BUILDING APPLICATION FORM

S
28 x 29

WELLINGTON,

To the City Engineer,
Wellington.

Date, 17 July 1926

Sir,—

I hereby apply for permission to Erect Office Store Premises

at Featherston & Johnston Sts (House No. and Street) for New Zealand Insurance Co (Owner)

of Wellington (Address) according to Plans

and Specifications deposited herewith.

Particulars of Land—Lot No. 170 TOWN SEC. or D.P.

Frontage By depth of Area

Particulars of Building—Foundations Concrete Walls Concrete

Roof Concrete Area of Ground Floor square feet

Estimated Cost £ 67,131-4-0

Area of Outbuildings sq. ft.

Building £66,391-4-0 Plumbing and Drainage £ 740 Total £ 67,131-4-0

Yours faithfully,

The J. Coates Construction Co Ltd Builder

per W. J. Coates

Postal Address Box 1544, Wellington

80001

City Engineer's Department.

Building Branch.

Inspection Sheet.

Date 17.7.36

Application for Office & Lab. &c. Locality [illegible]

Owner. [illegible] Building District No. 1

		Checked by.	Date.
1. Description of Lot & Locality & House No.	✓	[illegible]	[illegible]
2. Building Line Restriction, F.W. or By-Law.	✓	[illegible]	[illegible]
3. Distance from boundaries.			
4. Encroachment on Street or Council property.	✓	[illegible]	[illegible]
5. Use of Building.			
6. Values on Application.			
7. Builder's and Owner's name and address.	✓	[illegible]	[illegible]
8. Frontage and area of site) Residential.			
9. Open space and access to rear.) Buildings.			
10. Crossing and approach. Garages.			
11. Health Dept. approval. Shops & Restrnts.			
12. Labour " Factory			
13. Licensing Committee approval. Licensed Hotels.			
14. Fire Board & Special requirements. Pt. Hotels & Boarding houses.			
15. " " " " " Public Bldgs.			
16. " " and app. of Govt. Insp. Picture Theatres.			
17. Structural Calculations.	✓	[illegible]	10-9-36.
18. General construction			
19. Chimneys, heating appliances, flues etc.			
20. Fire escapes.			
21. Storage of fuel oil or Dagrs. Gds. D.G. Inspector.			
22. Retaining walls.			
23. Elevators and cart-dock.			
24. Hoardings or Gantry and Deposit.			
25. Street Works requirements.			
26. Town Planning.		[illegible]	17th.36
27. Dispensation of Council required.			

Permit may be issued subject to Drainage Department's approval and

25. Dr Engr. are passing levels satisfactory?
Deposit £70.

Complete Values

STRUCTURE OFFICE BUILDING
OWNER N.Z. INSURANCE Co.
LOCATION WELLINGTON

GUMMER & FORD,
ARCHITECTS AND STRUCTURAL ENGINEERS,
AUCKLAND.

STRUCTURE NO.
DATE 10-6-36
SHEET NO. 1 OF 56 SHEETS.

COMPUTATION FOR REINFORCED CONCRETE STRUCTURE

Live loads adopted :

Basement	100 lbs. per sq. ft.
Ground floor	100 " " " "
Office floors	60 " " " "
Caretaker's flat	60 " " " "
Motor Room	200 " " " "
Roofs	50 " " " "

Earthquake Loading :

Live load on all floors of 20 lbs. per sq ft.

At each floor a horizontal shear of 1/10 the combined dead load and specified live load above that level.

Stresses adopted :

	Static Only	Earthquake and Static Combined.
Concrete :		
Extreme fibre stress		
beam centres	650 lbs. per sq. in	812 lbs. per sq. in.
beam Supports	750 " " " "	937 " " " "
Direct compression	600 " " " "	750 " " " "
Unit shear stress	60 " " " "	75 " " " "
Unit bond stress	100 " " " "	125 " " " "
Steel :		
Max. tensile stress	18,000 " " " "	22500 " " " "
Max. compressive stress	15 times compression in concrete.	

Calculation for earthquake forces:

Following a trial calculation of the column and beam structure required, flexibility ratios and the corresponding distribution coefficients for all bents were calculated.

The calculations for the above ratios were made from the formulae of Dr. Naito, published in the bulletin of the Seismological Society of America, Vol. 17, 1927.

STRUCTURE OFFICE BUILDING
OWNER U.Z. INSURANCE Co.
LOCATION WELLINGTON

GUMMER & FORD,
ARCHITECTS AND STRUCTURAL ENGINEERS,
AUCKLAND.

STRUCTURE NO.
DATE 10 - 6 - 36
SHEET NO. 2 OF 56 SHEETS.

COMPUTATION FOR REINFORCED CONCRETE STRUCTURE

The total earthquake shears at each floor level have been distributed to the bents in accordance with the calculated distribution coefficients and these amounts divided among the columns in proportion to the relative stiffnesses of same.

Moments in columns were taken as fixed end moments and those in beams inverted to balance the fixed end moments in proportion to the relative stiffnesses of the beams at each connection.

It has been assumed that within the limits of the working stresses of the concrete, brick infills will not increase the rigidity of the frames in which they are located.

Calculation for static loading :-

Moments in frames at column and beam connections have been analysed generally by the Hardy Cross method, but where conditions were such as to make a detailed analysis unnecessary conventional moment coefficients such as $\frac{WL}{10}$ & $\frac{WL}{12}$ were used.

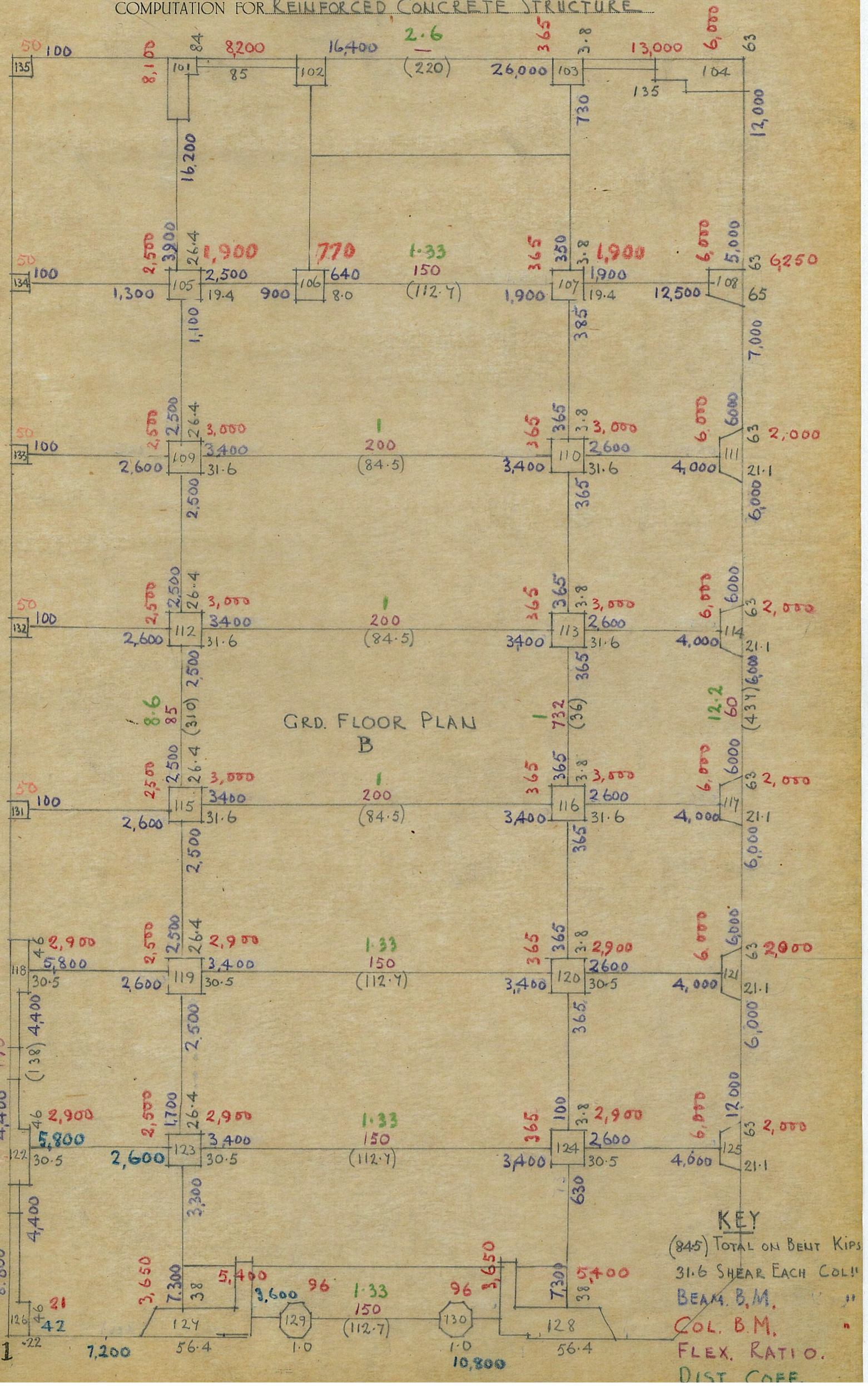
The foundations were designed on the assumption that the ground would carry an evenly distributed pressure of 3 tons per sq. ft. Increased pressure due to earthquake moments in the footings in no case exceeds 3 tons plus 25%.

STRUCTURE OFFICE BUILDING
OWNER N.Z. INSURANCE CO.
LOCATION WELLINGTON

STRUCTURE NO.
DATE 10.6.36
SHEET NO. 3 OF 56 SHEETS.

GUMMER & FORD,
ARCHITECTS AND STRUCTURAL ENGINEERS,
AUCKLAND.

COMPUTATION FOR REINFORCED CONCRETE STRUCTURE



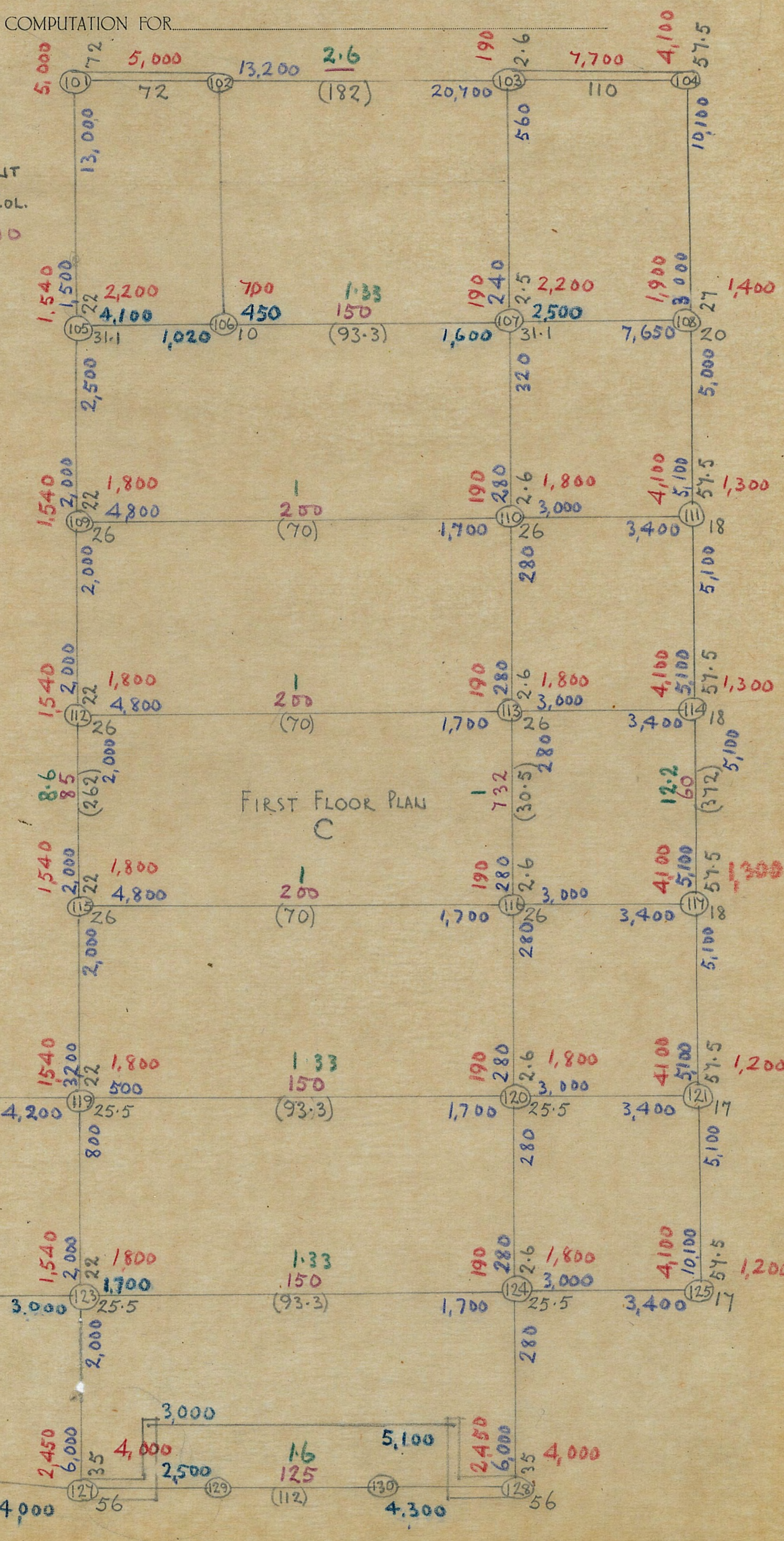
STRUCTURE OFFICE BUILDING
OWNER N.Z. INSURANCE CO.
LOCATION WELLINGTON

STRUCTURE NO. .....
DATE 10 - 6 - 36
SHEET NO. 4 OF 56 SHEETS.

GUMMER & FORD,
ARCHITECTS AND STRUCTURAL ENGINEERS,
AUCKLAND.

COMPUTATION FOR .....

KEY.
(93.3) TOTAL ON BENT
31.1 SHEAR EACH COL.
FLEXIBILITY RATIO
DIST. COEF.
BEAM B.M.
COL. B.M.



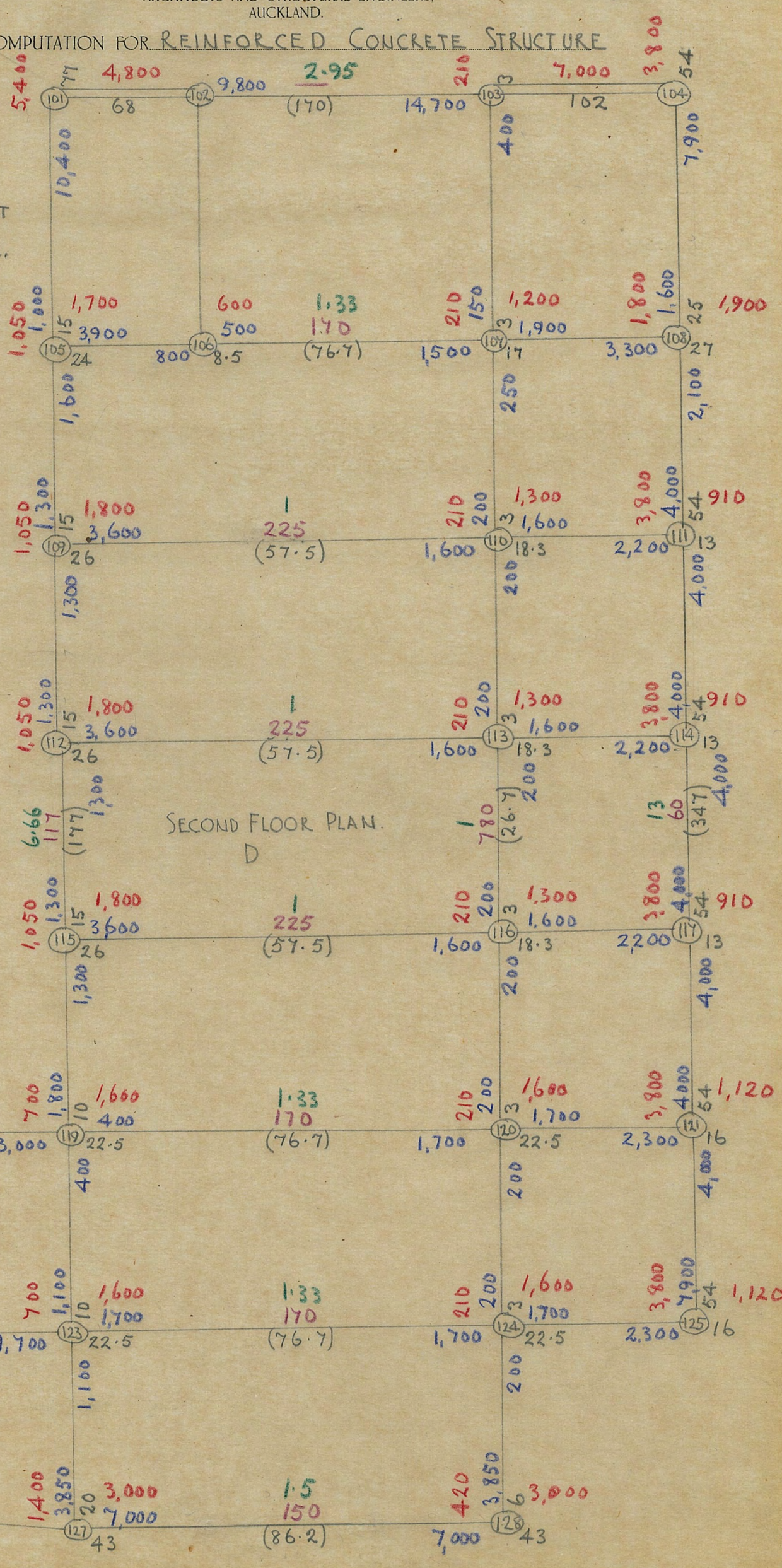
STRUCTURE OFFICE BUILDING
OWNER N.Z. INSURANCE CO.
LOCATION WELLINGTON

STRUCTURE NO.
DATE 10 - 6 - 36
SHEET NO. 5 OF 56 SHEETS.

GUMMER & FORD,
ARCHITECTS AND STRUCTURAL ENGINEERS,
AUCKLAND.

COMPUTATION FOR REINFORCED CONCRETE STRUCTURE

KEY.
(76·7) TOTAL ON BENT
8·5 SHEAR ON COL.
FLEXIBILITY RATIO
DIST. COEFFICIENT
BEAM B.M.
COL. B.M.



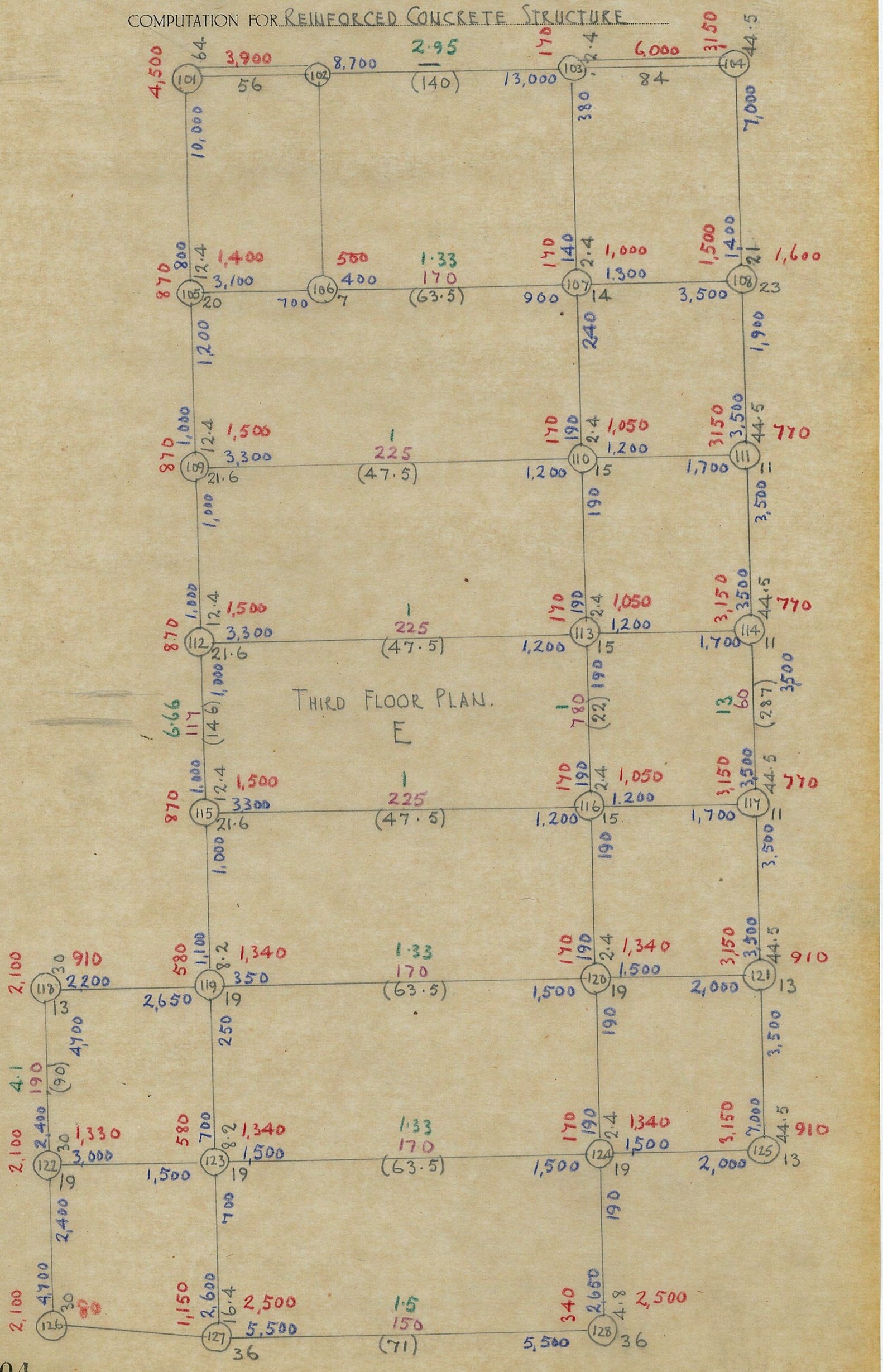
SECOND FLOOR PLAN.
D

STRUCTURE OFFICE BUILDING
OWNER N.Z INSURANCE CO
LOCATION WELLINGTON

STRUCTURE NO. .....
DATE 10 - 6 - 36
SHEET NO. 6 OF 56 SHEETS.

GUMMER & FORD,
ARCHITECTS AND STRUCTURAL ENGINEERS,
AUCKLAND.

COMPUTATION FOR REINFORCED CONCRETE STRUCTURE

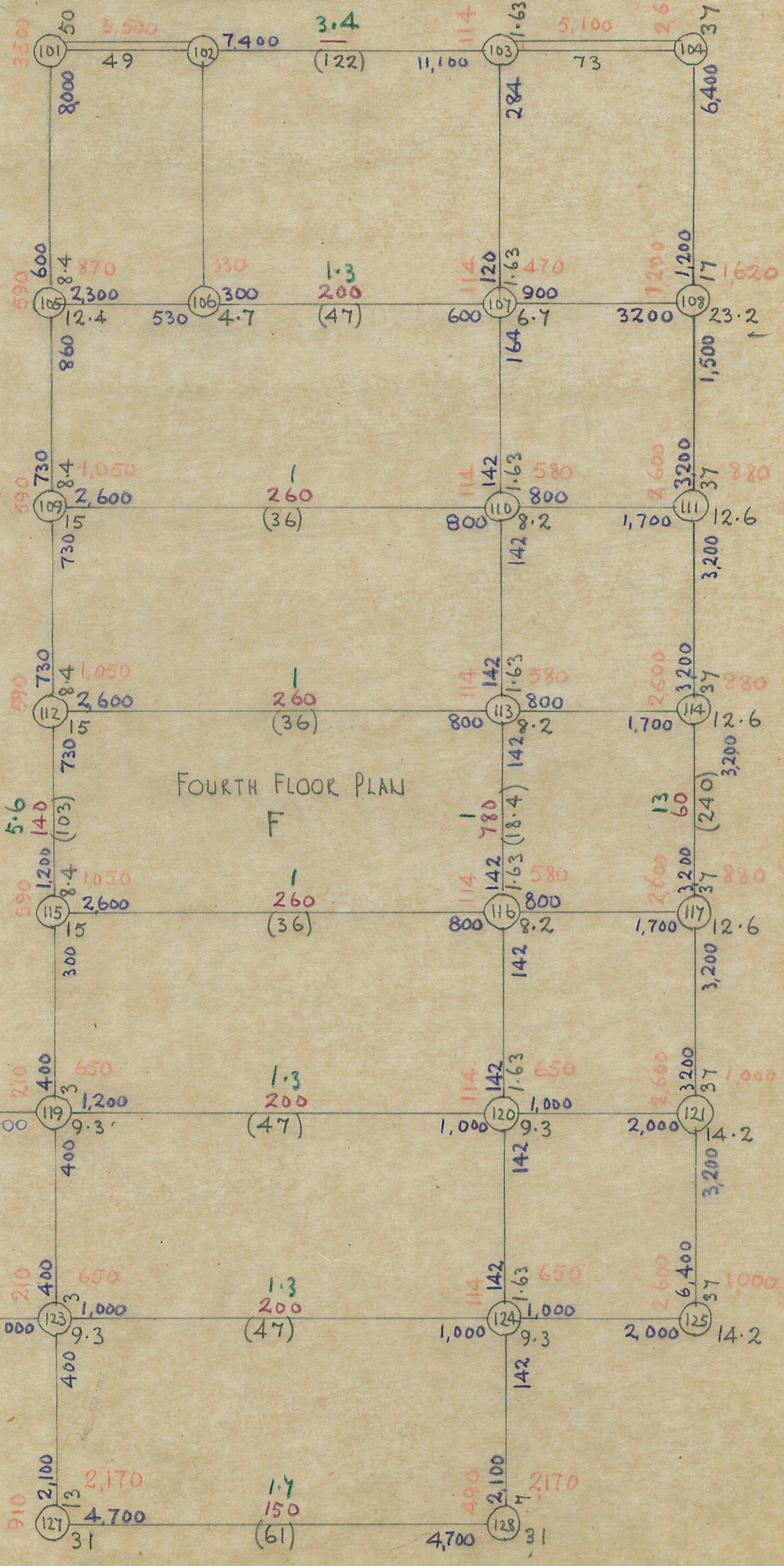


STRUCTURE OFFICE BUILDING
OWNER N.Z. INSURANCE Co
LOCATION WELLINGTON

STRUCTURE NO. .....
DATE 10-6-36
SHEET NO. 7 OF 56 SHEETS.

GUMMER & FORD,
ARCHITECTS AND STRUCTURAL ENGINEERS,
AUCKLAND.

COMPUTATION FOR REINFORCED CONCRETE STRUCTURE.

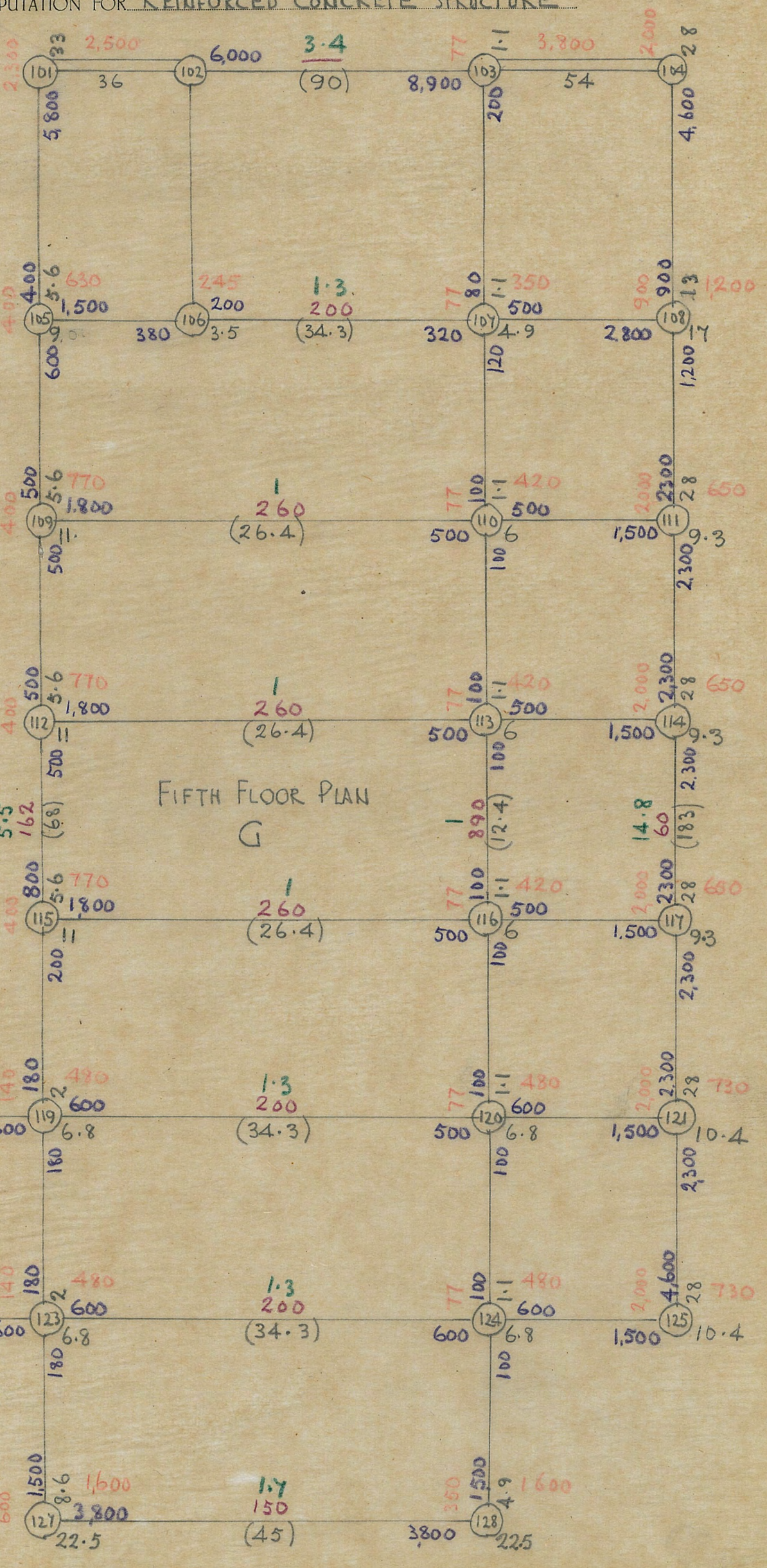


STRUCTURE OFFICE BUILDING
OWNER N.Z. INSURANCE Co.
LOCATION WELLINGTON.

STRUCTURE NO. .....
DATE 10-6-36
SHEET NO. 8 OF 56 SHEETS.

GUMMER & FORD,
ARCHITECTS AND STRUCTURAL ENGINEERS,
AUCKLAND.

COMPUTATION FOR REINFORCED CONCRETE STRUCTURE

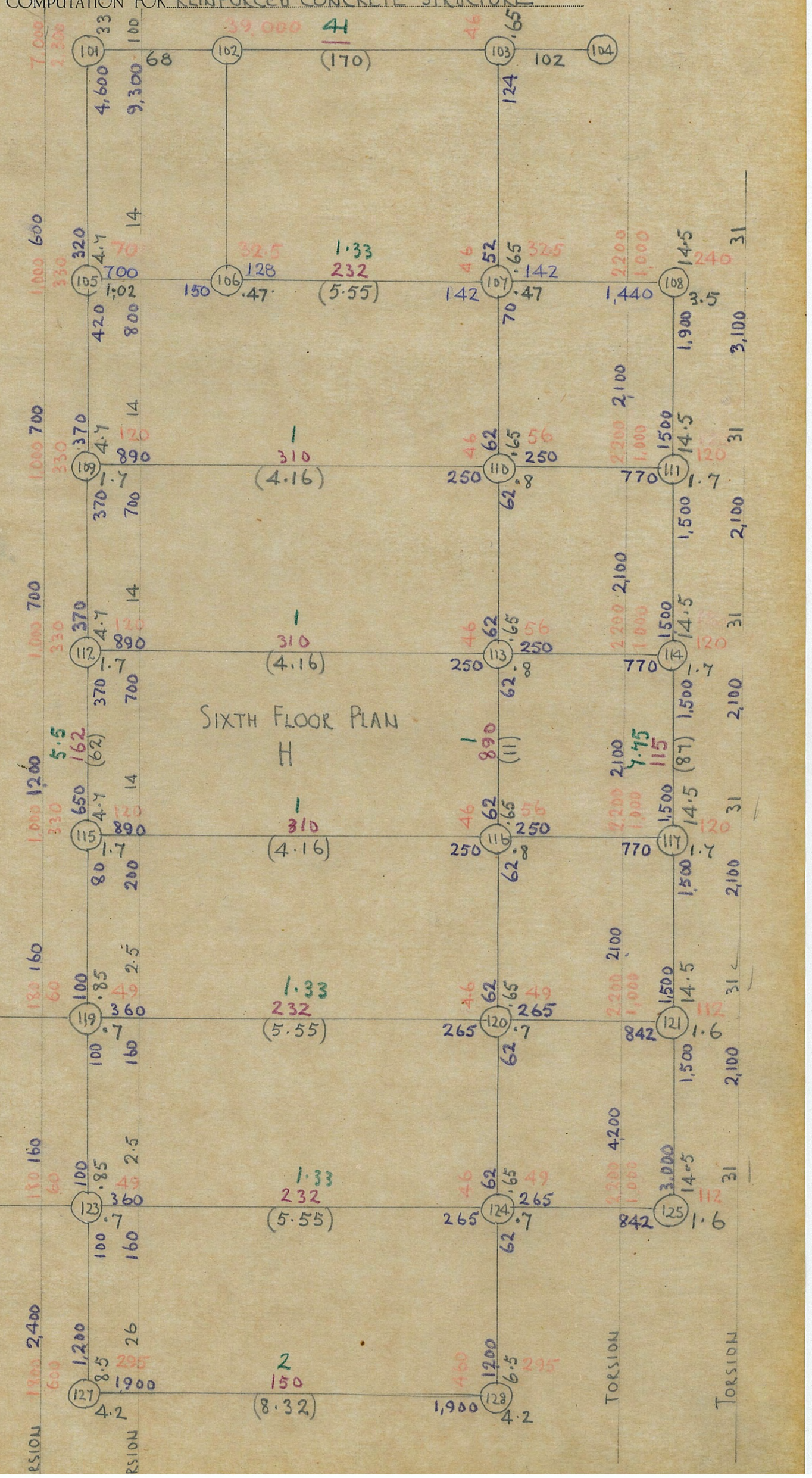


STRUCTURE OFFICE BUILDING
OWNER N.Z. INSURANCE CO.
LOCATION WELLINGTON.

STRUCTURE NO. .....
DATE 10-6-36
SHEET NO. 9 OF 56 SHEETS.

GUMMER & FORD,
ARCHITECTS AND STRUCTURAL ENGINEERS,
AUCKLAND.

COMPUTATION FOR REINFORCED CONCRETE STRUCTURE



SIXTH FLOOR PLAN
H

STRUCTURE Office Building
OWNER N.Z. Insurance Co.
LOCATION Wellington

STRUCTURE NO. .....
DATE 10-6-36
SHEET NO. 10 OF 56 SHEETS.

GUMMER & FORD,
ARCHITECTS AND STRUCTURAL ENGINEERS,
AUCKLAND.

COMPUTATION FOR Reinforced Concrete Structure.

STRUCTURE OFFICE BUILDING
OWNER N.Z. INSURANCE CO.
LOCATION WELLINGTON

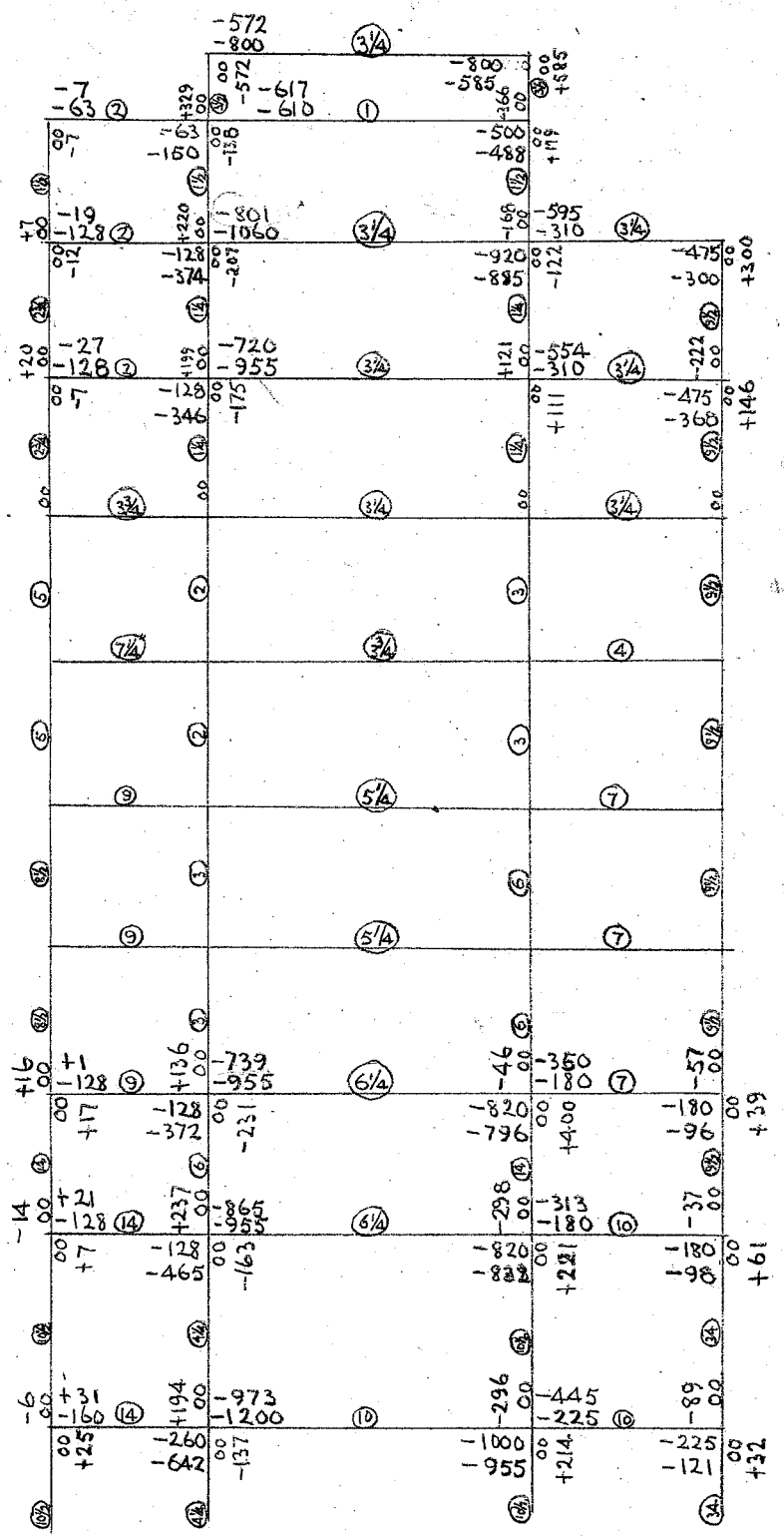
GUMMER & FORD,
ARCHITECTS AND STRUCTURAL ENGINEERS,
AUCKLAND.

STRUCTURE NO. .....
DATE 10-6-36
SHEET NO. 11 OF 56 SHEETS.

COMPUTATION FOR REINFORCED CONCRETE STRUCTURE.

HARDY CROSS ANALYSIS OF STATIC MOMENTS

BENT 105-106-107-108.



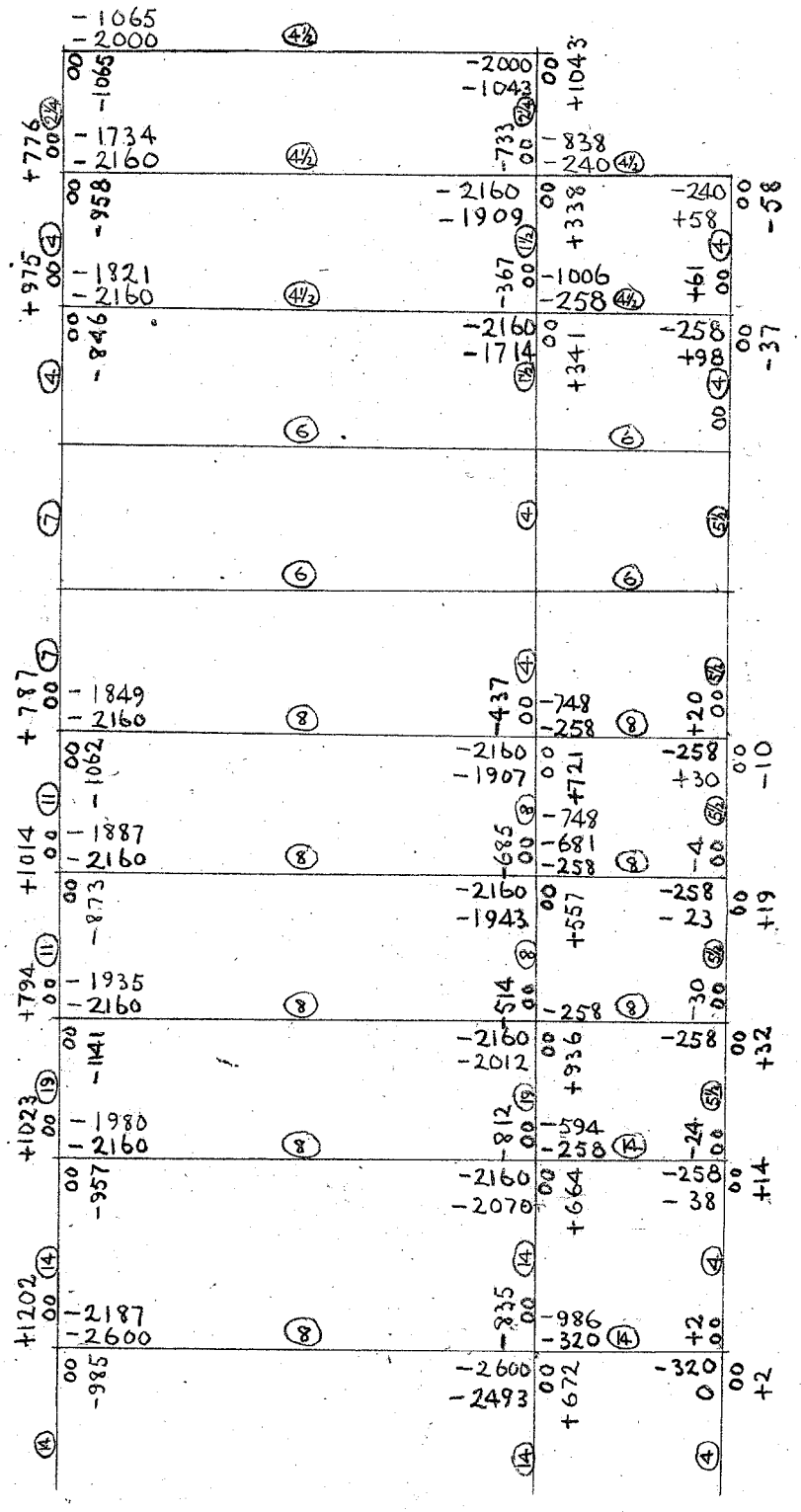
STRUCTURE OFFICE BUILDING
OWNER N.Z. INSURANCE CO.
LOCATION WELLINGTON

GUMMER & FORD,
ARCHITECTS AND STRUCTURAL ENGINEERS,
AUCKLAND.

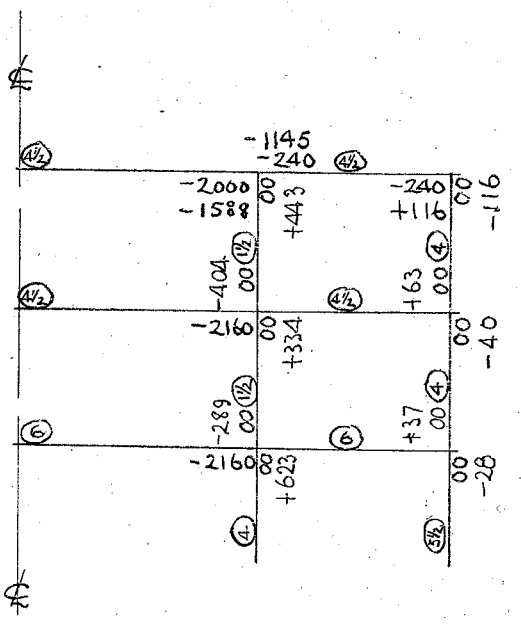
STRUCTURE NO.
DATE 10-6-36
SHEET NO. 12 OF 56 SHEETS.

COMPUTATION FOR REINFORCED CONCRETE STRUCTURE.

HARDY CROSS ANALYSIS OF STATIC MOMENTS

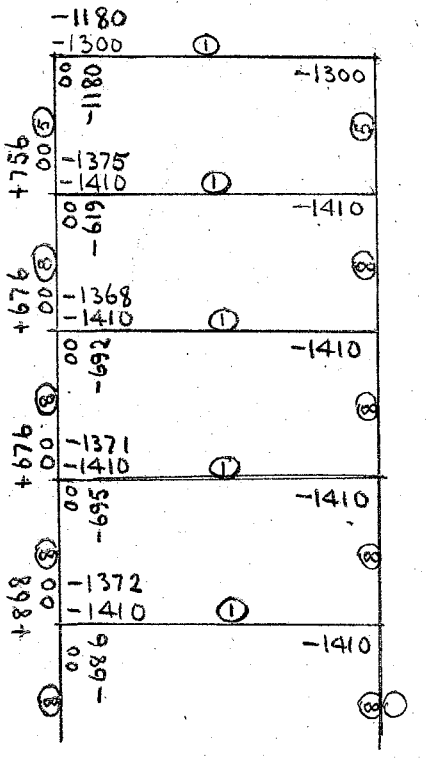


BENT 109-110-111



Upper right-hand half of bent 118-119-120-121. Lower portion as frame 109-110-111.

Reverse about ℄ for Moments in left hand half.



UPPER PORTION
BENT 127-128

					Moments							
Col. No.	Floor	P	E	Total	Eq. E-W Y Y	Eq. N-S X X	Static	Size	Steel	C_1	C_2
101	B	447			8,100			54"x 22"	10-1¼"φ ea. end		750
	C	389			5,000			54"x 18"	10-1¼"φ ea. end		700
	D, E		As floor C								
	F	238			3,500			54"x 18"	8-1¼"φ ea. end		
	G		As floor F								
	H	141			7,000			54"x 18"	6-1¼"φ. ea. end		
	I, J		As floor H								
102	B	450			120		250	24"x 24"	16-1¼"φ	530	614
	All floors above to be similar.										
103	As col. 102 on all floors										
104	B	300			6,000		200	50"x 32"	26-1¼"φ		700
	C	246			4,300			32 x 30	16-1¼"φ		830
	D, E		As floor C								
	F	121·3			2,600			27"x 27"	14-1¼"φ		655
	G		As floor F								
	H	35			200			18"x 18"	4-1¼"φ		100
105	B	306	94	400	2,500	1,900	31,000	30"x 30"	20-1¼"φ	325	550
	C		As floor B								
	D	222	44	266	1,050	1,700	20,000	27"x 26"	10-1¼"φ	307	662
	E		As floor D								
	F	150	17·4	168	590	870	25	27 x 22	8-1¼"φ	230	493
	G		As floor F								
	H	84	2	86	1,000	120	150	27"x 18"	8-1¼"φ	144	477
	I		As floor H								
106	B	450	66	516		770	250	24"x 24"	20-1¼"φ	560	760
	C		As floor B								
	D	342	31	373				20"x 20"	16-1¼"φ	550	770
	E		As floor D								
	F	245	12	257		330	170	18"x 18"	12-1¼"φ	485	710
	G		As floor F								

STRUCTURE OFFICE BUILDING
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GUMMER & FORD,
ARCHITECTS AND STRUCTURAL ENGINEERS,
AUCKLAND.

COMPUTATION FOR REINFORCED CONCRETE STRUCTURE

STRUCTURE NO.
DATE 10-6-36
SHEET NO. 13 OF 56 SHEETS.

STRUCTURE OFFICE BUILDING.
OWNER N.Z. INSURANCE CO.
LOCATION WELLINGTON.

GUMMER & FORD,
ARCHITECTS AND STRUCTURAL ENGINEERS,
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COMPUTATION FOR REINFORCED CONCRETE STRUCTURE.

STRUCTURE NO.
DATE 10-6-36
SHEET NO. 14 OF 56 SHEETS.

Col. No.	Floor	P	E	Total	Moments Eq. E-W	Moments Eq. N-S	Moments Static	Size	Steel	C_1	C_2	C_3
106	H	152	2	154		32·5	200	16"x16"	12-1¼"ϕ	333	466	
	I, J		As floor H									
107	B	488	66	554		1,900	300	30"x30"	28-1¼"ϕ	405	635	
	C	428	43	471		2,200	350	30"x30"	12-1¼"ϕ	425	790	
	D	371	31	402		1,200	400	24"x24"	20-1¼"ϕ	442	775	
	E		As floor D									
	F	265	12	277		470	160	20"x20"	12-1¼"ϕ	458	687	
	G		As floor F									
	H	163	1	164		32·5	150	16"x16"	8-1¼"ϕ	417	537	
	I, J		As floor H									
108	B	311	94	405	6,000	6,250	E-W 150 N-S 45	48"x24"	32-1¼"ϕ	Moment Only		
	C	324				2,000	150	27"x27"	24-1¼"ϕ	285	585	
	D, E		As floor C									
	F	141	18	159	1,200	1,620	150	27x27	16-1¼"ϕ	160	380	
	G, H, I		As floor F									
109	B	520	102	622		3,000	1,200	32"x32"	28-1¼"ϕ	415	795	
	C	458	70	528		1,800	1,150	30"x30"	28-1¼"ϕ	385	697	
	D	394	50	444		1,800	1,100	27"x27"	24-1¼"ϕ	390	806	508
	E	333	34	367		1,500	1,100	27"x26	22-1¼"ϕ	340	757	486
	F	273	20	293		1,100	1,050	27"x22"	20-1¼"ϕ	313	758	520
	G		As floor F									
	H	154	2	156	1,000	800	120	27"x18"	10-1¼"ϕ	240	565	
	I		As floor H									
110	B	527	34	561	365	3,000	850	30"x30"	28-1¼"ϕ	408	808	782
	C	469	24	493		1,800	950	30"x30"	20-1¼"ϕ	400	750	
	D	396	17	413		1,300	600	25"x25"	20-1¼"ϕ	430	793	777
	E	335	12	347		1,050	750	24"x24"	20-1¼"ϕ	381	756	
	F	267	7	274		580	500	20"x20"	16-1¼"ϕ	405	765	562
	G		As floor F									

Col. No.	Floor	P	E	Total	Moments Eq. E-W	Moments Eq. N-S ××	Static	Size	Steel	C_1	C_2	C_3
110	H	160	1	161		56	350	18"×16"	12-1¼"ϕ	< 350	< 585	
	I		As floor H									
	J	40					1,000	18"×16"	4-1¼"ϕ ea. end. Moment Only.			
111	B	268	68	336	6,000	2,000	N-S 20	33"×27"	20-1¼"ϕ		770	
	C	227	46	273	4,100	1,300	32	33"×20"	20-1¼"ϕ		N-S 735 E-W 920	765
	D	190	34	224	3,800	1,120	30	33"×18"	20-1¼"ϕ		N-S 800 E-W 840	680 610
	E		As floor D									
	F	123	14	137	2,600	880	20	33"×18"	10-1¼"ϕ		N-S 643 E-W 780	
	G		As floor F									
	H	56·4	1·4	58	2,200	120		27"×18"	10-1¼"ϕ		850	
	I		As floor H									
112		As 109 all floors										
113		As 110 all floors										
114		As 111 all floors										
115		As 109 all floors										
116		As 110 all floors										
117		As 111 all floors										
118		As 122 all floors										
119	B	508	51	559	2,500	2,900	850	30"×30"	28-1¼"ϕ	406	796	461
	C	430	35	465	1	1,800	950	30"×30"	20-1¼"ϕ	377	727	471
	D	358	25	383		1,600	750	26"×26"	20-1¼"ϕ	380	768	
	E	287	17	304		1,340	750	24"×24"	20-1¼"ϕ	333	410	461
	F	220	10	230		650	500	20"×20"	16-1¼"ϕ	340	720	
	G		As floor F									
	H	105	1	106		50	350	16"×16"	8-1¼"ϕ	270	533	
	I		As floor H									
120		As 119 all floors										
121		As 111 all floors										

STRUCTURE OFFICE BUILDING
OWNER N.Z. INSURANCE CO.
LOCATION WELLINGTON

GUMMER & FORD,
ARCHITECTS AND STRUCTURAL ENGINEERS,
AUCKLAND.

COMPUTATION FOR REINFORCED CONCRETE STRUCTURE

STRUCTURE NO.
DATE 10-6-36
SHEET NO. 15 OF 56 SHEETS.

Col. No.	Floor	P	E	Total	Moments Eq. E-W	Moments Eq. N-S	Moments Static	Size	Steel	c_1	c_2
122	B	336	66	402		2,900		48"×24"	16-1¼"ϕ	< 300	< 690
	C		As Floor B								
	D	240	32	272		1,700		48"×19"	16-1¼"ϕ	230	522
	E		As Floor D								
	F	158	12	170	2,500	1,000		48"×18"	14-1¼"ϕ		440
	G, H, I		As Floor F								
123		As 119 all Floors									
124		As 119 all Floors									
125		As 111 all Floors									
126	B	87									
	C	57									
	D		As Floor C								
127	B	478	220	698	3,650	5,400	E-W 240	92"×26"	53-1¼"ϕ	227	449
	C		As floor B								
	D	342	112	454	1,400	3,000	E-W 240 N-S 760	74"×20"	18-1¼"ϕ	265	465
	E, F, G, H, I		As floor D								
128		As 127	all Floors								
131	A, B	125						18"×9"	6-¾"ϕ	600	

Nomenclature adopted in above tables:

P = Static dead and live load

E = Earthquake direct force

c_1 = Stress under total direct pressure only.

c_2 = Stress under combined total bending and direct ptessure.

c_3 = Stress under static total bending and direct pressure.

All stresses in lbs. per sq. inch.

All loads in kips and moments in kip-inches.

STRUCTURE OFFICE BUILDING

OWNER N.Z. INSURANCE CO

LOCATION WELLINGTON

GUMMER & FORD,
ARCHITECTS AND STRUCTURAL ENGINEERS,
AUCKLAND.

COMPUTATION FOR REINF. CONCRETE STRUCTURE.

STRUCTURE NO.

DATE 10-6-36

SHEET NO. 16 OF 56 SHEETS.

STRUCTURE OFFICE BUILDING
OWNER NZ INSURANCE Co.
LOCATION WELLINGTON

GUMMER & FORD,
ARCHITECTS AND STRUCTURAL ENGINEERS,
AUCKLAND.

STRUCTURE NO.
DATE 10-6-36
SHEET NO. 17 OF 56 SHEETS.

COMPUTATION FOR REINF. CONCRETE STRUCTURE.

Slab design: All moments in lb.-inches.

13'-0" x 13'-0" panels:

Upper floors: M = 16,200 5" Slab ⅜"ϕ 4½" crs. both ways.

Ground floor: M = 20,300 5½" Slab ⅜"ϕ 4" crs. both ways.

14'-6" x 13'-0" panels:

Upper floors: Long Span M = 16,400 } 5" Slab
Short Span M = 16,100 } ⅜"ϕ 4½" crs. both ways.

Ground floor: M = 20,500 5½" Slab ⅜"ϕ 4" crs. both ways.

Between beams 4 & 6

Motor Room floor: M = 32,400 6" Slab ½"ϕ 5" crs.

Upper floors: M = 20,000 5" Slab ½"ϕ 6" crs.

Ground floor: M = 24,000 5½" Slab ½"ϕ 6" crs.

Between beams 4 & 16 Motor room floor

M = 20,000 5" Slab ½"ϕ 6" crs.

Between beams 3 & 12

Upper floors:

Long Span: M = 12,300 5½" Slab ⅜"ϕ 6" crs.

Short Span: M = 20,700 ½"ϕ 6" crs.

Ground floor

Long Span: M = 15,400 5½" Slab ⅜"ϕ 6" crs.

Short Span: M = 26,000 ½"ϕ 6" crs.

Between beams 9 & 11

Upper floors: M = 15,600 } 5" Slab
Ground floor: M = 16,300 } ⅜"ϕ 4½" crs.

Between beams 8 & 28

Upper floors: 5" Slab ⅜"ϕ 5" crs.

Ground floor: 5" Slab ⅜"ϕ 4½" crs.

Between beams 8 & 20 5" Slab ⅜"ϕ 4½" crs. both ways.

Between beams 3 & 26 5" Slab ⅜"ϕ 5" crs.

Slab below caretaker's quarters as for office floors.

Main roof slab:

13'-0" x 13'-0" panels M = 14,200 } 4½" Slab ⅜"ϕ 4½" crs. both ways.
14'-6" x 13'-0" panels M = 14,000 }

Between beams 3 & 26 as office floors.

STRUCTURE OFFICE BUILDING
OWNER NZ INSURANCE Co.
LOCATION WELLINGTON.

GUMMER & FORD,
ARCHITECTS AND STRUCTURAL ENGINEERS,
AUCKLAND.

STRUCTURE NO.
DATE 10-6-36
SHEET NO. 18 OF 56 SHEETS.

COMPUTATION FOR REINF CONCRETE STRUCTURE

Caretaker's Roof Slab:

Square Panels as for main roof.

Between beams 3 + 12 M = 21,000 5" Slab ½"ϕ 6" crs.

Motor Room Roof Slab:

M = 7,100 3½" Slab ⅜"ϕ 6" crs.

Slab each side beam 55 Ground floor.

5" Slab ⅜"ϕ 4½" crs.

Slab below strongroom on 1st floor:

Haunch to 9" at beam 7 ⅜"ϕ 5" crs.

Stair Slabs:

Starrs to strongroom M = 41,000 6½" Slab ½"ϕ 4½" crs.

Main Stairs:

12'-0" spans M = 33,000 6" Slab ½"ϕ 5" crs.

1st flight M = 14,600 5" Slab ⅜"ϕ 5" crs.

Service stair between 1st & 6th. floors

as 1st flight main stairs. 5" slab ⅜"ϕ 5" crs.

All slabs with one way reinforcement to have ⅜"ϕ distributing bars at 12" crs.

Basement retaining walls:

M = 40,000 9" Wall 2½" outside cover to steel

d = 6·25 A_s = ·4

½"ϕ 5" crs. vertically. Alt. rods cranked.

⅜"ϕ 12" crs. both ways on outside face.

All other walls:

⅜"ϕ 8" crs. both ways and both faces.

Note:- Ground Floor slab between beams 28 + 88 under both side walls is to be dropped 6"x6" with 2-¾" ϕ rods at bottom. This is not shown on contract set of Drawings.

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STRUCTURE NO.
DATE 10-6-36
SHEET NO. 19 OF 56 SHEETS.

COMPUTATION FOR REINF. CONCRETE STRUCTURE.

BEAM DESIGN:

Beam 1 B

Interior spans: M = 216,000 lb. ins.

b = 8" d = 15" 17" × 8"

As = .91 □" 2-½"ϕ, 1-¾"ϕ

End span: M = 260,000 lb. ins.

b = 8" d = 17" 19" × 8"

As = .97 □" 2-½"ϕ, 1-⅞"ϕ

V = 8,300 lbs. v = 79 lbs/sq.in. s = 6" ⅜"ϕ 2 arm.

Beam 1 All floors exept B

Interior spans:

At supports M = 176,000 lb. ins.

b = 8" d = 13½" 16" × 8" haunch.

As = .8 □" 2-½"ϕ, 1-¾"ϕ

At centres M = 118,500 lb. ins.

b = 8" d = 10" 12" × 8"

As = .8 □" 2-½"ϕ, 1-¾"ϕ

East end span: M = 210,000 lb. ins.

b = 8" d = 14.7" 16" × 8" D.R

As = .95 2-½"ϕ, 1-⅞"ϕ

T = 17,100 C = 15,600

f_s' = 6,400 A_s' = .235 2-½"ϕ

V = 7,000 lbs. v = 71 s = 7" ⅜"ϕ 2 arm.

West end span: M = 302,000 lb. ins.

Doubly Reinforced Beam 16" × 8"

As = 1.37 □" 3-¾"ϕ, 2-½"ϕ

T = 24,600 C = 15,600

f_s' = 6,450 A_s' = 1.4 3-¾"ϕ, 2-½"ϕ

V = 9,000 lbs. v = 92 s = 5½" ⅜"ϕ 2 arm.

Beam 2 B South.

At col. 128 M_s = 284,000 M_e = 7,300,000

b = 17" d = 47" 50" × 17"

As = 7.7 □" 8-1⅛"ϕ top + btm.

V_s = 9,100 Ve = 49,000 v = 78 s = 6" ⅜"ϕ 4 arm.

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STRUCTURE NO.
DATE 10-6-36
SHEET NO. 20 OF 56 SHEETS.

COMPUTATION FOR REINF. CONCRETE STRUCTURE.

Beam 2 B South.

West col. 124 $M_s = 240,000$ $M_e = 630,000$

$b = 17"$ $d = 24"$ — 26" × 17"

$A_s = 1.76$ □" — 2-1⅛"ϕ t. & b.

$V = 58,000$ — s = 3" ⅜"ϕ 4 arm.

At interior cols. $M_s = 240,000$ $M_e = 365,000$

$b = 10"$ $d = 20"$ — 22" × 10"

$A_s = 1.53$ □" — 3-¾"ϕ, 2-½"ϕ } top.

$A_s = .32$ □" — 2-½"ϕ btm.

$V_s = 9,100$ $V_e = 4,700$ — s = 6" ⅜"ϕ 2 arm.

Interior span centres $M = 240,000$

$b = 10"$ $d = 20"$ — 22" × 10"

$A_s = .74$ □" — 2-½"ϕ, 1-¾"ϕ

West col. 107 $M_s = 240,000$ $M_e = 380,000$ — 22" × 10" D.R.

$A_s = 1.56$ □" — 3-¾"ϕ, 2-½"ϕ } top.

$T = 35,000$ $C = 34,700$ — 2-½"ϕ b.t.m.

Beam 2 C South.

At col. 128 $M_s = 234,000$ $M_e = 6,000,000$ — 19" × 30"

$A_s = 21.0$ □" — 21-1⅛"ϕ t. & b.

$V_s = 7,500$ $V_e = 4,000$ — s = 4" ⅜"ϕ 6 arm.

West col. 124 $M_s = 250,000$ $M_e = 300,000$

$b = 19$ $d = 14$ — 16" × 19"

$A_s = 2.0$ □" — 4-1⅛"ϕ t. & b.

At interior cols. $M_s = 250,000$ $M_e = 300,000$

$b = 10$ $d = 17$ — 19" × 10"

$A_s = 1.63$ — 2-⅞"ϕ, 1-¾"ϕ } top. 2-⅞"ϕ btm.

$V_s = 7,500$ $V_e = 3,600$ — s = 6½" ⅜"ϕ 2 arm.

Interior span centres. $M = 195,000$

$b = 10"$ $d = 10"$ — 12" × 10"

$A_s = 1.23$ — 2-⅞"ϕ, 1-¾"ϕ

West col. 107 $M_s = 250,000$ $M_e = 350,000$ — 19" × 10"

$A_s = 1.76$ □" — 3-⅞"ϕ top.

$T = 40,000$ $C = 29,500$

$f_s' = 9,000$ $A_s' = 1.2$ — 2-⅞"ϕ btm.

s = 6" ⅜"ϕ 2 arm

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STRUCTURE NO. .....
DATE 10-6-36
SHEET NO. 21 OF 56 SHEETS.

COMPUTATION FOR REINF. CONCRETE STRUCTURE.

Beam 2 D South.

At Col.128 M_s = 234,000 M_e = 3,850,000 — 19" x 30"

A_s = 13.70" — 14 - 1⅛"ϕ t. & b.

V_s = 7,500 V_e = 26,700 — s = 5" ⅜"ϕ 6 arm.

West col. 124. M_s = 250,000 M_e = 200,000 — 16" x 19"

Make as floor C — 4 - 1⅛"ϕ t. & b.

At interior cols. M_s = 250,000 M_e = 200,000

b = 10" d = 17½" — 19" x 10"

A_s = 1.33 0" — 3 - ¾"ϕ top. 2 - ¾"ϕ btm.

V_s = 7,500 V_e = 2,600 v = 67 — nom. sp.

Interior span centres M = 195,000

b = 10" d = 10" — 12" x 10"

A_s = — 3 - ¾"ϕ

West col. 107 M_s = 250,000 M_e = 250,000 — 19 x 10 D.R.

A_s = 1.48 0" — 2 - ¾"ϕ, 1 - ⅞"ϕ } top.

T = 33,300 C = 29,500

f_s' = 9,000 A_s' = .42 — 2 - ¾"ϕ btm.

V_s = 7,500 V_e = 2,900 v = .69 — nom. sp.

Beam 2 E South

At col. 128 M_s = 234,000 M_e = 2,650,000 — 19" x 30"

A_s = 9.90" — 10 - 1⅛"ϕ t. & b.

V_s = 7,500 V_e = 18,400 v = 67 — nom. sp.

V at mid span v = 56 — O.K.

West col. 124 M_s = 250,000 M_e = 200,000 — 16" x 19"

Make as floor C — 4 - 1⅛"ϕ t. & b.

V_s = 7,500 V_e = 10,000 v = 77. — s = 6" ⅜"ϕ 4 arm.

Interior spans as floor D.

Beam 2 F South

At col. 128 M_s = 250,000 M_e = 2,100,000 — 19" x 30"

A_s = 8.00" — 8 - 1⅛"ϕ t. & b.

s = 6" ⅜"ϕ 6 arm.

West col. 124 M_s = 250,000 M_e = 150,000 — 16" x 14"

b = 14 d = 13.6

A_s = 1.45 0" — 2 - 1⅛"ϕ t. & b.

V_s = 7,500 V_e = 7,100 — s = 4" ⅜"ϕ 2 arm.

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STRUCTURE NO.
DATE 30-6-36
SHEET NO. 22 OF 56 SHEETS.

COMPUTATION FOR REINF. CONCRETE STRUCTURE

Beam 2 F South.

At interior cols, M_s = 234,000 M_e = 142,000

b = 8" d = 18" — 19" × 8" D.R.

A_s = 1·11 □" — 2-5/8"φ, 1-7/8"φ } top.

T = 25,000 C = 23,600

f_s' = 8,900 A_s' = ·16 □" — 2-5/8"φ btm.

V_s = 7,500 V_e = 1,800 v = 62·5 — s = 8" 3/8"φ 2 arm.

Interior span centres M = 195,000

b = 8" d = 10" — 12" × 8"

A_s = 1·23 □" — 2-1/2"φ, 1-7/8"φ }

West col. 107 M_s = 250,000 M_e = 164,000 — 19" × 8" D.R.

A_s = 1·23 □" — 2-5/8"φ, 1-7/8"φ } top.

T = 27,700 C = 23,600

f_s' = 8,900 A_s' = ·46 □" — 2-5/8"φ btm.

V_s = 7,500 V_e = 1,900 v = 78 — s = 8" 3/8"φ 2 arm.

Beam 2 G South

At col. 128 M_s = 250,000 M_e = 1,500,000 — 19" × 24"

A_s = 5·2 — 6-1"φ, 2-3/4"φ } t. & b.

V_s = 7,500 V_e = 10,000 v = 49 — s = 6" 3/8"φ 2 arm.

West col. 124 M_s = 250,000 M_e = 100,000

b = 12 d = 14 — 16" × 12"

A_s = 1·26 □" — 3-3/4"φ top.

V_s = 7,500 V_e = 5,000 v = 85 — s = 4 1/2" 3/8"φ 2 arm.

At int. cols. M_s = 250,000 M_e = 100,000

b = 8" d = 17" — 19" × 8"

A_s = 1·04 □" — 2-5/8"φ, 1-3/4"φ } top. 2-5/8φ btm.

V_s = 7,500 V_e = 1,280 v = 62 — s = 8" 3/8"φ 2 arm.

Interior Span Centres M = 195,000 — 12" × 8"

A_s = 1·23 □" — 3-3/4"φ.

West col. 107. M_s = 250,000 M_e = 120,000 — 19" × 8"

A_s = 1·1 □" — 3-3/4"φ top. 2-3/4"φ btm.

V_s = 7,500 V_e = 1,500 — s = 8" 3/8"φ 2 arm.

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STRUCTURE NO.
DATE 10-6-36
SHEET NO. 23 OF 56 SHEETS.

COMPUTATION FOR REINF. CONCRETE STRUCTURE.

Beams 2 H, I, J South. Designed for worst case.

At col. 128 M_s = 250,000 M_e = 1,200,000 19" x 20"
A_s = 4·3 □" 6-7/8"ϕ } t. + b.
2-3/4"ϕ }
V_s = 7,500 V_e = 8,000 v = 52 s = 6" 3/8"ϕ 2 arm.

West col. 124. M_s = 234,000 M_e = 62,000
b = 10" d = 14" 16"x10"
A_s = 1·08 □" 3-3/4" ϕ top.
2-3/4" ϕ btm.
V_s = 7,500 V_e = 8,000 v = 126 s = 4" 3/8"ϕ 2 arm.

At int. cols M_s = 194,000 M_e = 62,000
b = 10" d = 13" 15" x 10"
A_s = 1·00" 2-5/8"ϕ }
1-3/4"ϕ } top.
2-5/8"ϕ btm.
V_s = 7,500 V_e = 800 v = 66 s = 6" 3/8"ϕ 2arm.

Interior span centres M = 195,000
b = 10" d = 13" 15" x 10"
A_s = ·875 □" 2-5/8"ϕ }
1-3/4"ϕ }

West col. 107 M_s = 250,000 M_e = 70,000 15"x10" D.R.
A_s = 1·25 □" 3-3/4"ϕ top.
T = 28,000 C = 22,500
f_s' = 7,600 A_s' = ·72 2-3/4"ϕ btm.
s = 6" 3/8"ϕ 2arm.

Beams 2 K South as beams 11 K North.

Beams 2 B North.

At col. 127. M_s = 284,000 M_e = 7,300,000 50" x 17" 8-1⅛"ϕ t. + b.
Make as 2 B South at col. 128 exept s = 3½" 3/8"ϕ 4 arm.

At col. 123 M_s = 240,000 M_e = 3,300,000 33" x 17"
A_s = 5·6 □" 6-1⅛"ϕ t. + b.
V_s = 9,000 V_e = 67,500 s = 3½" 3/8"ϕ 4 arm.

At int. cols. M_s = 240,000 M_e = 2500,000
b = 17" d = 31" 33" x 17"
A_s = 4·2 5-1⅛"ϕ t. + b.
V_s = 9,000 V_e = 32,000 s = 7" 3/8"ϕ 4 arm.

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STRUCTURE NO.
DATE 10 - 6 - 36
SHEET NO. 24 OF 56 SHEETS.

COMPUTATION FOR REINF. CONCRETE STRUCTURE.

Beam 12 B North.

At col. 101 M_s = 11,000,000 M_e = 13,000,000 60" x 13"

A_s = 12·0 □" 12-1⅛"φ t. + b.

V_s = 24,000 V_e = 104,000 s = 4" ⅜"φ 4 arm.

In centre M_s = 500,000 M_e = 7,500,000

A_s = 6·8 □" 7-1⅛"φ t. + b.

Beam 2 C North.

At col. 127 19" x 30" 21-1⅛"φ t. + b.

Make as 2C South exept s = 3" ⅜"φ 6 arm.

At col. 123 M_s = 250,000 M_e = 2,000,000 16" x 30"

A_s = 8·4 □" 9-1⅛"φ t. + b.

V_s = 7,500 V_e = 55,500 s = 3" ⅜"φ 6 arm.

West col. 119 M_s = 250,000 M_e = 800,000 19" x 12"

A_s = 3·25 □" 4-1⅛"φ t. + b.

V_s = 7,500 V_e = 17,400 s = 6" ⅜"φ 4 arm.

Beam 11 C North.

East col. 119 M_s = 200,000 M_e = 3,200,000 60" x 8"

A_s = 2·8 □" 3-1⅛"φ t. + b.

V_s = 7,000 V_e = 36,000 v = 99 s = 6" ⅜"φ 2 arm.

At cols. 115, 112, 109

M_s = 250,000 M_e = 2,000,000 60" x 8"

A_s = 1·85 □" 4-⅞"φ t. + b.

V_s = 7,000 V_e = 25,600 s = 8" ⅜"φ 2 arm.

At col. 105 M_s = 250,000 M_e = 2,500,000 60" x 8"

A_s = 2·27 □" 4-⅞"φ t. + b.

Beam 12 C North.

At col. 105 as 11 C at col. 105

At. col. 101 M_s = 400,000 M_e = 11,000.000 60" x 13"

A_s = 9·75 □" 10-1⅛"φ t. + b.

V_s = 12,000 V_e = 72,000 s = 6" ⅜"φ 4 arm.

Beam 2 D North.

At col. 127 as 2D South at col. 128

At col. 123 M_s = 250,000 M_e = 1,100,000 16" x 16"

A_s = 5·0 □" 5-1⅛"φ t. + b.

V_s = 7,500 V_e = 21,000 s = 4½" ⅜"φ 4 arm.

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STRUCTURE NO.
DATE 10-6-36
SHEET NO. 25 OF 56 SHEETS.

COMPUTATION FOR REINF CONCRETE STRUCTURE.

Beam 2 D North.

At col. 119 M_s = 250,000 M_e = 400,000 — 19" x 12" D.R.
A_s = 1·93 □" — 2-7/8"φ, 1-1 1/8"φ } top.

T = 43,500 C = 35,500

f_s' = 9,000 A_s' = ·9 □" — 2-7/8"φ b.fm.

V_s = 7,500 V_e = 10,000 — s = 4" 3/8"φ 2 arm.

Centre: M = 150,000 A_s = ·45 — 2-7/8"φ

Beam 11 D North.

