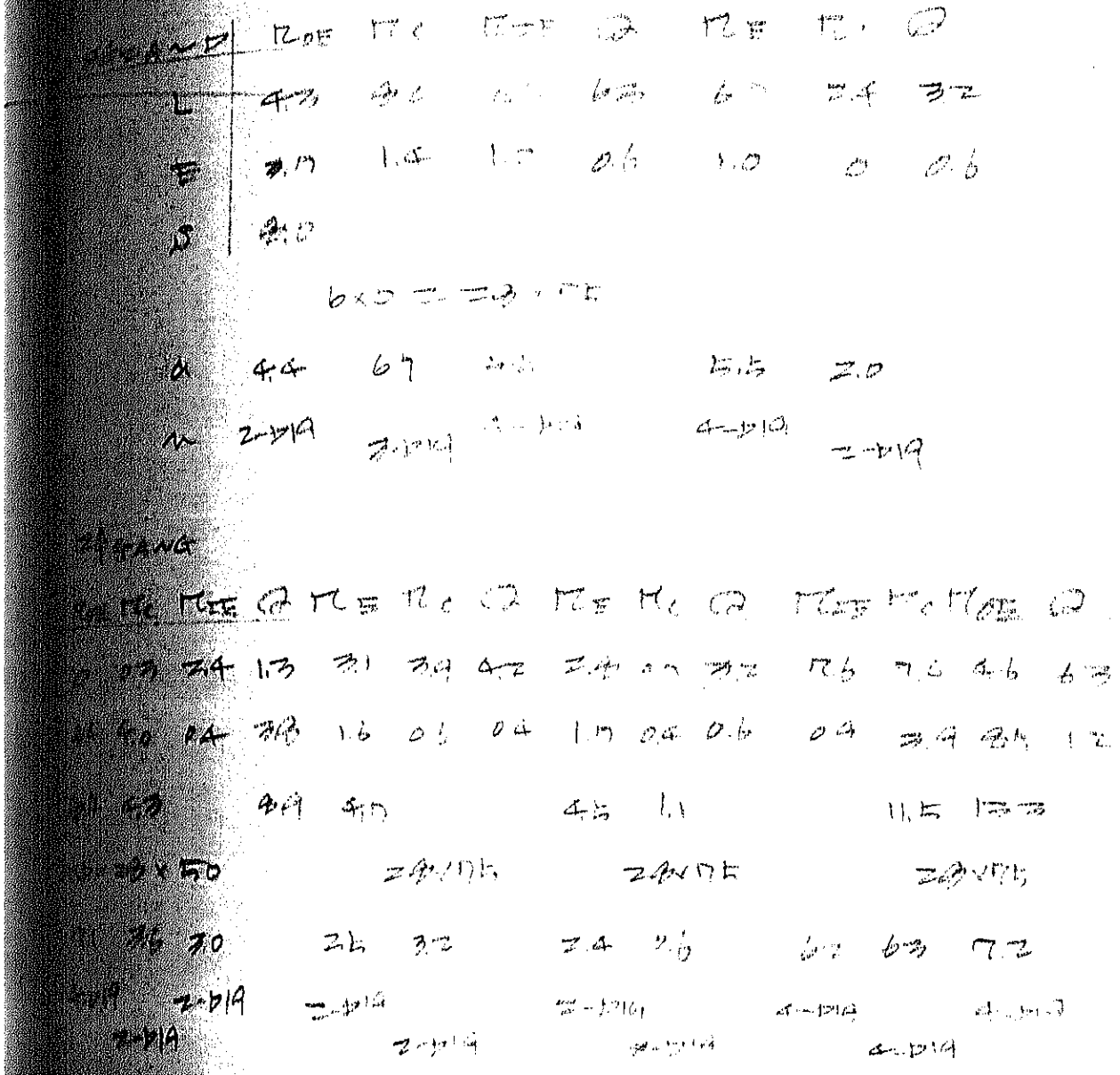


COLUMN

	P x	P y	M x	M y	Q x	Q y
L		5.3	0.5 0.6	0.6 0.6	0.3	0.3
E	1.0	1.3	2.4 1.8	2.2 1.4	1.2	1.3
S	6.3 4.7	6.6 5.0	2.9	3.7	3.7	3.9

b × D = 28 × 17.5 0.8% = 16.8

	P/bD x	P/bD y	M/bD² x	M/bD² y	Pt x	Pt y	At x	At y	n x	n y
L		2.5		1.3	0.4	0.02	-			
S	3.0 2.0	3.1 1.9	6.2	2.6	0.22	0.10	4.6	2.1	2-D19	2-D19

