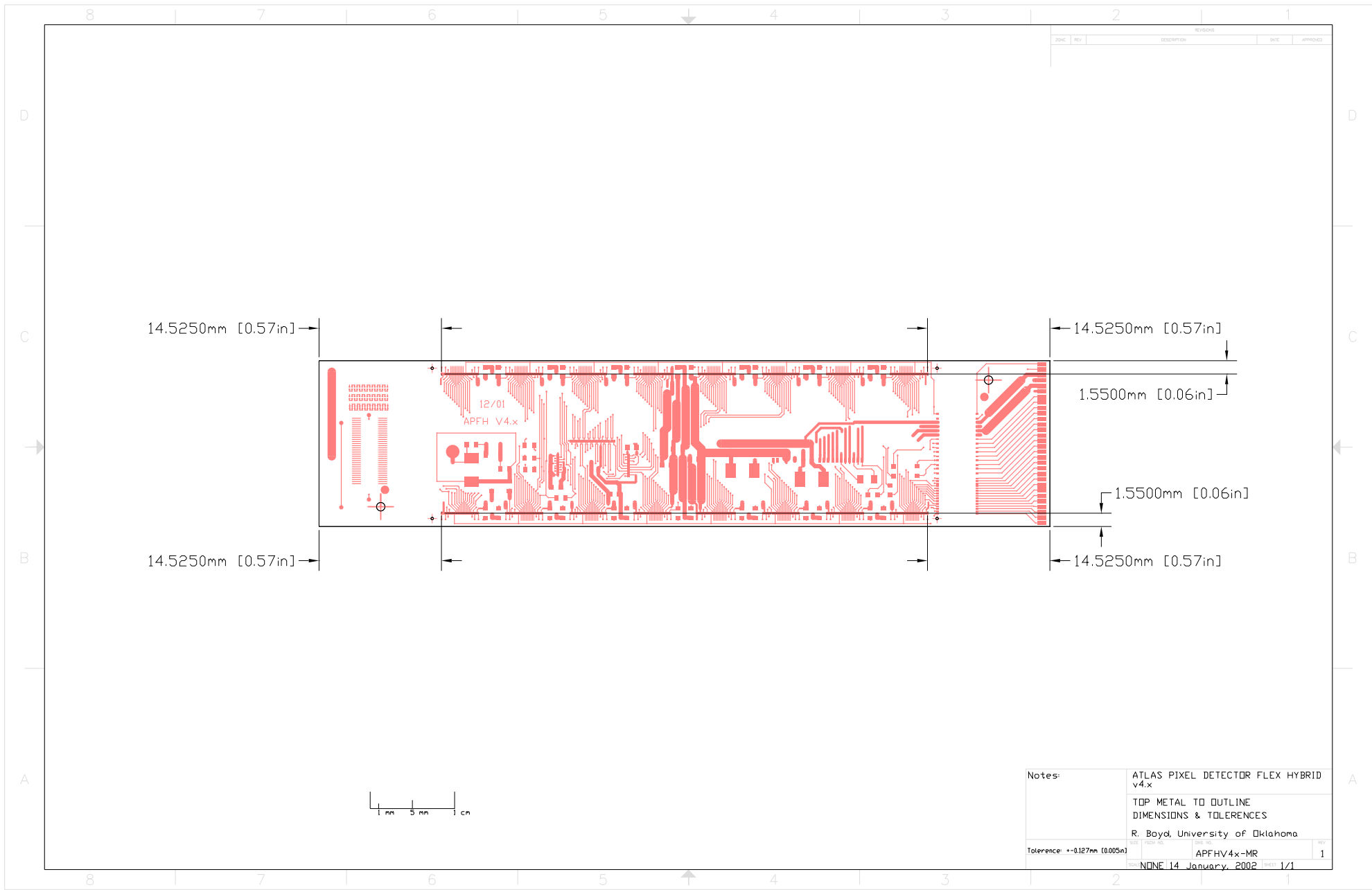


Notes: Holes NOT plated through except as noted	ATLAS PIXEL DETECTOR FLEX HYBRID VERSION 4.x			
	HOLE PLACEMENT			
	R. Boyd, University of Oklahoma			
Tolerance: $\pm 0.076\text{mm}$ [0.003in]	REV	ISS. NO.	DATE	APP.
			NONE 14 January 2002	1



REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED

14.5250mm [0.57in]

14.5250mm [0.57in]

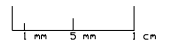
14.5250mm [0.57in]

14.5250mm [0.57in]

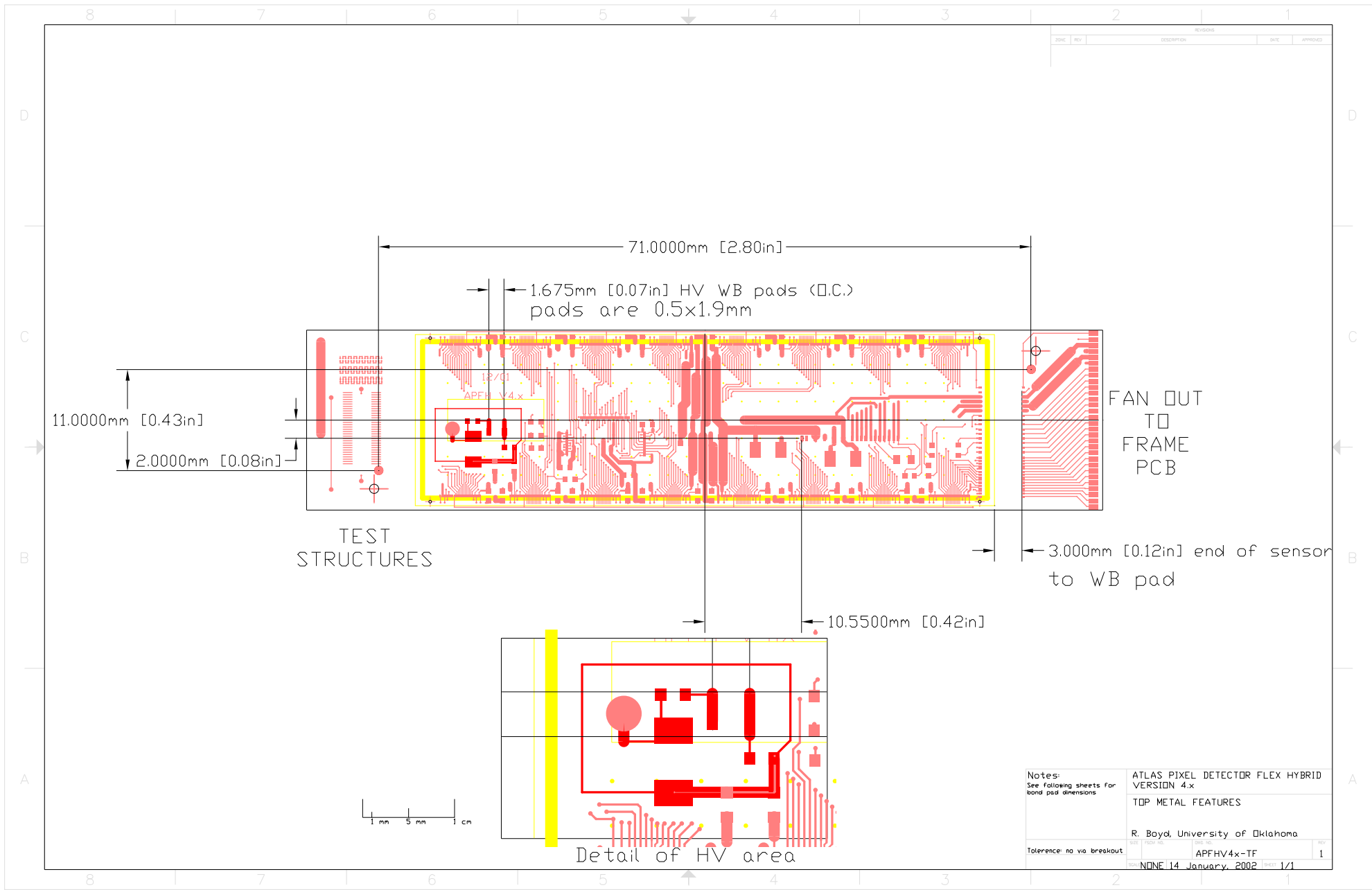
12/01
APFH V4.x

1.5500mm [0.06in]

1.5500mm [0.06in]



Notes:	ATLAS PIXEL DETECTOR FLEX HYBRID v4.x		
	TOP METAL TO OUTLINE DIMENSIONS & TOLERANCES		
Tolerance: $\pm 0.127\text{mm}$ (0.005in)	R. Boyd, University of Oklahoma		REV
	DATE: NONE 14 January 2002	ISS. NO: APFHV4x-MR	1
		REV: 1/1	



REVISION				
ZONE	REV	DESCRIPTION	DATE	APPROVED

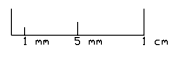
FAN OUT
TO
FRAME
PCB

TEST
STRUCTURES

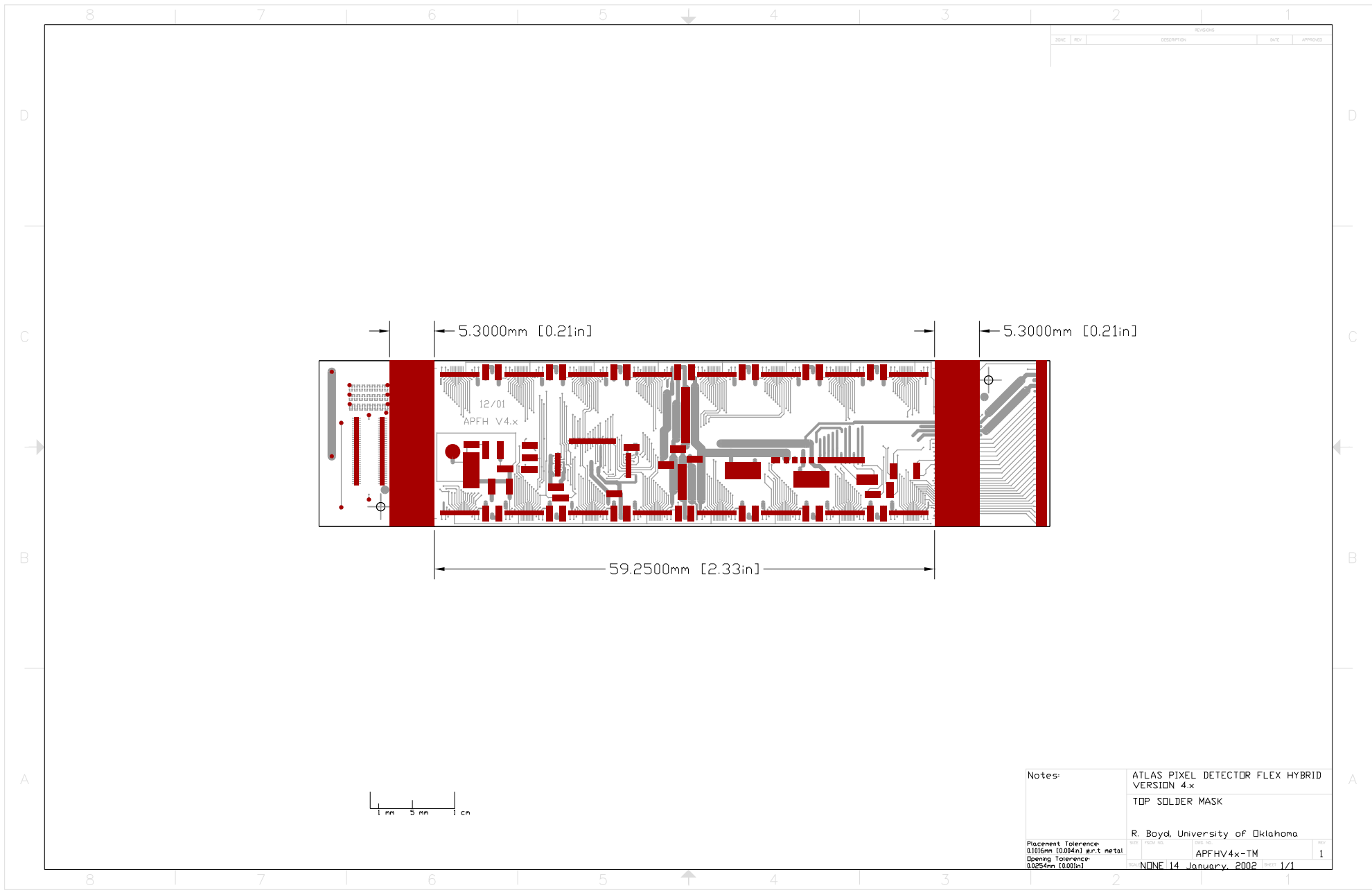
3.000mm [0.12in] end of sensor
to WB pad