At col. 119 M_s = 250,000 M_e = 1,800,000 — 60" x 8"
A_s = 1·73 □" — 3-7/8"φ t.+b.

V_s = 7,000 V_e = 20,000 — s = 10" 3/8"φ 2 arm.

At cols. 115, 112, 109

M_s = 250,000 M_e = 1,300,000 — 60" x 8"
A_s = 1·27 □" — 3-7/8"φ t.+b.

V_s = 7,000 V_e = 17,000 — s = 10" 3/8"φ 2 arm.

At col. 105 M_s = 250,000 M_e = 1,600,000 — 60" x 8"
A_s = 1·53 □" — 3-7/8"φ t.+b.

Beam 12 D North.

At col. 105 as 11 D at col. 105

At col. 101 M_s = 400,000 M_e = 9,000,000 — 60" x 13"
A_s = 8·2 □" — 7-1 1/8"φ, 2-7/8"φ } t.+b.

V_s = 12,000 V_e = 67,000 — s = 6 1/2" 3/8"φ 4 arm.

Beams 2, 11, 12 E North as floor D.

Beams 2, 11, 12 F, G, H, I North:

Designed for worst condition and min. depth of spandrels of 60"

At col. 127 M_s = 250,000 M_e = 2,400,000 — 19" x 30"
A_s = 8·0 □" — 9-1 1/8"φ t.+b.

V_s = 7,500 V_e = 18,000 — s = 6" 3/8"φ 4 arm.

West col. 123 M_s = 250,000 M_e = 400,000 — 16" x 12"
A_s = 2·4 — 4-7/8"φ t.+b.

V_s = 7,500 V_e = 20,000 — s = 4" 3/8"φ 4 arm.

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STRUCTURE NO.
DATE 10-6-36
SHEET NO. 26 OF 56 SHEETS.

COMPUTATION FOR REINF. CONCRETE STRUCTURE.

Beams 2, 11, 12 F, G, H, I North. contd.

East col. 123 , At col. 119 , West col. 115

M_s = 250,000 M_e = 400,000 — 19" × 12" D.R.

A_s = 1.93 □" — 4-7/8" ϕ top.

T = 43,500 C = 35,500

f_s' = 9,000 A_s' = .89 □" — 2-7/8" ϕ b.tm.

V_s = 7,500 V_e = 5,000 — s = 5" 3/8" ϕ 2arm.

Centres d = 14 — 16" × 12"

A_s = 1.1 □" — 2-7/8" ϕ.

East col. 115 M_s = 250,000 M_e = 1,200,000 — 60" × 8"

A_s = 1.22 □" — 3-7/8" ϕ t. + b.

V_s = 7,000 V_e = 12,500 v = 47 — nom. sp.

At cols. 112, 109, 105

M_s = 250,000 M_e = 860,000 — 60" × 8"

A_s = .9 □" — 2-7/8" ϕ t + b. nom. sp.

At col. 101 M_e = 7,500,000 — 60 × 8"
5-1" ϕ } t. + b.
2-7/8" ϕ }

A_s = 6.2

V_s = 12,000 V_e = 47,000 — s = 4½" 3/8" ϕ 2arm.

Special case beam 11 F between cols. 115 + 119

Beam O.K. 19½" × 36" with steel as floor G.

Beams 2 J North.

At col. 127 M_s = 200,000 M_e = 800,000 — 19" × 12"
3-1" ϕ } t + b.
2-7/8" ϕ }

A_s = 2.96 □"

V_s = 7,000 V_e = 5,300 v = 68 — s = 6" 3/8" ϕ 2arm.

At col. 123 M_s = 250,000 M_e = 83,000

b = 12" d = 13.6" — 16" × 12"
1-1" ϕ }
2-¾" ϕ } top
2-¾" ϕ btm.

A_s = 1.54 □"

V = 7,500 v = 52 — nom. sp.

At col. 119 as at col. 123

At col. 115 steel as at 123. beam 19" × 12"

Beam 11 J North as 11 I North.

Beams 11 & 12 K North M = 400,000 — 18" × 11"

b = 11" d = 17"

A_s = 1.59 □" — 3-7/8" ϕ {2 str. 1 cranked

V = 10,500 — s = 5" 3/8" ϕ 2 arm.

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DATE 10-6-36
SHEET NO. 27 OF 56 SHEETS.

COMPUTATION FOR REINF. CONCRETE STRUCTURE.

Beam 3 B South. 3 B North Similar

At col. 103 M_s = 690,000 M_e = 730,000 — 23"×12" D.R.

A_s = 3·4 □" — 4-1"φ, 2-½"φ } top.

T = 77,000 C = 43,700

f_s' = 9,700 A_s' = 3·4 □" — 4-1"φ, 2-½"φ } btm.

V_s = 17,800 V_e = 5,800 — s = 4" ⅜"φ 2 arm.

Centre M_s = 400,000 M_e = 200,000

A_s = 1·44 □" — 2-1"φ, 2-½"φ }

Beam 3C South 3C North Similar

At col. 103 M_s = 550,000 M_e = 560,000 — 20"×12" D.R.

A_s = 3·09 □" — 4-1"φ top.

T = 70,000 C = 37,400

f_s' = 9,200 A_s' = 3;55 □" — 4-1"φ btm.

V_s = 14,500 V_e = 4,200 — s = 4" ⅜"φ 2arm.

Centre M_s = 320,000 M_e = 200,000

A_s = 1·45 □" — 2-1"φ

Beam 3 D+E North + South.

At outer col. M_s = 550,000 M_e = 400,000

b = 12 d = 23 — 20"×12" D.R

A_s = 2·68 □" — 3-1"φ, 2-½"φ } top.

T = 60,000 C = 37,400

f_s' = 9,200 A_s' = 2·45 □" — 3-1"φ, 2-½"φ } btm.

V as C — s = 4" ⅜"φ 2 arm.

Centre as floor C — 2-1"φ.

Beam 3 F+G North + South.

At outer col. M_s = 550,000 M_e = 284,000 — 20"×12" D.R.

A_s = 2·35 □" — 4-⅞"φ top.

T = 53,000 C = 37,400

f_s' = 9,200 A_s' = 1·7 □" — 3-⅞"φ btm.

s = 4'

Centre M_s = 320,000 M_e = 100,000

A_s = 1·16 — 2-⅞"φ

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GUMMER & FORD,
ARCHITECTS AND STRUCTURAL ENGINEERS,
AUCKLAND.

STRUCTURE NO.
DATE 10-6-36
SHEET NO. 28 OF 56 SHEETS.

COMPUTATION FOR REINF. CONCRETE STRUCTURE

Beam 3 H. I

At outer col. M_s = 550,000 M_e = 124,000 — 20"×12" D.R.

A_s = 1.9 □" — 2-1"φ, 2-½"φ } top.

T = 42,700 C = 37,400

f_s' = 9,200 A_s' = .58 □" — 2-⅝" φ btm.

s = 4".

Centre M_s = 320,000 M_e = 40,000

A_s = 1.11 □" — 1-1"φ, 2-⅝"φ }

Beam 3 J

Centre & end M = 1,450,000

∴ b = 12" d = 27" — 30" × 12"

A_s = 3.38 □" — 2-1"φ } top end; 3-⅞"φ } btm. centre.

T = 61,000 C = 45,000

f_s' = 8,400 A_s' = 1.9 □" — 2-1"φ, 1-⅞"φ } btm. end.

V = 33,000 — s = 5½" ⅜"φ 4 arm.

Beam 3 K btm. M = 272,000

b = 11" d = 18" — 20" × 11"

A_s = .96 □" — 2-½"φ, 1-⅞"φ } nom. sp.

Beam 3 K top. M = 325,000

b = 11" d = 16" — 18" × 11"

A_s = 1.29 □" — 2-⅞"φ, 2-½"φ }

V = 8,000 v = 52 — nom. sp.

Beam 4 B M = 780,000

b = 12" d = 18" — 20" × 12"

A_s = 2.65 □" — 3-1"φ, 2-½"φ }

V = 13,000 v = 68 — s = 4½" ⅜"φ 2 arm.

Beam 4 C, D, E, F, G, H, I.

M = 660,000 b = 12" d = 17" — 19" × 12"

A_s = 2.37 □" — 3-⅞"φ, 2-⅝"φ }

V = 11,000 v = 61 — s = 5" ⅜"φ 2 arm.

Beam 4 J Motor Room

M = 2,500,000 b = 14" d = 38" — 42" × 14"

A_s = 4.15 □" — 5-1"φ, 2-½"φ }

V = 40,000 v = 85 — s = 6" ⅜"φ 4 arm.

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STRUCTURE NO. .....
DATE 10-6-36
SHEET NO. 29 OF 56 SHEETS.

COMPUTATION FOR REINF. CONCRETE STRUCTURE

Beams 5, 6, 32 B

At col. 105 M_s = 650,000 M_e = 2,500,000 — 28"x 17"

A_s = 5·8 □" — 6 - 1⅛"ϕ T + b.

V_s = 18,000 V_e = 32,000 — s = 4½" ⅜"ϕ 4 arm.

North col. 106 M_s = 650,000 M_e = 900,000 — 28"x 17"

A_s = 2·9 □" — 3 - 1⅛"ϕ top.
2 - 1⅛"ϕ btm.

s = 4½" 4 arm.

South col. 106 M_s = 975,000 M_e = 640,000 — 33"x 17"

A_s = 3·0 □" — 4 - 1⅛"ϕ top.
3 - 1⅛"ϕ btm.

V_s = 30,000 V_e = 11,000 — s = 6½" ⅜"ϕ 4 arm.

Centre of span. M = 850,000 — 2 - 1⅛"ϕ

North col. 107 M_s = 960,000 M_e = 1,900,000 — 33"x 17"

A_s = 4·65 □" — 5 - 1⅛"ϕ top.

A_s = 1·63 □" — 2 - 1⅛"ϕ btm.

s = 6½" ⅜"ϕ 4 arm.

South col. 107 M_s = 450,000 M_e = 1,900,000 — 28"x 17" D.R.

A_s = 4·5 □" — 5 - 1⅛"ϕ top.

T = 102,000 C = 77,000

f_s' = 10,400 A_s' = 2·4 □" — 3 - 1⅛"ϕ btm.

V_s = 19,000 V_e = 95,000 — s = 3" ⅜"ϕ 6 arm.

Centre of span M = 1,450,000 A_s = 2·8□" — 3 - 1⅛"ϕ

At col. 108 M_s = 120,000 M_e = 9,500,000

Side flaunch beam to 26" — 28"x 26"

A_s = 19·4□" — 20 - 1⅛"ϕ t. + b.

s = 3" ⅜"ϕ 6 arm.

Beams 5, 6, 32 C

At col. 105 M_e = 4,100,000 — 28"x 17"

A_s = 8·5 □" — 9 - 1⅛"ϕ t. + b.

V_e = 44,000 — s = 5" ⅜"ϕ 4 arm.

North col. 106 M_s = 480,000 M_e = 1,020,000 — 28"x 17"

A_s = 3·02 □" — 4 - 1⅛"ϕ top
2 - 1⅛"ϕ btm.

V_s = 15,000 V_e = 50,000 — s = 3" ⅜"ϕ 4 arm.

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STRUCTURE NO. :
DATE 10-6-36
SHEET NO 30 OF 56 SHEETS.

COMPUTATION FOR REINF CONCRETE STRUCTURE

Beams 5, 6, 32 C contd.

South col. 106 M_s = 870,000 Me = 450,000 — 26" x 17" D.R.

A_s = 2·93 □" — 5-7/8" ϕ top. 2-7/8" ϕ btm.

V_s = 24,000 Ve = 10,000 — s = 3½" 3/8" ϕ 4 arm.

Centre of span M_s = 650,000 Me = 600,000

A_s = 2·65 □" — 5-7/8" ϕ

North col. 107 M_s = 850,000 Me = 1,600,000 — 26" x 17" D.R.

A_s = 5·43 □" — 5-7/8" ϕ } 3-1⅛" ϕ } top and btm.

T = 123,000 C = 68,000

f_s' = 10,000 A_s' = 5·5 □"

V_s = 17,000 Ve = 9,000 v = 76 — s = 7" 3/8" ϕ 4 arm.

South col. 107 M_s = 350,000 Me = 2,500,000 — 28" x 17"

A_s = 5·75 □" — 5-7/8" ϕ } 3-1⅛" ϕ } t. + b.

V_s = 15,000 Ve = 70,000 — s = 5" ½" ϕ 4 arm.

At col. 108 M_s = 100,000 Me = 5,500,000 — 28" x 17"

A_s = 11·3 □" — 12-1⅛" ϕ t. + b.

Ve = 85,000 — s = 5" ½" ϕ 4 arm.

Beams 5, 6, 32 D

At col. 105 Me = 3,900,000 — 24" x 17"

A_s = 9·6 □" — 10-1⅛" ϕ t. + b.

Ve = 41,000 — s = 4" 3/8" ϕ 4 arm.

North col. 106 M_s = 400,000 Me = 800,000 — 24" x 17"

A_s = 2·9 □" — 5-7/8" ϕ top. 2-7/8" ϕ btm.

V_s = 15,000 Ve = 40,000 — s = 6" ½" ϕ 4 arm.

South col. 106 M_s = 750,000 Me = 500,000

b = 17" d = 22" — 26" x 17"

A_s = 2·75 □" — 5-7/8" ϕ top. 2-7/8" ϕ btm.

V_s = 24,000 Ve = 6,300 — s = 6" 3/8" ϕ 4 arm.

Centre of span M_s = 650,000 Me = 200,000

A_s = 1·8 □" — 2-7/8" ϕ top. 3-7/8" ϕ btm.

North col. 107 M_s = 650,000 Me = 1,500,000 — 26" x 17" D.R.

A_s = 5·1 □" — 5-7/8" ϕ } 3-1" ϕ } top and btm.

T = 115,000 C = 67,000

f_s' = 10,000 A_s' = 4·8 □"

V_s = 17,000 Ve = 8,900 v = 76 = nom. sp.

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SHEET NO. 31 OF 56 SHEETS.

COMPUTATION FOR REINF. CONCRETE STRUCTURE

Beams 5, 6, 32 D contd.

South col. 107 M_s = 350,000 Me = 1,900,000 — 26"x 17"
A_s = 5·01 □" — 5-7/8"φ } 3-1"φ } t. & b.
V_s = 15,000 Ve = 40,000 — s = 6" ½"φ 4 arm.

At col. 108 M_s = 200,000 Me = 3,500,000 — 26"x17"
A_s = 8·2 □" — 4-7/8"φ } 6-1⅛"φ } t. & b.
Ve = 39,000 v = 115 — s = 5" ½"φ 4 arm.

Beams 5, 6, 32 E + F as floor D.

Beams 5, 6, 32 G

At col. 105 Me = 1,500,000 — 24"x 12"
A_s = 3·43 □" — 6-7/8"φ t. & b.
Ve = 17,400 v = 76 — nom. sp.

North col. 106 M_s = 360,000 Me = 380,000
b = 12" d = 20" — 24"x 12"
A_s = 1·7 □" — 3-7/8"φ top. 2-7/8"φ btm.
V_s = 15,000 Ve = 19,000 — s = 5½" ⅜"φ 4 arm.

South col. 106 M_s = 730,000 Me = 200,000 — 24"x 12"
A_s = 2·13 □" — 4-7/8"φ top.
A_s = 1·22 □" — 3-7/8"φ btm.
V_s = 24,000 Ve = 2,500 — s = 7" ⅜"φ 4 arm.

Centre of span M_s = 650,000 Me = 100,000
A_s = 2·1 □" — 4-7/8"φ.

North col. 107 M_s = 790,000, Me = 320,000 — 24"x 12" D.R.
A_s = 2·55 □" — 5-7/8"φ top.
T = 57,000 C = 46,000
f_s' = 9,900 A_s' = 1·11 □" — 2-7/8"φ btm.
V_s = 17,000 Ve = 2,200 — s = 9" ⅜"φ 4 arm.

South col. 107 M_s = 470,000 Me = 500,000 — 24"x 12"
A_s = 2·23 □" — 4-7/8"φ top. 2-7/8"φ btm.
V_s = 15,000 Ve = 20,000 — s = 5½" ⅜"φ 4 arm.

At col. 108 M_s = 200,000 Me = 2,500,000 — 24"x 12"
A_s = 6.0 □" — 4-1⅛"φ } 4-7/8"φ } t. & b.
V_s = 10,000 Ve = 23,500 — s = 6" ⅜"φ 4 arm.

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SHEET NO. 32 OF 56 SHEETS.

COMPUTATION FOR REINF. CONCRETE STRUCTURE

Beams 5, 6, 32 H

At col. 105 Me = 700,000 — 20"x10"

A_s = 1.97 □" — 4-7/8"φ t. + b.

V = 7,800 v = 50 — nom. sp.

North col. 106 M_s = 360,000 Me = 150,000 — 20"x10"

A_s = 1.43 □" — 3-7/8"φ top. 2-7/8"φ btm.

V_s = 15,000 Ve = 5,000 — s = 4" 3/8"φ 2 arm.

South col. 106 M_s = 732,000 Me = 128,000 — 24"x12"

A_s = 2.1 — 4-7/8"φ top. 2-7/8"φ btm.

V_s = 24,000 Ve = 1,200 — s = 7½" 3/8"φ 4 arm.

Centre of span M = 650,000 A_s = 1.80□" — 3-7/8"φ

North col. 107 M_s = 790,000 Me = 142,000 — 24"x12" D.R.

A_s = 2.26 □" — 4-7/8"φ top.

T = 41,000 C = 36,700

f_s' = 7,900 A_s' = .54 □" — 2-7/8"φ btm.

V_s = 17,000 Ve = 1,500 v = 80 — s = 5" 3/8"φ 2 arm.

South col. 107 M_s = 600,000 Me = 142,000 — 21"x10" D.R.

A_s = 2.0 □" — 4-7/8"φ top.

T = 36,000 C = 26,300

f_s' = 7,500 A_s' = 1.3 □" — 3-7/8"φ btm.

V_s = 15,000 Ve = 12,000 — s = 3" 3/8"φ 2 arm.

At col. 108 M_s = 360,000 Me = 1,440,000 — 21"x10"

A_s = 5.3 □" — 3-1⅛"φ } t. + b. 4-7/8"φ }

V_s = 10,000 Ve = 11,000 — s = 3½" 3/8"φ 2 arm.

Beams 5, 6, 32 I

At col. 105 Me = 105,000 — 16"x10"

A_s = .38 □ — 2-7/8"φ t. + b. nom. sp.

North col. 106 M_s = 376,000 Me = 19,000 — 16"x10" D.R.

A_s = 1.7 □" — 3-7/8"φ top and btm.

T = 30,700 C = 19,500

f_s' = 6,500 A_s' = 1.7 □"

V_s = 15,000 Ve = 1,600 — s = 3½" 3/8"φ 2 arm.

Remainder as floor H.

Beams 5, 6, 32 J as for floor I

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SHEET NO. 33 OF 56 SHEETS.

COMPUTATION FOR REINF CONCRETE STRUCTURE.

Beam 5 K.

At col. 106 M = 150,000 16"x10"

A_s = .68 □" 2-¾"ϕ t.+b. nom. sp.

Beam 6 K. Top

At col. 106 M = 620,000

b = 12" d = 20.5 20"x 12" O.K.

A_s = 2.17 □" 5-¾"ϕ top.

T = 39,000 C = 30,000

f_s' = 7.300 A_s' = 1.23 □" 3-¾"ϕ btm.

V = 15,500 s = 5" ⅜"ϕ 2 arm.

Centre M = 350,000 A_s = 1.22 □" 3-¾"ϕ.

Beam 6 K btm. Make as beam 16 K top Later 24"x12"

Beams 7 + 8 B

Beam 8 At supports M_s = 2,200,000 M_e = 3,600,000 38"x 17"

A_s = 8.0 □" 8-1⅛"ϕ t. + b.

V_s = 41,000 V_e = 21,000 s = 5" ⅜"ϕ 4 arm.

Centre beam 8. M = 1,800,000 38"x 17"

A_s = 3.12 4-1⅛"ϕ

Beam 7 at col. 116

M_s = 1,000,000 M_e = 2,600,000 26"x 17"

A_s = 8.0 □" 8-1⅛"ϕ t. + b.

V_s = 16.000 V_e = 43,000 s = 3" ⅜" 4 arm.

At col. 117 M_e = 4,000,000 26"x 17"

A_s = 8.9 □" 9-1⅛"ϕ t. + b.

V_e = 43,000 s = 4½" ⅜"ϕ 4 arm.

At col. 118 M_e = 5,800,000 26"x 17"

A_s = 12.8 □" 13-1⅛"ϕ t. + b.

V_e = 54,000 s = 3" ⅜"ϕ 4 arm.

At cols. 131, 132, 133, 134 26"x 17"

M = 100,000 2-1⅛"ϕ t. + b.

Beam 7 at col. 105 M_s = 400,000 M_e = 1,300,000 26"x 17"

A_s = 3.8 □" 4-1⅛"ϕ top.

A_s = 2.2 □" 3-1⅛"ϕ btm.

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DATE 10-6-36
SHEET NO. 34 OF 56 SHEETS.

COMPUTATION FOR REINF. CONCRETE STRUCTURE.

Beams 7 + 8 C.

At col. 115 M_s = 1,500,000 Me = 4,600,000

b = 17" d = 35" — 38" x 17" D.R.

A_s = 8.5 □" — 9 - 1⅛"ϕ top and btm.

T = 191,000 C = 103,000

f_s' = 10,000 A_s' = 8.8 □"

Vs = 37,500 Ve = 19,000 v = 104 — s = 6" ⅜"ϕ 4 arm.

Just off haunch M_s + Me = 3,800,000

b = 17" d = 24" — 26" x 17"

A_s = 8.0 □" — 8 - 1⅛"ϕ t. + b.

Centre M = 2,800,000 A_s = 6.4 — 6 - 1⅛"ϕ } 2 - ¾"ϕ } btm.

North col. 116 M_s = 1,500,000 Me = 1,400,000 — 38" x 17"

A_s = 4.0 □" — 4 - 1⅛"ϕ t. + b.

At end of haunch North col. 116 M_s = 700,000 — 26" x 17"

A_s = 1.85 □" — 2 - 1⅛"ϕ btm.

South col. 116 M_s = 600,000 Me = 2,500,000 — 31" x 17"

A_s = 5.5 □" — 6 - 1⅛"ϕ t. + b.

At col. 117 M = 3,000,000 A_s = — 6 - 1⅛"ϕ t. + b.

Beams 7 + 8 D.

At col. 115 M_s = 1,500,000 Me = 3,400,000 — 38" x 17" D.R.

A_s = 7.0 □" — 7 - 1⅛"ϕ top.

T = 158,000 C = 103,000

f_s' = 10,000 A_s' = 5.5 — 6 - 1⅛"ϕ btm.

Vs = 37,500 Ve = 14,300 — s = 6" ⅜"ϕ 4 arm.

Just off haunch M_s = 500,000 Me = 2,300,000 — 26" x 17"

A_s = 6.0 □" — 6 - 1⅛"ϕ btm.

A_s = 3.8 □" — 4 - 1⅛"ϕ top.

Vs = 20,000 Ve = 14,300 — s = 6" ⅜"ϕ 4 arm.

Centre M = 2,400,000 A_s = 5.0 □" — 5 - 1⅛"ϕ btm. 2 - 1⅛"ϕ top.

End of haunch North col. 116 Me = 700,000 — 2 - 1⅛"ϕ btm.

North col. 116 M_s = 1,500,000 Me = 1,500,000 — 38" x 17"

A_s = 4.17 □" — 5 - 1⅛"ϕ top.

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COMPUTATION FOR REINF. CONCRETE STRUCTURE.

Beams 7 + 8 D cont'd.

South col. 116 M_s = 450,000 Me = 1,300,000 — 24" x 17" D.R.

A_s = 4.0 □" — 4 - 1⅛"φ top.

T = 90,000 C = 65,000

f_s' = 10,000 A_s' = 2.5 □" — 3 - 1⅛"φ btm.

V_s = 15,000 Ve = 24,200 — s = 5" ⅜"φ 4 arm.

At col. 117 Me = 1,900,000 — 4 - 1⅛"φ } 2 - ⅝"φ }

Beams 7 + 8 E as floor D.

Beams 7 + 8 F

At col. 115 M_s = 1,400,000 Me = 2,500,000 — 38" x 17" D.R.

A_s = 5.6 □" — 5 - 1"φ } 3 - ⅞"φ } top.

T = 126,000 C = 103,000

f_s' = 10,000 A_s' = 2.3 □" — 3 - 1"φ btm.

V_s = 37,500 Ve = 10,000 — s = 6" 4 arm.

Just off haunch M_s = 600,000 Me = 1,700,000 — 26" x 17"

A_s = 4.85 □" — 5 - 1"φ } 2 - ⅞"φ } top.

A_s = 2.33 □" — 3 - 1"φ btm.

V_s = 20,000 Ve = 10,000 — s = 7" ⅜"φ 4 arm.

Centre M_s = 1,500,000 Me = 800,000 — 26" x 17"

A_s = 4.0 □" — 2 - ⅞"φ top. 5 - 1"φ } 2 - ⅞"φ } btm.

Off haunch North col. 116 M_s = 750,000

A_s = 2.0 □" — 1 - 1"φ } 2 - ⅞"φ } btm.

North col. 116 M_s = 1,500,000 Me = 700,000 — 38" x 17"

A_s = 3.15 □" — 3 - 1"φ } 2 - ⅞"φ } top 2 - ⅞"φ btm.

V_s = 37,500 Ve = 12,000 — s = 6" 4 arm. ⅜"φ

South col. 116 M_s = 600,000 Me = 600,000 — 24" x 17"

A_s = 2.75 □" — 2 - 1"φ } 2 - ⅞"φ } top 2 - ⅞"φ btm.

V_s = 15,000 Ve = 16,000 — s = 6" ⅜"φ 4 arm

At col. 117 M = 1,500,000 — 3 - 1"φ } 2 - ⅞"φ } t. + b.

Beam 8 F at col. 119 — 4 - 1"φ } 2 - ⅞"φ } top

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COMPUTATION FOR REINF. CONCRETE STRUCTURE

Beams 7 + 8 G.

At col. 115 M_s = 1,500,000 Me = 1,700,000 — 34" x 17" D.R.

A_s = 5.08 □" — 5-1"φ, 2-⅜"φ } top.

T = 114,000 C = 94,000

f_s' = 10,900 A_s' = 1.84 □" — 1-1"φ, 2-⅞"φ } btm.

V_s = 37,500 Ve = 6,700 — s = 6" ⅜"φ 4 arm.

Just off haunch. M = 1,500,000

b = 17" d = 24" — 26" x 17"

A_s = 3.18 □" — 3-1"φ, 2-⅞"φ } t. & b.

V_s = 27,800 Ve = 6,700 — s = 6" ⅜"φ. 4 arm.

Centre M_s = 1,500,000 Me = 7,000,000 — 2-⅞"φ top.

A_s = 4.65 □" — 5-1"φ, 2-⅞"φ } btm.

North col. 116 M = 2,000,000 b = 17" d = 28" — 34" x 17"

A_s = 3.2 □" — 3-1"φ, 2-⅞"φ } top. 2-⅞"φ btm.

South col. 116 M_s = 700,000 Me = 400,000

b = 17" d = 21" — 21" x 17" D.R.

A_s = 2.92 □" — 3-1"φ, 2-¾"φ } top.

T = 66,000 C = 56,000

f_s' = 9,300 A_s' = 1.07 □" — 2-⅞"φ btm.

V_s = 15,000 Ve = 12,500 v = 97 — s = 6" ⅜"φ 4 arm.

At col. 117 M = 1,400,000 — 21" x 17"

A_s = 3.73 — 4-1"φ, 2-¾"φ } t. & b.

Beams 7 + 8 H as Floor G

Beams 7 + 8 I

At col. 115 M_s = 1,600,000 Me = 200,000

b = 14" d = 30.5" — 27" x 14" D.R.

A_s = 4.03 □" — 4-1⅛"φ top.

T = 73,000 C = 48,000

f_s' = 8,200 A_s' = 3.05 □" — 3-1⅛"φ btm.

V_s = 37,500 — s = 4½" ⅜"φ 4 arm.

Centre M = 1,700,000 b = 14 d = 25 — 27" x 14"

A_s = 4.3 □" — 4-1⅛"φ, 2-½"φ }

North col. 116 as at col. 115

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COMPUTATION FOR REIN. CONCRETE STRUCTURE

Beams 7 + 8 I contd.

South col. 116 M = 1,000,000 b = 14" d = 24.2 — 21" x 14" D.R.

A_s = 3.32 □" — 3-1⅛"φ, 2-½"φ } top and btm.

T = 60,000 C = 37000

f_s' = 7,500 A_s' = 3.07 □"

V = 15,000 — s = 4" ⅜"φ 2arm.

At col. 117 M_s = 120,000 Me = 180,000 — 21" x 14"

A_s = 2.8 □" — 3-¾"φ t. + b.

Beams 7 + 8 J as floor I

Beams 8K + 29K.

At col. M = 1,100,000 — 27" x 14"

A_s = 2.8 □" — 3-1"φ, 2-¾"φ } top 2-¾"φ btm.

V = — s = 4½" ⅜"φ 4arm.

Centre M = 1,900,000 b = 14 d = 25 — 27" x 14"

A_s = 4.63 □" — 5-1"φ, 2-¾"φ }

Beam 9 B M = 470,000 — 19" x 8"

A_s = 1.74 □" — 3-⅞"φ

V = 12,000 — s = 5" ⅜"φ 2 arm.

Beam 9 C to J M = 390,000 — 19" x 8"

A_s = 1.45 □" — 2-¾"φ, 1-⅞"φ }

V = 10,000 — s = 6" ⅜"φ 2arm.

Beam 10 M = 115,000 15" x 8" — 2-½"φ, 1-⅞"φ } nom. sp.

Beam 34 C to I

M = 350,000 b = 8" d = 17" — 19" x 8"

A_s = 1.3 □" — 3-¾"φ

V = 5,000 v = 42 — nom. sp.

Reinforced concrete mullions: Worst case = mullion carrying back stair beams. M = 40,000 — 12" x 8" overall

A_s = .2 □" — 4-½"φ

Beams 35 + 36 M = 170,000 — 14" x 8"

A_s = 1.07□" — 2-½"φ, 1-⅞"φ } s = 6" 2arm

Beam 37 M = 120,600 A_s = .64 □" 14" x 8" — 2-¾"φ t. + b. s = 6" 2arm.

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AUCKLAND.

STRUCTURE NO.
DATE 10 - 6 - 36
SHEET NO. 38 OF 56 SHEETS.

COMPUTATION FOR REINF. CONCRETE STRUCTURE.

Beams 11 + 12 B South.

At col. 125 M_s = 230,000 M_e = 10,000,000 — 84" × 8"

A_s = 6.0 □" — 10-7/8"φ t. + b.

V_s = 9,000 V_e = 120,000 — s = 6" 3/8"φ 4 arm.

At cols. 121, 117, 114, M_s = 230,000 M_e = 5,000,000 — 84" × 8"

A_s = 3.06 □" — 6-7/8"φ t. + b.

V_s = 9,000 V_e = 77,000 — s = 4½" 3/8"φ 2 arm.

Centres. — 2-7/8"φ t. + b.

Between cols. 111, 108 M_s = 230,000 M_e = 6,000,000 — 60" × 20"

A_s = 5.15 □" — 9-7/8"φ t. + b.

V_s = 9,000 V_e = 80,000 — s = 6" 3/8"φ 4 arm.

At col. 104 M_s = 480,000 M_e = 10,000,000 — 60" × 20"

A_s = 9.0 □" — 15-7/8"φ t. + b.

V_s = 15,000 V_e = 91,000 — s = 5" 3/8"φ 4 arm.

Beams 11 + 12 C South.

At col. 125 M_s = 620,000 M_e = 10,100,000 — 54" × 12" later, 59" × 12"

A_s = 10.3 □" — 8-1⅛"φ, 3-1"φ } t. + b.

V_s = 8,000 V_e = 100,000 — s = 4" 3/8"φ 4 arm.

At cols. 121, 117, 114, 111, 108

M_s = 210,000 M_e = 5,100,000 — 54" × 8" (59" × 8")

A_s = 5.1 □" — 4-1"φ, 2-1⅛"φ } t. + b.

V_s = 8,000 V_e = 100,000 — s = 4" 3/8"φ 4 arm.

At col. 104 as at col. 125.

Beams 11 + 12 D South.

At col. 125 M_s = 500,000 M_e = 7,900,000 — 60" × 12"

A_s = 6.9 □" — 7-1"φ, 3-7/8"φ } t. + b.

V_s = 7,000 V_e = 79,000 — s = 6" 3/8"φ 4 arm.

At cols. 121, 117, 114, 111, 108

M_s = 200,000 M_e = 4,000,000 — 60" × 8"

A_s = 3.45 □" — 3-1"φ, 2-7/8"φ } t. + b.

V_s = 7,000 V_e = 51,000 — s = 4½" 3/8"φ 2 arm.

At 104 as at col. 125

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DATE 10-6-36
SHEET NO. 39 OF 56 SHEETS.

COMPUTATION FOR REINF. CONCRETE STRUCTURE

Beams 11 + 12 E South.

At col. 125 M_s = 500,000 Me = 7,000,000 — 60" × 8"

A_s = 6·4 □" — 4-1"φ, 6-⅞"φ } t. + b.

V_s = 7,000 Ve = 70,000 — s = 3¼" ⅜"φ 2 arm.

At cols. 121, 117, 114, 111, 108

M_s = 200,000 Me = 3,500,000 — 60" × 8"

A_s = 3·16 □" — 4-⅞"φ, 2-¾"φ } t. + b.

V_s = 7,000 Ve 45,000 — s = 5" ⅜"φ 2 arm.

Centres — 2-⅞"φ t. + b.

At col. 104 as at col. 125

Beams 11 + 12 F as floor E

Beams 11 + 12 G

At col. 125 M_s = 500,000 Me = 4,600,000 — 60" × 8" D.R.

A_s = 4·63 □" — 4-1"φ, 3-⅞"φ } top.

T = 104,000 C = 77,000

f_s' = 10,500 A_s' = 2·57 □" — 3-1"φ, 3-⅞"φ } btm.

V_s = 7,000 Ve = 46,000 — s = 4½" ⅜"φ 2 arm.

At cols. 121, 117, 114, 111, 108

M_s = 200,000 Me = 2,300,000 — 60" × 8"

A_s = 2·14 □" — 4-⅞"φ t. + b.

V_s = 7,000 Ve = 30,000 — s = 7" ⅜"φ 2 arm.

At col. 104 as at col. 125

Beams 11 H make as for floor G exeept at col. 108 make as at col. 125.

Beam 11 I South

At col. 125 M_s = 200,000 Me = 3,300,000 — 60" × 8"

A_s = 2·7 □" — 5-⅞"φ t. + b.

V_s = 7,000 Ve = 33,000 — s = 7" ⅜"φ 2 arm.

At cols. 121, 117, 114, 111

M_s = 200,000 Me = 1,700,000 — 60" × 8"

A_s = 1·46 □" — 3-⅞"φ t. + b.

V_s = 7,000 Ve = 22,000. — s = 10" ⅜"φ 2 arm.

At col. 108 as at col. 125.

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COMPUTATION FOR REINF. CONCRETE STRUCTURE.

Beams 11 J South.

M_S = 200,000 Me = 1,100,000 — 60" × 6"

A_S = 1.03 □" — 2-7/8"Φ t. & b.

V_S = 7,000 Ve = 10,000 — nom. sp.

Beams 13-21-22 B.

At col. 125 M = 2,100,000 b = 8" d = 47" — 84" × 8"

A_S = 3.0 □" — 5-7/8"Φ top.
2-7/8"Φ btm.

V = 28,000 — s = 5½" 3/8"Φ 2 arm.

At col. 128 as at col. 125.

Beams 13-21-22 C.

At col. 125 M = 1,686,000 — 83" × 8"

A_S = 1.35 □" — 3-7/8"Φ top.
2-7/8"Φ btm.

V = 23,000 v = 41 — nom. sp.

At col. 128 as at col. 125.

Beams 13-21-22 D.

At col. 125 M = 1,364,000 — 60" × 8"

A_S = 1.46 □" — 3-7/8"Φ top.
2-7/8"Φ btm.

V = 20,000 v = 48 — nom. sp.

At col. 128 as at col. 125.

Beams 13-21-22 E, F, G, H as floor D.

Beam 14 B

At cols. 126-122 as for 14 C. — 47" × 12"

Beam 14 C

At cols 126, 118 M_S = 325,000 Me = 4,500,000 — 47" × 12"

A_S = 5.2 □" — 6-1⅛"Φ t. & b.

V_S = 12,000 Ve = 86,000 — s = 4" ⅜"Φ 4 arm.

At col. 122 M_S = 320,000 Me = 1,000,000 — 47" × 12"

A_S = 1.43 □" — 2-1⅛"Φ t. & b.

Beam 14 D

At cols. 126 & 118 M_S = 320,000 Me = 3,500,000 — 42" × 12"

A_S = 4.7 □" — 5-1⅛"Φ t. & b.

V_S = 12,000 Ve = 64,000 — s = 4½" ⅜"Φ 4 arm.

2-1⅛"Φ t. & b.

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COMPUTATION FOR REINF. CONCRETE STRUCTURE

Beam 14 E.

At cols. 126 & 118 M_s = 320,000 M_e = 2,800,000 — 35" x 12"

A_s = 4.8 □" — 5 - 1⅛" ϕ t. & b.

V_s = 12,000 V_e = 56,000 — s = 4" ⅜" ϕ 4 arm.

At col. 122 — 2 - 1⅛" ϕ t. & b.

Beams 14 F. G. H. I

M_s = 320,000 M_e = 4,500,000 — 48" x 12"

A_s = 5.1 □" — 5 - 1⅛" ϕ t. & b.

V_s = 12,000 V_e = 103,000 — s = 3½" ⅜" ϕ 4 arm.

Beam 14 J

M_s = 250,000 M_e = 1,800,000 — 60" x 6"

A_s = 1.65 □" — 4 - ¾" ϕ t. & b.

V_s = 8,000 V_e = 38,500 — s = 6" ⅜" ϕ 2 arm.

Beams 15 & 17 at landing and floor levels respectively between cols 101-102 & 103-104.

M = 180,000 Form beam in wall with

2 - ¾" ϕ top. & btm. 16" apart. — s = 6" ⅜" ϕ 2 arm.

Wall between cols. 101 & 102 & 103 & 104 up to 6th. floor.

To resist B.M of 13,000,000 in. lb. — 120" x 9" O.K.

A_s = 5.0 □" ⅜" ϕ 8" crs. both ways both faces OK.

Wall between cols. 101 - 104 above 6th. floor.

Shear = 170,000 lb. v = 41 OK.

M = 31,000,000 A_s = 3.45 Steel O.K.

Beam 16 B — 100" x 12"

M = 8,000,000 — 4 - 1⅛" ϕ t. & b.

s = 8" ⅜" ϕ 2 arm.

Beam 16 C M = 13,000,000 — 72" x 12"

A_s = 9.0 □" — 9 - 1⅛" ϕ t. & b.

V = 93,000 — s = 7" ⅜" ϕ 4 arm.

Beam 16 D & E M = 9,000,000 — 40" x 12"

A_s = 12.5 □" — 13 - 1⅛" ϕ t. & b.

V = 66,000 — s = 5" ⅜" ϕ 4 arm.

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COMPUTATION FOR REINF. CONCRETE STRUCTURE

Beam 16 F + G. M = 7,000,000 40"x12"
A_s = 9.7 □" 10-1⅛"ϕ t. + b.
s = 6" ⅜"ϕ 4 arm.

Beam 16 H + I M = 550,000
b = 12" d = 19.5" 22"x12"
A_s = 1.74 □" 4-¾"ϕ crank 2.
V = 14,000 v = 66 s = 5" ⅜"ϕ 2 arm.

Beam 16 J M = 1,800,000
b = 12" d = 35" 38"x12"
A_s = 3.2 □" 5-⅞"ϕ } 2-½"ϕ }
V = 45,000 v = 120. s = 5½" ⅜"ϕ 4 arm.

Beam 16 K. as beam 6 K top.

Beam 18 C.
M_s = 300,000 Me = 4,800,000 60"x 8"
A_s = 4.2 □" 7-1⅛"ϕ t. + b.
V_s = 7,000 Ve = 62,000 s = 4" ⅜"ϕ 2 arm.

Beam 18 D + E
M_s = 300,000 Me = 3,000,000 60"x 8"
A_s = 2.72 □" 5-⅞"ϕ t. + b.
V_s = 7,000 Ve = 40,000 s = 5½" ⅜"ϕ 2 arm.

Beam 18 F
At col. 118 M = 1,750,000 19½"x 45"
A_s = 5.0 □" 5-1"ϕ } 2-⅞"ϕ } t. + b.
At col. 119 M_s = 600,000 Me = 600,000 19½"x 24"
A_s = 3.47 □" 4-1"ϕ } 2-⅞"ϕ } top. 3-⅞"ϕ btm.
V_s = 12,000 Ve = 20,000 s = 4½" ⅜"ϕ 4 arm.

Beam 19 B
M_s = 300,000 Me = 6,000,000 48"x 20"
A_s = 6.35 □" 9-1"ϕ t. + b.
V_s = 10,000 Ve = 48,000 s = 6" ⅜"ϕ 4 arm.

Beam 19 C M = 4,200,000 48"x 8"
A_s = 4.65 □" 6-1"ϕ t. + b.
V_s = 7,000 Ve = 29,000 s = 5½" ⅜"ϕ 2 arm.

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COMPUTATION FOR REINF. CONCRETE STRUCTURE.

Beam 19 D

M_S = 300,000 Me = 4,000,000 — 60" × 8"

A_S = 3.67 □" — 4 - 1" ϕ, 2 - 7/8" ϕ } t. & b.

V_S = 7,000 Ve = 36,000 — s = 6" 3/8" ϕ 2 arm.

Beam 19 E M = 4,000,000 — 60" × 8"

A_S = 3.5 □" — 4 - 1 1/8" ϕ t. & b.

V_S = 7,000 Ve = 29,000 — s = 7" 3/8" ϕ 2 arm.

Beam 19 F as 19 E

Beams 20 + 28 B

Max. M = 5,000,000 — 48" × 20"

A_S = 5.05 □" — 7 - 1" ϕ t. & b.

V_S = 11,000 Ve = 150,000 — s = 4" 3/8" ϕ 6 arm.

Beam 20 C M = 4,300,000 — 32" × 10"

A_S = 8.7 □" — 9 - 1 1/8" ϕ t. & b.

V = 20,000 — s = 5" 3/8" ϕ 2 arm.

Beam 28 C M_S = 520,000 Me = 5,100,000 — 51" × 8"

A_S = 5.8 □" — 6 - 1 1/8" ϕ t. & b.

V_S = 13,000 Ve = 32,000 — s = 4 1/2" 3/8" ϕ 2 arm.

Centre M = 520,000 A_S = .67 □" — 2 - 1 1/8" ϕ

Beam 20 D M_S = 675,000 Me = 7,000,000 — 60" × 8"

A_S = 6.6 □" — 6 - 1 1/8" ϕ, 2 - 3/4" ϕ } t. & b.

V_S = 13,000 Ve = 28,000 — s = 6" 3/8" ϕ 2 arm.

Centre M = 675.000 A_S = .72 □" — 2 - 3/4" ϕ

Beam 28 D. M_S = 700,000 Me = 1,000,000 — 19 1/2" × 12"

A_S = 5.8 □" — 6 - 1 1/8" ϕ t. & b.

V_S = 23,000 Ve = 4,000 — s = 4" 3/8" ϕ 4 arm.

Centre M = 1,000,000 A_S = 3.86 □" — 4 - 1 1/8" btm, 2 - 1 1/8" top.

Beam 20 E

M_S = 1,400,000 Me = 5,500,000 — 60" × 8"

A_S = 5.2 □" — 6 - 1 1/8" ϕ t. & b.

V_S = 24,000 Ve = 32,000 — s = 4 1/2" 3/8" ϕ 2 arm.

Beam 20 F M_S = 1,400,000 Me = 4,700,000 — 60" × 8"

A_S = 4.3 □" — 6 - 7/8" ϕ, 2 - 3/4" ϕ } t. & b.

V_S = 24,000 Ve = 27,000 — s = 5" 3/8" ϕ 2 arm.

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COMPUTATION FOR REINF. CONCRETE STRUCTURE.

Beam 20 G as beam 20 F.

Beam 20 H

M_s = 1,400,000 M_e = 1,900,000 66" x 8"

A_s = 2·42 □" 3-⅞"φ, 2-¾"φ } top

A_s = ·4 □ 2-¾"φ btm.

V_s = 24,000 V_e = 11,000 s = 7½" ⅜"φ 2 arm.

Centre M = 750,000 A_s = ·76 □" 2-¾"φ

Beam 20 I M_s = 1,400,000 M_e = 450,000 60" x 8"

A_s = 1·45 □" 2-¾"φ, 1-⅞"φ } top. 2-¾"φ btm.

V_s = 24,000 V_e = 2,600 v = 68 nom. sp.

Centre M = 750,000 A_s = ·85 □" 2-¾"φ

Beam 20 J M_s = 550,000 M_e = 148,000

Centre M = 750,000 19" x 12"

A_s = 2·78 □" 3-1⅛"φ t. & b.

V = 22,500 s = 5" ⅜"φ 4 arm.

Beam 23 G, H, I, J.

M_s = 200,000 M_e = 800,000 60" x 8"

A_s = ·82 □" 2-⅞"φ t. & b.

V = 16,000 s = 12" ⅜"φ 2 arm.

Beams 24 & 25 as beam 23 except on floor H.

Beam 24 H 19½" x 12" 5-⅞"φ s = 3" ⅜"φ 2 arm

Beam 25 H 19½" x 12" 4-⅞"φ s = 3" ⅜"φ 2 arm.

Beam 26 H M = 860,000 19½" x 12"

A_s = 3·0 □" 4-⅞"φ, 2-⅝"φ }

V = 19,000 v = 106 s = 3" ⅜"φ 2 arm.

Beam 26 I M = 630,000 19½" x 12"

A_s = 2·33 □" 3-⅞"φ, 2-⅝"φ }

s = 3" ⅜"φ 2 arm.

Beam 30 B

M = 410,000 Cranked beam 20" x 10"

A_s = 1·44 □" 2-¾"φ, 1-⅞"φ }

V = 9,000 v = 57 nom. sp.

Beam 33 B M = 135,000 14" x 8"

A_s = ·7 □" 2-¾"φ t. & b. nom. sp.

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COMPUTATION FOR REINF. CONCRETE STRUCTURE.

Beam 33 B Cranked to landing level. Beam 12.

M = 225,000 — 15" x 8"
A_s = 1.1 □" — 3-¾"ϕ t. & b.
V = 11,000 — s = 4" ⅜"ϕ 2 arm.

Beam 5. at 1st landing level.

Me = 800,000 — 24" x 12"
A_s = 2.0 □" — 4-⅞"ϕ t. & b.
V = — v = 70 — hom. sp.

Beam 12 at 1st landing level.

M_s = 240,000 Me = 53,000 — 15" x 13"
A_s = 1.17 □" — 3-¾"ϕ top.
2-¾"ϕ btm.
Centre — 3-¾"ϕ

Beam 33 C to J M = 255,000 — 18" x 8"
A_s = 1.01 □" — 2-⅝"ϕ, 1-¾"ϕ
V = 8,500 — s = 6½" ⅜"ϕ 2 arm.

Beam 12 Pavement light level.

Beam 24" x 13" Steel as beam 11.

Beam 11 Pavement light level.

At cols. M_s = 200,000 Me = 1,000,000 — 24" x 12"
A_s = 2.67 □" — 5-⅞"ϕ t. & b.
Centres M_s = 200,000 Me = 500,000
A_s = 1.56 □" — 3-⅞"ϕ t. & b.
End span V = 17,500 — s = 5½" ⅜"ϕ 2arm.
Int. spans V = 14,000 — s = 7" ⅜"ϕ 2arm.

Pavement light beams 38, 39, 40, 47.

At cols. 119, 115, 112, 109, 105
M_s = 300,000 Me = 300,000 — 15" x 12" min. size.
A_s = 2.42 □" — 4-⅞"ϕ t. & b.

At outer cols.
M_s = 300,000 Me = 50,000 — 2-⅞"ϕ t. & b.

Beams 41, 42, 43, 44 M = 102,000 — Min. Size 10" x 6"
A_s = .64 □" — 2-¾"ϕ btm. 2-½"ϕ top.

Beams 45 M = 162,000 — 15" x 9"
A_s = .9 □" — 2-¾"ϕ t. & b.

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COMPUTATION FOR REINF. CONCRETE STRUCTURE

Pavement light beams contd.

Beam 46. M = 320,000 — 15 x 9

A_s = 1.73 □" — 4 - 3/4" ϕ t. & b.

Slab 4" th. 3/8" ϕ 6" crs. crank over supports.

Beam 54 B M = 273,000 — 10" x 12"

A_s = 2.16 □" — 5 - 3/4" ϕ

V = 7,000 — s = 4" 3/8" ϕ 2 arm.

Beam 55 B. M = 500,000

b = 8" d = 24" — 26" x 8"

A_s = 1.32 □" — 3 - 3/4" ϕ

Beam 51 E M = 52,500

b = 8" d = 7.5" — 8" x 8"

A_s = .43 □" — 2 - 5/8" ϕ t. & b.

V = 2,500 — v = 45 — hom. sp.

Beam 50 E M = 600,000 — 16" x 12"

A_s = 2.72 □" — 3 - 1" ϕ, 2 - 1/2" ϕ

V = 12,500 — s = 5 1/2" 3/8" ϕ 4 arm.

Beam 52 E

Centre M = 282,000 — 16" x 12"

A_s = 1.27 □" — 2 - 7/8" ϕ, 2 - 1/2" ϕ

End M = 500,000 b = 12 d = 18 1/2" — 19" x 12" D.R.

A_s = 1.85 □" — 3 - 7/8" ϕ, 2 - 1/2" ϕ top.

T = 33,400 C = 28,300

f_s' = 7,200 A_s' = .77 □" — 2 - 1/2" ϕ, 1 - 7/8" ϕ btm.

s = 6".

Beam 53 E.

Centre M = 400,000 — 16" x 12"

A_s = 2.52 □" — 3 - 1" ϕ, 2 - 3/4" ϕ

End M = 841,000 — 19" x 12" D.R.

A_s = 3.1 □"

T = 56,000 C = 28,000 — 3 - 1" ϕ, 2 - 3/4" ϕ top and btm.

f_s' = 7,150 A_s' = 3.9 □"

V = 20,000 — s = 3" 3/8" ϕ 2 arm.

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COMPUTATION FOR REINF. CONCRETE STRUCTURE.

Beam 30 K.

M = 530,000 — 20"x10"
A_s = 1·86 □" — 2-7/8"φ } 2-5/8"φ }
V = 11,000 — s = 5½" 3/8"φ 2 arm.

Cantilever hood over office entrance

M = 10,000 d = 4" — 5" Slab at beam.
A_s = ·2 □" — 3/8"φ 6" crs.

Foundations and footing beams.

Beam 1 A.

M = 350,000 b = 10" d = 17" — 19"x10"
A_s = 1·3 □" — 3-3/4"φ
V = 11,200 — s = 5" 3/8"φ 2arm.

Beam 2 A as beam 11A

Beams 11 + 35 A. — 22"x12"
M = 700,000 — 4-7/8"φ
s = 3" 3/8"φ 2 arm.

Beam 36 A M = 1,000,000
b = 12" d = 26" — 28"x12"
A_s = 2·42 □" — 3-7/8"φ } 2-5/8"φ } top.
V = 31,000 — s = 3" 3/8"φ 2 arm.
Centre A_s = 2·9 □" — 4-7/8"φ } 2-5/8"φ }

Beam 8 A.

M = 3,150,000 — 38"x17"
A_s = 5·1 □" — 6-1⅛"φ t.+b.
V = 53,000 — s = 6" ½" 6arm.

Beam 4 A

M = 1,830,000 — 31"x18"
A_s = 4·0 — 4-1"φ } 2-7/8"φ } btm.
M = 220,000 A_s = ·5 — 2-7/8"φ top.

STRUCTURE OFFICE BUILDING
OWNER NZ INSURANCE CO.
LOCATION WELLINGTON

GUMMER & FORD,
ARCHITECTS AND STRUCTURAL ENGINEERS,
AUCKLAND.

STRUCTURE NO.
DATE 10-6-36
SHEET NO 48 OF 56 SHEETS.

COMPUTATION FOR REINF. CONCRETE STRUCTURE

Footing 105. P = 425,000 lbs. Me = 2,500,000 lb.in

Ms = 350,000 lb in.

Try 8'-6" x 8'-6" 33" deep. e = 6.7" = .57'

$\frac{N}{\ell b}\left(1+\frac{6e}{b}\right)$ = 8250

$\frac{N}{\ell b}\left(1-\frac{6e}{b}\right)$ = 3540

Pressure at centre = $\frac{11800}{2}$ = 5,900

Average pressure = approx. 7,500

Pressure from D.L. = $\frac{425,000}{72}$ = 5,900

25% = $\frac{1500}{7400}$

Design for load + moment

Depth for P.S = 30" = t D = 33"

P.S. controls t as shear at $\frac{D}{2}+t$ is negligible.

Area of cantilever = 16½ D'

W = 124,000 lbs. M = 3,200,000 lb in.

$\frac{B}{2}+1\frac{1}{2}t$ = 8'

M per ft = 400,000 lb. in.

A_s = .185 D" ⅝"ϕ 4" crs.

Footing 106 P = 565,000 Me = 770,000

Ms = 200,000

e = 1.7" = .143'.

Try 8¾' x 8¾' x 50" deep.

$\frac{N}{\ell b}\left(1+\frac{6e}{b}\right)$ = 8,200

$\frac{N}{\ell b}\left(1-\frac{6e}{b}\right)$ = 6,700

Pressure at centre = 7,450

Av. pr. on one side = 7,825

Pressure from D.L. = 7,450

Design for load only.

Depth for P.S. = 47" = t D = 50"

P.S. controls as $\frac{D}{2}+t$ outside footing

Area = 18.4 D' W = 137,000 lbs.

M = 4,110,000 lb. in.

$\frac{B}{2}+1\frac{1}{2}t$ = 10¼

M per ft. = 470,000

A_s = .64 D" ½"ϕ 3 crs or ⅝"ϕ 4" crs.

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STRUCTURE NO. .....
DATE 10-6-36
SHEET NO. 49 OF 56 SHEETS.

COMPUTATION FOR REINF. CONCRETE STRUCTURE.

Footing 107 P = 568,000 Me = 1,900,000

e = .31' Ms = 200,000

Try 9'x9'x43" deep.

$\frac{N}{\ell b}\left(1+\frac{6e}{b}\right)$ = 8,500

$\frac{N}{\ell b}\left(1-\frac{6e}{b}\right)$ = 5500

Av. pressure = 8000

D.L. pressure = 7,000

Design for load only.

Depth for P.S = 40" = t D = 43"

$\frac{D}{2}$ + t outside footing.

Area of trapezoid = 18.7 □' W = 131,000 lb.

M = 3,150,000 $\frac{B}{2}$ + 1½ t = 9½'

M per ft = 350,000 lb.in.

A_s = .55 ½"ϕ 4" crs.

Footing beam between cols. 125, 121, 117, 114, 111.

W = 307,000 ℓ = 13'-0"

M_s = 4,000,000

Me = 3,000,000

b = 60" d = 28" D = 32"

A_s = 12.6 □" 21-⅞"ϕ btm. at cols. 121, 117, 114, 111

A_s = 18 □" 21-⅞"ϕ top } at col. 125
30-⅞"ϕ btm. }

= 9.0 □" 15-⅞"ϕ top centres

= 2.25 □" 4-⅞"ϕ top at cols. 121, 117, 114, 111.

V_s = 154,000 Ve = 39,000

s = 3¾" ½"ϕ 6 arm stirrups.

At col. 108 P = 364,000

Load per ft = 22,700 width = 3'-6"

Load on beam 108-111 = 336,000

" " " 108-104 = 364,000

" " " 32 = 466,000

M beam 11 = 4,400,000
M beam 12 = 5,800,000 } centre M = 5,000,000
M beam 32 = 5,100,000

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STRUCTURE NO.
DATE 10-6-36
SHEET NO. 50 OF 56 SHEETS.

COMPUTATION FOR REINF. CONCRETE STRUCTURE

Footing beam at col. 108 contd.

b = 42 d = 36 D = 39"

A_s = 11.6 □ 20-7/8"ϕ btm.

Centre beam 11 d = 32 A_s = 8.8 □" 15-7/8"ϕ top.

Centre beam 12

A_s = 10.1 □ = 17-7/8"ϕ

At col. 104

btm. A_s = 16.6 □" = 28-7/8"ϕ

top. A_s = 11.0 □" = 19-7/8"ϕ

V_s = 182,000 Ve = 45,000

s = 4" 1/2"ϕ 6 arm.

Footing beam 32. M_s = 5,100,000

Me = 6,200,000

b = 42" d = 43" D = 46"

A_s = 13.2 □" 22-7/8"ϕ

Centre M = 7,100,000

A_s = 8.3 □" 14-7/8"ϕ

V_s = 233,000 Ve = 63,000

s = 4" 1/2"ϕ 6 arm.

Footing 113, 110, 112 P = 610,000 Me = 3,000,000

e = 6" = .5' M_s = 700,000

Try 10'×10" 46" deep.

$\frac{N}{\ell b}\left(1+\frac{6e}{b}\right)$ = 8,000

$\frac{N}{\ell b}\left(1-\frac{6e}{b}\right)$ = 4,270

Av. pressure = 7,200

D.L. pressure = 6,100

Design for load only.

Depth for P.S. = 43" = t. D = 46"

$\frac{D}{2}$ + t at edge of footing.

M = 4,000,000 $\frac{B}{2}$ + 1½t = 13½'

M per ft. = 400,000

A_s = .58 = 1/2"ϕ 4" crs.

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STRUCTURE NO.
DATE 10-6-36
SHEET NO. 51 OF 56 SHEETS.

COMPUTATION FOR REINF. CONCRETE STRUCTURE

Footings 115, 116, 109, 119, 123,

P = 667,000 Me = 3,000,000

e = .463' Ms = 700,000

Try 10½' x 10½' x 49" deep.

$\frac{N}{C_b}(1 + \frac{6e}{b})$ = 7,600

$\frac{N}{C_b}(1 - \frac{6e}{b})$ = 4,400

Av. pressure = 7,000

D.L. Pressure = 6,000

Design for load only.

Depth for P.S. = 46" = t D = 49"

$\frac{D}{2} + t$ on edge of footing.

M = 4,680,000

$\frac{B}{2} + 1\frac{1}{2}t$ = 11'

M per ft. = 446,000

A_s = .61□" = ½" ϕ 3½" crs.

Footing 120 + 124

P = 557,000 Me = 3,000,000

e = .555' Ms = 700,000

Try 9½' x 9½' x 42" deep.

$\frac{N}{C_b}(1 + \frac{6e}{b})$ = 8,300

$\frac{N}{C_b}(1 - \frac{6e}{b})$ = 4,000

Av. pressure = 7,600

D.L. pressure = 6,200

Design for load only.

Depth for P.S. = 39" = t D = 42"

M = 3,400,000

$\frac{B}{2} + 1\frac{1}{2}t$ = 9½'

M per ft. = 358,000

d = 39" a = 34"

A_s = .583□"

½" ϕ 4" crs.

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STRUCTURE NO.
DATE 10-6-36
SHEET NO. 52 OF 56 SHEETS.

COMPUTATION FOR REINF. CONCRETE STRUCTURE

Strap footing under cols. 101, 102, 103, 104.

Load from col. 101 = 210,000
" " " 102 = 335 000 545,000
" " " 103 = 320,000
" " " 104 = 163,000 483,000

Load on beam 16 = 224,000
" " " 16 = 193,000 417,000

$b = \frac{417\,000}{20 \times 6700} = 3'\text{-}2''$

$b = \frac{1,028,00}{43 \times 6700} = 36''$

M beam 16 = 8,340,000 lb. in.

Footing beam 16. M_s = 8.340,000
M_e = 13,000,000

b = 38" d = 60 Make 48" x 38" D.R.
A_s = 23.5 □" 24 - 1⅛" ϕ btm. at 103.
T = 530,000 C = 295,000
f_s' = 10,800 A_s' = 22.0 □" 22 - 1⅛" ϕ top at 103.

Centre A_s = 11.6 □" 12 - 1⅛" ϕ top. centre.
V_s = 209,000 V_e = 90,000
s = 4" ½" ϕ 6arm.

At col. 102. M_s = 8,340,000
M_e = 8,200,000
A_s = 18.4 19 - 1⅛" ϕ btm. at col. 102
T = 410,000 C = 295,000
f_s' = 10,700 A_s' = 10.8 □"
11 - 1⅛" ϕ top at col. 102.

Note: Beam 16 B carries down to join with footing beam so the latter has been drawn up to take static moment of 8,340,000 lb. ins. only.

12 - 1⅛" ϕ { btm. at ends
top centre.

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STRUCTURE NO.
DATE 10-6-36
SHEET NO. 53 OF 56 SHEETS.

COMPUTATION FOR REINF. CONCRETE STRUCTURE.

Footing beam between cols. 103 + 104.

P = 483,000

M = 4,830,000

10 - 1⅛"φ top + btm.

5" ½"φ 6 arm stirrups.

Footing beams 3

M at col. 102 8,000,000

P = 280,000

b = 32" d = 45" D = 48"

A_s = 11.1 □" 12 - 1⅛"φ btm. at cols. 102 + 103.

Centre

M = 6,300,000

A_s = 8.8 □" 9 - 1⅛"φ top centre.

At col. 106 M = 4,500,000

A_s = 6.25 7 - 1⅛"φ btm: at cols. 106 + 107.

V_s = 180,000 V_e = 18,700

s = 4½" ½"φ 6 arm.

Footing beam 12 North.

At col. 101 M_e = 8,000,000

M_s = 5,100,000

W from col. 101 = 220,000

W " " 105 = 100,000

b = 36" d = 49" D = 52"

A_s = 13.5 □" 14 - 1⅛"φ btm. at col. 101.

Centre M_s = 5,100,000

M_e = 3,000,000

A_s = 8.4 □" 9 - 1⅛"φ top. at centre.

At col. 105 M_s = 5,100,000

M_e = 2,500,000

A_s = 8.1 □" 9 - 1⅛"φ btm at col. 105.

V_s = 160,000 V_e = 60,000

s = 5" ½"φ 6 arm.

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STRUCTURE NO.
DATE 10-6-36
SHEET NO. 54 OF 56 SHEETS.

COMPUTATION FOR REINF. CONCRETE STRUCTURE

Footings 127 + 128

P = 572,000 M = 5,400,000

e = .78'

Try 10'x10' x 27" deep.

Comect to footings 123,124 to take up eccentricity in E + W direction.

Depth for P.S. = 24"

Av. pressure over ½ footing = 7,000 lb.

AV. pressure D.L. only 7.150

Design for D.L. only.

M per ft. = 858,000

A_s = 2.27 □" 7/8"ϕ 3" crs.

Footings 129 + 130. P = 40,000 Me = 96,000

e = .625' Ms = 200,000

3½' x 3½' x 12" deep.

M = 78,000

M per ft. = 40,000

A_s = .28 □" ½"ϕ 6" crs.

Footing beam between cols. 122 + 126.

W from col. 126 = 121,000

W " " 122 = 200,000 320,000

Strap footings Cols 118, 122 to cols. 119 + 123.

At col. 118 W = 330,000

W per ft. = 25,600 b = 48"

Footing beam 7

W = 286,000 lbs. Ms = 3,500,000

Me = 3,000,000

d = 36 D = 39" b = 48"

A_s = 9.1 □" 10-1⅛"ϕ btm. ends.

Centre M = 3,500,000

A_s = 6.1 7-1⅛"ϕ

V_s = 134,000 Ve = 40,000 s = 5" ½" 6 arm.

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STRUCTURE NO.
DATE 10-6-36
SHEET NO. 55 OF 56 SHEETS.

COMPUTATION FOR REINF. CONCRETE STRUCTURE.

Footing beam 14 cols. 118-122.

W = 300,000

b = 48"

M_s = 3,900,000 M_e = 4,400,000

d = 34" D = 37"

A_s = 12.3 □" 13-1⅛"ϕ btm. at cols. 118 & 122.

Centre M = 4,000,000

A_s = 7.4 □" 8-1⅛"ϕ top centre.

V_s = 150,000

V_e = 57,000

s = 4½" ½"ϕ 6 arm.

Footing beam 14 cols. 122-126.

At col. 122 b = 48"

At col. 126 b = 30"

M at centre = 3,300,000

8-1⅛"ϕ top.

Footings to cols. 131, 132, 133, 134, 135.

W = 125,000 lbs.

Footing beams 7 to cols. 115, 112 etc.

W = 262,000

M_s = 4,100,000

M_e = 50,000

b = 36" d = 31" D = 34"

A_s = 8.4 □" 9-1⅛"ϕ btm. ends top centre.

V_s = 125,000 V_e = 3,000

s = 5" ½"ϕ 6 arm.

Footing beam between cols. 135 & 101

W = 18,000

b = 36 M = 3,700,000.

Make same as beams 7 above.

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STRUCTURE NO. .....
DATE 10-6-36.
SHEET NO. 56 OF 56 SHEETS.

COMPUTATION FOR REINF. CONCRETE STRUCTURE

Nomenclature adopted in beam calculations.

b = breadth.
d = depth to centroid of steel.
D = overall depth.
A_s = area of steel
A_s' = area of steel in compression.
f_s' = allowable unit stress in steel in compression.
Ms = Static moment in lb. inches.
Me = earthquake " " " " .
Vs = static shear in lbs.
Ve = earthquake " " " .
v = unit shear stress in lbs. per sq. ins.
s = stirrup spacing.
D.R. = doubly reinforced.

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LOCATION Wellington.

STRUCTURE NO.
DATE 29/8/36
SHEET NO. 1a OF 12 SHEETS.

GUMMER & FORD.
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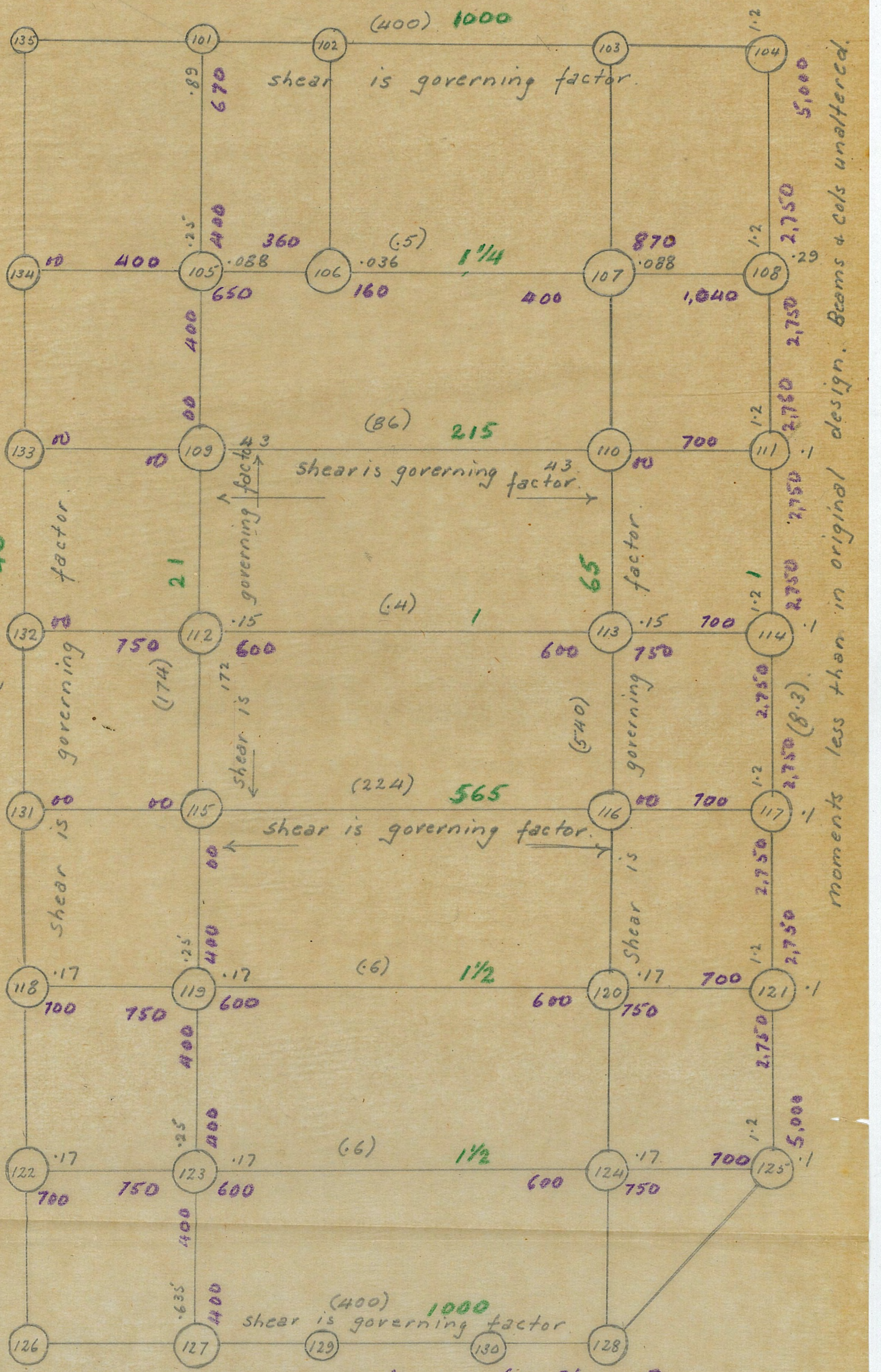
COMPUTATION FOR Amendments Basement & Grn Floor Beams,



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STRUCTURE NO. .....
DATE 29/8/36
SHEET NO. 20 OF 12 SHEETS.

COMPUTATION FOR Amendments to Basement

42483]

Wall 135-103

Shear = $\frac{400,000}{12 \times 40 \times 12}$ = 63 approx.

M = 24,000,000 in lbs

required d = 11'

provided d = 42'

a = 440

A_s = 2.60" provided 2.65"

Wall 115-116

Shear = $\frac{224,000}{18 \times 32 \times 12}$ = 32.5

M = 13,500,000

reqd d = 80" provided d = 360"

a = 3.16

A_s = 2.37. Ample provided.

Wall adjoining Col 109

= $\frac{43,000 \times 10 \times 12}{2}$ = 2,600,000

Theoretical Beam M in C.L wall = 5,600,000

at wall opening M = 1,500,000

Neglect static moment & provide for 1,500,000 above & below. In practice, static moment won't be present.

$\frac{1,500,000}{20 \times 2,500}$ ⟺ 3.35" = 6 - 7/8" ϕ

Other walls & columns can be checked up from inspection.

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STRUCTURE NO.
DATE 21/8/36
SHEET NO. 3a OF 12 SHEETS.

COMPUTATION FOR Amendments to Basement

Amended Loads on Columns Below Grnd. Floor.

Col.	Load.		
102	543,000	113	706,000
103	528,000	115	711,000
105	1160,000	116	713,000
106	620,000	123	675,000
107	646,000	124	665,000
109	705,000	126	650,000
110	713,000	127	681,000
112	705,000		

General Check up on Footing 110 for load + on Col 119 for Moment.

W = 713,000 lbs M static = 300,000
M E/Q = 500,000
800,000

$e = \frac{800,000}{713,000} = 1.12' = 1'$

$10\frac{1}{2} \times 10\frac{1}{2}$ $\frac{W}{C_b}\left(1 + \frac{6e}{b}\right) = \frac{713,000}{110}\left(1 + \frac{6}{15\frac{1}{2}}\right) = 6,500(1.057)$

$= 6,800$

static conditions p_s = 6.8 tons per sq ft

for p_s depth = $\frac{713,000}{120 \times 120} = 50''$

$A = \frac{2\frac{1}{2} + 10\frac{1}{2}}{2} \times 4 = 6\frac{1}{2} \times 4 = 26$ sq ft

$W = 26 \times 6,600 = 172,000$ lbs.

$M = 172,000 \times 28'' = 4,800,000$ inch lbs.

allowable Bending = $\frac{8}{2} + 1\frac{1}{2} t = 5' - 4'' + 6' = 11' 4''$

say 10' M per ft = 480,000 inch lbs

$d^2 = \frac{480,000}{12 \times 122}$ $d = 18''$ $d = 24''$ $a = 40''$

$A_s = \frac{1,880,000}{20 \times 18,000} = 4.6 = 11'' @ 3\frac{1}{2}''$ c.c.

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STRUCTURE NO.
DATE 31/8/36
SHEET NO. 44a OF 12 SHEETS.

43483]

COMPUTATION FOR Amendments to Basement.

Beam 4 A

W = 60,000 M = 1800,000 d = 28" a = 25 A_s = 4.0

Beams 1A.

W = 20,000 lbs M = 260,000 d = 17 a = 15 A_s = .90 3-3/4

at supports next to end supports.

M = 390,000.

Conc. stress provided for by double reinforcement to take care of uplift.

A_s = 1.45 = 3-3/4 } top & bottom over supports
2-1/2 } next to end supports.

Shear = 14,000 lbs.

$\frac{14,000}{9 \times 15}$ = 104 Sp = 4"

Beams 3E A.

W = 21,000. Centre M = 410,000 inch lbs

M at E end from door of 16,000 lbs = 420,000 inch lbs.

Max M = 830,000 inch lbs.

d" $\frac{830,000}{15" \times 122}$ d = 21" a = 18.5

A_s = 2.5 = 6 - 3/4" Ø.

E of Col 109-110 Shear = $\frac{16,000}{15 \times 18.5}$ = 48

W of Col 109-110 Shear = 1600 × 20 = 32,000.

Sp = $\frac{4,000 \times 18.5"}{32,000}$ = 2 1/4" = 4 1/2" with a arm stirrup

Allowable shear on conc.

= 15 × 18.5 × 60 = 16,600

diff = 15,400 $\frac{15,400}{1,600}$ = 9 1/2' stop stirrups.

