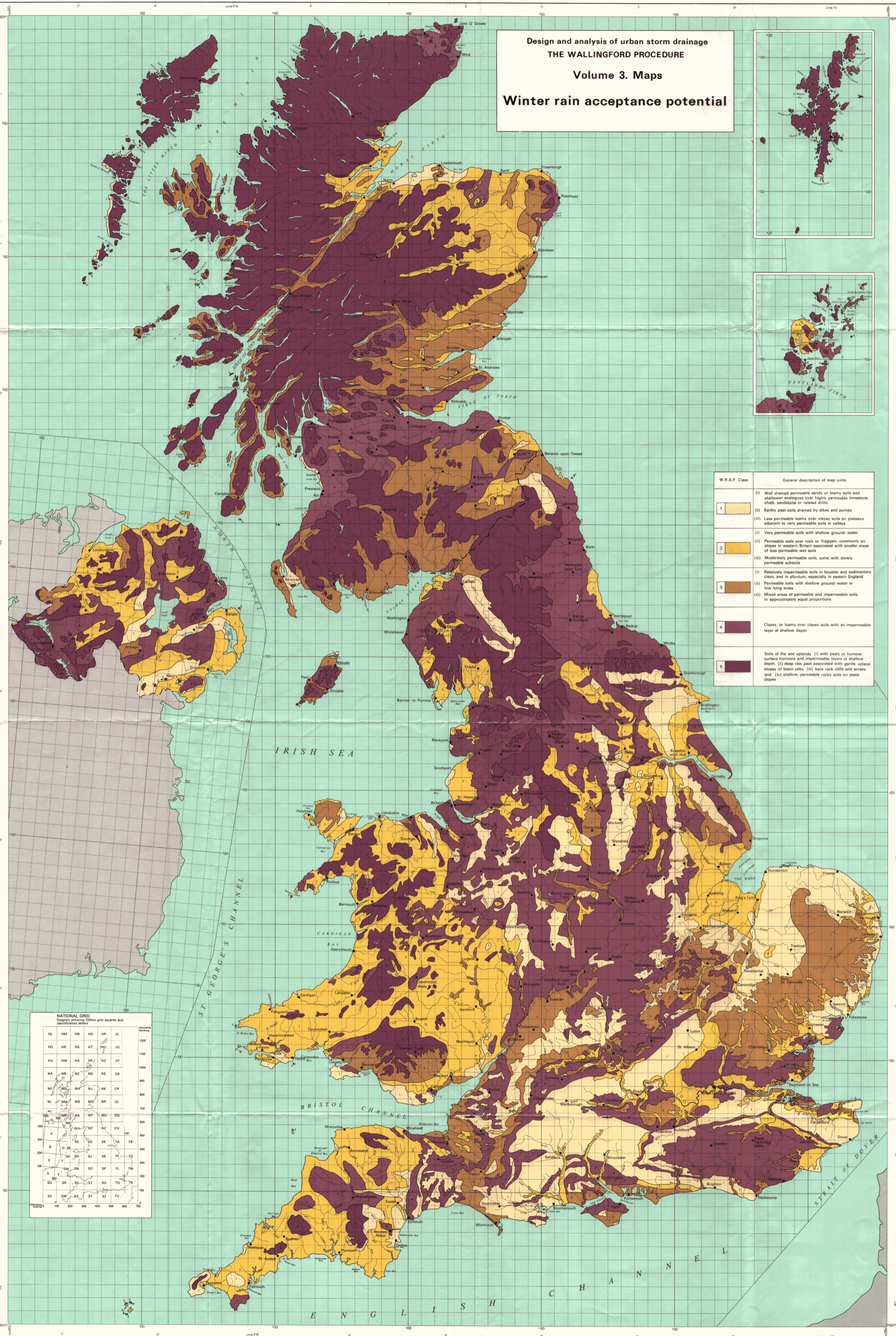
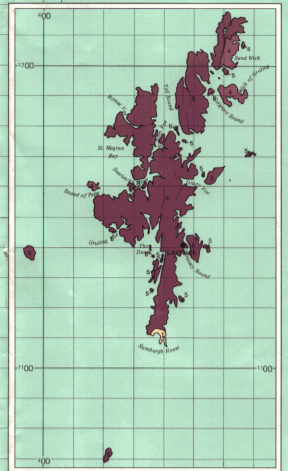


Design and analysis of urban storm drainage
THE WALLINGFORD PROCEDURE
 Volume 3. Maps
Winter rain acceptance potential



W.R.A.P. Class	General description of map units
1	(i) Well drained permeable sandy or loamy soils and shallower analogues over highly permeable limestone, chalk, sandstone or related drifts (ii) Earthy peat soils drained by dikes and pumps (iii) Less permeable loamy over clayey soils on plateaux adjacent to very permeable soils in valleys
2	(i) Very permeable soils with shallow ground-water (ii) Permeable soils over rock or fragipan, commonly on slopes in western Britain associated with smaller areas of less permeable wet soils (iii) Moderately permeable soils, some with slowly permeable subsoils
3	(i) Relatively impermeable soils in boulder and sedimentary clays, and in alluvium, especially in eastern England (ii) Permeable soils with shallow ground-water in low lying areas (iii) Mixed areas of permeable and impermeable soils, in approximately equal proportions
4	Clayey, or loamy over clayey soils with an impermeable layer at shallow depth
5	Soils of the wet uplands (i) with peaty or humose surface horizons and impermeable layers at shallow depth, (ii) deep raw peat associated with gentle upland slopes or basin sites, (iii) bare rock cliffs and screes and (iv) shallow, permeable rocky soils on steep slopes

NATIONAL GRID
 Diagram showing 100km grid squares and identification letters

HL	HM	HN	HO	HP	JL
HQ	HR	HS	HT	HTU	JQ
HV	HW	HX	HY	HZ	JV