10.5500mm [0.42in]

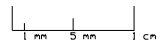
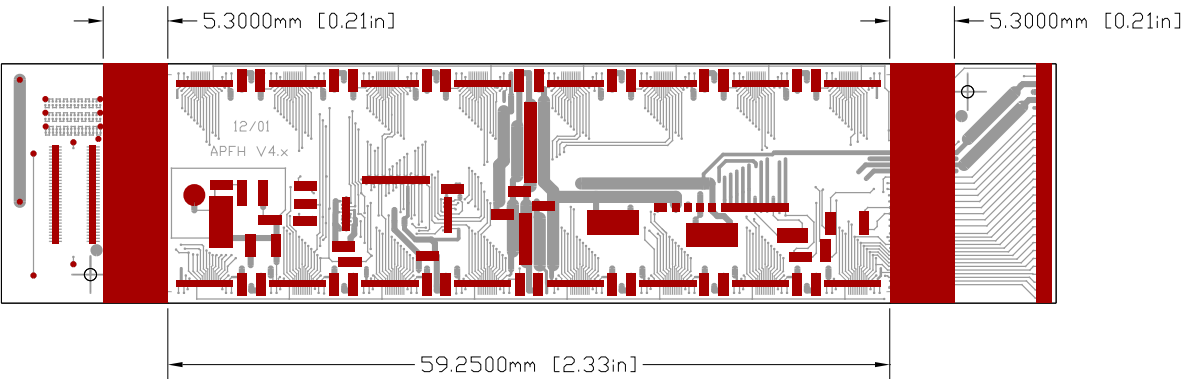
Detail of HV area



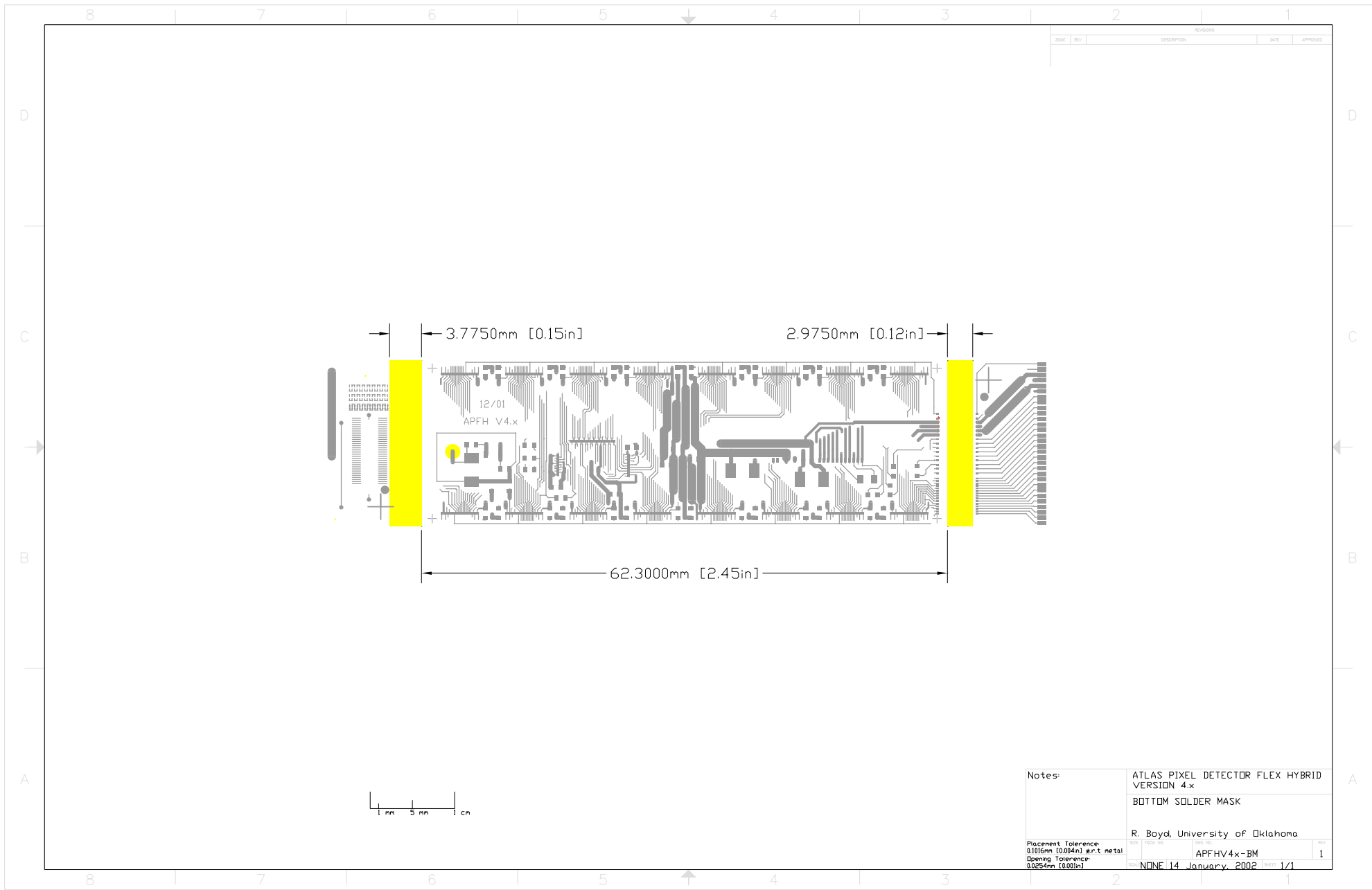
Notes: See following sheets for bond pad dimensions	ATLAS PIXEL DETECTOR FLEX HYBRID VERSION 4.x		
	TOP METAL FEATURES		
R. Boyd, University of Oklahoma			
Tolerance: no via breakout	DATE: NONE 14 January 2002	ISSUE NO: APFHV4x-TF	REV: 1



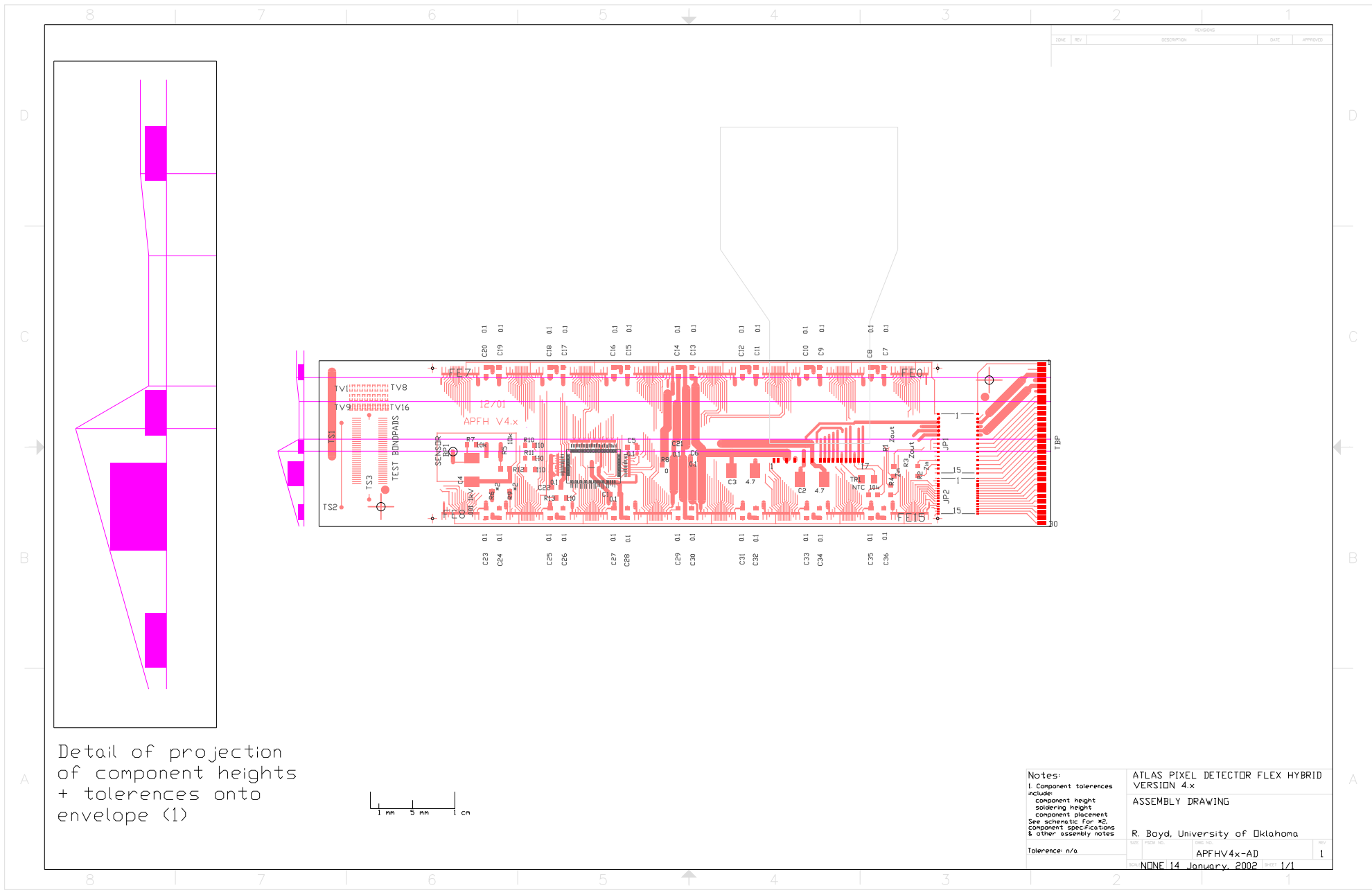
REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



Notes:	ATLAS PIXEL DETECTOR FLEX HYBRID VERSION 4.x		
	TOP SOLDER MASK		
	R. Boyd, University of Oklahoma		
Placement Tolerance: 0.1016mm [0.004in] w/rt metal	DATE	ISSUE NO.	REV
Opening Tolerance: 0.0254mm [0.001in]	NONE 14 January 2002	APFHV4x-TM	1
		1/1	

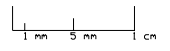


Notes:	ATLAS PIXEL DETECTOR FLEX HYBRID VERSION 4.x		
	BOTTOM SOLDER MASK		
	R. Boyd, University of Oklahoma		
Placement Tolerance: 0.1016mm [0.004in] w/rt metal	DATE	ISSUE NO.	REV
Opening Tolerance: 0.0254mm [0.001in]	NONE 14 January 2002	1	1