Sp. at 9 1/2' = $\frac{4,000 \times 18.5"}{16,600}$ = 4 1/2" = 9" with a arm.

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STRUCTURE NO. .....
DATE 31/8/36
SHEET NO. 5a OF 12 SHEETS.

COMPUTATION FOR Amendments to Basement

Check up on Beam 8A between Cols 109-110.

Span = 19 + 3½ = 22½'

Cr pt load = 47,000 lbs.

pt. Load F E M = 1,600,000

Uniform load = 90,000 lbs

Uniform load F E M = 2,000,000 inch lbs.

Total f E M = 3,600,000 inch lbs.

$d = \frac{3,600,000}{18 \times 122}$ $d = 40''$ $d = 35''$

$a = 31$

$A_s = 6.45 = 7 - 1\frac{1}{8}''\phi$.

Doubly reinforced.

where 6" stirrup spacing stops.

M = 2,300,000 d = 32"

Centre M = 2,600,000 d = 34½.

Shear transferred from bent 125-104 to 128-103.

= 437,000 - 8,300 = 439,000 lbs

Area of conc slab & beams = 6,700 sq inches.

shear stress - $\frac{430,000}{6,700}$ = 64 lbs per sq inch.

$\frac{I''^4}{C'}$	Beam 8 = 2,400	∞ of Col M above grn floor for interior Cols	.2
$\frac{I''^4}{C'}$	Beam 7 = 3,000		.25
$\frac{I''^4}{C'}$	Col = 6,800.		.35
			1.00

For Col 121

$\frac{I''^4}{C'}$ = 5,400.

∞ to Beam 7 = $\frac{3,000}{8,400}$ = .35.

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STRUCTURE NO.
DATE 31/8/35
SHEET NO. 6a OF 12 SHEETS.

COMPUTATION FOR Amendments to Basement.

$\frac{I''^4}{c'}$ Beam 5 = 5,400. At col 105 Beam 7 M ∅ .2
Beam 5 M ∅ .33.

$\frac{I''^4}{c'}$ Beam 6 = 2,400. At col 106 Beam 5 M ∅ .46.
Beam 6 M ∅ .21.

$\frac{I''^4}{c'}$ Beam 32 = 4,400. At Col 107 = Beam 32 M ∅ .167.

Beams 2. N. Side. Floor B.

$\frac{I''^4}{c}$ = 1,680. Beam M ∅ .166.

Col 127. Beam M ∅ $\frac{1680}{15,000}$

" 101 " " " ∅ $\frac{2830}{34,000}$

Beam 2 Floor B N. side.

M E/q = 400,000
Static 240,000
640,000

$A_s = \frac{640,000}{19.4 \times 22,500} = 1.47$ = 3 - 7/8" ∅ top at ends
2 - 7/8" ∅ elsewhere.

d = 21" a = 19.4

sp = 6" from previous calculation.

Beam 12 Floor B N.S.

Static M: 900,000
E/q M: 600,000
1,500,000

$d = \frac{1,500,000}{13 \times 150}$ d = 28" a = 24.6

$A_s = \frac{1,500,000}{24.6 \times 22,500} = 2.72$ = 2 - 7/8 } top at ends
2 - 1" }

2 - 7/8" bottom at ends.

Centre M. say 600,000

$A_s = 1.36$ = 2 - 7/8 } bottom at ends
1 - 1" }
or 3 - 7/8"

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STRUCTURE NO.
DATE 31/8/36
SHEET NO. 7a OF 12 SHEETS.

COMPUTATION FOR Amendments to Basement.

Beam 16 B

Beam in top of wall 12" thick.

W = 30,000 lbs. M = 600,000 inch lbs.

d = 20 a = 17.6 A_s = 1.9 = 2-1⅛" ϕ.

shear = $\frac{15,000}{12 \times 17.6}$ = 71.

sp = $\frac{4,000 \times 17.6}{15,000}$ = 4½" sp.

Beams 7, 5, 6 + 32 B.

Beam 7. North end. static = 290,000.

E/q > $\frac{50,000}{340,000}$

Limiting M for Conc. stress

= 12 x 17 x 24 x 24 = 1,200,000.

d = 20 a = 21. A_s = .765" 3-⅞" ϕ

shear > $\frac{11,300}{21 \times 17}$ = 32 Nominal stirrups.

Beam 7. South end. Solution to factory - from Picking sh.

M static > 390,000.

E/q $\frac{400,000}{790,000}$.

A_s 1.7 = 3-⅞" top + bottom

Sheard 13,500 static

E/q for $\frac{3,000}{17,000}$ = 48 O.K. nominal stirrups.
$\frac{}{21 \times 17}$

STRUCTURE OFFICE BUILDING
OWNER N.Z. Insurance Co
LOCATION Wellington.

GUMMER & FORD,
ARCHITECTS AND STRUCTURAL ENGINEERS,
AUCKLAND.

STRUCTURE NO.
DATE 31/8/86
SHEET NO. 8a OF 12 SHEETS.

COMPUTATION FOR Amendments to Basement.

Beam 5B North End

M static > 320,000.
E/q 650,000
1,000,000.

A_s = 2.12 = 4 - 7/8" top.
3 - 7/8" bottom.

shear static = 10,000.
E/q 10,000
20,000 = 5¢ nominal stirrups.
17×21

Beam 5B South end.

M static = 650,000.
" E/q 360,000
1,000,000.

= 4 - 7/8" top. } as above.
3 - 7/8" bottom }

shear = 13,000 static
10,000 E/q
23,000 = 6¢ nominal stirrups.
17×21

Beam 6 B N end

M static = 1,000,000
" E/q 160,000
1,160,000

A_s = 1,000,000 / 228×18,000 = 2.44 — 5 - 7/8" ϕ top. 3 - 7/8" ϕ bottom }

Shear static : 30,000
E/q : 3,000

30,000 / 17×228 = 78 — sp = 6" with 4 arm

STRUCTURE OFFICE BUILDING
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LOCATION Wellington

GUMMER & FORD,
ARCHITECTS AND STRUCTURAL ENGINEERS,
AUCKLAND.

STRUCTURE NO.
DATE 31/8/36
SHEET NO. 9a OF 12 SHEETS.

COMPUTATION FOR Amendments to Basement

Beam 6 B South end.

M static = 1,000,000

E/q = 400,000 / 1,400,000

d = 23.5" d = 26 a = 22.8.

A_s = 2.73 = 5 - 7/8" top.
3 - 7/8" bottom.

Shear = 6" with 4 arm stirrups as above.

Beam 32 B N. end.

Static M. 450,000

E/q 870,000 / 1,320,000

A_s = 2.58 = 5 - 7/8" top 3 - 7/8" bottom

Shear: 19,000 static.

13,400 E/q. 32,400 / 17x22.8 = .83 sp = 2.8 = 5 1/2"
32,400 with 4 arm.

Beam 32 B South end.

M E/q = 1,000,000. Static M negligible.

A_s = 1.95" = 4 - 7/8" ø top & bottom

Shear: 13,400 E/q. Static shear negligible.

14,000 / 17x22.8 = 36 nominal stirrups.

Beams 7 & 8. Floor B.

Take E/q. M throughout as 750,000 inch lbs.

At exterior Cols. E/q M = 750,000. Static M negligible.

A_s = 1.59 = 3 - 7/8" ø top & bottom

E/q shear = 11,000. Static shear negligible.

11,000 / 17x21 = 31 Nominal stirrups.

STRUCTURE OFFICE BUILDING
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GUMMER & FORD,
ARCHITECTS AND STRUCTURAL ENGINEERS,
AUCKLAND.

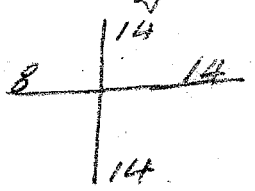
STRUCTURE NO.
DATE 31/8/36
SHEET NO. 10 a OF 12 SHEETS.

COMPUTATION FOR Amendments to Basement.

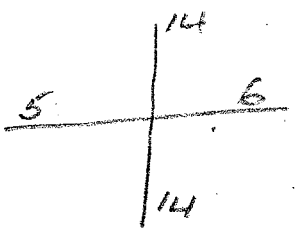
Static Moments

Note re junction of beams 7 & 8 at Cols 119, 120 etc.

Hardy Cross diagram was taken out for these stiffness ratios.



New stiffness ratios are



Comparative restraints

	original	New
Beam 8	5 1/4	6 4/5
Beam 7	2.57	3 1/2

Restraint of both beams has been increased so that new end moments will lie between F.E.Ms and original end moments. Take M at end of Beam 8 as 2,000,000 inch lbs (measured off Col) + 700,000 for beam 7

Beam 7 at interior Cols.

M static = 700,000

E/g : 750,000
1,450,000

d = 24 a = 21.1 A_s = 3.05 = 3 - 7/8" ϕ top
3 - 7/8" ϕ bottom.

Shear = 11,000 E/g
20,000 static

31,000 / 17×24 = 87. Sp = 5,000×21 / 31,000 = 3" or 6" with 4 arm,

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Beam 8 at Cols. M: 750,000 E/g
2,000,000 static
2,750,000

A_s = 5.8 say 6 - 7/8" ϕ top & bottom.

Shear static : 41,000 Sp = 4,000×21.1 / 41,000 = 2" = 4" with 4 arm or 6" with 6 arm.

E/g = 5,000.

Centre M. 1,600,000 A_s = 4.2. say 4 - 7/8" ϕ bottom.

STRUCTURE Office Building
OWNER N.Z. Insurance Bldg.
LOCATION Wellington

GUMMER & FORD,
ARCHITECTS AND STRUCTURAL ENGINEERS,
AUCKLAND.

STRUCTURE NO.
DATE 31/8/36
SHEET NO. 11a OF 12 SHEETS.

COMPUTATION FOR Amendments to Basement.

Beam 19 B. W = 10,000 lbs

M = 210,000 inch lbs. static

d = 14 a = 12 A_s = .97

Shear = $\frac{3,000}{12 \times 9}$ = 65 Sp = $\frac{4,000 \times .97}{7,000}$ = 6" sp.

43483]

Beam 2 B.

Uniform Load M = 1,040,000 inch lbs

C. Pc Load M = 18,000

3rd Pf Load M 240,000

Total ΣM = 1,300,000

E/f M wfgells

d^2 = $\frac{1,300,000}{14 \times 122}$ d = 28 a = 26.4

A_s = 2.70 = 3 - 7/8" φ bp at ends

3 - 7/8" φ bottom in c

Shear = $\frac{31,000}{14 \times 26.4}$ = 84 Sp = $\frac{4,000 \times 26.4}{31,000}$ = 3" or 6" with 4 bars

Check up on Basement beams & slabs for hydrostatic head of 8'.

13' x 15' bays short way .64 w long way .36 w

Head = 500 lbs per sq ft. Resultant Load = 400 lbs per sq ft

Short way = .64 x 400 = 256 lbs per sq ft.

w = 13 x 256 = 3,300 lbs M = 43,000 inch lbs

One way span of 9' w = 3,600 M = 32,400 inch lbs

Design for 43,000 inch lbs.

d^2 = $\frac{43,000}{12 \times 122}$ d = 5 1/2" 8" overall is ample.

d = 6" a = 5.3

A_s = $\frac{43,000}{5.3 \times 18,000}$ = .45" = 1/2" φ @ 5" cs.

STRUCTURE OFFICE BUILDING
OWNER N.Z Insurance Co.
LOCATION Wellington

GUMMER & FORD,
ARCHITECTS AND STRUCTURAL ENGINEERS,
AUCKLAND.

STRUCTURE NO.
DATE 31/8/36
SHEET NO. 12a OF 12 SHEETS.

COMPUTATION FOR Amendments to Basement.

937

Beam 4A (Hydrostatic Press. from 8' head)

W = 43,000 M = 1,300,000 d = 24

d = 28 a = 2.46

A_s = 2.93 4.29 provided

Beams 1A W = 24,600 lbs M = 320,000 inch lbs

d = 16 d = 17 a = 1.5 A_s = 1.19 1.3 provided.

Beams 8 A.

Hydrostatic reaction from Beams 1A = 24,600 lbs

M from Pt load = 1,100,000

M from Uniform load = 1,950,000

Total M = 3,000,000 inch lbs

d = 38" d = 35" a = 3.8

A_s = 5.4 5.96 provided.

Double reinforcement makes concrete stress ok.

Retaining walls.

Max press. = 500 lbs per sq ft.

Total. W = 500 × 8 = 4,000 lbs.

M = .125 × 4,000 × 10 × 12 = 61,500 inch lbs

d = 6½"

for 2" cover d = 9 − 2¼ = 6¾" a = 5.85

A_s = .575 = ½" ø at 4" crs

C O N T E N T S.

S P E C I F I C A T I O N of Work to be done and Materials to be used in the Erection and Completion of an OFFICE BUILDING at the Intersection of

Featherston and Johnston Streets

Wellington

for

THE NEW ZEALAND INSURANCE COMPANY LIMITED.

GUMMER & FORD & PARTNERS
Reg. Architects and Structural Engineers,
AUCKLAND.

June, 1936.

CONDITIONS OF TENDER.

1. Tenders close at the office of the Architects at Noon on Monday, 13th July, 1936.
2. Tenders must be accompanied by a cheque for £700 : 0 : 0 (Seven hundred pounds) free of exchange.
3. Tenders to be marked on outside of cover "Tender for Office Building for the New Zealand Insurance Company Ltd."
4. Telegraphic tenders will not be accepted.
5. The lowest or any tender will not necessarily be accepted.
6. The work is to be carried out in accordance with the General Conditions of Contract agreed to by the N.Z. Institute of Architects and the N.Z. Federated Builders, with provision for the use of Quantities, and in accordance with the Special Conditions of Contract set out herewith, and the successful tenderer will be called upon to sign a contract accordingly upon acceptance of Tender.

7. The Schedule of Quantities has been measured according to the Scottish Mode of Measurement adapted to suit New Zealand requirements. It shall be priced in detail, extended and added to show how Contractor's estimate has been arrived at. Priced Schedules are to be lodged under separate sealed cover, along with Contractor's tender. The Priced Schedule of the unsuccessful tenderers will be returned with the sealed covers unbroken. Any Tender lodged unaccompanied by the Priced Schedule or not priced in detail and extended will be treated as informal. In the event of any Contractor who receives a Schedule of Quantities not tendering for the work the Schedule is to be immediately returned to the Architects. The Pricing, extensions and additions of the successful Contractor's Schedule will be checked by the Quantity Surveyor, and any errors or inconsistencies in such pricing, extensions or additions, will be adjusted with the Contractor by the Quantity Surveyor, but no error of any description found will entitle either contracting party to this agreement to alter the amount of the Contractor's original tender. Such adjustment must be made prior to or immediately after the signing of the Contract, but in no case will any payment upon account of the works be made until such adjustment has been completed.

8. The Contractor is requested to make a personal inspection of the plans and to visit the site of the proposed building and satisfy himself about all matters relating to the nature of the site, the means of access thereto, and the rights and interests which may be interfered with by the execution and construction of the works and all other matters referred to in the plans anddrawings, specifications and schedule of quantities which may influence the contractor in submitting his

The fact of tendering shall be taken as certifying that the Contractor has inspected the site and satisfied himself as to the nature of the grounds and every other condition that may affect his tendering or the execution of the work.

SPECIAL CONDITIONS OF CONTRACT.

1. The sum to be deducted or set off under Clause 26 of the General Conditions of Contract shall be £20 (Twenty pounds) per working day.
2. Time for Commencement & Completion of Contract.
   Under Clause 22 of the General Conditions of Contract access to the site of the works for the purpose only of carrying out the works shall be given to the Contractor on the 1st August, 1936.
   He shall begin the works immediately after such access has been given, shall regularly proceed with the same, and shall within fifty-two weeks from the Contractor obtaining possession of the site complete the works.
3. The period of maintenance shall be ninety days from and after the date certified by the Architects as the date on which the works were completed to their satisfaction.
4. The Priced Schedule of Quantities shall remain in the custody of the Architects and shall be produced by him at his office as and when required by the Employer or the Contractor.
   Neither the Architects nor the Quantity Surveyor shall divulge or use any information contained in the priced schedule of Quantities otherwise than for the purposes of this contract.
5. All extras, omissions and variations authorised by the Architects or subsequently sanctioned by them in writing may be measured by the Surveyor if so desired by the Employer and The Surveyor who shall then give to the Contractor opportunity to be present with him on the works at the time and to take

such noted and measurements as he may require. The Contractor shall be supplied with a copy of the measured Schedule on or before the date of the Architects' certificate in respect to such extras and omissions and the valuation thereof unless previously or otherwise agreed shall be made in accordance with the following rules:-

(a) The prices in the original Schedule of Quantities shall determine the valuation of extra work of similar character executed under similar conditions as work priced therein.

(b) The said prices, where extra works are not of a similar character and or executed under similar conditions as aforesaid, shall be the basis of prices for the same so far as may be reasonable; failing which a fair valuation therefore shall be made based upon prices for similar work in the locality current at the time the extra works are executed.

(c) Where extra work cannot be properly measured or valued the Contractor shall be allowed day-work prices at the rates stated in the Schedule of Quantities or, if none stated, than at the nett cost of labour and materials and overhead charges, plus 10% profit provided that in either case vouchers specifying the time daily (and if required by the Architects) the workmen's names) and materials employed be delivered for verification to the Architects or his authorised representative at or before the end of the week following that in which the work has been executed.

(d) The prices in the original Schedule of Quantities shall determine the valuation of items omitted; provided that if omissions vary the conditions under which any remaining items of work are carried out, the prices for such remaining items shall be valued under (b) hereof.

(e) But no extras, whether extras within or extras without the contract, and no payment for any additions deviations or alterations whatever which shall be claimed by the Contractor, will be admitted or recognized under any circumstances, or will be allowed or made, which shall be done or executed without or contrary to an order from the Architects in writing as aforesaid, nor unless the total quantities and the rates of payment for such additions, deviations or alterations shall have been approved by the Architects, whose decision as to quantities and prices shall be final and binding on all parties.

6. DRAWINGS. It is to be clearly understood that the drawings are to be considered solely as implements of service, are to be used for this building only, are the property of the Architects, and are to be carefully preserved and returned to them at the completion of the work set forth therein.

7. DETAIL DRAWINGS. Detail or other drawings supplied to the

Contractor during the course of the contract shall not be taken as authority for extra work unless accompanied by the written order to that effect. Should any detail supplied be deemed by the Contractor to involve work beyond that contracted for, the contractor shall at once notify his objection to the Architects and shall not proceed with the work until ordered in writing to do so. All details shall be applied for by the Contractor and shall be received by him before the work to be detailed is begun.

8. SUB-CONTRACTORS. Before any sub-contract is let the name of the proposed sub-contractor is to be submitted to the Architects for approval. Sub-contractors will be bound as the General Contractor by all the Conditions of Contract which may be applicable to them.

9. INCLUDED SUMS. It is to be clearly understood that all included sums are nett and that the Contractor is to include in his tender any profit to which he considers himself entitled or any amount to cover waiting upon any sub-contractor or making good after him. The amount of the profit included in the priced schedule shall in the final settlement be adjusted in proportion to the amount expended. In the case of all materials or labour for which sums are included in the Contract the Architects may obtain prices or call for tenders for the supply and fixing of same and will advise the Contractor of their decision as to which of such prices or tenders are to be accepted. The person or firm so nominated shall forthwith become a sub-contractor of the General Contractor and shall be under his direction in all matters so far as his contract and shall receive payment through the General Contractor. If the Contractor has reasonable grounds for questioning the ability of the person or firm nominated

by the Architects to properly execute the work the subject of the price or tender either in regard to material, workmanship or time of completion, or shall have other proper ground of objection to the person nominated as a sub-contractor, then he shall so advise the Architects in writing before accepting the tender and within twenty-four hours of receipt of the Architects' letter of instruction. If the Architects do not agree with the Contractor's objection the matter shall be referred to the New Zealand Insurance Co. for final decision and their nominee shall forthwith become the sub-contractor for the particular work in question.

10. INSURANCE. Insure all workmen employed for the several trades during the carrying out of the work as provided for in the General Conditions of Contract, or as required by any Act of Parliament or any Regulation made under any such Act. Insure the building as provided for in the General Conditions of Contract with The New Zealand Insurance Co. Ltd.

11. ADJOINING BUILDINGS.

The Contractor undertakes all responsibility for damage to adjoining structures and indemnifies the Owners against any claims for any damage to such structures or for any injury to life or limb which may arise through the execution of the works subject of this Contract.

IN GENERAL.

WORK SPECIFIED "TO APPROVAL".

In all cases in which work or materials forming part of this Contract are specified as "approved" or "to approval" the Contractor shall supply to the Architects upon request samples or specimens of such work or materials and shall not proceed with the execution of any such work or material in the Contract until the Architects' approval in writing has first been obtained.

WORKS INCLUDED.

The work included in the contract shall consist of all material, labour and plant and the erection of thestructure as shown on the drawings; all as directed in the specifications and detailed in the Schedule of Quantities.

SCHEDULE OF DRAWINGS.

NO.	SCALE.	DESCRIPTION OF DRAWING.
1.	1/8" = 1 ft.	Foundation and Basement Plan
2.	" "	Ground, 1st and 2nd floor plans.
3.	" "	Third, Fourth and Fifth floor plans.
4.	" "	Sixth, Seventh, Roof and Caretaker's Floor Plans.
5.	" "	Elevations to Featherston and Johnston Streets.
6.	" "	North and East Elevations, Section through Area.
7.	" "	Longitudinal and Cross Sections.
8.	1/2" and F.S.	Cross Section and Show Window Details.
9.	3/4" = 1 ft.	Front Entrance Detail.
10.	" "	Johnston Street Entrance Details.
11.	" "	Sectional Elevation of Elevator & Stair Vestibule.
12.	" "	Details of Main Stairs.
13.	1/2" and F.S.	Details of Finishes in Main Office.
14.	3/4" = 1 ft.	Details of Ground Floor Lavatories.
15.	" and F.S.	Typical Lavatory Details.
16.	" "	Typical Joinery Details.
17.	" "	" " "
18.	1/2" = 1ft.	Footing details.
19.	" "	" "
20.	" "	" "
21.	" "	" " and Chimney Flue Detail.
22.	1/8" = 1 ft.	Framing Plan, Ground, 1st. and 2nd Floors.
23.	" "	" " 3rd, 4th and 5th floors.
24.	" "	" " 6th, 7th, and Roof floors.
25.	1/4" = 1 ft.	Column Schedule.
26.	1/2" = 1 ft.	Slab Details and Stair Details.
27.	" "	Stair Details.
28.	" "	Ground Floor beams.
29.	" "	" " "

NO.	SCALE.	DESCRIPTION OF DRAWING.
30.	½" - 1 ft.	Ground Floor Beams
31.	" "	First " "
32.	" "	" " "
33.	" "	" " "
34.	" "	Second " "
35.	" "	" " "
36.	" "	Third " "
37.	" "	Fourth " "
38.	" "	" " "
39.	" "	Fifth " "
40.	" "	Sixth " "
41.	" "	Seventh " "
42.	" "	Main Roof "
43.	" "	Caretaker's Roof Beams.

PROTECTION OF WORKS & MATERIALS.

All work or materials used or to be used in the building shall be efficiently protected from damage or dirt by the Contractor, and any damage occuring, from whatever cause, shall be made good by the Contractor. All stair wells and similar openings shall be properly railed off and boarded over or otherwise guarded.

ORIGIN OF MATERIALS.

The Contractor is to produce vouchers proving materials to be genuine and as hereinafter described should he be called upon to do so by the Architects.

REMOVAL OF INFERIOR MATERIALS.

Any materials which may be rejected by the Architects to be immediately removed from the site.

TESTING.

Provide for any testing of the various materials to be used in the construction of the building as may be required by the Architects or their representatives. Allow the sum of £30 : 0 : 0 (Thirty pounds) for this, to be deducted in full or expended as directed by the Architects, provided that the cost of testing any materials or work found to be defective shall be borne by the Contractor.

GIVE NOTICE & PAY FEES.

The Contractor or sub-contractor, as the case may be, shall give any or all notices to the City Authorities and pay all fees in connection therewith. In no case will the owners be liable for payment of any fees whatsoever.

BY-LAWS.

The whole of the works are to be carried out in strict accordance with the By-laws of the Wellington City Council.

HOARDINGS.

Erect and maintain all necessary temporary timber hoardings in strict accordance with the City By-laws. No hoardings to be used for purpose of advertising without the written consent of the Architects.

Provide for the proper lighting up of hoardings and for protecting footpaths during carting operations to the satisfaction of the City Authorities.

SCAFFOLDING.

All scaffolding is to be erected to the satisfaction of the official scaffold Inspector.

TEMPORARY OFFICE ACCOMMODATION.

Erect two temporary timber offices, one for Contractor and one for Clerk of Works, each with wood floor, door with lock and key, window and adequate desks with drawers complete with locks and keys. Remove offices at completion. Install in Contractor's office

EXCAVATOR.

For the purpose of this Contract the depths and levels of foundations shown on the Drawings are deemed to be correct, but in execution levels may be varied as required by the Architects; the variation from the Drawings being measured and their cost added or deducted from the contract price, as the case may be, at the schedule rate.

ORDER OF PROCEDURE AND INSTRUCTIONS.

The excavations shall be proceeded with in such manner as the Architects may direct.

The Architects shall have full power and authority to issue such instructions as to the order of proceeding or carrying out the work as they may deem necessary for the guidance of the Contractor, and the Contractor shall be bound by such instructions of the Architects, or any person or persons authorised by the Architects to give instructions.

NOTIFY ARCHITECTS.

The Contractor is to report to the Architect when excavations are ready to receive concrete footings, and obtain their opinion that it is in order to proceed with the work, any extra work to be measured as mentioned above. Any concrete or other work put in before this has been done will be removed.

MAINTAIN EXCAVATIONS.

Secure and maintain the sides of all excavations and keep same clear of water and fallen material; provide and maintain shoring, sheeting, planking, and strutting, also pumping and bailing as required, and remove plant when no longer required.

REMOVAL OF EXISTING FOUNDATIONS.

Where required for new work remove the remainder of the foundation of the buildings originally on site. In the event of such

material shall be well broken up, rammed and consolidated. The top 4" of filling shall consist of rock, well rammed, blinded, rolled and consolidated to the satisfaction of the Architects.

FILLING IN.

The Contractor shall not fill in over any work until it has been approved by the Architects or their representatives. The earth shall then be brought back from the place where it was temporarily deposited and the trenches or other excavations shall be filled up to the height of the surrounding ground level with earth in layers of not more than 6" in thickness. Each layer shall be carefully rammed until it is completely consolidated.

KEEP DRY.

No more ground is to be removed than is absolutely necessary, and all foundations at the lowest level of any part of them shall at all times be kept free from water. The Contractor shall provide all necessary pumps and tackle and do all pumping and bailing necessary to effect this.

PROTECTION.

The Contractor shall provide all necessary boards or coverings and lay same to protect the trenches or excavations from the effect of frost or inclement weather if so required by the Architects.

EXCAVATIONS TOO DEEP.

In the event of the Contractor excavating below the proper level necessary to execute the work in accordance with the drawings, he shall fill up the part so excavated with concrete at his ow expense, the concrete to be made as specified for foundations

RAM BOTTOMS.

Well ram the bottoms of all excavations for foundations and

CLEAR AWAY.

CLEAR AWAY.

All rubbish arising from the works and all superfluous earth not required for the fulfilment of this contract or by the Owners, to be carried away clear of the site, or at the Architects' instructions to be deposited where directed on the site in whole or in part.

BLASTING DISALLOWED.

Should rock be met with in the course of the excavation it must be removed by means of wedges and levers. Blasting will not be permitted except on written permission from the architects, who will require to be fully informed as to the steps taken by the Contractor to ensure the safety of the surrounding property.

UNDERPINNING.

Underpinning of the adjoining building at the Eastern end of the property shall be executed in new brickwork laid in 2-1 Wilsonite cement mortar on concrete foundations. Old bricks, if clean, hard and well wetted may be used at the discretion of the Architect. Alternatively, at the discretion of the Architects, underpinning may be executed in 1, 2, 4, Wilsonite concrete in which the coarse aggregate consists of clean, selected and spawled rubble obtained from the demolition of the old building.

Underpinning shall be carried out in short sections and generally in such a manner as to ensure that no settlement to adjoining buildings can occur. Shoring and strutting shall be of adequate size and properly fixed and shall not be removed until the new foundations have acquired sufficient strength to safely support the load upon them. The Contractor shall be responsible for any damage to adjoining buildings either during the course of the contract or at any future date, which shall be due to settlement or other causes consequent on the improper execution of the underpinning work and shall indemnify the Owners against any claims arising therefrom.

RETAINING WALLS.

Contractor will be responsible for retaining earth at the back of the retaining walls during the progress of the construction work, and will be liable for any damage incurred to adjoining land or property due to collapse of banks, and will be required to make good such damage at his own expense. No strutting or shoring off the new building will be allowed until such part of the building has attained an age of 28 days.

USE OF "WILSONITE" CEMENT.

The concrete for footings, column bases and Basement floors and walls is to be made with "Wilsonite" quick setting cement.

REINFORCED CONCRETE.

SCOPE OF THIS SPECIFICATION.

Wherever applicable this specification shall be taken to apply to concrete covering structural steelwork and to all concrete work, whether reinforced or not.

DRAWINGS.

All the detail working drawings and schedules of reinforcement relative to the reinforced concrete work and necessary for its proper execution will be supplied by the Architects.

RELATIONS WITH OTHER TRADES.

The Contractor shall inspect all preparatory work and any other work against which his material is to be placed and report immediately any defects, etc., that would prevent the satisfactory execution of permanency of his work and he shall not proceed until all satisfactory preparatory work has been corrected. Failure to examine and report will be construed as an acceptance that preparatory work is satisfactory.

The Contractor shall take particular care to protect asphalte until such work has been completely covered by the required thickness of brickwork or concrete and until such concrete has set sufficiently to adequately protect the asphalte against damage. The cost of repairing asphalte work which is damaged subsequent to being laid by the asphalter shall be borne by the Contractor.

PROTECTION OF MATERIALS.

The Contractor shall provide sheds, racks, bins and other storage accommodation for properly protecting all materials and goods brought on to the site for use in the works.

OPENING UP FOR INSPECTION.

The Architects shall be entitled to have any part of the work opened out or cut away for inspection. The cost of this and of making good shall be borne by the Contractor if the work is found to be defective otherwise by the Owner.

LEAVE ALL COMPLETE.

All work shall be left complete and in orderly condition to the satisfaction of the Architects.

TESTING.

Test cylindrical blocks shall be made of every separate portion of the work wherever required by the Architects, and shall be sent to the testing laboratory at the expense of the Contractor. The laboratory testing fees shall be met out of the allowance previously specified. The cylinders for making the test blocks shall be of brass and are to be made in accordance with the drawing supplied by the Architects, and shall be 12" high and 6" diameter. Provide for use of Architects a slump cone of 20 gauge steel, 12 inches high, 4 inches diameter at top and 8 inches diameter at bottom with two handles. Slump tests shall be made throughout the work as directed by the Architects.

SETTING OUT, FOREMAN, PLANT.

The Contractor is to set out the works and provide everything necessary for that purpose, and is to make good at his own expense all errors caused by his negligence or bad workmanship.
The Contractor is to allow for keeping a competent foreman constantly on the works during all working hours.
The Contractor is to provide all materials, labour, tools, plant, scaffolding, tackle, ladders, lighting etc., for the proper and complete execution of the work.

CEMENT.

QUALITY OF CEMENT.

The cement shall be New Zealand Portland and shall be obtainable only from approved manufacturers and shall conform in every aspect with the latest British Standard Specification for Portland Cement.

STORAGE.

The cement shall be delivered ready for immediate use and may be

used direct from the bag. The bags of cement shall be keptin a perfectly waterproof and reasonable air-tight shed, the floor of which is raised from the ground. The cement shall be used, as far as possible, in the order in which it has been stored. The cement shall be stored on the site in such a manner as to permit of easy access for proper inspection and identification of the Architects. Where cement delivered upon the site is to be used within 48 hours it may be stored on a floor raised at least 12" from the ground if it be covered with rainproof tarpaulins.

SAND.

QUALITY OF SAND.

The sand shall be from an approved source and shall be clean and gritty and composed of hard siliceous grains or other materials approved by the Architects.
It shall be free from clay and any animal, vegetable, bituminous or other deleterious matter.

SIZE.

All sand shall pass through a mesh 3/16" square measured in the clear. Sand shall not be used if it contains more than 10% of fine grains that pass a seventy six mesh sieve as used for cement testing, unless the proportion of cement be increased to the satisfaction of the Architects.

COARSE MATERIAL.

KIND.

The coarse material shall consist of crushed blue stone from an approved source and samples must be submitted to the Architects for their approval before any concreting is commenced.

MATERIALS FOR TESTING.

Immediately upon signing the contract the Contractor shall deliver to an approved testing station, to be nominated by the Architects,

sufficient aggregate sand and cement to make six 6" diameter test blocks and for two sealed samples to be retained by the Architects. The condition of the aggregate and sand being approved by the Architects is that the concrete shall, when the cubes are made with a 1:2:3½ mix and 4½" slump and kept under laboratory conditions, attain an ultimate crushing strength of not less than 3,500 lbs. per square inch at 28 days. When the approval of the Architects has been given the aggregate and sand or their source of supply is not then to be changed throughout the contract except with the approval of the Architects in writing.

SIZE.

The coarse material except where hereinafter provided shall be of such a size as will pass through a mesh ¾" square measured in the clear, and be retained on a three-sixteenth inch mesh measured in the clear, and shall be well graded within these limits. For any work of lesser thickness than four inches the coarse material shall pass through a mesh ½" square, and be well graded from fine up to the maximum size.

WATER.

CLEANLINESS.

The water used for mixing cement grout, mortar and concrete is to be provided by the Contractor, and shall be fresh water, free from earthy, vegetable or organic matter, acids and alkaline substances in solution or suspension. No sea or brackish water shall be used.

CONCRETE PROPORTIONS & MIXING.

PROPORTION.

The concrete shall be composed of one part of cement to two parts of sand and 3½ parts of coarse aggregate, field mix, to be measured by volume, the measure of volume to be one cubic foot. For this purpose one cubic foot of cement is assumed to weigh 94 pounds; the sand as used is assumed to be bulked 33% and coarse aggregate as used,

16⅔% upon their respective compacted volumes (dry rodded) and the Architects reserve the right to vary the mix, the price to be adjusted accordingly. The concrete as used upon the works shall attain a minimum ultimate compressive strength of 3,000 lbs 28 days after mixing with 4½" slump. Any work which does not attain this required strength may, at the discretion of the Architects, be required to be cut out and renewed.

MEASURING.

Such methods shall be used for measuring the cement and coarse material as shall enable the proportions of the materials to be readily checked. The methods proposed to be used shall be submitted to the Architects before the work commences and approved by them in writing.

MIXING.

The concrete shall be mixed for not less than 2 minutes and until it is of even colour and even and regular consistency throughout. All mixing shall be done by a batch machine of a design approved by the Architects. The capacity and number of mixing machines provided by the Contractor shall be such as to suit the requirements, in order that all concrete shall be used when freshly made so as to prevent loss of strength by premature setting. The volume of the mixed material per batch shall not exceed the manufacturers' rated capacity of the mixer. Special attention shall be devoted to this point in warm weather when the setting of cement is considerably accelerated. Care shall be taken not to use any concrete showing signs of initial setting.
The method adopted for measuring the water must be to the Architects' approval and such as will enable a complete control of the amount used. The concrete shall be discharged from a mixer on to a watertight platform or floor or into a receptacle.

CONSISTENCY FOR CONCRETE.

For reinforced concrete, the quantity of water added to the other constituents shall be the minimum quantity which will allow of a plastic mixture being made and tamped into all parts of the mould and between the reinforcing members. Great care should be exercised that there is not excess of water and the architects' directions in this respect must be strictly adhered to.

AFTER POURING CONCRETE.

Care shall be taken after concrete is placed in position to keep the concrete damp for several days by the use of wet sacks or other approved suitable means.

WATERPROOFING.

Floors, footings and column bases will not be waterproofed. Walls and columns against which soil will lie upon completion, and where specified in schedule of quantities or shown upon plans to be waterproofed with hydrated lime in the proportion of 7½ lbs. of hydrated lime to 100 lbs. of cement.

CONCRETE UNDER WATER.

All excavation for footing beams and floor slabs below water level are to be kept clear of water during the placing of concrete and for at least one hour after such placing is completed. All care must be taken to prevent scour of the concrete after placing. If in the opinion of the Architects, the conditions after excavation show that it is not reasonably practicable to dewater the foundations, then concrete must be placed under water in a manner approved by the Architects. Concrete shall be deposited by a method that will prevent the washing of cement from the mixture, minimize the formation of laitance, and avoid flow of water until the concrete has fully hardened.

REINFORCEMENT.

REINFORCEMENT.

MANUFACTURE.

Steel shall be of British manufacture and made by the open hearth process.

KIND.

Bars used for reinforcement shall be of mild steel and shall comply with all the conditions and tests of the latest British or Australian Standard Specification for steel for structural purposes.

STORAGE.

All steel shall be stored in an approved manner under tarpaulin sheets or other cover.

ENDS OF BARS.

The ends of all tension bars shall be bent into a U form or otherwise anchored in a manner approved in writing by the Archite

CLEANLINESS.

All metal for reinforcement shall be clean and free from all mill scale, dust and loose rust before depositing the concrete.

COATING.

All metal for reinforcement shall when placed in position be free from paint, oil, cement, grout, or any other material.

DEFECTS.

Any material which develops weak spots, brittleness, cracks or other imperfections will be rejected by the Architects and shall be removed from the works by the Contractor immediately, at his own cost.

WELDING.

No reinforcing steel that is subjected to tensile or shearing stre shall be welded; nor will welding be permitted except as in the following paragraph. The welding of bars subjected to tensile

or shearing stress shall be resorted to only where definitely specified or in difficult cases which cannot be overcome in any other way, and then only when permission of the Architects in respect to each particular weld has been obtained in writing.

BENDS.

Bends, cranks and other labours on steel reinforcements shall be carefully formed, care being taken to keep bends out of winding. Otherwise all rods shall be truly straight.

PLACING.

The number, size, form and position of all steel meshwork, bars, ties, links, stirrups and other parts of the reinforcement shall be placed in exact accordance with the working drawings. Nothing shall be allowed to interfere with the required disposition of the reinforcement, and the Contractor shall make a particular point of seeing that all parts of the reinforcement are placed correctly in every respect and are temporarily fixed where necessary to prevent displacement before or during the process of tamping and ramming the concrete in place. The longitudinal bars in struts, pillars and piles shallbe straight and fixed parallel to each other and to the sides of the forms. The ties, links or stirrups connecting the bars shallbe taut so that the bars are properly braced; the inside of their curved parts shall in actual contact with the bars around which they are intended to fit, and their position shall be exactly as shown on the working drawings.

BINDING WIRE.

The wire used for binding shall be thoroughly annealed soft iron No.16 S.W.G. and the binding shall be done tightly with proper pliers.

SPACERS & CHAIRS.

Reinforced concrete spacers and chairs shall be built in between all longitudinal bars and the boarding to support the reinforcements at the proper distance from the forms. The concrete used for same shall be composed of one part of cement to two parts of sand. Provided that other approved methods may be adopted to effect the same purpose. In beams having two layers of tensile reinforcement the top layer is to be separated from the bottom layer by short ½" dia. rods spaced not more than 3 feet apart.

COVER TO BARS.

The minimum concrete cover to main bars in beams and columns shall be 1½". Where footing beams, etc., are formed underground, the minimum cover to main bars at bottom and sides of beams shall be 3". The minimum cover to bars at back of retaining walls shall be 2". The minimum cover to bars in curtain walls shall be 1". The minimum cover to any bar not otherwise specified shallbe ¾".

LAPS IN BARS.

Laps in reinforcing bars in all beams, slabs, and walls shall extend for 40 dia. of the bar or as shown on drawings. Where walls abutt on floor slabs reinforcement in wall shall be carried into floor slab for 40 dia. in length or as shown on drawings. Similarly where floor slabs abutt against walls, the floor reinforcement shall be carried into walls for a distance of 40 dia. or as shown on the drawings. Column rods shall be taken to with in 3 inches of bottom footing beams and hooked. Reinforcement in columns shall be lapped 24 dia. Lapped joint in column reinforcement shall be made immediately above the floor slabs or as directed by the Architects during the progress of the work.

ANCHORS FOR CONCRETE BLOCK & BRICKWORK.

To all concrete walls shown to be lined with brickwork build in

vertically at not more than 2 ft.3" crs., 22 gauge galv. iron continuous anchor slots. Also build into all concrete work similar anchor slots to which pumice block or brick walls abutt. In the case of double skin walls the outer skin only is to be anchored by this means. The anchor slots are manufactured by Crittall Metal Windows (N.Z.) Ltd. Auckland. See under "Mason" for anchor slots for securing stonework.

CONCRETE MULLIONS.

Concrete mullions not particularly detailed are to be reinforced with four ⅜" dia. rods with ¼" dia. stirrups spaced at 6" crs.

FORM OPENINGS & CHASES ETC.

Form all openings, chases, etc. to accommodate vents, flashings, conduits or other work required by the various trades.
To accommodate H.W. pipes leave slots in the following beams at all floors excepting Basement. Beams No.9; No.1 end span at East end and Nos.6 and 8. Slots to be 7" x 7" constructed directly under the floor slab. All sundry slots formed in concrete are to be made with due allowance for clearance over the pipes as required by the By-laws.

BUILD IN BOLTS.

Build in all bolts as required and specified under the various trades for connecting their work to the concrete.

FINISH OF CONCRETE FLOORS, WALLS ETC.

See under "Plasterer" for finish of concrete floors of Boiler room and Entry thereto, the floors of Elevator shaft and Motor room.

The contractor is to take special care in erecting formwork that the necessary allowance is made for finishes to floors, walls, etc., so that in every case the finished surfaces are as shown

on drawings, whether the concrete is to be finished in one operation or to be afterwards cement rendered, or to have linoleum, terrazzo, glass or any other type of finish.

GRADE AND RECESSES IN LAVATORY FLOORS.

All concrete floor slabs to Lavatories and W.C.'s to be set at grade of 1" in 10 feet to outlets provided in "Plumber". See details for construction of floor slab for accommodation of urinal stall.

GRADE TO ROOF SLABS.

With the exception of the flat roof in area over Ground Floor which is to be cast with proper grades, grading is to be added to the concrete flat roofs, where shown graded on drawings, to a fall of 1" to 10 feet. This grading is extra to the thickness of the slab shown on the structural drawings, and composed of 1 part of cement 3 parts sand and 7 parts pumice measured by volume. The grading is to have a minimum thickness of 1" and finished to a true and even surface in readiness for asphalte.

CONCRETE URN.

Concrete urn at 6th floor level to be pre-cast to detail and secured in position by a $\frac{3}{4}$" dia. bronze bolt complete with nut and washer at upper end and hooked at lower end for engaging around a $\frac{5}{8}$" dia. anchor bar with ragged ends. Bar to be built into concrete walls as indicated. See Sheet No.10.

FORMWORK.

APPROVAL.

The formwork shall be approved by the Architects before concreting is started but the Contractor shall be responsible for its sufficiency.

STRENGTHENING OR IMPROVEMENT.

If at any time in the opinion of the Architects the formwork is insufficiently rigid or in any way defective the Contractor shall strengthen or improve such formwork in such a manner as the Architects shall direct.

MATERIALS & WORKMANSHIP.

All formwork shall be adapted in every respect to the structure and to the required surface finish of the work. It shall be made of sound timber of sufficient thickness, and of a wood which will not stain the finishing plaster work. The formwork shall be fixed in perfect alignment, level and plumb, and securely braced so as to be able to withstand without displacement, vibration or movement of any kind, the weight of construction and the movement of men, materials and plant.

JOINTS.

All joints shall be close enough to prevent undue leakage of liquid from the concrete.

REMOVAL.

The formwork shall be so arranged as to permit of easing and removal without jarring the concrete. Wedges and clamps shall be used wherever practicable, instead of nails.

TIMBER TO BE THICKNESSED.

All formwork shall be thicknessed with edges shot and close joints.

REUSE.

Care should be taken that when any formwork is re-used its surfaces shall be smooth and clean.

ANGLE FILLETS.

The formwork shall be chamfered on the angles so as to form splayed fillets of at least 1 inch width on both the exterior and re-entrant angles of the concrete whether shown on detail drawings or not.

SIDES OF BEAM BOXES.

All moulds for beams and allied members shall be designed and constructed so that the sides may be removed without interferences with the remainder of the formwork.

STRUTS & SHORES.

The supporting struts shall be adjusted and fixed in position by suitable means. They shall be placed upon proper sole plates and shall be so arranged that they may be lowered gently in the striking of the formwork.

COLUMN MOULDS.

All moulds for rectangular pillars shall be designed and constructed with one side open from bottom to top and the open side shall be filled in as successive layers of concrete are placed and tamped into position.

EXAMINATION BEFORE CONCRETING.

Immediately before any concreting is commenced all formwork shall be carefully examined to see that all dirt, shavings, sawdust, and other refuse have been removed by brushing or by washing with a hose. All traps and temporary doors shall be carefully made good before any concrete is put into place.

PREVENTION OF ADHESION.

The inside of the moulds shall be treated with a coat of lime-wash or other approved material, if so directed. In warm weather the inside of the moulds shall be wetted shortly before concreting is commenced.

FERRULES.

Ferrules shall be used for all work where temporary form-bolts are required. The holes shall be large enough for the bolt to be removed easily.

RESPONSIBILITY FOR REMOVAL.

The responsibility for the removal of the whole or any part of the formwork shall rest entirely with the Contractor, who must nevertheless be guided by the opinion of the Architects and such removal shall be delayed if the Architects shall consider it needful for the security of the work.

SUPERVISION OF REMOVAL.

The work of striking and removal shall be conducted under the personal supervision of a competent foreman in the employment of the contractor.

TIME FOR REMOVAL.

The following minimum intervals of time shall be allowed between placing concrete and striking moulds:-

Slabs	7 days
Walls and columns	4 days
Beamsides (if bottoms are propped)	4 days
otherwise	14 days
Beam bottoms	14 days

EMERGENCY PROPS.

If it be intended that any portion of the structure shall be used for carrying heavy weights within a period of six weeks from its completion, emergency props shall be left in for such time as the Architects may direct.

CONCRETING.

WORKMANSHIP.

All concreting shall be done as quickly and efficiently as possible, to the satisfaction of the Architects.

CONVEYANCE.

The concrete shall be conveyed to its place in such manner that there shall be no separation of the different ingredients, or, in cases where such separation occurs inadvertently, concrete shall be remixed before putting in place.

PLACING IN POSITION.

All concrete shall be placed in its final position in the work as soon as possible after mixing. In no case must more than half an hour be allowed to elapse before this is done. The concrete must be sufficiently tamped round the steel reinforcement and into all parts of the formwork. Care shall be taken that the steel reinforcement is thoroughly surrounded by the concrete and that no voids or cavities are left. Care shall be taken that the reinforcing bars projecting from concrete which has recently been put into position are not shaken or disturbed.

STOPPAGES.

If a cessation of work is unavoidable the break shall be made in the centre of the span of slabs and beams. The joint with the new concrete shall be square to the main reinforcement. It is of great importance that no joint should be made towards the ends of beams or slabs or close to the point of application of a concentrated load. Provided that joints may, however, be made over a pillar with the sanction in writing of the Architects.

STOPS IN COLUMNS.

In concreting pillars, work shall only be stopped not less than 1 inch and not more than 3 inches below the bottom of lowest

portion of beams, or splayed connection of same at point of junction with the column.

RE-STARTING.

In re-starting work which has been stopped, the foreman shall personally supervise the making of the joint. Before depositing fresh concrete upon or against any concrete which has already hardened, the surface of the hardened concrete shall be hacked and roughened, thoroughly cleaned from all foreign matter, and well washed with clean water. Before the concreting is commenced the hardened surface shall be covered with mortar composed of 1 part of cement to 2 parts of sand not less than ½" thick. Special care shall be taken to ram the mortar and fresh concrete thoroughly upon and against the hardened concrete.

END COVER OF BARS.

The ends of bars in all cases shall be covered with not less than 2 inches of concrete.

HOLES FOR BOLTS ETC.

Holes for bolts or for any other purpose shall be moulded during the work of concreting, in the positions shown on the working drawings. Exact position to be obtained from General Contractor wherever necessary.

WETTING & PROTECTION.

When concreting in hot weather the surface shall be kept moist as long as may be required by the Architects. The work shall be protected where practicable from the direct rays of the sun.

DEFECTIVE WORK.

Any defective concrete shall be cut out and the work re-constructed. No concrete thus cut out shall be re-used. The steel shall only be re-used by special permission.

SHOCK & VIBRATION.

Care shall be taken that as far as possible no shock or vibration

shall reach the concrete during the process of setting.

FAIR FACES.

The faces of concrete work shall be left sound and solid, free from voids or excrescences.

PATCHING.

No "patching" of any concrete facing shall be carried out except after inspection by and with the express permission of the Architects. When permission is granted such "patching" shall be made with cement mortar in the proportion of 1 part cement to 2 parts fine sand.

STRUCTURAL STEEL.

MACHINE JOISTS.

Provide and fix at the direction of the Elevator contractor and to his and the Architects' satisfaction 7 machine joists 12" x 5" x 30 lbs., with $\frac{3}{8}$" diameter bolts and bevelled washers. Allow 4 bolts and washers for each joist.

BRICKLAYER.

BRICKS.

Generally to be hard, square, sound and well burnt red "commons" of approved manufacture.

CELLCONCRETE BLOCK PARTITION WALLS.

Where indicated on plans construct partition walls of Cellconcrete blocks of Messrs. Christiani & Nielsen (N.Z. Ltd.) manufacture P.O. Box 451, Wellington.

PAVEMENT LIGHTS.

To be approved British Luxter prism lights set in 3-1 Portland cement concrete with the addition of Pudlo waterproofing. Reinforce concrete between lights with two ⅜" dia. rods. Point lights in mastic and leave clean and watertight at completion.

MORTAR.

Mortar unless otherwise specified to be composed of 4 parts sand 1½ parts hydraulic lime well mixed, tempered, beaten together, and gauged with one part Portland Cement to 4 parts of the above added immediately before use.

METAL TIES TO WALLS.

Wherever brick or cellconcrete walls abutt or run parallel with concrete columns or walls they are to be connected with 6" long NO.12 gauge galv. iron dovetail anchors, spaced at not more than 18" crs., vertically and 2 ft.3" horizontally. Anchors to be fitted into No.22 gauge galv. iron continuous anchor slots built into concrete. The metal anchors and slots are manufactured by Crittall Metal Windows (N.Z.) Ltd. All anchors are to be well bedded in mortar.

METAL BOND.

Build into all brick and cellconcrete block walls, one strip of Lysaght Bros. 2½" x 1" x 19 gauge galv. iron wire reinforcement

laid at every fifth course in brickwork and every third course in concrete block. Bonding strips to be full length of walls, turned down into vertical joints at ends and well flushed in mortar throughout. (Derbyshire & Co., 180 Wakefield St., Wellington, agents for bonding strips).

FINISHED SURFACES.

All walls to be plastered to be left rough to ensure a good key. The brick walls to Boiler room are to have the joints cut off flush and slightly rubbed with a piece of bagging used over a wood block.

POINTING.

Point all flashings, frames etc., with 2-1 cement mortar.

CAVITY WALLS.

Keep all cavities clear of mortar droppings and carefully flaunch up and grade bottoms of cavities to weep holes formed by the omission of mortar in a vertical joint at regular intervals of not more than 3 ft. apart.

CHIMNEY FLUE LININGS.

Line the flue from the Boiler room with 14" x 14" internal size, 1½" thick fireclay pipes made in lengths of about 2 ft. 0". These linings to be made by the Auckland Gas Co. the order for which is to be placed immediately the contract is signed in order that the time taken in their manufacture will not delay the contract. Tightly wrap around each flue pipe, before setting brickwork, approved crimped celular packing paper. Lap edges of paper about 2" and secure in position by tying with cord.

PAVING SLABS ON FLAT ROOFS.

After the asphalting work is complete on the main, Caretaker's and Motor room roofs set 3" thick pre-cast pumice concrete paving slabs

slabs over the whole areas. Slabs to be of size not larger than 3 ft. x 3 ft. evenly bedded on bitumen with ¾" wide bitumen joints. Cut slabs to accurately fit parapet walls and columns etc.

CONCRETE PIPE DUCT.

(See Sheet No.8) Provide under Ground Floor slab an air duct constructed of approved stock manufacture 12" internal dia. reinforced concrete pipes with spigot and socket joints. Joints to be made with 3-1 Portland cement mortar neatly trowelled. Support pipes on galv. M.I. hangers and collars from floor slab as shown. All ironwork is to be heavily galv. after manufacture.

BUILD IN.

Build in as directed all window and door frames all metal and other fittings required, bedding fully and strongly.

MASON.

RELATIONS WITH OTHER TRADES.

The Contractor shall inspect all preparatory work and any other work against which his material is to be placed and report immediately to the General Contractor, any defects, etc., that would prevent the satisfactory execution or permanency of his work and he shall not proceed until all unsatisfactory preparatory work has been corrected. Failure to examine and report will be construed as an acceptance that preparatory work is satisfactory.

SEPARATE PRICES FOR ALTERNATE MATERIALS.

The Contractor is requested to submit in his tender separate prices for the supply, working and fixing complete of each of the kinds of stone specified hereunder.

ALTERNATE KINDS OF STONE PROPOSED TO BE USED.

The type of stone to be used will be finally selected from the following kinds:

A. Tasmanian Granite equal in all respects to a sample supplied by J. Tait Ltd. 24 Dundas St., Christchurch.

B. Red Peterhead Granite (Scotland).

EXTENT OF WORK.

The stone will be employed externally only, and is confined, as indicated on the drawings, to the various entrance steps and paving thereto and to the Featherston and Johnston Street facades from 1" below pavement level to a height of approx. 19 feet.

WORKING OF STONE.

The following specification for the working and setting of stone applies equally to both kinds "A" and "B".

FINISHED SURFACES.

All exposed surfaces of stone steps and paving and the column bases are to be fine axed. All other stonework throughout is to have exposed portions polished, excepting the V-shaped cuts which shall be fine axed.

SAMPLES.

A sample of the kind of stone selected to be used, of size 6" x 6" x 6" finished on the faces in the manner above specified is to be furnished to the Architects and approved by them before the work is commenced. The approved sample will then be taken as the standard of material and workmanship required.

STONE YARD.

All stone to be worked in an approved Mason's yard where inspections may be made by the Architects or their representative

WORKMANSHIP ETC.

To be of the highest grade. Arrises to be sharp and straight and all features carefully membered strictly to detail.

DOOR SILL TO N.Z.INSURANCE CO. OFFICE.

To have a $\frac{3}{8}$" wash in the width of the step.

BACK JOINTS & CUTTING.

All stones are to be sawn on the back. Peform all cutting required to accommodate metal anchors.

FITTING.

All stones to be fitted dry before fixing in order to discover any irregularities.

JOINTS.

All joints shall be located exactly where shown on the drawings unless changed by special instruction by the Architects to whom any uncertainty in jointing is to be referred. External angle joints to be formed with quork mitres. Butt joints to be as

thin as possible and not more than $\frac{1}{8}$". All back joints between the stone work and the concrete walls are to be filled solid with 3-1 Portland cement mortar. The mortar in butt joints is to be kept back $\frac{1}{2}$" from the face of the stone in readiness for pointing.

METAL ANCHORS & SLOTS.

For the proper tying of stonework provide and build into concrete walls 22 gauge galv. iron dove-tail masonry anchor slots set vertically in rows not exceeding 2 ft.0" apart.

Secure each stone to metal slots by not less than two 3" x 1" x $\frac{1}{8}$" copper dovetail anchors bent one end to engage into slot cut into edge of stone.

Metal anchors and slots are tobe dipped in pure hot bitumen before building into the work.

In the case of the top course of stones four anchors are to be provided to each stone. Run anchors in neat cement.

Support stone slabs over window openings on a 3" x $1\frac{1}{2}$" x $\frac{1}{4}$" continuous bronze angle drilled at 3 ft. crs., for securing to concrete by 5" x $\frac{3}{8}$" bronze rag bolts.

POINTING.

Point all joints after masonry has set with one to one coloured mortar.

DEFACEMENT.

Any defective stonework is to be removed on detection and replaced. No patching or concealing of defects with composition of any kind or by pieces will be permitted. On completion of the contract each and every piece of stone is to be sound and perfect.

CLEANING DOWN.

At completion all exposed surfaces of the stonework are to be carefully cleaned down so as to entirely remove all dirt and mortar stains. The use of acids will not be allowed in cleaning down.

PROTECTION.

Adequately cover over and protect from damage all stonework, until completion of the building.

ELECTRICIAN.

This work shall be the subject of special tendering to be arranged by the Architects.

Allow in tender the nett sum of £1500 :0 : 0 (Fifteen hundred pounds) for the complete installation of electric lighting and electric bell system and two exhaust fans in Basement.

The Contractor appointed for the electrical work shall forthwith become a sub-contractor under the General Contractor, and shall be under his direction in all matters as far as their work affects the structure or time of completion, of the contract and shall receive payment through the General Contractor in accordance with the terms of the General Contract.

HOT WATER HEATING INSTALLATION.

Allow in tender the nett sum of £2,200 : 0 : 0 (Two thousand two hundred pounds) for the installation complete of a hot water heating system comprising boiler, circulation pipes and radiators. The contractor for this work will be appointed by the Architects and shall forthwith become a sub-contractor under the General Contractor and shall be under his direction in all matters as far as their work affects the structure or time of completion of the contract and shall receive payment through the General Contractor in accordance with the terms of the General Contract.

ELEVATORS.

Allow the nett sum of £7,000 : 0 : 0 (Seventhousand pounds) for electric elevator installation comprising the following:-

Three elevators including all electrical machinery, cages, cage and landing gates and doors and all other attendant fittings including erection costs, but excluding R.S.Js. to carry machinery and metal jambs and Builder's trim around openings.

The General Building Contractor shall construct the lift wells perfectly plumb to the dimensions given. All door openings, nibs and sills etc., are to be formed strictly in accordance with detail drawings specially applying to this portion of the work.

The concrete slab at top of elevator shafts is to be constructed with apertures and provision is to be made for the reception of steel joists.

ASPHALTER.

RELATIONS WITH OTHER TRADES.

The contractor shall inspect all preparatory work and any other work against which his material is to be placed and report immediately to the General Contractor anydefects, etc., that would prevent the satisfactory execution or permanency of his work and he shall not proceed until all unsatisfactory preparatory work has been corrected. Failure to examine and report will be construed as an acceptance that preparatory work is satisfactory.

THE WORK.

Cover all concrete flat roofs with two ½" thick layers of Neuchatel Asphalte turned up 6" against all upstands and into window sills where indicated.

Waterproof all floors and walls to Base ment portions of the building and lower portion of Elevator wells with two ½" thick layers of Neuchatel Asphalte.

The work is to be done by the Neuchatel Asphalte Co.

The asphalte on roofs is to finish smooth, properly graded and free from roller marks or blemishes of any kind.

SMITH & FOUNDER.

RELATIONS WITH OTHER TRADES.

The contractor shall inspect all preparatory work and any other work against which his material is to be placed and report immediately to the General Contractor any defects etc., that would prevent the satisfactory execution or permanency of his work and he shall not proceed until all unsatisfactory preparatory work has been corrected. Failure to examine and report will be construed as an acceptance that preparatory work is satisfactory.

REINFORCING STEEL.

See "Reinforced Concrete".

NOTE. Where copper abutts other metals all abutting surfaces to receive 3 good coats of bitumastic paint.

STEEL WINDOWS & DOORS.

Provide the nett sum of £2,749 : 0 : 0 (Two thousand seven hundred and forty nine pounds) for the whole of the steel windows and doors throughout. This sum includes the cost of supply and delivery on to the site. Allow for taking delivery and fix in position in accordance with instructions and bed and point with approved mastic specially made for the purpose.

BRONZE SASHES & LAYLIGHTS.

Allow the nett sum of £137 : 0 : 0 (One hundred and thirty seven pounds) for bronze sashes and laylights over Entrances in Johnston Street. Allow for taking delivery and building into position complete

BRONZE WALL VENTILATORS.

Allow the nett sum of £31 : 3 : 8 (Thirty one pounds three shillings and eightpence) for supply and delivery of six in all 10" x 6" heavy cast bronze ventilating grilles in stall-boards, three grilles each 36" x 11" in wall to Johnston St. and two grilles to detail in wall of N.Z.Insurance Co. general office. Grilles to be made to detail with lugs cast on for fixing. This sum includes Sales Tax.

KICKING PLATES.

Supply and fix to both sides of Doors No.4 bronze kick plates. Plates are to be 1/16" thick, with upper edges bevelled and secured by ½" bronze head coach screws and washers spaced at about 4" crs. Provide to Vestibule side of Door No.6 bright metal kick plates the cost of which is included in a separate lump sum allowance covering all bright metal work.

BRONZE LETTERS.

Allow the nett sum of £115 : 15 : 3 (One hundred and fifteen pounds fifteen shillings and threepence) for the cost and delivery of 93 (ninety three) letters for the title of the building. Allow in addition for the cost of fixing in position. The letters are complete with lugs or bolts for securing to wall. This sum includes Sales Tax.

WEATHERBARS.

To thresholds of doors No.5 and 8 provide 2" x ½" W.I. weather bars built into sills to approval.

SOOT DOOR TO CHIMNEY FLUE.

Provide and build into base of chimney flue a ⅜" thick cast iron soot door and frame. Opening to be 9" x 9" in clear and frame 5⅝" deep.

GALVANISED PIPE HANDRAIL BALUSTRADING.

The stairs to Boiler room, to be fitted with galv. iron pipe handrail balustrading with handrail 2 ft.6" above nosings. Handrails to be fixed to both sides of lower flight. Handrails and intermediate rails to be 1½" dia. with 1½" dia. standards spaced as indicated. All rails and standards are to be complete with all necessary galv. special fittings such as angles, tees, flanges, etc. Base of standards are to be grouted 4" into concrete. Where handrails are adjacent to walls they are to be secured thereto by 1" dia. curved

brackets complete with T-fittings and wall flanges for screw fixing to plugs. Brackets to be spaced at not more than 3 ft. 6" crs. apart.

W.I. BALUSTRADING TO STAIRS.

Main Stairs.

The amount of W. ironwork to these stairs is limited to the first flight from the Ground Floor Vestibule. (See details). The bright metal handrail and fixings for same are included in a separate lump sum allowance specified in "Carpenter & Joiner". The W.I. members forming the open balustrading to be constructed to detail. All members are to be zinc sprayed after manufacture and the surfaces rubbed down to give a smooth and even ground for "Painter's" finish.

Grout standards not less than 4" into concrete stairs.

Subsidiary Stairs.

Provide a continuous W.I. balustrade to these stairs constructed with $\frac{5}{8}$" x $\frac{5}{8}$" balusters, two to each tread and $1\frac{1}{2}$" x $\frac{1}{2}$" continuous seating bar drilled at not more than 18" crs., for screw fixing wood handrail. Finish seating bar at upper end by truning down 1" for screw fixing to plug set into wall. At lower end finish balustrade with newel twisted to detail cut of $1\frac{1}{2}$" x $1\frac{1}{2}$" W.I. with ragged end for grouting 6" into concrete. Balusters are to be welded to seating bar at upper end and grouted 3" into concrete at lower end.

PARAPET BALUSTRADE RAIL ON ROOF.

To be constructed to further detail. Rail to be 2" dia. galv. W.I. with welded end joints. Support rail by 2" x $\frac{5}{8}$" W.I. shaped standards ragged at lower ends for grouting not less than 3" into wall and fitted at upper ends with a $2\frac{1}{2}$" x $\frac{5}{8}$" flange welded to same. Secure rail to standards by 3" x $\frac{3}{8}$" dia. brass

bolts set through rail and flange.

Each standard is to be zinc sprayed after manufacture and after all cutting and drilling has been performed.

Standards to be spaced at not more than 4 ft.6" apart and are to be evenly spaced in each length of wall to approval.

ACCESS LADDER TO FLAT ROOFS.

From Ground floor Area provide a W.I. ladder to give access to the flat roof over adjacent Lavatories. Ladder to be constructed with 1¾" x ½" strings and ¾" dia. rungs spaced at 15" crs. Strings to be 15" apart with the upper and lower ends bent around for building 3" into wall. All members to be strongly welded together. Provide similar ladders from Main roof to Caretaker's roof and from this up to roof of Machinery Room.

STRUCTURAL STEEL WALL FRAMING.

The dividing wall shown betweenthe Passenger and Goods Elevator is to be framed with 3" x 1½" structural steel channels fixed horizontally at not more than 6 ft. crs., apart. The ends of channels are to be built 3" intowalls with 3-1 cement mortar. Before building the channels into position the Contractor is to collaborate with the Elevator Contractor and arrange with him for the fixing of elevator guides to the channels. Provide for 1½" x 1½" x ¼" angles, three to each Lavatory partition wall with ends built into walls as above.

STRONG RM. DOORS.

Allow the nett sum of £36 : 15 : 0 (Thirty six pounds fifteen shillings) each for two Chubb's tenant Quality Strongroom Doors, size 2. These doors to be built in, one on 1st. floor and one on 3rd floor.

Allow the nett sum of £20 (Twenty pounds) for the cost of a small strong room door to be built in on the 3rd floor.

Allow the nett sum of £100 (One hundred pounds) for the cost of a doo to be built into the strongroom in Basement.

Allow in addition for taking delivery of the doors and for building into position complete.

STRUCTURAL STEEL TRANSOMES.

See under "Show Windows to Showroom" in Carpenter & Joiner for structural steel channels and their connections over show windows.

GENERAL W.I. WORK.

Provide where shown or required all building in bolts. Bolts generally for securing wood plates to be $\frac{3}{8}$" dia. and spaced at not more than 4 ft. crs. Also provide for all other sundry W.I. work required by the several trades throughout. The Contractor is referred to the other trades for work of this description.

METAL REVEAL LININGS TO GOODS ELEVATOR OPENINGS.

Provide and fix seven in all architraves and reveal linings to Goods Elevator Openings constructed of 1/16" thick steel machine bent to accurately fit the work and with architrave mitred and welded at angles. Secure linings in position with galv. iron screws spaced at 9" crs., and set into dovetail Jarrah blocks. The metal linings are to be zinc sprayed after manufacture.

CAST BRONZE CAPS TO COLUMNS.

Allow the nett sum of £39 : 1:3 (Thirty nine pounds one shilling and threepence) for the supply and delivery only of two cast bronze caps to columns in Featherston St. Entrance. In addition allow for fixing in position complete. This sum includes Sales Tax.

BRONZE ANGLES FOR SUPPORTING STONE LINTOLS.

Build in 3" x $1\frac{1}{2}$" x $\frac{1}{4}$" bronze angles to support stone lintols over openings. Drill angles at 3 ft. crs., for securing to concrete with $\frac{3}{8}$" dia. bronze rag bolts.

ALUMINIUM CRESTING TO JOHNSTON ST. ENTRANCE.

Allow the nett sum of £41 : 9 : 6 (Forty one pounds nine shillings and sixpence) for supply and delivery of Cast Aluminium Cresting to face of canopy over Johnston St. Entrance. In addition allow for erection and fixing complete with bolts, the cost of which is included in the above allowance. This amount includes Sales Tax.

CARPENTER & JOINER.

RELATIONS WITH OTHER TRADES.

The Contractor shall inspect work of any other trade against which his material is to be placed and report immediately to the General Contractor any defects, etc. that would prevent the satisfactory execution or permanency of his work, and he shall not proceed until all unsatisfactory preparatory work has been corrected. Failure to examine and report will be construed as an acceptance that preparatory work is satisfactory.

PRELIMINARY.

The whole of the work shown and figured on the drawings and described in the Specification and Schedule of Quantities is to be done in a workmanlike and in the best and most approved manner. Drawings are typical only and all corresponding work not specially detailed or described is to be done in a similar manner. Throughout this Contract any work which in the opinion of the Architect or their representatives is not in accordance with this specification, shall be removed and replaced and the expense of such replacement shall be undertaken by the Contractor.

All rough timbers to be cut full size specified or shown. All joinery whether detailed or otherwise is to be construed according to the best known methods of joinery woodwork, by mortice, tenon, dovetail, tongued and grooved mitres, etc.

All shifting beads, glazing fillets, movable boards etc., to be screwed with brass screws and cups.

Upon signing the contract, all mouldings, skirtings, etc., to be run and all joinery put into frame and stacked in a dry room until required.

Throughout this specification the definition of classes of

timber as published by the Wellington Sawmillers' & Woodware Manufacturers Association has been adopted. Only seasoned heart of timber to be used and all classes to be the best of their respective kinds. Generally "Clean Heart" timber is to be used for joinery and "Building B" heart timber for carpenters framings. Unless otherwise specified no framing or furring timbers to be more than 18" centre to centre. All exposed timber to be dressed. Cut for and wait on all other trades and provide for and fix all necessary fixing blocks in Heart Totara (bevelled where required) for proper fixing of joinery or stopping of plaster. Where wall plugging is required "Metalset" or similar approved wall plugs to be used. All glazing in woodwork to be secured with moulded fillets.

FORMS FALSEWORK ETC.

See "Reinforced Concrete".

VENTILATOR SHAFT OVER GR. FLOOR ROOMS.

(See detail drawings Sheet No.14).

Construct louvre ventilator frames out of D.Ht. Totara with sills weathered, grooved and throated out of 6" x 3" and beads, stiles and mullions out of 4" x 3". Groove stiles and mullions at 45 degree angle for housing ends of $\frac{3}{4}$" thick louvre slats. Set all joints together in thick lead and oil paint.

Frame for roof over ventilator shaft with dressed 3" x 2" B.H.R. rafters spaced at 18" crs; birdsmouth rafters over louvre frame and over 4" x 2" Ht. Totara plate cement bedded and secured to concrete wall by $\frac{5}{8}$" dia. rag bolts spaced at not more than 3 ft.6" crs. Sark the roof with 6" x 1" dressed one side B.H.R. material.

TANK STANDS.

Provide where directed on roofs four in all wood stands to carry the various water supply tanks specified in "Plumber".

Stands to be constructed of best quality Ht. Jarrah with 4" x 3" bearers set upon roofing and 4" x 2" decking spaced ½" apart.

CLOTHES LINE FIXTURE.

Provide where directed on roof a revolving clothes line fixture of approved standard manufacture with the exception of the supporting post which is to be out of 5" x 5" Ht. Jarrah. Secure the base of post to concrete roof slab by four 8" x 8" x 4½" x ½" W.I. angles each secured to concrete by two ⅝" dia. bolts of sufficient length to extend through the roof slab; each pair bolts to be complete with 5" x 3" x ½" back plate, nuts and washers. Secure post to iron base fittings with two 7" x ¾" bolts as directed.

FLAG POLES.

Provide and fix three flag poles out of 9" x 9" first class Oregon selected whole timber shaped to the circular, entasised towards top and with 10" turned truck each complete with approved bronze sheave, galv. cleats and proper length of galv. wire halyards. Secure each pole to concrete wall by two 2" x ⅜" galv. W.I. U-straps with each end fixed by ¾" dia. rag-bolts complete with nuts and washers. Bases of poles to have 6 lbs. lead seatings set upon concrete upstands.

FALSE CEILINGS.

See typical details Sheet No.11.

With the exception of the Basement ceiling slab, machinery room and caretaker's washhouse false ceilings are to be provided at varying heights under all other concrete floor, roof and portions of stair slabs throughout. Framing for ceilings to be Building Ht. Mimu. Generally suspend 4" x 2" framing spaced at not more than 4 ft.0"

crs.

from concrete work above by galv. iron hangers for the cost of which allow the nett sum of 6/- per dozen. Arrange with Concretor for fixing and placing hangers in proper position. Upper ends of hangers to have fish-tail turned out and wired to the general reinforcement so that the hanger will be bedded into the concrete not less than 2½". Secure joists to hangers each with four nails. Provide 3" x 2" joists spaced at not more than 24" crs. across the 4" x 2" framing and secure one to the other by screw-fixing to 6" x 1" x ⅛" galv. W.I. twisted straps, one to each intersection. Provide 3" x 2" noggings spaced at not more than 24" crs., and trim for handholes where required. Where framing is shown against concrete it is to be secured by ⅝" dia. rag bolts spaced at not more than 3 ft.0" crs. Build into concrete stair soffits where shown 1" Jarrah dovetail grounds for securing Tentest linings.

SUNDRY WOOD FRAMED CONSTRUCTION.

Ventilating Duct from Basement.

Frame for air duct above Ground Floor slab in N.Z. Insurance Co. General Office with 3" x 2" B.H.R. Secure framing to concrete floor and wall with ⅝" dia. rag bolts and cut in one row of nogging for linings. Internal size of ducts to be 24" x 10".

Dwarf Walls in Lavatories.

(See Sheet No.15).

Frame for dwarf walls forming pipe ducts in Lavatories with 3" x 2" Kauri. Secure plates to concrete work by ⅝" dia. rag bolts spaced at not more than 4 ft. 0" crs.

BALUSTRADE WALLS TO STAIRS.

Handrail balustrade walls to Main Stairs to be constructed with 3" x 2" M. Oregon dressed two sides. Bottom plate to be

to be secured to concrete stairs by ⅝" dia. bolts spaced at not more than 2 ft.6" crs. Studs to be spaced at not more than 16" crs. each one fixed to bottom plate by two 18" x 2" x ⅛" W.I. angle brackets drilled at 3" crs., for screw fixing to woodwork. Upper ends of studs to be tenoned to top rail and securely spiked. To both sides of wood framing provide 16 gauge, ½" mesh expanded metal of the Midland Expanded Metal Co. Ltd. manufacture.

FRAME WALL OVER SHOW WINDOW.

Over first show window in Vestibule construct framed wall with 4" x 2" plates and studs supported off steel channel. Studs to be N. Oregon spaced at not more than 18" crs., with one row of nogging.

CEILING LIGHTS UNDER GR. FLOOR VENTILATOR SHAFT.

