### PAPER

# Autosomal dominant mutation causing the dorsal ridge predisposes for dermoid sinus in Rhodesian ridgeback dogs

**OBJECTIVES:** To define the mode of inheritance of the dorsal ridge and investigate if the ridge predisposes to the congenital abnormality dermoid sinus in the Rhodesian ridgeback.

METHODS: Segregation analysis was performed, including 87 litters (n=803) produced in Sweden between 1981 and 2002. Data were corrected to avoid bias in the segregation ratio. Chi-squared analysis was performed including 402 litters (n=3598) for the evaluation of a possible genetic correlation between the ridge and dermoid sinus. **RESULTS:** The ridge is inherited in an autosomal dominant mode and predisposes for dermoid sinus. The frequency of ridgeless offspring in the Swedish Rhodesian ridgeback population is estimated to be 5.6 per cent.

**CLINICAL SIGNIFICANCE:** Rhodesian ridgeback dogs that carry the ridge trait are predisposed to dermoid sinus.

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Journal of Small Animal Practice (2006) **47**, 184–188

### INTRODUCTION

The Rhodesian ridgeback is an African dog breed with a characteristic coat formation denoting the ridge. The origin of the breed is unknown. It has been suggested that several different European dog breeds (Table 1) and the Hottentot hunting dog, an indigenous breed of Africa from which the characteristic ridge originated, have contributed to generate the modern Rhodesian ridgeback breed (Hare 1932, Lutman 1966, Hawley 1984).

The ridge trait is also found in another purebreed, the Thai ridgeback dog. The breed is indigenous to Asia and is also known as the Phu-Quoc dog (Gulf of Siam). To date it is unknown whether the ridge trait originates from the Phu-Quoc dog of Asia (Wegner 1986) or the Hottentot dog of Africa (Hall 2003).

The Rhodesian ridgeback is often associated with a congenital cutaneous defect, dermoid sinus (DS), which occurs with

increased frequency in the breed (Salmon Hillbertz 2005). The defect also occurs in the Thai ridgeback dog (N. H. C. Salmon Hillbertz, unpublished data). The genetic relationship between the two ridged breeds remains to be evaluated using the approach described by Parker and others (2004). Helgesen (1991) discussed a historical aspect of the Rhodesian ridgeback, associating ridged dogs with the behavioural hunting traits for which the breed was selected. It has been described that early observers in southern Africa found the ridge to be synonymous with courage, as the ridged dogs had the pre-eminent ability to bay African game, such as lion and treeing leopards (Lutman 1966).

In the original Rhodesian ridgeback standard of the 1920s, the ridge was clearly defined (Hutchinson 1931). The mode of inheritance of the ridge trait has previously been suggested as autosomal recessive (Hawley 1984, Willis 1989, Robinson 1990, Nicholson and Parker 1991). However, these studies were inconclusive since they did not present statistical support for the mode of inheritance.

The aim of the current study was to conclusively define the mode of inheritance of the ridge trait. The analysis was performed using a sufficiently large population material to ensure statistically conclusive results. In Fig 1 ridgeless and ridged siblings are displayed.

#### **Definition of the ridge**

To fulfil the modern Rhodesian ridgeback breed standards, the ridge must be distinct, symmetrical and tapering towards the hip bones. The ridge is divided into three main parts (Fig 2): the box, two symmetrical crowns and the tail. The box is also known as the "head" or "swirl" and is the part of the ridge pertaining the crowns. The box may be heartshaped, square or rounded.

According to Rhodesian ridgeback breed standards, the crowns should be identical

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 Table 1. Different European dog breeds that have been suggested as contributors

 to the establishment of the modern Rhodesian ridgeback

Breed	Source
Bloodbound	Hutchinson (1931) Lutman (1966) Murray (1989)
Boar hound	Lutman (1966)
Bulldog	Lutman (1966), Murray (1989), Helgesen (1991)
Deerhound	Lutman (1966)
Foxhound	Murray (1989)
Greyhound	Murray (1989), Helgesen (1991)
Labrador	Hawley (1984)
Mastiff	Lutman (1966), Murray (1989)
Pointer	Hawley (1984), Murray (1989), Helgesen (1991)
Spaniel	Lutman (1966)
Staghound	Murray (1989)
Terrier	Lutman (1966), Murray (1989)

and opposite to each other; thus, the right crown should swirl clockwise and the left, counter-clockwise. Furthermore, the ridge is required to contain only two crowns and the tail should be a minimum of two-thirds of the length of the ridge, even and symmetrical (Lutman 1966, Helgesen 1991). Similar to the hair of the box, the hair of the tail grows in the opposite direction to the hair of the general coat. In the original Rhodesian ridgeback standard, there was no reference to either the crowns or their dorsal position (Hutchinson 1931). The ridge is distinct on a newborn puppy, that is, the anatomical position and morphology do not change from what is displayed at birth (Helgesen 1991).

#### **MATERIALS AND METHODS**

## The Swedish Rhodesian ridgeback population

Rhodesian ridgeback breeders have been reporting the health status of born litters to the Swedish Rhodesian Ridgeback Club (SRRS) since 1964 (Salmon Hillbertz 2004). According to the SRRS breeding committee, the current population constitutes of approximately 2500 animals (1995 to 2003) (U. Thedin, personal communication).

#### Data

The litter health status data used for this study were collected by the SRRS from a







FIG 2. The dorsal ridge in a Rhodesian ridgeback dog. The ridge is divided in three parts, the box, two symmetrical crowns and the tail

total of 402 litters (n=3598) produced between 1981 and 2002. The litters included in the study were exclusively restricted to those where information regarding the number of born offspring in the litters were available and the presence, or absence, of the ridge trait and DS had been recorded. The hypothesis was that the data (Appendix 1) would not deviate from a 3:1 phenotypic ratio (three ridged [*RR* and *Rr*], one ridgeless [*rr*]).

To investigate whether the ridge trait is autosomal dominant and not sex-linked, a four-generation pedigree (U. Thedin, personal communication) was scrutinised. Corrections of expected frequencies were performed as all litters included in the analysis contained one or more ridgeless offspring. The utilised correction formula (Cavalli-Sforza and Bodmer 1971) was  $q'=q/(1-p^s)$ , where q is the expected frequency of rr (0.25), p is the expected frequency of RR or Rr (1-0.25), q' is the corrected expected frequency of rr and s is the litter size. The segregation analysis was performed to obtain upper and lower estimates of p, by utilising the extended and simplified method of discarding singles (Davie 1979), with the assumption that all families with ridgeless offspring were not included in the data (Nicholas 1987). Further, a chi-squared analysis was performed on all 402 litters (n=3598) to investigate a possible correlation between DS and the ridge trait.

In an effort to investigate whether DS+ ridgeless offspring had been produced in a population other than the Swedish Rhodesian ridgeback population, Joerg Meil, DVM, was consulted. Joerg Meil communicated information from the breeding register of the largest Rhodesian Ridgeback Club in Germany, the Deutsche Züchtergemeinschaft Rhodesian Ridgeback (DZRR), in which two-thirds of German Rhodesian ridgeback litters are registered (approximately 450 litters per year). All Rhodesian ridgeback offspring produced in Germany are examined by trained and qualified personnel.

#### RESULTS

No support for a sex-linked distribution of the ridge trait was evident (Fig 3).