NA	NB	NC	ND	NE	OA
NF	NG	NH	NJ	NK	OF
NL	NM	NN	NO	NP	OL
ND	NE	NF	NG	NH	NU
NO	NP	NQ	NR	NS	NT
NR	NS	NT	NV	NW	OV
NS	NT	NU	NV	NW	OW
NT	NU	NV	NW	OW	OX
NU	NV	NW	OW	OX	OY
NV	NW	OW	OX	OY	OZ
NW	OW	OX	OY	OZ	PA
OW	OX	OY	OZ	PA	PB
OX	OY	OZ	PA	PB	PC
OY	OZ	PA	PB	PC	PD
OZ	PA	PB	PC	PD	PE
PA	PB	PC	PD	PE	PF
PB	PC	PD	PE	PF	PG
PC	PD	PE	PF	PG	PH
PD	PE	PF	PG	PH	PI
PE	PF	PG	PH	PI	PJ
PF	PG	PH	PI	PJ	PK
PG	PH	PI	PJ	PK	PL
PH	PI	PJ	PK	PL	PM
PI	PJ	PK	PL	PM	PN
PJ	PK	PL	PM	PN	PO
PK	PL	PM	PN	PO	PP
PL	PM	PN	PO	PP	PQ
PM	PN	PO	PP	PQ	PR
PN	PO	PP	PQ	PR	PS
PO	PP	PQ	PR	PS	PT
PP	PQ	PR	PS	PT	PU
PQ	PR	PS	PT	PU	PV
PR	PS	PT	PU	PV	PW
PS	PT	PU	PV	PW	PX
PT	PU	PV	PW	PX	PY
PU	PV	PW	PX	PY	PZ
PV	PW	PX	PY	PZ	QA
PW	PX	PY	PZ	QA	QB
PX	PY	PZ	QA	QB	QC
PY	PZ	QA	QB	QC	QD
PZ	QA	QB	QC	QD	QE
QA	QB	QC	QD	QE	QF
QB	QC	QD	QE	QF	QG
QC	QD	QE	QF	QG	QH
QD	QE	QF	QG	QH	QI
QE	QF	QG	QH	QI	QJ
QF	QG	QH	QI	QJ	QK
QG	QH	QI	QJ	QK	QL
QH	QI	QJ	QK	QL	QM
QI	QJ	QK	QL	QM	QN
QJ	QK	QL	QM	QN	QO
QK	QL	QM	QN	QO	QP
QL	QM	QN	QO	QP	QQ
QM	QN	QO	QP	QQ	QR
QN	QO	QP	QQ	QR	QS
QO	QP	QQ	QR	QS	QT
QP	QQ	QR	QS	QT	QU
QR	QS	QT	QU	QV	QW
QS	QT	QU	QV	QW	QX
QT	QU	QV	QW	QX	QY
QU	QV	QW	QX	QY	QZ
QV	QW	QX	QY	QZ	RA
QW	QX	QY	QZ	RA	RB
QX	QY	QZ	RA	RB	RC
QY	QZ	RA	RB	RC	RD
QZ	RA	RB	RC	RD	RE
RA	RB	RC	RD	RE	RF
RB	RC	RD	RE	RF	RG
RC	RD	RE	RF	RG	RH
RD	RE	RF	RG	RH	RI
RE	RF	RG	RH	RI	RJ
RF	RG	RH	RI	RJ	RK
RG	RH	RI	RJ	RK	RL
RH	RI	RJ	RK	RL	RM
RI	RJ	RK	RL	RM	RN
RJ	RK	RL	RM	RN	RO
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RL	RM	RN	RO	RP	RQ
RM	RN	RO	RP	RQ	RS
RN	RO	RP	RQ	RS	RT
RO	RP	RQ	RS	RT	RU
RP	RQ	RS	RT	RU	RV
RQ	RS	RT	RU	RV	RW
RS	RT	RU	RV	RW	RX
RT	RU	RV	RW	RX	RY
RU	RV	RW	RX	RY	RZ