To be constructed of C.Ht. Rimu to detail. Light to be in four sections with frames solid rebated out of 3" x 2", set flush with beam soffit and secured in position by brass screws set into plugs spaced at not more than 18" cs. Frames to be sub-divided by rebated mullions out of 3" x 3" into equal sized units of not more than 2 ft. 6" in length. In each frame provide two pivot hung ventilating sashes with rebated frames out of 2" x 2" square framed on upper side, rebated on under side with loose splayed glazing fillets for securing glass. Fillets to be screw fixed. Fix pivot hinges and operating hardware to sashes, the cost of which is included in "Ironmonger".

WOOD FRAMED PARTITION WALLS.

Where interior walls are not shown hatched or otherwise designated on plan they are to be constructed of N. Oregon with members of the following sizes:

Studs generally 4" x 2" spaced at 16" crs.

Studs to angles and openings 4" x 3"

Jack studs between false ceiling level and concrete slab 4" x 2" 24" crs.

Top and bottom plates 4" x 2"
Nogging in three rows 4" x 2"
Trimmers over openings generally 4" x 3"
" " " wider than 4 ft. 4" x 4".

Bracing cut into studs and noggings at 45 degree angle in each bay of framing 6" x1".

Secure plates and studs against concrete walls and columns by ⅝" dia. rag bolts spaced at not more than 4 ft.0" crs.

All members to be securely spiked together and trimmers to be housed at ends into studs.

Where shown on 3rd and Caretaker's floors construct double stud partition walls. The framing generally to be all as above specified, but the studs in each wall to be staggered. Line between walls with Cabot's triple ply quilt. Lap edges of quilt and secure to framing with galv. clouts in accordance with the Manufacturer's instructions.

DOORS & FRAMES.

Generally.

All doors and frames to be constructed to detail. The thickness specified is the finished thickness of the door. All wood members to be properly framed together and prepared for paint or natural finish. Panel moulds to be run solid on the framing of the doors. For kick plates see under "Smith & Founder". Where doors and frames are specified to be sheathed with metal see under "Bright Metal Work" for the cost of such work.

Where interior doors are shown in pumice concrete walls the finished door frames are to be fixed into 4" x 1½" rough frames. Rough frames are tobe built into the walls during their construction and are to be secured in position by 2" x ⅛" x 6" galv. iron lugs built into wall joints, two to each stile.

Where finished door frames are shown set into walls without rough frames they are to be secured by galv. iron ties built into the structure (three to each stile) and ¾" dia. iron dowels, one to each stile set 2" into floor.

HANGINGS & FASTENINGS.

See "Ironmonger" for all hangings and fastenings in connection with same. Contractor to fix same and leave all in perfect working order. All doors over 6 ft. inheight to have 1.1/2 pairs hinges to each leaf.

NETT SUM FOR COST OF DOORS NO.1, 2 and 3.

Allow the nett sum of £535 : 1 : 6 (Five hundred and thirty five pounds one shilling and sixpence) for the cost of Doors No.1, 2 and 3 and frames specified below to be sheathed in bronze metal fixed complete.

DOORS NO.1.

To be size 8 ft.1" x 7ft. 8" x 2½" in two leaves with rebated meeting stiles. Each leaf square framed in single panel with loose glazing fillets both sides. Frame to be solid rebated out of 5" x 4".

All portions of the doors and frame exposed to view, and the glazing fillets, inside and out to be sheathed with bronze metal. The glazing fillets to be secured by screws spaced at not more than 9" crs. Doors and frame to be constructed of best quality Redwood.

DOORS NO.2 & 3.

Door No.2 to be size 7ft. 5" x 8 ft.0" x 2½" square framed in thirty panels as indicated.

Door No.3 to be size 6 ft.10" x 3 ft.5" x 2" square framed in five panels.

Frame to be constructed in one unit to accommodate both doors No.2 and 3 with solid rebated stiles out of 7" x 4" and mullion

and head out of 8" x 8".

Doors and frame inside and out to be sheathed with bronze metal.

The panels to No.2 door to be moulded externally.

DOORS NO.4.

To be size 7 ft.3" x 5 ft.7" x 2" in two leaves. Each leaf in single panel with metal glazing fillets screw fixed both sides. Stiles to be rounded on edge to detail. Hang each leaf on patent double action spring hinges (the cost of which is included in "Ironmonger") to moulded and hollowed frame out of 7" x 2".

Doors and frame to be constructed of Tasmanian Blackwood.

DOOR NO.5.

To be size 7 ft. 3" x 3 ft. 5" x 2" square framed in single panel. Hang door to solid rebated frame out of 5" x 4". All external portions of the door and frame, and the glazing fillets both inside and out to be metal sheathed. The door and frame to be constructed of Tasmanian Blackwood.

DOOR NO.6.

To be size 7 ft.1" x 3 ft.9" x 2" in two leaves with rebated and moulded meeting stiles. Each leaf square framed in single panel with metal sheathed glazing fillets screw fixed both inside and out. Hang doors to solid rebated frame out of 4" x 4". All portions of the frame exposed to view on Vestibule side to be metal sheathed. Doors and frame to be Tasmanian Blackwood.

DOOR NO.7.

To be size 7 ft.3" x 2 ft.8" x 1¾" framed in three flush panels. Framing to be Tasmanian Blackwood and panels in Walnut veneer. Hang door to solid rebated frame out of 6" x 2". The portion of the frame visible on the Vestibule side to be metal sheathed.

DOOR NO.8.

To be size 6 ft.10" x 2 ft.6" x 1¾" square framed in 1st Class Kauri

in two panels. Interior face of door to be faced with Walnut plywood. Upper panel to be rebated externally for putty glazing and complete with loose moulded Tasmanian Blackwood glazing fillets internally secured with antique brass screws and cups. Lower panel to be flush internally with bottom rail of Tasmanian Blackwood with a V-shaped horizontal joint to line with wall skirting. Externally lower portion of door to be flush bead and butt in two panels. Groove bottom rail for weather-bar. Hang door to solid rebated frame out of 4" x 3" Ht. Totara.

DOORS NO.9.

To be size 5 ft.9" x 1 ft.9" x 1½" framed in Redwood and flush veneered both sides. Side to shop to be finished with Walnut plywood and side to Vestibule to be finished with Oak plywood. Hang each door to solid rebated and moulded frame out of 3" x 2" Oak.

DOOR NO.10.

To be size 6 ft.10" x 2 ft.0" x 1½" square framed in Redwood in two panels. Both sides of door to be faced with Walnut plywood. Upper panel to be glazed with loose moulded Tasmanian Blackwood glazing fillets screw fixed one side and planted the other side. Lower portion to have on external side only, two horizontal moulded strips inset. Bottom rail of door to be Tasmanian Blackwood with a V-shaped horizontal joint to line with counter base. Door to be hung to frame forming portion of screen wall construction specified hereinafter under "Glazed Walls to Offices".

DOORS NO.11.

To be size 6 ft.10" x 2 ft.6" x 1½" and generally to be similar in all respects to No.10 type door above specified. The one between Girls' room and Lavatory and 3 on upper floors to have the T. Blackwood insets omitted.

DOORS NO.12.

To be size 6 ft.10" x 2 ft.6" x 1½" in single panel framed in Redwood

and flush veneered both sides with Walnut plywood. Bottom rail to be Tasmanian Blackwood with a V-shaped joint to line with skirting.

DOORS NO.13.

To be size 5 ft.2" x 2 ft.0" x 1½" in single panel framed in Redwood and flush Walnut veneered both sides.

Hang doors to moulded frame out of 6" x 2" C.Ht. Rimu with 2" x ½" planted stops. Secure each frame stile to concrete walls with three ½" dia. rag bolts with heads let into frame.

DOORS NO. 13A

To be size 6 ft.2" x 2 ft.6" x 1½" and otherwise similar to No.13 doors. Hang doors to solid rebated frames out of 6" x 2".

DOORS NO.14.

To be size 6 ft.10" x 3 ft.0" x 1½" framed in Redwood and flush veneered both sides with Walnut plywood. To each side generally inset horizontal moulded strips of Tasmanian Blackwood to line with similar strips on dado panelling. Two doors of this type to Manager's office to have strip insets omitted internally. Bottom rail of doors to be Tasmanian Blackwood with a V-shaped joint to line with base to dado. Hang doors to solid rebated frame out of 7" x 2".

DOORS NO.15.

Generally to be size 6 ft.10" x 5 ft.6" x 1½" in two leaves with rebated meeting stiles. Each leaf framed in Redwood flush veneered externally with Walnut plywood and square framed internally. Hang each leaf to solid rebated frame out of 6" x 2". Doors of this type in Caretaker's Flat to be size 6 ft.8" x 4 ft.6" x 1½".

DOORS NO.16.

To be size 6 ft.10" x 3 ft.3" x 1¾" framed in Redwood and flush veneered both sides with Walnut plywood. Plant a ½" finished thickness C.H. Rimu margin around all edges of door with small V-joint as detailed. Hang doors on solid rebated frame out of 7" x 2" C.Ht. Rimu.

DOORS NO.17.& TRANSOME LIGHT OVER.

To be size 6 ft.10" x 4 ft.6" x 1¾" in twoleaves with rebated meeting stiles. Doors tobe framed in Redwood and faced both sides with Walnut plywood. Upper portion to be square framed with loose moulded fillets both sides for securing glass. Fillets to be planted one side and screw fixed on otherside. Finish around edges of doors with Rimu margin as specified for No.16 type doors. Hang each leaf to frame having stiles solid rebated out of 7" x 2", head out of 7" x 3" and transome frame out of 3" x 2" rebated as required for plaster key. Provide loose moulded glazing fillets both sides for securing glass and glazing bars as detailed.

DOORS NO.18.

To be size 6 ft.10" x 5 ft.6" x 1¾" in two leaves and otherwise similar in all respects to No.17 type doors. This door is without transome light.

DOORS NO.19.

To be 6 ft.6" x 6 ft.10" x 1¾" in two leaves. Each leaf to be constructed with Redwood core, steel clad and constructed and hung strictly in accordance with the requirements of the Fire Underwriters' Association Specification A.

DOORS NO.20.

Generally to be size 6 ft.10" x 3 ft.3" x 1¾" and otherwise door and frame to be similar in construction and finish to Doors No.17. Doors of this type in Caretaker's Flat and from back stair landing giving access to Offices to be 6 ft.8" x 2 ft.8" x 1¾" and to Lavatories to be 6 ft.10" x 2 ft. 6" x 1¾".

DOORS NO.21.

Generally to be size 6 ft.10" x 2 ft.10" x 1¾" and otherwise to be similar in all respects to No.16 type doors. Doors of this

type in Caretaker's Flat to be size 6 ft. 8" x 2 ft.8" x 1¾".

DOOR NO.22.

(1st Floor Front Office). To be size 3 ft 0" x 2 ft 4" x 1¾" flush both ~~framed~~ sides framed, laminated and Walnut veneered door with the upper rail double splayed on edge. Hang to solid rebated frame stiles out of 3" x 2". Finish upper ends of stiles with capping mould to detail.

DOORS NO.23.

To be size 6 ft.8" x 3 ft.6" x 1¾" in two leaves with rebated and moulded meeting stiles. Each leaf in single panel flush moulded internally, rebated for glazing externally and subdivided by 1" moulded glazing bars into four panes. Provide plain splayed glazing fillets for securing glass. Hang to solid rebated frames out of 6" x 2". Doors and frames to be in C. Ht. Rimu.

DOOR NO.23A.

To be size 6 ft.8" x 2 ft.8" x 1¾" and otherwise similar to No. 23 doors.

DOORS NO.24.

(Basement) To be size 6 ft.6" x 2 ft.10" x 1¾" in six panels flush moulded both sides. Hang to solid rebated frame out of 6" x 2". Door and frames to be in C.Ht. Rimu.

DOORS TO COAT CUPBOARDS OFFICE NO.1.

To be size 6 ft.6" x 2 ft. 6" x 1¾" flush both sides doors constructed and finished similar to type No.14 doors. Hang to solid rebated frame out of 5" x 2".

DOOR TO COAT CUPBOARD MANAGER'S OFFICE.

To be size 6 ft.2" x 1 ft.8" x 1¾" and otherwise similar to cupboard doors in Office No.1.

ACCESS DOORS TO SANITARY FITTING WASTES.

(Clean Ht. Rimu). Provide behind each range of Lavatory Basins in stair wall a pair of access doors of size 4 ft.0" x 2 ft.6" x 1½" in two leaves with rebated meeting stiles. Each leaf to be framed, flush beaded and butt and hung to solid rebated frame out of 4" x 2". Plant 1½" half-round architraves around frame, including sill, mitred at angles.

COUNTERS IN N.Z.INSURANCE CO. OFFICE.

Frame for counters with dressed 3" x 2" ".Ht. Rimu spaced at not more than 3 ft. crs. Halve and spike all members securely together. Tops to be 1" finished thickness "Ibus" board with front edge rebated over 1½" moulded Tasmanian Blackwood nosing. The fronts generally are to be constructed of approved manufacture 13/16" thick five ply, veneered with Australian Walnut.
The walnut veneer panels are to be specially selected for beauty of colour, figure and uniformity. Only material which is accompanied by a guarantee from the Manufacturer will be acceptable.
The Trust Dept. Counter is to have the veneered plywood front and end with the grain showing horizontally. The main counter front is to be in five panels each cut and matched to show diamond figure as indicated. Flush joints to be made with hardwood fillets set into grooved edges of sheets as detailed.
Form recessed base and moulded horizontal bands in Tasmanian Blackwood. Run vertical and horizontal V-joints and ploughings as detailed. Under counter tops provide intermediate shelf and raised floor with 4" x ⅞" T. & G. D.Ht. Rimu. Skirt back of counters with 1" D.H.R.
At end of Trust Dept. counter provide a wicket gate 1½" fin. thickness, flush both sides. Mould the edge of top rail. Finish the back of door with plain Walnut veneer and the front to match

the counter. The top and bottom rails and the moulded horizontal bands to be Tasmanian Blackwood and the remainder Walnut veneered plywood. Hang door to moulded frame out of 2" x 1" T. Blackwood.

DWARF SCREEN WALLS IN N.Z. INSURANCE CO. OFFICE.

Any framing not exposed to view to be dressed N. Oregon. All veneered plywood to be 13/16" thick of 5-ply construction faced with approved best quality specially selected Australian Walnut with the grain set horizontally. All other exposed timber shall be best quality Tasmanian Blackwood with the various members moulded, rebated and jointed as detailed.

Glazing fillets to be planted one side and secured by antique brass screws and cups on other side.

WALL PANELLING TO TRUST MANAGER'S OFFICE, GENERAL OFFICE & PUBLIC SPACE N.Z.I.C. OFFICE.

Generally to be all as specified above for "Dwarf Screen Walls". The panelling of walls in Trust Manager's Office and General Office to extend to height of window sills. Columns to be panelled full height. Finish each window sill with 1" thick Blackwood full depth sill-board with front edge rebated over dado work. Cap dwarf wall around stairs to Basement, with 6" x 1½" T. Blackwood. Plant small mould over plaster joint on stair side. Secure all panel work to dressed grounds out of 2" x 1" secured to walls by Metlex or other approved plugs spaced at not more than 18" crs. Grounds to be spaced to suit panelling, but not more than 18" crs. apart.

WALL PANELLING TO MANAGER'S OFFICE.

Generally to be similar to wall panelling specified for Public Space, etc., but the plywood to be ½" thickness.

GLAZED SCREEN WALLS & COUNTER IN SHOW ROOM.

Screen walls in Showroom, to Cashier and attendant's offices to be 7 ft.0" high and generally similar in all respects to the glazed screen walls specified and detailed for Trust Dept. Office No.2. The lower portion of the walls inside and out to be finished with ½" thick best "ceiling" quality fibrous plaster. The circular counter to be 21" wide and otherwise similar to the counter in Trust Dept. Office including raised floor and shelving.

SHOW WINDOWS TO SHOWROOM.

Transome across entrance from Street to be built up on a 4" x 2" structural steel channel (included in cost of Steel Windows) and the transome over show windows and entrance in Elevator Vestibule to be built up on a 5" x 2½" channel. Drill both flanges of channel at 18" crs., for securing wood plates. The ends of channels to be secured to concrete columns each by a 8" x 3" x ½" angle iron. Bolt each angle iron to column by two ⅝" dia. bolts and each end of channels to angle iron by two ⅝" dia. bolts. Drill and tap both flanges of the 4" x 2" channel at 18" crs., for screw-fixing the cast bronze fascia. Drill both channels at 2 ft.6" crs., for securing 4" x 3", 5" x 1½" and 4" x 2" M. Oregon core framing with ⅝" dia. bolts. Countersink bolts heads into framing. Brace the head of frame to Door No.5 with two 1" x ⅝" W.I. straps with ends bent and drilled for screw-fixing to wood framing. Provide similar W.I. straps behind each wood glazing bar in Ingoe ceiling glazing for stiffening same. Screw fix straps at 6" crs. and countersink all heads.

Encase portions of transomes not exposed to view with dressed C.H.Rimu out of 1" thickness. Frame for ceilings to show cases

and Ingoe from Vestibule with 3" x 2" Building A Ht. Rimu spaced at 18" crs. Frame for raised floors to show cases and opaque glass lining over show window in Vestibule with 4" x 2" plate studs and joists: frame for back walls to show cases with matched 3" x 2" M.Oregon studs and plates. Floor show cases with 4" x 1" T. & G. Ht. Matai.

All portions of transomes and glazing bars forming the show-windows which are exposed to view from the street or Elevator Vestibule are to be of Redwood encased in metal the cost of which is included in a separate lump sum allowance.

Ceil the Vestibule Ingoe with 13/16" 5-ply veneered with Walnut. Ceil and line the backs of show cases with $\frac{3}{8}$" 5-ply veneered with Oak.

GLAZED PARTITION WALLS ETC. (See typical details).

To be constructed of D.Ht. Rimu. All corridor walls to be glazed. With the exception of the 3rd floor, glazing to extend from door head up to ceiling height and on the 3rd Floor to extend from 4 ft. height to ceiling.

All rough framing timbers over glazing work to be suspended by galv. W.I. hangers as specified for "False Ceilings". Rebate upper rails on office side for plaster key. Glazing fillets to be planted externally and secured by antique brass screws and cups spaced at 15" crs., internally.

The glazed office portions on 1st. and 2nd floors to be glazed from 4 ft. up to ceiling and to be similar to Corridor wall glazing.

Construct where indicated in partition walls on 2nd and 3rd floors communication slides each with a clear opening of 2 ft. h high x 14" wide. The slide panels to be 1" thick flush both

sides framed, laminated and veneered. Hang each slide on solid brass pulleys and best quality cords and iron counter-weights to 1" C.Ht. Rimu box casings with small moulded stops planted each side. Provide to each opening a shelf out of 12" x 1" with rounded nosings and a small bed-mould planted under each returned on self at ends.

COUNTER & SLIDE ON 3rd FLOOR.

Where shown in Corridor wall on 3rd Floor provide a counter with a vertical sliding sash over. Counter to be framed with dressed 3" x 2" Building A Ht. Rimu in three rows.

The front to line with general wall face of Corridor with a 6" deep projecting nosing. Finish the front with opaque glass and Terrazzo skirting as hereinafter specified for general wall finish.

Line the top with 4" x $\frac{7}{8}$" T. & G. dressed material and finish with opaque glass. Provide raised T.&G. floor set on 4" x 2" joists and one full depth 1" shelf. Skirt along base at rear with 5" x 1" plain splayed skirting, matchline ends.

Over counter provide a 3 ft.7" high x 4 ft.4" wide x $1\frac{1}{8}$" fin. thickness glazed vertical sliding sash in six panes with loose moulded fillets for securing glass. Construct boxed stiles for accommodating counterweights. Hang sash on Rhodes or other approved brass chain and pulleys.

General wall glaz ing to extend over sliding sash on Corridor side. Form cavity wall with 2" thick framing above Corridor ceiling height to accommodate sash when in open position.

WOOD SKIRTINGS.

All wood panelled walls to have removable moulded skirtings out of 9" x 1" Tasmanian Blackwood. With the exception of walls to

Basement, Lavatories, Corridors, Vestibules, Stairs and Caretaker's. Flat skirt all other walls and columns with moulded skirting out of 9" x 1" D.Ht. Rimu. Secure these skirtings by antique brass screws and cups spaced in pairs at 18" crs.

Finish all room and Passage walls generally throughout Caretaker's. Flat with plain splayed skirting out of 6" x 1" D.Ht. Rimu. Provide all necessary fixing grounds in Ht. Totara. Mitre skirtings at external angles and scribe at internal angles.

TENTEST CEILINGS.

With the exception of portions of wood framed soffits to stairs, which will be ceiled with fibrous plaster, all other wood framed false ceilings throughout to be ceiled with Tentest wall-board. Tentest to be 7/16" thick, the sheets to be cut and set out in the various rooms by the Contractor to give uniformly sized panels, not larger than 6 ft. x 3 ft. All abutting edges of sheets to have the arris removed ¼" to form a V-joint. Secure sheets to framing by nailing with 1½" wire brads, punch the heads and rub the surface down as directed with a Tentest block to obscure the nail hole. Nails to be spaced at not more than 18" crs., in either direction.

All Tentest to be unpacked, cut and fixed strictly in accordance with the Manufacturer's printed instructions.

Allow the nett sum of £50 : 0 : 0 (Fifty pounds) for the cost of additional decorative work to the Tentest ceiling in the N.Z. Insurance Co. General Office.

WOOD CORNICES.

To all Tentest ceilings throughout excepting one to N.Z. Insurance Co. General Office provide built-up cornices of 1" quarter-round fillet and plain splayed batten out of 3" x 1" D.H.R. Mitre

cornice at all angles and scribe to angles of walls and columns.

DIRECTORY BOARD.

See Sheet No.11.

All portions of frame and surround exposed to view to be metal sheathed the cost of which is provided for in a separate lump sum allowance.

Allow the nett sum of £20 (Twenty pounds) for the cost of patent sign backing board and the necessary dressings complete. Screw fix backing to 2" x 1" Ht. Totara grounds as directed.

ELECTRIC LIGHT FITTINGS.

Where required to carry electric light outlet points or fittings in false ceilings provide all necessary timber framing.

HANDHOLES IN FALSE CEILINGS.

Provide in false ceilings where directed 70 in all hand-holes of Clean Ht. Rimu. Clear size of opening to be 12" x 12". Frame to be rebated out of 3" x 2", panel 1¼" fin. thickness framed and perforated to detail, hinged on 1 pair 2" brass butts and plain splayed architraves out of 2" x ¾".

WOOD HANDRAILS TO STAIRS.

The secondary stair balustrading and the one from N.Z.Insurance Co. General Office to Basement to be fitted with a continuous moulded wood handrail out of 2" x 2" C.H.Rimu.

Rails are to be grooved on the underside to accommodate W.I. seating bar specified in "Smith & Founder" and all to be complete with all necessary wreaths, ramps, scrolls, swan necks etc.

FIRE HOSE CUPBOARDS ETC.

(See typical details) At each floor above Gr. Flr. construct fire hose cupboards and a cupboard over on 1st, 3rd, 5th and 7th floors Frame for cupboards with 3" x 2" B.H.R. Doors to hose cupboards to be 3 ft.0" x 3 ft.0" x 1⅜" framed in single panel with loose

glazing fillets internally for securing glass. Doors to top cupboards to be size 2 ft.8" x 3 ft.0" x 1½" framed in Redwood and flush veneered externally in Walnut plywood. Hang each cupboard door on 1 pair 3" antique brass butts to solid rebated frame out of 3" x 1½".

TENTEST WALL LININGS.

All portions of wood framed walls not shown or specified to be wood panelled or glazed to be lined with 7/16" thick Tentest sheets. Secure sheets with galv. clouts spaced at not more than 18" crs. either way. Over Tentest walls stretch Orb brand, 20 gauge, 1" mesh galv. wire netting secured by galv. staples to framing. Netting is to be kept ¼" off face of Tentest by small galv. iron clips fixed behind each staple. Lap and staple edges of netting over all joints between walls and beams and columns.

DWARF. WALL. FRONT OFFICE. 1st FLR.

Frame for dwarf wall in 1st. Floor front office with 4" x 2" Building A Ht. Rimu plates and studs. Secure each bottom plate to concrete by two ⅝" dia. rag bolts. Line wall inside and out with ⅜" best "ceiling" quality fibrous plaster. Flush point all joints in F.P. with plaster of pairs to a perfectly smooth and even surface. Fix typical skirtings to wall and finish on top with moulded capping out of 7" x 2" D.Ht. Rimu with mitred angles and exposed end next to wicket gate returned on self, all to detail.

PICTURE RAILS.

Provide moulded picture rails out of 3" x 1½" C.Ht. Rimu in Hall, Living Rm., and each Bedroom in Caretaker's Flat.

CASINGS TO PIPES.

To all exposed pipes on internal walls above Basement level provide and fix 1" thick wood casings with beaded joints and screw fixed removeble cover boards. Return typical cornice around all casings. Casings in panelled offices to be constructed to match panelling

work in similar material; elsewhere to be constructed of C. Ht. Rimu.

HAND LIFT.

Allow the nett sum of £15 : 0 : 0 (Fifteen pounds) for the providing and fixing complete of a hand lift to operate from the 2nd floor to the 3 rd floor. This sum includes the cage, running gear, guides, cables and counter-weights.
Construct shaft for Hand Lift between 2nd and 3rd Floors with dressed 3" x 2" B.H.H. framing extending from floor to ceiling in both cases. Bolt plates to floors and cut in noggings spaced at not more than 24" crs. Trim for 4 ft.0" x 15" doors 3 ft. above floors. Doors to be 1⅜" fin. thickness framed and flush panelled (in C.H.R.) externally and square framed internally. Hang on 1 pair 3" antique brass butts to solid rebated frame out of 3" x 2" and fix fastener provided in "Ironmonger". Provide 16 gauge, ½" mesh expanded metal over the wood framing for plaster finish.

BACKING TO MIRRORS.

Provide for each mirror in Lavatories a wood backing comprised of 3" x ⅝" Ht. Totara frame, and ¼" thick ply-wood panel and to this affix ⅛" thick approved felt as backing to mirror. Secure mirror and backing to wall by four chromium plated brass screws set into rawl plugs. Back edge of mirror to be set in white lead against face of opaque glass wall lining.

TUBS IN WASHHOUSE.

Provide and fix approved, standard manufacture two compartment, concrete metal edged wash tubs on concrete pedestals where indicated in Washhouse. Tubs to be complete with brass plugs, chains and grated outlets.

KITCHEN FITTINGS. (Caretaker's Flat).

To be constructed to detail in Clean Mt. Pinus generally.

Sink Bench. To be cut of 22" x 1½" First Class Kauri supported on 3" x 2" dressed framing.

Bench to be set with slight fall each way to sink; the sink to be set into underside of bench by rebating the lower edges of opening. Rebate back and end edges of bench to accommodate tiles and form rounded nosing. Bench to extend in length from wall to wall under Safe.

Under sink provide raised 4" x 1" T. & G. flooring set on 4" x 2" joists with 3" deep recessed base.

Provide intermediate shelving formed with 3" x 1" battens spaced ⅝" apart. Shelving to be stopped under sink to form a 20" wide clear opening.

Safe. Safe to be 1 ft.10" wide in clear and 3 ft.0" high with store cupboard extending to ceiling above. Form side and front out of 1" thick material with tongued and glued joints.

Provide two intermediate shelves in both safe and store cupboard formed with 3" x 1" dressed battens spaced ⅝" apart. Floor store cupboard with 4" x ⅞" T.&G. flooring. See later for cupboard doors.

Dresser on South Wall.

To have raised floor and recessed base and Kauri bench top as specified for sink bench fitting. Under bench top provide two bins constructed of 1" thick Kauri properly tongued and grooved together and set upon shaped rocker piece at base. Over each bin provide one 5" deep drawer. Subdivide one draw as directed with ⅝" thick partitions for cutlery. Under remainder of bench construct two cupboards with one full depth intermediate shelf.

At height 15" above bench top provide eleven cupboards 11½" deep in two tiers to extend to ceiling. The upper tier to extend over door-head to wall. Provide one intermediate shelf out of 1" material in each cupboard with ends properly framed into 1" full depth

standards.

SINK BENCHES & DRESSER 3rd FLOOR.

Sink benches to be similar to one specified for Caretaker's Flat including raised floor and intermediate shelf; the bench in Kitchen to extend under dresser fitting at end. The Dresser fitting to be set 15" above bench top and is to extend to ceiling with three intermediate full depth shelves.

KITCHEN CUPBOARD DOORS.

To both kitchens provide cupboard doors to the various fittings of 1" thick, framed, laminated and veneered flush both sides doors each hung on 1 pair 3" chromium plated brass butts. Fix door fasteners the cost of which is included in "Ironmonger".

SHELVING.

Provide and fix where directed in Washhouse 30 ft. lineal of 10" x 1" dressed D.Ht. Kauri shelving firmly supported on 2" x 1" ledges and brackets.

IRONMONGER.

Allow the nett sum of £400 (Four hundred pounds) for the purchase only of all door locks, furniture, bolts, handles, hooks, hinges, door checks and stops required for all doors throughout, but not including elevator doors which are provided for in the cos t of the elevators.

Also for the purchase of 1½ dozen hat and coat hooks, three towel rails, and one toilet paper holder to each W.C.

The Contractor is to allow in addition for fixing all hardware complete. All locks, hinges and movable parts are to be carefully and thoroughly oiled and left in perfect working order at completion.

BRIGHT METAL WORK.

Includes the stripping shown on walls of Ground Floor elevator vestibule, the sheathing of all doors, frames show windows and

joinerywork specified to be metal covered, the mainstair handrail reveal linings to elevator openings and the frame to Directory Board. Allow the nett sum of £768 : 14 : 0 (Seven hundred and sixty eight pounds fourteen shillings) for the cost of supply and fixing complete.

All bright metal work is to be secured and fixed in position in an inconspicuous manner. Where screws are used the heads of same are to match the bright metal finish.

RUBBER FLOOR COVERING.

Allow the nett sum of £2 (Two pounds) per square yard for the supply and fixing complete of rubber floor tiling to the whole of the N.Z.I.C. offices, Elevator Vestibules and Public Corridors on each floor.

LINOLEUM FLOOR COVERING.

Allow the nett sum of 9/3 per square yard for the supply and fixing complete of Linoleum floor covering and felt to all Tenants' portion of the building throughout, excepting in Strongrooms.

CLOTHES LOCKERS.

Allow the nett sum of £100 (One hundred pounds) for the supply and delivery of forty metal clothes lockers. Take delivery of fittings and set into positions where directed.

PLUMBER.

WORKMANSHIP.

The whole of this work is to be executed in accordance with the best known principles of scientific plumbing, and in the most substantial and tradesmanlike manner to the entire satisfaction of the Architects and the Wellington City Council Inspectors. Any portion of the work which may not be particularly mentioned is to be executed in accordance with the general character specified.

RELATIONS WITH OTHER TRADES.

The Contractor shall inspect all preparatory work and any other work against which his material is to be placed and report to the General Contractor immediately any defects, etc., that would prevent the satisfactory execution or permanency of his work and he shall not proceed until all unsatisfactory preparatory work has been corrected. Failure to examine and report will be construed as an acceptance that preparatory work is satisfactory.

OPENINGS & CHASES THROUGH FLOORS & WALLS ETC.

Proper slots, openings, chases and wood fixings will be provided by other trades in their respective materials.

The plumber is to make himself responsible for the proper location of these slots, openings, chases and fixings so as to avoid unnecessary cutting later, inferior laying out of his work, or the disturbance of the building as designed. Should the Plumbing Contractor fail to inform other trades during the course of construction work of the size and position of the openings, chases etc., required to accommodate his work, he will be responsible for the work of cutting and forming such openings and chases himself.

ROOF TO VENTILATING SHAFT GROUND FLOOR.

Cover the pitched wood roof over ventilating shaft with 22 gauge soft copper. Turn upper edges of sheets not less than 6" up wall

and the lower edges 4" down over edge of sarking. Form lateral joints in copper sheets of the Standing Seam Method. The sheets to be secured to sarking each by four 3" x 1½" copper cleats which are twice nailed and turned up 1½" to engage the vertical edges of sheets, turned over same, locked together and again turned over to form a double lock. Before laying copper cover the sarking with approved asphalte paper. All exposed edges of copper to be folded under ½" and angles are to be machine made to give clean, straight arrises to accurately fit the work.

RAINWATER DOWNPIPES.

All rainwater pipes to be C.I. of Walter Macfarlane's manufacture. 4" dia. generally with ¼" thick metal. Pipes to have lugs cast on and fixed with screws and metlex plugs to walls. All pipes to have necessary bends, shoes, offsets, junctions and other purpose made fittings and where fixed internally to have approved screwed inspection eyes immediately above each bend and change of direction of the pipe for cleaning purposes. Joints to be caulked with tarred gaskin and run with molten lead. R.W. pipes discharging over G.T. in Area are to deliver well down into same to avoid any back-wash.

Where pipes are carried horizontally they are to be laid with even falls of not less than 1 inch in 10 ft.

The R.W. outlet pipe from the gutter of the flat roof over Gr. Floor in Area is to be 6" dia. The R.W. pipes from each Balconette at 6th flr. level and the outlet pipe from canopy roof over Johnston St. entrance to be 3" dia. delivering back into 4" dia. pipes from main roof.

RAINWATER HEADS.

To be Walter Macfarlane's Catalogue No.108 Flat with 4" dia. outlet.

LEADS INTO R.W.P's AND HEADS.

Conduct water from flat roofs into R.W.P.'s or through parapet walls into R.W. heads with 22 gauge copper dressed 9" all round under asphalte and not less than 4" down into D.P. or R.W.H. The copper is to be dressed 6" up the sides of outlets through parapet walls.

STRAINERS.

To all R.W. outlets through parapet walls and to heads of all D.P.s and in each R.W.H. provide approved type strainers formed of No.12 gauge brass crimped wire set to a 1" mesh.

FLASHINGS.

Apron flash with 24 gauge "soft" copper, 8" wide and in long lenghts all asphalte upstands on flat roofs. Cover flashings to extend through openings in parapet walls. Similarly flash the copper roof over ventilating shaft. Apron flash with 24 gauge copper thejuntions of all adjoining buildings with new walls, whether horizontal, vertical or curved.

All apron flashings are to beset into raglets formed in walls 1½" deep. The edge of the metal to be turned into the reglets for its full depth and turned back ½" to form a hook. Secure with lead plugs at 8" crs., and point with approved mastic cement. The flashings over adjoining property walls is to be sufficiently wide to extend over the tops and 3" down the inside face of same. Secure free edges with 3" x 1½" copper clips folded over edge of flashing and nailed to metlex plugs set into walls. Space clips not more than 24" crs., apart.

Flash the 11" brick cavity wall at the N.E. corner of the 1st floor immediately above concrete beam with 22 gauge copper. Flashing is to be built in during construction work and is to extend in width from the inner course of brickwork across cavity through outer course of brickwork, over exposed top portion

of concrete beam and finish 1" over face of same. Fold the outer edge ½" under and the inner edge ½" up and machine bend angles to accurately fit the work. Flash under the edge of Asphalte around the Area on Ground Floor with 24 gauge copper 6" wide. Flashing to be set 4" under asphalte and turned down over face of wall. Flash the sill of the main stair window on 1st. Floor with 24 gauge copper built into wall to span cavity and turned down face of wall. Flash and cover-flash all vent or other pipes which protrude through roof and wall slabs with 5 lbs lead. Flash the chimney top with 22 gauge copper as detailed. Copper to be accurately made to fit the work with rivetted and soldered joints and welted edges. Secure with copper cleats spaced at 6" crs., along edges as directed. Cover the top of the free beam over entrance from Featherston St. with 5 lbs. sheet lead. Edges of lead to be folded under and all dressed accurately to conform to the work. Secure lead in position by lead clips tacked to metlex plugs and folded over edges, spaced at not more than 18" crs. apart. Form folded and welted joints in sheets as directed; joints to be regularly spaced.

COPPER VENTILATING DUCT.

From the end of the concrete pipe ventilating duct under Ground Floor of N.Z. I. Co. General Office provide an air duct lining of 22 gauge copper to extend up and out through wall to metal grille all as detailed on Sheet No.8. All joints to be rivetted and soldered and edges of metal to be folded. The metallining to extend into mouth of concrete pipe duct not less than 4" and is to be pointed with mastic and sealed with 3-1 Portland Cement mortar neatly trowelled. Provide in end of pipe duct in wall of Store Rm. No.1 an approved type variable air control

panel constructed of 22 gauge copper with hinged panel set in angle frame. From roof of Boiler Room take a 12" x 12" internal size ventilating air duct constructed of 22 gauge copper. Duct to terminate at upper end with curved head as indicated. Support duct at not more than 3 ft. crs., by 2" heavy gauge copper straps screwed to plugs in walls.

From Store Room in Basement take a 12" x 12" ventilating air duct constructed of 22 gauge copper. Duct to extend around ceiling as indicated on Basement Plan and extend up through roof slab and is to terminate at top and be supported similarly to the duct from Boiler Room.

Provide 9" x 9" air grate in bottom of duct where same passes through Store Rm. No.2.

COLD WATER SUPPLY.

All piping throughout to be galv. screwed W.I. of Lloyd & Lloyd's or John Russell & Co.'s manufacture. Joints are to be made in red lead . All pipes to be concealed. Lay on water from main in Johnston St. with 1½" dia. piping laid under Ground Floor slab into elevator well and continue into Basement and up conduit shaft to top of same. From this main supply pipe take off ¾" dia. branches to each Lavatory and from this subsidiary supply, ½" dia. branches to each sanitary fitting in Lavatory. Also extend 1" dia. branch to 350 gallon supply tank and ¾" dia. branches to other supply tanks on roof and ½" dia. branches to wash copper, each compartment of wash tubs, to each sink, two standpipes on roof, one standpipe in Ground Floor area and one in Boiler Room.

WATER METER.

Provide where directed in Basement an approved water meter.

WATER SUPPLY FOR FIRE HYDRANTS.

Allow the nett sum of £150:0:0 (One hundred & fifty pounds) for the installation complete of an independent water supply for fire fighting purposes. The supply to be taken from the City Council mains in 3" dia. galv. screwed W.I. piping up the conduit shaft, terminating on the 7th floor. At each floor level take off 3" dia. branches into adjoining fire hydrant cupboard provided; control each branch with an approved full bore gate valve suitable for hose connection.

HOT WATER SYSTEMS.

All piping conveying or in any way concerned with the H.W. systems to be in copper and of the following gauges:-

½", ¾" and 1" dia.	19 gauge
1¼" do.	18 "

All fittings to be Lamont's "Securex" brand. Bends to be used and not angles.

All runs of H.W. tubing are to be concealed in false ceilings, pipe duct provided or accessible chases as far as possible and all exposing of piping on any walls is to be subject to the Architects' approval. Support tubing off walls with approved 16 gauge copper clips screw-fixed to "Metlex" plugs.

H.W. SYSTEM TO CARETAKER'S FLAT.

This service will be heated by an electric element provided for in "Electrician", the "Plumber" is to make provision for fixing same. H.W. cylinder to be situated in Kitchen of 30 gallon capacity corrugated copper of standard manufacture and with all fittings in brass.

Provide on roof, on stand provided by "Carpenter", a 30 gallon capacity supply tank constructed of 24 gauge corrugated copper complete with removable cone-shaped cover.

Connect supply tank to H.W. cylinder with ¾" dia. tubing. From top of cylinder take off 1" dia. expansion pipe to a height of 12" and continue up through roof with ½" dia. tubing terminating with a bend 12" above roofing.

From expansion pipe take off ¾" dia. branch to bath and ½" dia. branches to one compartment of wash tubs, sink and basin.

HOT WATER SYSTEM TO LAVATORIES.

Provide where directed in Boiler Room a 100 gallon capacity, 16 gauge corrugated copper H.W. cylinder and on main roof a 75 gallon capacity similar supply tank of 22 gauge copper complete with cone shaped, removable cover.

Cylinder and tank to be set upon wood stands provided in "Carpenter". Connect supply tank to cylinder with 1" dia. tubing. The primary flow and return pipes between cylinder and boiler and the heating coil will be supplied and fixed by the Heating Contractor. Build into the cylinder the heating coil and provide as directed brass connections for the circulating pipes.

From top of cylinder take off 1" dia. secondary flow pipe to rise up pipe shaft to the highest lavatory and return down to cylinder. From this flow pipe take off ½" dia. branches to each Lavatory basin and sink and from top of loop, continue up over top of supply tank on roof with ½" dia. exhaust pipe.

LAGGING.

Lag both H.W. cylinders (sides and bottom) with 2" thickness closely packed cow hair or other approved insulating material and lag top with 3" thick insulation. Secure lagging in heavy canvas and encase all in 26 gauge galv. iron rivetted and soldered together with removable lid and coned openings for pipes and fittings.

Lag all pipes and fittings, including vent pipes, conveying hot water with No.5 "Salmac" pipe insulation secured with purpose made brass straps.

HOT & COLD WATER TERMINALS.

To supply tanks generally on roofs provide best quality copper ball cock with ¾" dia. copper silencer pipe to within 2" of bottom of tank. To 350 gallon tank supply 1" dia. ball-cock and silencer pipe.

Provide in accessible position in Basement on main supply pipe a 1½" dia. full bore gunmetal gate valve for control of service and on each subsidiary supply pipe a similar ¾" dia. valve for local control.

Provide to each standpipe a Fiddian best quality brass cock with screwed ruff for hose connection. To points over wash tubs and copper in Caretaker's Quarters provide similar cocks, but without screwed ruffs. To all other points throughout provide Methven's chromium plated, stream lined, bestquality cocks marked "Hot" and "Cold" as required.

Cocks over sinks and bath to be fixed at heights directed and complete with chromium plated extension fittings.

All cocks to be of the same bore in the clear as the pipes to which they are fixed. Special enlarging socket fittings are to be used if necessary, ensuring this requirement being fulfilled.

SUPPLY TANKS FOR W.C. FLUSHING VALVES.

Provide on stand provided on main roof a 350 gallon capacity corrugated copper tank constructed with 16 gauge bottom and 18 gauge sides strongly rivetted and soldered together and complete with removable domical cover and brass connections for supply and delivery pipes. On flat roof over Ground Floor Lavatories provide a 30 gallon capacity corrugated copper tank constructed

with 22 gauge bottom and 24 gauge sides. Provide removable cone-shaped cover and brass pipe connections.

SANITARY FITTINGS.

Allow the following nett sums for each of the following sanitary fittings:-

Urinal Stall and Cistern	£25 : 0 : 0
W.C. pans	1 :17 : 6
Lavatory Basins and Brackets	3 : 0 : 0
Sinks	4 : 5 : 0
Bath	10 : 0 : 0
W.C. seats	1 :12 : 6

All sanitary fittings shall be selected by the Architects. Take delivery of same and fit and fix into positions complete. The W.C. pans are to be set as close to the rear wall as is practicable.

W.C. FLUSHING VALVES.

From 350 gallon supply tank on main roof take 3" dia. supply pipe down conduit shaft to 6th floor level; continue from 6th to 5th floors with 2½" dia; from 5th to 2nd floors with 2" dia. and from 2nd to 1st floors with 1½" dia. piping. From these points take off 1¼" dia. branches to connect to each flushing valve.

From 30 gallon supply tank on roof over Ground floor take 1½" dia. pipe with 1¼" dia. branches to each flushing valve. Flushing valves to be Nelson Bros. manufacture patent "Hush" valves complete with wall flange. Connect each valve to W.C. pan with 1½" dia. heavy gauge copper flush pipe.

All metalwork including valves, flush pipes etc., exposed to view to be chromium plated. The branch service pipe to each lavatory is tobe controlled by a full bore gunmetal cock.

WASTES & VENTS.

Connect W.C. pans in 4" dia. heavy C.I. to drains and from horn on traps take 2" dia. antisyphonage of 6 lbs. lead and connect through wall to C.I. vent pipe.

Wastes and traps from all basins and sinks to be heavy brass with all portions exposed to view, heavily chromium plated.

Vents to be screwed galv. W.I.

From Buchan trap take 4" x 3" C.I. F.A.I. pipe to terminate above roof level.

Provide 1½" dia. screwed galv. iron waste pipe from tiled floor of each lavatory with heavy brass grated outlet built in flush with tiling. These wastes to extend 6" out beyond face of external area wall.

WASHING COPPER.

Provide in Washhouse a 14 gallon capacity "Wright's" manufacture gas washing copper complete with frame, lid and all appurtenances.

Connect vent pipe to 6" dia. 24 gauge copper flue pipe to extend up through roof and terminate with approved weathertight cowl. Copper to be best quality seamless.

GAS COOKER.

Allow the nett sum of £19 : 16 : 10 (Nineteen pounds sixteen shillings and tenpence) for the cost only of a gas cooker.

Take delivery and fix into position complete.

CANOPY VENT OVER COOKER.

Over gas cooker in Caretaker's Kitchen provide and fix a canopy vent of size 4 ft.0" x 2 ft.6" fixed at 6 ft.0" height. To be constructed of 24 gauge galv. iron all strongly rivetted and soldered together. Externally the sides to be vertical

and to extend up to ceiling, internally form to be funnel shaped converging at top to 8" dia. vent flue. Flue to extend up through roof, terminated at top with approved weathertight cowl.

GAS.

Pay all fees and lay on gas from main in 1½" dia. black iron piping. Extend main up pipe shaft to roof and from this take ¾" dia. branches to gas washing copper and cooker in Caretaker's quarters. Provide meter where directed in Washhouse. At each floor level in rising main provide 1" T-connection for future connections.

At Ground and 3rd floors take off ⅜" branches to points shown on plan adjacent to sink benches. Terminate points with wall flange cock.

DRAINLAYER.

Pay all charges and lay all drainage as shown on plans. The tender is to provide for connection to Public Sewer in Johnston St. and do everything necessary to furnish a complete system of drainage, in conformity with the Drawings the requirements of the Local Authority and to the Architects' and Inspectors approval, notwithstanding any omission in this specification in describing same.

The drainlayer must proceed with his work immediately when called upon to do so by the General Contractor. Any excavations which have to be made for drains adjacent to the building foundations must be done and the drain, in at least that portion, laid prior to the building of foundations. The drainage sub-contractor will be responsible for keeping in necessary touch with the General Contractor and arranging his work accordingly. All drains and their fittings throughout to be Macfarlane's 5/16" thick metal 6" dia. C.I. drain pipes jointed with tarred gaskin and molten lead. Provide copper wire cowls at top of all vent pipes.

INSPECTION CHAMBERS.

Construct two Inspection Chambers; one in Area and one under Ground Floor slab. Chambers to be constructed with 5" thick floors and walls reinforced with ½" dia. rods spaced at 8" crs., both ways. One in Area to have well rounded and evenly graded channels formed in 3-1 portland cement neatly trowelled to a smooth, dense surface. The one under floor slab is to have the C.I. pipes run through each fitted with inspection and cleaning eyes. To each chamber provide and fix a Walter Macfarlane No.1401 cast iron manhole cover and frame with a clear opening of 36" x 24". Frame to be set flush with finished floor level as instructed.

All drains are to be subjected to such tests as the Sanitary Engineer may see fit to apply. The Contractor to do all necessary

testing and make good any defects at his own expense to the entire satisfaction of the Architects and the Local Authorities.

PLASTERER.

All work included under this heading shall be subject to the "General Conditions" and "Preliminary & General" and the sub contractor for this portion of the work is required to refer thereto. The Contractor for this part of the work shall carefully examine all parts of the work to be plastered and satisfy himself as to the fitness of all rough work for plastering, and if there are any defects he shall notify the contractor and have such defects remedied before proceeding with his work.

He shall provide all necessary labour and material and shall do all his work in the neatest and best manner and upon completion shall leave his work clean and perfect and to the satisfaction of the Architects.

After the work of other trades is finished he shall patch and make good all damaged portions of his work.

MATERIALS.

Sand.

All sand used throughout the work must be approved by the Architects. It must be clean and sharp and free from all foreign matter. It shall be fresh water or pit sand. No salt water sand shall be used. Proof of origin shall be given if desired by Architects. The sand shall be washed on the site if directed by the Architects.

Cement.

As specified under "Concretor."

Lime.

To be well-burnt Te Kuiti Reche Lime, to be run at least one month before being used, to be kept clean.

Colorcrete Cement.

To be fresh and keen and to be brought upon the job in the manufacturer's original sealed packages.

Hard Wall Plaster.

To be Caferata Keenes. (to be brought upon the job in sealed packages).

Putty.

To be fresh burnt Te Kuiti or other approved stone lime run into putty at least twelve weeks before using.

PREPARATION OF SURFACES.

All concrete surfaces are to be slushed with cement grout containing fine aggregate before plastering. All surfaces to be plastered are to be thoroughly clean and soaked with clean water immediately before applying plaster.

EXTERIOR WORK.

NOTE: The rendering coat to all exterior work to walls is to have 10 per cent of hydrated lime added to the composition of the plaster, measured by volume.

RENDERING.

Rendering for exterior work to be composed of one part Portland cement to 3 parts sand laid not less than ½" thick.

FINISHING WORK.

Generally all exposed external wall areas shown to be plastered are to be finished with "Cullamix" special plaster. (Messrs. Briscoe & Co. Ltd. Agents). The work is to be in three colours; one for the general ground work, one for the wide horizontal bands at each floor level and one colour for the narrow bands. The general texture finish is to be in accordance with a sample to be seen at the office of the Architects. The material is to have double the quantity of mica incorporated as is

contained in the sample.

The Contractor is to prepare for the approval of the Architects, before commencing the finishing work, samples of the various coloured plaster. The samples are to be not less than 1 square yard set upon the wall of the building where directed for inspection. Changes are to be made in the plaster samples in accordance with the requirements of the Architects and no finishing work is to proceed until the approval and consent of the Architects is obtained. Plaster samples are to be removed from the wall before approved finishing coat is applied.

The backs of parapet walls and the area walls from First Floor level down are to be set with ¼" thick plaster composed of 1part "Snowcrete" cement to two parts approved silver sand finished with a wood float.

Similarly finish the soffit of that portion of the 5th floor which overhangs the Area. Weather the top of chimney with 3-1 Portland cement steel trowelled.

FORM DRIPS.

Form drips to exposed soffits of all openings.

MOULDED WORK.

Run all bends, mouldings, mitres or other features shown strictly to detail.

IMITATION JOINTING.

Form the horizontal and vertical lining upon the facades by means of imitation Mason's joints. Joints to be V-shaped ½" deep x ¼" wide. Point all joints with 3-1 silver sand and Snowcrete cement, care being taken to form clean cut edges, intersections, and angles and perfect alignment.

INTERIOR WORK.

PORTIONS NOT PLASTERED.

The Motor room, Boiler room and stairs to Boiler room, pipe and

conduit shaft and areas specified to be covered with tiles, glass, penelling, terrazzo, fibrous plaster, etc., will not be plastered. Finish the reveals and sills of window openings in Motor room with 3-1 cement mortar.

GENERAL FINISH.

With the exception of areas shown to be covered by wood panelling, terrazzo, or fibrous plaster render all other areas throughout including Tentest covered wood framed walls shown to be faced with glass, and Elevator shafts with rendering composed of 1 part Portland cementto 3 parts sand, laid not less than $\frac{1}{2}$" thick. Except where otherwise shown or directed round off all external and internal angles to a $\frac{1}{2}$" radius.

SETTING COAT.

With the exception of rendered areas to which opaque glass is shown to be fixed and 6 ft. high dado to walls of Goods Elevator Landings on each floor set all other areas with material composed of 1 part Cafferatas Keenes Hard Wall plaster and 1 part lime putty. Set 6 ft. high dado to Goods Elevator Landings with $\frac{1}{2}$" thick coat 3-1 Portland Cement mortar steel trowelled to a smooth, hard surface. Finish at top with $\frac{1}{2}$" wide x $\frac{1}{2}$" deep V-joint.

SKIRTINGS.

To walls of secondary stairs off Corridors, stairs from N.Z. I.C. office to Basement and to Strong Room and Store Rooms in Basement form 8" high 1-3 Portland cement and sand skirtings run flush with wall and with a $\frac{1}{2}$" wide x $\frac{1}{2}$" deep V-shaped sinking at top.

W.C. PARTITIONS.

Construct W.C. partition walls each with four horizontal 1½" x 1½" x ¼" angle-iron rails with ends built 3" into walls. To these rails securely wire to approval 16 gauge, ½" mesh expanded metal of the Midland Expanded Metal Co. Ltd. manufacture. Embed metal in 1¾" thickness 3-1 cement rendering with sufficient hair added to make good bond.

CONDUITS ETC.

On no account must Hard Wall Plaster be allowed to have contact with any electric light conduit or any other metal piping etc. All such conduits and pipes must be completely protected by Portland cement.

Where pipes occur in walls specified to be tiled or to be finished in plaster at or sufficiently near the surface to cause a danger of cracks occurring in the finished work, the Contractor shall supply and fix a strip of metal lathing or other approved reinforcement to the brick or concrete work over such pipes. Any cracks which develop due to the omission of reinforceing shall be repaired at the Contractor's expense to the satisfaction of the Architects.

SCREEN WALL IN ELEVATOR SHAFT.

Construct between freight elevator and passenger elevators a screen wall the full height of shaft. Wall to be constructed with 26 gauge Trussit expanded metal attached to angle-iron framing (specified in Smith & Founder) by No.16 gauge black iron wire. (John Chambers Agents for Trussit metal).

Plaster the metal both sides with 3-1 Portland cement mortar to finish 2½" thick. Add sufficient hair in the mortar to give a good key.

FALSE BEAM HAUNCHES.

Six beams of Type No.7 on the 1st floor are to be encased by wood

framing (specified in Carpenter & Joiner). Cover framing with approved heavy gauge expanded metal fixed to accurately fit the wood base and securely stapled tosame. Render the metal with material as specified for rendering generally but with the addition of hair in sufficient quantity to bond the mortar. Setting coat to be as specified for general finish.

FIBROUS PLASTER WORK.

Allow the nett sum of £200 (Two hundred pounds) for the supply and fixing complete of all decorative F.P, work in N.Z.I. C. General Office. Fibrous plaster work also includes sundry wall and ceiling areas to main stairs and a portion of subsidiary stairs. All F.P. sheets to be best "ceiling" quality $\frac{3}{8}$" thick. Secure all joints and edges of sheets over a continuous solid bearing by galv. clout nails closely spaced. All enrichments in cast work are to be accurately made to detail. Carefully point with Plaster of Pairs all joints and leave all surfaces, angles, and arrisses smooth and even and free from all blemishes to the entire satisfaction of the Architects.

FLOORS & STEPS.

Concrete floors of Boiler Room, and entry thereto, the floor of Elevator Shaft and Motor Rm., are to be finished in one operation with the pouring of the slab by dusting with 1 to 1 cement and sand and steel trowelling to a dense, smooth surface.

All other floors throughout not specified to receive tile or terrazzo finish, but including all areas to be covered with rubber or lino., are to be rendered with 3-1 cement plaster laid not less than $\frac{3}{4}$" thick and steel trowelled to a dense,

smooth and evensurface. Thoroughly cure plaster by covering with wet sacks or other suitable covering which must be kept damp for not less than one week after laying.

The surface of rendered floors is to finish below the level of adjacent tiles, terrazzo, granite or plaster in order that the rubber or lino surfaces will be in the same plane as the general floor finish.

The secondary stairs, the stair from N.Z.I.Co. offices to Basement and the stair down to Boiler room to be rendered with ¾" thickness of 3-1 cement mortar finished with a dry mixture composed of equal parts of cement and carborundum filings which is to be evenly sprinkled and well trowelled to obtain a permanent, hard non- slipping surface to the Architects approval.

ATTENDANCE ON OTHER TRADES.

Make good inside and out after all trades.

TERRAZZO.

Terrazzo is confined to the risers, treads, landings and skirtings of the Main Stairs, the floor of Goods Entry on the Ground Floor skirtings to Public Corridors generally and sills to No.15 type doors in Conduit shaft.

Terrazzo is to be composed of approved hard wearing marble and granite chips embedded in 3-1 Portland cement mortar, finished generally 1" thick and ground down to a smooth and semi-polished surface with an emery machine. Stair treads to be 1½" finished thickness with slightly rounded nosings to detail.

The Contractor is to submit to the Architects for their approval samples of the marble and granite which is proposed to be used for the work and also finished samples complete, of reasonable size, showing texture and colour.

Stair treads, landings and the paving in Goods Entry to be manufactured with the addition of Carborundum Filings as directed.

The risers, treads and skirtings are to be precast to accurately fit the work and bedded and pointed in 3-1 Portland Cement mortar.

The skirtings to Corridor walls to be cove-base, see details Sheet No.17.

TERRAZZO SINK BENCH.

Provide and fix in Girls' Room on Ground Flor, a 5 ft.10" long x 1 ft. 10" wide sink bench rebated along back and one end for accommodating glass wall linings. Form rebated aperture for fitting sink as directed.

TILES.

EXTENT OF TILING.

Floor tiling is confined to all Lavatories and the Caretaker's Bathroom. Wall tiling is limited to the back and ends of three wood sink benches, the back, ends and front of bath, a panel behind Lavatory basin in Caretaker's Quarters; base to all Lavatory walls and sills to all windows generally not specified to be finished in wood.

FITTINGS.

Tiling shall include all necessary cove-base tiles and bonded angles. No angle beads shall be used. All the above special "fitting" tiles shall be "internal" or "external" and "left stop" or "right stop" as required to suit the work.

SETTING.

All wall tiles to be set in mortar composed of 1 part Portland cement to 3 parts clean and perfectly washed sand, and pointed in Keene's cement. All tiles to be in perfect alignment and with joints not exceeding 1/32 inch. Floor tiles to be similarly set but to be pointed in Portland Cement.

WETTING.

All tiles to be soaked for not less than 24 hours immediately previous to setting.

CLEANING DOWN.

All tiling to be washed over in cold water and soft soap and wiped off dry at periods during the first weeks of laying.

PROTECTION.

After laying all tiling to be protected from possible injury or disfiguration.

WALL TILING.

Wood Sink Benches. Line backs and ends (where applicable)

of each wood sink-bench with four courses of 4" x 4" English "Commercial" quality white glazed tiles. Lower course to be cove-base and upper course sanitary capping.

Tiles against wood to be set on heavy gauged expanded metal.

Bathroom. Set four courses of 4" x 4" tiles as specified for sink benches to back and ends of bath also similar tiles to front of bath. Provide base cove tiles at intersection with floor and sanitary capping tiles on upper course against walls.

Behind Lavatory basin set with similar tiles a panel of size ten courses wide x four courses in height. Marginal tiles to be sanitary capping type.

Lavatories.

At base of walls provide 4" x 4" coved base tiles.

WINDOW SILLS.

With the exception of window sills in Motor Room and those shown to be covered with wood or glass all other sills throughout are to be finished 6" x 3" English "Commercial" quality Buff glazed tiles with rounded nosings.

FLOOR TILING.

Finished surface of floor tiling is to be in the same plane as finish of adjacent floors.

Lay floors throughout all Lavatories and Caretaker's Bathroom with 3" x 3" tiles for the cost of which allow the nett sum of 30/- super yard.

OPAQUE GLASS.

EXTENT OF WORK.

The work includes all walls and partitions, including sills and reveals of windows, to a general height of 7 ft. in each Lavatory. (See Sheets No.14 and 15). Also to walls of Elevator Vestibule, Main Stairs and Office Corridors.
Allow the nett sum of 5/- per square foot for the supply and fixing complete of all opaque glass.

IN GENERAL.

Opaque glass to be approved British manufacture in 5/16" thick sheets and in colours to be selected by the Architects. Sheets to be set in tile form as shown on detail drawings.
All edges of sheets to be perfectly straight and clean and no joints are to exceed 1/32" in width. All exposed edges are to be ground true and polished and all necessary perforations are to be accurately and neatly made for accommodation of pipes, screws, etc.

METHOD OF FIXING.

Generally opaque glass is to be fixed with Mastic to walls prepared in the following manner. To all walls not shown to have removable panels, apply not less than ½" thick rendering coat of 3-1 sand and Portland cement, screeded to a perfectly smooth and even surface. This coat is to be thoroughly dry before the ~~vitrolite~~ glass is fixed.
Upon this plaster backing apply a coat of Cripon Sealer applied with a brush. The opaque glass is to be fixed as follows:-

(a) Clean the ribbed side with a brush.

(b) Apply daubs of Mastic to the back at 4 or 5 inch intervals each way.

(c) Press panels to walls with a rubbing motion to provide an even bed of Mastic 3/16" to ¼" thick.

(d) Allow half gallon Gripon Sealer to 10 to 12 sq. yards, and 1 cwt. of Gripon Mastic to 8 to 10 sq. yards.

(e) Point up joints at completion with coloured plaster of Paris to match the work.

Where panels are shown to be secured to wood pipe ducts, they are to be secured by chromium headed screws, four to each panel.

CLEANING.

At completion all opaque glass is to be carefully and thoroughly cleansed of all defacing matter to the approval of the Architects.

PROTECTION.

Proper precautions are to be taken to guard all completed opaque glass from injury until the whole building is handed over at completion.

PAINTER.

RELATIONS WITH OTHER TRADES.

The Contractor shall inspect all preparatory work and any other work against which his material is to be placed and report to the General Contractor immediately any defect, etc., that would prevent the satisfactory execution or permanency of his work and he shall not proceed until all unsatisfactory preparatory work has been corrected. Failure to examine and report will be construed as an acceptance that preparatory work is satisfactory.

MATERIALS.

Unless particularly specified to the contrary all materials are to be of New Zealand manufacture.

All materials to be the best of their several kinds specified, to be approved, to be delivered in unbroken packages, bearing brand and maker's name intact, and to be submitted to such tests as the Architects may direct at the expense of the Contractor.

Oil colours for general work to be composed, except as mentioned below of the best brands of "genuine" unadulterated lead mixed with linseed oil prepared by the N.Z. Oil and Cattle Cake Co. Ltd., and with no more than 5% of approved dryers, and pigment added to give the desired colour. All oil to be used to be of clear pale colour. None but raw oil to be used outside. See under "External" woodwork for use of prepared paint. These paints to be ~~made~~ Sherwin Williams, Smith & Smith's "Lustruss" or other approved manufacture. Where enamel paints are specified they are to be (including undercoating) approved New Zealand or British manufacture high grade enamel, applied without adulteration in any way. Water paint to be Smith & Smith Ltd. Anvil brand. Stains for woodwork to be "Kleartone" oil stain

put on without adulteration. Overcoats to staining to be Ingam Clarke's varnish except where polish is required. (see later).

MIXING OF MATERIALS.

All mixing of materials shall be done at the building.

SURFACING.

Do all rubbing down to obtain a good surface before and between coats to the approval of the Architects.

STOPPING ETC.

Do all stopping and knotting necessary and prepare for paint, varnish or polish.

DRYING OF COATS.

All coats to be perfectly dry before subsequent coats are applied.

TINTING OF PAINT.

Each coat of paint, colour or distemper is to be a different tint to the previous coat, and the whole of the paint, colour, distemper or varnish is to be finished if practicable, one coat over the whole internal and external surfaces before a further coat is applied. The Contractor is to give notice to the Architects before each coat of any material is applied, and all tints are to be submitted to the Architects for approval before the paint is applied.

PREPARATION FOR PRIMING COAT.

All materials to be primed are to the thoroughly cleaned of all dirt, grease, rust or scale by approved methods to the satisfaction of the Architects.

PRIMING FOR GENERAL IRONWORK.

With the exception of galv. ironwork, all other general W.I.

work is to receive one good coat of "Chamlead" liquid red lead applied without admixture of oil.

PRIMING FOR WOODWORK.

All exterior or interior woodwork to be painted to receive immediately after fixing a coat of red and white lead in equal proportions mixed with linseed oil to the required consistency. All priming to be in addition to other coats of paint hereinafter specified.

IRON & STEELWORK.

Paint all steel windows and doors externally, parapet railing, all rainwater and drain pipes and their fittings exposed to view externally, access ladders to roofs and all sundry exposed ironwork two coats best quality and approved manufacture aluminium paint.

Paint metal windows and doors internally, W.I. work to stair balustrading and all other sundry ironwork throughout two coats lead and oil. Windows in rooms specified for enamel finish to have one extra coat lead and oil.

EXTERNAL WOODWORK.

Unless other wise particularly specified paint all exterior woodwork three coats lead and oil. The last coat to be prepared paint. Trucks of flagpoles to be finished in best quality gold leaf.

INTERNAL WORK.

French Polish.

French polish all woodwork exposed to view (excepting in Lavs. and Girl's room) throughout the whole of the N.Z.I.C. offices on the Ground Floor; also all woodwork exposed to view in Elevator Entrance Vestibule, Show room, interior of Show windows and wood handrails to stairs.

Enamel Finish.

All woodwork in Lavatories, and Caretaker's Kitchen and Bathroom and Kitchen on 3rd Floor to receive in addition to priming coat, two coats lead and oil undercoatings and two coats enamel to finish with a high gloss.

Varnish Finish.

All other interior finishing woodwork throughout to be given one coat stain, one coat linseed oil well rubbed in, one coat filling and two coats of varnish to finish with a full, semi-flat and perfectly smooth surface.

Wood Cornices.

Paint wood cornices three oils.

Oil Finish.

Give all woodwork inside sundry cupboard and backs of doors to same, shelving, tops of show windows and backs of counters one coat oil stain and one coat Crown Hard Oil.

INTERNAL PLASTER & CONCRETE SURFACES.

Give walls and ceilings throughout Motor and Boiler rooms two coats of "Anvil" Mill White.

Finish all plaster wall surfaces in Lavatories, Caretaker's Kitchen and Bathroom and Kitchen on 3rd Floor with one coat petrifying liquid, two coats of lead and oil and two coats of enamel to finish with a high gloss and smooth surface.

Finish all other plastered wall and ceiling surfaces generally throughout including fibrous plaster, three coats "Anvil" brand water paint.

Finish cement plastered dado to Goods Elegator Landings and cement skirtings to secondary stairs, stairs from N.Z.I.C. office to Basement, Strong room and store rooms in Basement with two coats lead and oil.

TENTEST CEILINGS.

Generally Tentest ceilings will not receive Painter's work. Allow the nett sum of £50 (Fifty pounds) for the cost of decorating the ceiling in the N.Z.I.C. General Office.

SIGN WRITING.

Pick out where directed on plate glass glazing in entrances, in gold leaf, the titles "The New Zealand Insurance Company Limited" and "The New Zealand Insurance Company Building" in 12" high letters to detail.

Paint upon each lavatory door in 2" high letters the word "Ladies" or "Gentlemen" as required. The letters to be approved block type with coloured body and black outlines. With similar 2" high numerals write the Office No. on each door to Corridor. On each fire hydrant cupboard door paint in 2" red block letters the words "Fire Hydrant".

ATTENDANCE ON OTHER TRADES.

Make good inside and out after all trades.

GLAZIER.

GENERALLY.

All glass to be of British manufacture of approved make, the best quality of its respective kind and free from bubbles, smoke waves, air bubbles, scratches and other defects. It is to fit the rebates with proper allowance for expansion and to be secured with metal grips and well bedded and back puttied. All plate glass glazing to doors and show windows to be bedded in chamois leather strips and fixed with removable fillets. Black edges of all plate glass to prevent reflection of light. Putty to be composed of raw linseed oil, powdered whiting and white and red lead in proportions as directed.

SHEET GLASS.

To be selected Glazing Quality invoiced and branded "S.Q.".

PLATE GLASS.

All plate glazing to be executed in the best quality, $\frac{1}{4}$" thick, British manufacture polished plate. Where glass is specified to be bevelled, the bevel is to show $\frac{3}{4}$" in clear.

Where plate glass of show windows intersect without angle mullions the edges of sheets are to be mitre ground to accurately fit together, cemented together and secured by approved chromium plated brass angle clips, three to each angle. Drill glass for accommodating clip bolts.

The following windows and doors are to be plate glazed:

All show windows to Street and Elevator Vestibule.

Sidelights and transome light to Door No.1

In lower panes of four steel windows on Ground Floor to Johnston St.

Soffits to Johnston St. Entrances over Doors Nos. 2,3 and 5.

Transome light over Doors Nos. 2 and 3.

Directory Board.

Doors Nos. 1, 4, 5, 6 bevelled plate.

Doors Nos. 11, 12, 17, 18 and 20.

All glazed screens throughout N.Z.I.C. offices and Show room on Ground Floor.

SHEET GLASS.

Excepting office partition lights on Ground Floor all other Corridor lights throughout, hydrant cupboard doors, ventilator laylights on Ground Floor, and the lower panes to two Ground Floor windows in Featherston and Johnston Streets to be glazed with 26 oz. clear glass.

With the exception of windows specified to be plate glazed and the windows to the main and subsidiary stairs and each Lavatory glaze all other windows throughout and Doors No. 23 and 23A with 21 oz. clear glass.

FANCY GLASS.

Windows to main and subsidiary stairs and all Lavatory windows to be glazed with selected white fancy glass.

ETCHING.

Generally all work is to be executed to detail in one biting.

Door No.1 and sidelights and transome to be etched with 2½" and ½" bands as indicated.

Transome light over Doors No.2 and 3 to be etched with 2" band.

Soffit lights over Doors Nos. 2, 3 and 5 to be completely etched.

Door No.4 to be etched with 2½" and ½" bands.

Transome lights over show windows in Elevator Vestibule to be etched with 2½" and ½" bands.

Screens throughout N.Z.I.C. offices and Show Room on Ground Floor to be entirely etched in one biting leaving two clear ½"

wide lines and a 2½" band in two bitings.

Plate glass panels to Doors Nos. 11, 12, 17, 18 and 20, excepting five of No.11 type to be completely etched. The five No.11 type doors in N.Z.I.C. offices and Showroom to be etched with bands as specified for adjacent screens.

With the exception of the Corridor lights on the 3rd floor, all other Corridor lights, each hydrant cupboard door panel and laylights to ventilator in Ground Floor to be etched in one biting leaving a ⅛" clear margin to each pane.

Corridor lights on 3 rd floor and the lower portion of internal office partitions (excepting Ground Floor) to be entirely etched.

MIRRORS.

All mirrors to be ¼" thick polished plate of the best silvering quality; the glass to be silvered in the best manner.

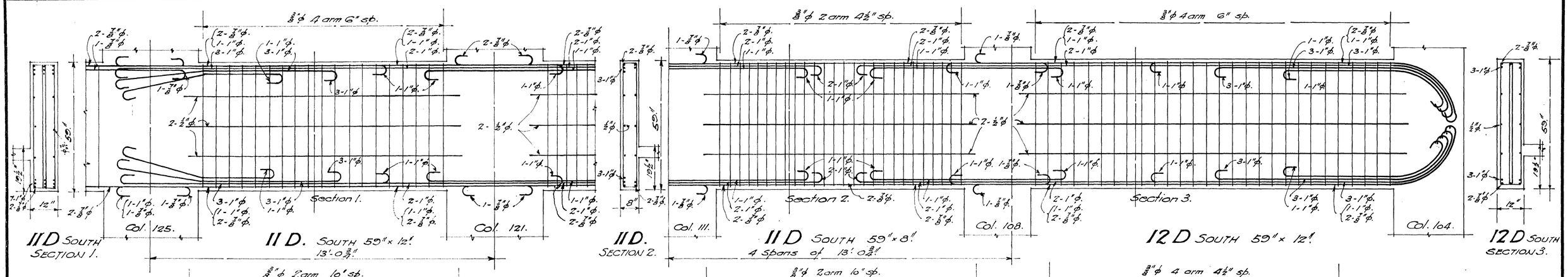
See "Carpenter & Joiner" for backing to mirrors.

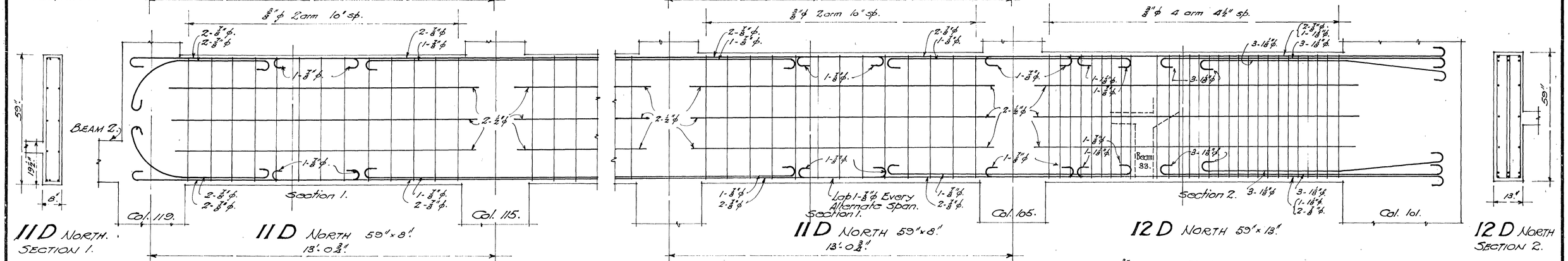
Provide the following mirrors:-

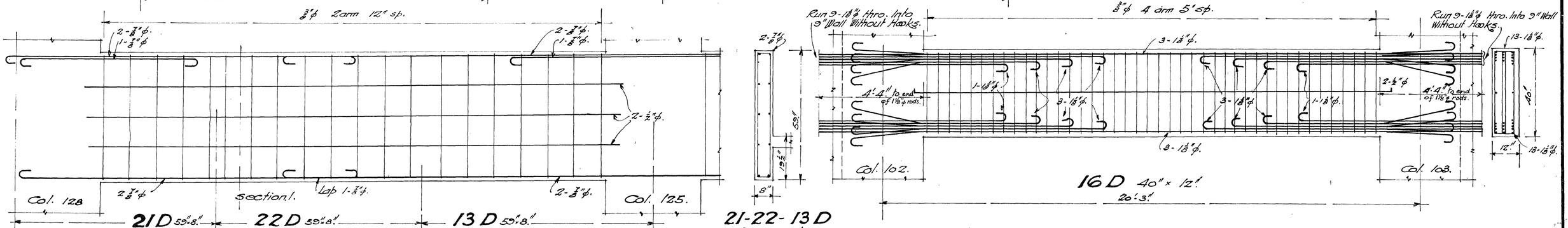
One mirror 3 ft.9" x 2 ft.6" in Men's Lavatory Ground Floor.

One mirror 15" x 15" in Women's Lavatory Ground Floor.

Seven mirrors 2 ft. 6" x 2 ft.6" in Lavatories generally.







