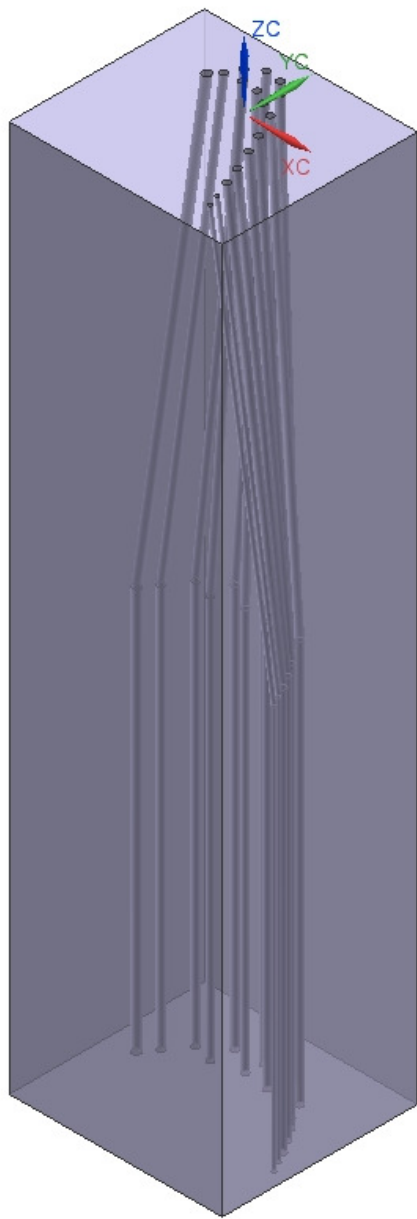
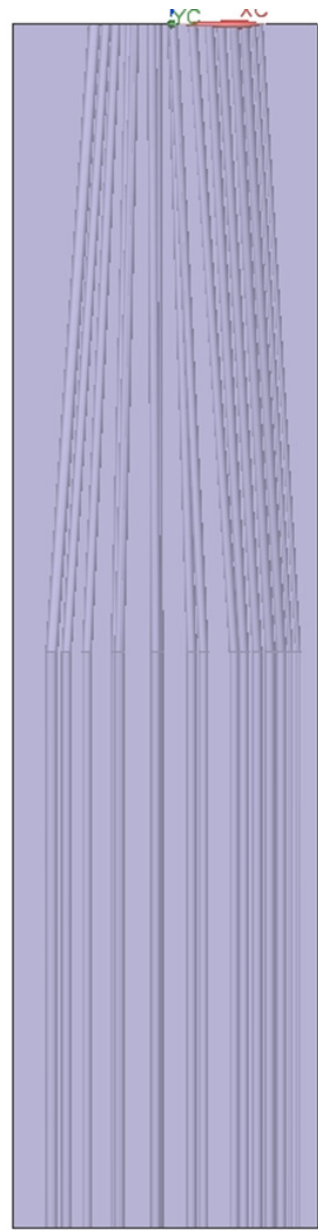