	P x	P y	M x	M y	Q x	Q y
L		13.3	0.5 0.6	0.7 0.8	0.3	0.4
E	3.6	4.1	4.7 4.4	10.0 8.2	2.6	6.2
S	16.9 9.7	17.4 9.2	5.2	10.9	5.5	10.8

b × D = 28 × 17.5

	P/bD x	P/bD y	M/bD² x	M/bD² y	Pt x	Pt y	At x	At y	n x	n y
L		6.3		1.3	0.5	-	-			
S	8.0 4.5	8.3 4.4	11.1	6.4	0.24	0.30	9.0	4.2	3-D19	2-D19

	P x	P y	M x	M y	Q x	Q y
L		22.2	0.4 0.2	3.0 1.5	0.2	1.2
E	8.6	9.0	9.1 9.9	16.1 19.4	4.5	8.6
S	30.7 13.7	31.2 [illegible]	9.5 10.1	17.7 20.9	9.3	13.4

$_sQ_y$ = 13.4 … [illegible]

30/$_b$ = 1175

P_{ty} = 0.32

D10 = 15.9 → 10(?)

b × D = 28 × 17.5 → × Q_A = 13.6 → Q_A = 13.4

	P/bD x	P/bD y	M/bD² x	M/bD² y	Pt x	Pt y	At x	At y	n x	n y
L		10.6	0.9	1.9	-	-				
S		14.9 11.0	19.1 21.5	10.9 13.3	0.62 0.47	0.29 0.38	13.0 19.3	6.1 8.0	5-D19 7-D19	2-D19 2-D19