REFERENCE TO BEAMS D NOT DETAILED

Beam 1 : For all spans except West end, as Floor C, Sheet No 31.
" 4,9,34 : As Floor C, Sheet " 31.
" 10 : " " C, " " 32.
" 18 : " " C, " " 33.
" 33 : " Stair details, " " 27

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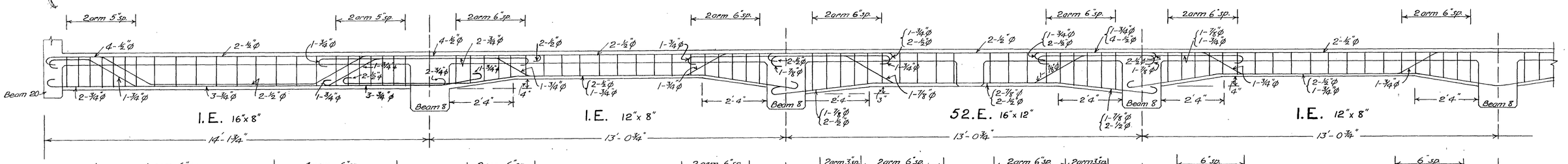
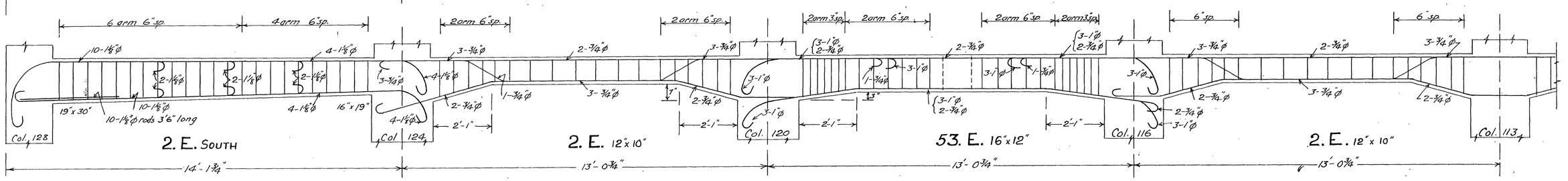
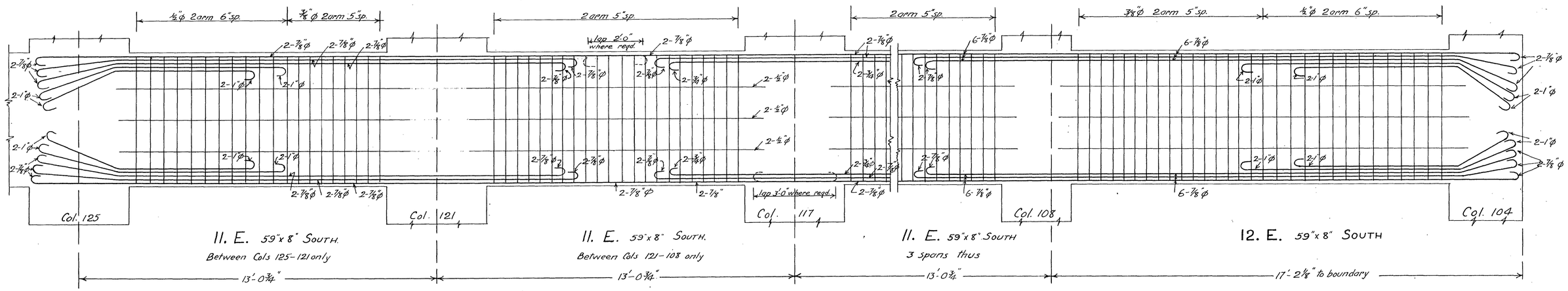
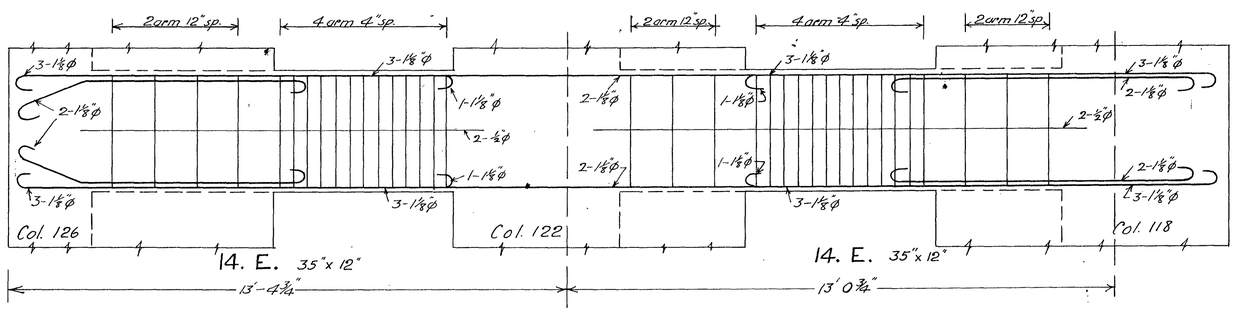
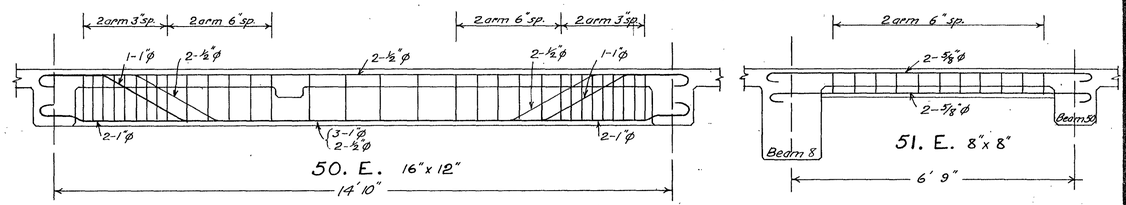
DATE JUNE. 1936	Reinforcing Details for Second Floor Beams, D.	SCALE ½" = 1 FT.
DRAWN BY G.N.C.		DRAWING No. 35
CHECKED BY C.R.F. & K.W.R.		

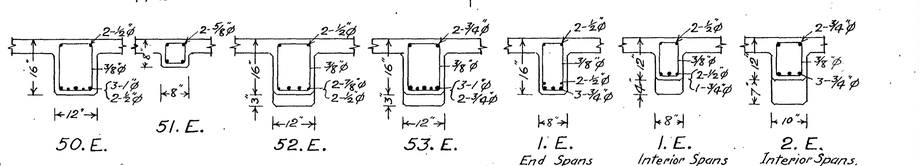


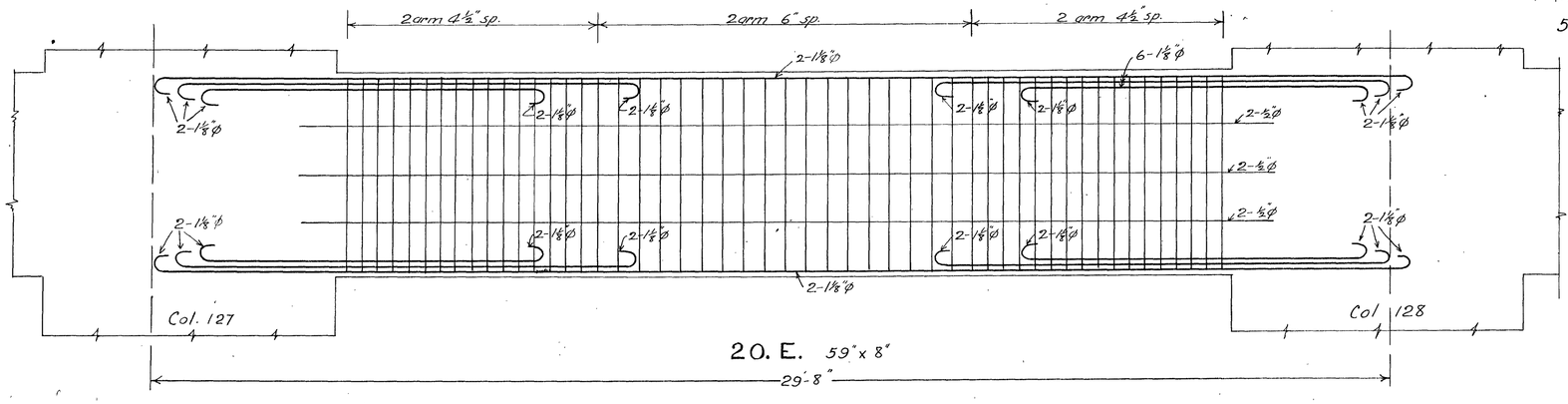


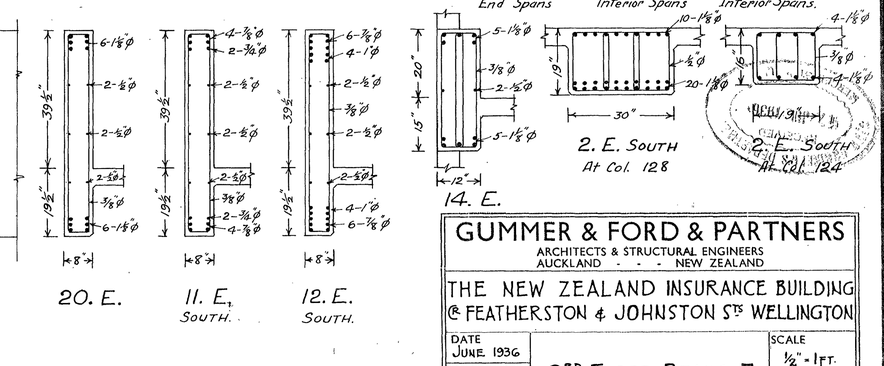












REFERENCE TO BEAMS E NOT DETAILED :- Beam 1 : Spans at East End only, as Floor C, Sheet No 31.
" 2 South Side, Spans East End only, as Floor D, Sheet No 34.
" 2 North Side, As Floor D, Sheet No 34.

Beam 3, 5, 6, 7, 8 : As Floor D, Sheet No 34
" 4, 9, 34 : " " C, Sheet No 31.
" 10. : " " C, Sheet No 32

Beam 11, 12, North : As Floor D, Sheet No 35.
" 13, 16, 19, 21, 22 : " " D, " " 35.
" 32. " " D, " " 34.

Beam 18 : As Floor C, Sheet No 33.
" 33 : As Stair Details, Sheet No 27.

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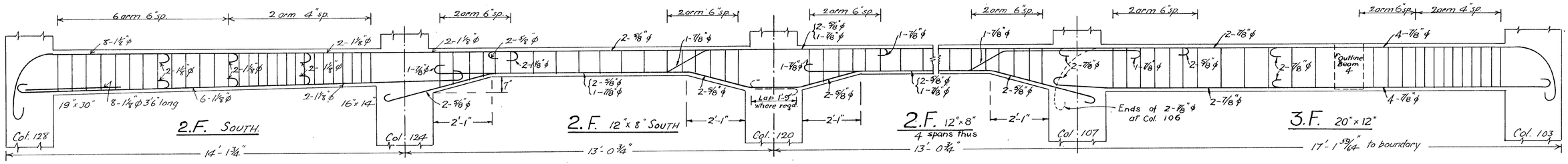
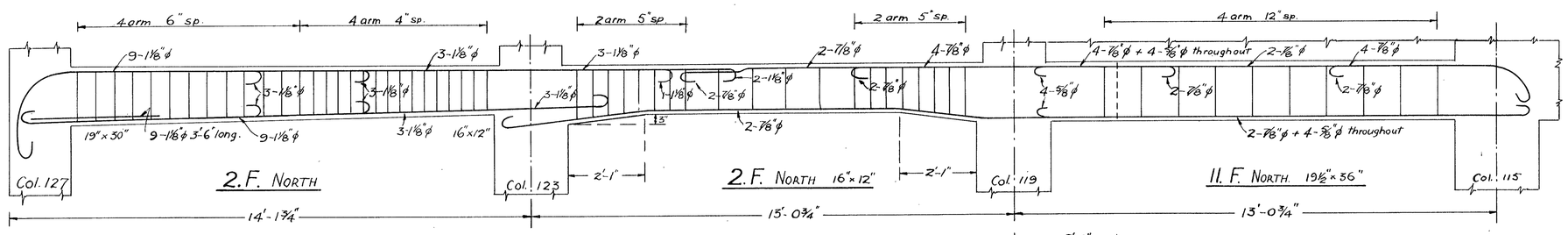
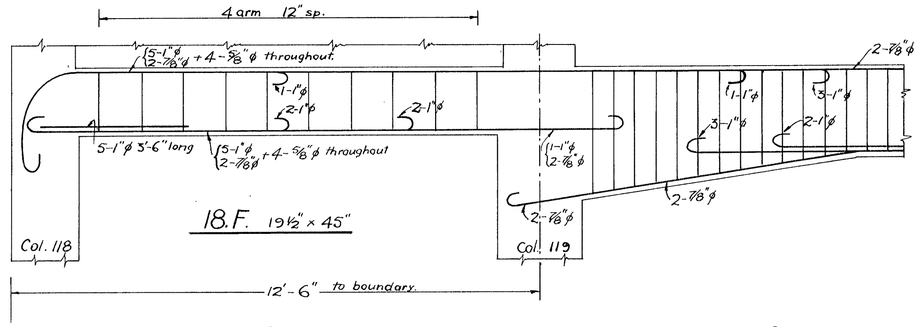
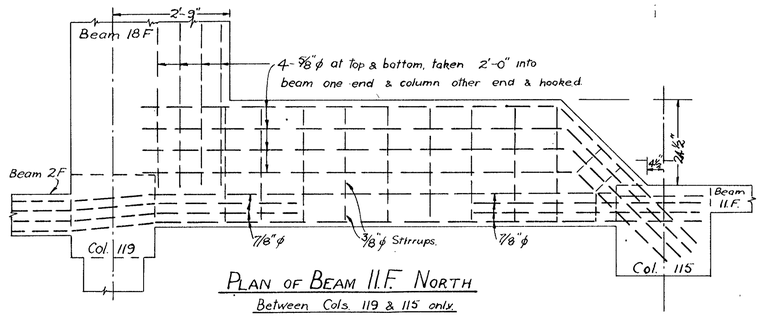
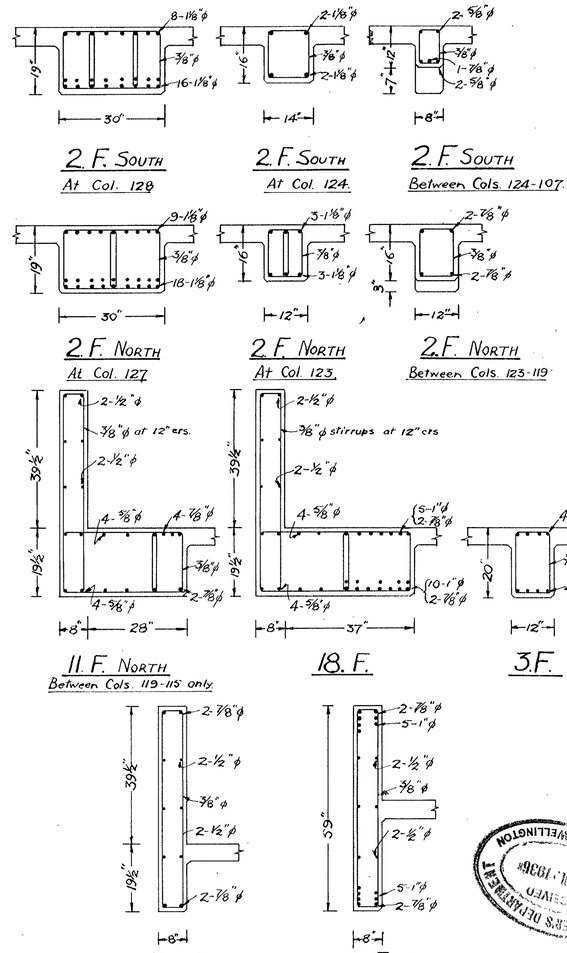
DATE JUNE 1936	3RD FLOOR BEAMS. E	SCALE ½" = 1FT.
DRAWN BY K.W.R.		DRAWING No. 36
CHECKED BY C.R.F. & K.W.R.		

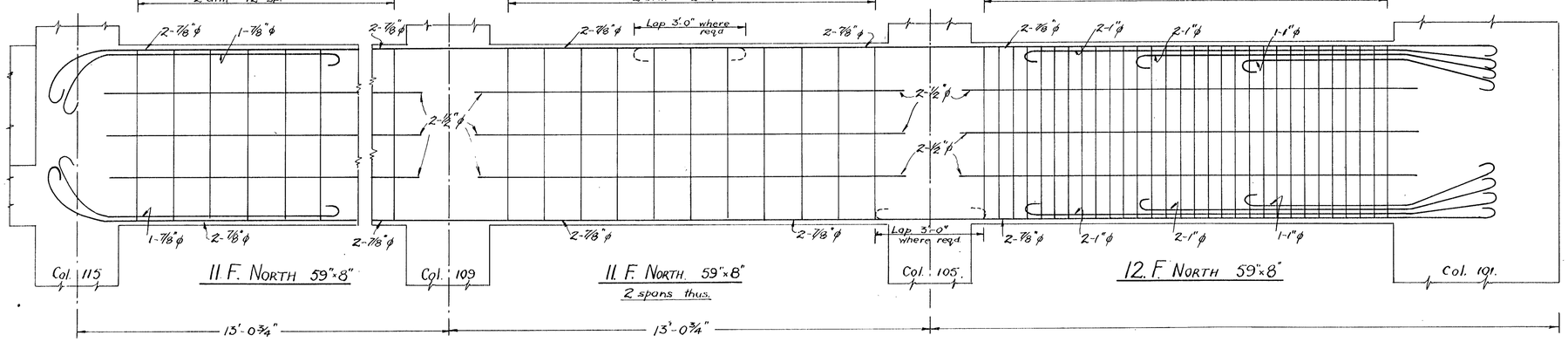


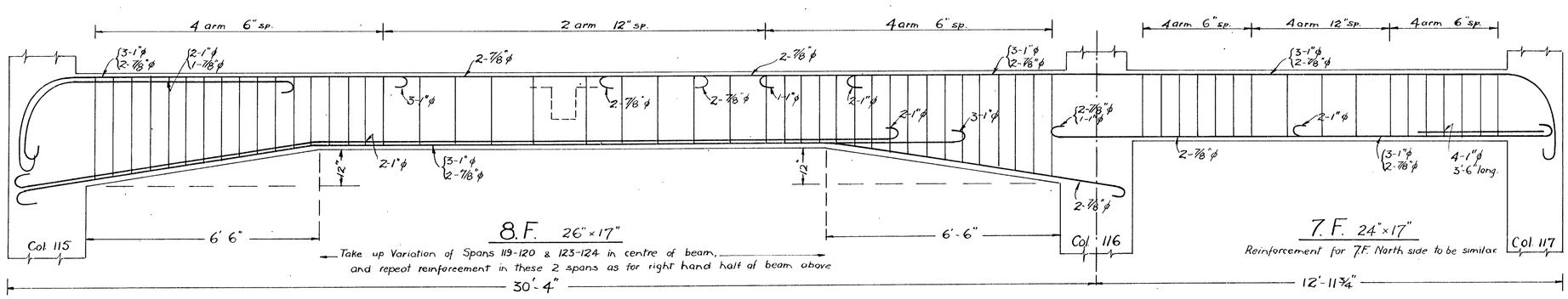


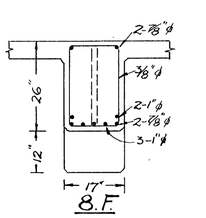












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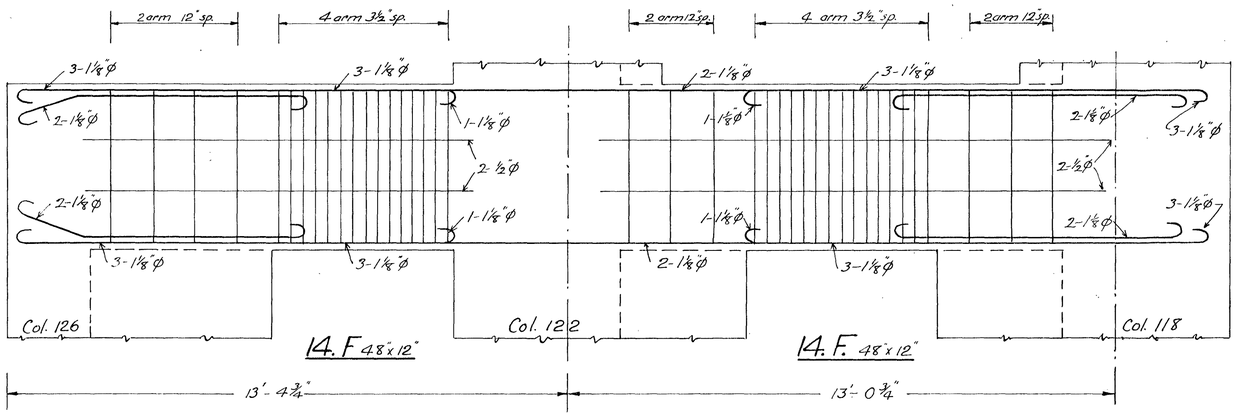
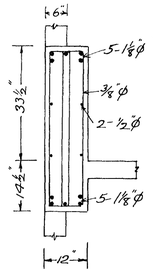
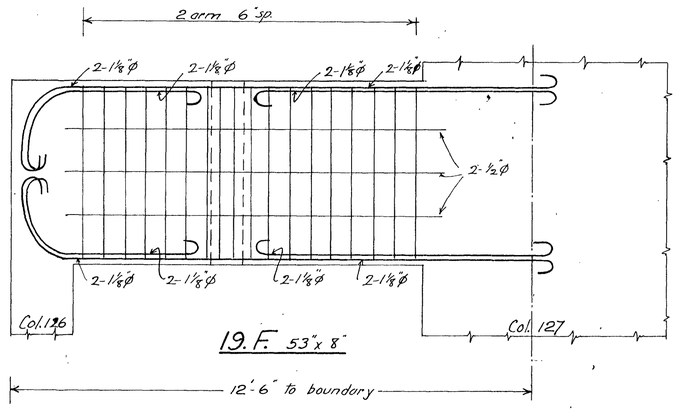
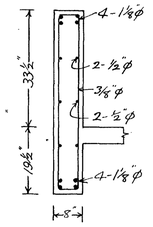
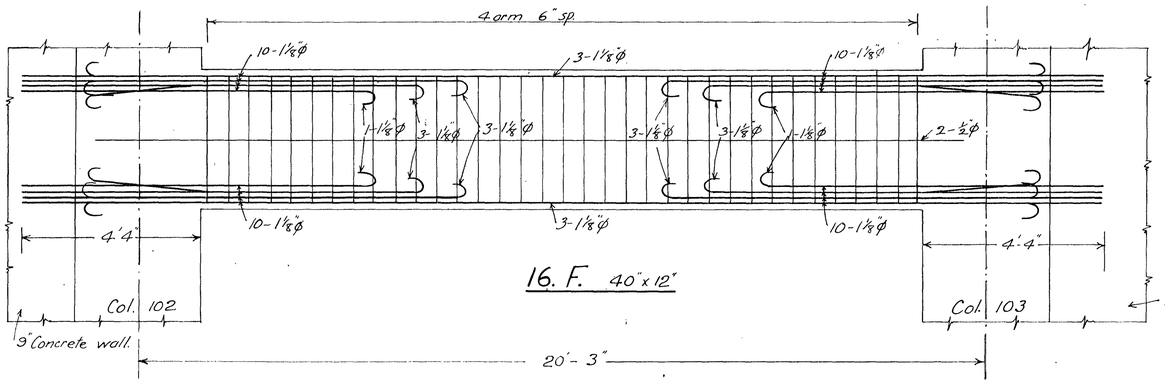
DATE JUNE. 1936	4TH FLOOR BEAMS. F.	SCALE ½" = 1 FT.
DRAWN BY K.W.R.		DRAWING No. 37
CHECKED BY C.R.F. & K.W.R.		

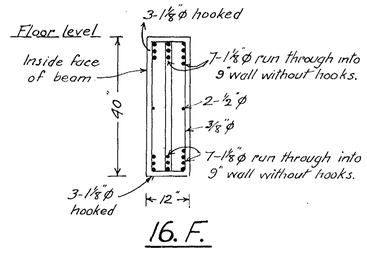


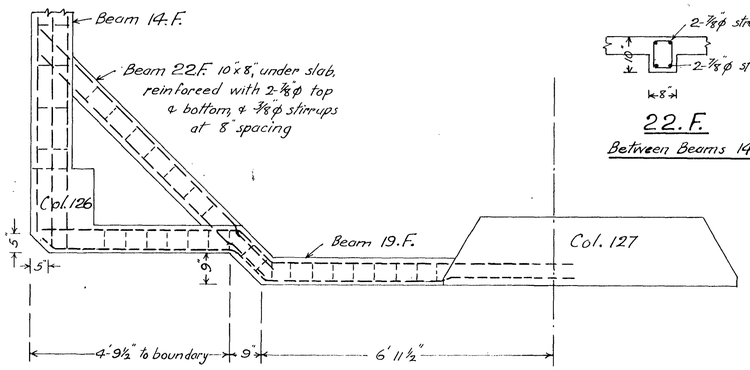




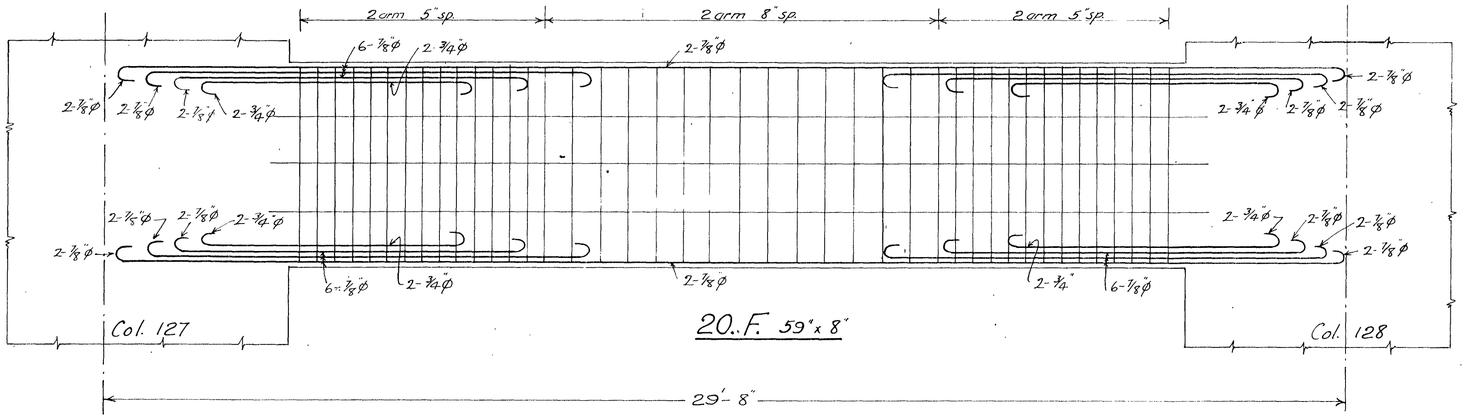


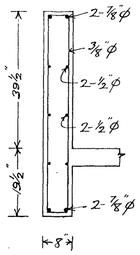






PLAN OF BEAMS 19 & 22 F.





REFERENCE TO BEAMS F NOT DETAILED:

Beam 1 : West end as Floor E. Sheet Nº 36; other spans as Floor C. Sheet Nº 31.
" 4.9.34 : As Floor C. Sheet Nº 31.
" 5, 6, 32 : " " D. " " 34.
" 10. : " " C. " " 32
" 13, 21, 22 (South) : " " D. " " 35.
" 11, 12, (South) : " " E. " " 36.
" 33 : As Stair Details, " " 33.

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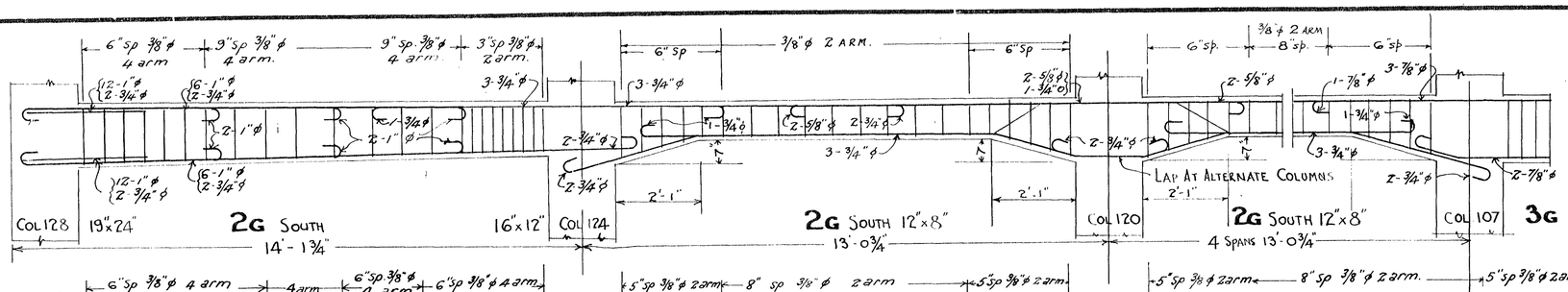
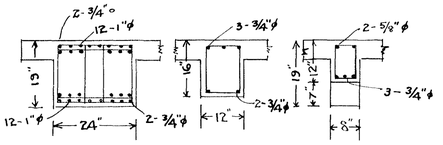
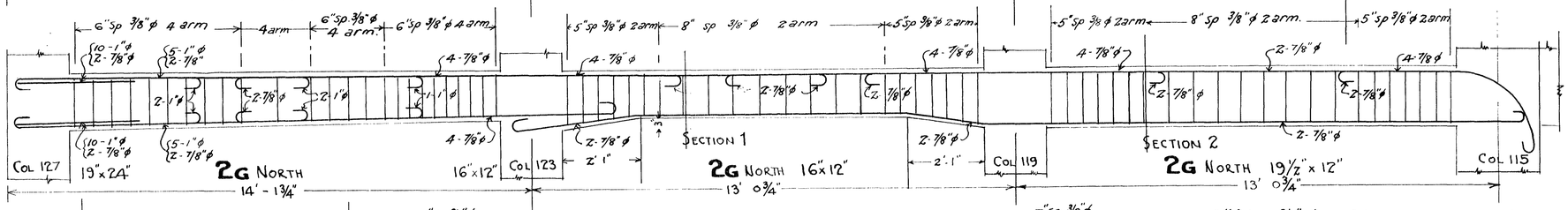
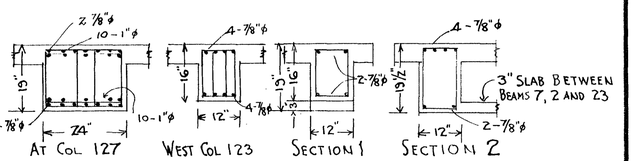
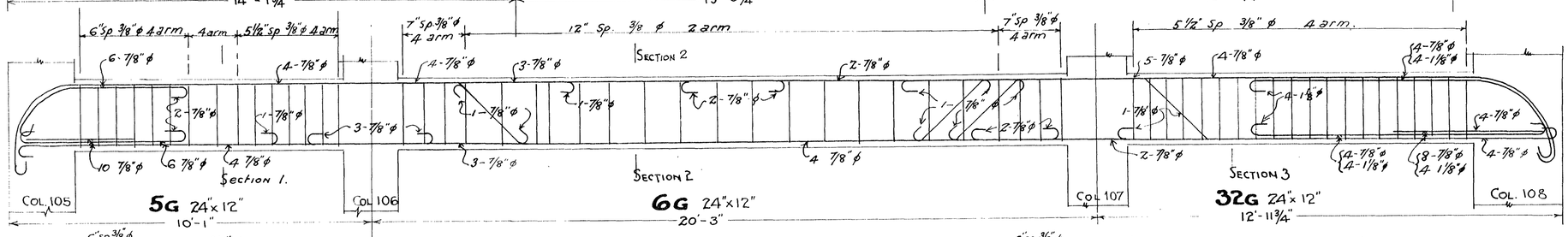
DATE JUNE 1936	4TH FLOOR BEAMS, F.	SCALE ½" = 1 FT.
DRAWN BY K.W.R.		DRAWING No. 38
CHECKED BY C.R.F. & K.W.R.		

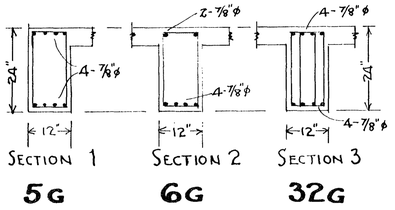


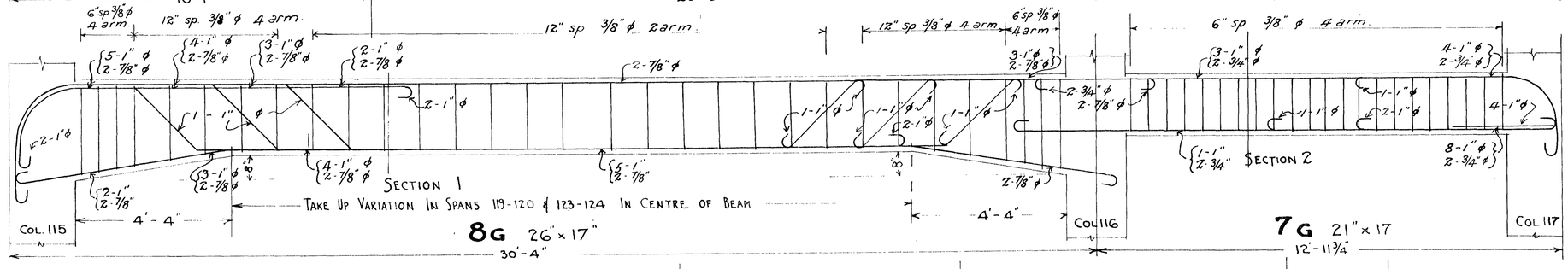


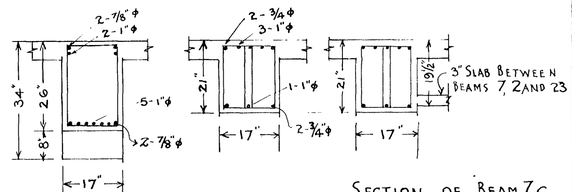


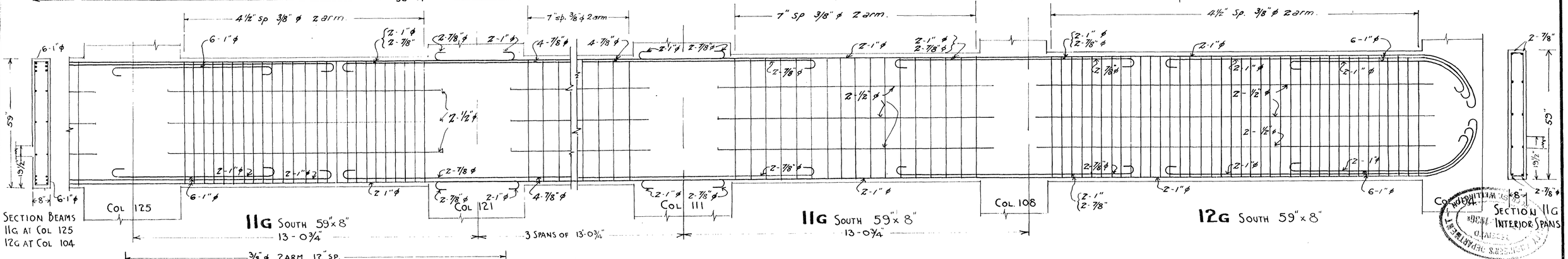


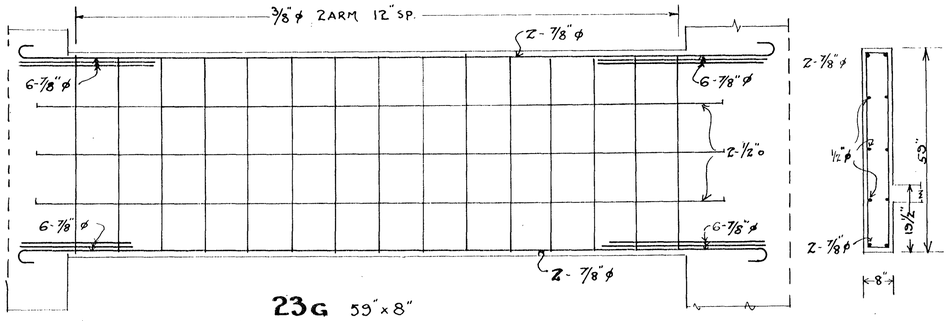












Reference to Beams G not Detailed:

Beam 1 : West end as Floor E, Sheet Nº 36; other spans as Floor C, Sheet Nº 31.
" 3 : As Floor F, Sheet Nº 37.
" 4, 9, 34 : " " C, " " 31.
" 10 : " " C, " " 32.
" 13 : " " D, " " 35.
" 21, 22 : " " D, " " 35.
" 16, 20 : " " F, " " 38.
" 11, 12, North : " " F, " " 37.
" 14 : " " F, " " 38. Size 48"x12", and depth below top of slab to be 19½"
" 33 : As Stair details, " " 27.

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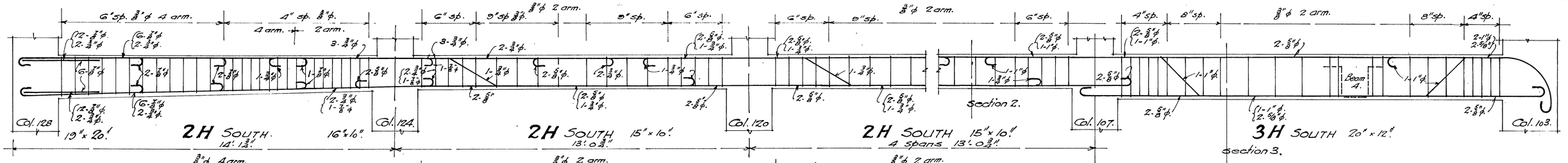
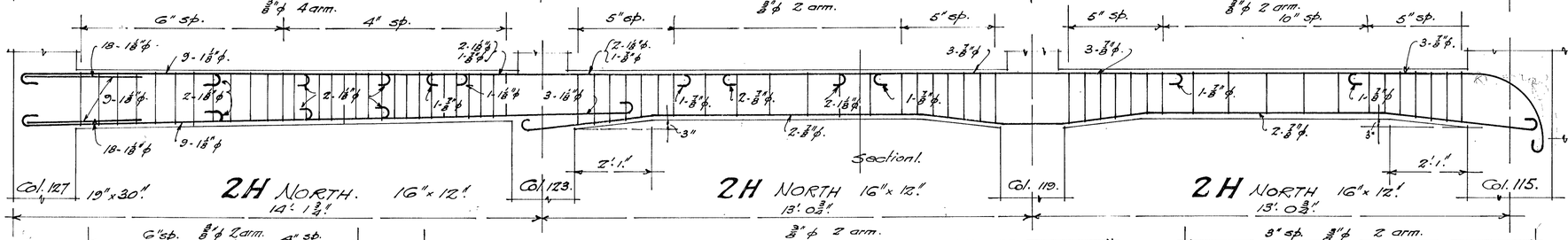
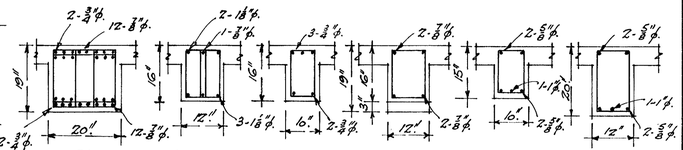
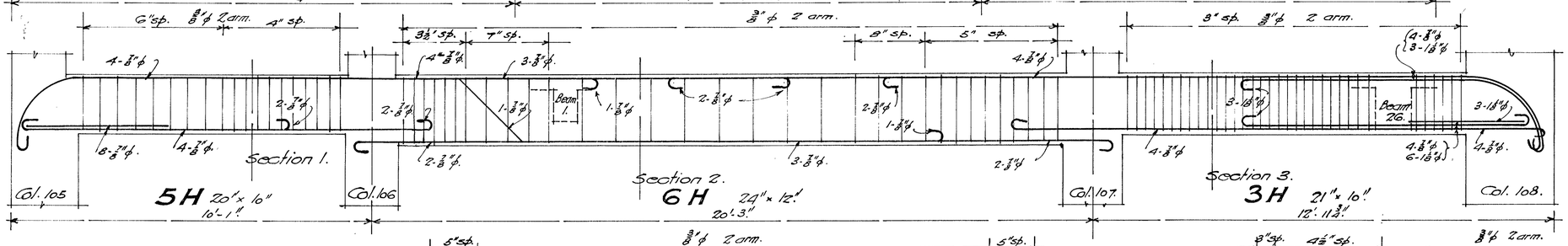
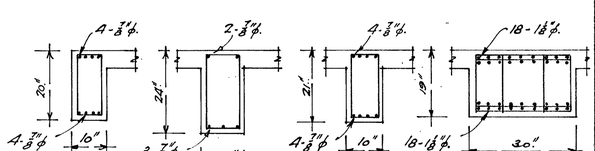
DATE: JUNE 1936	5TH FLOOR BEAMS, G.	SCALE: ½"=1FT.
DRAWN BY: G.N.C.		DRAWING No. 39
CHECKED BY: C.R.F. & K.W.R.		

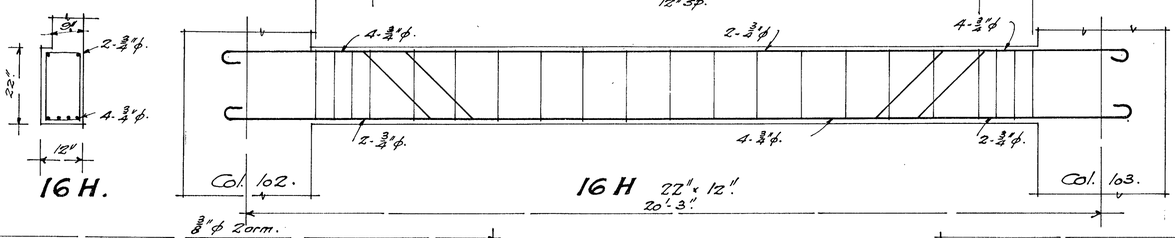


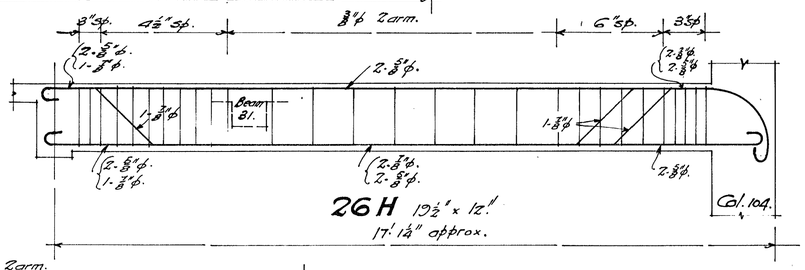


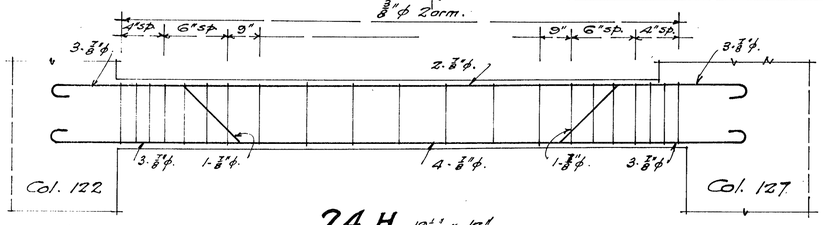


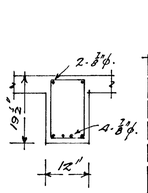


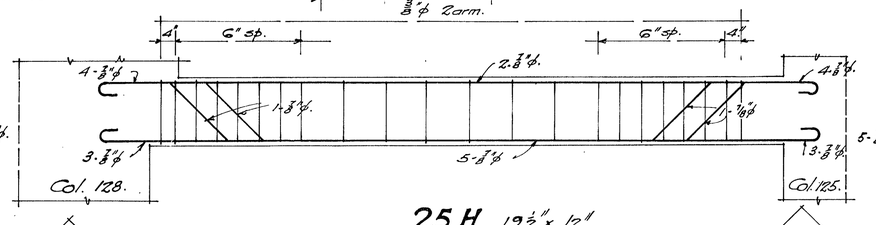


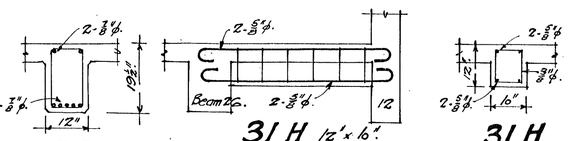


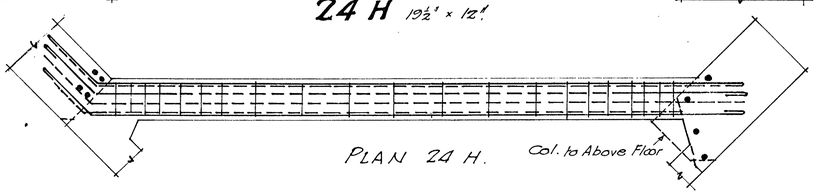


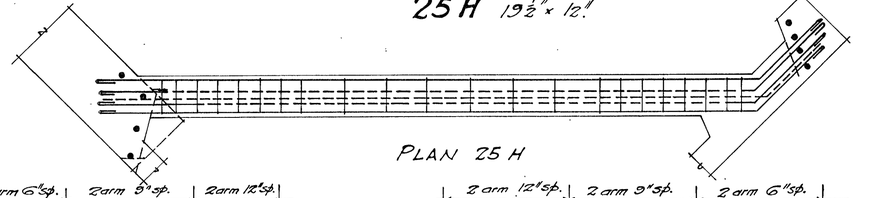


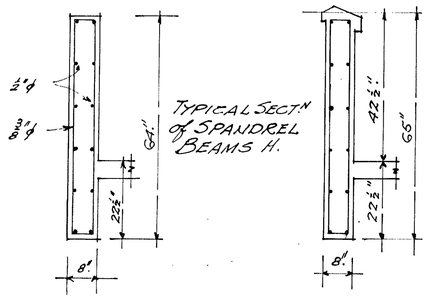


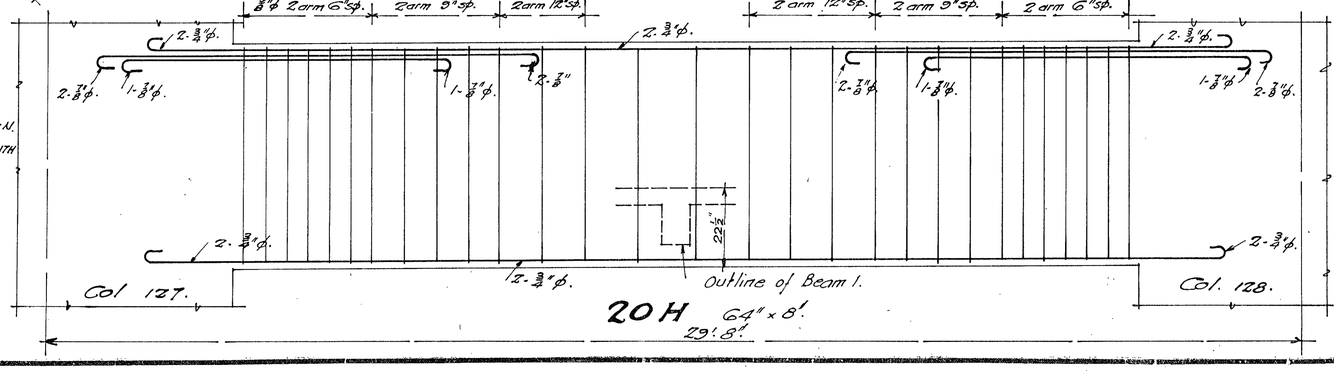












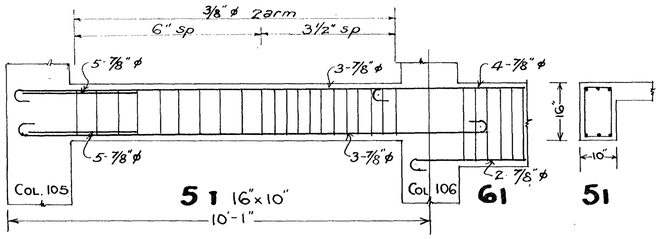
REFERENCE TO BEAMS H NOT DETAILED.

Beam 1 : West end as Floor E, Sheet Nº 36. Other spans as Floor C, Sheet 31.
" 4, 9, 34 : As Floor C, Sheet Nº 31.
" 7, 8 : " " G, " " 39.
" 10. : " " C, " " 31.
" 11, 12, South : " " G, " " 39. but depth 64" & 22½" below slab.
" 11, 12, North : " " F, " " 37. " 64" " 22½" " "
" 13, 21, 22 : " " D, " " 35. " " 64" " 22½" " "
" 14 : " " F, " " 38. but depth 22½" below slab.
" 23 : " " G, " " 39. but depth 64" & 22½" below slab.
33 : As Stair details, Sheet Nº 27.

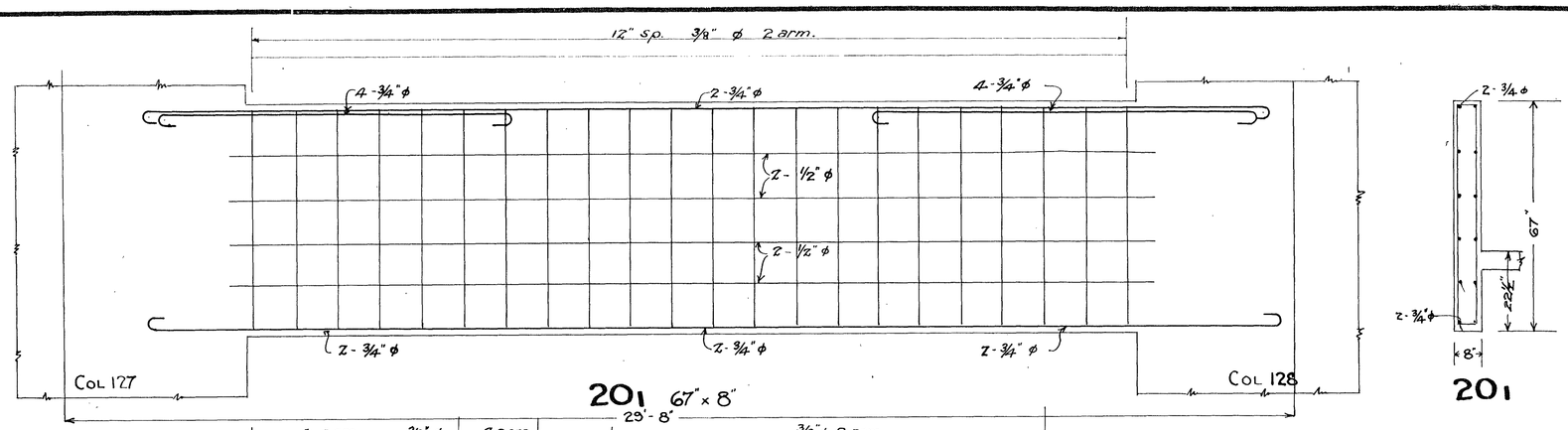
GUMMER & FORD & PARTNERS
ARCHITECTS & STRUCTURAL ENGINEERS
AUCKLAND - - - NEW ZEALAND

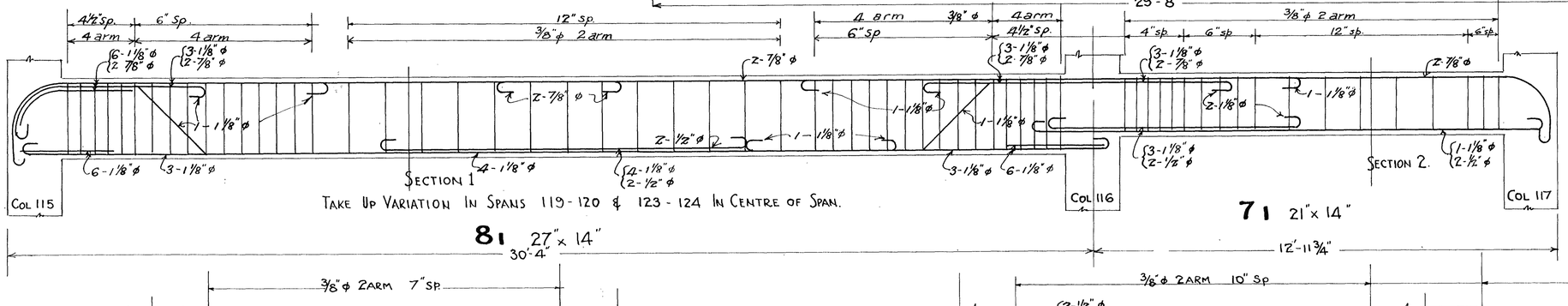
THE NEW ZEALAND INSURANCE BLDG.
E. FEATHERSTON & JOHNSTON STS., WELLINGTON.

DATE JUNE 1936	Reinforcing Details for Sixth Floor Beams, H.	SCALE ½ = 1 FT.
DRAWN BY G.N.C.		DRAWING No. 40
CHECKED BY C.R.F. & K.W.R.		

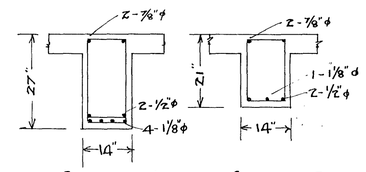


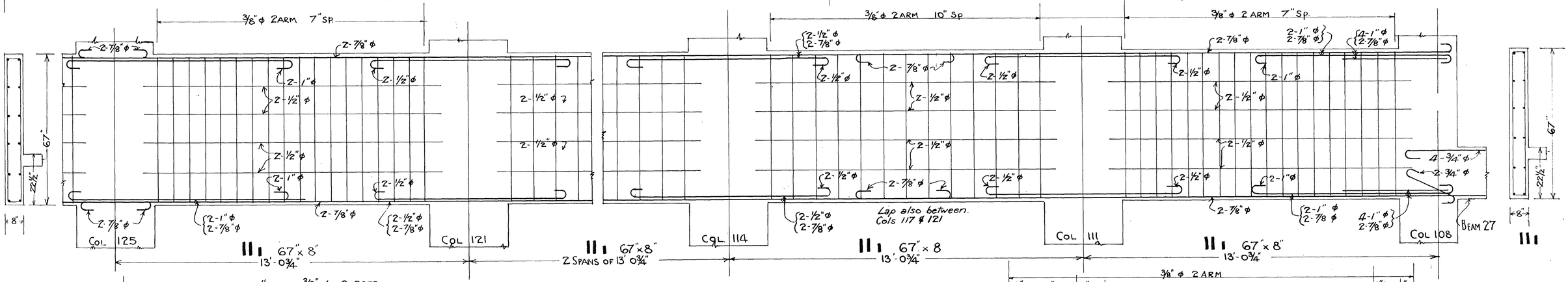
Note. Beams 61 & 32I to be the same as 6H & 32H.



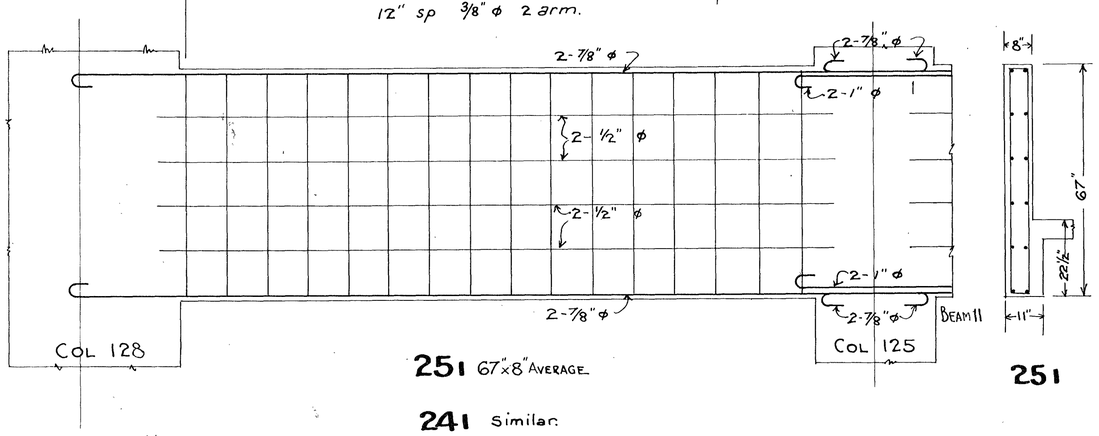


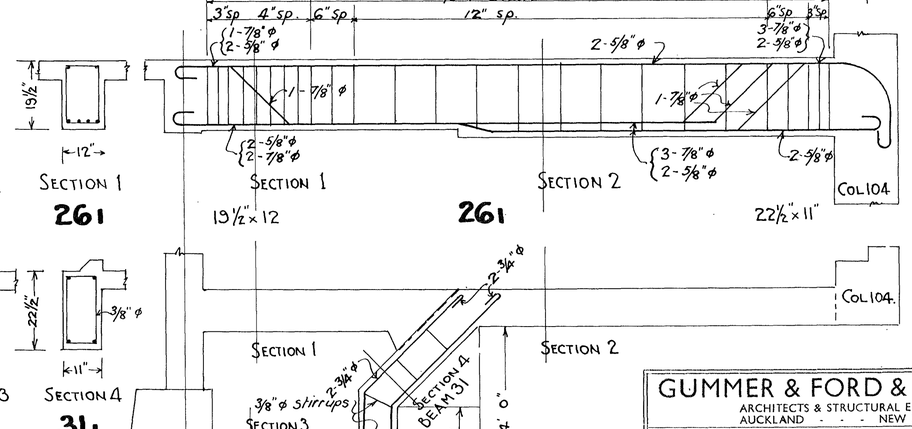
Take Up Variation In Spans 119-120 & 123-124 In Centre of Span.





12" sp 3/8" ϕ 2 arm.





Beam 33: As stair details, Sheet N° 27.

Reference to Beams I not Detailed:-

Beam 1	: West end as Floor E, Sheet N° 36; other spans as Floor C, Sheet N° 31.				
" 2, North & South	: As Floor H, Sheet N° 40.				
" 4, 9, 34.	: " " C, " " 31.				
" 3, 6, 16, 32.	: " " H, " " 40.				
" 10	: " " C, " " 32.				
" 11, 12, North only	: " " F, " " 37, but depth 67", & 22½" below slab.				
" 14	: " " F, " " 38, " " 22½" below slab.				
" 23	: " " G, " " 39, " " 67" & 22½" below slab.				

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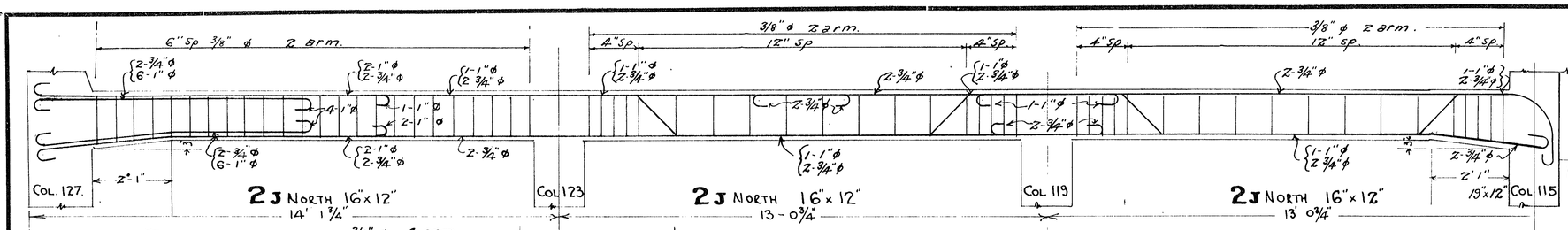
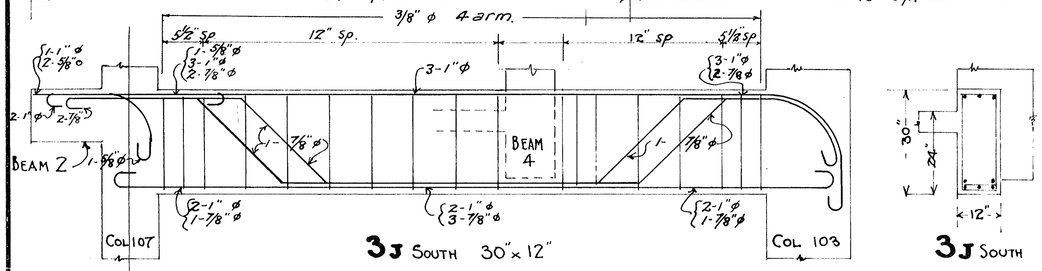
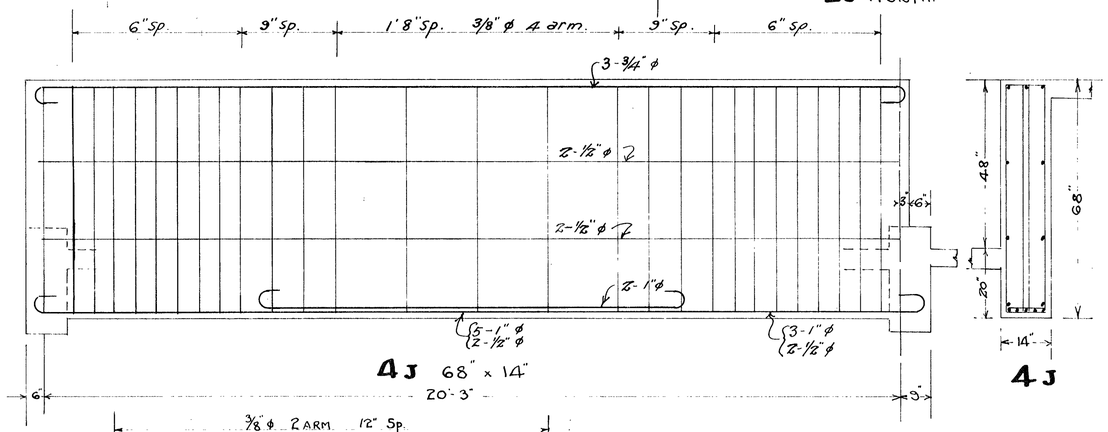
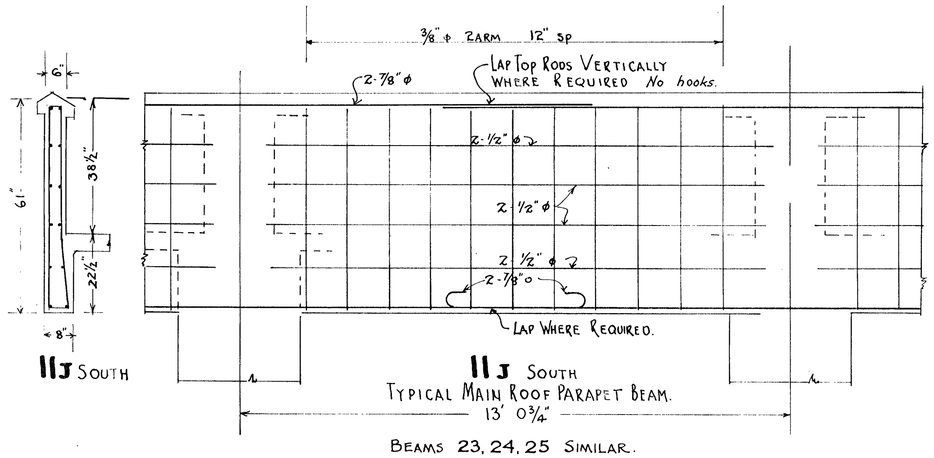
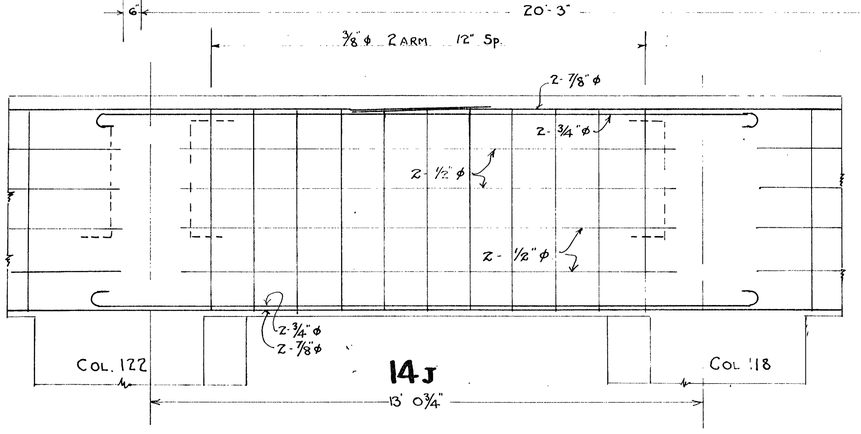
DATE JUNE 1936	7TH FLOOR BEAMS I	SCALE ½" = 1 FT.
DRAWN BY G.N.C		DRAWING No. 41
CHECKED BY C.R.F. & K.W.R.		

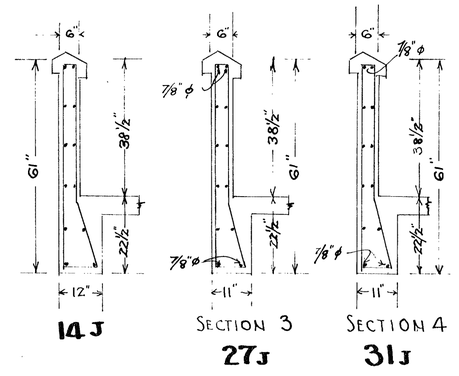


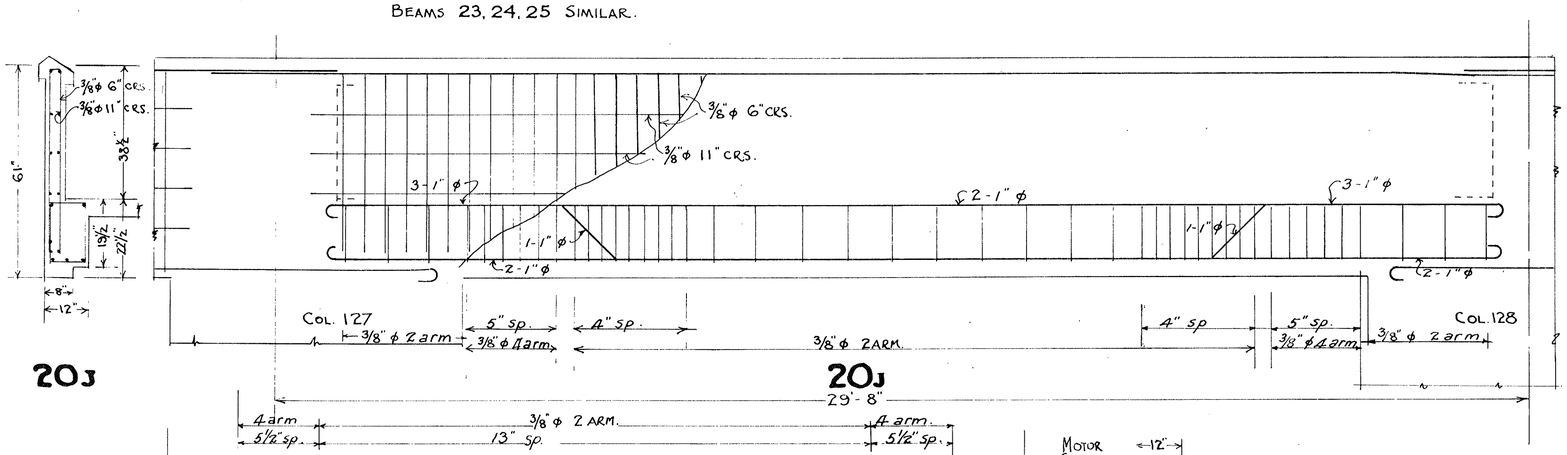


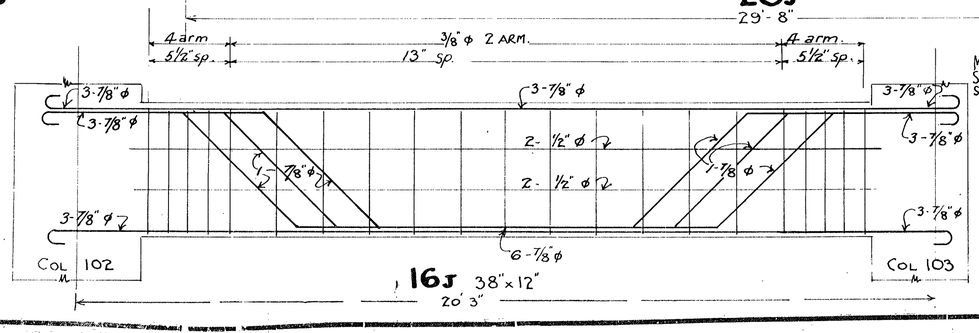


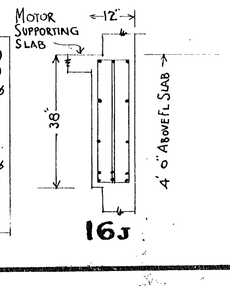


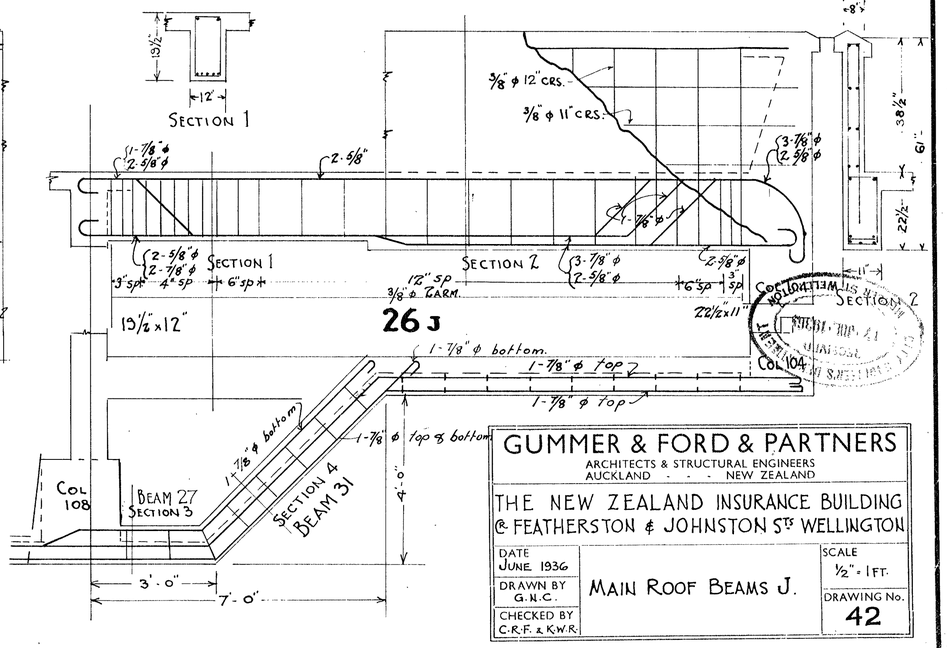












Reference to Beams J not detailed

Beam 1 : West end as Floor E, Sheet Nº 30, other spans as Floor C, Sheet Nº 31.
" 2 South : As Floor H, Sheet Nº 40.
" 5, 7, 8 : " " I, " " 41.
" 6, 32 : " " H, " " 40.
" 10 : " " C, " " 32.
" 9, 34 : " " C, " " 31
" 33. : " Stair details " " 27.
" 11, 12, North : As Beam 11 Floor F, (N) Sheet Nº 37, but depth increased to 67", and 22½" below slab.

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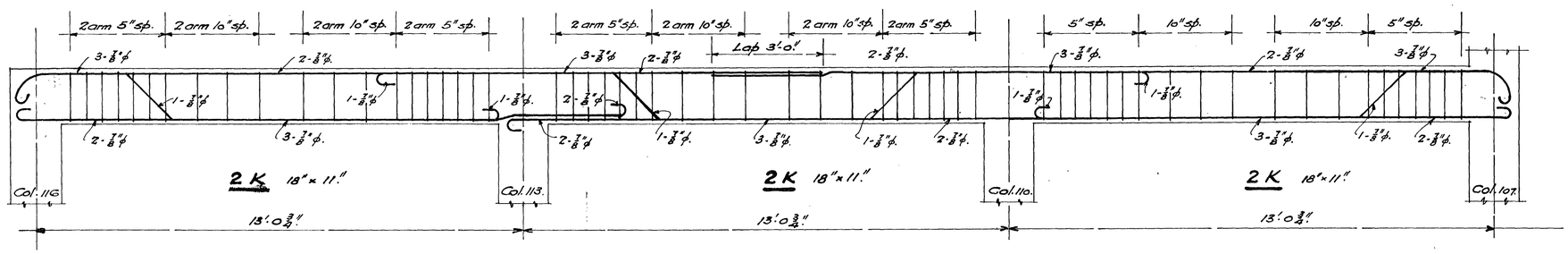
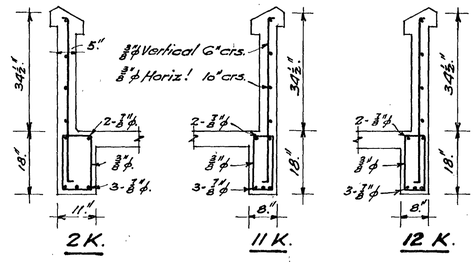
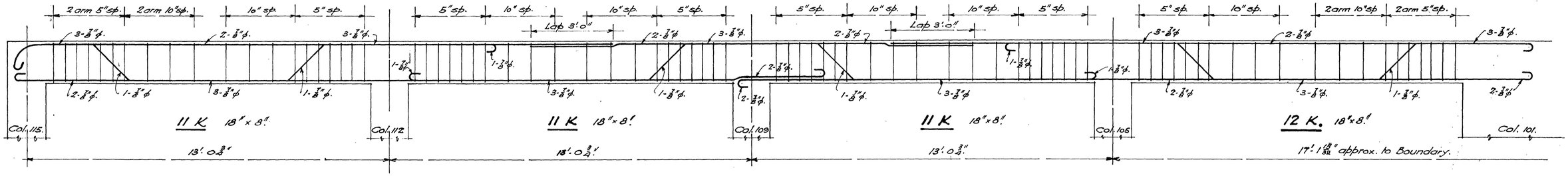
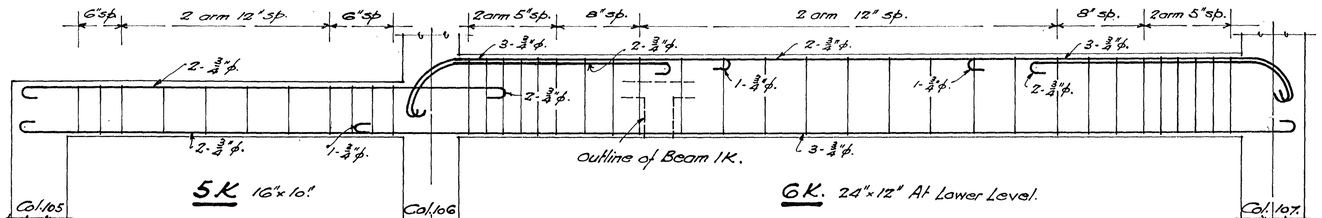
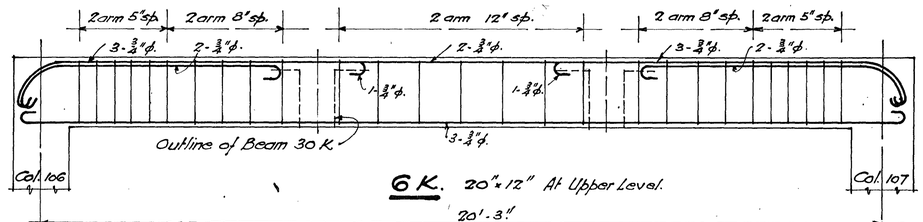
DATE JUNE 1936	MAIN ROOF BEAMS J.	SCALE ½" = 1 FT.
DRAWN BY G.N.C.		DRAWING No. 42
CHECKED BY C.R.F. & K.W.R.		