Micro-holes in the Blade/Block

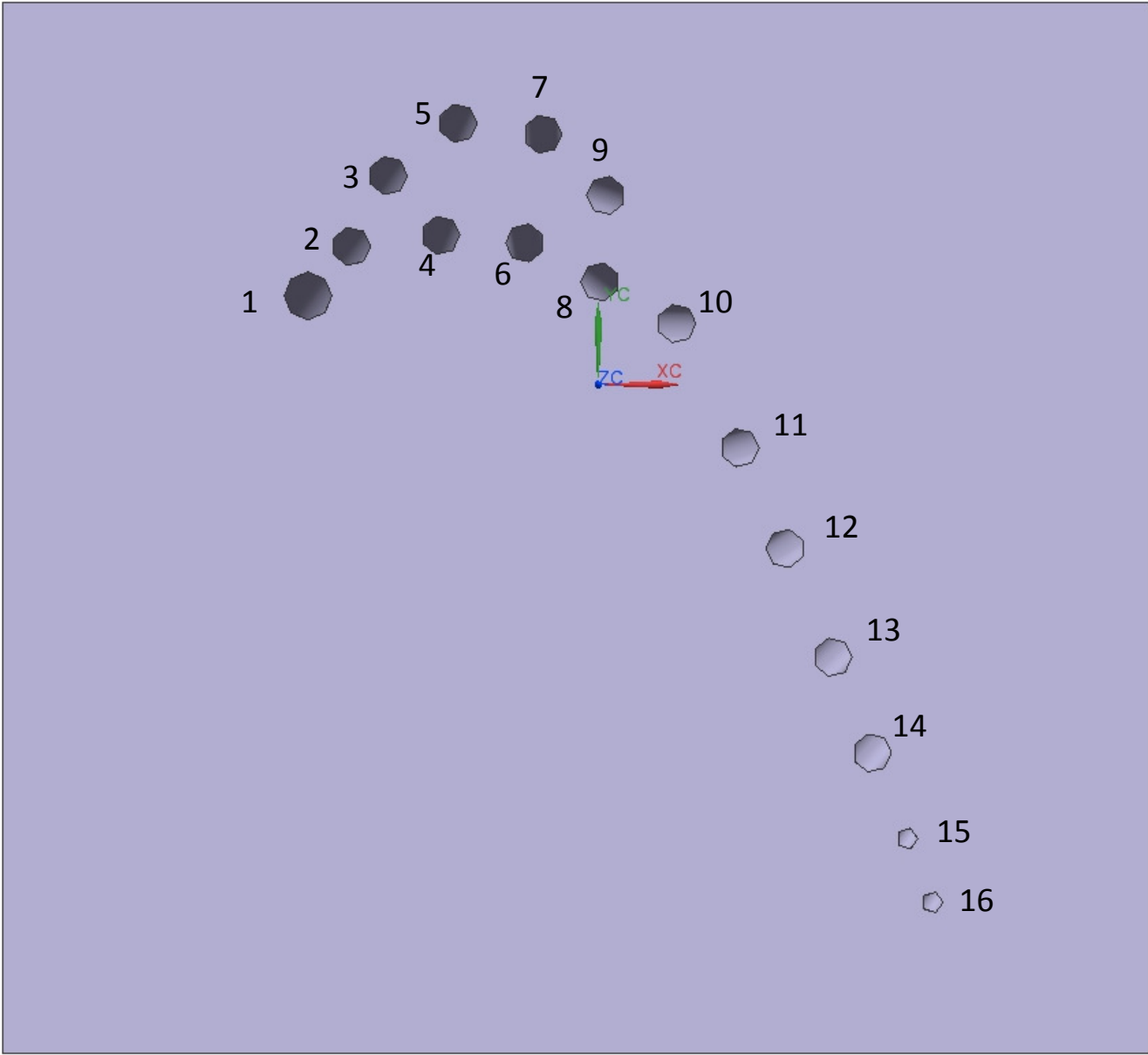
Blade/Block Material: GTD111 or Equivalent