P		
6.0	0	0
11	0.5	0.7
17.1	0.6	0.6

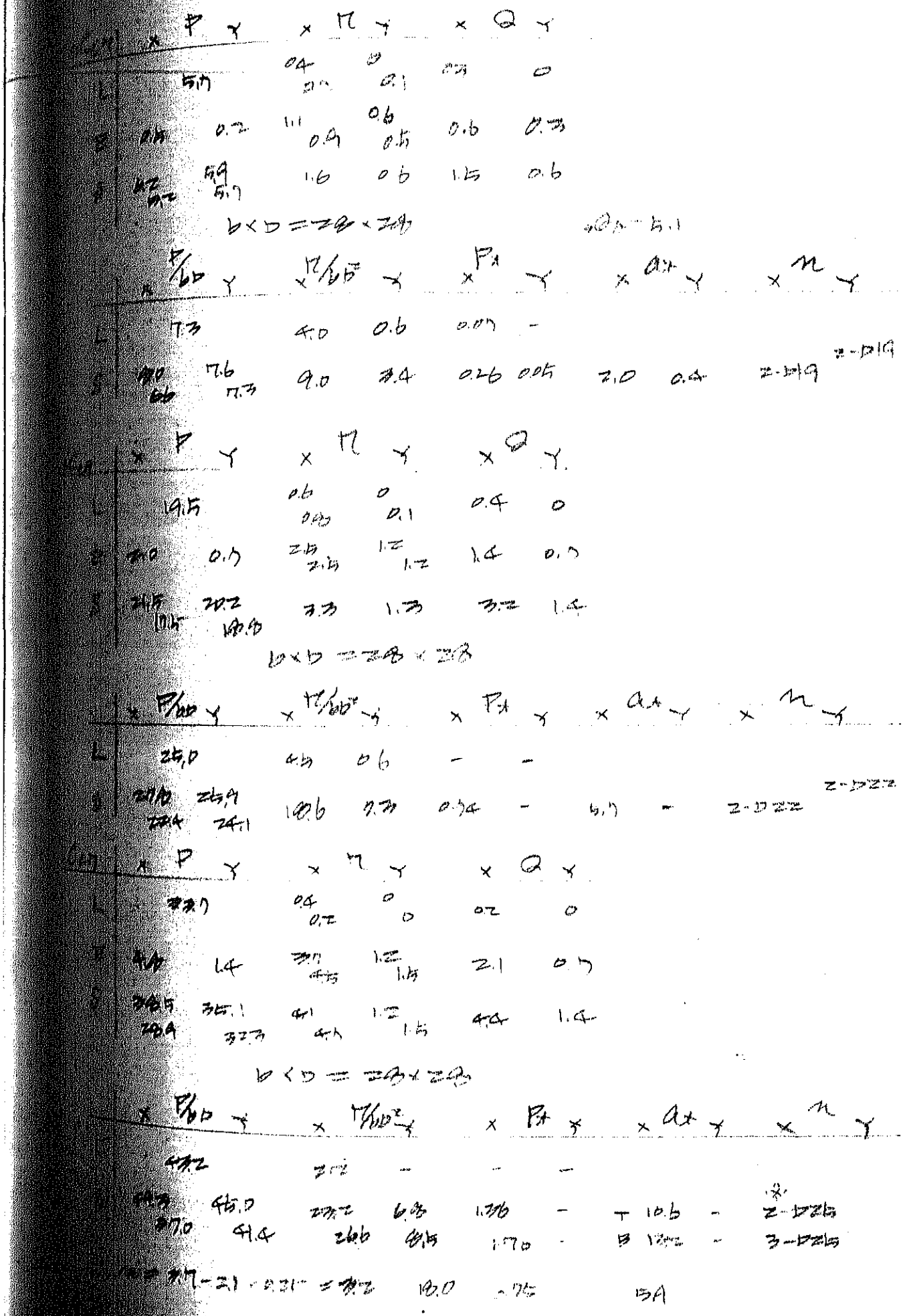
7.7	0	-		
9.1			0.4	

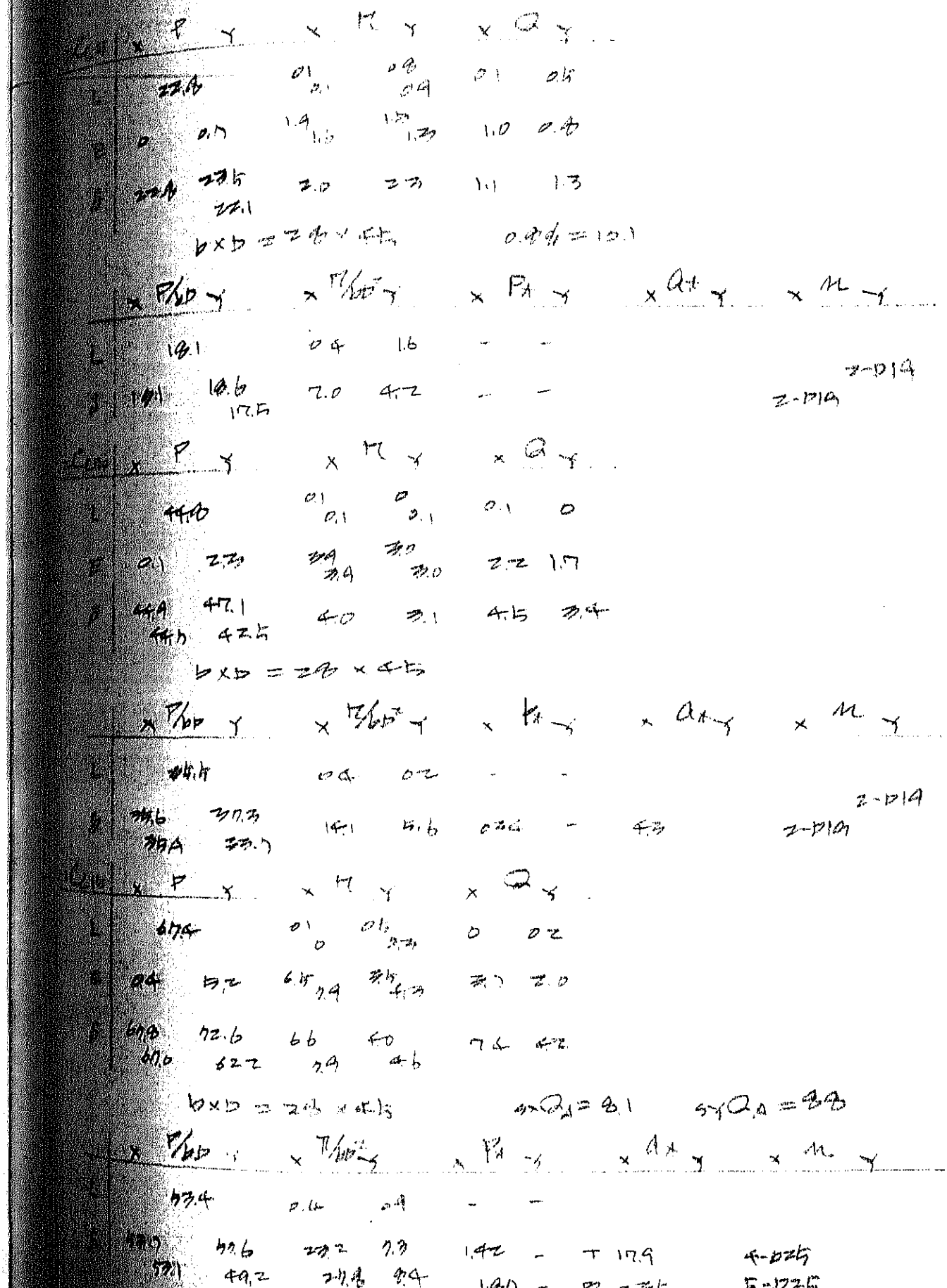
P		
16.4	0	0
	1.2	0.7
19.0	1.2	1.6

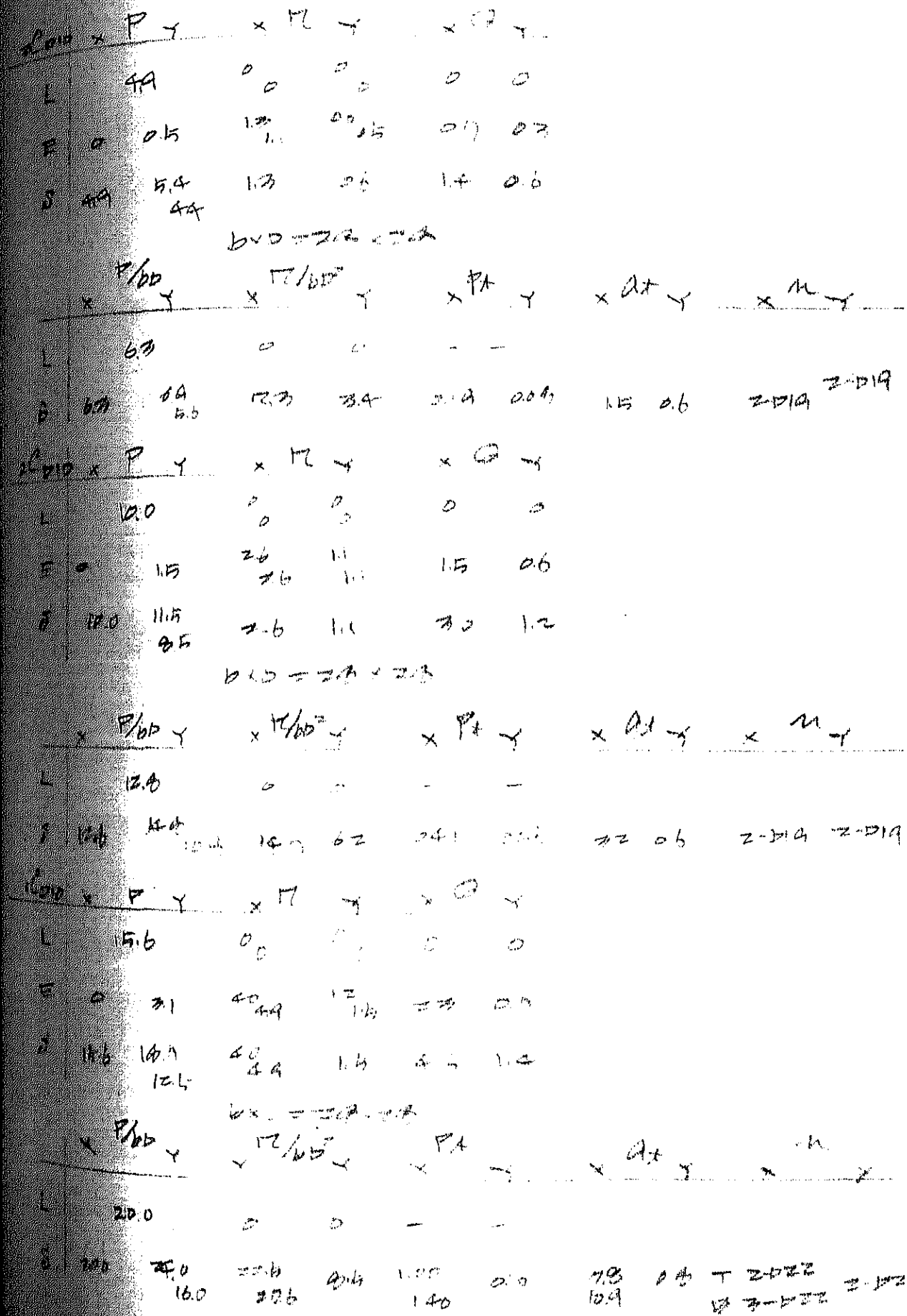
11.0		-		
16.7	6.0	-		

P		
21.2	0	0
7.5	1.2	0.7
28.7	1.5	1.4

24.7	0	-		
25.2	0.5	-		







1C16 | x P Y | x M Y | x Q Y

L | 6.1 | 0.6 0.2 | 0 0 | 0.3 | 0
S | 0.4 | 0.2 | 0.8 0.9 | 0.8 0.9 | 0.6 | 0.6
S | 6.5 5.7 | 6.3 5.4 | 1.4 | 0.9 | 1.5 | 1.2

b × D = 28 × 28

x P/bD Y | x M/bD² Y | x Pt Y | x Qt Y | x u Y

L | 7.8 | 3.4 | 0 | 0.5
