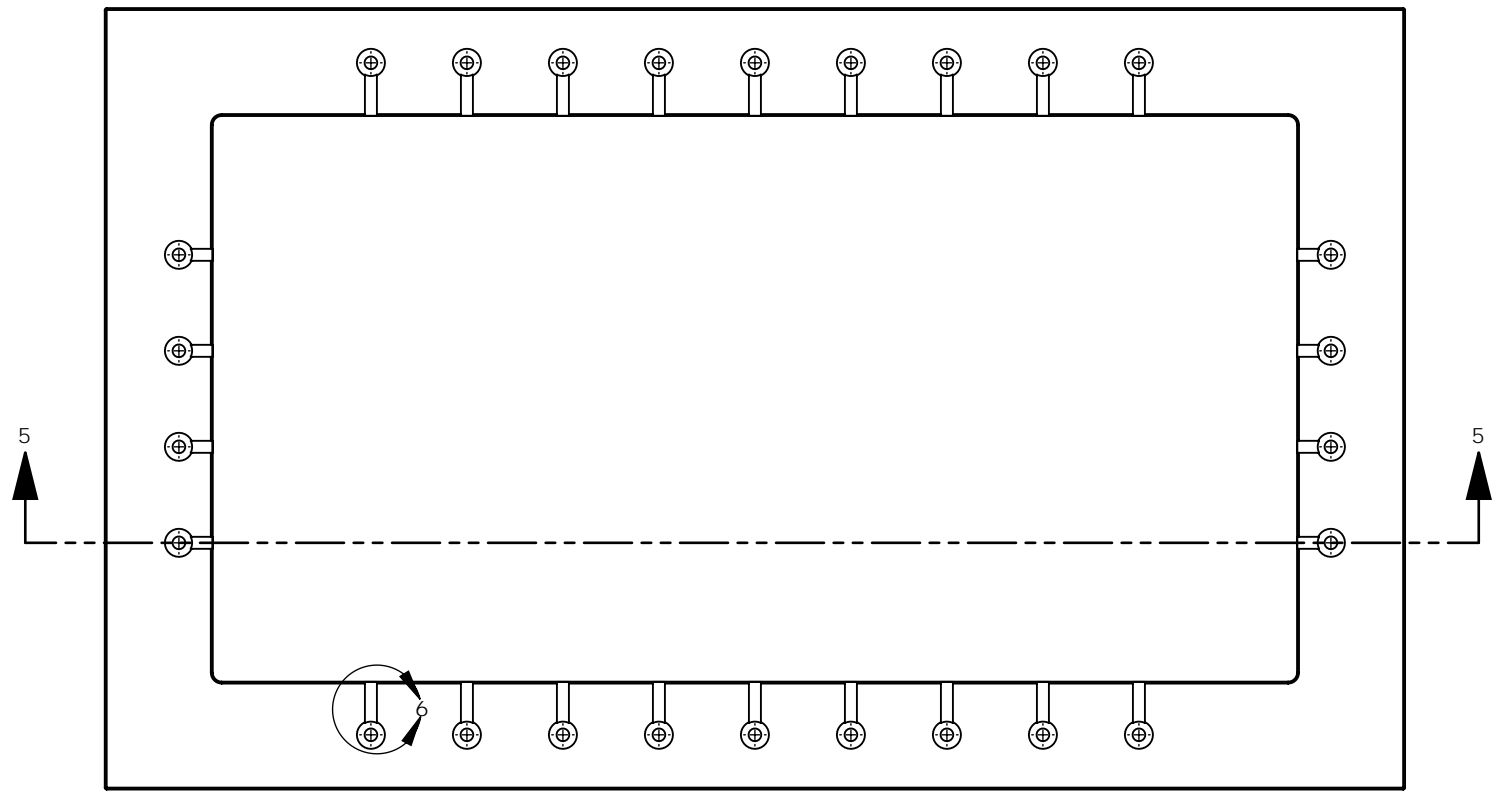
7

6

5



89H5 @6
75 @9% . &

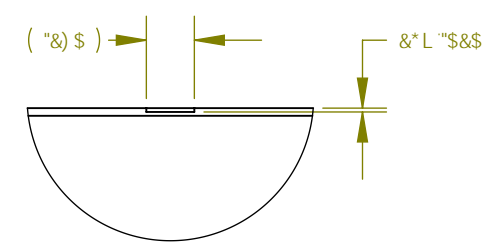


8

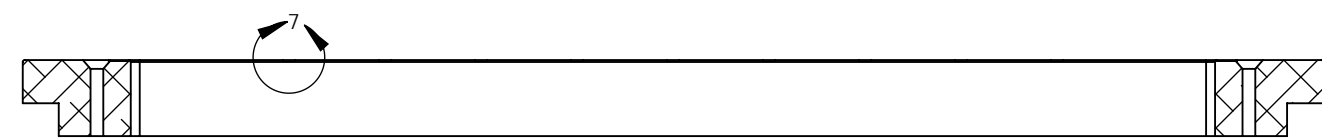
7

6

5



89H5 @7
75 @9% . %



G97 HC B '5!5

LIGO 75@CFB-5-BGH HPC: 197-BC@: M
A5G57 <1 G#G-BGH HPC: 197-BC@: M

G#9 BK; "BC"	F9J "
6	j %
G75@% (DFC>97 HCB.	G<99H&C: &