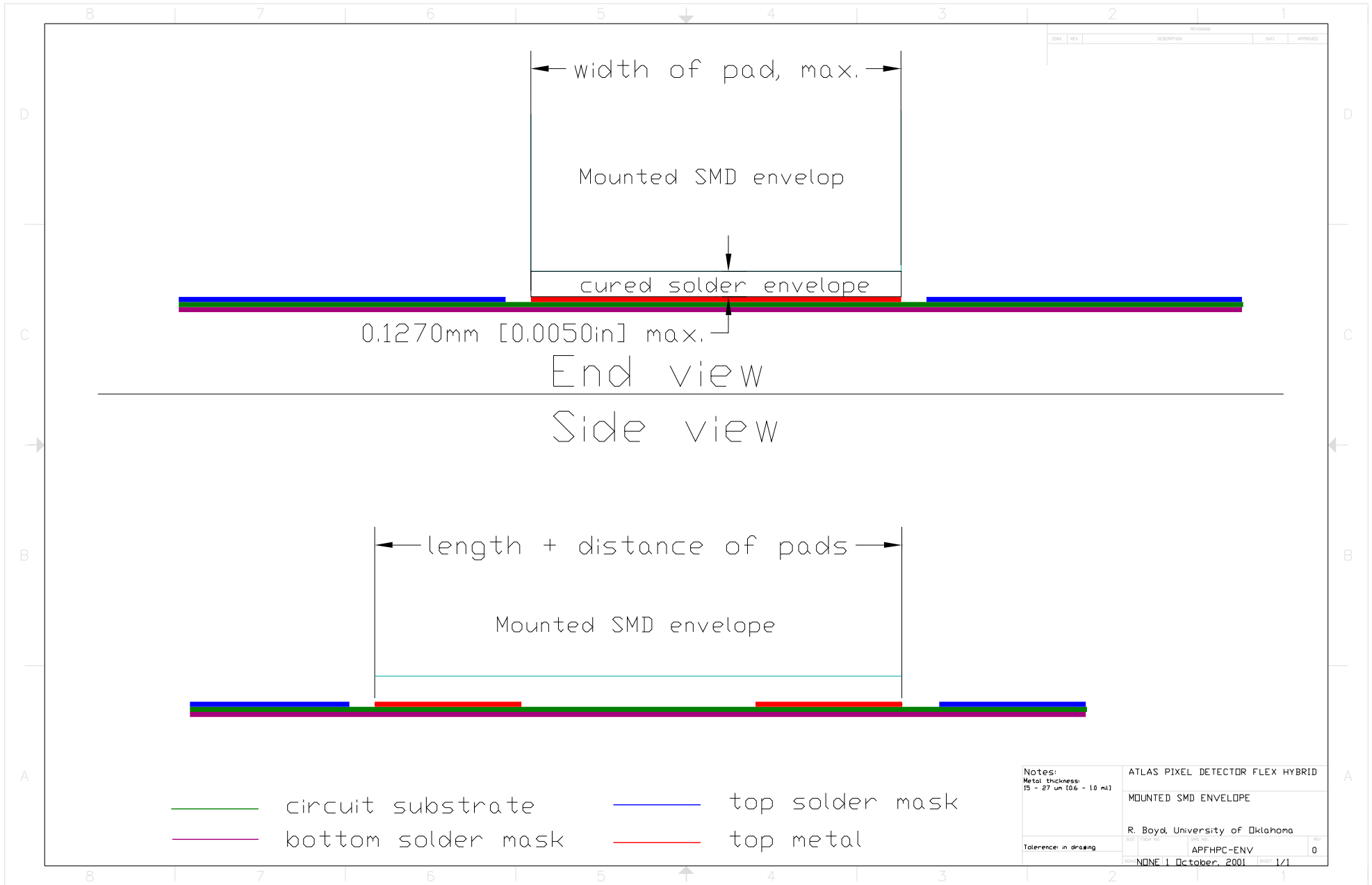


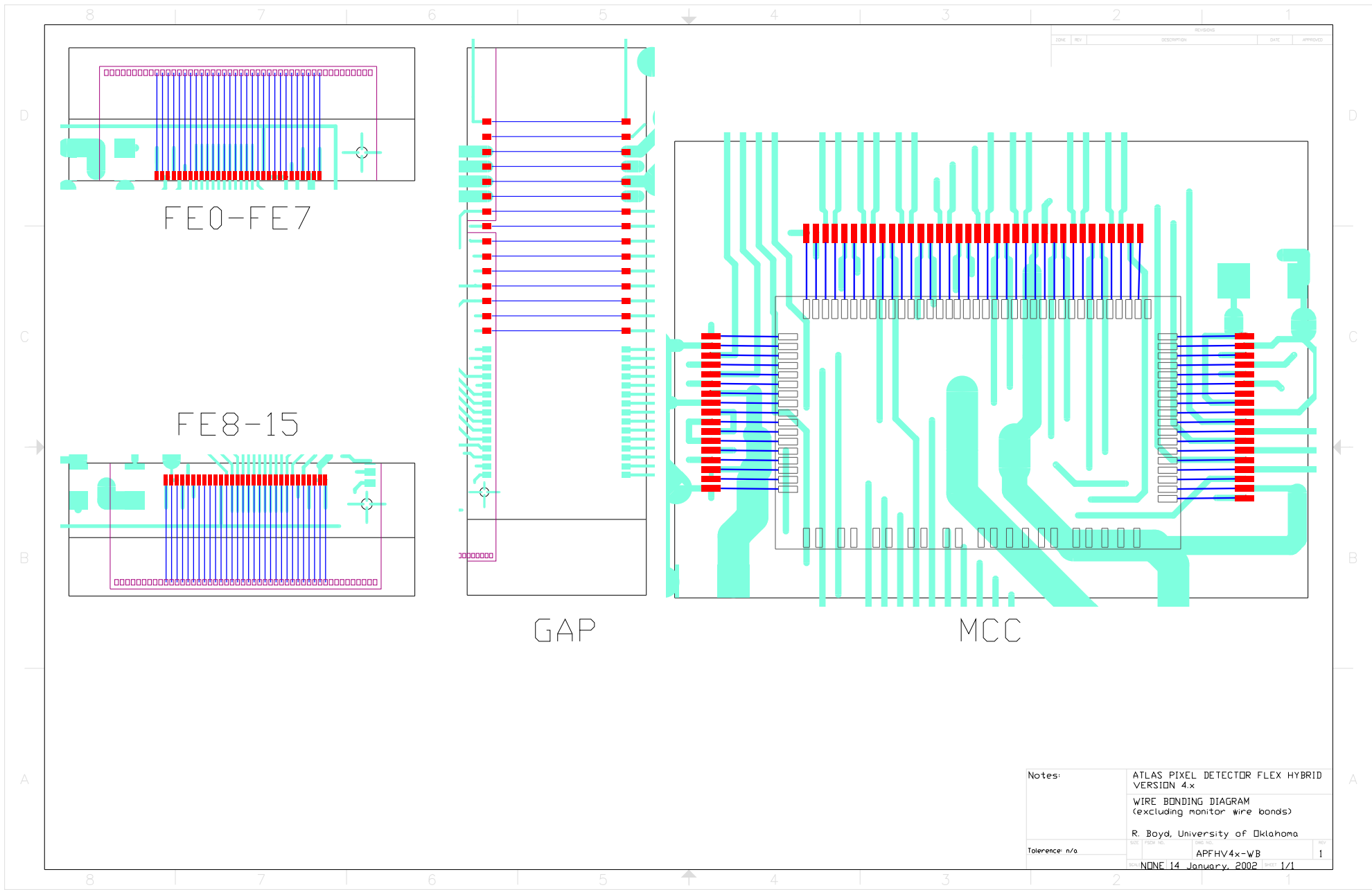
REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	1		14 January 2002	

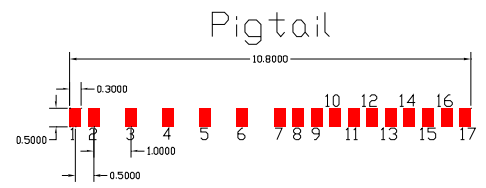
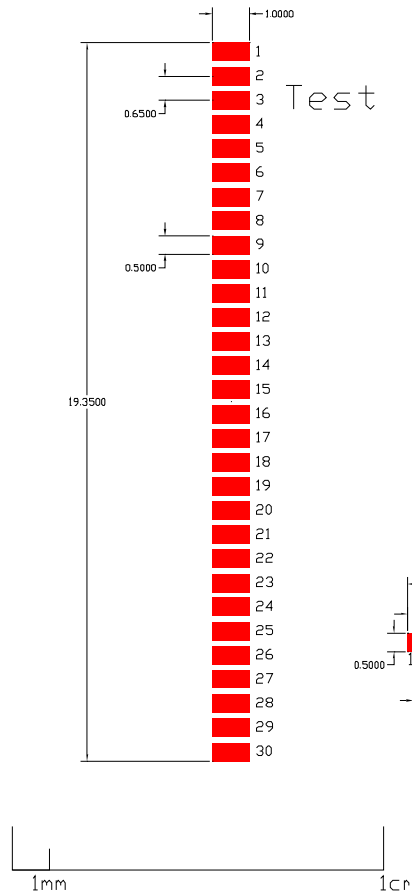
Detail of projection
of component heights
+ tolerances onto
envelope (1)



Notes: 1. Component tolerances include: component height soldering height component placement See schematic for #2. Component specifications & other assembly notes	ATLAS PIXEL DETECTOR FLEX HYBRID VERSION 4.x	
	ASSEMBLY DRAWING	
Tolerance: n/a	R. Boyd, University of Oklahoma	
	SUB: APFHV4x-AD	REV: 1
	DATE: 14 January 2002	SHEET: 1/1







ATLAS Pixel Flex Hybrid Module connector pad def.'s & dim.'s	
Drawn by: R. Boyd, University of Oklahoma	
Document Number: APFH-SV1	REV:
Date: 27 July, 2001	Units: mm Scale: n/a

V3 and v4.x Pigtail Connector Signals

Pin #	Flex v3 Signal Name	Flex v4.x Signal Name	Pigtail Signal Name
1	Vcal	Vcal	spare1
2	VDD_AMS	VDD_AMS	spare2
3	VDDA	VDDA	VDDA
4	AGnd	AGnd	AGnd
5	VDD	VDD	VDD
6	DGnd	DGnd	DGnd
7	STRIN	DTO2N	STRI/DTO2N
8	STRIP	DTO2P	STRI/DTO2P
9	RSIB	RSIB	RSIB
10	DTON	DTON	DTON
11	DTOP	DTOP	DTOP
12	NTC_RET	NTC_RET	NTC_RET
13	DCIN	DCIN	DCIN
14	DCIP	DCIP	DCIP
15	NTC	NTC	NTC
16	XCKN	XCKN	XCKN
17	XCKP	XCKP	XCKP

ATLAS PIXEL FLEX HYBRID MODULE		
PIGTAIL CONNECTOR		

University of Oklahoma		Scale: n/a
Dwg.#	Rev. A	Units: n/a
Drawn By:	R. Boyd	Date: 27 February, 2002

V3 and v4.x Test Connector Signals

Pad #	Signal Name		Pad #	Signal Name
	3.x	4.x		
1	Vca1		16	CCK
2	VDD_AMS	spare 2	17	DAO
3	DGnd		18	LD
4	VDD		19	SYNCP
5	AGnd		20	SYNCP
6	VDDA		21	XCKN
7	RSIB		22	XCKP
8	DTOP		23	LV1N
9	DTON		24	LV1P
10	STRIP	DTO2P	25	STRN
11	STRIN	DTO2N	26	STRP
12	DCIN		27	VDDA
13	DCIP		28	DGnd
14	CKN		29	VDD
15	CKP		30	AGnd

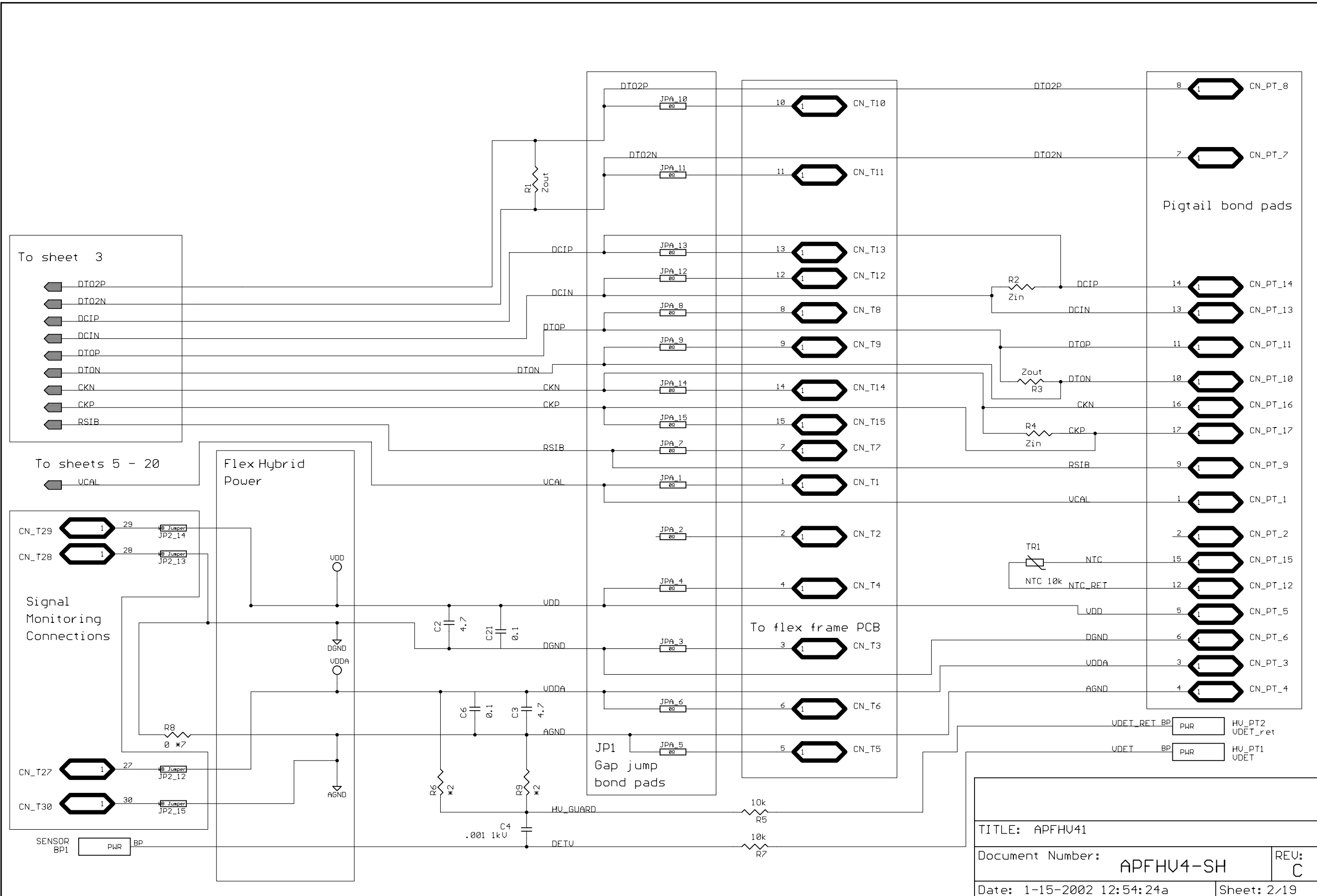
ATLAS PIXEL FLEX HYBRID MODULE			
TEST CONNECTOR			
University of Oklahoma		Scale: n/a	
Dwg.#	Rev. A	Units: n/a	
Drawn By:	R. Boyd	Date:	26 February, 2002