S | 8.3 7.3 | 8.1 7.5 | 17.9 | 5.1 | 0.30 | 0.09 | 1.6 | 0.7 | 2-D19 2-D19

1C21 | x P Y | x M Y | x Q Y

L | 7.1 | 0.1 0 | 0.1 0 | 0 | 0
S | 2.0 | 3.6 | 1.6 2.0 | 6.9 10.3 | 0.7 | 3.3
S | 6.1 6.1 | 10.7 3.5 | 2.0 | 10.3 | 1.4 | 6.6

b × D = 28 × 75   0.3% = 1.6

x P/bD Y | x M/bD² Y | x Pt Y | x Qt Y | x u Y

L | 3.4 | 0.1 | – | – | –
S | 3.9 2.9 | 5.1 1.7 | 4.3 | 6.5 | 0.13 | 0.24 | 2.7 | 5.0 | 2-D19 2-D19

1C22 | x P Y | x M Y | x Q Y

L | 13.0 | 0 0 | 4.3 0 | 0 | 0.8
S | 4.3 | 0.6 | 1.6 2.0 | 3.1 0 | 0.7 | 0.7
S | 13.3 13.7 | 13.6 12.4 | 2.0 | 8.0 | 1.4 | 2.2

b × D = 28 × 75

x P/bD Y | x M/bD² Y | x Pt Y | x Qt Y | x u Y

L | 6.2 | 0 | 2.1 | – | –
S | 6.8 6.0 | 6.5 5.9 | 4.3 | 5.1 | 0.03 | 0.12 | 1.7 | 2.5 | 2-D19 2-D19

Cas	x P	Y	x M	Y	x Q	Y
L		8.1	0 / 0	0 / 0	0	0
F	0	3.8	1.6 / 2.0	3.6 / 10.3	0.7	3.6
S	4.1	11.4 / 4.3	2.0	10.3	1.4	7.7

b × D = 28 × 175

	x P/60	Y	x M/60²	Y	x PA	Y	x QA	Y	x M	Y
L		3.9	0	0	–	–				
S	4.4	5.17 / 2.0	4.3	6.6	0.12	0.24	2.9	5.0	Z-D19	Z-D19

Cas	x P	Y	x M	Y	x Q	Y
L		18.0	0.3 / 0.2	0.1 / 0	0.1	0
E	2.0	2.4	0.7 / 0.9	0.9 / 1.2	0.3	0.7
S	30.0 / 16.0	21.4 / 14.6	1.1	1.2	0.7	0.8