Among the records of 402 litters (n=3598), 315 litters (n=2795) showed no evidence of ridgeless offspring. In the remaining 87 litters (n=803), produced by 61 sires and 63 dams, ridgeless offspring were identified. The observed numbers of ridgeless offspring were 202, whereas 601 individuals were defined as phenotypically normal (ridged) according to modern Rhodesian ridgeback breed standards. All 124 parental animals carried a ridge and were thus classified as heterozygotes Rr.

Due to the non-randomised selection of litters included in the analysis (n=87),



FIG 3. A four-generation pedigree displaying an autosomal dominant distribution concerning ridged Rhodesian ridgeback offspring. Deceased individuals included in the pedigree did not reach the age of two weeks

the corrected numbers of ridgeless and ridged offspring show the correct expected frequencies in the selected sample. The results from the segregation analysis (0.77 > P > 0.70; P=0.75) were consistent with an autosomal dominant mode of inheritance (Table 2). Further, a genetic correlation between the ridge and DS was statistically supported ( $\chi^2$ =12.66 (1 df); P<0.005) (Table 3). No ridgeless DS+ Rhodesian ridgeback offspring had been reported from the German Rhodesian ridgeback population (DZRR) during 2000 to 2003 (201 litters, n=1778) (J. Meil, personal communication). Based upon reported cases concerning the lack of a dorsal ridge and litter size, the frequency of ridgeless offspring in the Swedish Rhodesian ridgeback population was estimated to be 5.6 per cent ( $202 \div 3598$ ).

#### **DISCUSSION**

Availability of the unique Swedish Rhodesian ridgeback register has enabled us to determine that the ridge trait is inherited according to an autosomal dominant mode of inheritance. The autosomal

Table 2. Observed and corrected frequencies for 803 ridged or ridgeless           Rhodesian ridgeback dogs									
Litter (n) Sire Dam Born Observed Expected									
				Ridgeless Ridged		Uncorrected Corrected			
						Ridgeless	Ridged	Ridgeless	Ridged
87	61	63	803	202	601	200.75	602·25	217.17	585.83
Data was collected by the Swedish Rhodesian Ridgeback Club during the period 1981 to 2002									

# Table 3. Observed and expected frequencies for the presence of dermoid sinus(DS) in 3598 ridged or ridgeless Rhodesian ridgeback dogs, produced inSweden during 1981 to 2002

		DS					
		+	-	Total			
Observed	<i>Rr/RR</i> (ridged)	201	3195	3396			
	<i>rr</i> (ridgeless)	0	202	202			
	Total	201	3397	3598			
Expected	<i>Rr/RR</i> (ridged)	189.72	3206·28	3396			
	<i>rr</i> (ridgeless)	11.28	190·72	202			
	Total	201	3397	3598			

dominant inheritance also corroborates with the distribution over generations of produced ridgeless offspring, shown in Fig 3. The provided association between the congenital skin abnormality DS and the ridge is, to the author's knowledge, the first study to show a statistically supported genetic correlation between these traits, as no ridgeless individuals affected by DS were produced between 1981 and 2002 in Sweden. These results corroborate with the information received from the DZRR. The data concerning rr and DS appearances were reported by breeders to the SRRS and therefore the results entirely rely upon the breeders information. Further, it is undetermined whether Swedish breeders from 1981 to 2002 examined all stillborn or euthanased offspring for DS. Therefore, an uncertainty in the absolute numbers of DS+ offspring exists.

The causative mutation (R) leading to the existence of the dorsal ridge in this breed is currently unidentified, and there is a lack of knowledge concerning whether the trait originated from the ridged Rhodesian or Thai ridgeback dogs. However, a recent study of the genetic diversity between a large number of dog breeds (Parker and others 2004) may supply the necessary tools regarding evaluating the genetic relationship between dog breeds carrying the R mutation. The present study provides knowledge that could aid in the identification of such mutation. Further analysis will allow us to elucidate the genetics underlying the two traits.

#### **Acknowledgements**

A special gratitude to the Swedish Rhodesian ridgeback breeders and the SRRS, who have made this study possible. Many thanks to Jörg Meil (Germany), Janet Murray (Australia) and Ulla Thedin (Sweden) for personal communications, Ronny Hauge (Norway) for photographs, and to Dr Carl-Gustaf Thulin, Professor Leif Andersson and Professor Per-Erik Sundgren for helpful discussions and comments on the manuscript. Funding was provided by the Swedish Kennel Club research foundation and the SRRS.

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#### Appendix 1. Data derived from 87 litters, where ridgeless offspring were identified from 1981 to 2002

						Expected				
				Observed		Uncorre	ected	Corrected		
Litter No.	Sire	Dam	Born	Ridgeless	Ridged	Ridgeless	Ridged	Ridgeless	Ridged	
1	Y1	X1	11	3	8	2.75	8.25	2.87	8.13	
2	Y2	X2	4	3	1	1.00	3.00	1.46	2.54	
3	Y3	X3	5	2	3	1.25	3.75	1.64	3.36	
4	Y4	X4	9	2	7	2.25	6.75	2.43	6.57	
5	Y5	X5	11	3	8	2.75	8.25	2.87	8.13	
6	Y6	X6	17	3	14	4.25	12.75	4.28	12.72	
7	Y7	X4	7	2	5	1.75	5.25	2.02	4.98	
8	Y8	Χ7	12	1	11	3.00	9.00	3.10	8.90	
9	Y9	X8	9	3	6	2.25	6.75	2.43	6.57	
10	Y9	Х9	7	1	6	1.75	5.25	2.02	4.98	
11	Y10	X10	8	3	5	2.00	6.00	2.22	5.78	
									(continued)	