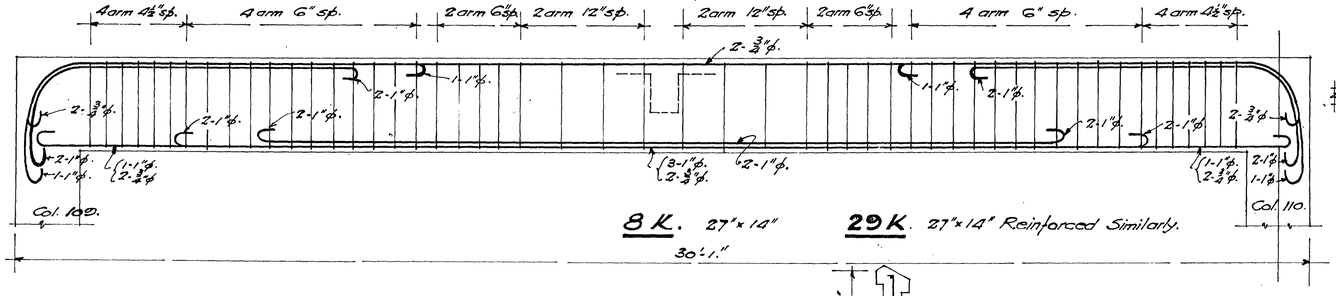


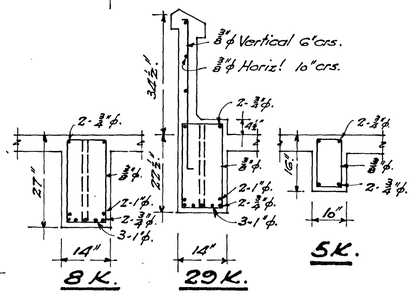


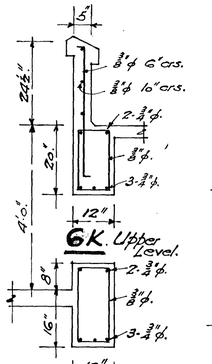


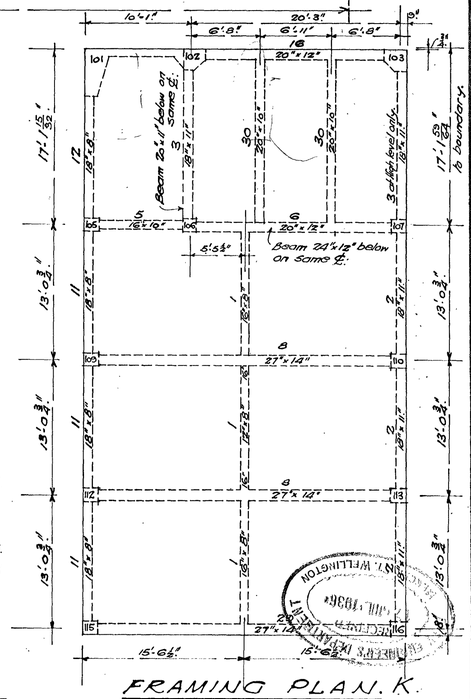


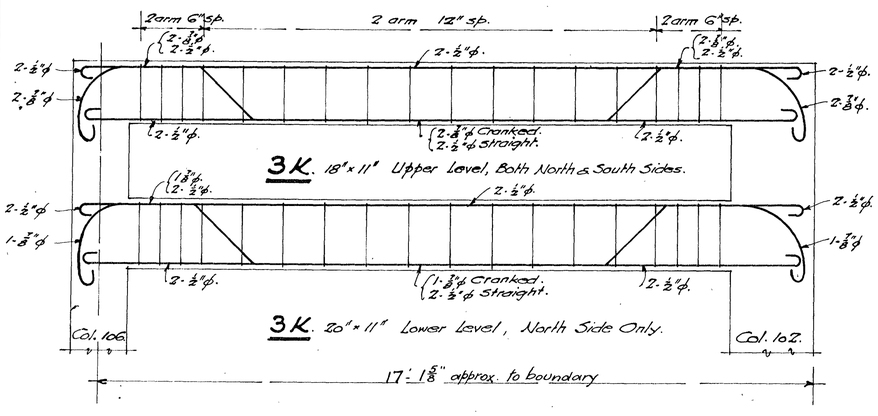


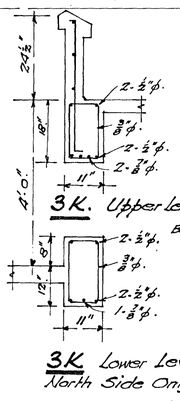


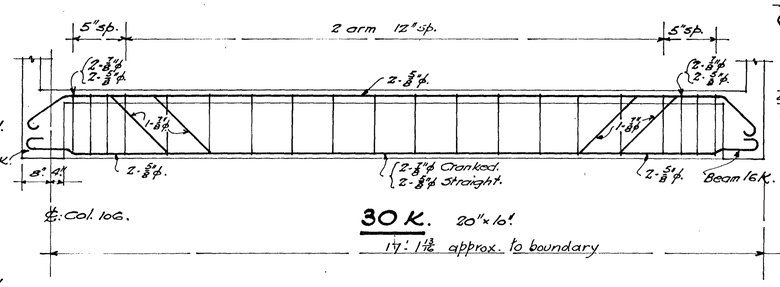


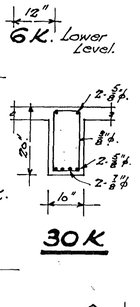


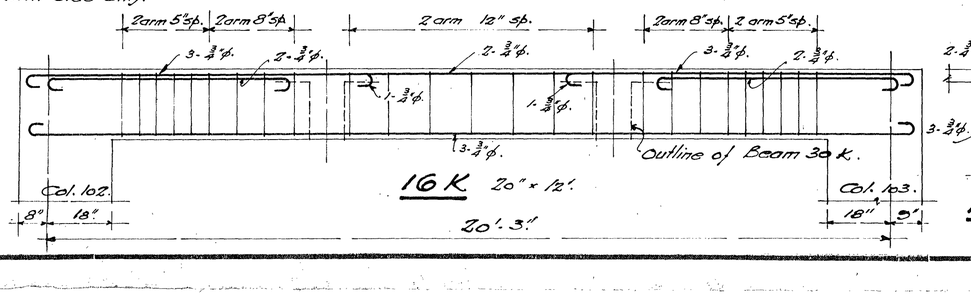


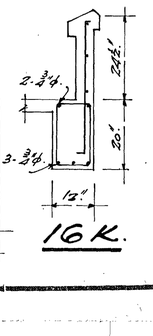












REFERENCE TO BEAMS NOT DETAILED:

BEAM 1K : AS BEAM 1, FLOOR "C", SHEET Nº 31,
2 TYPICAL END SPANS, AND 1 TYPICAL CENTRE SPAN.

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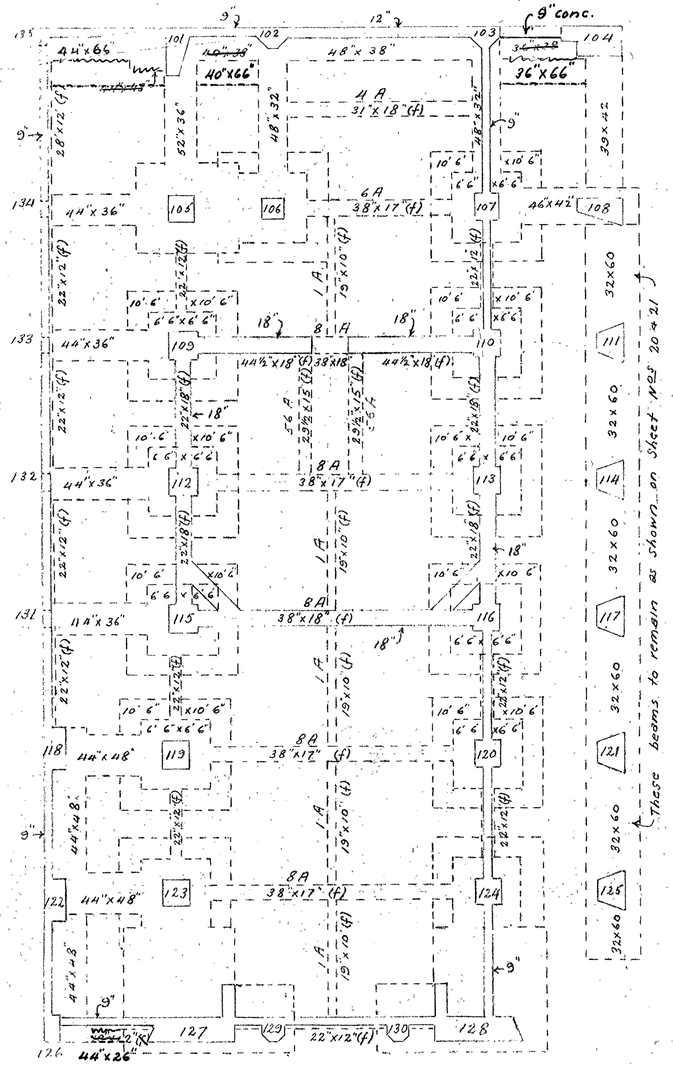
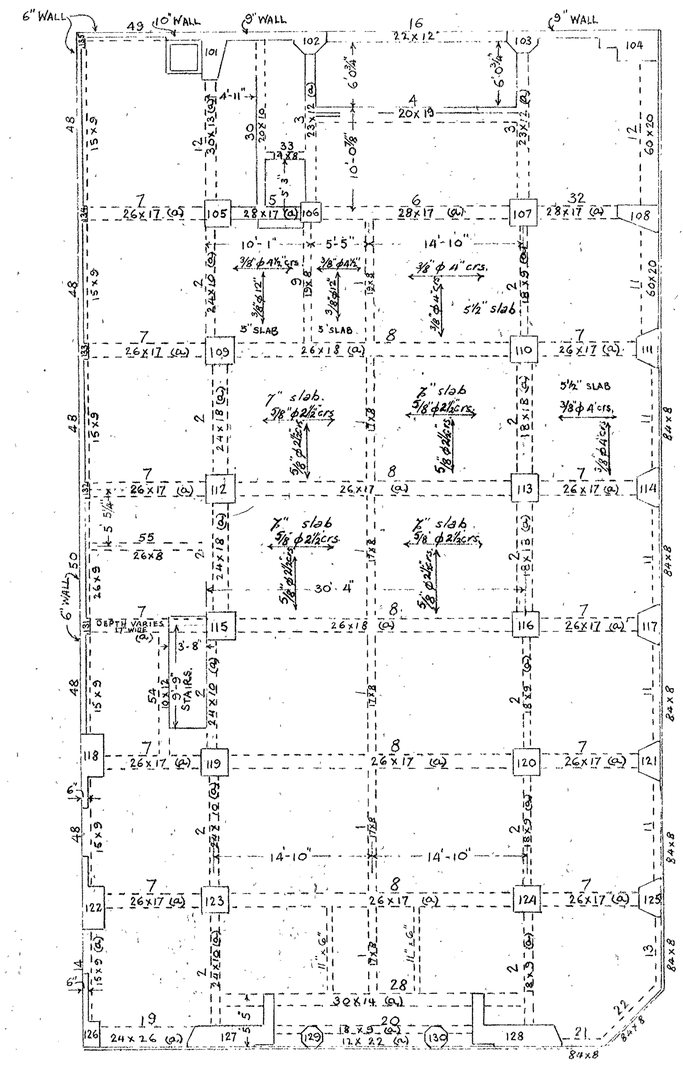
DATE JUNE, 1936	Reinforcing details for Caretakers Roof Beams K.	SCALE 1/4, 1/2, 1/8 = 1 Foot.
DRAWN BY K.W.R.		DRAWING No. 43
CHECKED BY C.R.F. & K.W.R.		





Foundation Plan

For set out of Column centres see sheet Nº 21
For details of foundations see sheet Nºs 18, 20, 21 & 46, 47 & 48
Keep excavated surface clear of undersides of basement floor slabs and of all beams whose dimensions are suffixed by (f)
Columns below ground floor to remain as shown on sheet Nº 25 with exception of Col. Nº 106 which is to be increased to 26"x 26"

GROUND FLOOR "B"

For set out of Column centres see sheet Nº 22
Where beam dimension is suffixed by (a), beam has been amended.
See sheet Nos. 49 & 50. Other beams to remain as shown on sheet Nºs 27-30
Ground Floor slabs to remain as shown on sheet Nº 22 except slabs inside square formed by Cols. 109-110-116-115 which are to be 6" thick. Reinforcement as on sheet Nº 22.

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WELLINGTON NEW ZEALAND

N.Z INSURANCE BUILDING
WELLINGTON

21.8.56	AMENDED FRAMING PLANS. BASEMENT & GROUND FLOOR	SCALE ½" = 1FT
J.T.B		DRAWING No. 45.

Col 135 | Col 101 | Col 102 | Col 103

8" slab A | 8" slab B | 8" slab

9-1⅛"φ | 5-1⅛"φ | 4-1⅛"φ | 10-1⅛"φ | 2-½"φ | 1-1⅛"φ | ½"φ 2'6" long | 6-1⅛"φ | 12-1⅛"φ

2½" cover | 66" wide x 44" deep | 3'0" | 1½" | All Stirrups ½"φ 6 arm A | 66" wide x 40" deep | 12-1⅛"φ | 2½" cover | 38" wide x 48" deep B | 36" deep x 66" wide | see sheet No 18

11'-11 31/64" | 10'-2½" | 20'-3" | 12'-10¾"

For Footing Beam between Cols. 102 and 106 see sheet No. 18

Footing Beam 16.

Footing Beams Between Cols. 135, 101, 102, 103 & 104

All stirrups ½"φ 6 arm.

space stirrups & bars evenly. See Amended detail.

See sheet No 18 (except for size of beam)

½"φ at 5" crs. both ways.

3" R. wall. | 8" slab | 10-1⅛"φ | 2'5⅛" | 3'-4½"

Section AA

3'2" | 12" Retaining Wall. | 4'0"

Section BB

Col 134 | Col 105 | Col 106 | Col 107 | Col 108

C | D

Note:- Col 106 to be increased to 26"x 26"

8'-10" | 6'6" (square) | 12'-10¾" | 6'-6"

9-1⅛"φ | 4-1⅛"φ | 2-1⅛"φ | 9-1⅛"φ | 1½"φ at 3½" crs. | 1½"φ at 3½" crs. both ways | T-1⅛"φ | 9-1⅛"φ | 2'-1" | 17"x 38" Beam 6A | 6-1⅛"φ | ½"φ H arm | 9-1⅛"φ | 4-1⅛"φ | 2-1⅛"φ | 2'-1½"φ | 14-1⅛"φ | ½"φ 2'6" long | 1½"φ at 3½" crs. both ways. | 7-1⅛"φ | 6-1⅛"φ

36" wide x 44" deep | 42" wide x 46" deep. | Stirrups ½"φ 6 arm.

omit ½"φ rods where 1⅛"φ occur.

1'9¾" | 10'6" square. | steel to be placed but concrete omitted over 6' opening until door is hung

Col 133 | Col 109 | Col 110

C | E

6'6" | 8" slab | 9-1⅛"φ | 2-1⅛"φ | 5-1⅛"φ | 7-1⅛"φ | 4'1½" | 2'1" | 4'2" | 3'0" | ½"φ

Bottom of Beam 8A Cols. 112-113 + 115-116

18"x 44½" | 18"x 38" | 18"x 44½" | 2½" cover | ½"φ at 3½" crs both ways

Section CC.

36" wide x 44" deep. ½"φ 6 arm stirrups. | ½"φ 4 arm stirrups | 10'6"

Note:- Footings to Columns 132, 112, 113 and 131, 115, 116 to be similar to 133, 109, 110 but beam 8A between cols 112-113 to be 17"x 38" throughout and between Cols 115-116 18"x 38" throughout, each with 6-1⅛"φ top and bottom as indicated by dotted lines.

Col 118 | Col 119 | Col 120

D

6'6" | 14'10" | 6'6"

10-1⅛"φ | ½"φ 3'6" long | 2-1⅛"φ | 4-1⅛"φ | 10-1⅛"φ | 6-1⅛"φ | 4-1⅛"φ | 2-1⅛"φ | ½"φ at 3½" crs both ways | 2½" cover | 2'1" | 4'2" | 2'10"

48" wide x 44" deep ½"φ 6 arm stirrups | ½"φ at 3½" crs both ways | ½"φ 4 arm stirrups | 17" x 38" deep BEAM 8A | 10'6" | 29'-8"

Section DD

18" | 3'2" | 3'8½" | 3'5½"

Section EE Cols 115-116 | Section EE Cols 109-110.

Col 122 | Col 123 | Col 124

6'6" | 10-1⅛"φ | ½"φ 3'6" long | 2-1⅛"φ | 4-1⅛"φ | 10-1⅛"φ | 6-1⅛"φ | 2'1" | same as above between Cols 119+120

48" wide x 44" deep ½"φ 6 arm stirrups. | ½"φ at 3½" crs both ways | ½"φ 4 arm stirrups | 5'6¾" | 10'6" | 10'6¾"

6-1⅛"φ | 2'1" | 3'0" | 17" x 38" deep | ½"φ at 3½" crs both ways | 5'3" | 5'3" | 4'11¾" | 5'7"

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AUCKLAND — NEW ZEALAND

N.Z. INSURANCE BUILDING WELLINGTON.

DATE		SCALE
29-8-36	AMENDED FOOTINGS & BASEMENT FLOOR BEAMS.	½" = 1 FT.
DRAWN		DRAWING NO.
J.J.B.		46

Col. 126 | Col. 127 | Col. 129 | Col. 130 | Col. 128

A … A

B … B

3-1⅛" ϕ

3-⅞" ϕ

½" ϕ at 12" crs.

⅞" ϕ at 6" crs.

⅞" ϕ at 3" crs

19" x 7" ⅜ ϕ A arm stirrups

47-⅞" ϕ

⅞" ϕ at 3" crs both ways

23-⅞" ϕ

3-1⅛" ϕ

26" wide x 44" deep

3'0"

22½" x 12"

⅜" ϕ 2 arm stirrups

23-1⅛" ϕ

12' 6" 3/4"

5' 0"

9' 3"

2' 0"

11' 9"

8' 8"

16' 3"

Section AA.

Section BB.

Col. 126 | Col. 122 | Col. 118 | Col. 131 | Col. 132

C … C

D … D

8-1⅛" ϕ

6 2-½" ϕ

2-½" ϕ

2-⅝" ϕ

3-⅞" ϕ

1-⅞" ϕ

48" wide x 44" deep

½" ϕ 6 arm stirrups

22"x12"

⅜" ϕ 2 arm stirrups

14' 0 3/4"

13' 0 3/4"

Col. 134 | Col. 135

E … E

2-⅝" ϕ

3-⅞" ϕ

6 2-⅝" ϕ

1-⅞" ϕ

⅜" ϕ 2 arm stirrups

28" x 12"

17' 1 13/44

Col. 127

Col. 123

6' 6"

Col. 119

Section CC

4' 0"

3'8"

½" ϕ

F … F

Col. 115

Col. 112

G … G

Section DD

Section EE

Section FF

Section GG

Section HH

Note:- Detail at Col 109 similar to this but reversed

3-¾" ϕ

4-⅝" ϕ

22" x 18"

Stirrups ⅜" ϕ 2 arm

6" sp. 4" sp.

62-⅞" ϕ

21-⅞" ϕ

41-⅞" ϕ

⅞" ϕ at 6" crs

⅞" ϕ at 3" crs

½" ϕ at 12" crs

½" ϕ at 3½" crs. both ways

6' 5"

11' 9¾"

10' 6"

15' 0 3/4"

13' 0 3/4"

Col. 105 | Col. 101

4-1⅛" ϕ

3-1⅛" ϕ

3-¾" ϕ

2-1⅛" ϕ

9-1⅛" ϕ

2-1⅛" ϕ

4-1⅛" ϕ

5-1⅛" ϕ

½" ϕ 2'6" long

½" ϕ at 3½" crs. both ways

36' wide x 5'2" deep

8' 6"

See amended section

Col. 128 | Col. 124

H … H

11' 9¾"

15' 0¾"

Note:- Beams connecting footings 124-120-116-113-110-107 to be 22"x12" and 22"x18" with 3-¾" ϕ top and bottom as for beams connecting footings 123-119-115-112-109-105.

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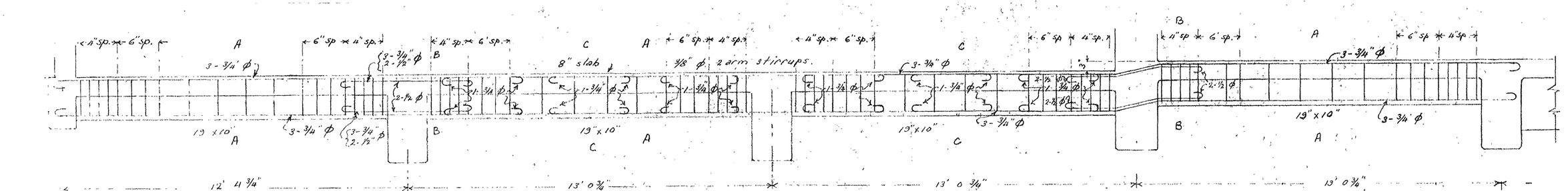
AUCKLAND NEW ZEALAND

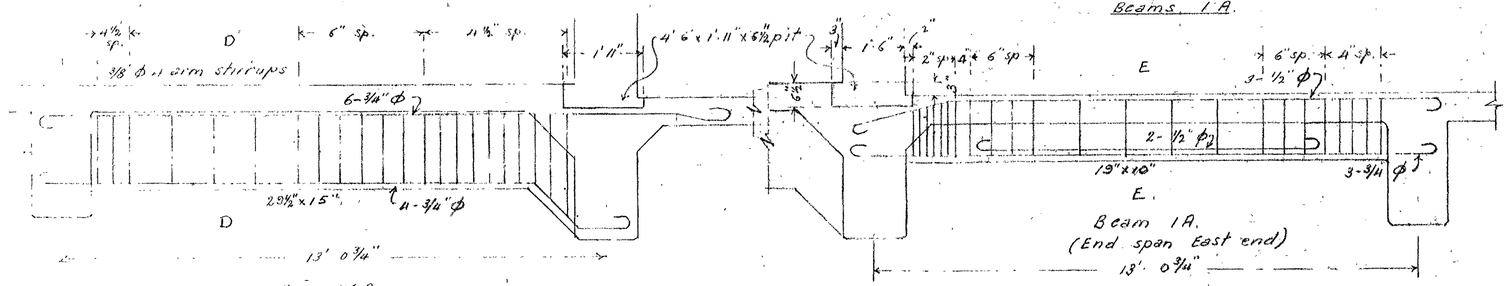
N.Z. INSURANCE BUILDING
WELLINGTON.

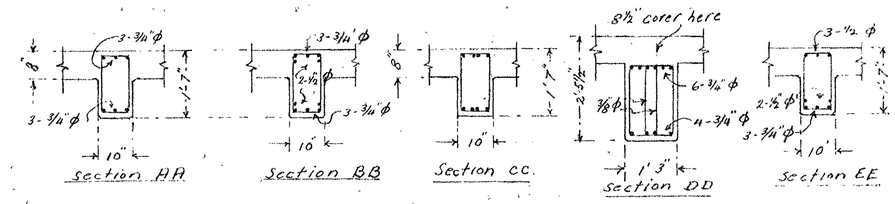
DATE 29.8.36
DRAWN J.J.B.

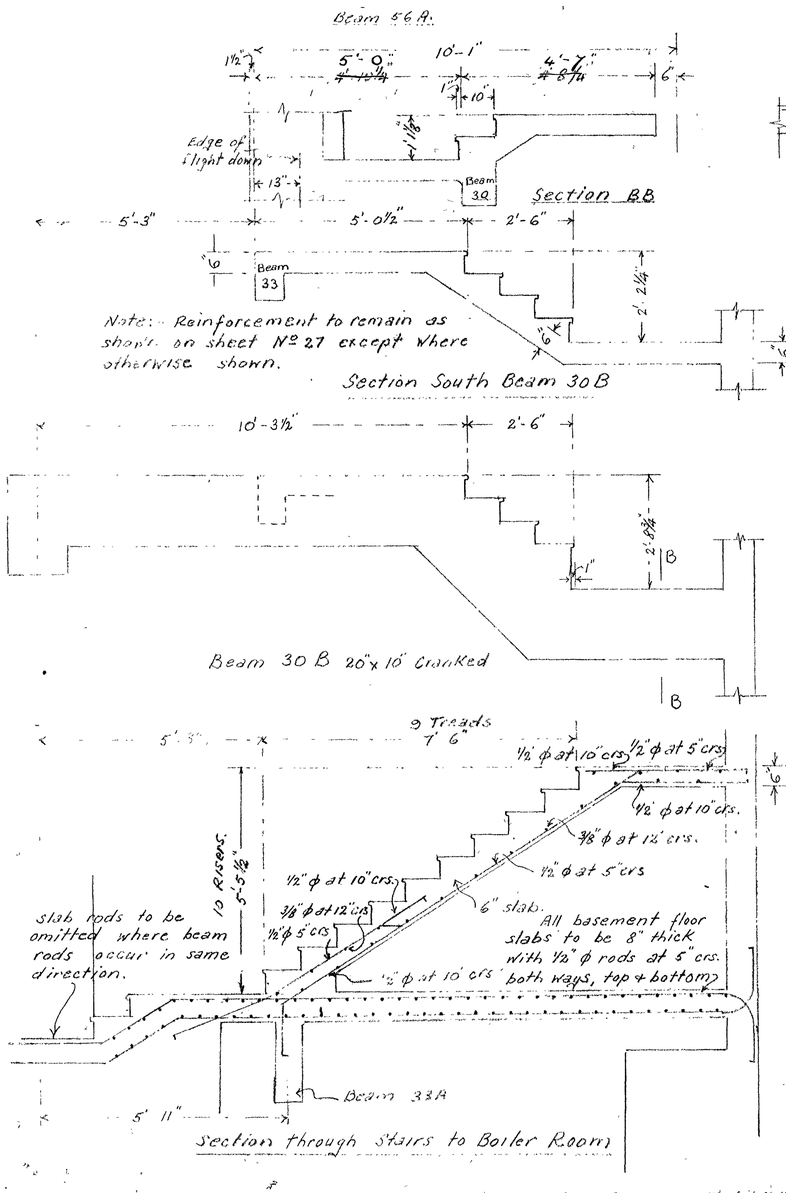
AMENDED FOOTINGS & BASEMENT FLOOR BEAMS.

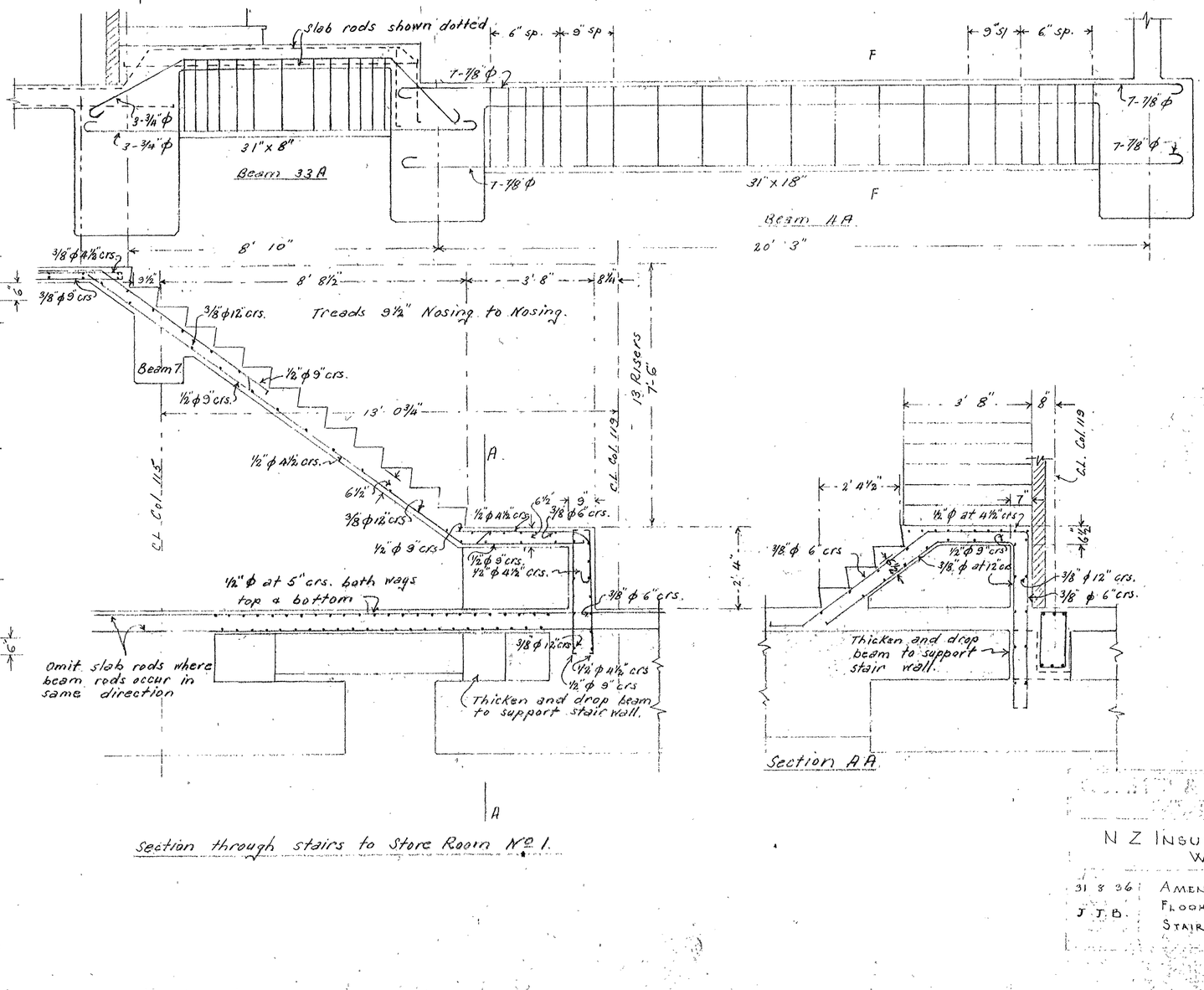
SCALE ½ - 1 FT.
DRAWING No. 47

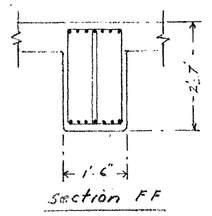










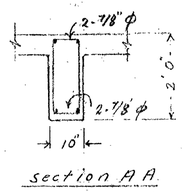


COLLETT & ICKE ARCHITECTS
WELLINGTON

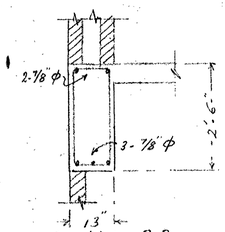
N Z INSURANCE BUILDING
WELLINGTON.

31 8 36	AMENDED BASEMENT FLOOR BEAMS & STAIRS.	SCALE 1/2 = 1FT.
J.T.B.		DRG. NO. 48.

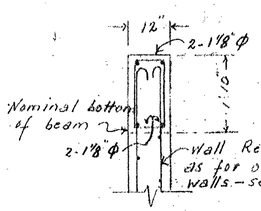
Note:- Beam 11B to be the same as Beam 4B, see sheet No 30.
Beams 1B to remain unchanged see sheet No 28.
Beams 2B South to be 18"x9"+18" with 2-7/8" ϕ top & bottom with stirrups and laps as for beam 4B sheet No 30
Beams 11, 12 (South) 13, 21 & 22 B to remain as shown on sheet No 29.



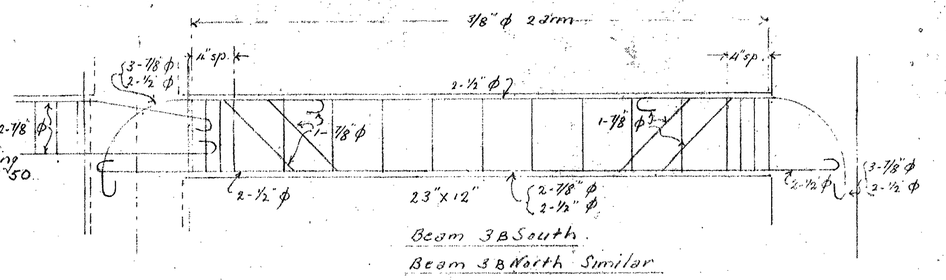
Section AA



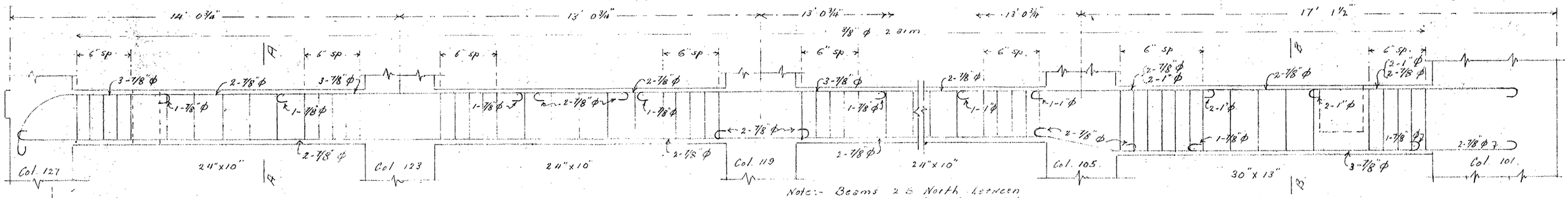
Section BB



Section CC



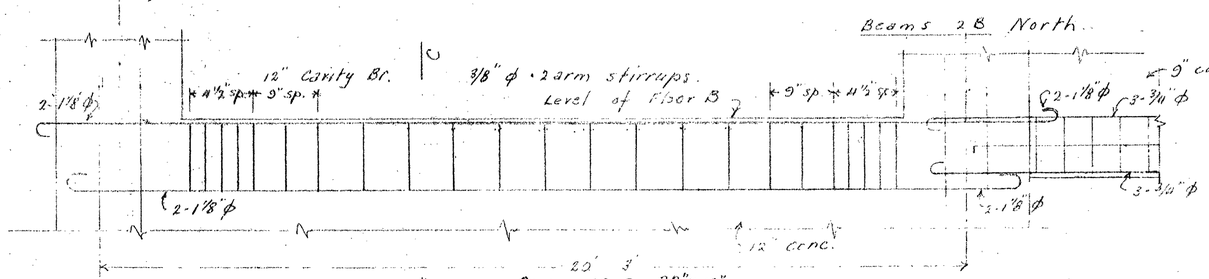
Beam 3B South.
Beam 3B North Similar



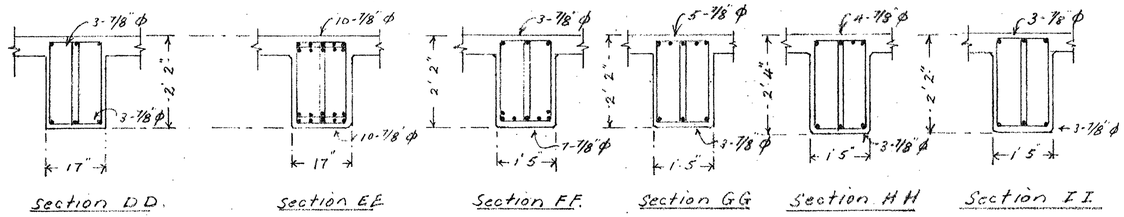
Beams 2B North.

Note:- Beams 2B North between Cols. 115-109 & 2B South between Cols. 116-110 to be 18" wide.

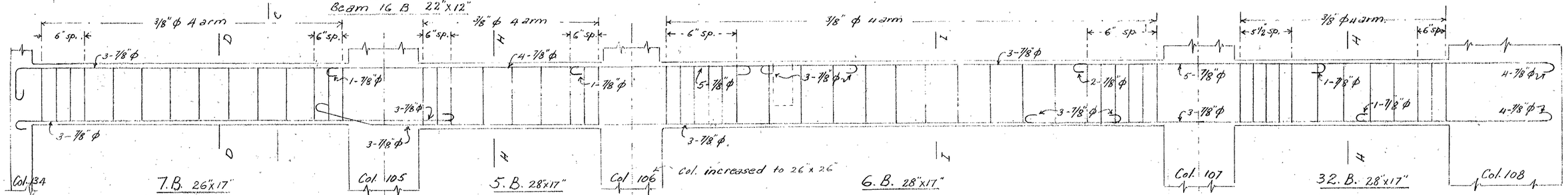
Beam 12B North.



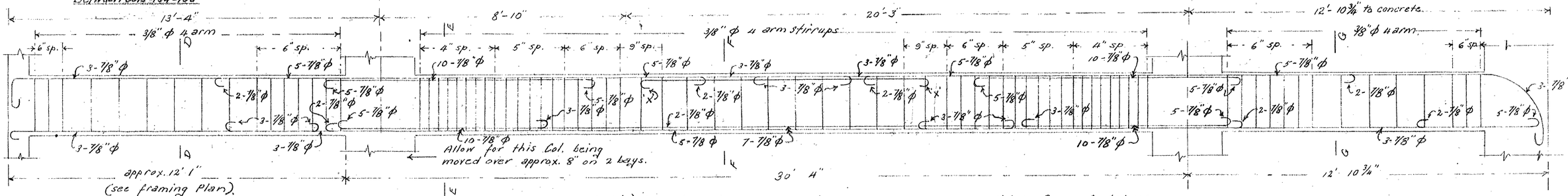
Beam 16B 22"x12"



Section DD. Section EE. Section FF. Section GG. Section HH. Section II.



Between Cols. 134-105



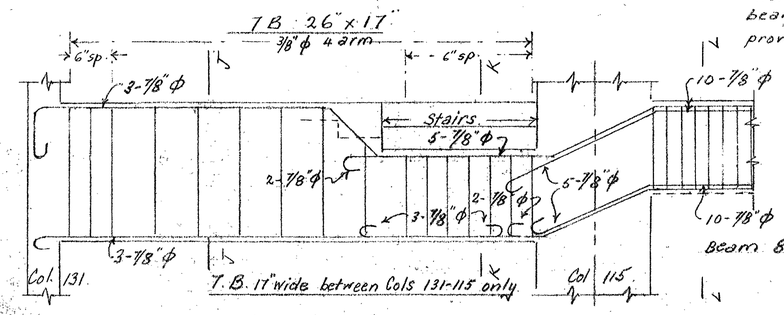
7B 26"x17"

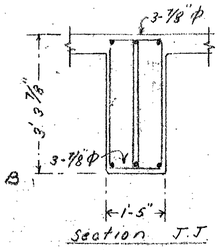
Note:- Bars marked 'X' in centre of beam 8 to be 3-⅞" ϕ and to be provided between Cols. 109-110 only.

8B 26"x17"

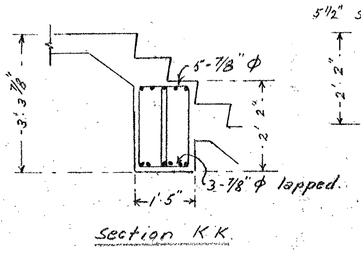
Note:- Beam 8 between Cols. 109-110 & 115-116 to be 18" wide.

7B 26"x17"

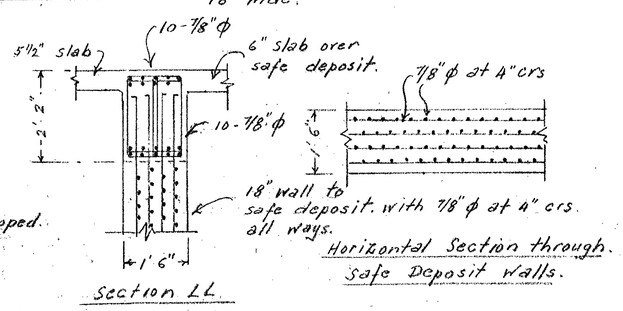




Section JJ



Section KK



Section LL

Horizontal Section through Safe Deposit Walls.

GUMMER & FORD & PARTNERS
ARCHITECTS & STRUCTURAL ENGINEERS
WELLINGTON - - - NEW ZEALAND

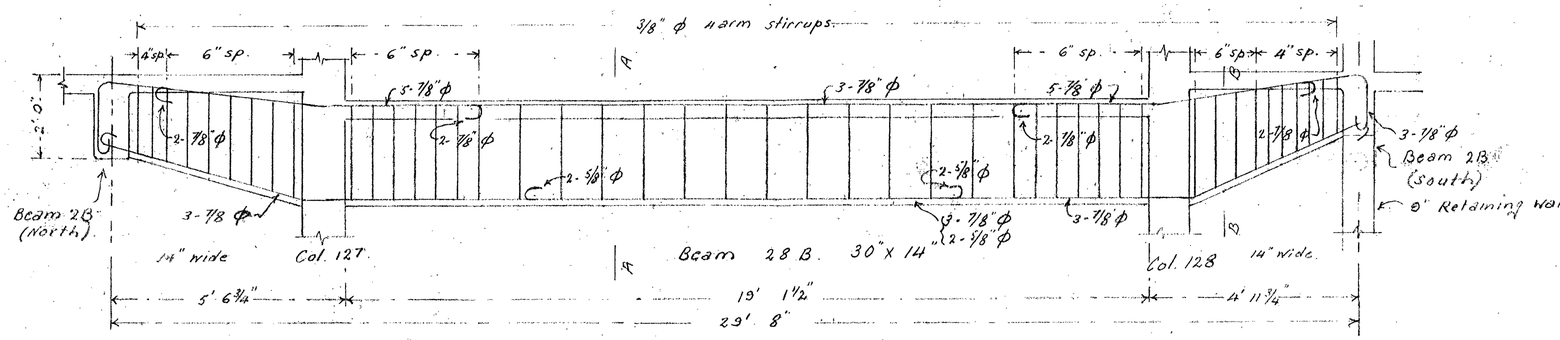
N.Z. INSURANCE BUILDING
WELLINGTON.

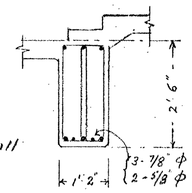
DATE 31·8·36
J.J.B.

AMENDED GROUND FLOOR BEAMS.

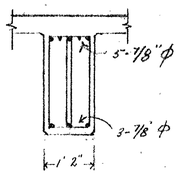
SCALE ½" = 1 FT.

DRAWING No. 49

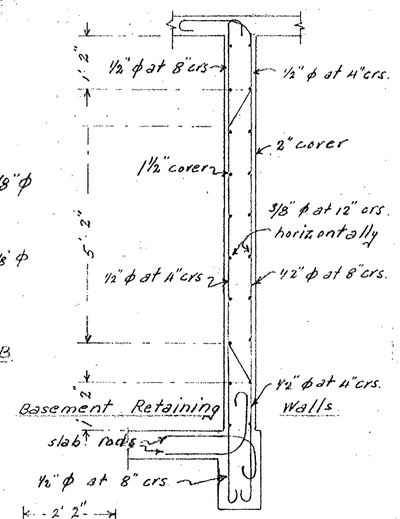


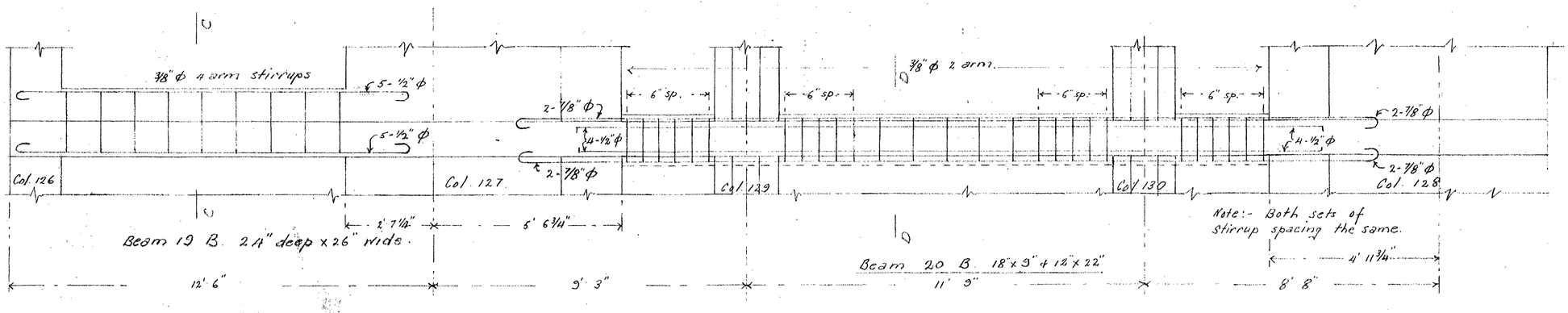


Section AA

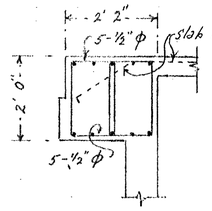


Section BB

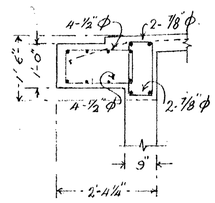




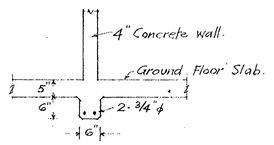
Note:- Both sets of stirrup spacing the same.



Section CC



Section DD

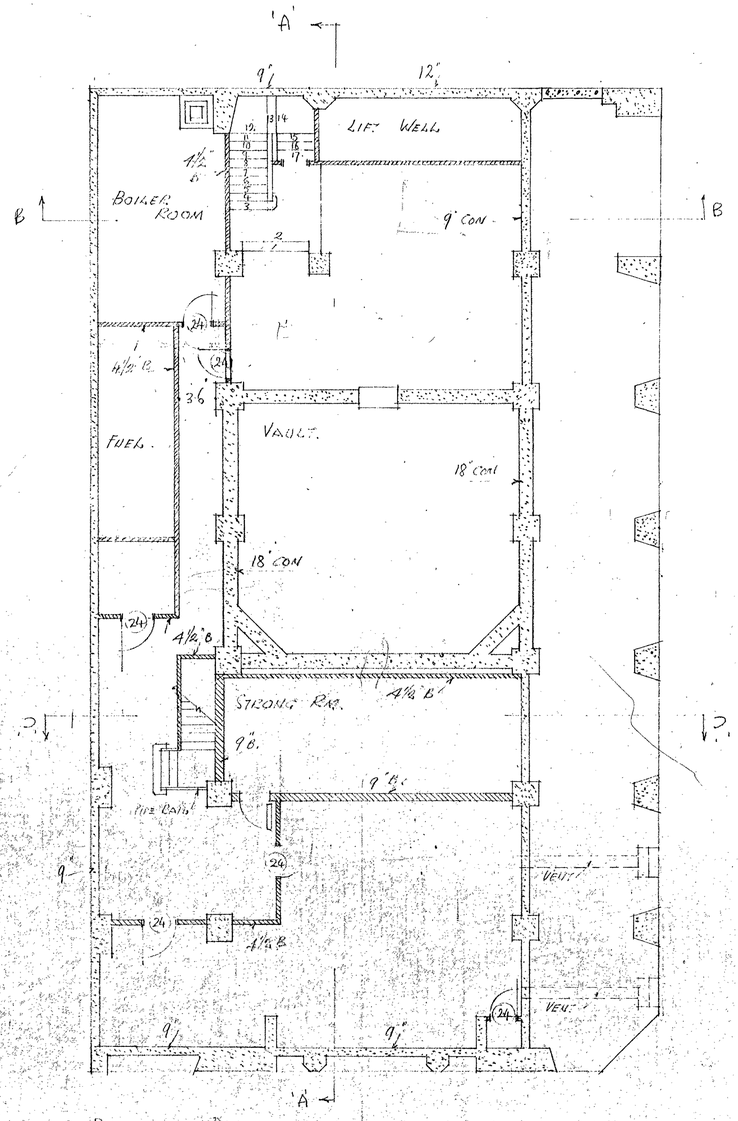


Dropped Slab under 4" Side Walls of Entrance Vestibule, between Beams 8 & 28 B. 4" Ceiling Slab over Entrance Vestibule reinforced with ⅜" ϕ at 8" crs. both ways.

GUMMER & FORD & PARTNERS
ARCHITECTS & STRUCTURAL ENGINEERS
AUCKLAND - - - NEW ZEALAND

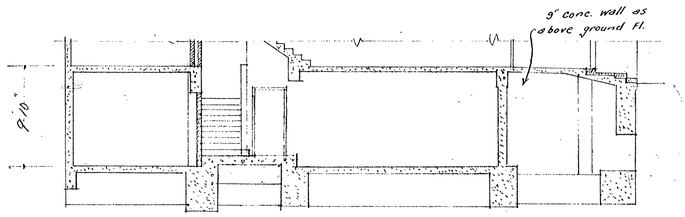
N. Z. INSURANCE BUILDING
WELLINGTON

DATE 31.5.36. DRAWN BY J. T. B.	AMENDED BEAMS GROUND FLOOR	SCALE ½" = 1 FT. DRAWING No. 50

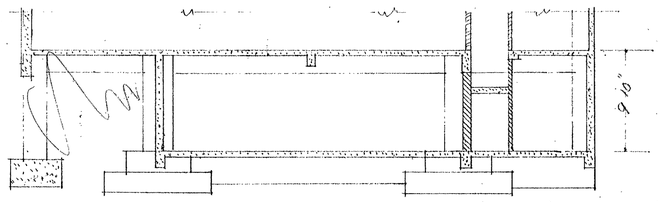


BASEMENT PLAN

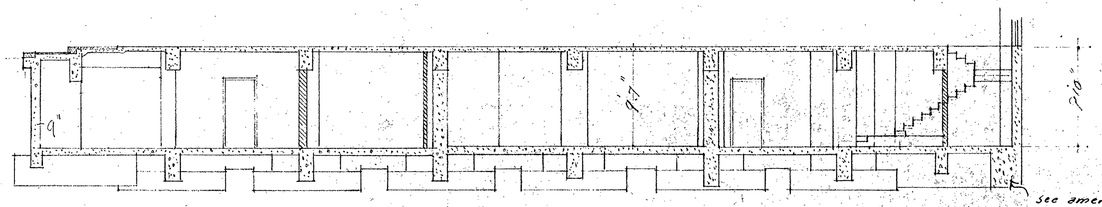
BASEMENT.



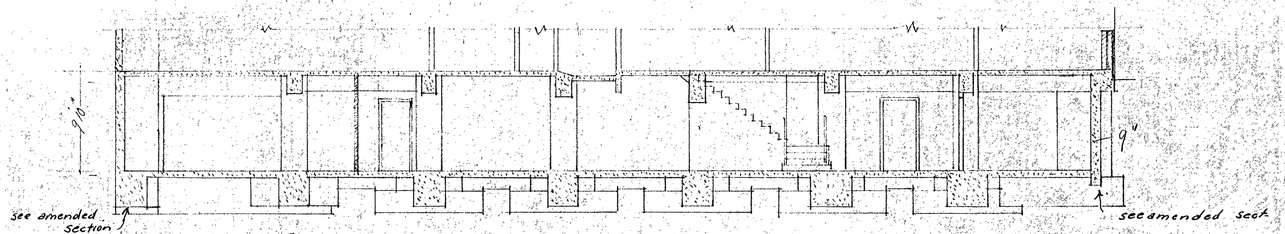
CROSS SECTION AT REAR LOOKING EAST 'B B' SEE SHEET No 7.



CROSS SECTION 'C·C' SEE SHEET No 8.



LONGITUDINAL SECTION LOOKING NORTH 'A A SEE SHEET No 7.



LONGITUDINAL SECTION THROUGH AREA SEE SHEET No 6

GUMMER & FORD & PARTNERS

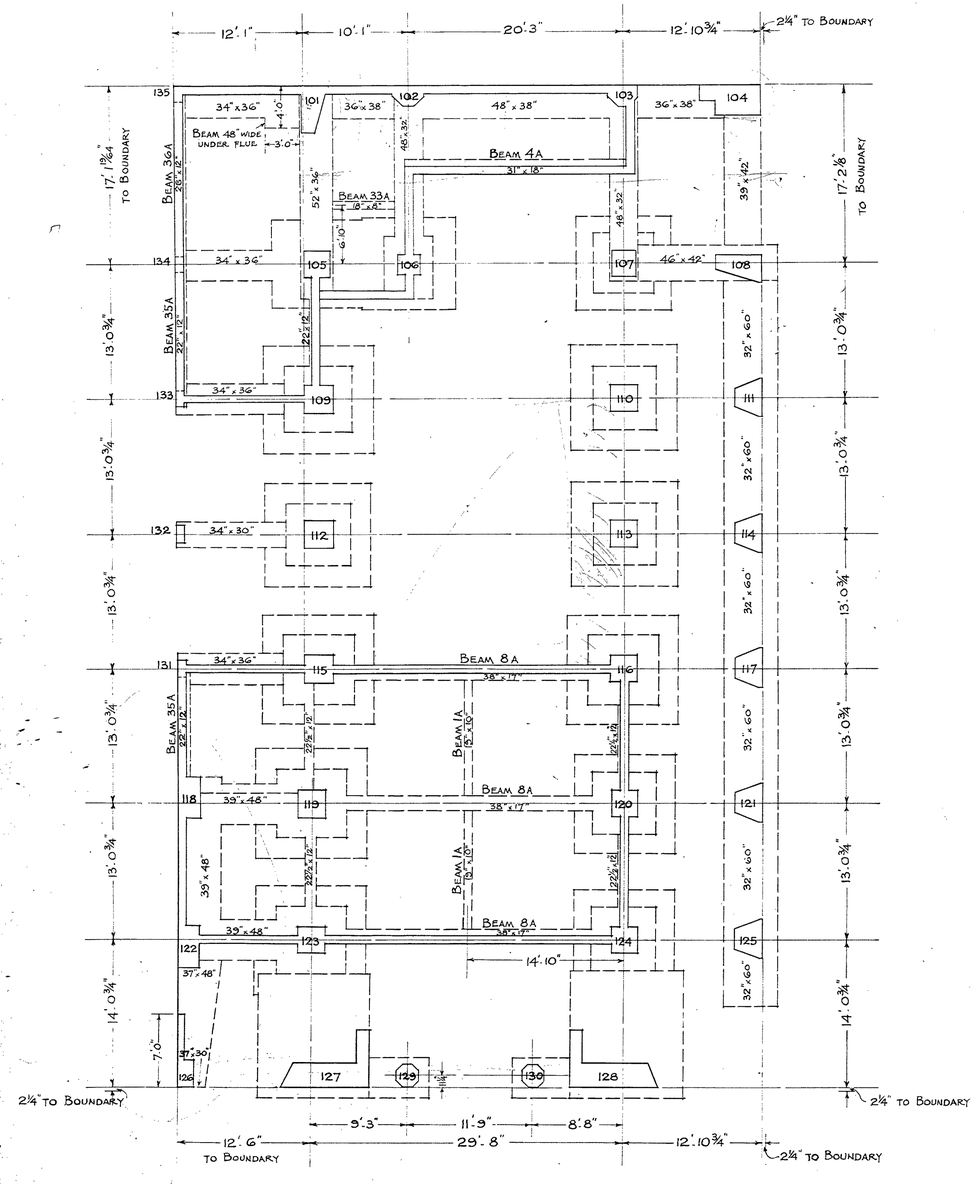
NEW ZEALAND INSURANCE BLD. WELLINGTON

25.8.36. DRAWN G.F.W. CHECKED BY

REVISED PLAN AND SECTIONS OF BASEMENT

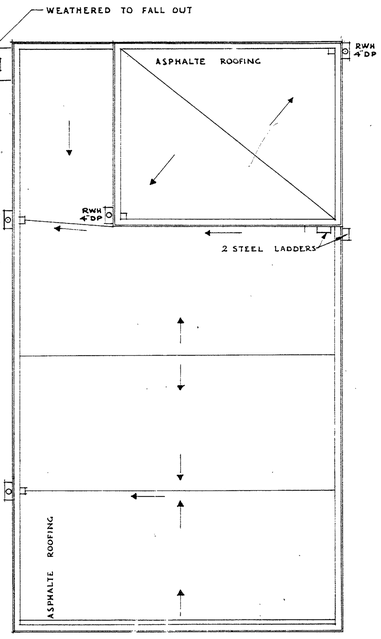
SCALE 1/8" TO 1 FT.

DRAWING No. 51

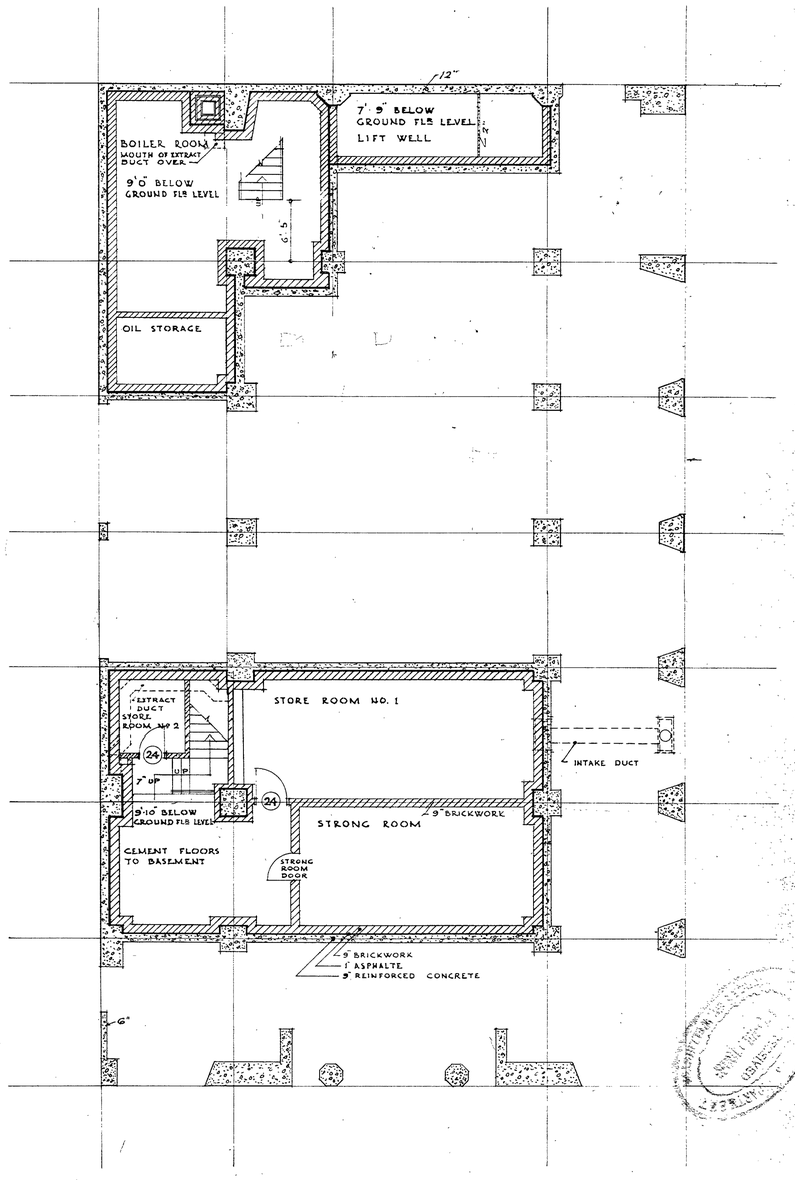


FOUNDATION PLAN

SEE SHEETS Nº 18-21 FOR DETAILS.



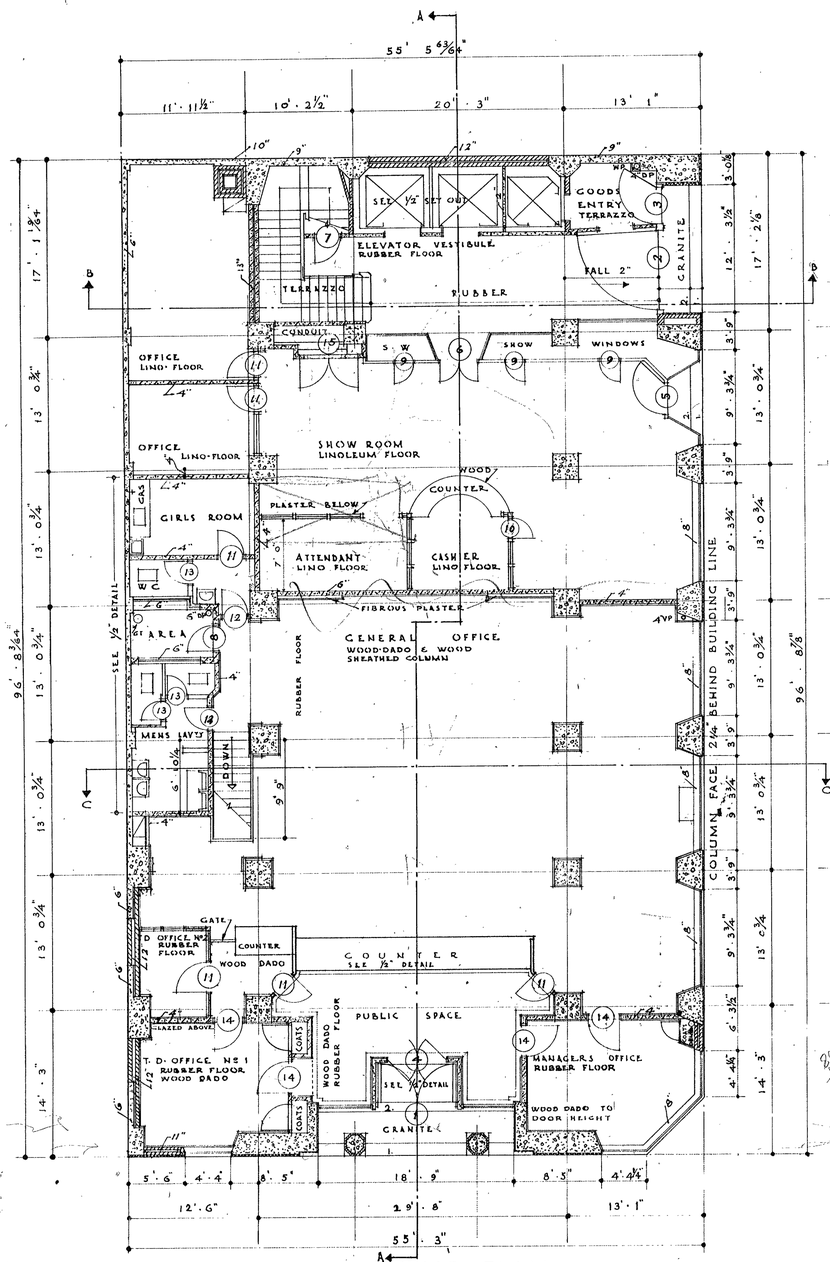
ROOF PLAN TO CARETAKER'S FLAT & MOTOR ROOM



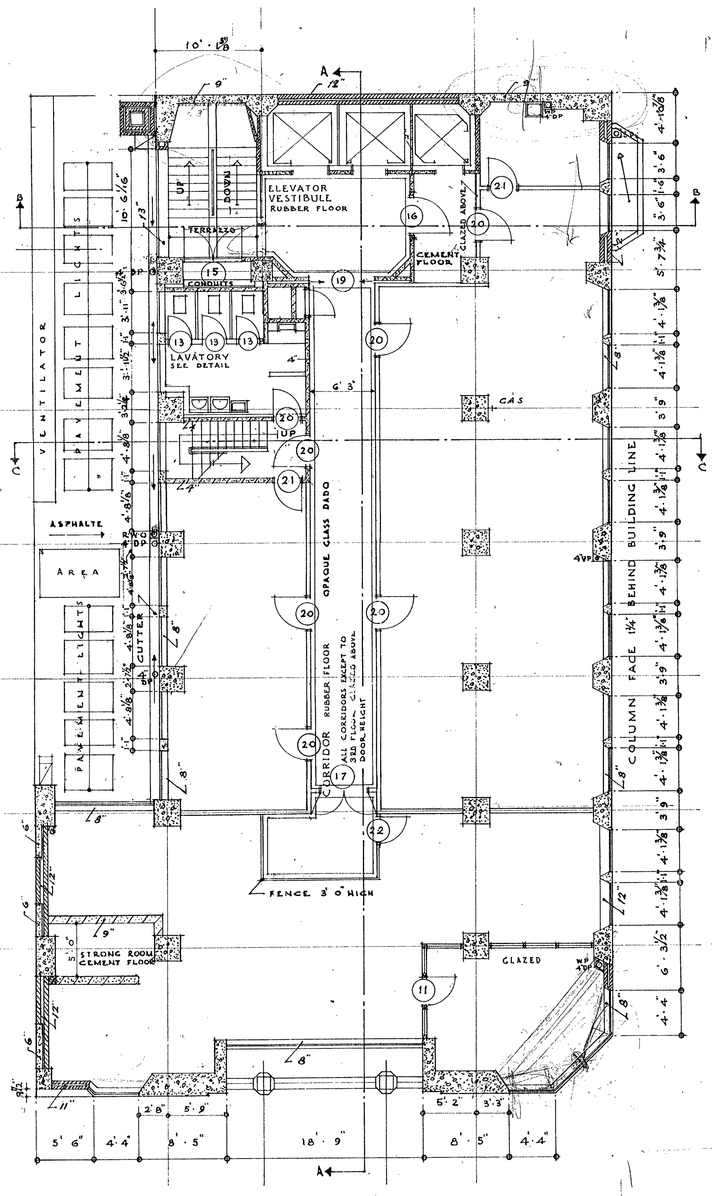
BASEMENT PLAN LINES OF SECTION AS FOR GROUND FLOOR

Deposit £70 paid on 5.8.36.
By Cheque
2.3.37
R.R.F.

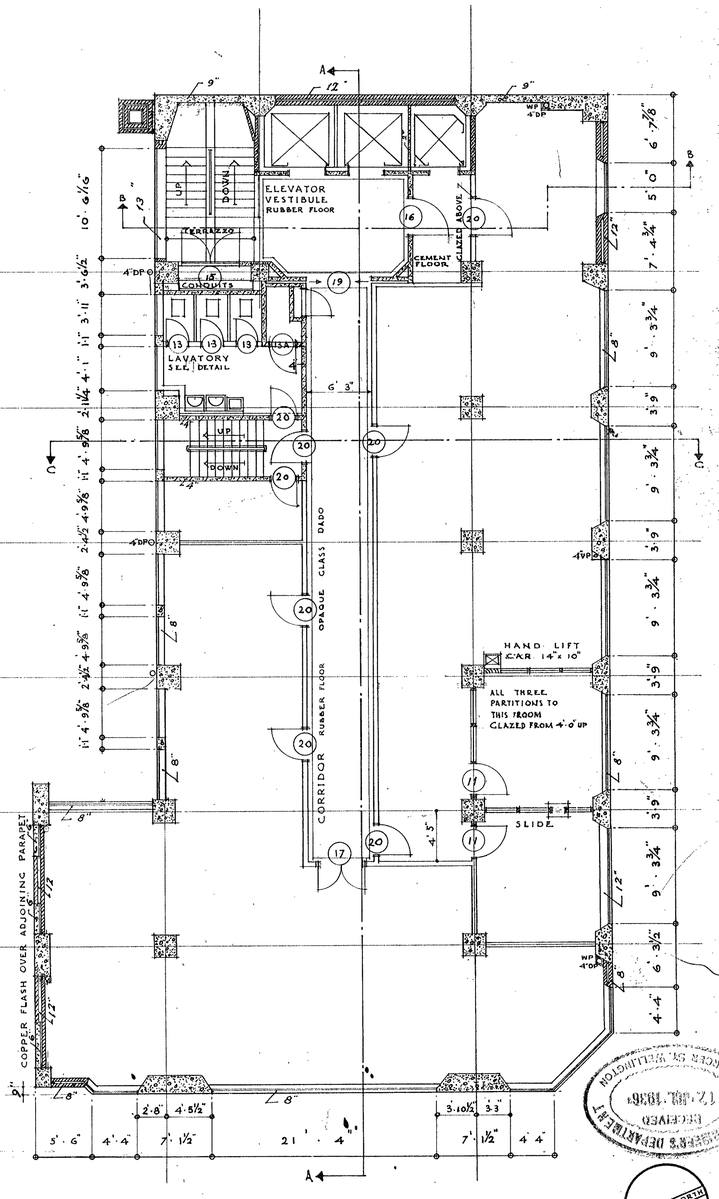
GUMMER & FORD & PARTNERS ARCHITECTS & STRUCTURAL ENGINEERS AUCKLAND - - - NEW ZEALAND		
THE NEW ZEALAND INSURANCE BUILDING @ FEATHERSTON & JOHNSTON STS WELLINGTON		
DATE MAY 1936	THE FOUNDATION PLAN & PLANS OF THE BASEMENT & ROOF TO CARETAKER'S FLAT &c.	SCALE ⅛" = 1 FOOT
DRAWN BY W.R.S.		DRAWING No. 1
CHECKED BY C.R.F.		