NOTES:

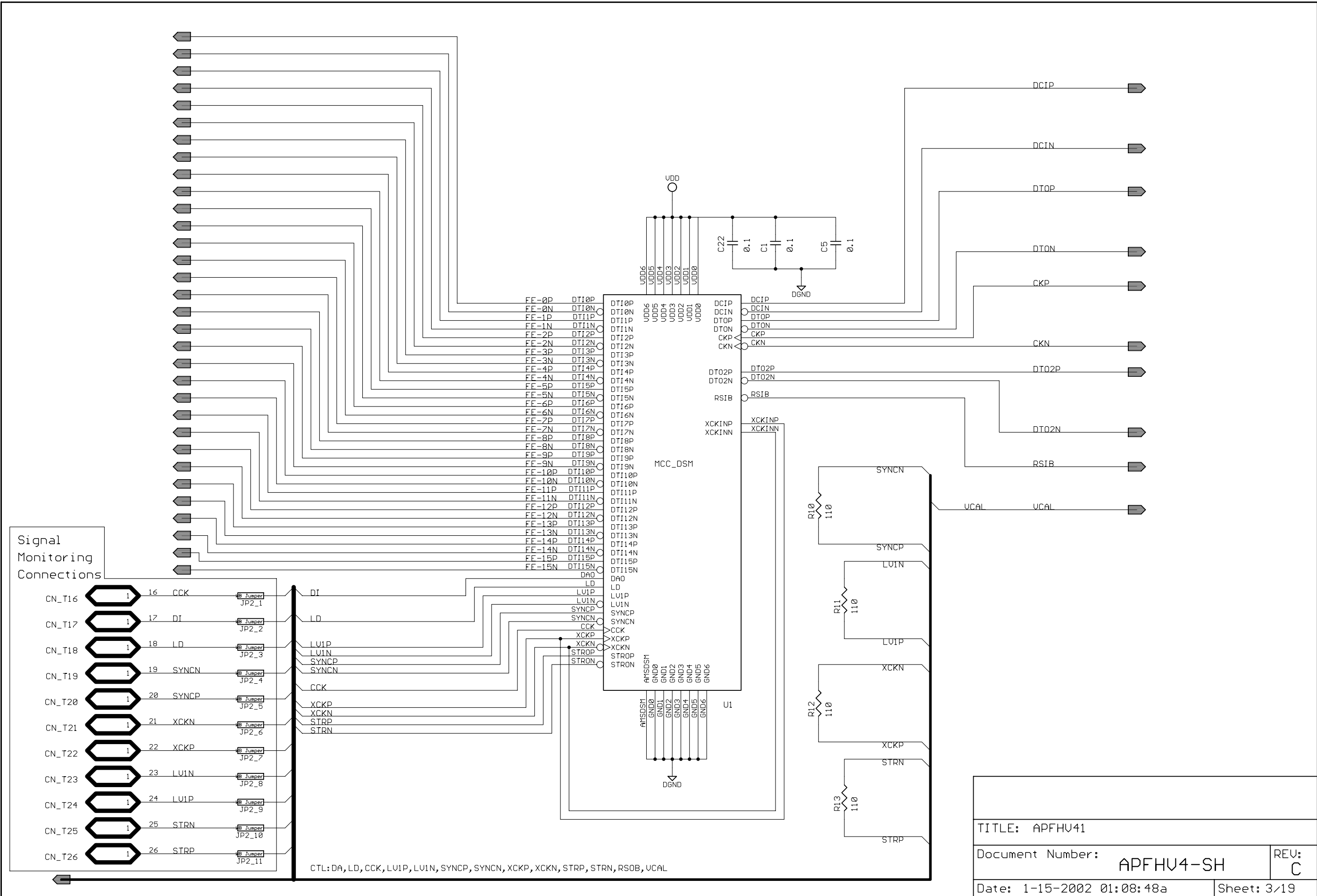
- *1 All resistors in Ohms, 0402, 1/16 W
- *2 Use of R6 and R9 is mutually exclusive! One or the other can be zero Ohms, but not both.
- *4 All capacitors 10 WVDC unless otherwise noted
- *5 All capacitors 0402 except: C2 - C4 are 1206
- *6 NTC is 0603

Missing parts designators:

TITLE: APFHU41		
Document Number:	APFHU4-SH	REV: C
Date: 1-15-2002 12:54:24a	Sheet: 1/19	



TITLE: APFHU41	
Document Number: APFHU4-SH	REV: C
Date: 1-15-2002 12:54:24a	Sheet: 2/19

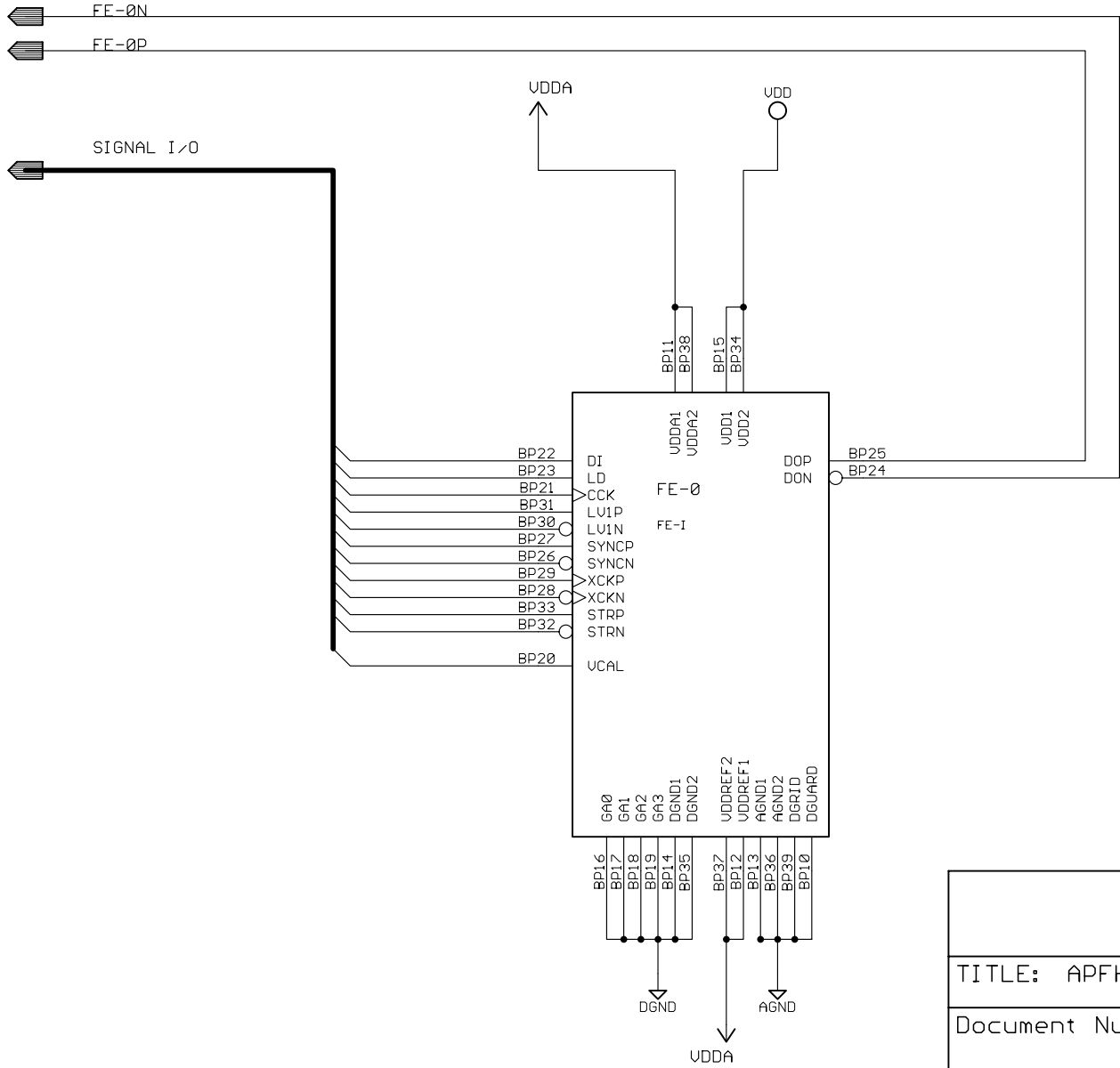


Signal Monitoring Connections

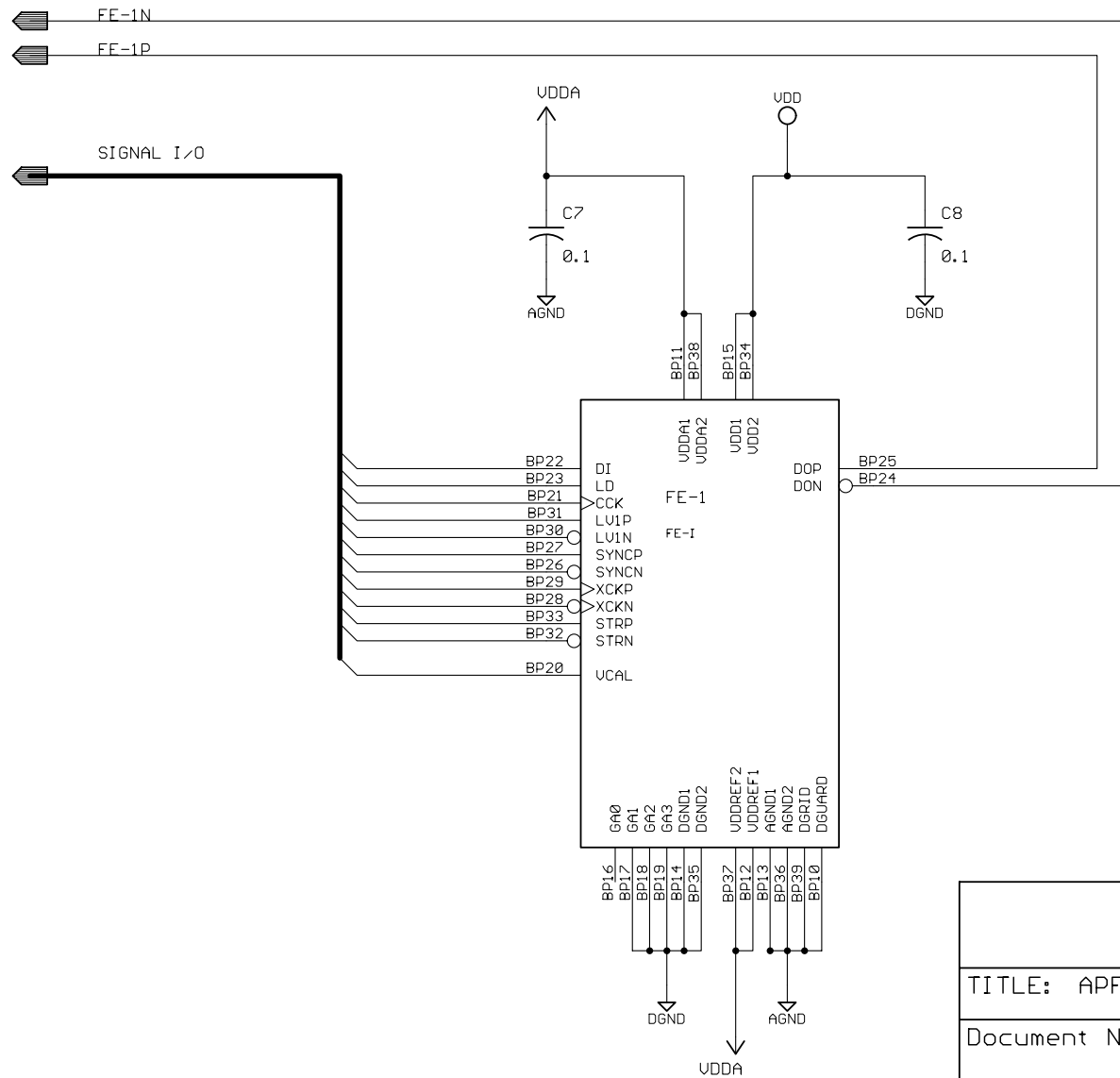
CN_T16	16	CCK	JP2_1
CN_T17	17	DI	JP2_2
CN_T18	18	LD	JP2_3
CN_T19	19	SYNCN	JP2_4
CN_T20	20	SYNCP	JP2_5
CN_T21	21	XCKN	JP2_6
CN_T22	22	XCKP	JP2_7
CN_T23	23	LU1N	JP2_8
CN_T24	24	LU1P	JP2_9
CN_T25	25	STRN	JP2_10
CN_T26	26	STRP	JP2_11