Decom         Decom         Decom         Decom         Decom         Decom           121         11         111         112         12         1	Appendix 1.	(continu	ed)							
Uterbo.BitBitRelatNet/ASet of a set of a						Expected				
Litter No.JenDanRidge <th< th=""><th></th><th></th><th></th><th></th><th>Obser</th><th>rved</th><th>Uncorre</th><th>cted</th><th>Correc</th><th>ted</th></th<>					Obser	rved	Uncorre	cted	Correc	ted
12     Y11     X11     10     2     4     1.50     7.50     2.65     7.35       13     Y12     X14     11     1     410     2.76     9.75     2.44     9.13       15     Y13     X15     9     9     6     2.26     9.75     2.43     9.13       16     Y13     X15     9     9     6     3.26     9.75     2.43     9.13       17     Y14     X17     1     1     1     7     3.00     4.60     1.82     4.18       18     Y17     X19     110     9     7     2.00     7.60     2.46     7.38       22     Y10     X10     10     9     7     2.20     7.60     2.42     7.38       23     Y20     X21     10     4     4     2.20     7.60     2.43     6.57       24     Y20     X24     9     2     7     2.26     6.75     2.43     6.57       25     Y20     X24     9     2     7     2.26     6.75     2.43     6.57       26     Y21     X24     9     2     7     2.26     6.75     2.43     6.57       26 </th <th>Litter No.</th> <th>Sire</th> <th>Dam</th> <th>Born</th> <th>Ridgeless</th> <th>Ridged</th> <th>Ridgeless</th> <th>Ridged</th> <th>Ridgeless</th> <th>Ridged</th>	Litter No.	Sire	Dam	Born	Ridgeless	Ridged	Ridgeless	Ridged	Ridgeless	Ridged
13       110       120       120       1<	12	Y11	X11	10	2	8	2.50	7.50	2.65	7.35
·····         ······         ······         ······         ······         ······         ·······         ·······         ······         ······         ······         ······         ·······         ·······         ·······         ·······         ·······         ········         ·············         ···············         ·	13	Y11	X12	6	2	4	1.50	4.50	1.82	4.18
12       113       X15       9       3       8       225       675       243       657         15       114       X150       8       1       7       200       600       222       758         13       115       11       7       200       600       222       758         20       117       X150       800       750       243       758         217       110       4       7       200       750       248       753         23       110       4       6       2200       750       248       853         23       110       4       6       2200       750       243       860         24       120       4       6       230       750       243       860         243       110       4       7       200       675       243       667         27       120       110       4       7       200       675       243       667         243       10       2       7       200       675       243       667         244       10       1       8       10       10 <td< td=""><td>15</td><td>Y13</td><td>X13 X14</td><td>9 11</td><td>1</td><td>10</td><td>2.75</td><td>8.25</td><td>2.43</td><td>8.13</td></td<>	15	Y13	X13 X14	9 11	1	10	2.75	8.25	2.43	8.13
11       Y14       X16       6       1       5       1.80       4.60       1.82       4.81         15       Y17       X10       10       5       9       2.00       4.60       2.22       Y13         20       Y17       X10       10       5       9       2.00       4.60       2.22       Y13         21       Y18       X6       11       4       7       2.05       7.60       2.65       7.33         22       Y13       X22       10       4       6       2.00       7.60       2.65       7.33         25       Y21       X22       10       4       6       2.00       6.67       2.66       6.67         26       Y21       X22       0       2       7       2.25       6.67       2.43       6.67         27       Y23       X27       0       2       7       2.25       6.67       2.43       6.67         28       Y23       X26       0       2       7       2.25       6.75       2.44       6.67         30       Y24       X30       1       1       2       2.05       6.75       2.44	16	Y13	X15	9	3	6	2.25	6.75	2.43	6.57
38       Y40       X11       8       1       7       200       800       222       578         20       Y17       X40       10       9       7       200       700       260       262       738         21       Y18       X40       10       4       7       275       873       265       738         22       Y18       X40       10       4       7       226       73       266       73       246       738         24       Y12       X23       12       4       8       300       760       266       738       738         25       Y12       X23       12       4       8       300       760       243       850         26       Y22       X43       9       2       7       226       673       243       857         33       Y23       X42       8       4       4       200       670       243       857         34       Y25       X11       1       8       4       200       670       243       857         35       Y25       63       11       1       10       100	17	Y14	X16	6	1	5	1.50	4.50	1.82	4.18
20       Y17       Y18       Y1	18	Y15 V16	X17 X19	8	1	7	2.00	6.00	2.22	5.78
21         Y18         N6         11         41         7         275         823         287         833           23         Y19         1202         81         34         6         260         730         236           23         Y10         1202         81         3         6         260         760         266         738           25         Y12         X23         90         2         7         225         675         243         667           26         Y33         X27         9         2         7         225         675         243         677           27         Y33         X27         9         2         7         225         675         244         677           38         Y25         X31         1         2         9         2         7         275         263         243         677           38         Y25         X32         9         3         8         260         275         835         243         833           39         Y26         X33         11         1         1         10         275         835         247 <th< td=""><td>20</td><td>Y17</td><td>X19</td><td>10</td><td>5</td><td>5</td><td>2.50</td><td>7.50</td><td>2.65</td><td>7.35</td></th<>	20	Y17	X19	10	5	5	2.50	7.50	2.65	7.35
22       Y49       X40       1.0       3       7       2.00       7.00 </td <td>21</td> <td>Y18</td> <td>X6</td> <td>11</td> <td>4</td> <td>7</td> <td>2.75</td> <td>8.25</td> <td>2.87</td> <td>8.13</td>	21	Y18	X6	11	4	7	2.75	8.25	2.87	8.13
14         14         14         14         15         16<	22	Y19	X20	10	3	7	2.50	7.50	2.65	7.35
25         Y21         X33         12         4         8         300         900         310         800           26         Y22         X33         X35         9         3         6         225         675         243         657           27         Y23         X35         9         3         6         225         675         243         657           39         Y33         X36         8         4         4         200         600         222         578           30         Y33         X38         8         4         4         200         600         222         578           31         Y44         X30         11         5         6         275         825         287         813           33         Y52         X30         12         6         6         300         900         310         890           37         Y27         X34         11         1         10         275         825         267         833           44         Y30         X37         10         2         8         250         750         243         675 <t< td=""><td>23</td><td>Y20 Y21</td><td>X21 X22</td><td>8 10</td><td>3 4</td><td>5</td><td>2.00</td><td>6.00 7.50</td><td>2.22</td><td>5·78 7.35</td></t<>	23	Y20 Y21	X21 X22	8 10	3 4	5	2.00	6.00 7.50	2.22	5·78 7.35
22       Y22       X24       9       2       7       225       675       2.43       657         23       Y23       X25       9       3       6       220       676       2.43       657         230       Y23       X26       9       2       7       2.00       609       2.22       578         331       Y24       X29       3       1       2       0.75       2.82       2.30       1.70         331       Y24       X30       11       5       6       2.75       2.44       6.67         333       Y26       X32       9       3       6       2.75       2.44       6.67         333       Y26       X33       1.2       0       6       3.00       9.00       3.10       8.00         336       Y26       X33       1.1       5       6       2.75       2.44       4.18         36       Y26       X33       1.1       5       6       2.75       2.44       4.18         37       Y27       X34       1.1       5       6       2.75       2.44       4.18         38       Y27       X33	25	Y21	X23	12	4	8	3.00	9.00	3.10	8.90