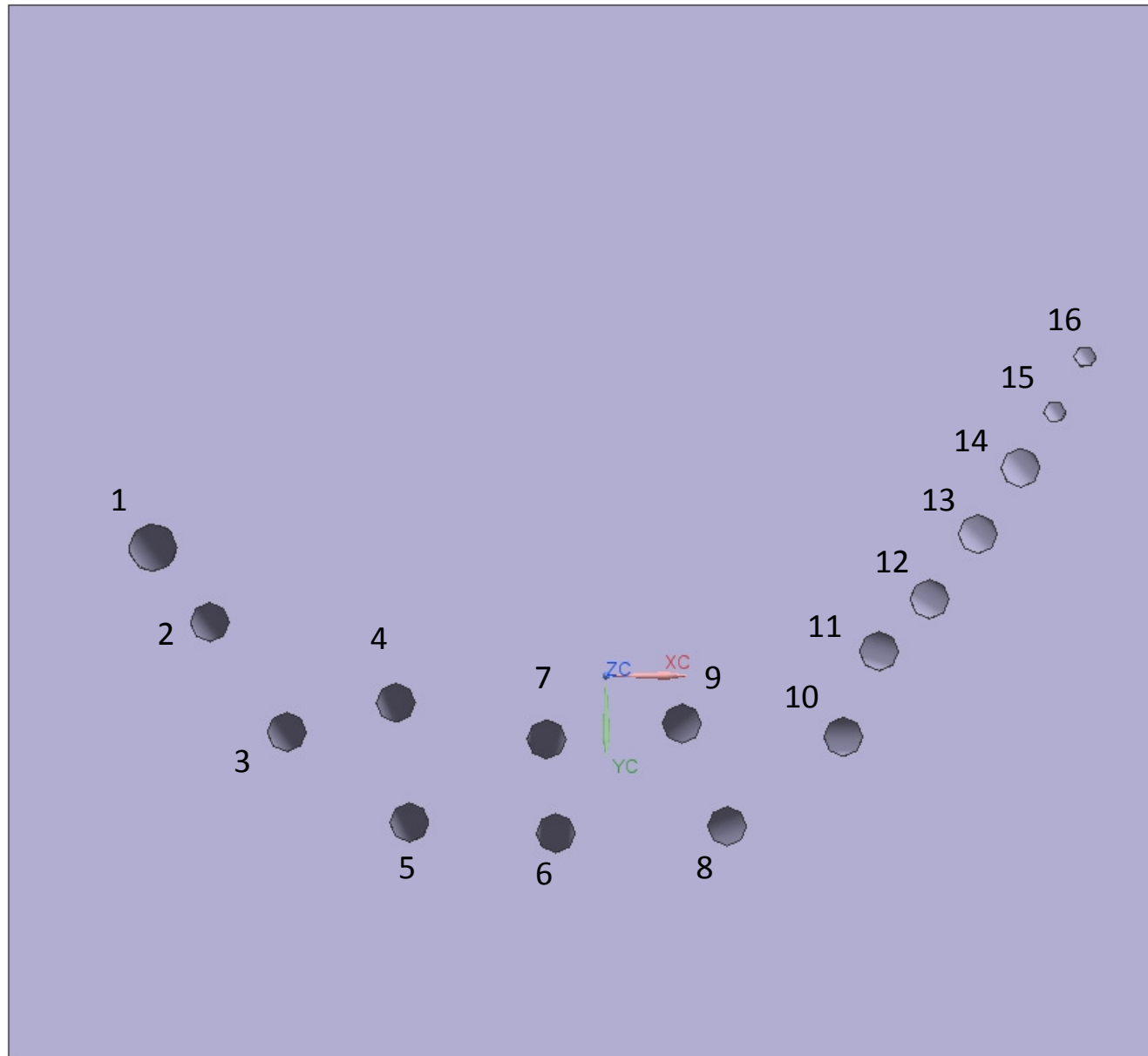
Isometric View of Blade/Block



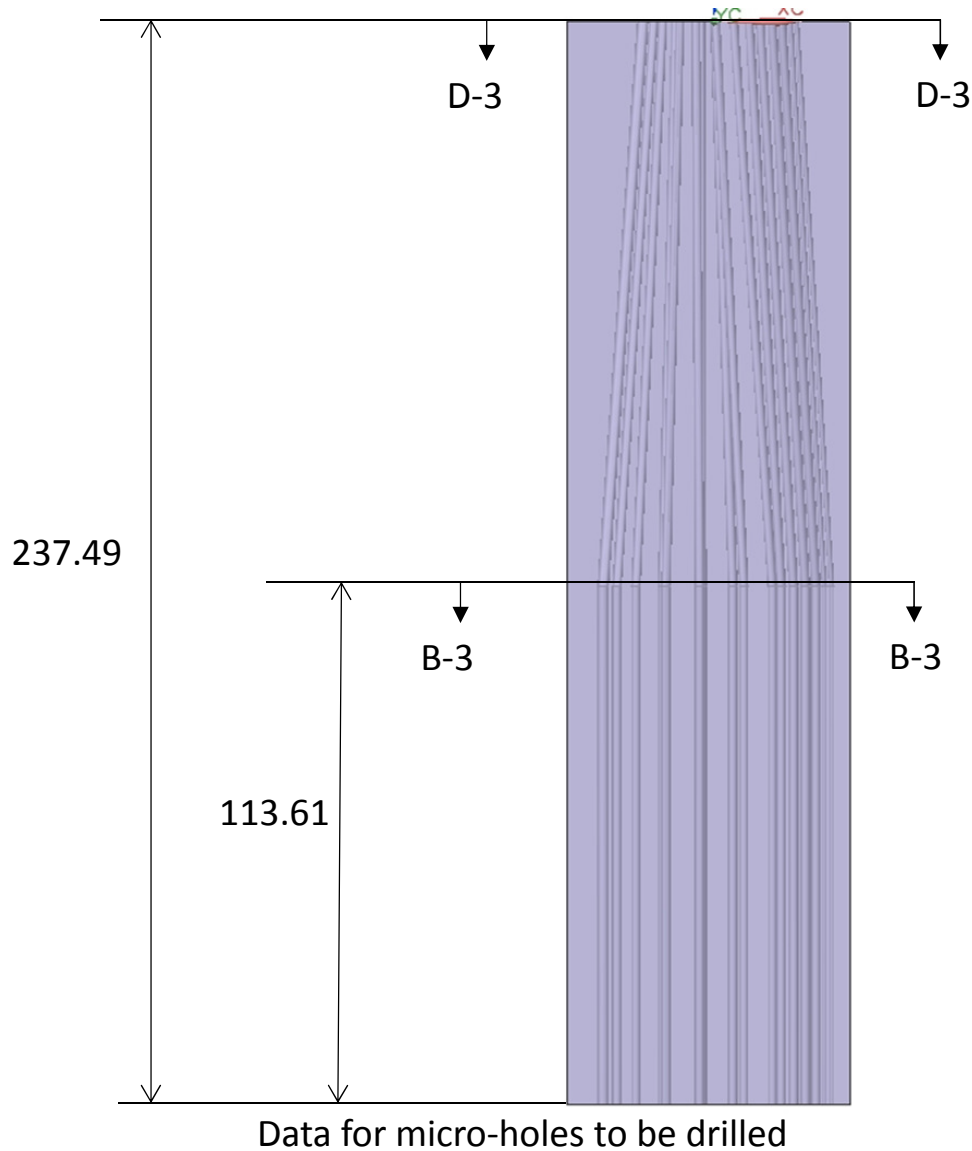
Front View of Blade/Block



Top View of Blade/Block (1-16 indicate hole numbers)



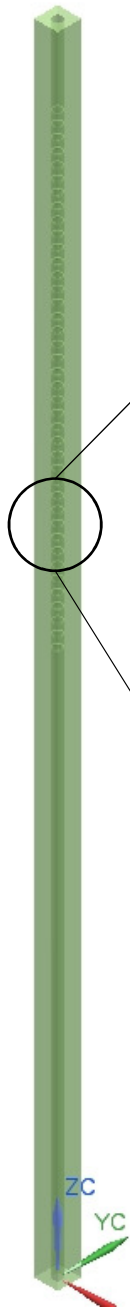
Bottom View of Blade/Block (1-16 indicate hole numbers)



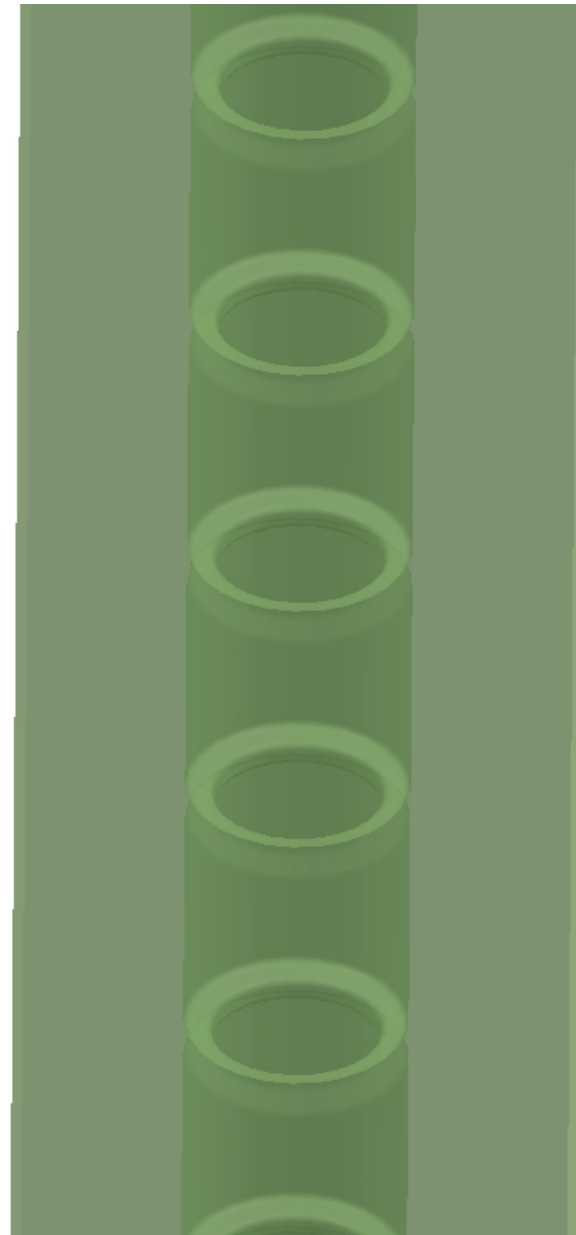
HOLE	HOLE DIA $\pm 0,13$ FROM SECT.D-3 TO SECT.B-3	SECTION D-3		SECTION B-3		COMMENTS
		X	Y	X	Y	
1	2,5	( - 15,19 )	( 4,65 )	( - 23,65 )	( - 6,68 )	SEE NOTE 1
2	2,03 SEE DETAIL F-3 SH.2	- 12,93	7,24	- 20,68	- 2,79	
3		- 11,00	10,95	- 16,66	2,95	
4		- 8,25	7,82	- 10,97	1,42	
5		- 7,34	13,69	- 10,26	7,67	
6		- 3,83	7,42	- 3,10	3,33	
7		- 2,90	13,11	- 2,62	8,23	
8		0,10	5,38	3,96	2,51	
9		0,41	9,91	6,32	7,87	
10		4,11	3,20	12,39	3,20	
11		7,42	- 3,30	14,25	- 1,27	
12		9,80	- 8,58	16,89	- 3,99	
13		12,29	- 14,27	19,41	- 7,39	
14		14,35	- 19,28	21,64	- 10,85	
15	1,14	16,18	- 23,77	23,42	- 13,77	
16	1,14	17,50	- 27,10	24,99	- 16,66	

