

# Preliminary Proposal to Add Standardised Variation Sequences for CJK Strokes

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






This is a proposal to add 17 standardised variation sequences (SVS) for various unencoded stroke characters that were unified together in IRGN 1137 when developing the current CJK Strokes block.

## Background

The current form of CJK Strokes block is based on the [L2/06-212 \(WG2 3063\)](#), where the IRG Rapporteur proposed the current encoding for U+31D0..31E3. When comparing the document with its predecessors, [L2/04-221](#) and [L2/04-367](#), there are some strokes that were unified together. The unification discussion seems to be based on [IRGN 1137](#), which is reflected in the [Appendix F: Documentation of CJK Strokes](#) of the Unicode Standard. Most of the variant strokes are taken from IRGN 1137 and Appendix F, with real world usage evidence in [GF 2001-2001 《GB 13000.1 字符集汉字折笔规范》](#) too.

## List of variant strokes

Here is a list of variant strokes grouped by the base form with their glyph name and shape. Variant strokes that are encoded already are shown in 4<sup>th</sup> and 5<sup>th</sup> column which should not be added as SVS, and only included here for informative reference.

	VS1	VS2	<i>Already encoded</i>	
U+31D0 一 H 横	 XH 斜横		 T 提 (U+31C0)	
U+31C0 ㇇ T 提	 DT 點提			
U+31D1   S 豎	 XS 斜豎			
U+31D2 丿 P 撇	 BP 扁撇		 SP 豎撇 (U+31D3)	
U+31D4 丶 D 點	 ZD 左點			
U+31CF ㇇ N 捺	 DN 點捺	 BN 扁捺	 TN 提捺 (U+31DD)	

U+31DD ㄨ TN 提捺	ㄨ HN 橫捺	ㄨ BTN 扁提捺		
U+31D5 ㄗ HZ 橫折	ㄗ HXZ 橫斜折			
U+31D7 ㄘ SZ 豎折	ㄘ XSZ 斜豎折			
U+31DC ㄚ PZ 撇折	ㄚ PT 撇提			
U+31DB ㄣ PD 撇點	ㄣ SPD 豎撇點			
U+31C3 ㄣ BXG 扁斜鉤			ㄣ XG 斜鉤 (U+31C2)	ㄣ SWG 豎彎鉤 (U+31DF)
U+31C6 ㄣ HZG 橫折鉤	ㄣ HWG 橫彎鉤	ㄣ XHZG 橫斜折鉤		
U+31E5 ㄣ SZP 豎折撇	ㄣ XSZP 斜豎折撇			
U+31C9 ㄣ SZWG 豎折彎鉤	ㄣ XSZWG 斜豎折彎鉤			

A few of the proposed stroke variants are taken from Ming typeface design and might not be obvious in other font style or scripts: stroke DT (variant of stroke T) and stroke SPD (variant of PD). The stroke origin is marked red in the following example.

ㄣ vs ㄣ	< vs ㄣ
地默 vs ㄣ 治	巡災 vs 女 (綏 has both)

### Standardized Variation Sequences

Below is a complete list of the 17 proposed standardized variation sequences as they would appear in the UCD's *StandardizedVariants.txt* file:

# CJK stroke variants

31C0 FE00; CJK stroke DT form; # CJK STROKE T

31C6 FE00; CJK stroke HWG form; # CJK STROKE HZG

31C6 FE01; CJK stroke XHZG form; # CJK STROKE HZG

31C9 FE00; CJK stroke XSZWG form; # CJK STROKE SZWG

31CF FE00; CJK stroke DN form; # CJK STROKE N  
31CF FE01; CJK stroke BN form; # CJK STROKE N  
31D0 FE00; CJK stroke XH form; # CJK STROKE H  
31D1 FE00; CJK stroke XS form; # CJK STROKE S  
31D2 FE00; CJK stroke BP form; # CJK STROKE P  
31D4 FE00; CJK stroke ZD form; # CJK STROKE D  
31D5 FE00; CJK stroke HXZ form; # CJK STROKE HZ  
31D7 FE00; CJK stroke XSZ form; # CJK STROKE SZ  
31DB FE00; CJK stroke SPD form; # CJK STROKE PD  
31DC FE00; CJK stroke PT form; # CJK STROKE PZ  
31DD FE00; CJK stroke HN form; # CJK STROKE TN  
31DD FE01; CJK stroke BTN form; # CJK STROKE TN  
31E5 FE00; CJK stroke XSZP form; # CJK STROKE SZP