27       Y23       X29       9       3       6       225       6.75       2.43       6.57         39       Y23       X29       8       4       7       2.00       6.00       2.22       5.76         39       Y24       X30       11       5       6       2.75       8.25       2.33       1.70         32       Y24       X30       11       5       6       2.75       8.25       2.43       8.73         34       Y20       X30       11       5       6       2.75       8.25       2.47       8.13         34       Y20       X30       11       5       6       2.75       8.25       2.47       8.13         35       Y27       X34       11       5       6       2.75       8.25       2.47       8.13         36       Y27       X34       11       1       0       2.75       8.25       2.47       8.13         37       Y27       X34       11       6       1.75       5.25       2.47       8.13         34       Y30       X37       10       2       8       2.40       7.00       2.65       7.35	26	Y22	X24	9	2	7	2.25	6.75	2.43	6.57
24       120       12	27	Y23	X25	9	3	6	2.25	6.75	2.43	6.57
20       1723       X28       8       4       4       200       0.00       2.22       578         31       1724       X30       111       5       6       2.75       8.25       2.43       8.57         32       1725       X31       9       2       7       2.25       6.75       2.43       8.57         34       1725       X32       9       3       6       2.25       6.75       2.43       8.57         35       176       X32       9       3       6       2.25       6.75       2.43       8.57         37       1775       X34       111       5       6       2.75       8.55       2.87       8.13         38       1728       X35       9       5       4       2.25       6.75       2.43       6.57         414       170       X38       10       3       7       2.65       7.67       8.55       2.67       8.13         44       132       X39       10       3       7       2.25       6.75       2.43       6.57         44       132       X39       10       3       7       2.80       7.	28	Y23 V23	X26 X27	8	3	5	2.00	6.00	2.22	5·78 6.57
31       Y24       X29       3       1       2       0.75       2.85       2.87       8.33         Y24       X30       11       5       6       2.75       2.85       2.87       8.35         33       Y25       X31       9       2       7       2.25       6.75       2.85       2.87       8.35         345       Y26       X33       12       6       6       2.00       9.00       3.10       8.90         37       Y27       X34       11       1       10       2.75       8.25       2.87       8.13         38       Y28       X19       11       1       10       2.75       8.25       2.87       8.13         40       Y30       X37       40       1       8       2.00       7.00       2.255       7.35         41       Y30       X37       11       6       5       2.75       8.25       2.67       2.43       6.57         42       Y30       X37       11       6       5       2.75       8.25       2.67       7.35         44       Y32       X30       10       3       7       2.55	30	Y23	X28	8	4	4	2.00	6.00	2.43	5.78
33       Y24       X30       11       5       6       2/75       8/25       2/87       8/13         34       Y25       X32       9       3       6       2/25       675       2/43       657         34       Y25       X33       9       3       6       2/26       675       2/42       675         34       Y26       X33       12       6       6       2/75       8/25       2/87       8/13         35       Y26       X33       11       5       6       2/75       8/25       2/87       8/13         39       Y28       X19       11       1       6       2/75       8/25       2/87       8/13         41       Y30       X37       11       6       1/75       8/25       2/62       4/93         42       Y30       X37       11       6       2/75       8/25       2/43       6/75         44       Y32       X38       9       1       8       2/25       6/75       2/43       6/75         45       Y32       X40       10       3       1       7       2/05       7/5       2/43       6/77	31	Y24	X29	3	1	2	0.75	2.25	1.30	1.70
43       10       10       20       1       200       61/5       2.43       61/5         345       V26       X36       12       6       6       300       900       310       803         37       V27       X34       11       5       6       300       900       310       803         38       V28       X19       11       1       10       2.75       825       2.87       8.13         39       V29       X35       8       1       7       2.00       600       2.22       578         40       V29       X36       8       1       7       2.00       7.50       2.65       7.35         41       V30       X37       11       6       5       2.75       8.25       2.87       8.13         43       V32       X39       9       1       8       2.25       6.75       2.43       6.67         44       V32       X39       9       1       8       2.25       6.75       2.43       6.67         45       V32       X38       10       3       7       2.60       7.50       2.65       7.35 <td>32</td> <td>Y24</td> <td>X30</td> <td>11</td> <td>5</td> <td>6</td> <td>2.75</td> <td>8.25</td> <td>2.87</td> <td>8.13</td>	32	Y24	X30	11	5	6	2.75	8.25	2.87	8.13
NB         Y26         X26         6         1         5         1 b00         950         1 b22         4 148           37         Y26         X33         112         6         6         275         825         287         8133           38         Y28         X19         111         1         10         275         825         287         8133           39         Y29         X35         9         5         4         225         675         243         6675           41         Y30         X37         1         1         6         175         525         247         818           44         Y31         X37         1         1         6         175         525         243         657           44         Y32         X38         10         3         7         250         750         245         735           45         Y32         X38         10         3         7         250         750         243         657           46         Y32         X41         3         2         1         8         245         675         243         657	33	Y25	X31 X32	9	2	6	2.25	6.75	2.43	6.57
36       Y27       X33       12       6       6       300       9.00       310       8.80         37       Y27       X34       11       5       6       275       825       2.87       8.13         38       Y28       X35       9       5       4       225       6.75       2.43       6.57         40       Y30       X37       8       1       7       2.50       6.75       2.43       6.57         43       Y31       X37       9       1       6       5       2.75       8.25       2.67       8.43         44       Y32       X38       10       3       7       2.50       7.50       2.65       7.35         44       Y32       X38       10       3       7       2.50       7.50       2.65       7.35         44       Y32       X41       3       2       1       0.75       2.65       1.30       1.70         50       Y33       X43       7       2       5       1.57       5.65       2.02       4.98         51       Y35       X44       10       1       9       2.50       7.50       <	35	Y26	X26	6	1	5	1.50	4.50	1.82	4.18
37       YZ       X34       11       5       6       275       825       287       813         38       YZ8       X19       11       1       10       275       825       247       813         39       Y20       X35       9       5       4       225       675       243       657         41       Y30       X37       11       6       5       275       525       202       498         42       Y30       X37       11       6       5       275       525       202       498         44       Y32       X38       9       1       8       225       675       243       657         45       Y32       X40       10       3       7       250       750       265       735         46       Y32       X40       10       2       8       215       675       243       657         47       Y32       X44       10       2       8       215       675       243       657         51       Y38       X44       10       1       9       250       750       265       733 <t< td=""><td>36</td><td>Y26</td><td>X33</td><td>12</td><td>6</td><td>6</td><td>3.00</td><td>9.00</td><td>3.10</td><td>8.90</td></t<>	36	Y26	X33	12	6	6	3.00	9.00	3.10	8.90