GROUND FLOOR PLAN



FIRST FLOOR PLAN



SECOND FLOOR PLAN

TRUE NORTH

INDICATION

- CONCRETE
- CELL CONCRETE BLOCKS
- BRICKWORK
- TIMBER (FOR ⅛" SCALES)
- GRANITE
- BRONZE
- STEEL

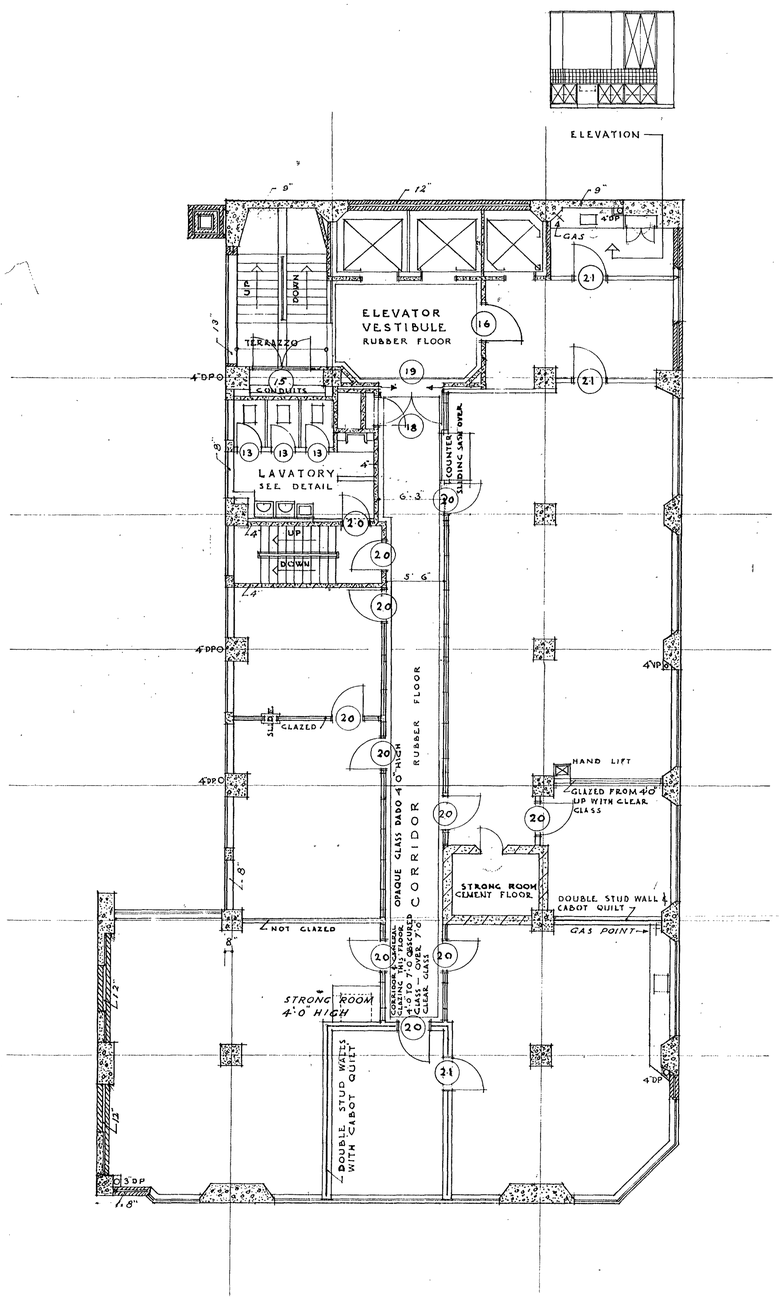
NOTE· ALLOW FOR COVERING ALL FLOORS TO TENANTS OFFICES WITH FELT & LINOLEUM·

MALE LAVATORIES OCCUR ON FLOORS 2·4·6 NOT 1·3·5·7 AS SHOWN SEE DETAIL DRAWING Nº 15

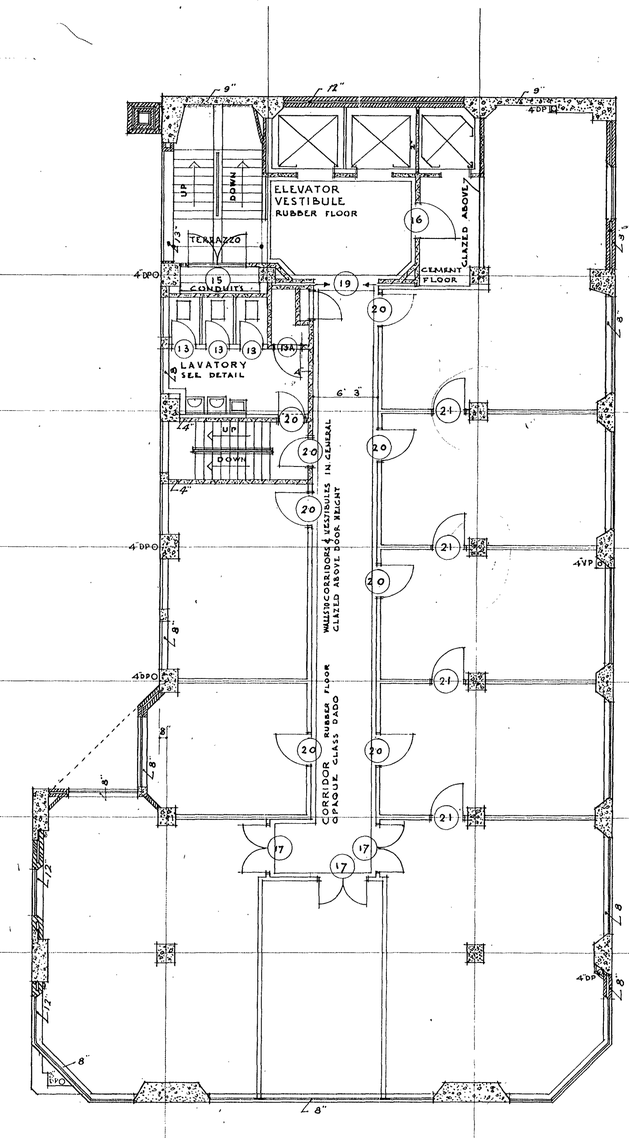
GUMMER & FORD & PARTNERS
ARCHITECTS & STRUCTURAL ENGINEERS
AUCKLAND - - - NEW ZEALAND

THE NEW ZEALAND INSURANCE BUILDING
@ FEATHERSTON & JOHNSTON Sts WELLINGTON·

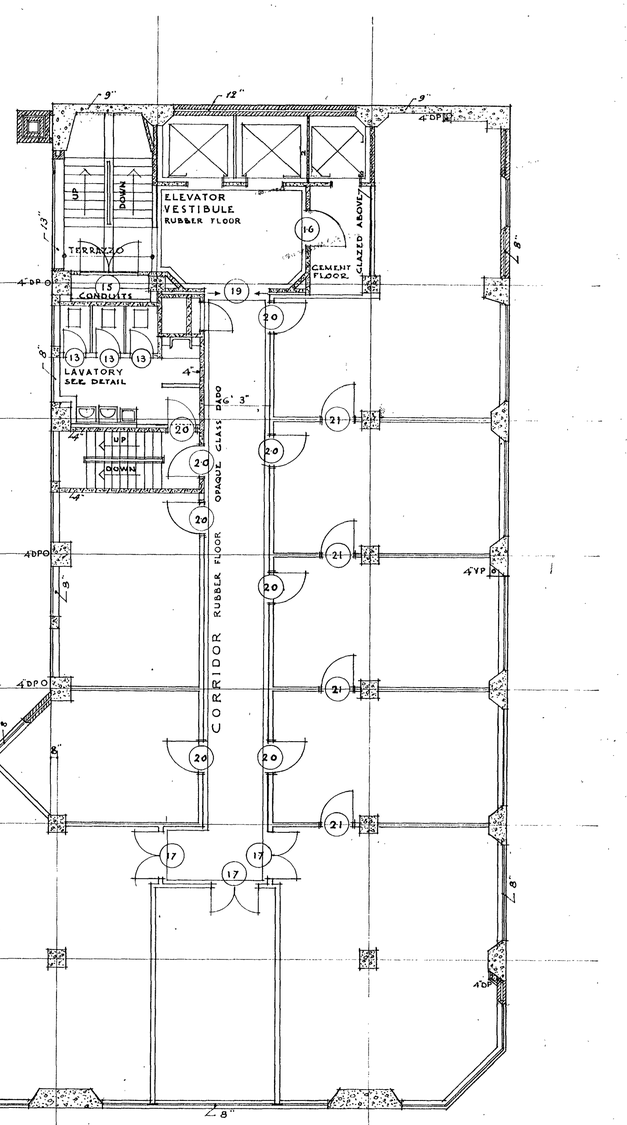
DATE MAY 1936	PLANS OF THE GROUND FIRST & SECOND FLOORS	SCALE ⅛" = 1 FOOT
DRAWN BY W R S		DRAWING No. 2
CHECKED BY C·R·F		



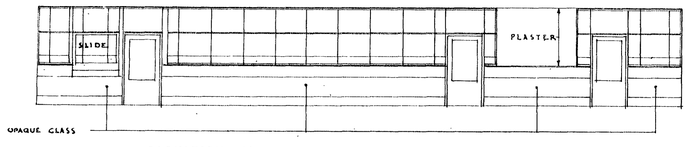
THIRD FLOOR PLAN



FOURTH FLOOR PLAN



FIFTH FLOOR PLAN



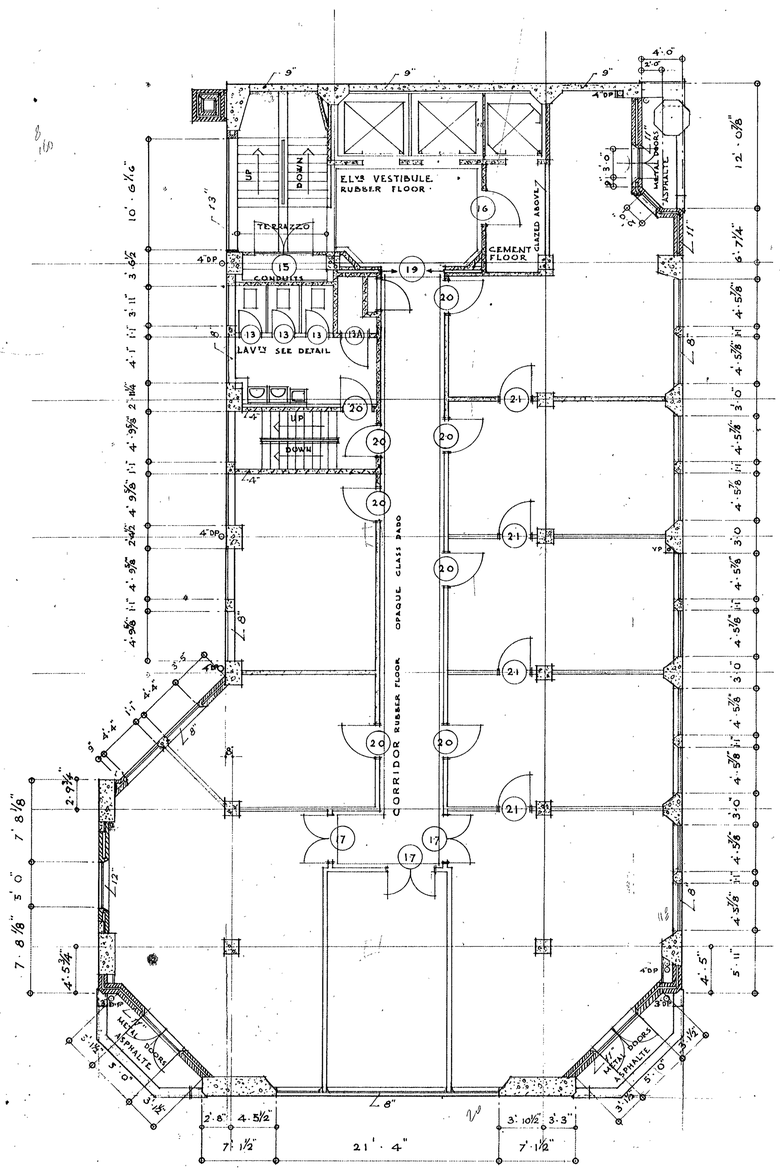
ELEVATION SOUTH WALL TO CORRIDOR THIRD FLOOR

NOTE LINES OF SECTION AS FOR SECOND FLOOR.

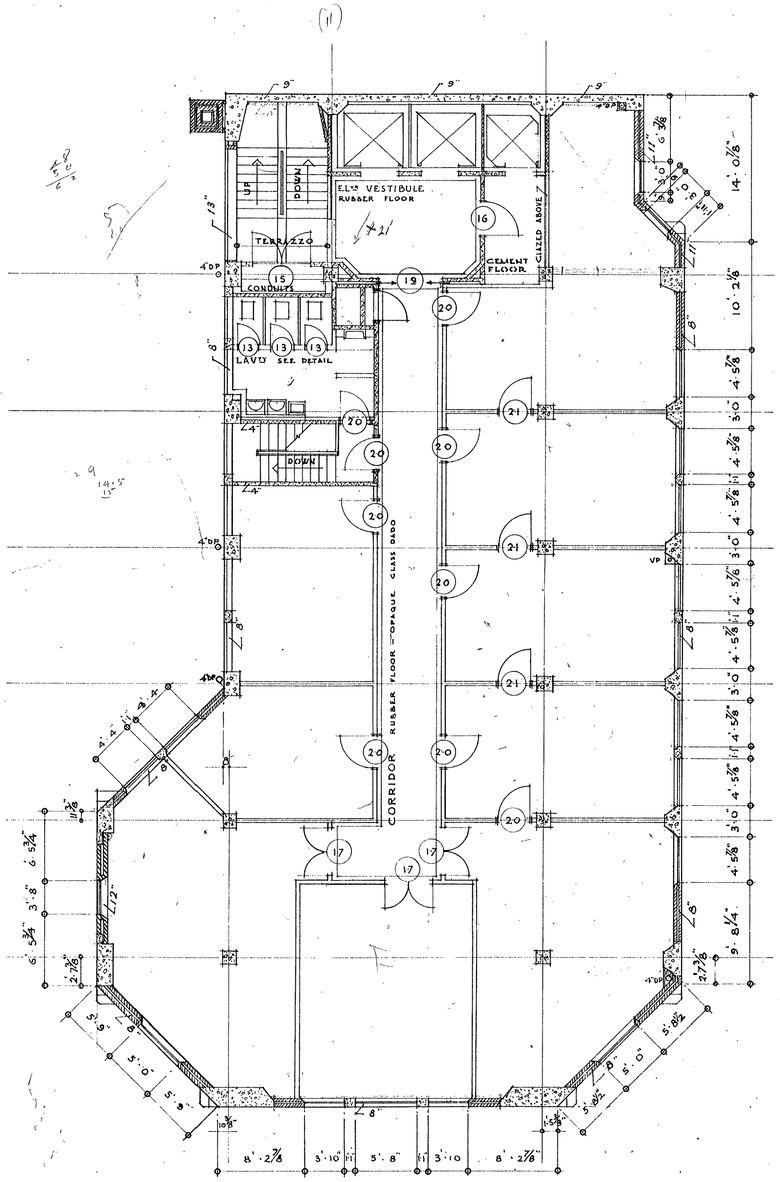
GUMMER & FORD & PARTNERS
ARCHITECTS & STRUCTURAL ENGINEERS
AUCKLAND - - - NEW ZEALAND.

THE NEW ZEALAND INSURANCE BUILDING
G FEATHERSTON & JOHNSTON STS WELLINGTON -

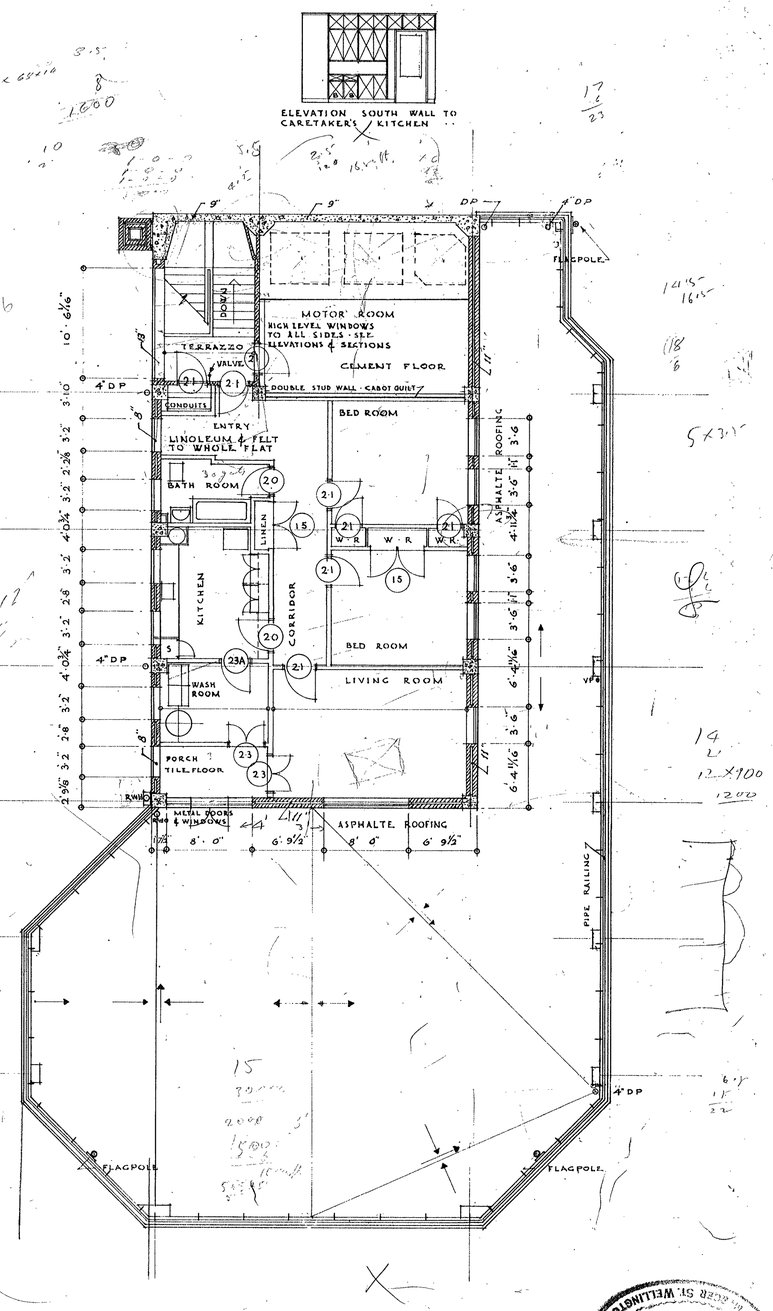
DATE MAY 1936.	PLANS OF THE THIRD FOURTH & FIFTH FLOORS	SCALE 1/8" = 1 FOOT
DRAWN BY W R S		DRAWING No. 3
CHECKED BY C.R.T		



SIXTH FLOOR PLAN



SEVENTH FLOOR PLAN



PLAN OF ROOF & CARETAKER'S FLAT

NOTE LINES OF SECTION AS FOR SECOND FLOOR.

GUMMER & FORD & PARTNERS
ARCHITECTS & STRUCTURAL ENGINEERS
AUCKLAND - - - NEW ZEALAND

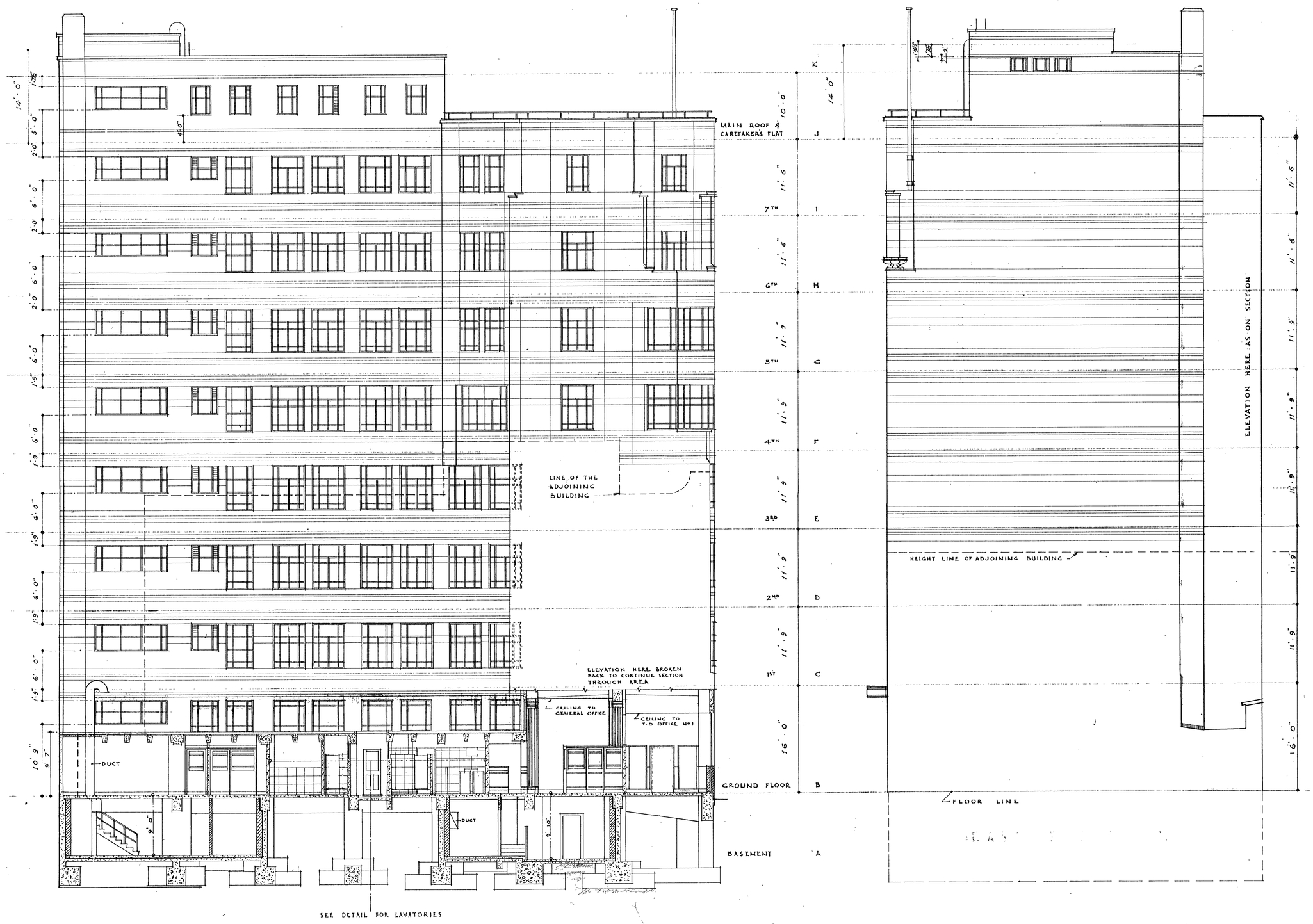
THE NEW ZEALAND INSURANCE BUILDING
FEATHERSTON & JOHNSTON STS WELLINGTON

DATE MAY 1936	PLANS OF THE SIXTH & SEVENTH FLOORS - THE ROOF & CARETAKERS FLAT.	SCALE 1/8" = 1 FOOT
DRAWN BY W.R.S		DRAWING No. 4.
CHECKED BY C.R.F		

ELEVATION TO FEATHERSTON STREET

ELEVATION TO JOHNSTON STREET

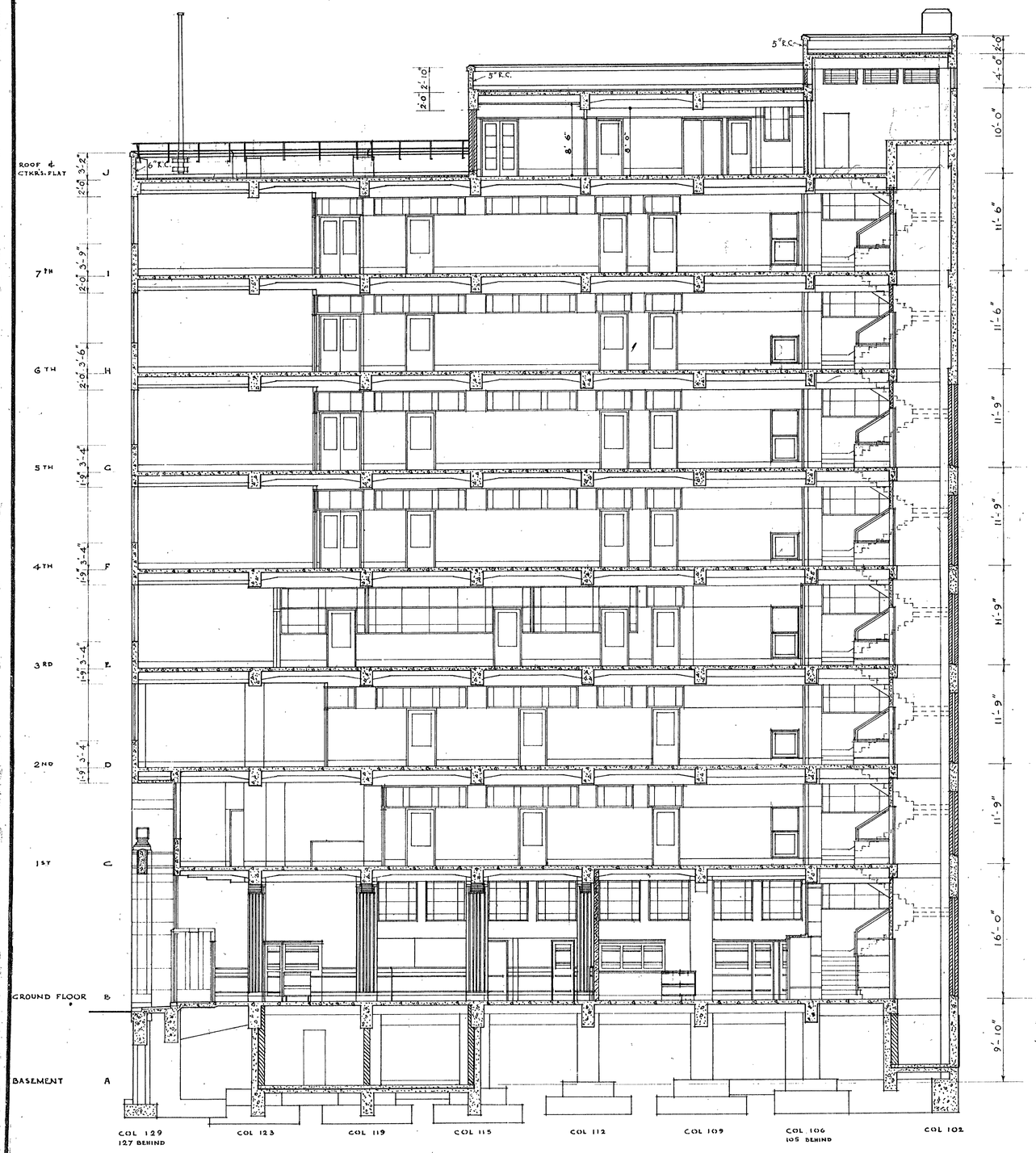
GUMMER & FORD & PARTNERS ARCHITECTS & STRUCTURAL ENGINEERS AUCKLAND - - - NEW ZEALAND		
THE NEW ZEALAND INSURANCE BUILDING @ FEATHERSTON & JOHNSTON STS WELLINGTON		
DATE MAY 1936	ELEVATIONS TO FEATHERSTON AND JOHNSTON STREETS	SCALE 1/8" = 1 FOOT
DRAWN BY W.R.S		DRAWING No. 5
CHECKED BY C.R.F		



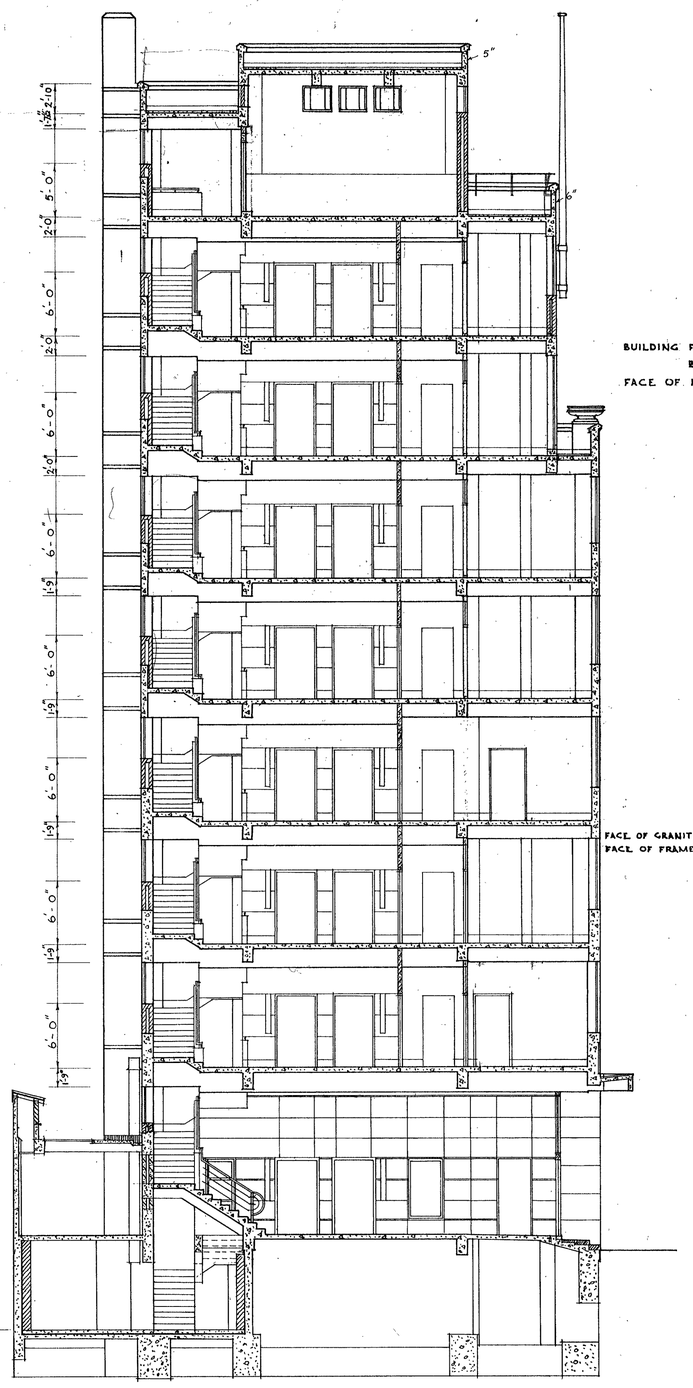
NORTH ELEVATION & SECTION THROUGH AREA SHOWING Gd FLOOR & BASEMENT

EAST ELEVATION

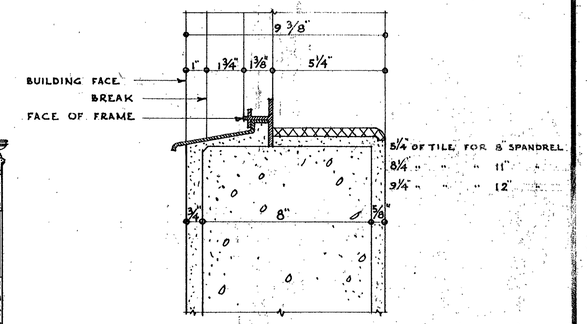
GUMMER & FORD & PARTNERS ARCHITECTS & STRUCTURAL ENGINEERS AUCKLAND - - - NEW ZEALAND	
THE NEW ZEALAND INSURANCE BUILDING @ FEATHERSTON & JOHNSTON STS WELLINGTON	
DATE MAY 1936	NORTH & EAST ELEVATIONS SECTION THROUGH AREA
DRAWN BY W R S	SCALE 1/8" = 1 FOOT
CHECKED BY C·R·F	DRAWING No 6



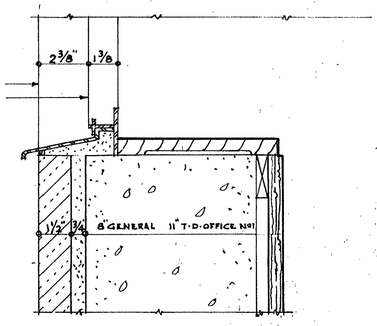
LONGITUDINAL SECTION LOOKING NORTH · A·A ·



CROSS SECTION AT REAR, LOOKING EAST · B·B ·



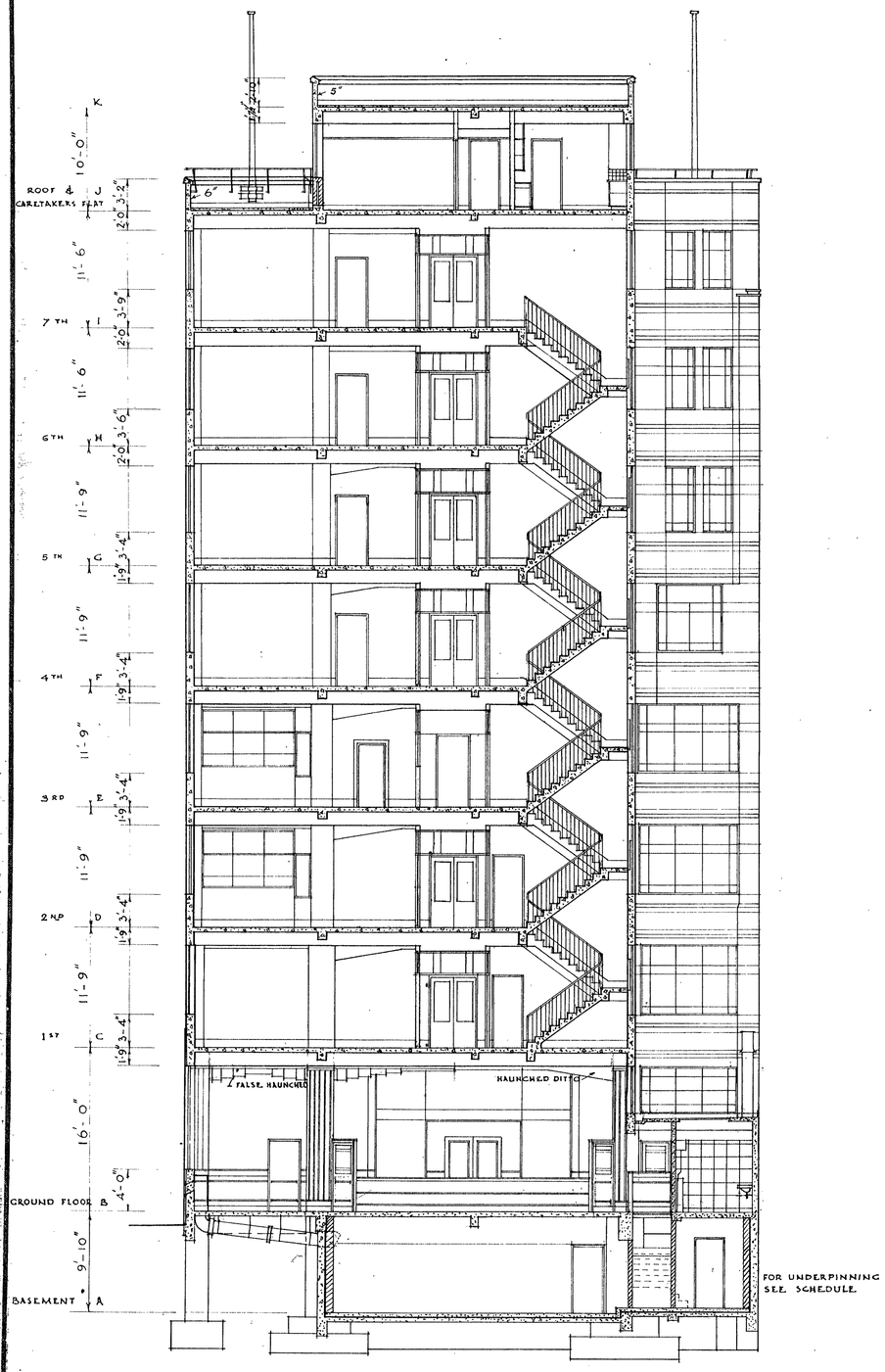
TYPICAL CILL



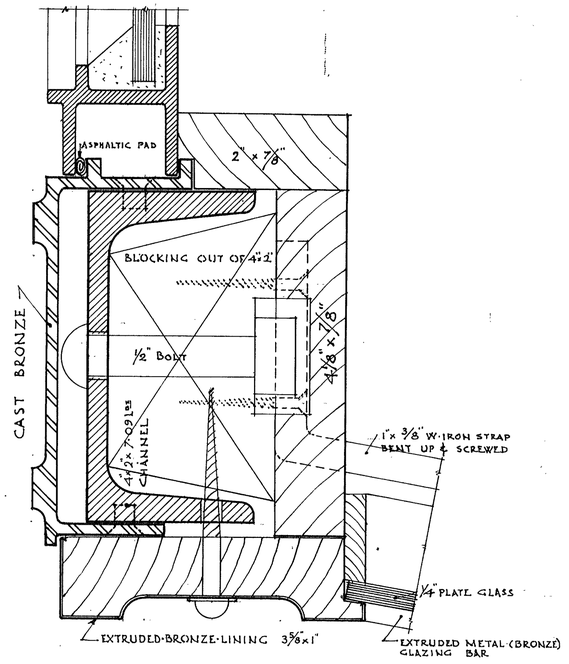
TYPICAL CILL GROUND FLOOR

NOTE· OBTAIN DETAILS FOR CILLS TO CORNER GROUND FLOOR - CENTRE WINDOWS WEST FRONT & ALL TO NORTH WALL · · ·

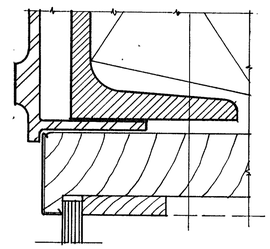
GUMMER & FORD & PARTNERS ARCHITECTS & STRUCTURAL ENGINEERS AUCKLAND - - - NEW ZEALAND	
THE NEW ZEALAND INSURANCE BUILDING @ FEATHERSTON & JOHNSTON STS WELLINGTON	
DATE MAY 1936	LONGITUDINAL AND CROSS SECTIONS ·
DRAWN BY CHC & WRS	SCALE 1/8" = 1 FOOT 3" = 1 FOOT
CHECKED BY C. R. P	DRAWING No. 7



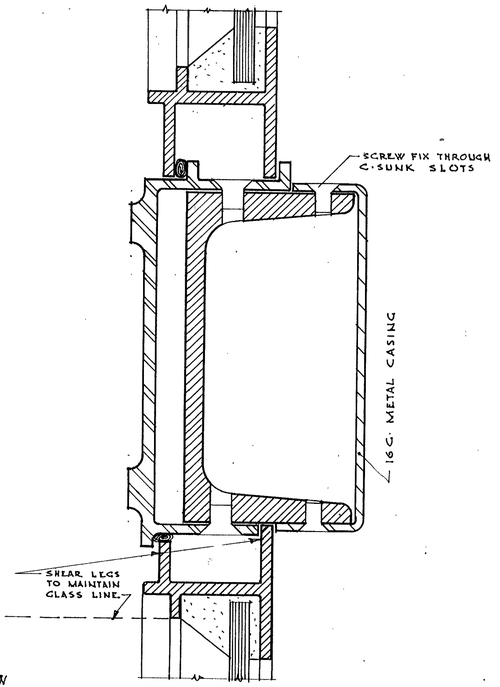
CROSS SECTION ·C·C·



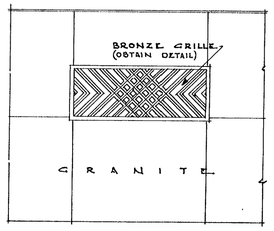
TRANSOM SECTION AT ENTRANCE TO SHOW ROOM



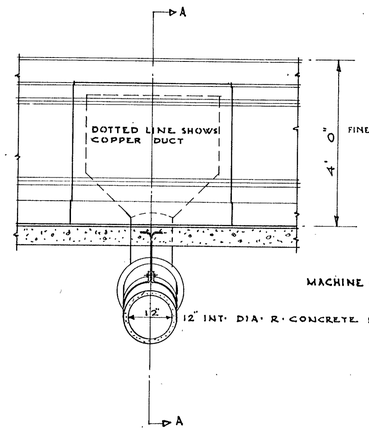
GLAZING SECTN AT SHOW WINDOW



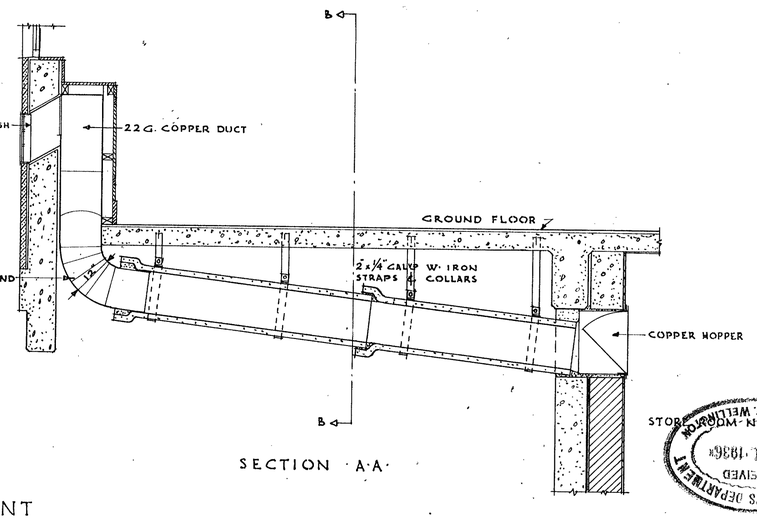
DITTO AT SIDE WINDOWS (JOHNSTON·ST)



OUTSIDE ELEVATION



SECTION ·B·B·



SECTION ·A·A·

DETAILS OF VENTILATING DUCT TO BASEMENT

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THE NEW ZEALAND INSURANCE BUILDING
@ FEATHERSTON & JOHNSTON STS WELLINGTON

DATE JUNE 1936	CROSS SECTION	SCALE ⅛" = 1 FOOT ½" = 1 FOOT & F·S·
DRAWN BY GNC & W·R·S	DETAIL OF BRONZE TRANSOM	DRAWING No.
CHECKED BY G·R·F	DETAIL OF VENTILATING DUCT	8

FALSE CEILING

METAL SASH

METAL PANELS

GLASS LAMPS

GRANITE

BRONZE

LINES IN PLASTER

PLASTER

METAL SASH

1'9"

8'0"

6'8"

TILED SILL

LEAD CAPPING

3'4"

2'10"

8"

1½"

FALSE CEILING

6'2½"

4'9"

4'10"

15'2"

SAND BLASTED GLASS

8'8"

SHEET METAL ON WOOD

MAT SINKING WITH GROOVES & HOLES

¼" ETCHED B.P. PLATE IN EXTRUDED METAL FRAME

1'3"

7'2"

¼" ETCHED BEV. B.P. PLATE GLASS

¼" BEV. B.P. PLATE GL'S.

METAL

METAL SHEETED WOOD DOORS

BRONZE KICKING PLATE

GRANITE

¾"

METAL SASH

BRONZE PANEL

¾"

¾"

11'3"

8"

FALSE CEILING

TILED SILL

PLASTER

9"

2½"

3'4"

8"

¾"

3'9½"

FALSE CEILING

16'0"

PLASTER

PLY-WOOD

WOOD SILL B'D

4'0"

8"

¾"

GRANITE

3"x1½"x¾" BRONZE ANGLE

MASTIC

DETAIL OF SUPPORT TO GRANITE AT WINDOW HEADS

CELL CONCRETE BLOCKS

4'10"

MAT SINKING

5'6¾"

3'6"

4'2½"

5'10½"

4'2½"

5'10½"

1'1½"

1'1½"

3'6"

GRANITE SLABS

BEAM OVER, DOTTED

4'4¼"

5'5¾"

4'11¾"

3'3"

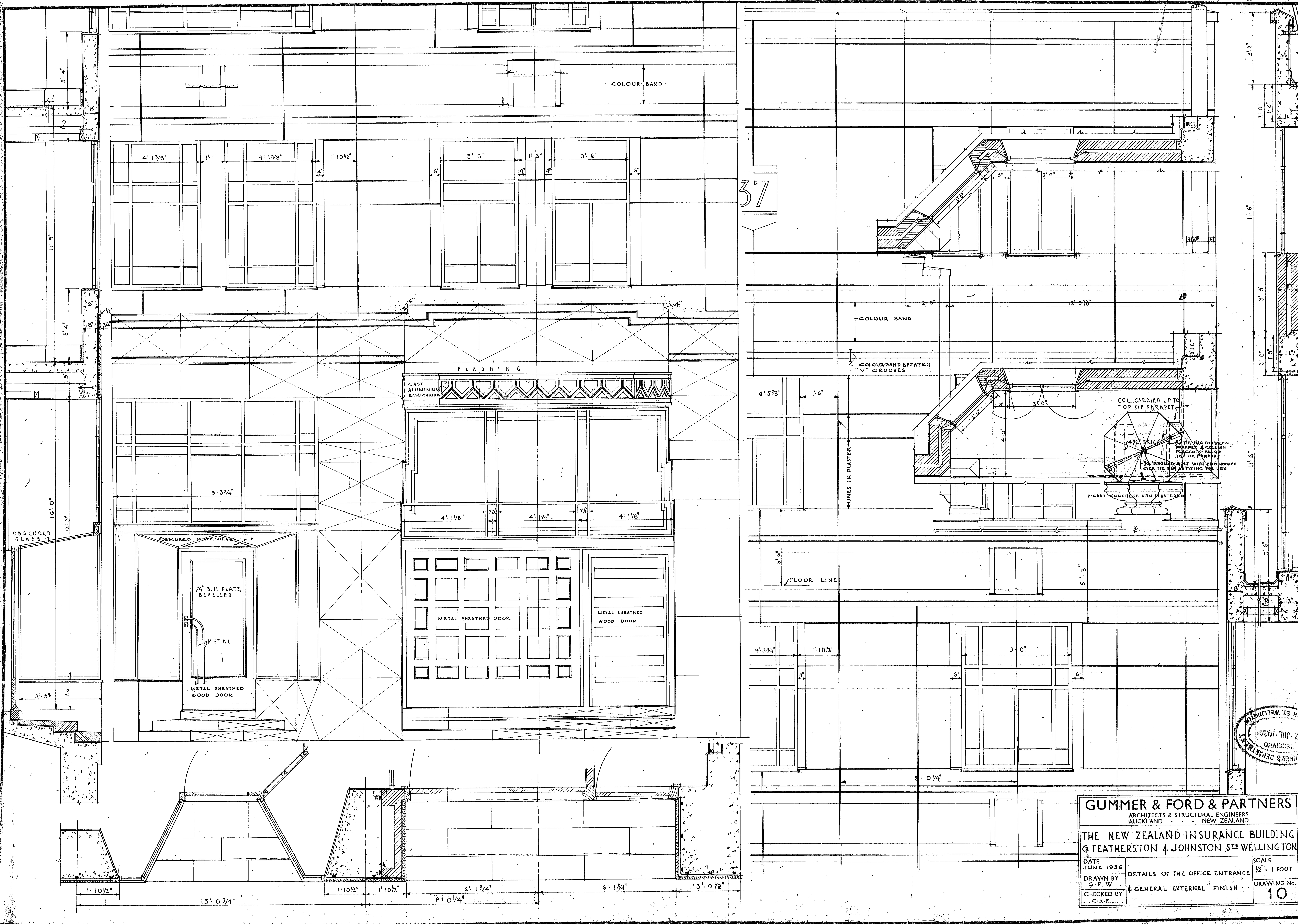
1¼"

2¼"

GUMMER & FORD & PARTNERS
ARCHITECTS & STRUCTURAL ENGINEERS
AUCKLAND - - NEW ZEALAND

THE NEW ZEALAND INSURANCE BUILDING
@ FEATHERSTON & JOHNSTON STS WELLINGTON

DATE JUNE 1936	DETAIL OF THE ENTRANCE TO THE COMPANY'S OFFICE.	SCALE ½"=1 FOOT 4'-F-S.
DRAWN BY G.F.W.		DRAWING No. 9
CHECKED BY C.R.F.		



GUMMER & FORD & PARTNERS

ARCHITECTS & STRUCTURAL ENGINEERS
AUCKLAND - - - NEW ZEALAND

THE NEW ZEALAND INSURANCE BUILDING
C. FEATHERSTON & JOHNSTON STS WELLINGTON

DATE JUNE 1936	DETAILS OF THE OFFICE ENTRANCE & GENERAL EXTERNAL FINISH	SCALE 1/2" = 1 FOOT
DRAWN BY G·F·W		DRAWING No. 10
CHECKED BY C·R·F		

SPACING OF FRAMING AS BELOW

F. PLASTER

TELTEST

B.M. INDICATOR

ELEVATOR DOORS

ELEVATOR DOORS

B.M. INDICATOR

GOODS ELEVATOR

COVER TO D.P. AND WASTE PIPE

TILE SILL

GRANITE 1½ TH

WOOD SKIRTING

TALL 1"

3" D.P.

2" EX. DIA B.M. HANDRAIL

TERRAZZO TREADS AND RISERS

TERRAZZO

OPAQUE GLASS

BRIGHT METAL ARCHITRAVE AND JAMB

16 STEEL LINING SLUICE SPRAYED

HANGERS 4'·0" O·C·

4×2 BEARERS NOT MORE THAN 4'·0" O·C·

3×2 JOISTS & NOGGING 2'·0" O·C·

1" B.M. STRIP

PLASTER FRIEZE

TEN TEST HANGING CEILINGS

METAL FRAME WITH GLASS PANELS

OPAQUE GLASS SILL

OPAQUE GLASS

COPPER FLASH BELOW THIS WINDOW ONLY

TERRAZZO TREADS AND RISERS

DOOR No 7

B.M. INDICATOR

ELEVATOR DOORS

ELEVATOR DOORS

B.M. INDICATOR

DIRECTORY BOARD

OPENING

POLISHED GRANITE

2" EX. DIA. B.M. RAIL

BRIGHT METAL ARCHITRAVE AND JAMB

2" FALL

GRANITE STEPS

B.M. HANDRAIL TO LATER DETAILS SEE R.C. SUMS

Section Thru Door No 7 and Stairs

Section Thru Entrance Vestibule and Stairs

OPAQUE GLASS
MASTIC
⅝ PLASTER ON METAL LATH
3×2 FRAMING
W. IRON ANGLE

TERRAZZO

TERRAZZO

SECTION THROUGH STAIR BALUSTRADE

SCALE 1½" = 1'·0"

VARIES

TYPICAL FINISHES BEAMS TO CEILINGS

SCALE · 3" = 1'·0"

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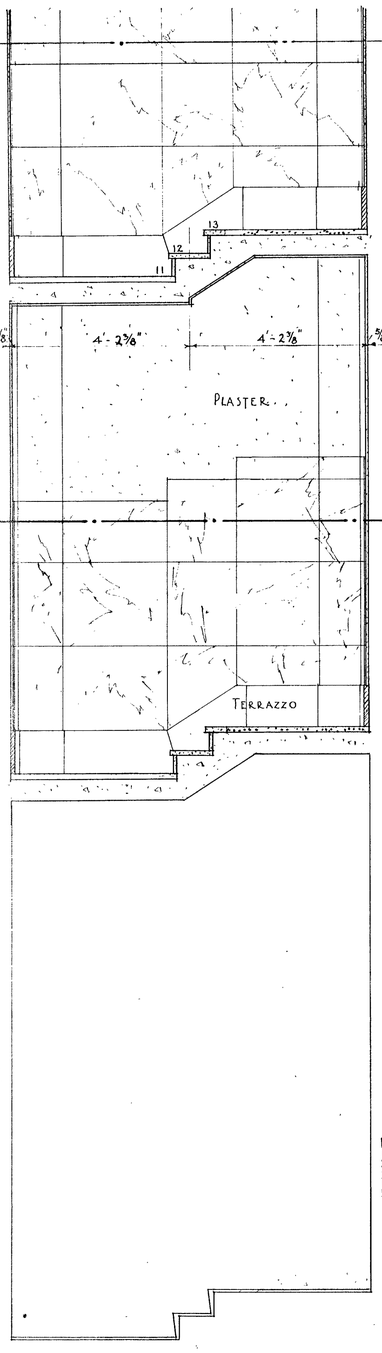
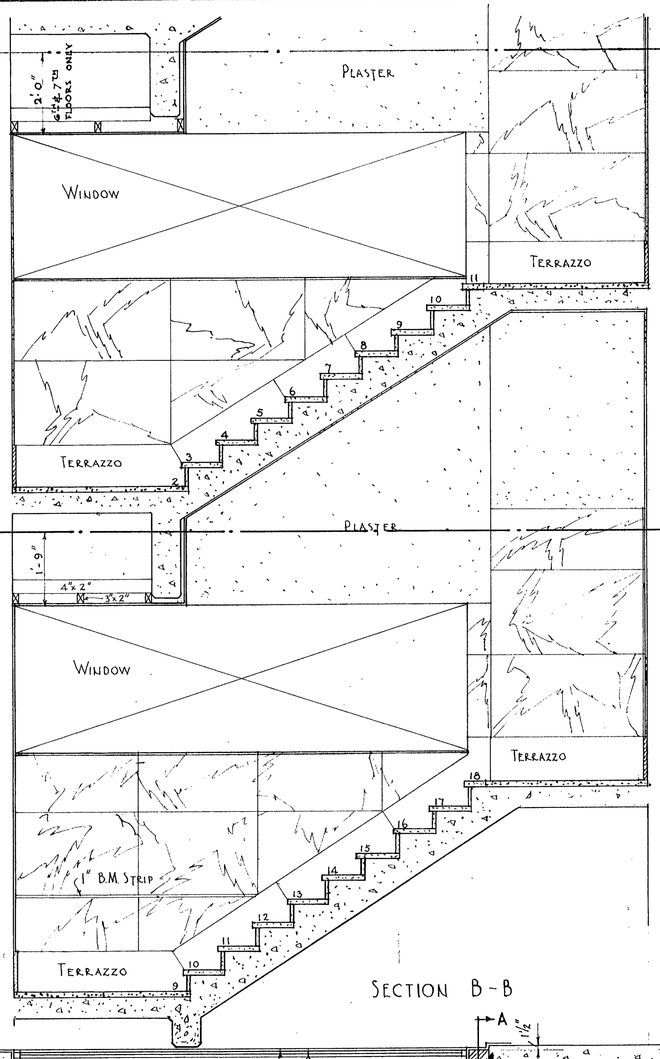
ARCHITECTS & STRUCTURAL ENGINEERS
AUCKLAND - - - NEW ZEALAND

THE NEW ZEALAND INSURANCE BUILDING
& FEATHERSTON & JOHNSTON STS WELLINGTON

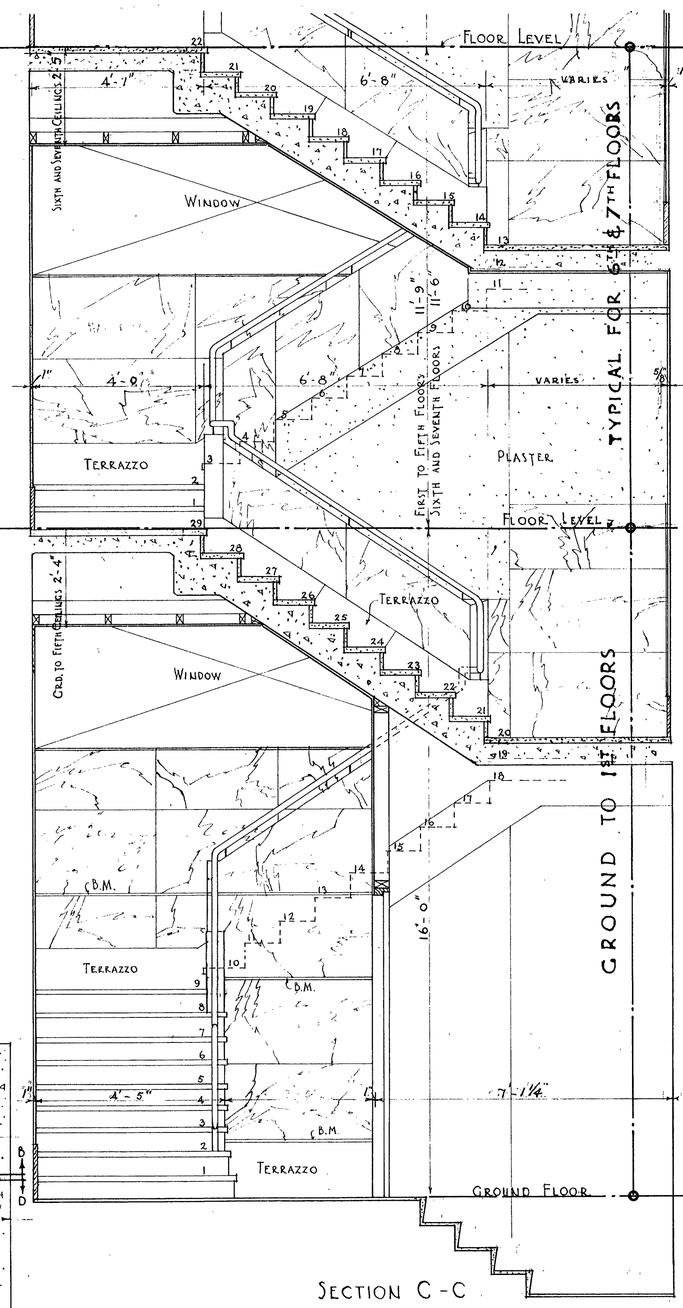
DATE JUNE 1936	SECTIONAL ELEVATION OF ELEVATOR & STAIR VESTIBULE	SCALE ½" = 1 FOOT
DRAWN BY C.F.W.		DRAWING No. 11
CHECKED BY C.R.F.		



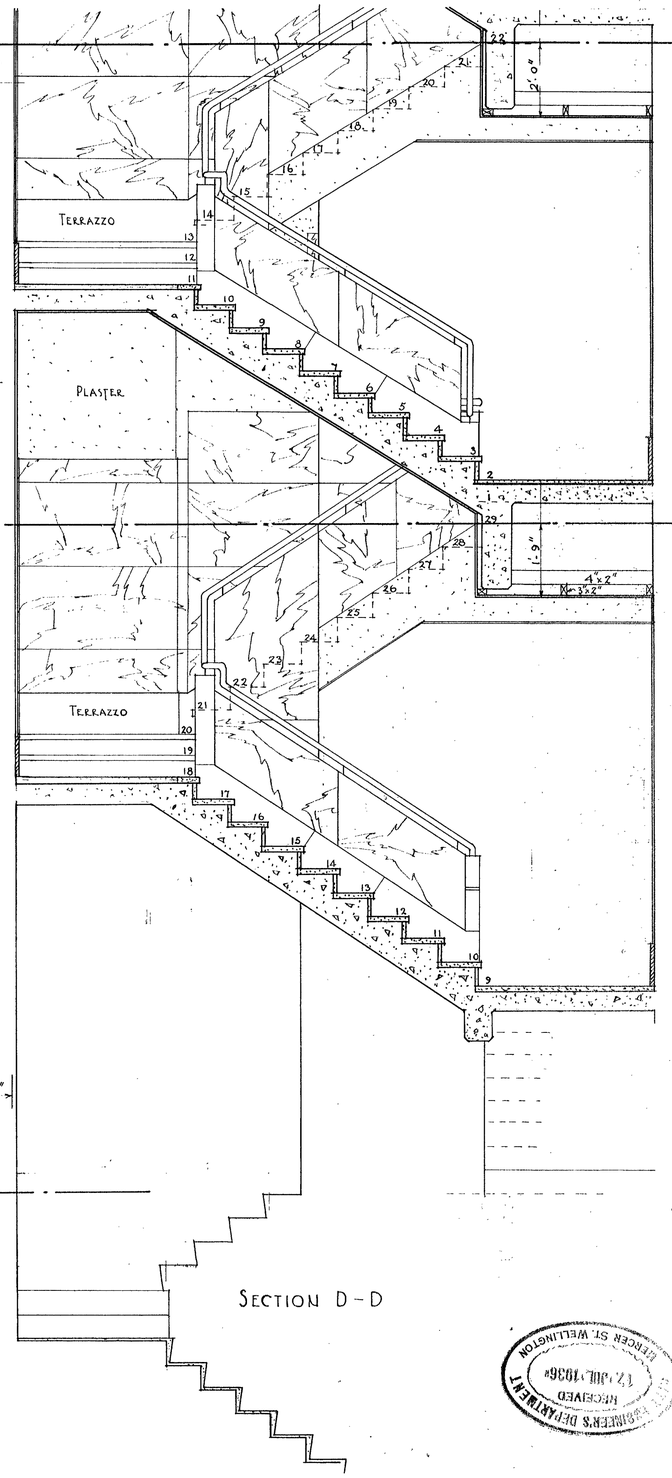
SECTION A-A



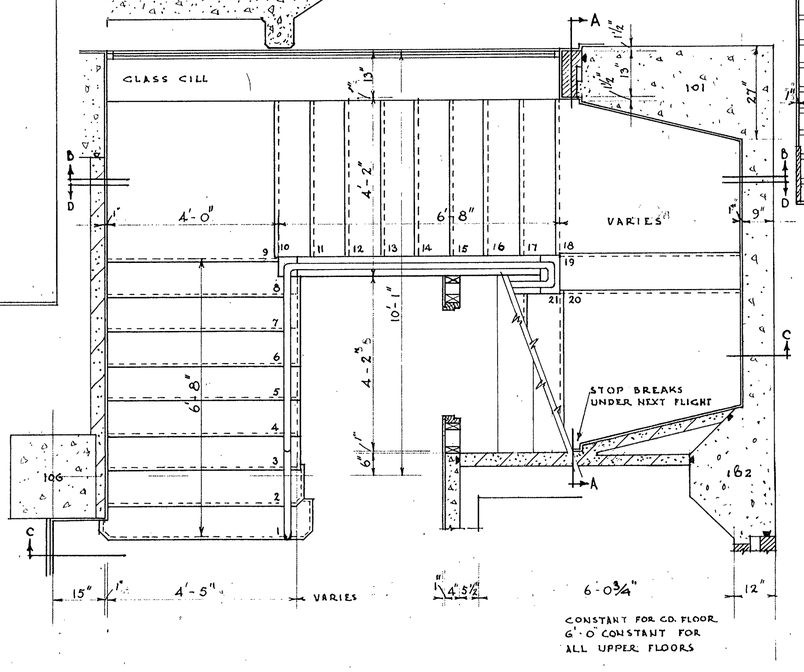
SECTION B-B



SECTION C-C



SECTION D-D



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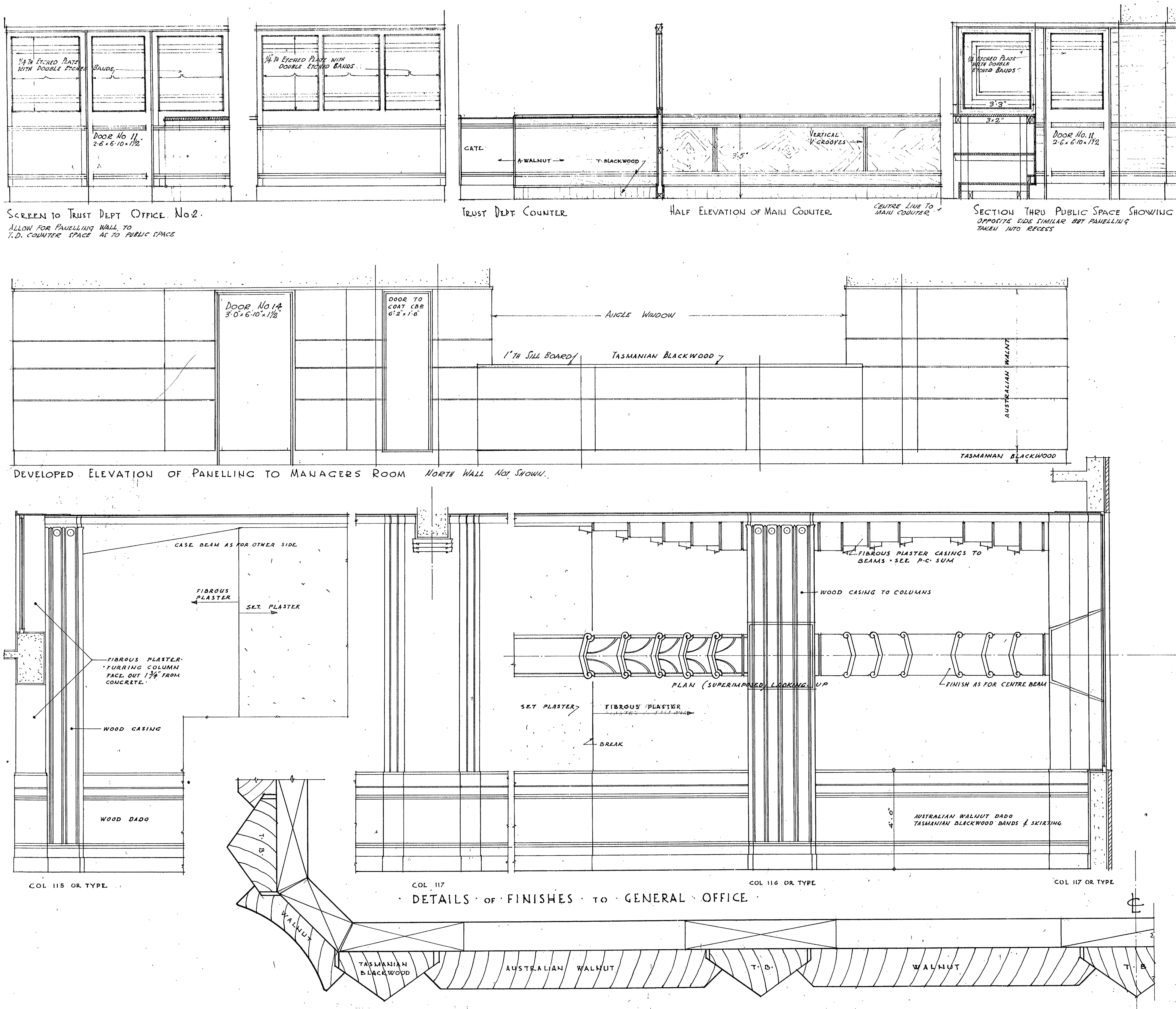
THE NEW ZEALAND INSURANCE BUILDING
@ FEATHERSTON & JOHNSTON STS WELLINGTON

DATE JUNE 1936	DETAILS OF MAIN STAIRS	SCALE ½" = 1 FOOT
DRAWN BY G.N.C.		DRAWING No. 12
CHECKED BY C.R.F		



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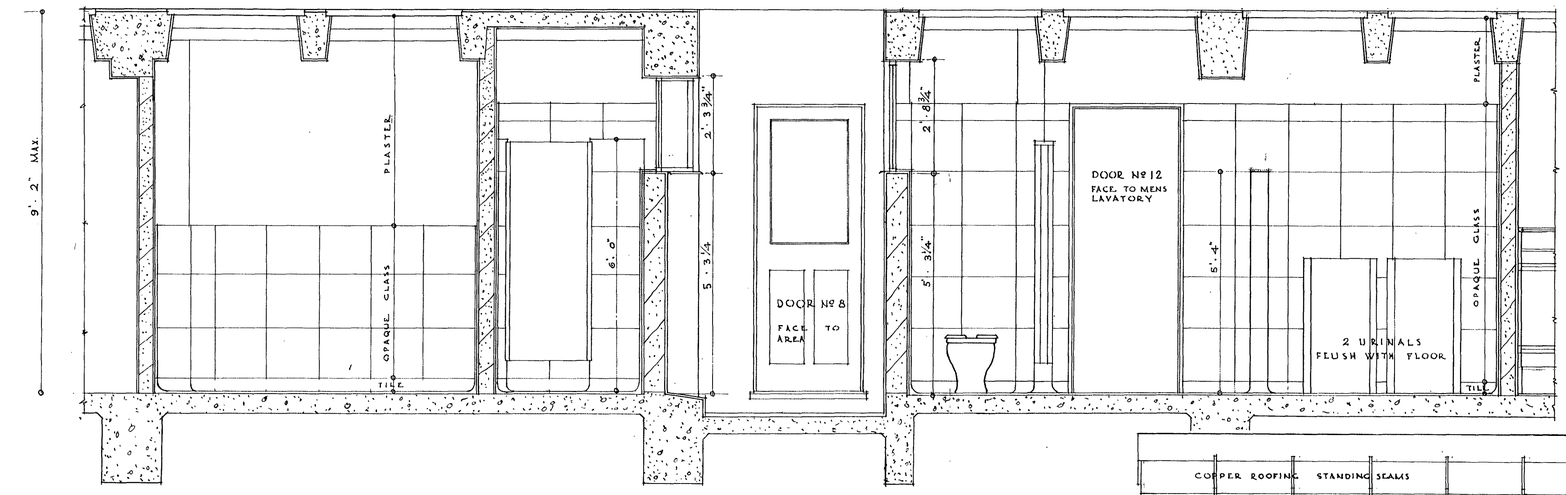
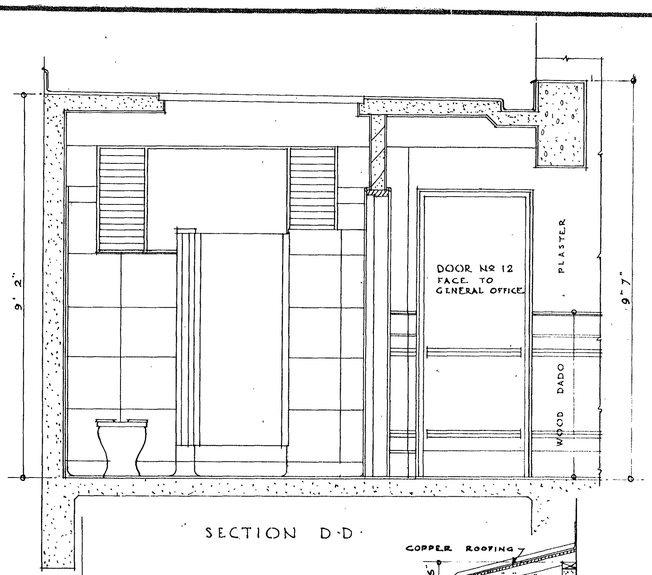
THE NEW ZEALAND INSURANCE BUILDING
@ FEATHERSTON & JOHNSTON STS WELLINGTON

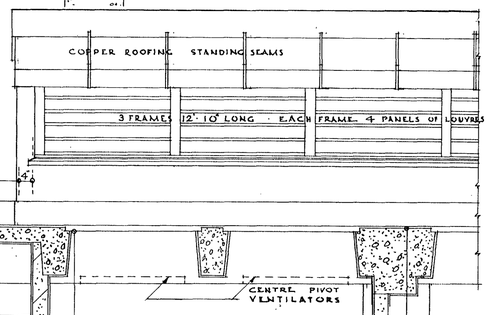
DATE MAY 1936	DETAILS OF FINISHES	SCALE 1/2" = 1 FOOT & F.S.
DRAWN BY G.F.W		
CHECKED BY C.R.F	IN MAIN OFFICE	DRAWING No. 13

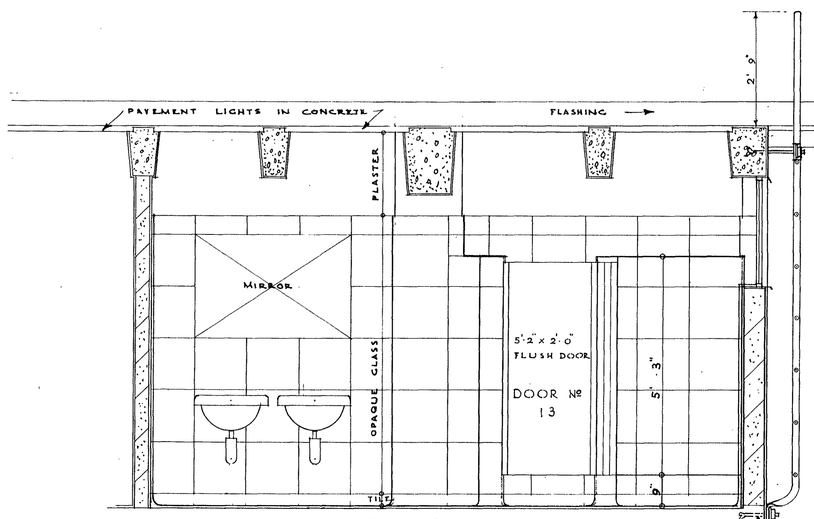


SECTION · C·C ·



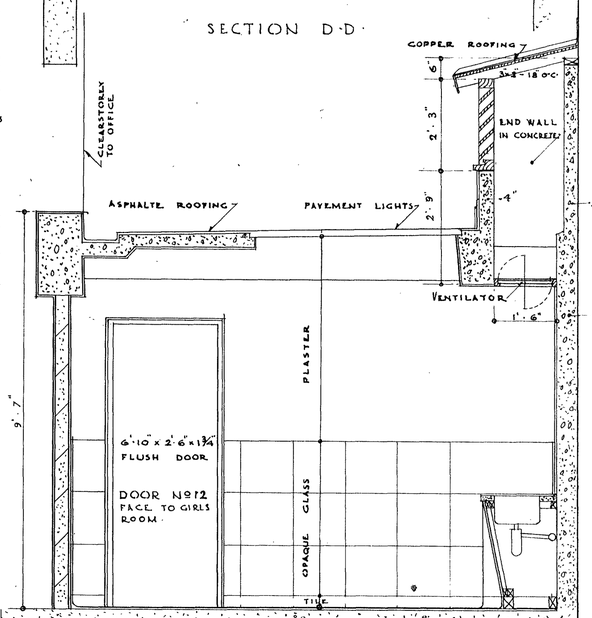
SECTION D·D·



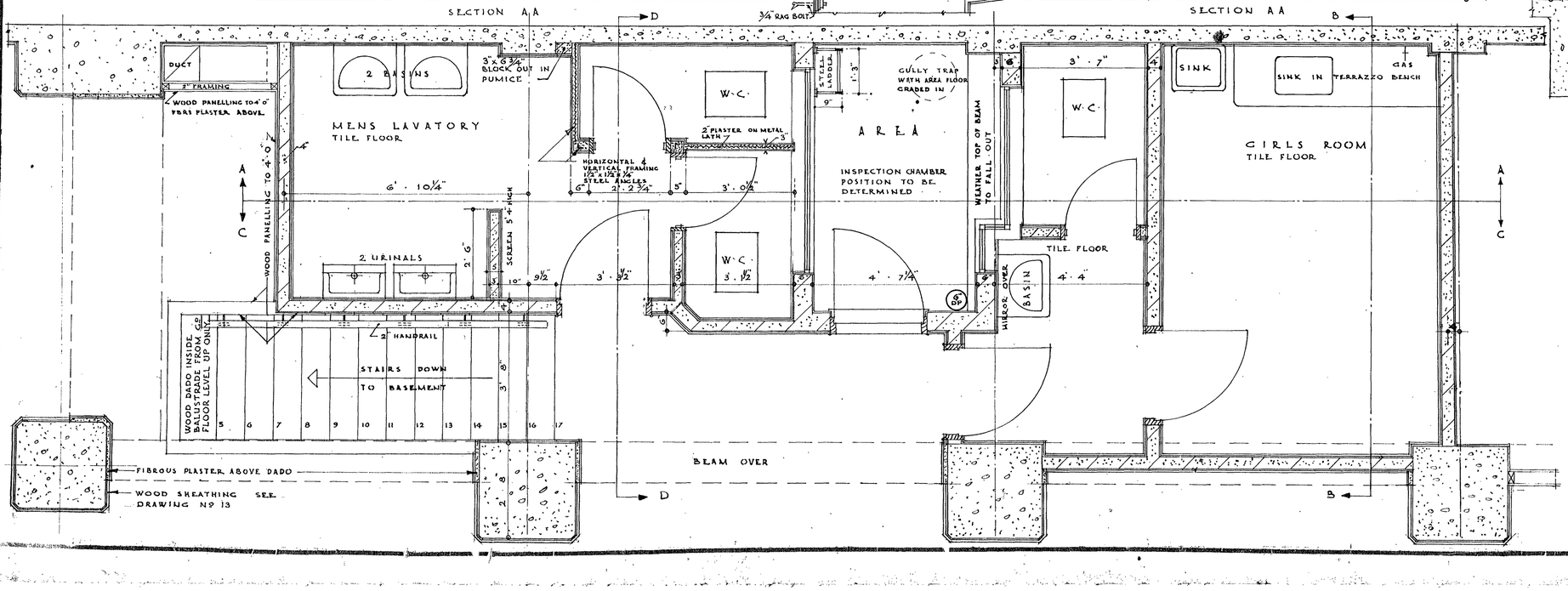


SECTION A A

SECTION A A



SECTION B B



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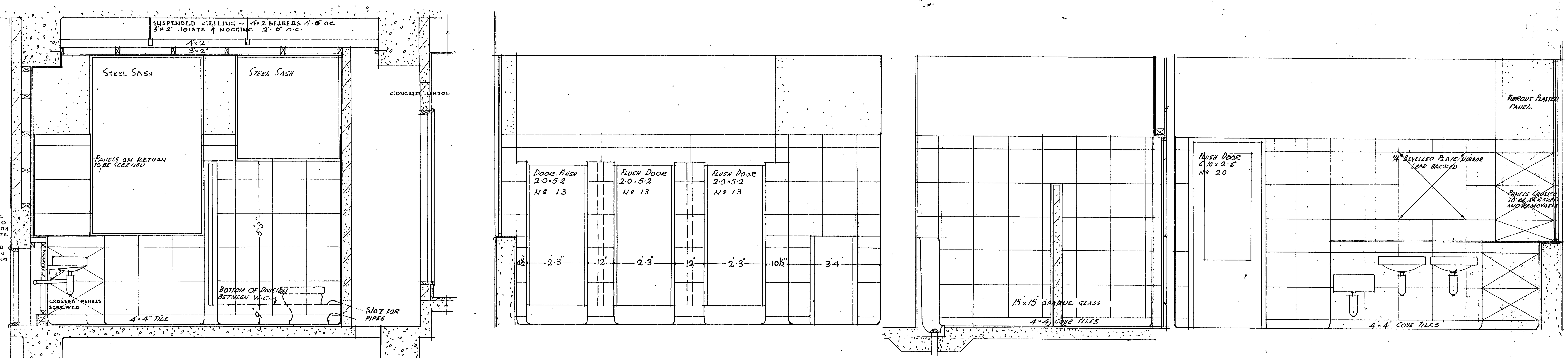
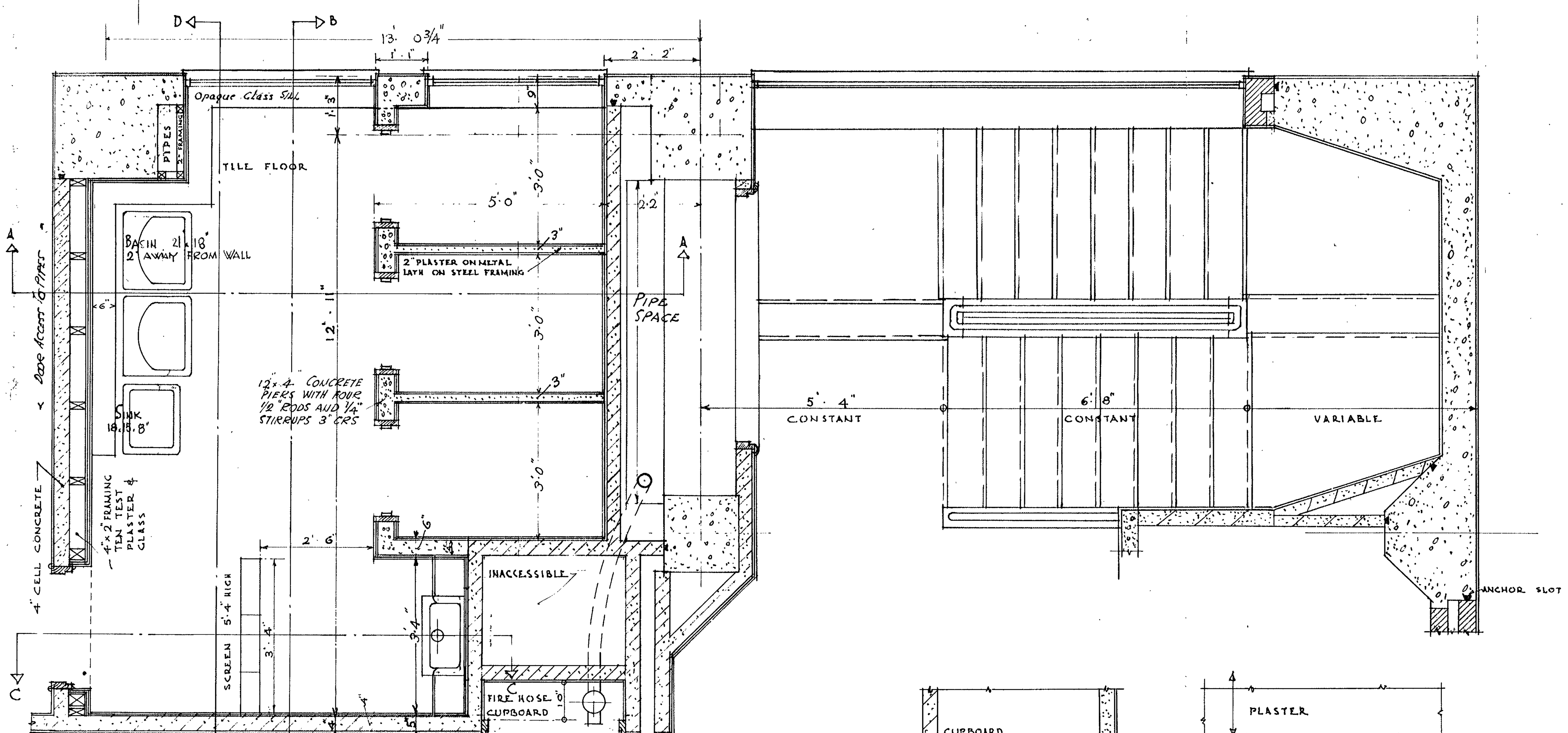
THE NEW ZEALAND INSURANCE BUILDING
@ FEATHERSTON & JOHNSTON Sts WELLINGTON