### **Rationale**

CJK Strokes are sometimes used to describe the structure of ideographs in plain-text scenario and sometimes it is useful to separate variant strokes based on graphical differences. For example, in discussing stroke SZP in Simplified Chinese, stroke XSZP ㄣ (e.g. 专) and SZP ㄣ (e.g. 隹) are used in different characters and are not always interchangeable. These variants are also listed in the 5<sup>th</sup> column of Appendix F, which shows that the variants are in use in various modern characters.

There is also a list of strokes in ideographs compiled by the Ichitenfont team under the document [List of Inherited Strokes \(傳承字形筆畫表\)](#), which provides a list of strokes with variants, and their symbols based on English names. It should be noted that this document is only a digital document compilation and not authoritative, however the information in the document is detailed enough for reference. The headers are screenshotted and attached in references.

That is all.

## References

折数	序号	名 称		笔 形	例 字
		全 称	简称 (或俗称)		
1 折	5.1	横折竖	横折	冫 (𠃉)	口 见 达 舆 己 罗 马 丑 贯 / 敢 為
	5.2	横折撇	横撇	フ (フ)	又 祭 之 社 登 卵 / 令 了
	5.3	横钩		フ	买 宝 皮 饭
	5.4	竖折横	竖折	乚 (乚、𠃊)	山 世 岫 / 母 互 乐 / 发 牙 降
	5.5	竖弯横	竖弯	乚	四 西 尢
	5.6	竖折提	竖提	レ	长 瓜 鼠 以 瓦 叫 收
	5.7	撇折横	撇折	㇇ (㇇)	公 离 云 红 乡 亥 / 车 东
	5.8	撇折点	撇点	㇇	女 巡
	5.9	撇钩		ノ	メ
	5.10	弯竖钩	弯钩 (俗称)	㇇	犹 家
	5.11	捺钩	斜钩 (俗称)	㇇	代 戈
2 折	5.12	横折竖折横	横折折	㇇	凹 卍
	5.13	横折竖弯横	横折弯	㇇	朵
	5.14	横折竖折提	横折提	レ	计 颧 鸬
	5.15	横折竖钩	横折钩	㇇ (㇇)	同 门 却 永 耍 万 母 仓 / 也
	5.16	横折捺钩	横斜钩 (俗称)	㇇	飞 风 执
	5.17	竖折横折竖	竖折折	㇇	鼎 𠃊 亞 吳
	5.18	竖折横折撇	竖折撇	㇇ (㇇、㇇)	专 / 隼 / 矢
	5.19	竖弯横钩	竖弯钩	㇇	己 匕 电 心
3 折	5.20	横折竖折横折竖	横折折折	㇇	凸
	5.21	横折竖折横折撇	横折折撇	㇇	及 延
	5.22	横折竖弯横钩	横折弯钩	㇇ (乙)	几 丸 / 艺 亿
	5.23	横折撇折弯竖钩	横撇弯钩 (俗称)	㇇	阳 部
	5.24	竖折横折竖钩	竖折折钩	㇇ (㇇)	马 与 钙 / 号 弓
4 折	5.25	横折竖折横折竖钩	横折折折钩	㇇ (㇇)	乃 / 杨

10	㇇	HZ	T:口、口、田、品、呂、申、甲、圓 G:𠂔 Cook:口
11	㇈	HG	T:疋、了、予、矛、子、字、疏 Cook:、寫、㇈
12	㇇	HXZ	今、敢
23	㇉	PH	互、彙、牙
24	㇊	PT	T:弘、么、公、翁 Cook:么
30	㇋	SZZ	T:亞、鼎、𠂔 Cook:亞、龍
31	㇌	SZXZ	T:吳 G:吳、吳 Cook:專、吳
38	㇍	DN	入、𠂔
39	㇎	PN	是、走
40	㇏	TPN	之