38       7.28       X35       30       10       2.05       8.25       2.84       8.13         40       Y30       X35       8       1       7       2.25       6.60       2.42       8.57         40       Y30       X38       7       1       6       5.75       7.80       2.42       8.78         43       Y31       X37       11       6       5       2.75       8.25       2.67       8.43         43       Y32       X38       10       3       7       2.50       7.50       2.65       7.35         44       Y32       X34       10       3       7       2.50       7.50       2.65       7.35         47       Y32       X44       3       2       1       0.75       2.25       1.30       1.70         48       Y33       X42       9       1       8       2.25       6.75       2.43       6.57         51       Y38       X44       10       1       9       2.50       7.60       2.65       7.35         54       Y38       X46       10       1       9       2.50       7.50       2.65       7.3	37	Y27	X34	11	5	6	2.75	8.25	2.87	8.13
0         1         2         3         1         7         2.00         6.00         2.22         5.78           41         Y30         X37         10         2         8         2.50         7.50         2.66         7.35           42         Y30         X37         11         6         5         2.75         8.25         2.67         8.13           44         Y32         X38         10         3         7         2.50         7.50         2.65         7.35           46         Y32         X40         10         3         7         2.50         7.50         2.65         7.35           47         Y32         X41         3         2         1         0.75         2.25         1.30         1.67           48         Y33         X42         9         1         8         2.25         6.75         2.43         6.57           50         Y34         X43         7         2         5         1.75         5.25         2.02         4.88           51         Y35         X44         9         3         6         2.25         6.75         2.43         6.57	38	Y28 V29	X19 X35	11	1	10	2.75	8.25	2.87	8·13 6.57
41       Y30       X37       10       2       8       2.50       7.50       2.65       7.35         42       Y31       X37       11       6       5       2.75       8.25       2.87       8.13         43       Y32       X39       9       1       8       2.75       8.25       2.87       8.13         44       Y32       X38       10       3       7       2.50       7.50       2.65       7.35         45       Y32       X.40       10       3       7       2.50       7.50       2.65       7.55         47       Y33       X.41       3       2       1       0.75       2.52       1.30       1.70         40       Y35       X.43       0       1       0       2.25       0.750       2.66       7.65         50       Y36       X.43       10       1       9       2.50       7.50       2.65       7.35         54       Y38       X.46       10       1       9       2.50       7.50       2.43       6.57         55       Y38       X.47       9       1       8       2.25       6.75       2	40	Y29	X36	8	1	7	2.00	6.00	2.43	5.78
42       Y30       X38       7       1       6       1.75       5.25       2.92       4.83         44       Y32       X39       9       1       8       2.25       6.75       2.43       6.67         44       Y32       X38       10       3       7       2.50       7.50       2.65       7.35         46       Y32       X40       10       3       7       2.50       7.50       2.65       7.35         47       Y32       X41       3       2       1       0.75       2.25       1.30       1.70         48       Y35       X41       10       2       8       2.25       6.75       2.43       6.67         51       Y35       X44       10       1       9       2.50       7.50       2.65       7.35         52       Y36       X45       9       3       6       2.25       6.75       2.43       6.67         54       Y38       X47       9       2       7       2.25       6.75       2.43       6.67         55       Y39       X47       9       2       7       2.25       6.75       2.43	41	Y30	X37	10	2	8	2.50	7.50	2.65	7.35
43       Y31       XJ       11       b       5       2.7b       8.25       2.84       8.13         44       Y32       X38       10       3       7       2.80       7.50       2.66       7.35         46       Y32       X40       10       3       7       2.80       7.50       2.66       7.35         47       Y32       X40       10       3       7       2.80       7.50       2.66       7.35         46       Y34       X41       3       2       1       0.75       2.66       2.42       6.57         48       Y34       X42       8       1       7       2.75       2.65       2.65       7.35         51       Y35       X44       10       1       9       2.50       7.60       2.66       7.35         52       Y36       X42       9       1       8       2.25       6.75       2.43       6.67         54       Y38       X46       10       1       9       2.50       7.50       2.66       7.35         55       Y40       X48       9       1       8       2.25       6.75       2.43	42	Y30	X38	7	1	6	1.75	5.25	2.02	4.98
n         n	43	Y31 V32	X37 X30	11	6	5	2.75	8.25	2.87	8·13 6.57
46       Y32       X40       10       3       7       260       7.50       265       7.30         47       Y32       X42       9       1       8       225       6.75       2.43       6.67         49       Y33       X42       9       1       8       2.25       6.75       2.43       6.67         50       Y35       X43       7       2       5       1.75       5.25       2.02       4.86         51       Y35       X44       10       2       8       2.80       7.50       2.65       7.35         52       Y36       X45       9       3       6       2.25       6.75       2.43       6.57         54       Y38       X46       10       1       9       2.80       7.50       2.65       7.35         55       Y39       X47       9       2       7       2.25       6.75       2.43       6.57         56       Y40       X28       9       1       8       2.25       6.75       2.43       6.57         57       Y40       X49       8       2       6       2.00       6.00       2.22	45	Y32	X38	10	3	7	2.50	7.50	2.45	7.35
47       Y32       X41       3       2       1       0.75       225       1.30       1.70         48       Y33       X42       9       1       8       0.25       6.75       2.43       6.57         49       Y34       X19       8       1       7       200       6.00       2.22       5.75         51       Y35       X44       10       2       8       2.80       7.50       2.65       7.55         52       Y36       X44       10       1       9       2.80       7.50       2.65       7.35         54       Y38       X47       9       2       7       2.25       6.75       2.43       6.57         55       Y39       X47       9       2       7       2.25       6.75       2.43       6.57         56       Y40       X48       9       1       8       2.25       6.75       2.43       6.57         57       Y40       X48       10       1       9       2.50       7.50       2.65       7.35         60       Y40       X50       9       4       5       2.25       6.75       2.43	46	Y32	X40	10	3	7	2.50	7.50	2.65	7.35
48       Y33       X42       9       1       8       225       6/5       243       657         50       Y35       X43       7       2       5       175       525       202       488         51       Y35       X44       10       2       8       250       750       265       735         52       Y36       X45       9       3       6       225       6.75       243       6.675         54       Y38       X46       10       1       9       250       7.50       266       7.35         55       Y39       X47       9       1       8       2.25       6.75       2.43       6.677         56       Y40       X49       9       1       8       2.25       6.75       2.43       6.677         57       Y40       X48       8       2       6       6.55       2.43       6.677         58       Y40       X48       8       2       6       6.55       2.43       6.677         59       Y40       X48       14       1       13       2.56       6.75       2.43       6.677         5	47	Y32	X41	3	2	1	0.75	2.25	1.30	1.70
no         y35         x43         r         n <td>48</td> <td>¥33 ¥34</td> <td>X42 X19</td> <td>9</td> <td>1</td> <td>8</td> <td>2.25</td> <td>6.00</td> <td>2.43</td> <td>6·57 5.78</td>	48	¥33 ¥34	X42 X19	9	1	8	2.25	6.00	2.43	6·57 5.78
51       Y36       X44       10       2       8       250       7.50       2.65       7.35         52       Y37       X16       10       1       9       2.50       7.50       2.65       7.35         53       Y38       X46       10       1       9       2.50       7.50       2.65       7.35         55       Y39       X47       9       2       7       2.25       6.75       2.43       6.67         56       Y40       X48       9       1       8       2.25       6.75       2.43       6.67         58       Y40       X48       9       1       8       2.25       6.75       2.43       6.67         59       Y40       X48       10       1       9       2.50       7.50       2.65       7.35         60       Y41       X51       14       1       13       3.50       10.50       3.66       1.044         62       Y42       X52       10       1       9       2.50       7.50       2.43       6.67         63       Y43       X56       10       3       7       2.50       7.50       2.43<	50	Y35	X43	7	2	5	1.75	5.25	2.02	4.98