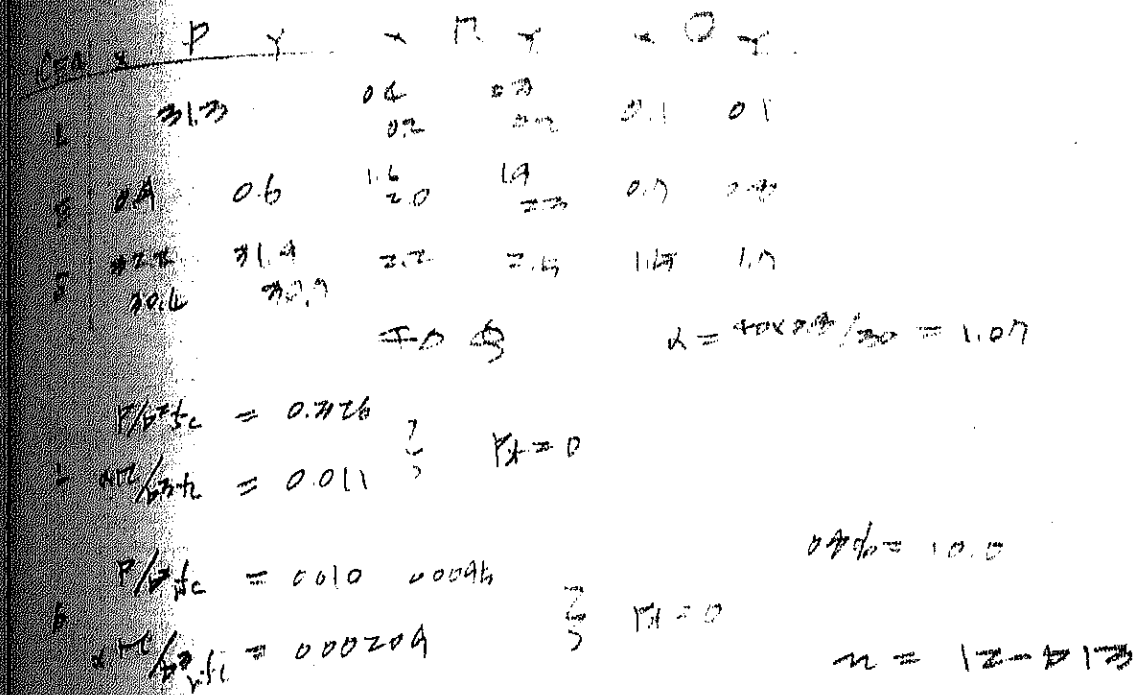
b × D = 28 × 28

	x P/60	Y	x M/60²	Y	x PA	Y	x QA	Y	x M	Y
L		27.1	1.7	0.6	–	–				
S	44.7 / 20.6	24.4 / 14.7	6.2	6.4	–	–			Z-D19	Z-D19

Cas	x P	Y	x M	Y	x Q	Y
L		17.8	3.1 / 1.6	0.2 / 0.1	0.9	0.1
E	2.0	2.4	4.6 / 10.6	1.9 / 2.3	3.7	0.8
S	19.8 / 15.8	21.7 / 14.4	12.2	2.4	8.7	1.77

b × D = 28 × 175

	x P/60	Y	x M/60²	Y	x PA	Y	x QA	Y	x M	Y
L		8.5	2.0	0.4	–	–				
S	9.5 / 9.5	10.1 / 6.9	7.8	5.1	0.20	0.10	4.2	2.1	Z-D19	Z-D19



TIE BEAM   30×70   w = 0.76 T/M

j = 77.6

[illegible]

$M_{OE} = 9.9 + 0.2 = 10.1$

$M_{IE} = 5.8 + 0 = 5.8$

$w' = 0.76 + 0.47 = 1.23$ $l = 4.0$

$C = w'l^2/12 = 1.72$

$M_0 = \;\; " \; /8 = 2.58$

$M_{IE} = 1.2C = 2.1$

$\Sigma M_{IE}\;\; 5.8 + 2.1 = 7.9$

$M_C = 0.6 M_0 = 1.5$

$a_{OE} = 10.1 / 0.776 \times 3.0 = 4.6$ 2-D19

$a_{IE} = 7.9 / \;\; " \;\; = 3.6$ 2-D19

[illegible]