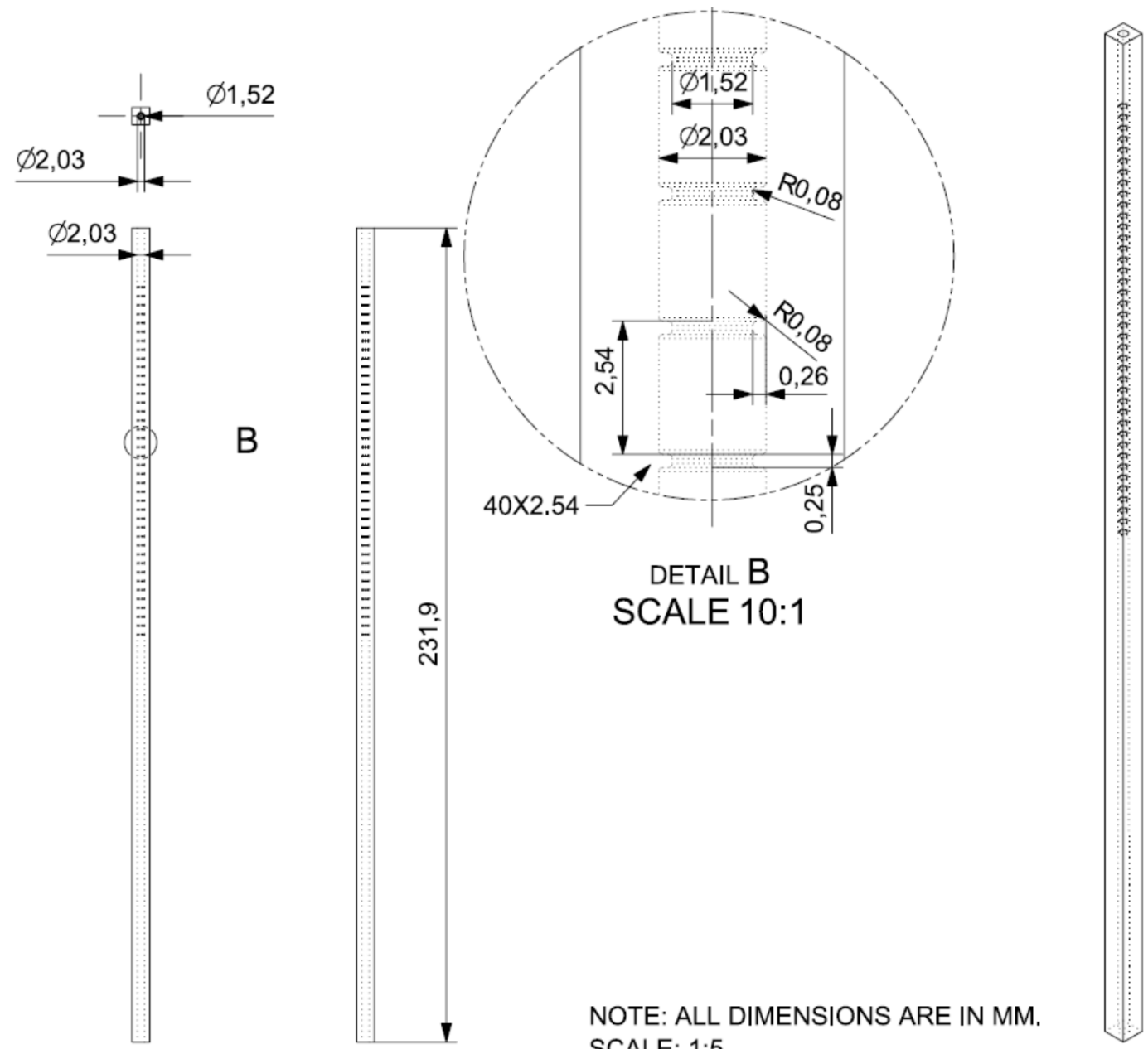
**NOTE:**

1. Hole No. 1 to be centered in leading edge by  $\Phi 0.25$ .
2. All holes from section D-3 to section B-3 to be located within  $\Phi 0.76$ .
3. Surface finish 6.3 Ra on all holes.
4. All holes to linearly extend from section B-3 to bottom.
5. Only holes 2 thru 14 are turbulated. Holes 1, 15 and 16 are not turbulated.

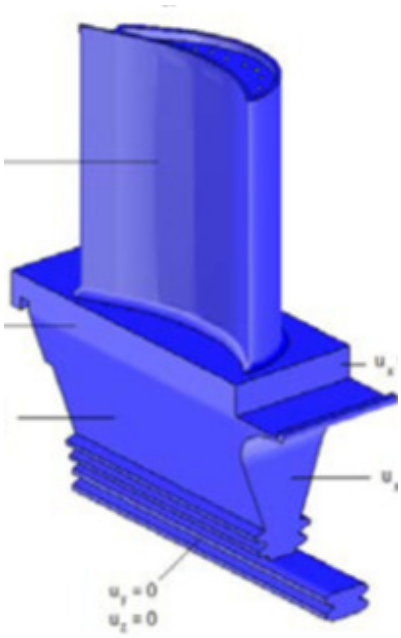


Hole Details of turbulations

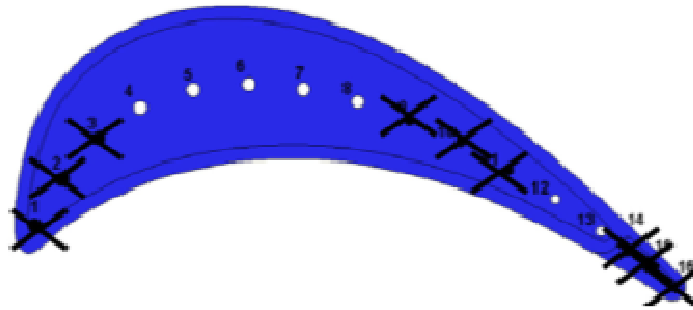




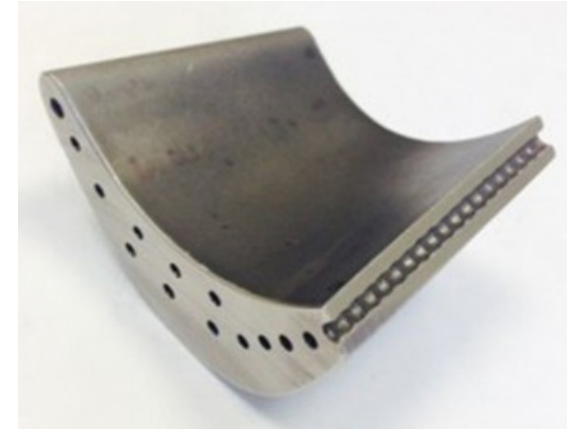
**NOTE:**  
1. Only holes 2 thru 14 are turbulated. Holes 1, 15 and 16 are not turbulated.



(a) GT Blade



(b) Perimeter cooling holes



(c) cooling holes with turbulations

**GT Blade – shown for reference**