RV	RW	RX	RY	RZ	SA
RW	RX	RY	RZ	SA	SB
RX	RY	RZ	SA	SB	SC
RY	RZ	SA	SB	SC	SD
RZ	SA	SB	SC	SD	SE
SA	SB	SC	SD	SE	SF
SB	SC	SD	SE	SF	SG
SC	SD	SE	SF	SG	SH
SD	SE	SF	SG	SH	SI
SE	SF	SG	SH	SI	SJ
SF	SG	SH	SI	SJ	SK
SG	SH	SI	SJ	SK	SL
SH	SI	SJ	SK	SL	SM
SI	SJ	SK	SL	SM	SN
SJ	SK	SL	SM	SN	SO
SK	SL	SM	SN	SO	SP
SL	SM	SN	SO	SP	SQ
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SO	SP	SQ	SR	SS	ST
SP	SQ	SR	SS	ST	SV
SQ	SR	SS	ST	SV	SW
SR	SS	ST	SV	SW	SX
SS	ST	SV	SW	SX	SY
ST	SV	SW	SX	SY	SZ
SV	SW	SX	SY	SZ	TA
SW	SX	SY	SZ	TA	TB
SX	SY	SZ	TA	TB	TC
SY	SZ	TA	TB	TC	TD
SZ	TA	TB	TC	TD	TE
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TB	TC	TD	TE	TF	TG
TC	TD	TE	TF	TG	TH
TD	TE	TF	TG	TH	TI
TE	TF	TG	TH	TI	TJ
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UB	UC	UD	UE	UF	UG
UC	UD	UE	UF	UG	UH
UD	UE	UF	UG	UH	UI
UE	UF	UG	UH	UI	UJ
UF	UG	UH	UI	UJ	UK
UG	UH	UI	UJ	UK	UL
UH	UI	UJ	UK	UL	UM
UI	UJ	UK	UL	UM	UN
UJ	UK	UL	UM	UN	UO
UK	UL	UM	UN	UO	UP
UL	UM	UN	UO	UP	UQ
UM	UN	UO	UP	UQ	UR
UN	UO	UP	UQ	UR	US
UO	UP	UQ	UR	US	UT
UP	UQ	UR	US	UT	UV
UQ	UR	US	UT	UV	UW
UR	US	UT	UV	UW	UX
US	UT	UV	UW	UX	UY
UT	UV	UW	UX	UY	UZ
UV	UW	UX	UY	UZ	VA
UW	UX	UY	UZ	VA	VB
UX	UY	UZ	VA	VB	VC
UY	UZ	VA	VB	VC	VD
UZ	VA	VB	VC	VD	VE
VA	VB	VC	VD	VE	VF
VB	VC	VD	VE	VF	VG
VC	VD	VE	VF	VG	VH
VD	VE	VF	VG	VH	VI
VE	VF	VG	VH	VI	VJ
VF	VG	VH	VI	VJ	VK
VG	VH	VI	VJ	VK	VL
VH	VI	VJ	VK	VL	VM
VI	VJ	VK	VL	VM	VN
VJ	VK	VL	VM	VN	VO
VK	VL	VM	VN	VO	VP
VL	VM	VN	VO	VP	VQ
VM	VN	VO	VP	VQ	VR
VN	VO	VP	VQ	VR	VS
VO	VP	VQ	VR	VS	VT
VP	VQ	VR	VS	VT	VU
VQ	VR	VS	VT	VU	VV
VR	VS	VT	VU	VV	VW
VS	VT	VU	VV	VW	VX
VT	VU	VV	VW	VX	VY
VU	VV	VW	VX	VY	VZ
VV	VW	VX	VY	VZ	WA