$M_{OE} = 19.4 + 1.5 = 20.9$

$M_{IE} = 3. + 0.2 = 3.2$

$M_{E} = 1.5 + 0 = 1.5$

$w' = 0.76 + 1.27 = 2.03$ $l = 6.6$ $w' = 0.76$ $l = 3.3$

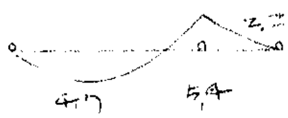
$C = 2.03 \times 6.6^2 / 12 = 4.91$ $0.76 \times 3.3^2 / 12 = 0.34$

$M_0 = \;\; " \;\; /8 = 7.43$ $/8 = 0.51$

1.0   0.39   0.30   0.70

= 0.53 − 2.1

− 2.0 [illegible]



$\Sigma M_{IE} = 3.2 + 5.4 = 8.6$

$a_{OE} = 20.9 / 0.776 \times 3.0 = 9.0$ 4-D19

$a_{IE} = 8.6 / \;\; " \;\; = 3.7$ 2-D19

LAUNDRY

FG 35 × 75 $w = 0.63$ $j = 59.5$

$M_{FE} = 0.9 + 0.3 = 1.2$

$w' = 0.63 - 1.03 = 1.66$ $l = 4.10$

$M_0 = 1.66 \times 4.1^2/8 = 3.5$

$a_E = 1.2 / 0.695 \times 3.0 = 0.7$ 2-D19

$a_L = 3.5 / 0.695 \times 3.0 = 2.9$ 2-D19

DINING

FG 35 × 90

$M_{OE} = 11.5 + 3.4 = 14.8$

$M_{IE} = 1.6 + .. = 1.7$

$w' = 0.76$ $l = 6.96$ $w' = 0.76 + 0.90 = 1.66$ $l = 4.64$

$C = 0.76 \times 6.96^2/12 = 3.6$ $1.66 \times 4.64^2/12 = 2.98$

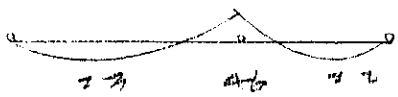
$M_0 =$ " $/8 = 4.6$ " $/8 = 4.46$

1.2 1.5

0.46 0.60

+4.6 −4.5

0 −0.1



$\Sigma M_{IE} = 1.7 + 4.6$

$a_{OE} = 14.8 / 0.726 \times 3.0 = 6.8$ 3-D19

$M_{IE} = 4.5 / 0.726 \times 3.0 = 3.3$ 2-D19

FOUNDATION

PILE 30φ $f_p = 25^T$

FOOTING $0.9 \times 0.9 \times 0.75 \times 2.4 = 1.5$

$f_p' = 25 - 1.5 = 23.5 \rightarrow 23$

35φ $f_p = 30^T$

FOOTING $1.05 \times 1.05 \times 0.75 \times 2.4 = 2.0$

$f_p' = 30 - 2.0 = 28$

40φ $f_p = 35$

FOOTING $1.2 \times 1.2 \times 0.75 \times 2.4 = 2.6$

$f_p' = 35 - 2.6 = 32.4 \rightarrow 32$

PAINTING

P	WALL			Σ P	P × n	l × l'
	0.47 × 3.42	1.90				
	1.27 × 2.55	3.25				
	0.47 × 1.91	0.93				
	1.27 × 1.31	1.54				
	0.47 × 1.21	0.51				
	1.27 × 2.11	2.94				
	1.27 × 2.56	3.25				
	1.27 × 3.42	4.34				
	0.47 × 1.21	0.57				
	1.64 × 4.28	7.02				
	0.15 × 1.91	0.28				
	1.64 × 1.91	3.13				
	1.27 × 2.06	2.62				
	0.30 × 3.82	1.14				
	1.13 × 1.02	1.15				
	0.54 × 1.02	0.55				
	1.13 × 1.02	1.15				
	0.54 × 2.04	1.10				
	1.13 × 1.02	1.15				
	0.91 × 5.9	5.37				
	0.91 × 2.14	1.95				
	2.04	4.63				
	2.04	0.66				
	0.91 × 4.31	4.01				
	1.14 × 1.04	1.18				
	1.13 × 2.04	2.30				
	1.13 × 1.02	1.15				
		9.19				