CTL: DA, LD, CCK, LU1P, LU1N, SYNCN, SYNCP, XCKP, XCKN, STRP, STRN, RS0B, UCAL

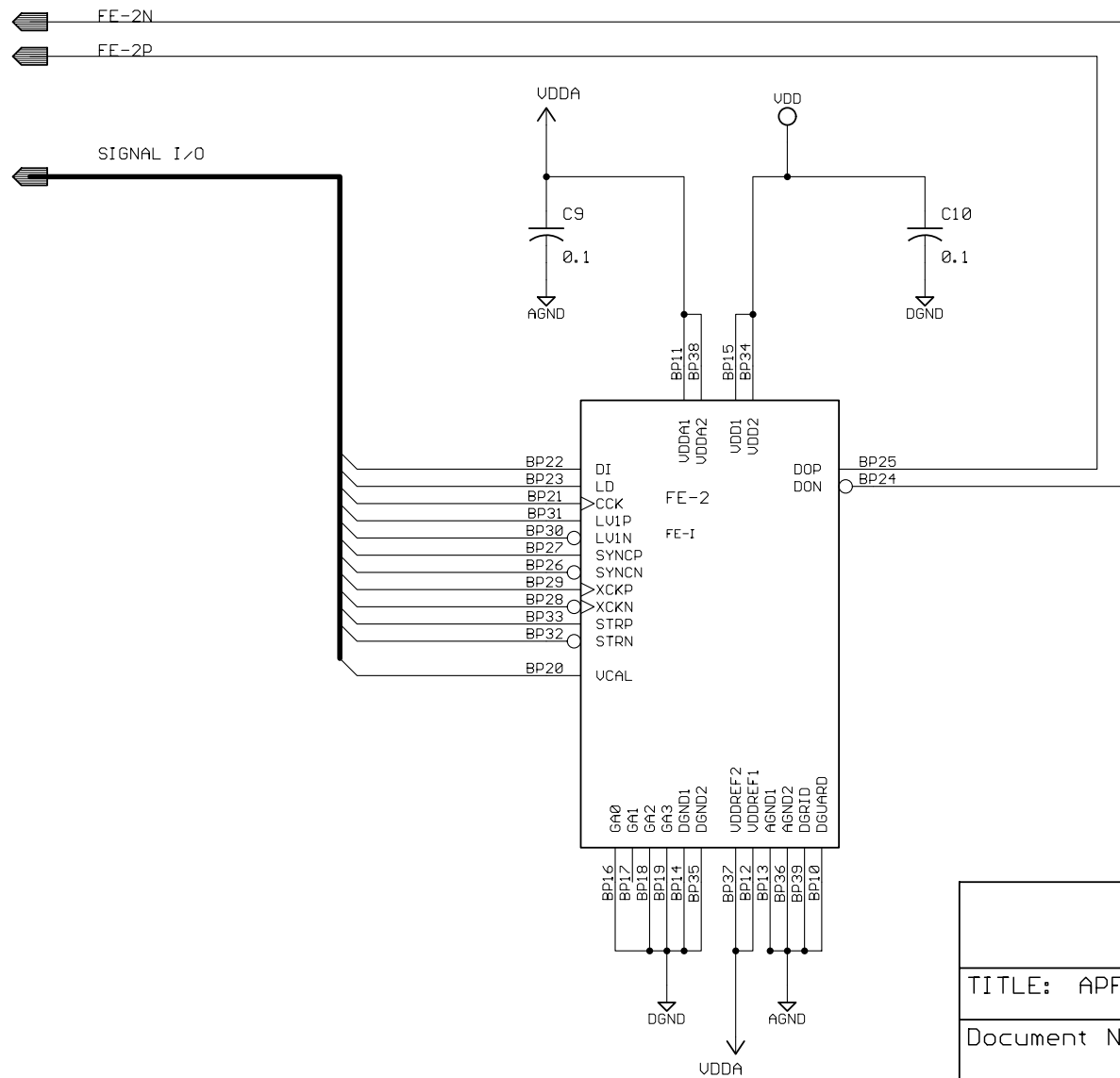
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Sheet: 3/19	