VW	VX	VY	VZ	WA	WB
VX	VY	VZ	WA	WB	WC
VY	VZ	WA	WB	WC	WD
VZ	WA	WB	WC	WD	WE
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WB	WC	WD	WE	WF	WG
WC	WD	WE	WF	WG	WH
WD	WE	WF	WG	WH	WI
WE	WF	WG	WH	WI	WJ
WF	WG	WH	WI	WJ	WK
WG	WH	WI	WJ	WK	WL
WH	WI	WJ	WK	WL	WM
WI	WJ	WK	WL	WM	WN
WJ	WK	WL	WM	WN	WO
WK	WL	WM	WN	WO	WP
WL	WM	WN	WO	WP	WQ
WM	WN	WO	WP	WQ	WR
WN	WO	WP	WQ	WR	WS
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WP	WQ	WR	WS	WT	WU
WQ	WR	WS	WT	WU	WV
WR	WS	WT	WU	WV	WW
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XB	XC	XD	XE	XF	XG
XC	XD	XE	XF	XG	XH
XD	XE	XF	XG	XH	XI
XE	XF	XG	XH	XI	XJ
XF	XG	XH	XI	XJ	XK
XG	XH	XI	XJ	XK	XL
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XI	XJ	XK	XL	XM	XN
XJ	XK	XL	XM	XN	XO
XK	XL	XM	XN	XO	XP
XL	XM	XN	XO	XP	XQ
XM	XN	XO	XP	XQ	XR
XN	XO	XP	XQ	XR	XS
XO	XP	XQ	XR	XS	XT
XP	XQ	XR	XS	XT	XU
XQ	XR	XS	XT	XU	XV
XR	XS	XT	XU	XV	XW
XS	XT	XU	XV	XW	XZ
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XU	XV	XW	XZ	YA	YB
XV	XW	XZ	YA	YB	YC
XW	XZ	YA	YB	YC	YD
XZ	YA	YB	YC	YD	YE
YA	YB	YC	YD	YE	YF
YB	YC	YD	YE	YF	YG
YC	YD	YE	YF	YG	YH
YD	YE	YF	YG	YH	YI
YE	YF	YG	YH	YI	YJ
YF	YG	YH	YI	YJ	YK
YG	YH	YI	YJ	YK	YL
YH	YI	YJ	YK	YL	YM
YI	YJ	YK	YL	YM	YN
YJ	YK	YL	YM	YN	YO
YK	YL	YM	YN	YO	YP
YL	YM	YN	YO	YP	YQ
YM	YN	YO	YP	YQ	YR
YN	YO	YP	YQ	YR	YS
YO	YP	YQ	YR	YS	YT
YP	YQ	YR	YS	YT	YU
YQ	YR	YS	YT	YU	YV
YR	YS	YT	YU	YV	YW
YS	YT	YU	YV	YW	YZ
YT	YU	YV	YW	YZ	ZA
YU	YV	YW	YZ	ZA	ZB
YV	YW	YZ	ZA	ZB	ZC
YW	YZ	ZA	ZB	ZC	ZD
YZ	ZA	ZB	ZC	ZD	ZE
ZA	ZB	ZC	ZD	ZE	ZF
ZB	ZC	ZD	ZE	ZF	ZG
ZC	ZD	ZE	ZF	ZG	ZH
ZD	ZE	ZF	ZG	ZH	ZI
ZE	ZF	ZG	ZH	ZI	ZJ
ZF	ZG	ZH	ZI	ZJ	ZK
ZG	ZH	ZI	ZJ	ZK	ZL
ZH	ZI	ZJ	ZK	ZL	ZM