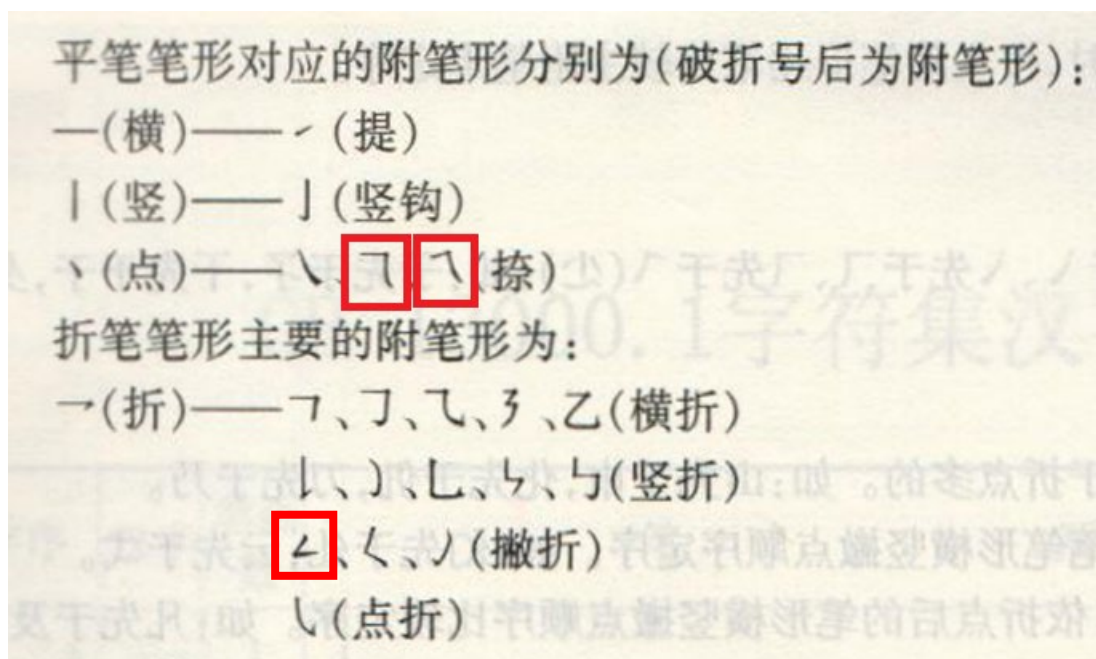
IRGN 1137 showing stroke HXZ, PT, XZSP (SZXZ in diagram), DN, BN (PN in diagram) and BTN (TPN in diagram)

㇉	撇橫
㇊	撇挑

IRGN 1086 from TCA listing stroke PZ and PT as separate strokes

1	31D0	一	㇇	CJK BASIC STROKE H
3	31D1	丨	丨 /	CJK BASIC STROKE S
5	31D3	丿	丿	CJK BASIC STROKE P
6	31D4	㇇	㇇	CJK BASIC STROKE WP
7	31D5	㇇	㇇	CJK BASIC STROKE SP
8	31D6	丶	㇇	CJK BASIC STROKE D
12	31D9	㇇	㇇	CJK BASIC STROKE TN
13	31DA	㇇	㇇	CJK BASIC STROKE TPN
17	31DD	㇇	㇇	CJK BASIC STROKE SZ
28	31C6	㇇	㇇	CJK BASIC STROKE HZG
31	31E4	㇇	㇇	CJK BASIC STROKE SZP






L2/04-367 listing stroke variants in 4<sup>th</sup> column  
(Stroke BP in this proposal is listed as WP)