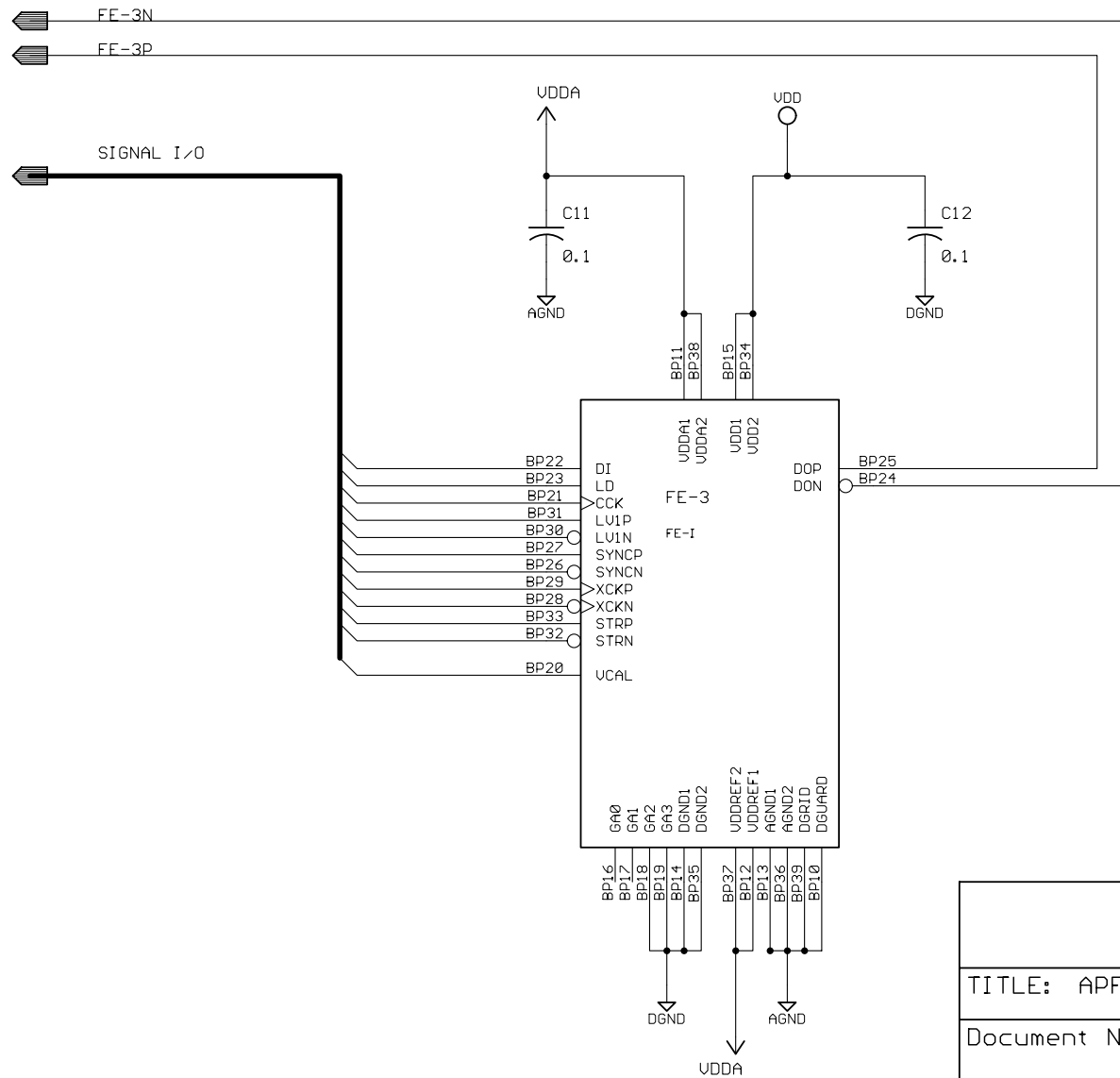
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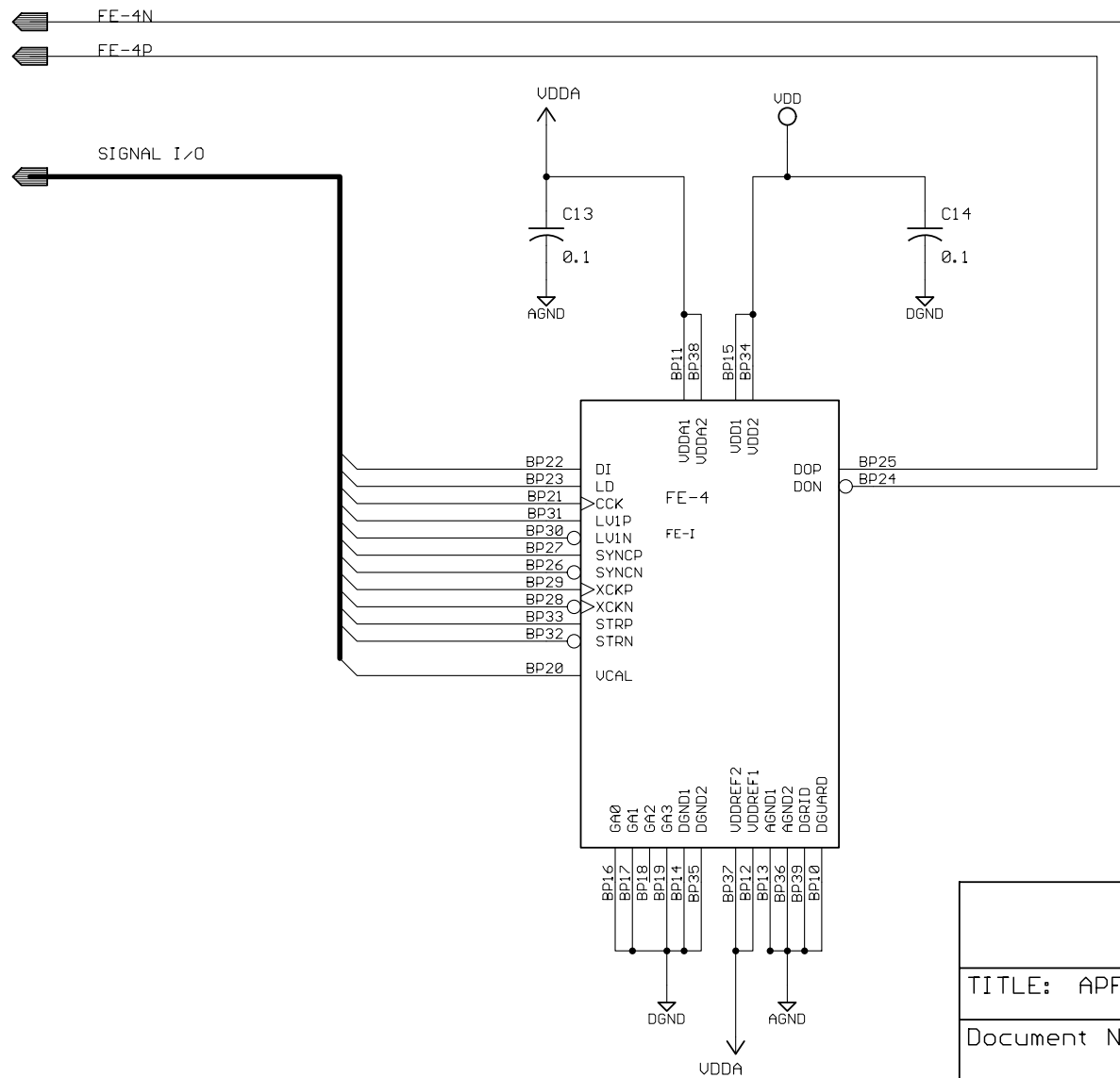
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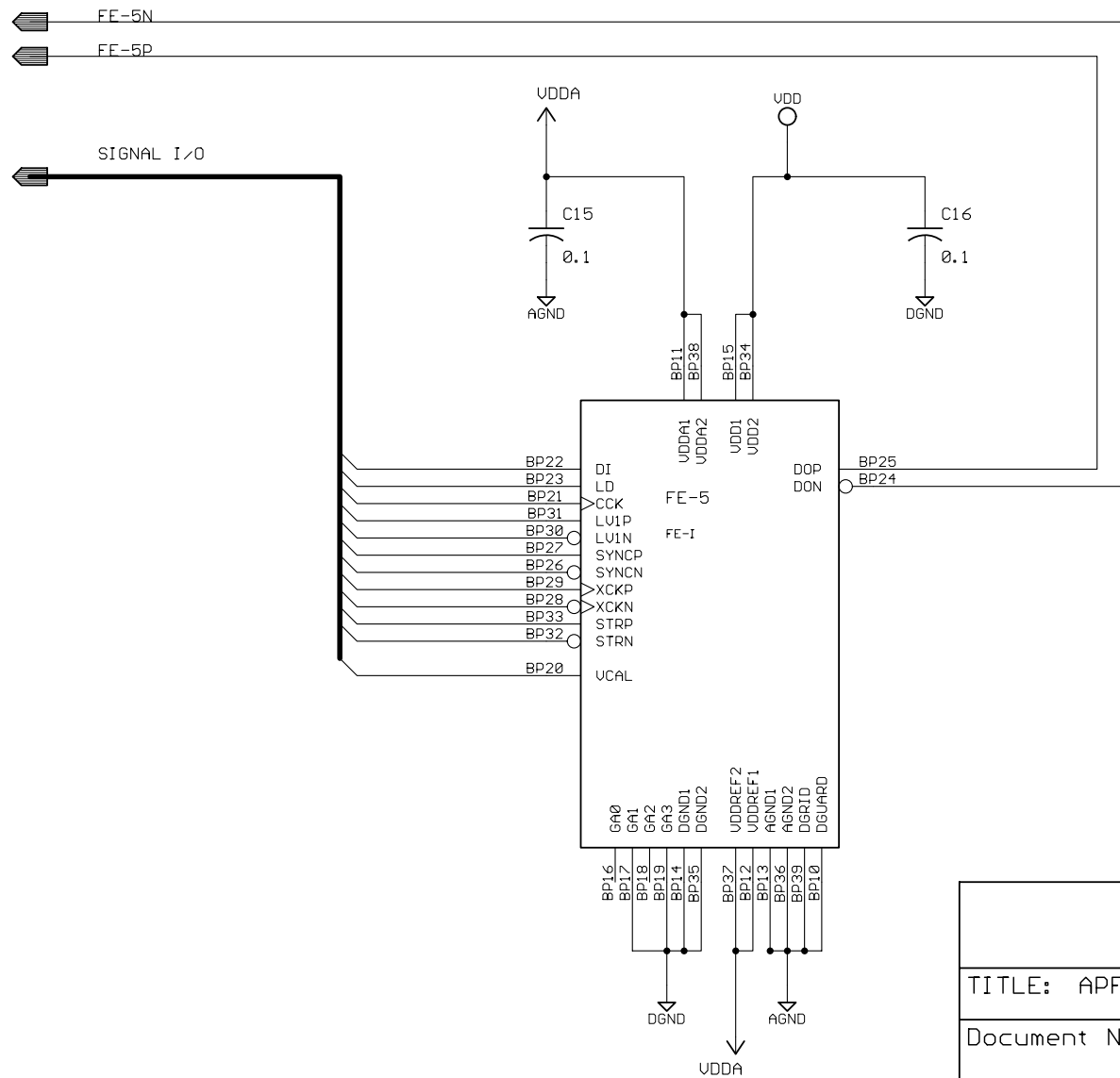
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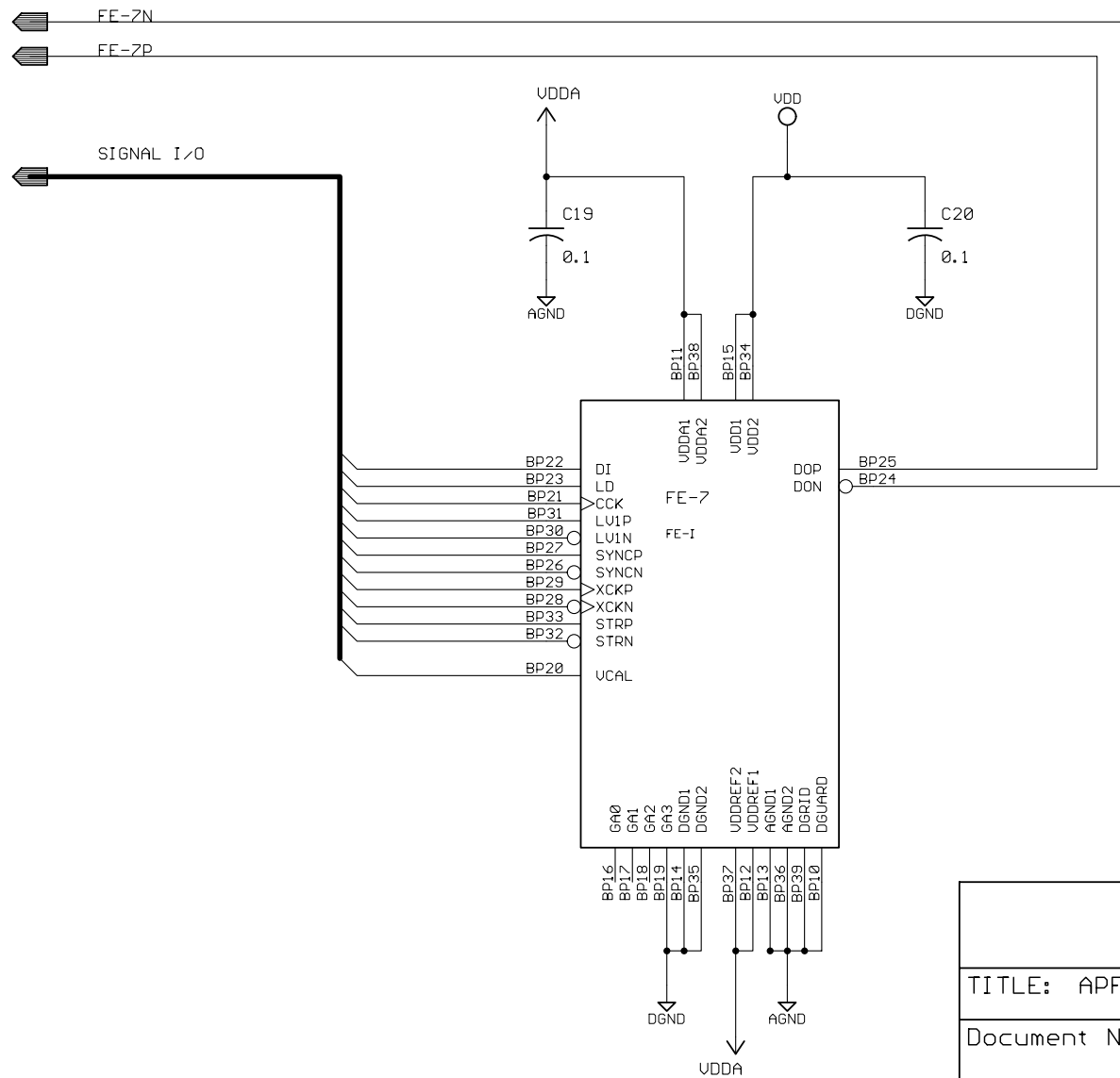
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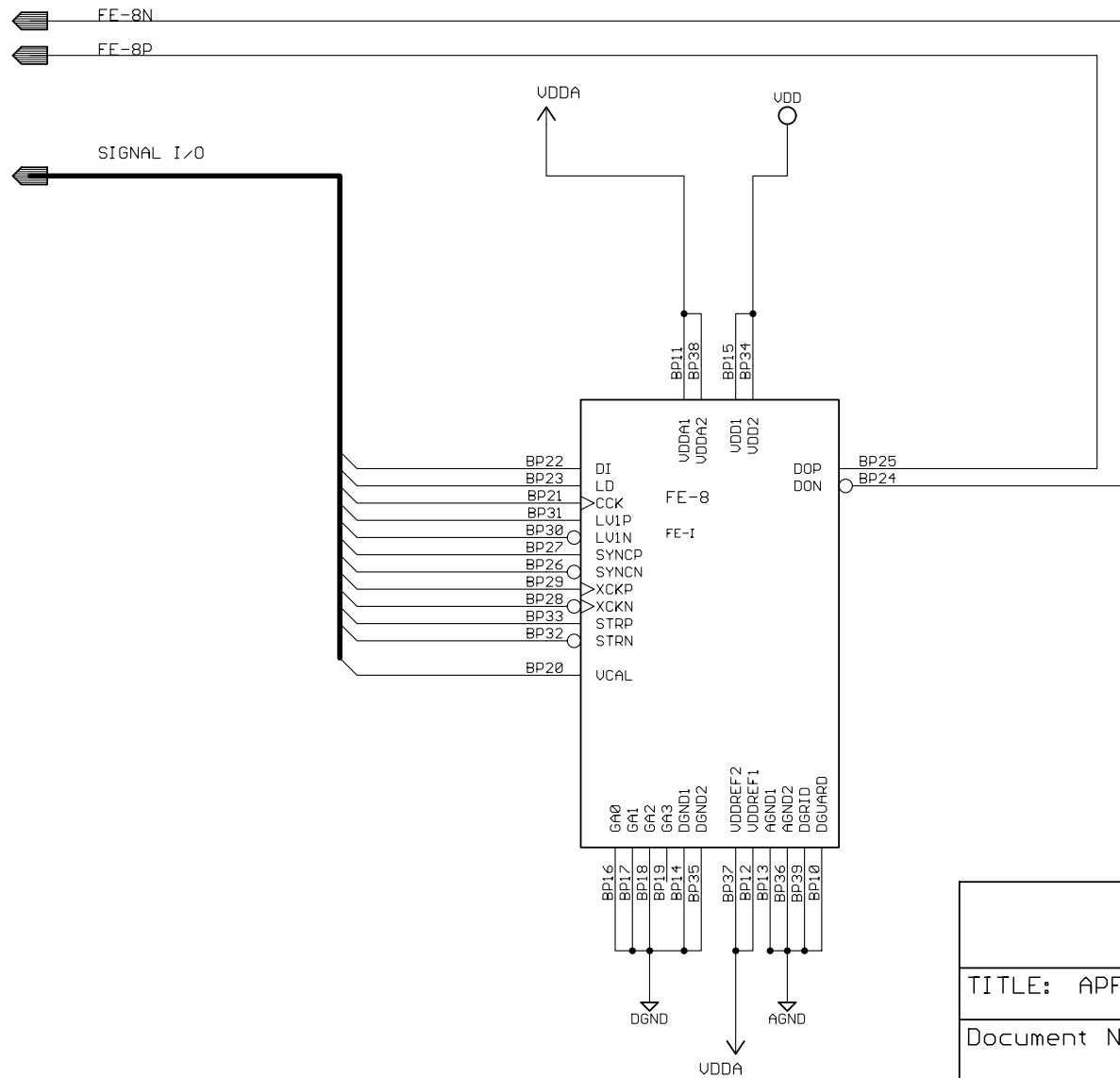