52       Y36       X45       9       3       6       225       6.75       243       657         53       Y37       X16       10       1       9       250       7.50       265       7.35         54       Y38       X46       10       1       9       2.50       7.50       2.65       7.35         56       Y40       X2       9       1       8       2.25       6.75       2.43       6.57         57       Y40       X48       9       1       8       2.25       6.75       2.43       6.57         58       Y40       X48       9       1       8       2.25       6.75       2.43       6.57         59       Y40       X48       10       1       9       2.50       7.50       2.65       7.35         61       Y41       X51       1.4       1       3       3.50       10.50       3.86       10.44         62       Y42       X52       10       1       9       2.50       7.50       2.43       6.57         64       Y44       X53       9       1       8       2.25       6.75       2.43	51	Y35	X44	10	2	8	2.50	7.50	2.65	7.35
b3         137         118         10         1         9         2.80         7.80         2.405         7.435           55         Y39         X47         9         2         7         2.25         6.75         2.43         6.57           56         Y30         X47         9         1         8         2.25         6.75         2.43         6.57           57         Y40         X48         9         1         8         2.25         6.75         2.43         6.57           58         Y40         X48         10         1         9         2.50         7.50         2.65         7.35           61         Y41         X51         1.4         1         13         3.50         10.50         3.56         10.44           62         Y42         X52         10         1         9         2.50         7.50         2.65         7.35           64         Y44         X55         9         4         5         2.25         6.75         2.43         6.57           64         Y45         X56         9         4         5         2.25         6.75         2.43         6.57	52	Y36	X45	9	3	6	2.25	6.75	2.43	6.57
55         Y39         X47         9         2         7         225         6.75         2.43         6.87           56         Y40         X2         9         1         8         2.25         6.75         2.43         6.87           57         Y40         X48         9         1         8         2.25         6.75         2.43         6.57           58         Y40         X48         9         1         8         2.25         6.75         2.43         6.57           60         Y40         X50         9         2         7         2.25         6.75         2.43         6.57           61         Y41         X51         14         1         13         3.50         10.50         3.56         10.43           62         Y42         X52         10         1         9         2.50         7.50         2.65         7.35           64         Y44         X54         8         2         6         2.00         6.00         2.22         5.78           65         Y45         X55         9         4         5         2.25         6.75         2.43         6.57 <tr< td=""><td>53 54</td><td>Y38</td><td>X16 X46</td><td>10</td><td>1</td><td>9</td><td>2.50</td><td>7.50</td><td>2.65</td><td>7.35</td></tr<>	53 54	Y38	X16 X46	10	1	9	2.50	7.50	2.65	7.35
56       Y40       X2       9       1       8       225       6.75       2.43       6.675         57       Y40       X49       8       2       6       2.00       6.00       2.22       5.78         58       Y40       X49       8       2       6       2.00       6.00       2.22       5.78         59       Y40       X43       10       1       9       2.26       6.75       2.43       6.57         61       Y41       X51       1.4       1       13       3.50       10.50       3.56       10.44         62       Y42       X52       9       1       8       2.25       6.75       2.43       6.57         64       Y43       X55       9       1       8       2.25       6.75       2.43       6.57         65       Y45       X55       9       4       5       2.25       6.75       2.43       6.57         66       Y47       X58       9       4       5       2.25       6.75       2.43       6.57         67       Y46       X59       1.1       3       8       2.75       8.25       2.87 <td>55</td> <td>Y39</td> <td>X47</td> <td>9</td> <td>2</td> <td>7</td> <td>2.25</td> <td>6.75</td> <td>2.43</td> <td>6.57</td>	55	Y39	X47	9	2	7	2.25	6.75	2.43	6.57
57       Y40       X48       9       1       8       2.25       6.75       2.43       6.57         58       Y40       X48       10       1       9       2.50       7.50       2.65       7.35         60       Y40       X50       9       2       7       2.25       6.75       2.43       6.57         61       Y41       X51       1.4       1       13       3.50       10.50       3.56       10.44         62       Y42       X52       10       1       9       2.50       6.75       2.43       6.57         63       Y43       X53       9       1       8       2.25       6.75       2.43       6.57         64       Y44       X54       8       2       6       2.00       6.00       2.22       5.78         65       Y45       X55       9       4       5       2.25       6.75       2.43       6.57         66       Y45       X56       10       3       7       2.50       7.50       2.65       7.35         67       Y46       X57       11       1       10       2.75       8.25       2.87	56	Y40	X2	9	1	8	2.25	6.75	2.43	6.57
35       140       A49       6       2       0       200       600       242       578         59       Y40       X48       10       1       9       250       750       265       735         60       Y40       X50       9       2       7       225       675       243       657         61       Y41       X51       14       1       13       350       1050       366       1044         62       Y42       X52       10       1       9       250       750       265       735         63       Y43       X53       9       1       8       225       675       243       657         64       Y44       X54       8       2       6       200       600       222       578         65       Y45       X56       10       3       7       250       675       243       657         66       Y45       X56       10       3       7       250       675       243       657         67       Y46       X57       11       1       10       275       825       287       813	57	Y40	X48	9	1	8	2.25	6.75	2.43	6·57
60         Y00         X50         9         2         7         225         675         243         657           61         Y41         X51         14         1         13         350         10.50         356         10.44           62         Y42         X52         10         1         9         2.50         7.50         2.65         7.35           63         Y43         X53         9         1         8         2.25         6.75         2.43         6.57           64         Y44         X54         8         2         6         2.00         6.00         2.22         5.78           65         Y45         X55         9         4         5         2.25         6.75         2.43         6.57           66         Y46         X57         11         1         10         2.75         8.25         2.87         813           70         Y49         X60         11         5         6         2.75         8.25         2.87         813           71         Y50         X37         9         2         7         2.25         6.75         2.43         6.57	58 59	Y40 Y40	X49 X48	8 10	2	9	2.50	7.50	2.22	5·78 7:35
61       Y41       X51       14       1       13       350       1050       356       1044         62       Y42       X52       10       1       9       250       750       265       735         64       Y44       X54       8       2       6       200       600       222       578         64       Y44       X55       9       4       5       225       675       243       657         65       Y45       X56       10       3       7       250       755       243       657         66       Y45       X56       10       3       7       250       755       243       657         67       Y46       X57       11       1       10       275       825       287       813         68       Y47       X58       9       4       5       225       675       243       657         70       Y48       X50       11       5       6       275       825       287       813         71       Y50       X37       9       2       7       225       675       243       657	60	Y40	X50	9	2	7	2.25	6.75	2.43	6.57