F2 408 × 2   120 × 240   D = 175   j' = 59.5

Qp = 44.1 / 2 = 22.1 = Q

τ = 22.1 × 10³ / 120 × 59.5 = 3.1 < 5.0

q = 22.1 × 10³ / 59.5 × 15 = 24.8

a = 22.1 × 60 / 59.5 × 2.0 = 11.1 } 6-D16

F3 408 × 3   120 × 360

Qp = 59.7 / 3 = 19.9

q = 199 × 10³ / 59.5 × 15 = 22.3 }

a = 19.9 × 120 / 59.5 × 2.0 = 20.1 } 8-D19

F4 408 × 4   240 × 240

Qp = 82.9 / 4 = 20.7

q = 2 × 20.7 × 10³ / 59.5 × 15 = 46.4 }

a = 2 × 20.7 × 60 / 59.5 × 2.0 = 20.8 } 8-D19

F5 408 × 1   120 × 120   6-D16

F6 308 × 1   90 × 90   4-D16

F6 308 × 2   90 × 180   D = 60   j = 46.4

Qp = 28.8 / 2 = 14.4

τ = 14.4 × 10³ / 90 × 46.4 = 3.4 < 5

q = 14.4 × 10³ / 46.4 × 15 = 20.7

a = 14.4 × 45 / 46.4 × 2.0 = 7.0 } 4-D16

F7 308 × 3   90 × 270

Qp = 48.0 / 3 = 16.0

q = 16.0 × 90 / 46.4 × 2.0 = 15.5   8-D16

$w_x = 610$　$w_y = 590$

4階　$l_x = 4.10$　$\ell_y = 4.01$　$\lambda = 1.02$

$M_{0x} = 0.076 \times w \times 4.10^2 = 1.06w$　0.64　0.63

$M_{0y} = 0.064 \times$ 〃 $= 0.91w$　0.53　0.52

$M_{1x} = 0.064 \times$ 〃 $= 0.91w$　0.43　0.42

$M_{1y} = 0.038 \times$ 〃 $= 0.54w$　0.29　0.28

D=12　d=9　j=7.8

$A_{x1} = 4.2$　D13 @20　4.0　D13 @20

$A_{x2} = 2.4$　D10 @20　2.7　D10 @20

$A_{y1} = 3.1$　D10 @20　3.0　D10 @20

$A_{y2} = 2.1$　〃　2.0　〃

3階　$l_x = 2.72$　$\ell_y = 4.10$　$\lambda = 1.51$　$w_x = 560$　$w_y = 540$

$M_{0x} = 0.076 \times w \times 2.72^2 = 0.56w$　0.32

$M_{0y} = 0.054 \times$ 〃 $= 0.29w$　0.16

$M_{1x} = 0.064 \times$ 〃 $= 0.35w$　0.19

$M_{1y} = 0.038 \times$ 〃 $= 0.21w$　0.12

D=10　d=8　j=6.8

$A_{x1} = 1.9$　D10 @20

$A_{x2} = 1.2$　〃

$A_{y1} = 1.2$　D10 @30

$A_{y2} = 0.8$　〃

S3 l_x = 3.34 l_y = 4.10 λ = 1.23 w_c = 0.61

M_{x1} = 0.054 × 0.61 × 3.34² = 0.37

M_{x2} = 0.034 " " = 0.26

M_{y1} = 0.042 × " = 0.29

M_{y2} = 0.028 × " = 0.19

ロニトニ

Q_{x1} = 2.5 ロロ = 20 ㎏

Q_{x2} = 1.7 "

Q_{y1} = 2.0 ロロ = 15 ㎏

Q_{y2} = 1.4 "

S4 l_x = 2.72 w_c = 0.56

M_{x1} = 0.049 × 0.56 × 2.72² = 0.20

M_{x2} = 0.034 " = 0.17

M_{y1} = 0.025 × " = 0.13

M_{y2} = 0.017 " = 0.09

ロ = 10

Q_{x1} = 2.0 ロロ = 20 ㎏

Q_{x2} = 1.4 "

Q_{x3} = 1.2 ロロ = 20 ㎏

Q_{x4} = 0.8 "