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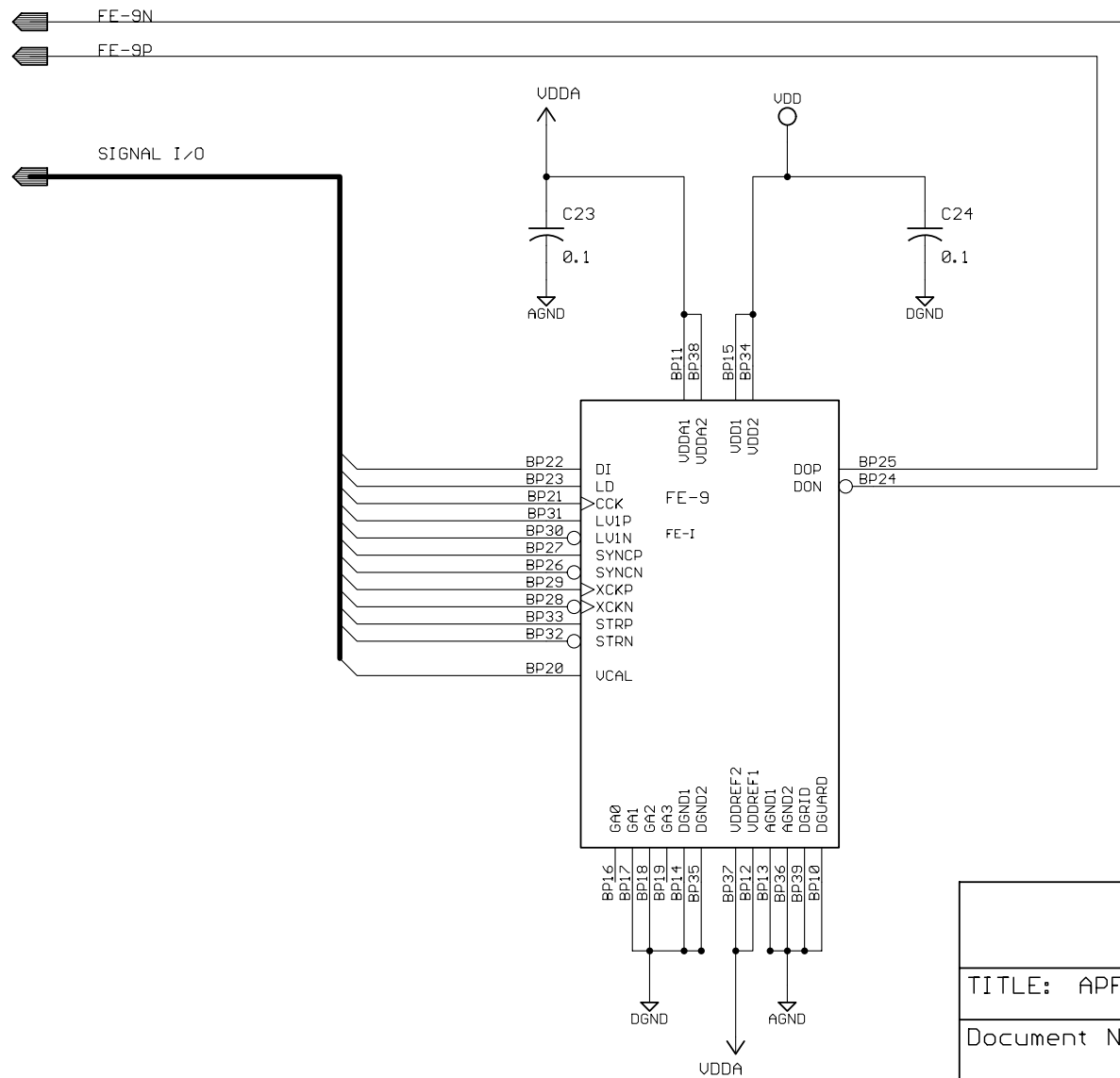
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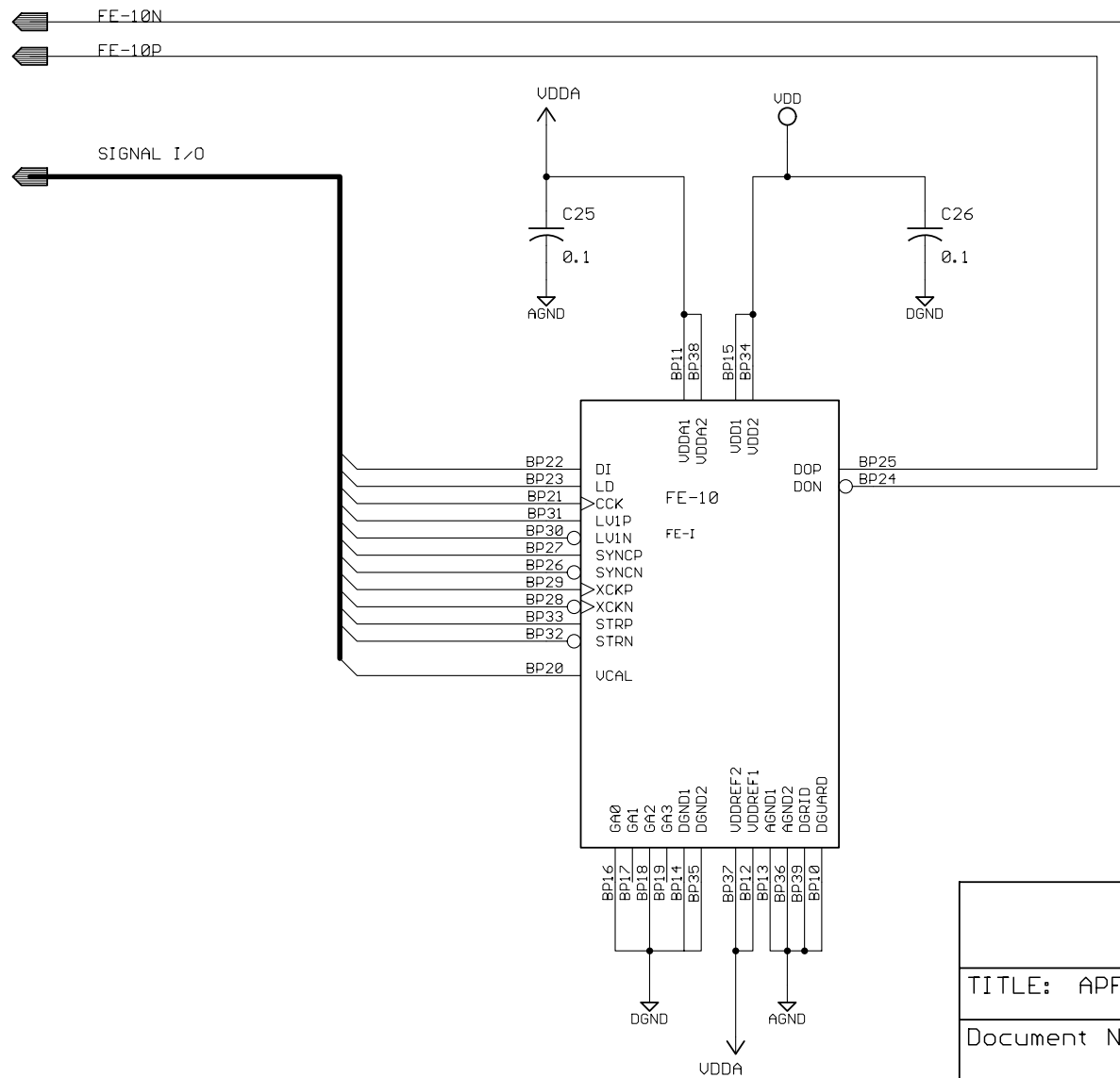
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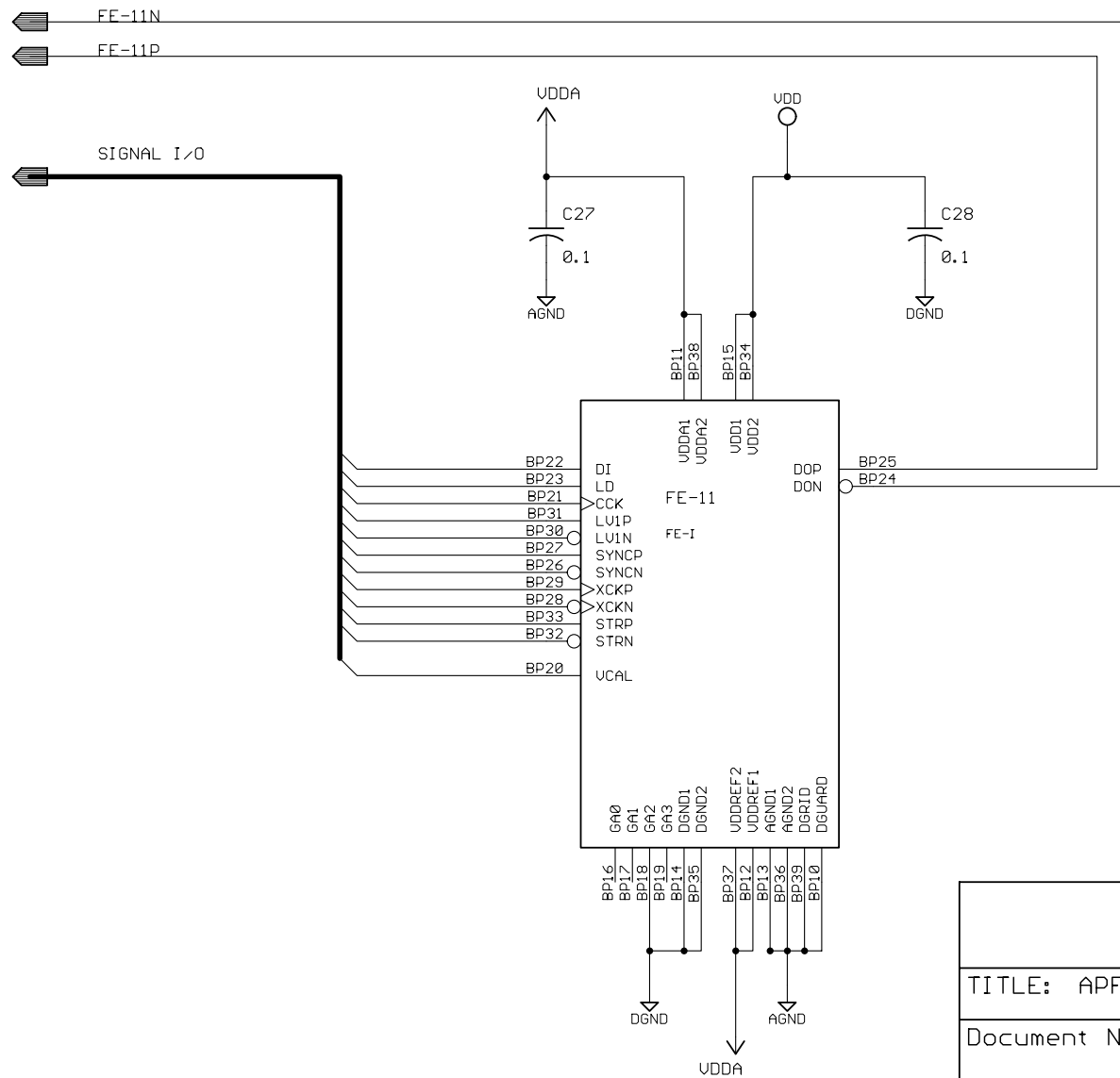
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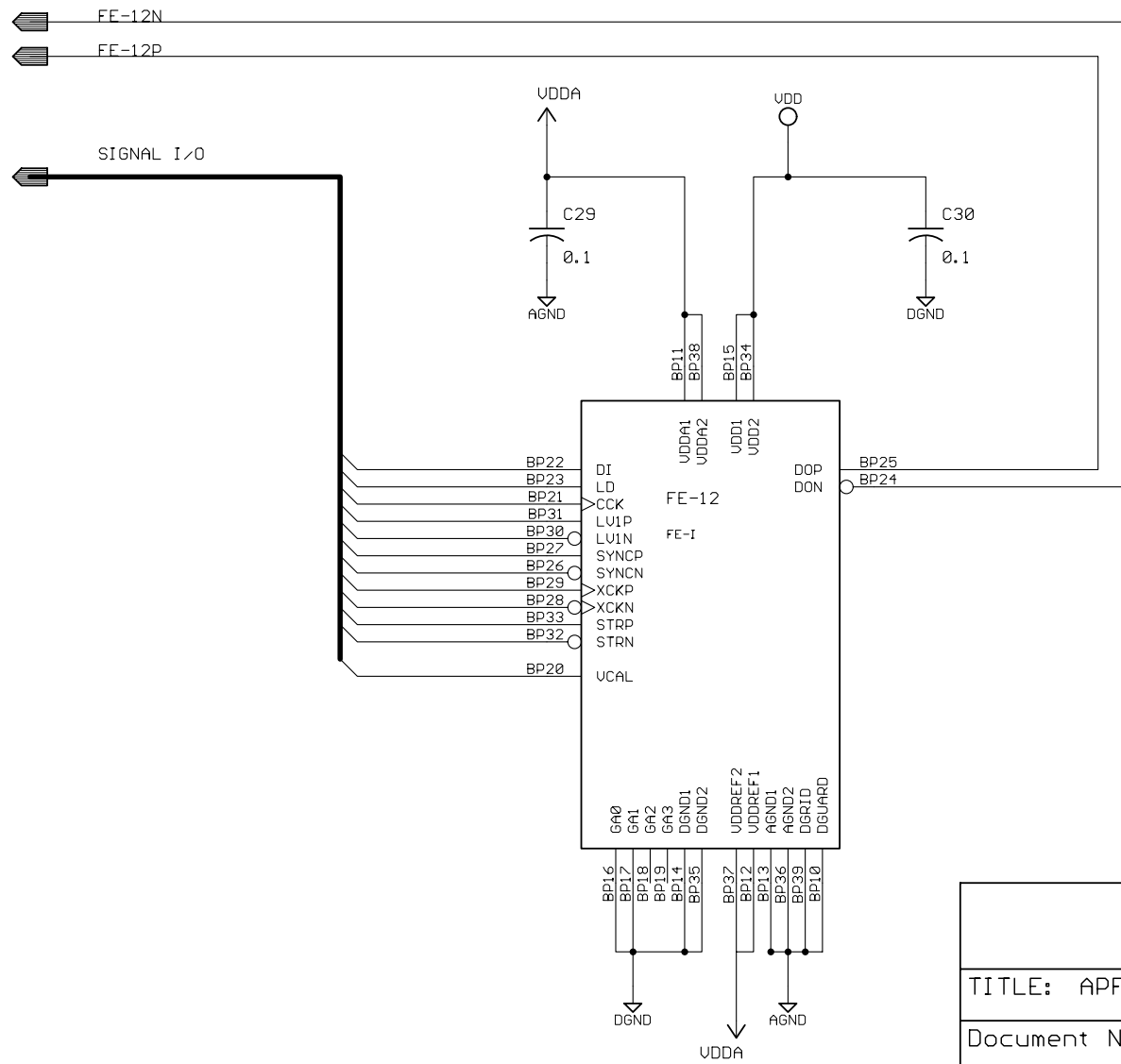