62       Y42       X52       10       1       9       250       7.50       2.65       7.35         63       Y43       X53       9       1       8       2.25       6.75       2.43       6.57         64       Y44       X54       8       2       6       2.00       6.00       2.22       5.78         65       Y45       X56       10       3       7       2.50       7.50       2.65       7.35         66       Y45       X56       10       3       7       2.50       6.75       2.43       6.57         67       Y46       X57       11       1       10       2.75       8.25       2.87       8.13         68       Y47       X58       9       4       5       2.25       6.75       2.43       6.57         69       Y48       X59       11       3       8.275       8.25       2.87       8.13         71       Y50       X37       9       2       7       2.25       6.75       2.43       6.57         72       Y51       X6       12       1       11       3.00       9.00       3.10       8.13	61	Y41	X51	14	1	13	3.50	10.50	3.56	10.44
03       143       A35       9       1       6       223       673       243       057         64       Y44       X54       8       2       6       200       600       222       578         65       Y45       X56       9       4       5       225       675       243       657         66       Y45       X56       10       3       7       250       775       243       657         67       Y46       X57       11       1       10       275       825       287       813         68       Y47       X58       9       4       5       225       675       243       657         69       Y48       X59       11       5       6       2.75       825       2.87       813         71       Y50       X37       9       2       7       2.25       6.75       2.43       657         72       Y51       X6       12       1       11       300       900       310       890         73       Y52       X13       11       1       10       2.75       8.25       2.87       813	62	Y42	X52	10	1	9	2.50	7.50	2.65	7.35
65Y45X559452.256.752.436.5766Y45X5610372.507.502.657.3567Y46X5711102.758.252.878.1368Y47X589452.256.752.436.5769Y48X5911382.758.252.878.1370Y49X6011562.758.252.878.1371Y50X379272.256.752.436.5772Y51X6121113.009.003.1089073Y52X13111102.758.252.878.1374Y52X2911472.758.252.878.1375Y52X619182.256.752.436.5776Y52X619192.507.502.657.3578Y54X6210192.507.502.657.3580Y55X1410372.507.502.657.3581Y56X1410393.009.003.108.9082Y57X112382.758.252.878.1384Y5	64	Y44	X54	8	2	6	2.25	6.00	2.43	5.78
66       Y45       X56       10       3       7       2:50       7:50       2:65       7:35         67       Y46       X57       11       1       10       2:75       8:25       2:43       8:13         68       Y47       X58       9       4       5       2:25       6:75       2:43       6:57         69       Y48       X59       11       3       8       2:75       8:25       2:87       8:13         70       Y49       X60       11       5       6       2:75       8:25       2:87       8:13         71       Y50       X37       9       2       7       2:25       6:75       2:43       6:57         72       Y51       X6       12       1       11       3:00       9:00       3:10       8:90         73       Y52       X13       11       1       10       2:75       8:25       2:87       8:13         74       Y52       X29       11       4       7       2:75       8:25       2:87       8:13         75       Y52       X61       9       1       8       2:50       7:50       2:65<	65	Y45	X55	9	4	5	2.25	6.75	2.43	6.57
67       Y46       X57       11       1       10       275       825       2.87       813         68       Y47       X58       9       4       5       2.25       6.75       2.43       6.57         69       Y48       X59       11       3       8       2.75       8.25       2.87       8.13         70       Y49       X60       11       5       6       2.75       8.25       2.87       8.13         71       Y50       X37       9       2       7       2.25       6.75       2.43       6.57         72       Y51       X.6       12       1       11       300       9.00       3.10       8.90         73       Y52       X13       11       1       10       2.75       8.25       2.87       8.13         74       Y52       X29       11       4       7       2.75       8.25       2.87       8.13         75       Y52       X61       9       1       8       2.25       6.75       2.43       6.57         76       Y53       X21       6       1       5       1.50       4.50       1.82	66	Y45	X56	10	3	7	2.50	7.50	2.65	7.35
69       Y48       X50       J       A       S       L2D       613       L4D       Corr         70       Y49       X60       11       5       6       275       825       287       813         71       Y50       X37       9       2       7       225       6.75       243       6.57         72       Y51       X6       12       1       11       300       900       310       890         73       Y52       X13       11       1       10       2.75       825       2.87       813         74       Y52       X13       11       4       7       2.75       8.25       2.87       813         75       Y52       X61       9       1       8       2.25       6.75       2.43       6.57         76       Y53       X21       6       1       5       1.50       4.50       1.82       4.18         77       Y54       X62       10       1       9       2.50       7.50       2.65       7.35         78       Y55       X14       10       3       7       2.50       7.50       2.65       7.3	67	Y46 V47	X57 X58	11	1	10	2.75	8.25	2.87	8·13 6.57
70       Y49       X60       11       5       6       2.75       8.25       2.87       8.13         71       Y50       X37       9       2       7       2.25       6.75       2.43       6.57         72       Y51       X6       12       1       11       3.00       9.00       3.10       8.90         73       Y52       X13       11       1       10       2.75       8.25       2.87       8.13         74       Y52       X61       9       1       8       2.25       6.75       2.43       6.57         76       Y52       X61       9       1       8       2.25       6.75       2.43       6.57         76       Y53       X21       6       1       5       1.50       4.50       1.82       4.18         77       Y54       X62       10       1       9       2.50       7.50       2.65       7.35         78       Y55       X14       10       3       7       2.50       7.50       2.65       7.35         81       Y56       X14       10       3       7       2.50       7.50       2.65 <td>69</td> <td>Y48</td> <td>X59</td> <td>11</td> <td>3</td> <td>8</td> <td>2.75</td> <td>8.25</td> <td>2.87</td> <td>8.13</td>	69	Y48	X59	11	3	8	2.75	8.25	2.87	8.13
71       Y50       X37       9       2       7       2.25       6.75       2.43       6.57         72       Y51       X6       12       11       11       3.00       9.00       3.10       8.90         73       Y52       X13       11       1       10       2.75       8.25       2.87       8.13         74       Y52       X29       11       4       7       2.75       8.25       2.87       8.13         75       Y52       X61       9       1       8       2.25       6.75       2.43       6.57         76       Y53       X21       6       1       5       1.50       4.50       1.82       4.18         77       Y54       X62       10       1       9       2.50       7.50       2.65       7.35         78       Y55       X14       10       3       7       2.50       7.50       2.65       7.35         79       Y55       X14       10       3       8       2.75       8.25       2.87       8.13         81       Y56       X14       10       3       9       3.00       9.00       3.10<	70	Y49	X60	11	5	6	2.75	8.25	2.87	8.13
72       Y51       X6       12       1       11       3.00       9.00       3.10       8.90         73       Y52       X13       11       1       10       2.75       8.25       2.87       8.13         74       Y52       X29       11       4       7       2.75       8.25       2.87       8.13         75       Y52       X61       9       1       8       2.25       6.75       2.43       6.57         76       Y53       X21       6       1       5       1.50       4.50       1.82       4.18         77       Y54       X62       10       1       9       2.50       7.50       2.65       7.35         78       Y55       X14       10       3       7       2.50       7.50       2.65       7.35         79       Y55       X14       10       3       7       2.50       7.50       2.65       7.35         80       Y55       X52       11       3       8       2.75       8.25       2.87       8.13         81       Y56       X14       10       3       9       3.00       9.00       3.10<	71	Y50	X37	9	2	7	2.25	6.75	2.43	6.57