GF 3001-1999 showing stroke HN and TN

一 31D0	H	héng	橫	一
一4E00, 二4E8C, 三4E09, 丁4E01, 丞4E1E, 丈4E08, 世4E16, 不4E0D, 土571E, 上4E0A, 十5341, 卅5345, 七4E03				
丨 31D1	S	shù	豎	丨
丨4E28, 丨4E29, 上4E0A, 工5DE5, 中4E2D, 串4E32, 冫8BA7, 乍4E4D, 五4E94, 丑4E11				
丿 31D2	P	pié	撇	丿
丿4E3F, 人4EBA, 八516B, 乂4E42, 爻723B, 禾79BE, 毛6BDB, 乏4E4F, 乖4E56, 采91C6, 衣8863, 行884C				
丶 31D4	D	diǎn	點	丶
丶4E36, 丸4E38, 义4E49, 永6C38, 冫51AB, 冰51B0, 凡51E1, 丹4E39, 冫4E3B, 求6C42, 火706B, 刃5203				
㇀ 31CF	N	nà	捺	㇀
大5927, 人4EBA, 天5929, 入(入5165), 尺5C3A, 走8D70, 是662F, 达8FB9, 廷5EF7				
㇁ 31DD	TN	tí-nà	提捺	㇁
㇁4E40, 忝5C10, 八(八516B), 入(入5165), 文(文6587), 交590A(交), 廻(廻5EFB)				
フ 31C7	HP	héng-pié	橫撇	フ
又53C8, 双53CC, 彘53D2, 今(今4ECA)				
㇂ 31D7	SZ	shù-zhé	豎折	㇂
㇂200CA, ㇂200CB, 山5C71, 牙7259, 互4E92, 乐4E50, 东4E1C, 断65AD, 继7EE, 彙5F59				
㇃ 31DC	PZ	pié-zhé	撇折	㇃
㇃53B6, 彡5E7A, 糸7CF8, 絲7D72, 弘5F18, 公516C, 翁7FC1				
㇄ 31C6	HZG	héng-zhé-gōu	橫折鉤	㇄
㇄200CC, 习4E60, 羽7FBD, 包5305, 匀52FB, 葡8461, 用7528, 青9752, 甫752B, 勺52FA, 月6708, 乚4E5C, 也4E5F				
㇅ 31C8	HZWG	héng-zhé-wān-gōu	橫折彎鉤	㇅
九4E5D, 几51E0, 飞98DE, 风98CE, 气6C14, 虱8671, 瘋760B				
㇆ 31DE	SZZ	shù-zhé-zhé	豎折折	㇆
㇆1200D1, 𠂇5350, 亞4E9E, 鼎9F0E, 吳5433, 专4E13, 設279AE, 屐244F7, 蕘249A1				

Various variant strokes listed in 5<sup>th</sup> column of Appendix F (Unicode 15.0)

	VS1	VS2
U+31D0 一 H 橫	● 斜橫 Stroke SH 	
U+31C0 ㇇ T 提	● 點挑 Stroke DU 	
U+31D1 丨 S 豎	● 斜豎 Stroke SV 	
U+31D2 丿 P 撇	● 扁撇 Stroke FT 	
U+31D4 丶 D 點	● 左點 Stroke LD 	
U+31CF ㇏ N 捺	● 橫捺 Stroke HP 	● 扁捺 Stroke FP 
U+31DD ㇐ TN 提捺	● 橫捺 Stroke HP 	● 挑扁捺 Stroke UFP 
U+31D5 𠃑 HZ 橫折	● 橫斜 Stroke HSV 	
U+31D7 𠃒 SZ 豎折	● 撇橫 Stroke TH 	
U+31DC 𠃓 PZ 撇折	● 撇挑 Stroke TU 	
U+31DB 𠃔 PD 撇點	● 直撇點 Stroke WTD 	
U+31C6 𠃕 HZG 橫折鉤	● 橫撇鉤 Stroke HTJ 	● 挑撇鉤 Stroke UTJ 
U+31E5 𠃖 SZP 豎折撇	● 撇橫撇 Stroke THT 	
U+31C9 𠃗 SZWG 豎折彎鉤	● 撇橫撇鉤 Stroke THTJ 	

Compiled list from List of Inherited Strokes