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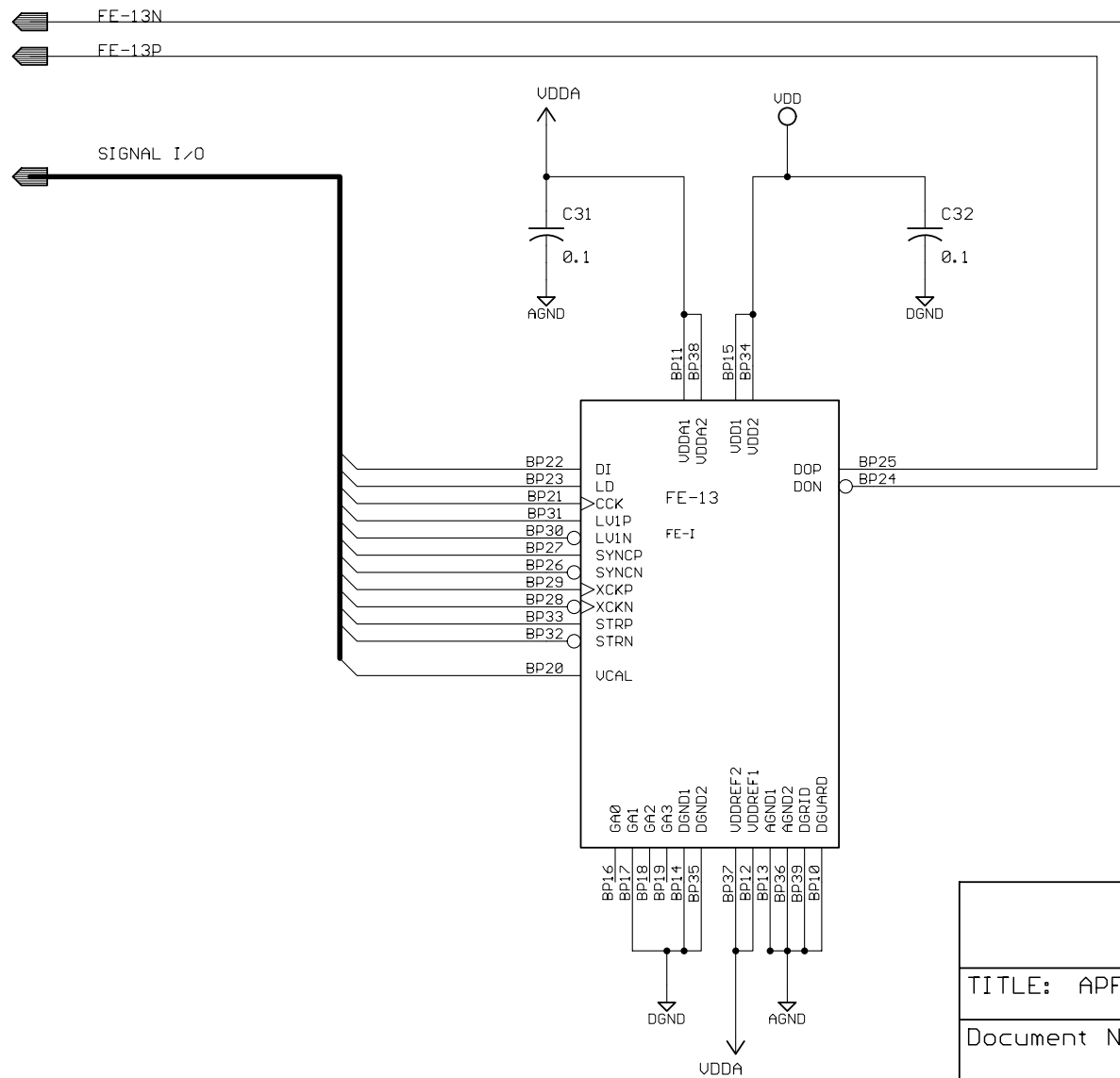
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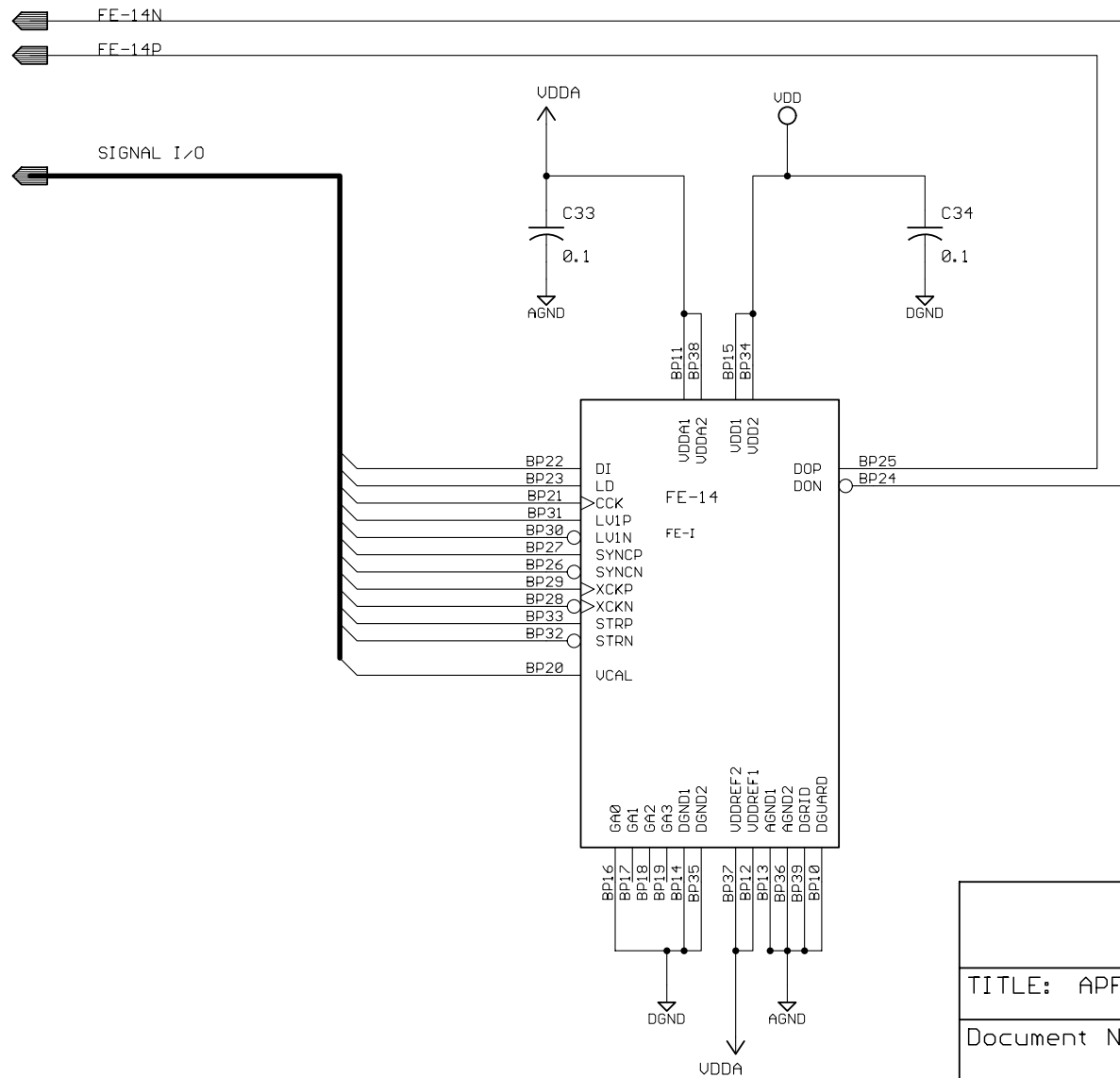
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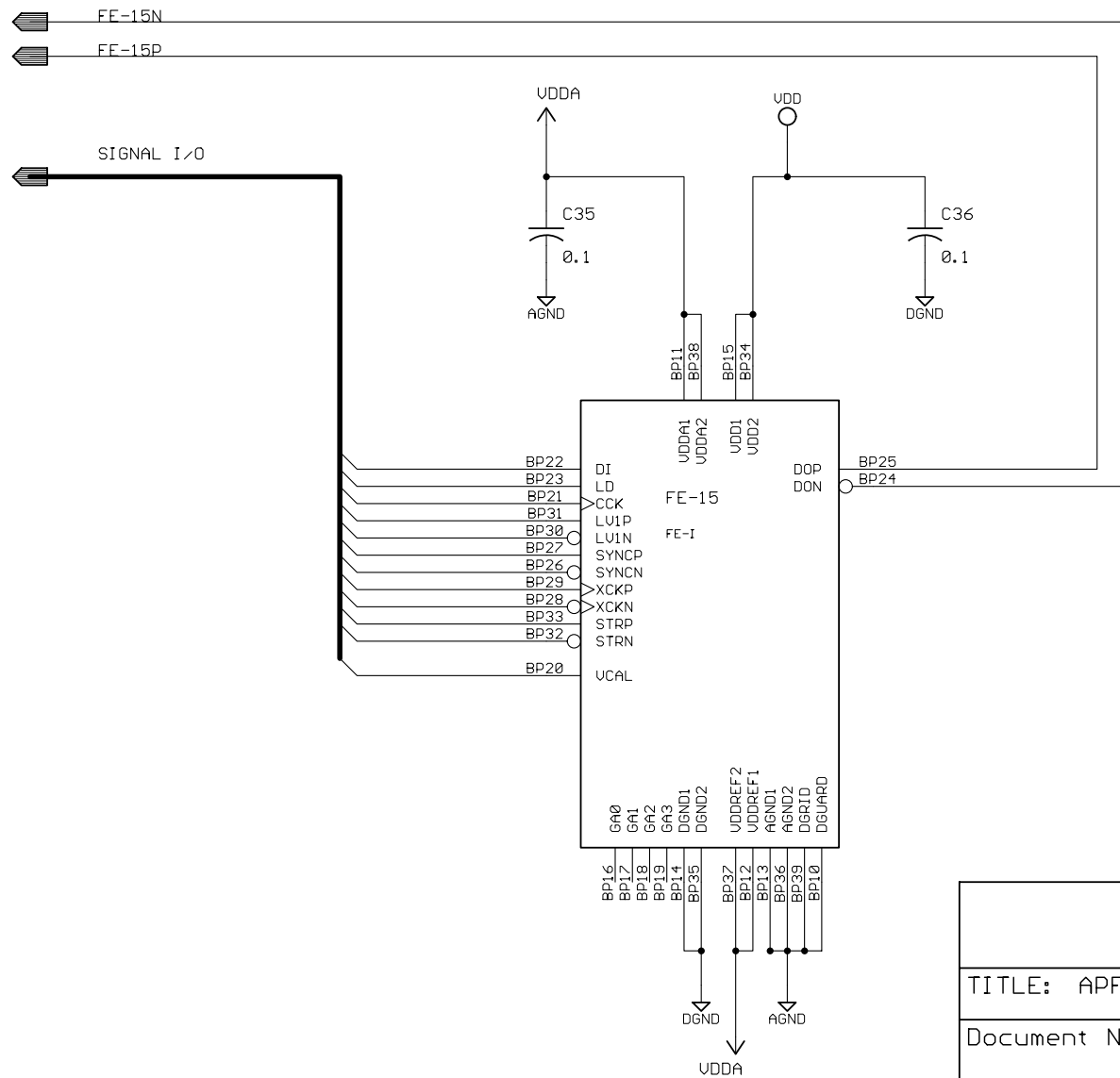
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Sheet: 19/19	