74       Y52       X29       11       4       7       2.75       8.25       2.87       8.13         75       Y52       X61       9       1       8       2.25       6.75       2.43       6.57         76       Y53       X21       6       1       5       1.50       4.50       1.82       4.18         77       Y54       X62       10       1       9       2.50       7.50       2.65       7.35         78       Y55       X14       10       3       7       2.50       7.50       2.65       7.35         79       Y55       X14       10       3       7       2.50       7.50       2.65       7.35         80       Y55       X52       11       3       8       2.75       8.25       2.87       8.13         81       Y56       X14       10       3       7       2.50       7.50       2.65       7.35         82       Y57       X1       12       3       9       3.00       9.00       3.10       8.90         82       Y57       X1       12       3       9       3.00       9.00       3.10 <td>72</td> <td>151 Y52</td> <td>X6 X13</td> <td>12</td> <td>1</td> <td>11</td> <td>3.00</td> <td>9.00</td> <td>3·10 2.87</td> <td>8.90 8.13</td>	72	151 Y52	X6 X13	12	1	11	3.00	9.00	3·10 2.87	8.90 8.13
75       Y52       X61       9       1       8       2.25       6.75       2.43       6.57         76       Y53       X21       6       1       5       1.50       4.50       1.82       4.18         77       Y54       X62       10       1       9       2.50       7.50       2.65       7.35         78       Y55       X14       10       3       7       2.50       7.50       2.65       7.35         80       Y55       X14       10       3       7       2.50       7.50       2.65       7.35         80       Y55       X14       10       3       7       2.50       7.50       2.65       7.35         81       Y56       X12       11       3       8       2.75       8.25       2.87       8.13         81       Y56       X1       12       3       9       3.00       9.00       3.10       8.90         82       Y57       X1       12       3       9       3.00       9.00       3.40       8.75       7.35         84       Y58       X16       10       4       6       2.50       7.50 <td>74</td> <td>Y52</td> <td>X29</td> <td>11</td> <td>4</td> <td>7</td> <td>2.75</td> <td>8.25</td> <td>2.87</td> <td>8.13</td>	74	Y52	X29	11	4	7	2.75	8.25	2.87	8.13
76 $Y53$ $X21$ $6$ $1$ $5$ $1.50$ $4.50$ $1.82$ $4.18$ $77$ $Y54$ $X62$ $10$ $1$ $9$ $2.50$ $7.50$ $2.65$ $7.35$ $78$ $Y55$ $X29$ $10$ $1$ $9$ $2.50$ $7.50$ $2.65$ $7.35$ $79$ $Y55$ $X14$ $10$ $3$ $7$ $2.50$ $7.50$ $2.65$ $7.35$ $80$ $Y55$ $X52$ $11$ $3$ $8$ $2.75$ $8.25$ $2.87$ $8.13$ $81$ $Y56$ $X21$ $8$ $2$ $6$ $2.00$ $6.00$ $2.22$ $5.78$ $82$ $Y57$ $X1$ $12$ $3$ $9$ $3.00$ $9.00$ $3.10$ $8.90$ $83$ $Y58$ $X63$ $10$ $1$ $9$ $2.50$ $7.50$ $2.65$ $7.35$ $84$ $Y58$ $X16$ $10$ $4$ $6$ $2.50$ $7.50$ $2.65$ $7.35$ $85$ $Y59$ $X29$ $7$ $3$ $4$ $1.75$ $5.25$ $2.02$ $4.98$ $86$ $Y60$ $X44$ $11$ $2$ $9$ $2.75$ $8.25$ $2.87$ $8.13$ $87$ $61$ $63$ $803$ $202$ $601$ $200.75$ $602.25$ $217.17$ $585.83$	75	Y52	X61	9	1	8	2.25	6.75	2.43	6.57
78 $754$ $A02$ $10$ $1$ $9$ $2.50$ $7.50$ $2.65$ $7.35$ $78$ $Y55$ $X29$ $10$ $1$ $9$ $2.50$ $7.50$ $2.65$ $7.35$ $79$ $Y55$ $X14$ $10$ $3$ $7$ $2.50$ $7.50$ $2.65$ $7.35$ $80$ $Y55$ $X52$ $11$ $3$ $8$ $2.75$ $8.25$ $2.87$ $8.13$ $81$ $Y56$ $X21$ $8$ $2$ $6$ $2.00$ $6.00$ $2.22$ $5.78$ $82$ $Y57$ $X1$ $12$ $3$ $9$ $3.00$ $9.00$ $3.10$ $8.90$ $83$ $Y58$ $X63$ $10$ $1$ $9$ $2.50$ $7.50$ $2.65$ $7.35$ $84$ $Y58$ $X16$ $10$ $4$ $6$ $2.50$ $7.50$ $2.65$ $7.35$ $85$ $Y59$ $X29$ $7$ $3$ $4$ $1.75$ $5.25$ $2.02$ $4.98$ $86$ $Y60$ $X44$ $11$ $2$ $9$ $2.75$ $8.25$ $2.02$ $4.98$ $87$ $61$ $63$ $803$ $202$ $601$ $200.75$ $602.25$ $217.17$ $585.83$	76	Y53	X21	6	1	5	1.50	4.50	1.82	4.18
79     Y55     X14     10     3     7     250     7.50     2.65     7.35       80     Y55     X52     11     3     8     2.75     8.25     2.87     8.13       81     Y56     X21     8     2     6     2.00     6.00     2.22     5.78       82     Y57     X1     12     3     9     3.00     9.00     3.10     8.90       83     Y58     X63     10     1     9     2.50     7.50     2.65     7.35       84     Y58     X16     10     4     6     2.50     7.50     2.65     7.35       85     Y59     X29     7     3     4     1.75     5.25     2.02     4.98       86     Y60     X44     11     2     9     2.75     8.25     2.87     8.13       87     61     63     803     202     601     200.75     602.25     21.717     585.83	78	154 155	X 62 X 29	10	1	9	2.50	7.50	2.65	7.35 7.35
80         Y55         X52         11         3         8         2.75         8.25         2.87         8.13           81         Y56         X21         8         2         6         2.00         6.00         2.22         5.78           82         Y57         X1         12         3         9         3.00         9.00         3.10         8.90           83         Y58         X63         10         1         9         2.50         7.50         2.65         7.35           84         Y58         X16         10         4         6         2.50         7.50         2.65         7.35           85         Y59         X29         7         3         4         1.75         5.25         2.02         4.98           86         Y60         X44         11         2         9         2.75         8.25         2.87         8.13           87         Y61         X38         7         1         6         1.75         5.25         2.02         4.98           87         61         63         803         202         601         200.75         602.25         217.17         585.83	79	Y55	X14	10	3	7	2.50	7.50	2.65	7.35
81         Y56         X21         8         2         6         2.00         6.00         2.22         5.78           82         Y57         X1         12         3         9         3.00         9.00         3.10         8.90           83         Y58         X63         10         1         9         2.50         7.50         2.65         7.35           84         Y58         X16         10         4         6         2.50         7.50         2.65         7.35           85         Y59         X29         7         3         4         1.75         5.25         2.02         4.98           86         Y60         X44         11         2         9         2.75         8.25         2.87         8.13           87         Y61         X38         7         1         6         1.75         5.25         2.02         4.98           87         61         63         803         202         601         200.75         602.25         217.17         585.83	80	Y55	X52	11	3	8	2.75	8.25	2.87	8.13
o2         157         A1         12         3         9         3.00         9.00         3.10         8.90           83         Y58         X63         10         1         9         2.50         7.50         2.65         7.35           84         Y58         X16         10         4         6         2.50         7.50         2.65         7.35           85         Y59         X29         7         3         4         1.75         5.25         2.02         4.98           86         Y60         X44         11         2         9         2.75         8.25         2.87         8.13           87         Y61         X38         7         1         6         1.75         5.25         2.02         4.98           87         61         63         803         202         601         200.75         602.25         217.17         585.83	81	Y56	X21	8	2	6	2.00	6.00	2.22	5.78
84     Y58     X16     10     4     6     2.50     7.50     2.65     7.35       85     Y59     X29     7     3     4     1.75     5.25     2.02     4.98       86     Y60     X44     11     2     9     2.75     8.25     2.87     8.13       87     Y61     X38     7     1     6     1.75     5.25     2.02     4.98       87     61     63     803     202     601     200.75     602.25     217.17     585.83	o∠ 83	157 Y58	X1 X63	10	3	9	2.50	9.00	2.65	8·90 7·35
85         Y59         X29         7         3         4         1.75         5.25         2.02         4.98           86         Y60         X44         11         2         9         2.75         8.25         2.87         8.13           87         Y61         X38         7         1         6         1.75         5.25         2.02         4.98           87         61         63         803         202         601         200.75         602.25         217.17         585.83	84	Y58	X16	10	4	6	2.50	7.50	2.65	7.35
86         Y60         X44         11         2         9         2.75         8.25         2.87         8.13           87         Y61         X38         7         1         6         1.75         5.25         2.02         4.98           87         61         63         803         202         601         200.75         602.25         217.17         585.83	85	Y59	X29	7	3	4	1.75	5.25	2.02	4.98
87         61         63         803         202         601         200.75         602.25         217.17         585.83	86	Y60	X44	11	2	9	2.75	8.25	2.87	8.13
	87	6 <b>1</b>	63	803	202	601	200.75	602·25	217.17	585·83