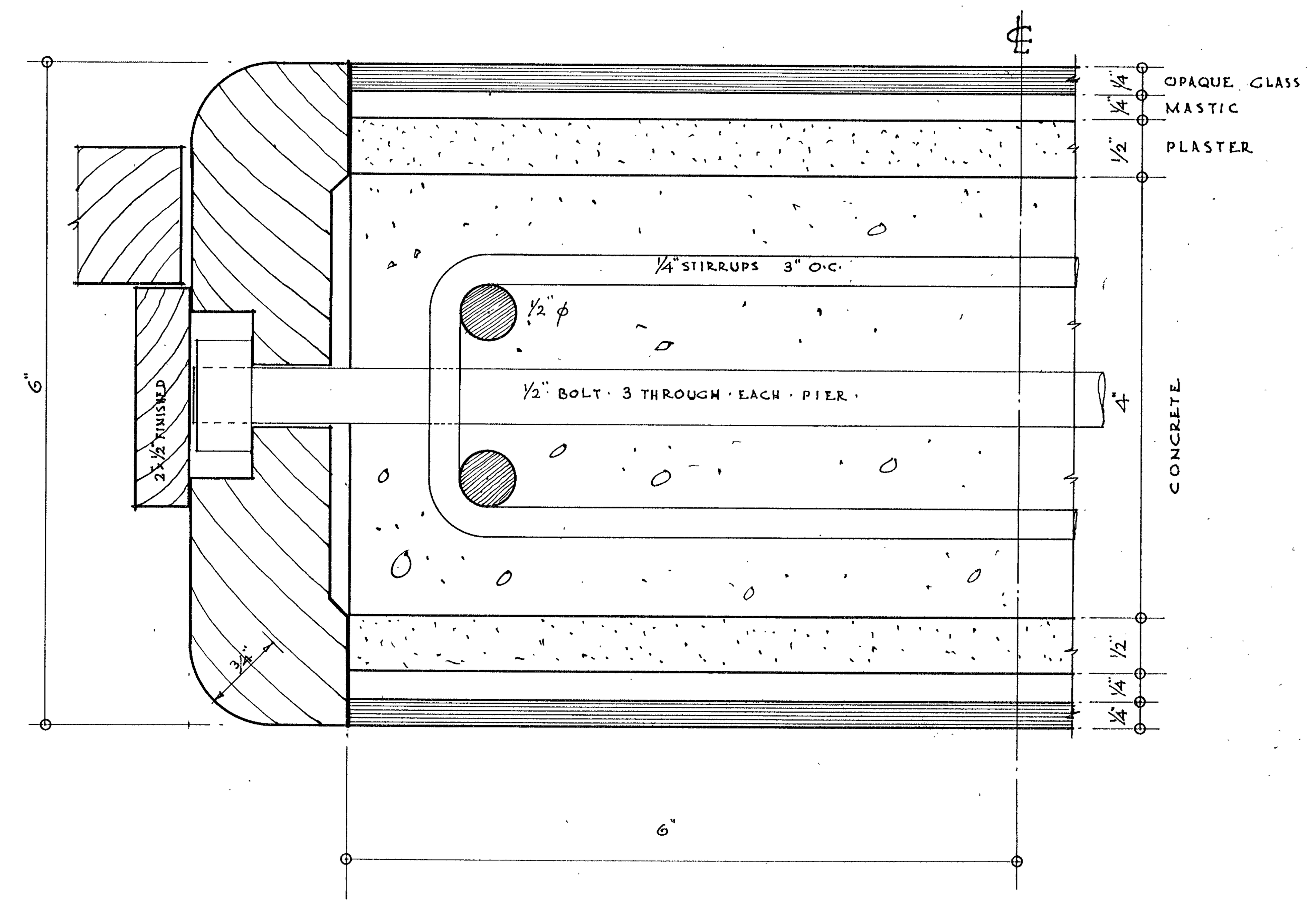
DATE MAY 1936	DETAILS OF GROUND FLOOR LAVATORIES	SCALE ½" = 1 FOOT
DRAWN BY W.R.S		DRAWING No. 14
CHECKED BY C.R.F		



SECTION AA
SECTION BB
SECTION CC
SECTION DD

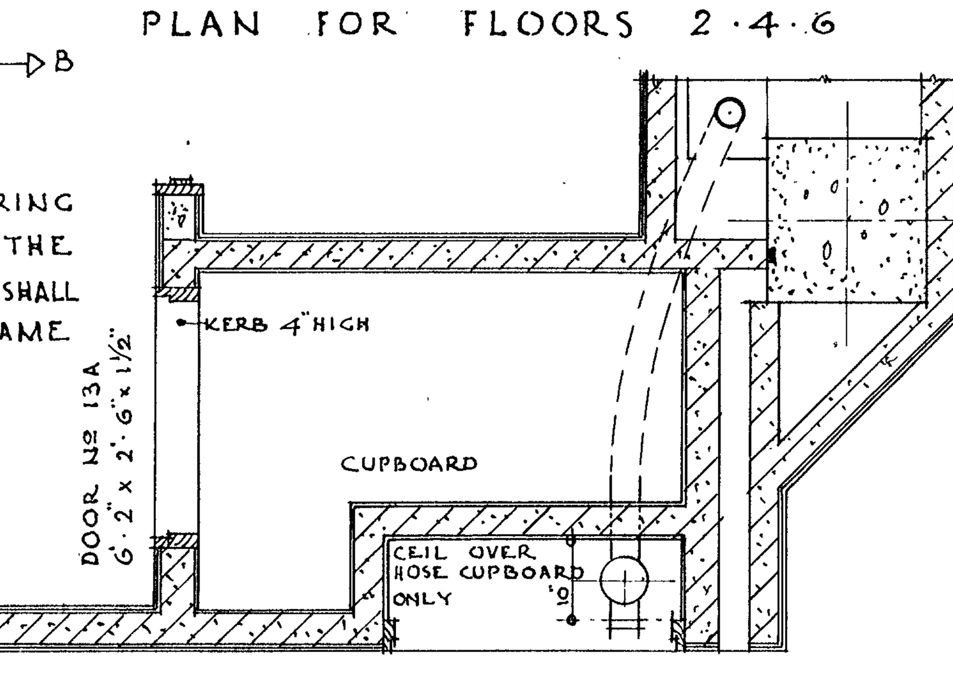


PLAN FOR FLOORS 2·4·6

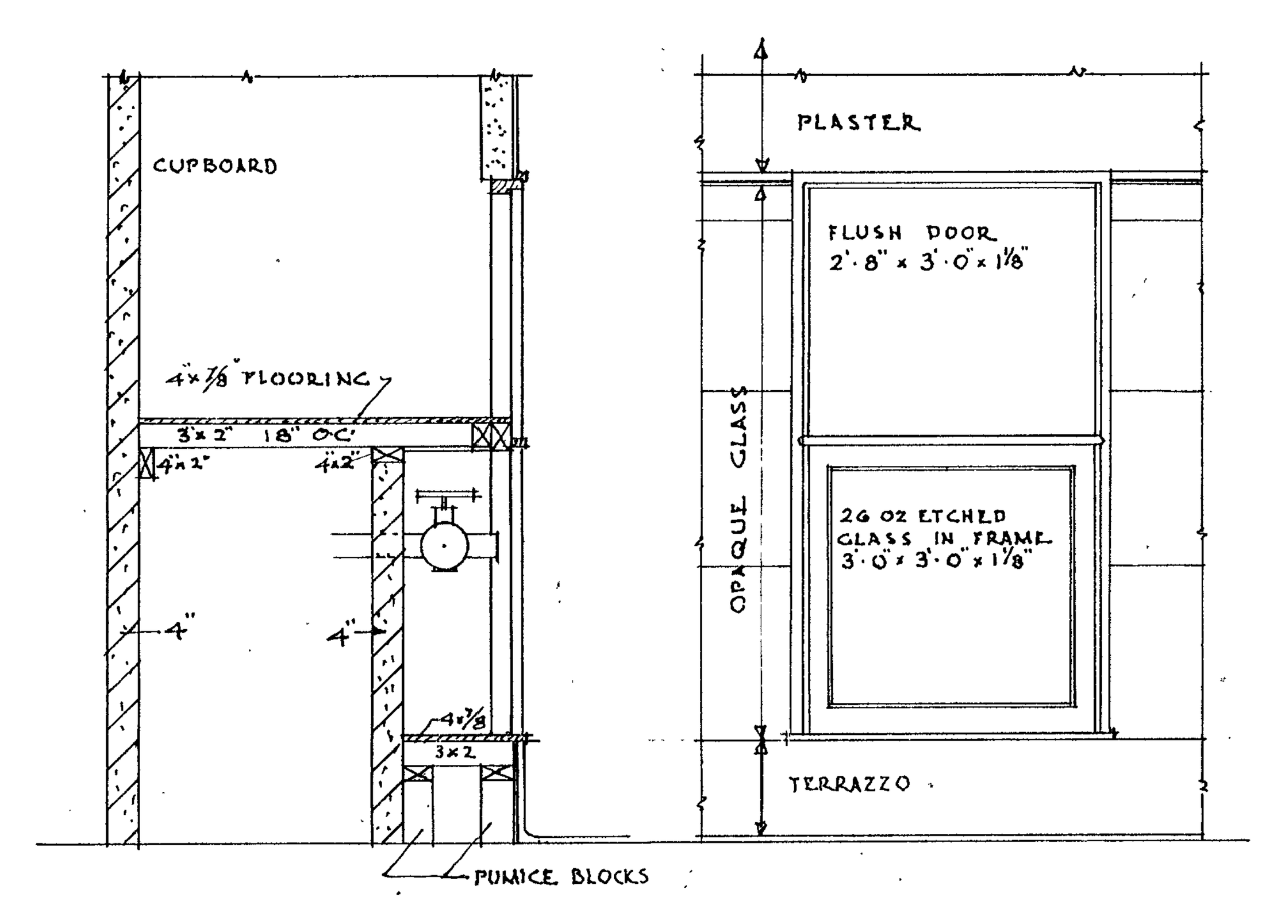


F·S· DETAIL OF LAVATORY JAMB

NOTE THE FLOOR NUMBERING HERE IS INCONSISTENT WITH THE DRAWING OF THE ⅛" SCALES & SHALL OVER-RIDE THE NUMBERING OF SAME.



CHANGE IN PLAN FOR FLOORS 1·3·5·7



SECTION & ELEVATION OF FIRE HOSE CUPBOARD FOR FLOORS ~~3-5-7~~ 2-4-6

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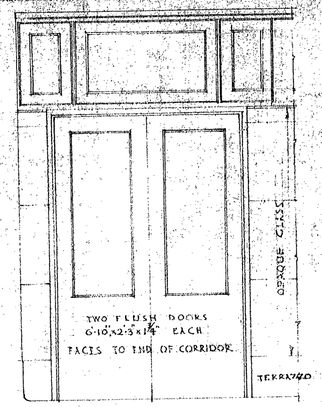
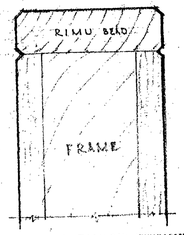
@ FEATHERSTON & JOHNSTON STS WELLINGTON

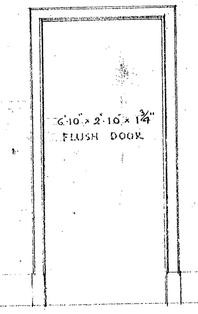
DATE MAY 1936	TYPICAL LAVATORY DETAIL	SCALE ½"=1'0" & F.S.
DRAWN BY G.F.W. & W.R.S.	(URINALS ALTERNATE FLOORS ONLY)	DRAWING No. 15
CHECKED BY C.R.F.		



DOOR Nº 17

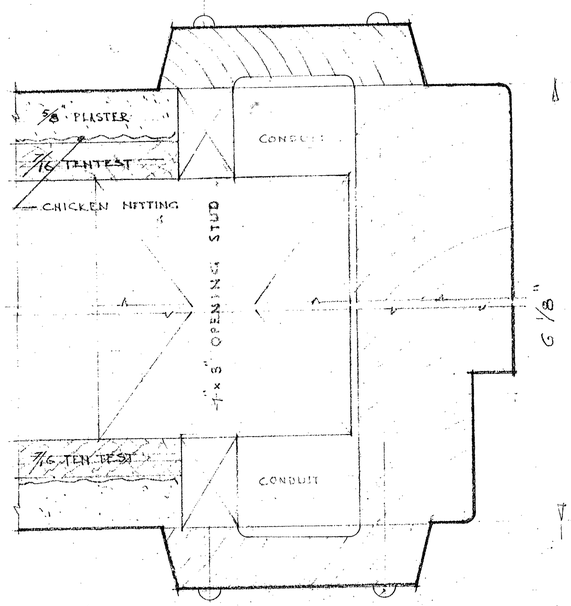


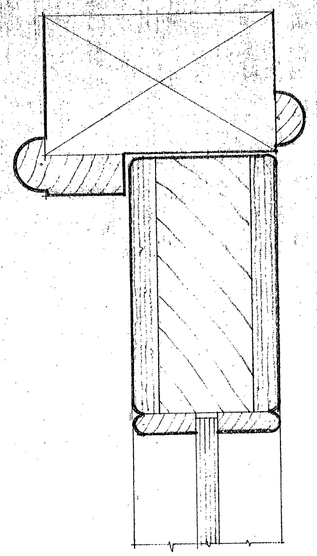
TYPICAL FINISH AROUND DOORS NOS. 20 & 21 & 17



INTER-OFFICE DOORS Nº 21

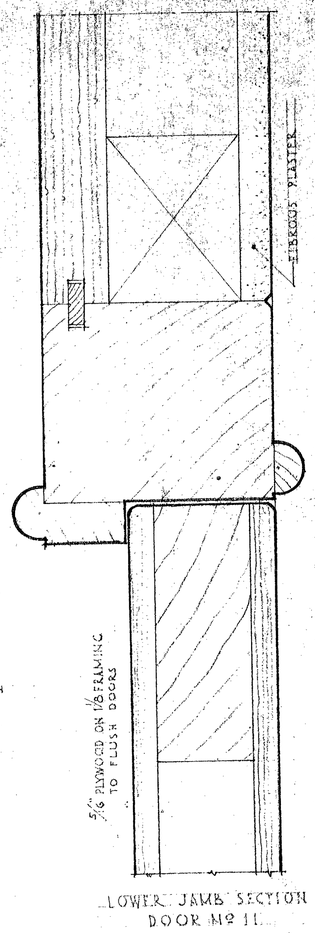
TYPICAL JAMB SECTION HEAD SECTION SIMILAR



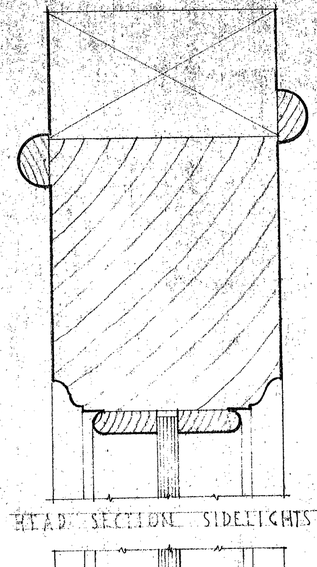


HEAD SECTION DOOR Nº 11

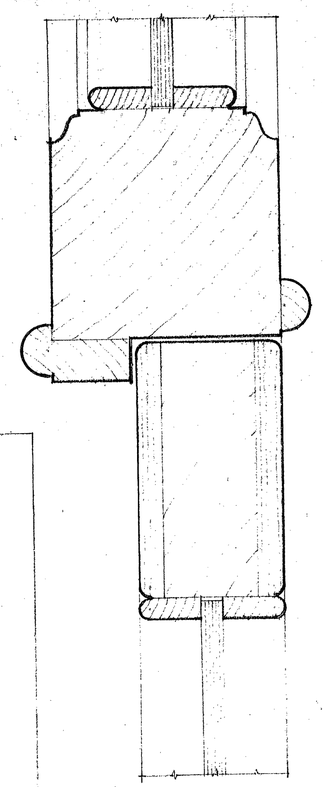
ALL PLYWOOD SHALL BE FACED WITH AUSTRALIAN WALNUT VENEER
ALL OTHER VISIBLE TIMBER SHALL BE AUSTRALIAN BLACKWOOD



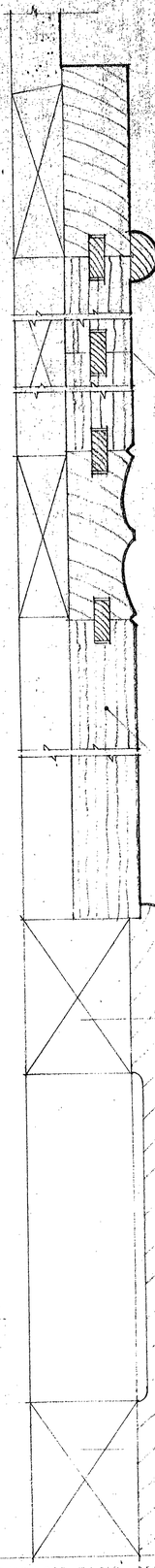
LOWER JAMB SECTION DOOR Nº 11



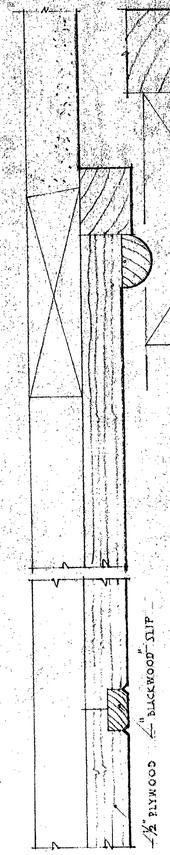
HEAD SECTION SIDELIGHTS



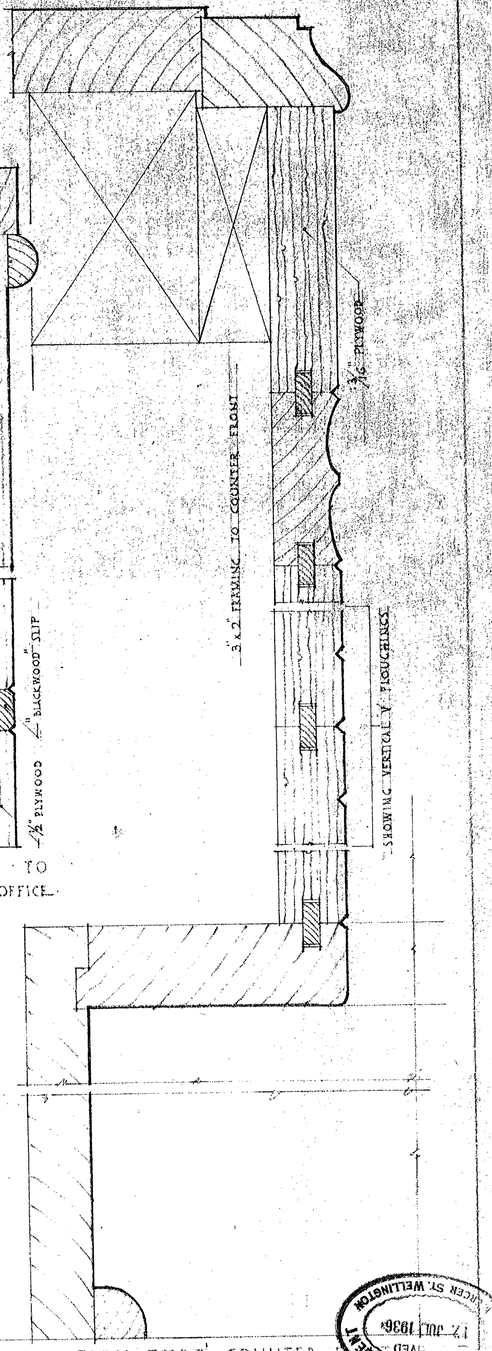
UPPER JAMB SECTION DOOR Nº 11



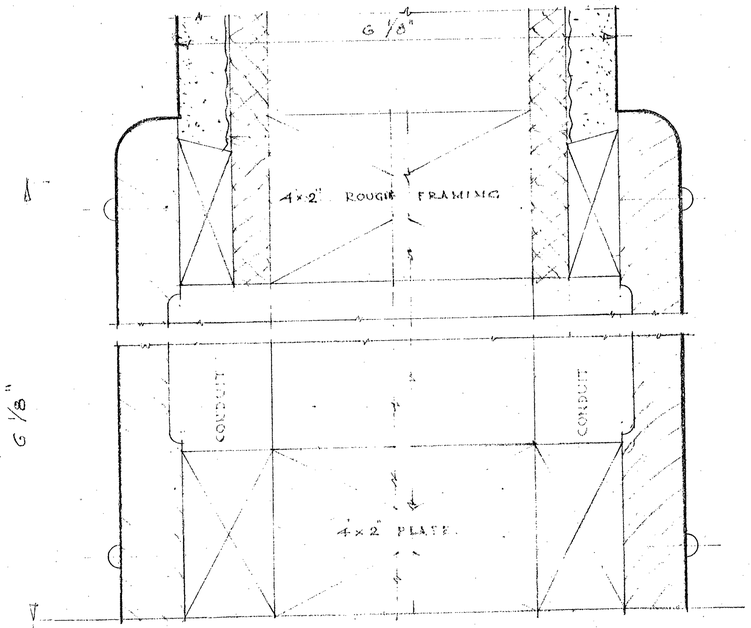
SECTION THRO PANELLING TO PUBLIC SPACE MAIN OFFICE



PANELLING TO MANAGERS OFFICE



SECTION THRO COUNTER



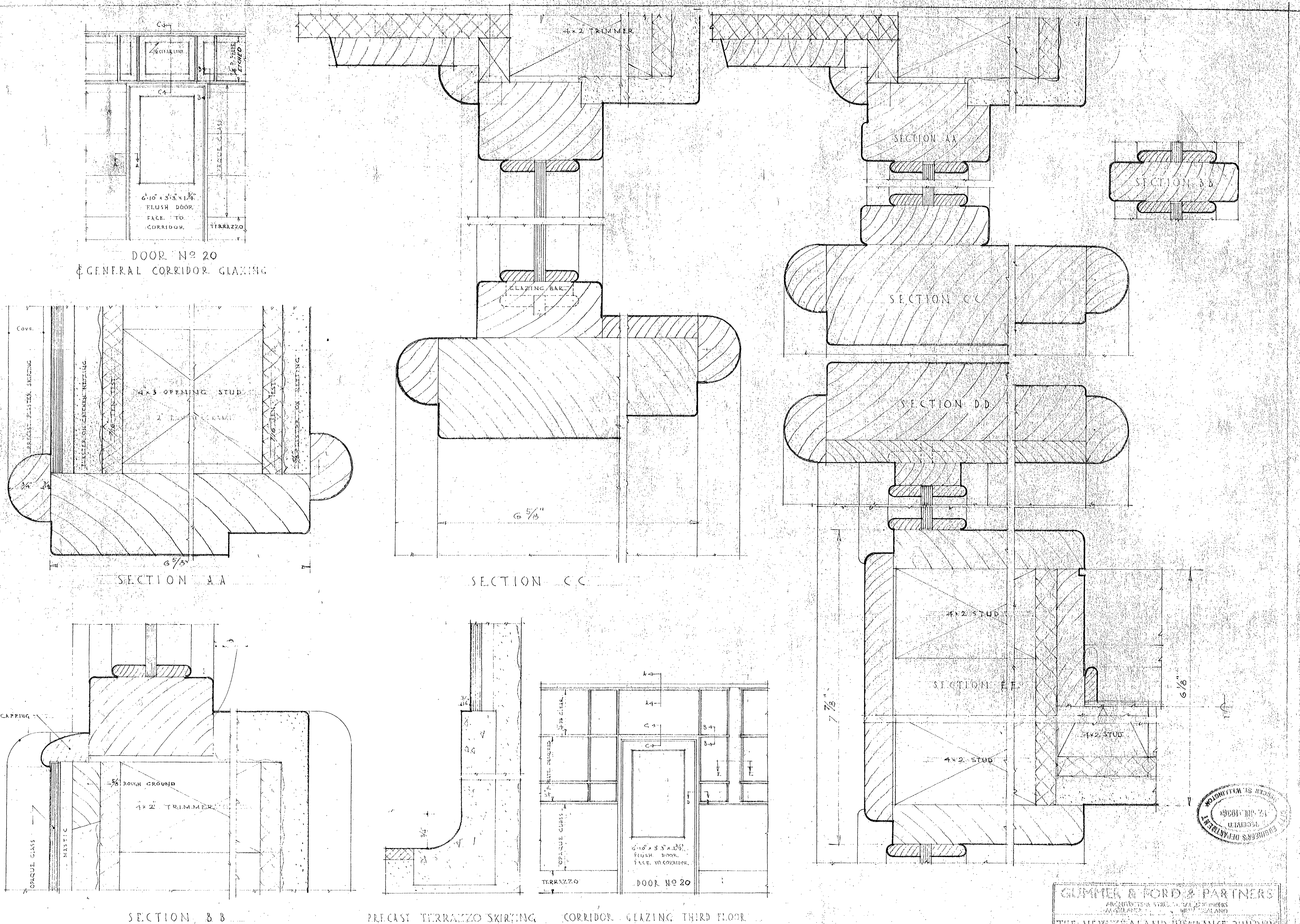
SECTION THRO SKIRTING TYPICAL

GUMMER & FORD & PARTNERS
ARCHITECTS & STRUCTURAL ENGINEERS
AUCKLAND NEW ZEALAND

THE NEW ZEALAND INSURANCE BUILDING
@ FEATHERSTON & JOHNSTON ST WELLINGTON

DATE JUNE 1936	DETAILS OF DOORS Nos 17 & 21 & PANELLING IN MAIN OFFICE	SCALE ½ = 1 FOOT & ¼ FULL
DRAWN BY W.R.S.		
CHECKED BY C.R.F		DRAWING No. 16

FOR ELEVATIONS OF DOORS & PANELLING SEE DRAWING Nº 13



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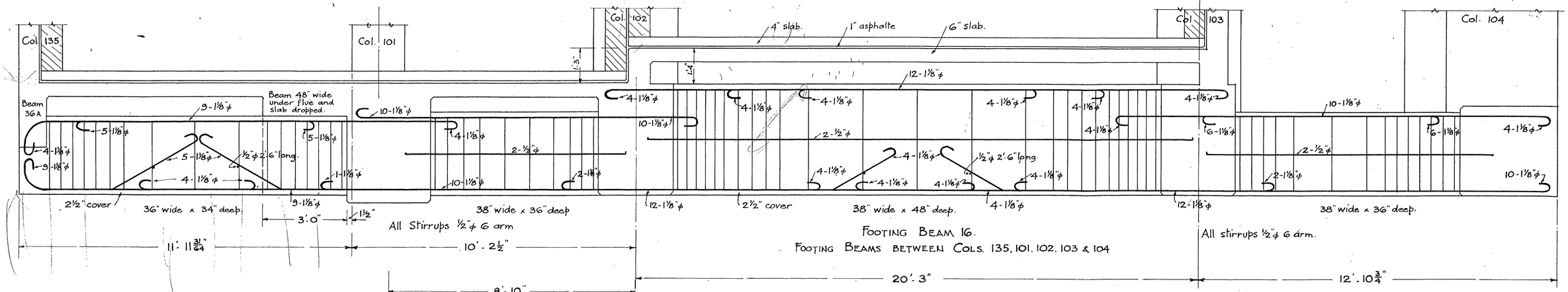
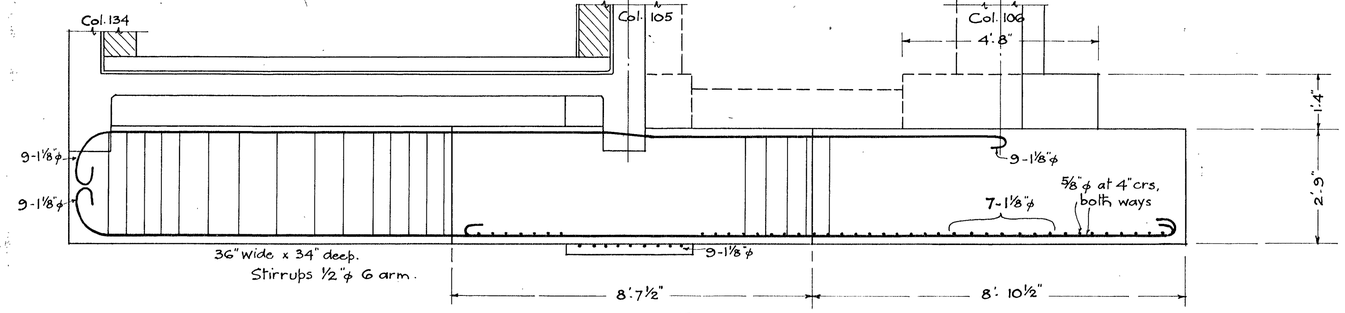
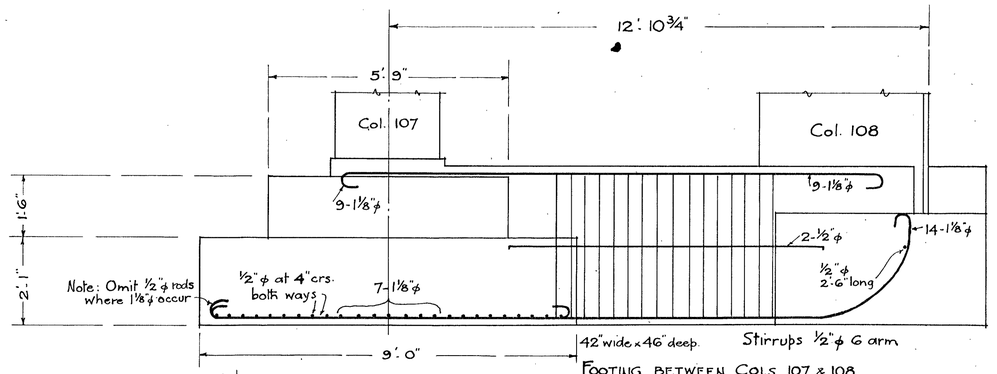
AUCKLAND NEW ZEALAND

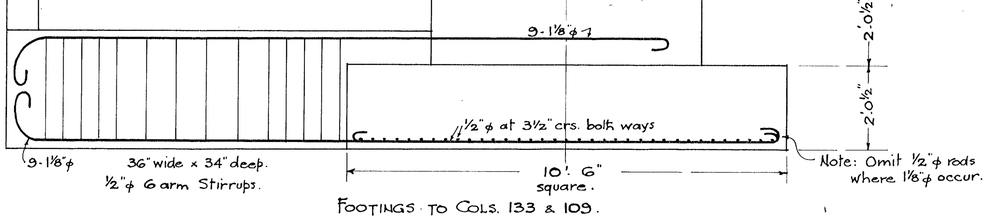
THE NEW ZEALAND INSURANCE BUILDING
@ FEATHERSTON & JOHNSTON STS WELLINGTON

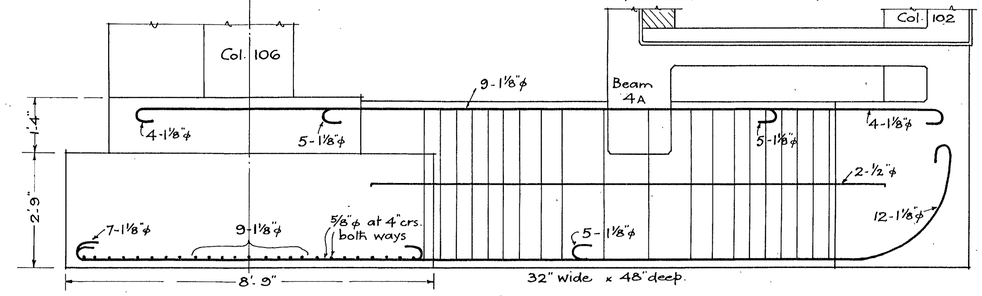
DATE JUNE 1936	DETAILS OF DOORS Nº 20 & 21	SCALE ½" = 1 FOOT / 4 F.S.
DRAWN BY W.R.S.	& CORRIDOR GLAZING	DRAWING No
CHECKED BY C.R.F.		17

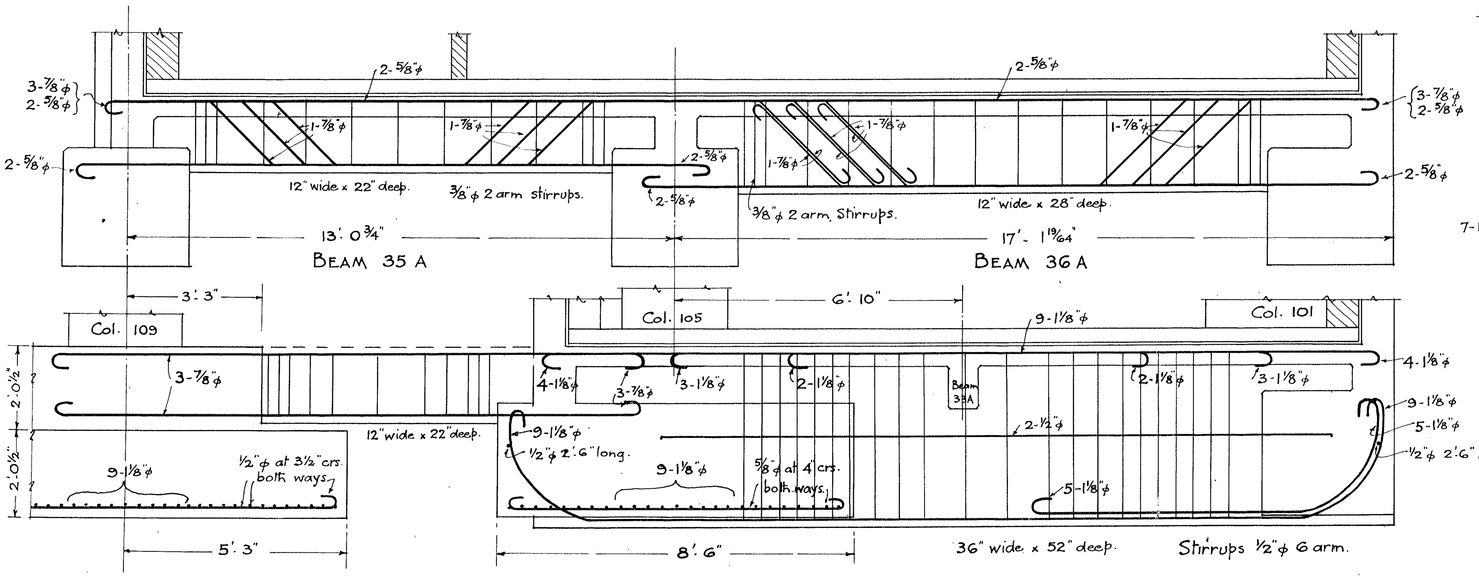


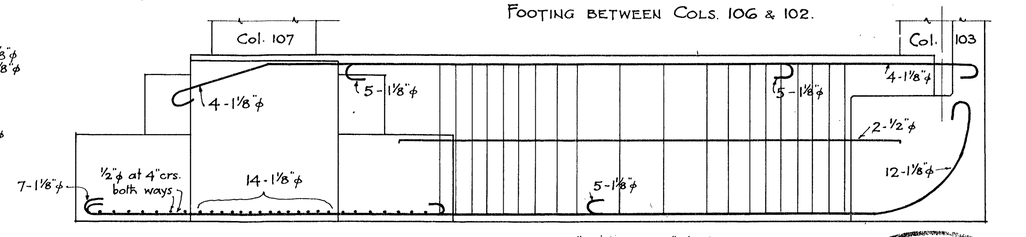








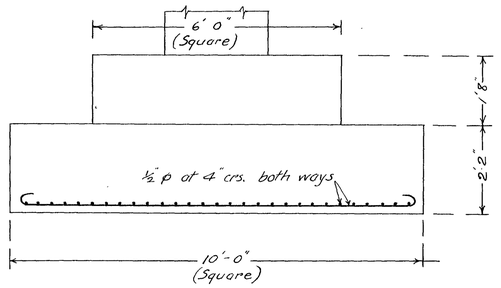


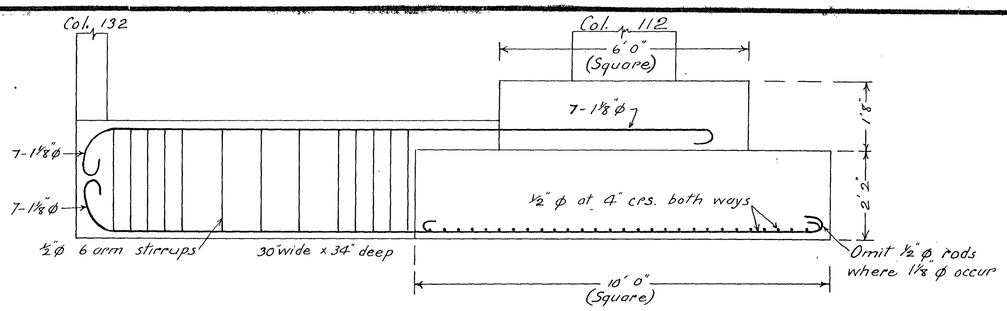


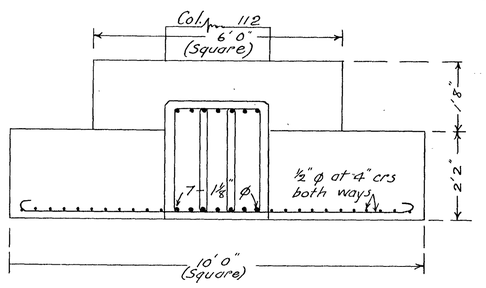
GUMMER & FORD & PARTNERS
ARCHITECTS & STRUCTURAL ENGINEERS
AUCKLAND - - - NEW ZEALAND

THE NEW ZEALAND INSURANCE BUILDING
@ FEATHERSTON & JOHNSTON STS WELLINGTON

DATE JUNE, 1936	FOOTING DETAILS.	SCALE ½"=1 FT.
DRAWN BY J.J.B.		DRAWING No. 18
CHECKED BY C.R.F & K.W.R.		

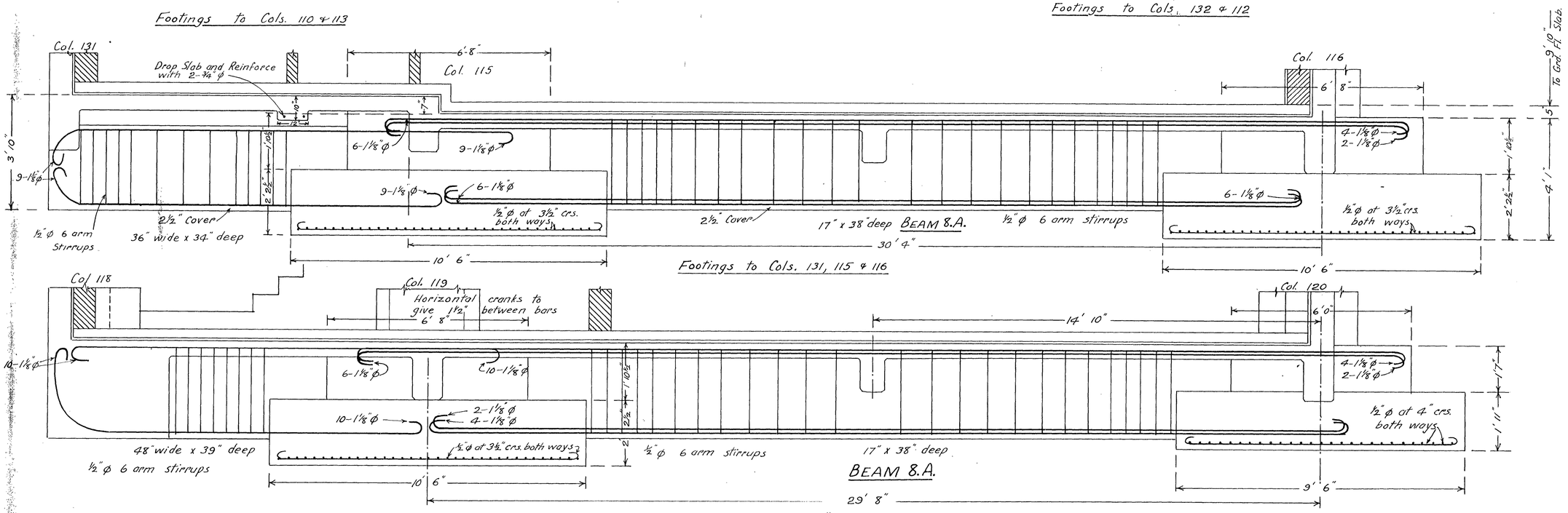


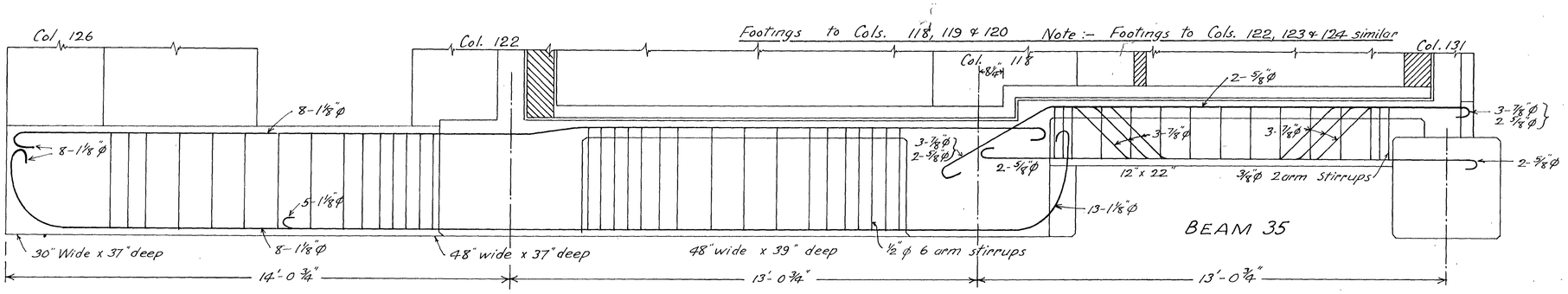




Footings to Cols. 110 & 113

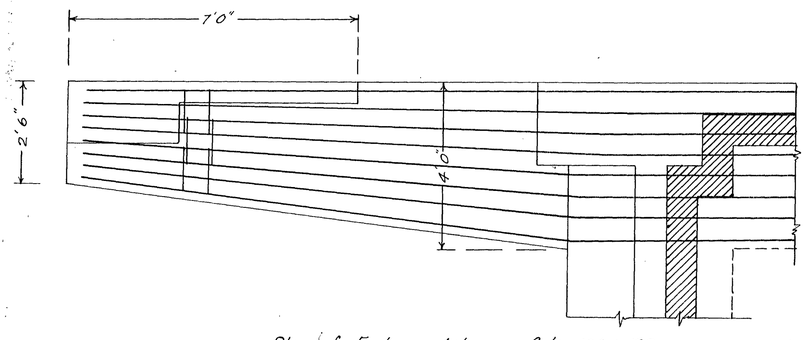
Footings to Cols. 132 & 112



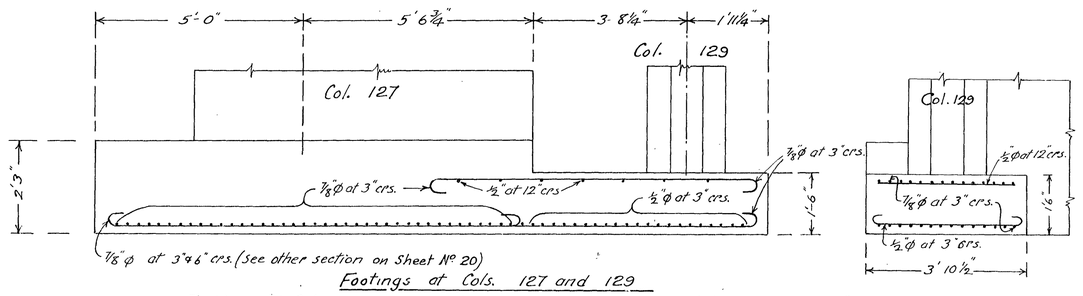


Footing Beams to Cols. 126, 122 & 118

Footings to Cols. 118, 119 & 120 Note :- Footings to Cols. 122, 123 & 124 similar



Plan of Footing between Cols 126 & 122



Footings at Cols. 127 and 129

Footings at Cols. 128 & 130 similar but reversed & with ℄ of Col 128 moved 7"

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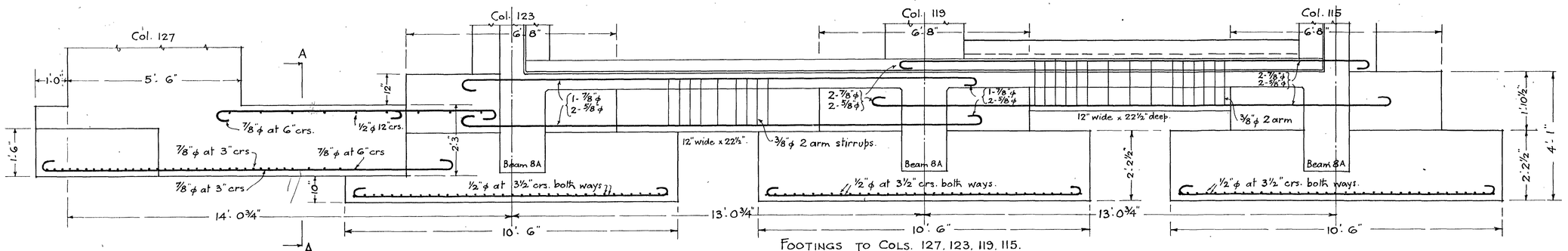
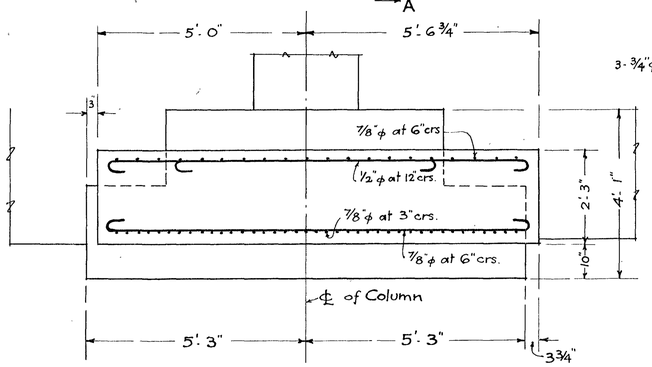
THE NEW ZEALAND INSURANCE BUILDING
℄ FEATHERSTON & JOHNSTON Sts WELLINGTON

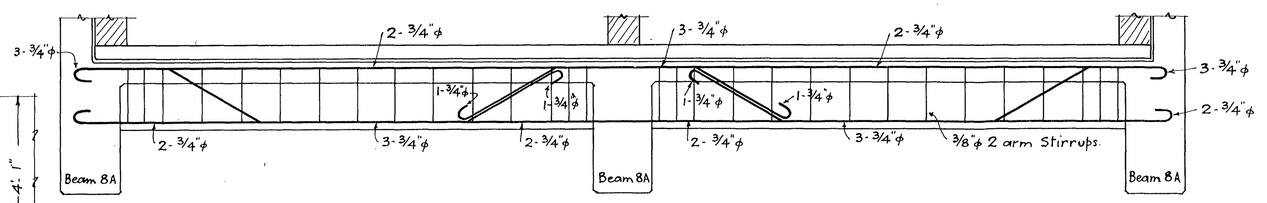
DATE JUNE. 1936	FOOTING DETAILS.	SCALE ½" = 1 FT.
DRAWN BY J.J.B.		DRAWING No. 19
CHECKED BY C.R.F. & K.W.R.		



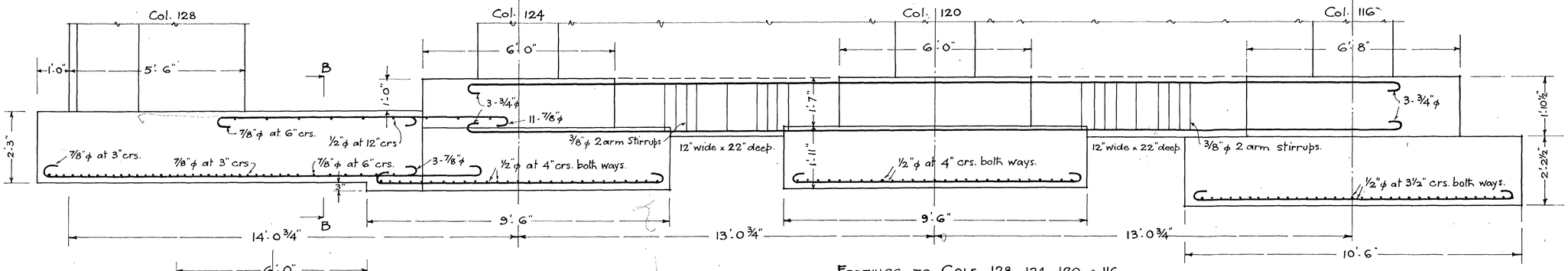
FOOTINGS TO COLS. 127. 123. 119. 115.



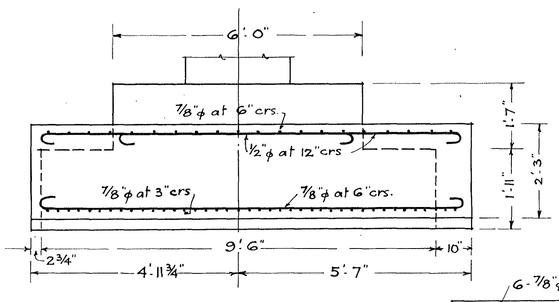
SECTION A-A



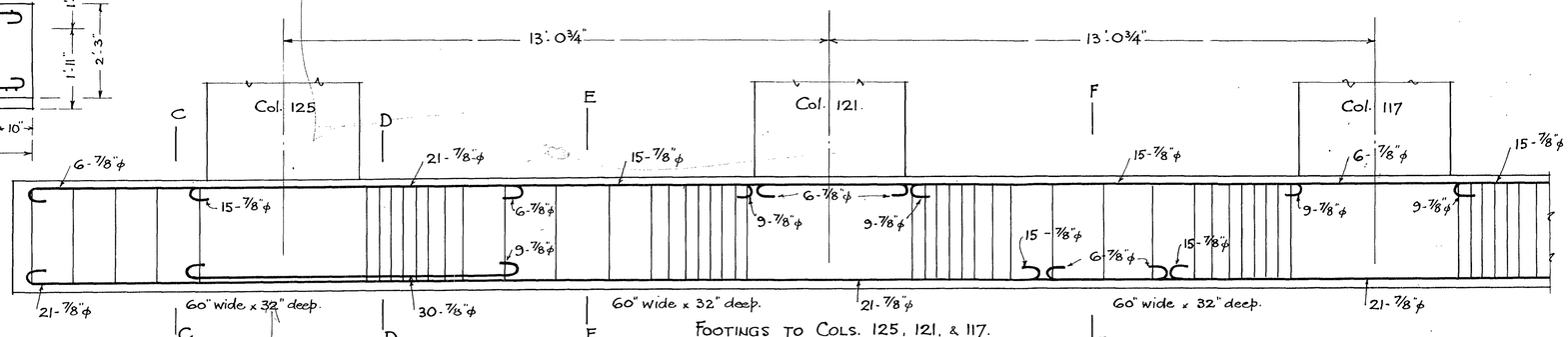
BEAMS 1A. 10" wide x 19" deep.



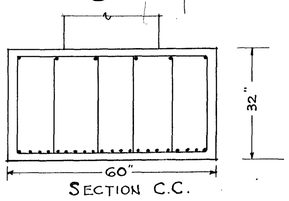
FOOTINGS TO COLS. 128. 124. 120. & 116



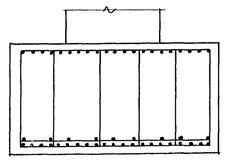
SECTION B.B.



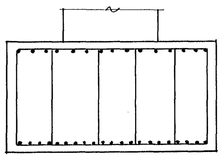
FOOTINGS TO COLS. 125, 121, & 117.



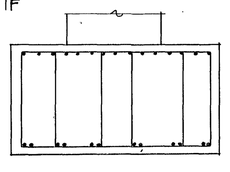
SECTION C.C.



SECTION D.D.



SECTION E.E.

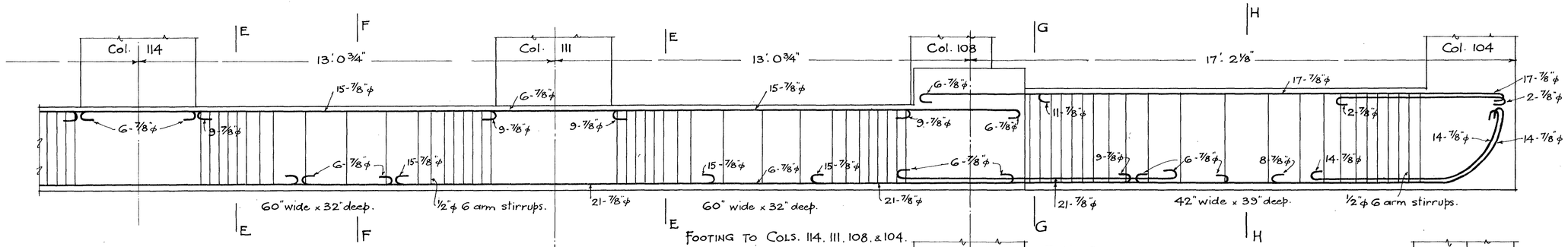


SECTION F.F.

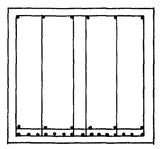
GUMMER & FORD & PARTNERS
ARCHITECTS & STRUCTURAL ENGINEERS
AUCKLAND - - - NEW ZEALAND

THE NEW ZEALAND INSURANCE BUILDING
℄ FEATHERSTON & JOHNSTON Sts WELLINGTON

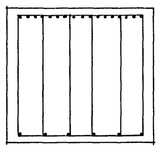
DATE JUNE 1936	FOOTING DETAILS.	SCALE ½"=1FT.
DRAWN BY J.J.B.		DRAWING No. 20
CHECKED BY C.R.F. & K.W.K.		



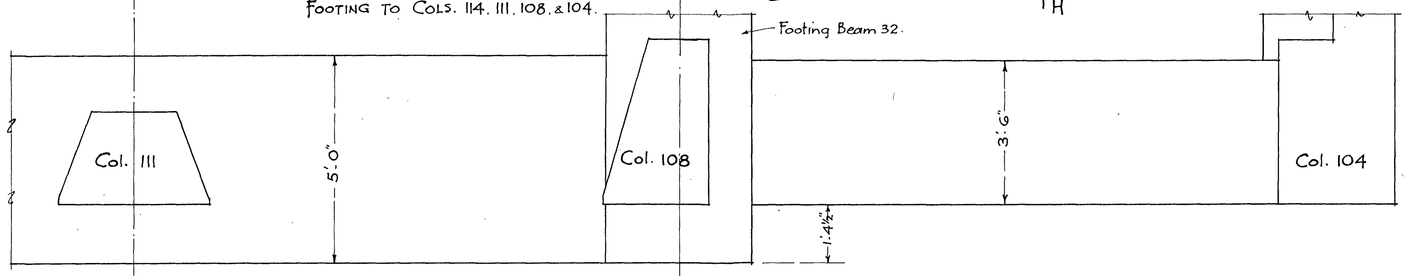
FOOTING TO COLS. 114. 111. 108. & 104.



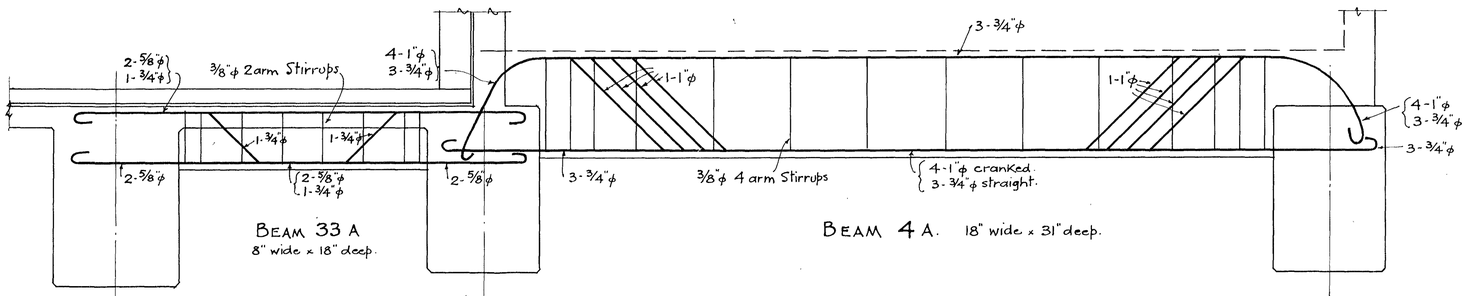
SECTION G.G.



SECTION H.H.

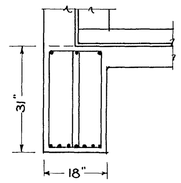


PLAN OF FOOTING BEAMS BETWEEN COLS. 111. 108 & 104.

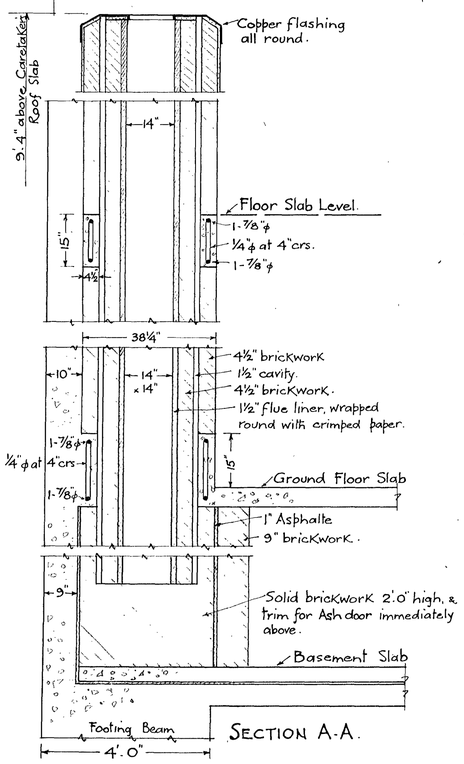


BEAM 33 A
8" wide x 18" deep.

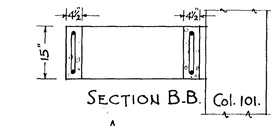
BEAM 4 A. 18" wide x 31" deep.



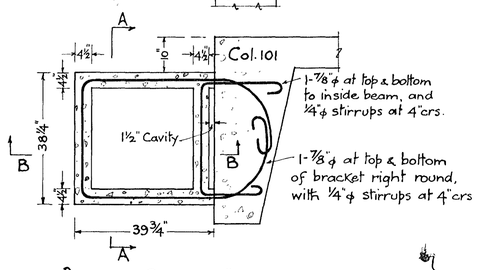
BEAM 4A.
at ℄ Section.



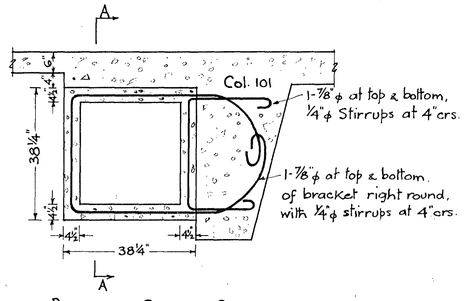
SECTION A-A.



SECTION B.B. Col. 101.



PLAN OF CHIMNEY BRACKET AT ALL FLOORS FROM 1ST TO ROOF.

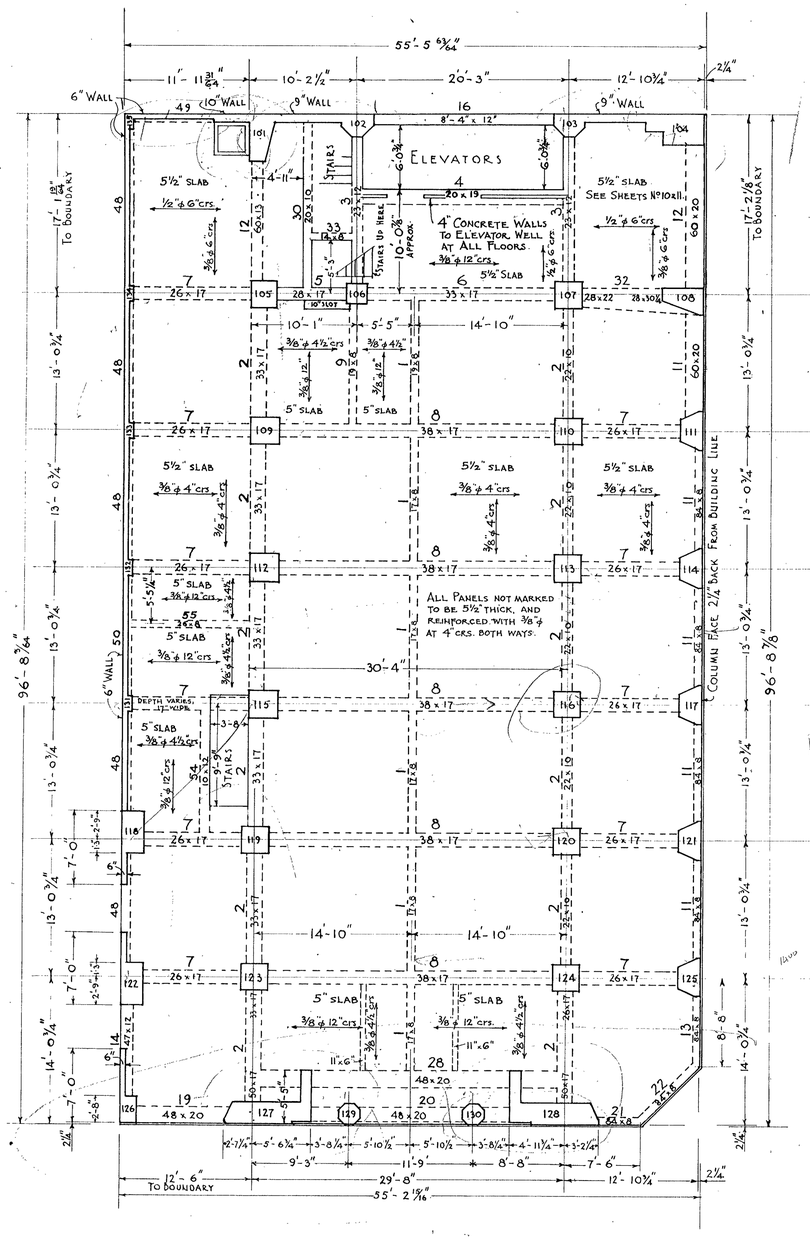


PLAN OF CHIMNEY BRACKET AT GROUND FLOOR. (SHOWING CONCRETE ONLY).

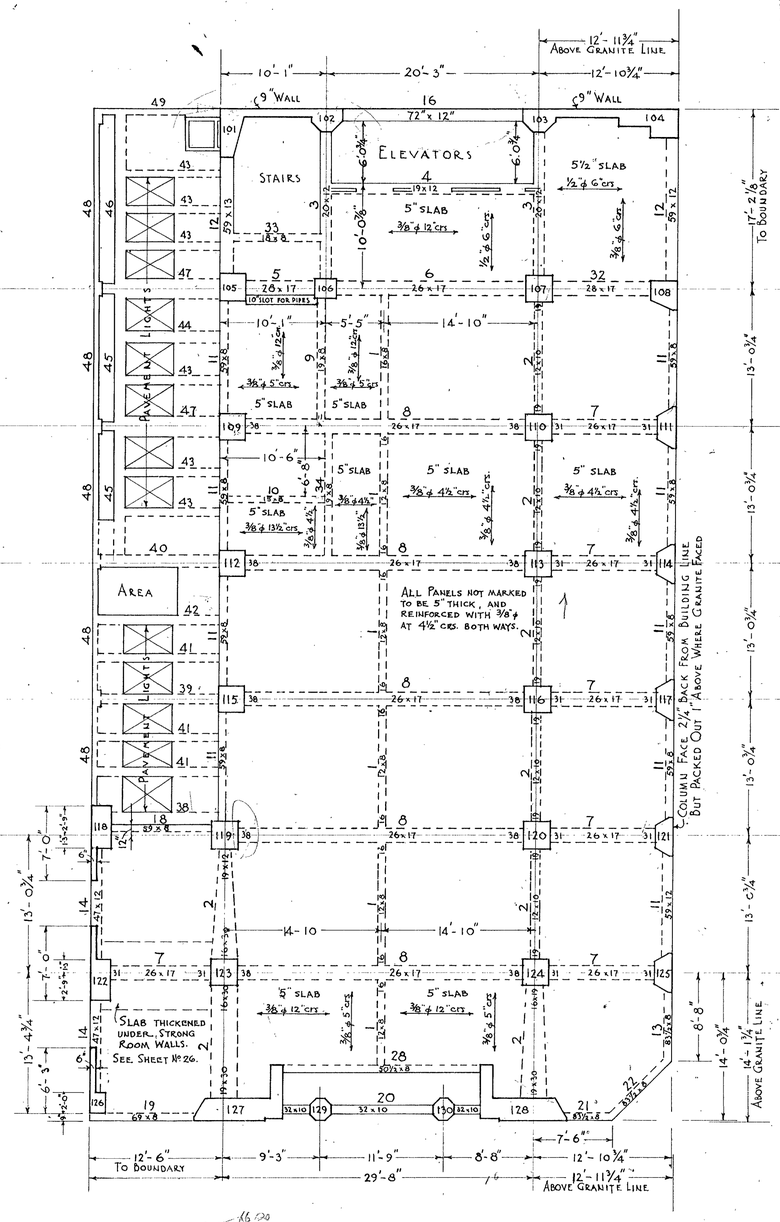
GUMMER & FORD & PARTNERS
ARCHITECTS & STRUCTURAL ENGINEERS
AUCKLAND - - - NEW ZEALAND

THE NEW ZEALAND INSURANCE BUILDING
℄ FEATHERSTON & JOHNSTON STS. WELLINGTON.

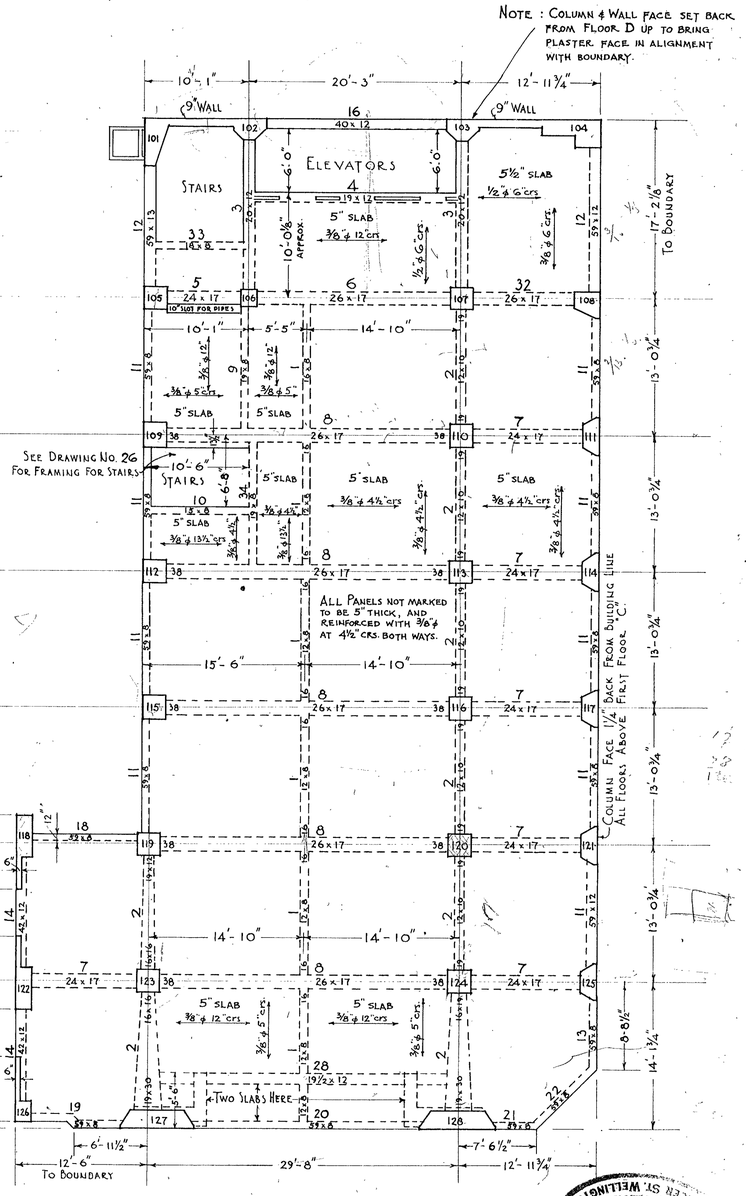
DATE JUNE. 1936	FOOTING DETAILS. CHIMNEY DETAILS.	SCALE ½"= 1 FT.
DRAWN BY J.J.B.		DRAWING No. 21
CHECKED BY C.R.F. & K.W.R.		



GROUND FLOOR "B"

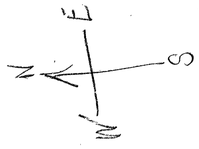


FIRST FLOOR "C"



SECOND FLOOR "D"

NOTE : FOR SLAB THICKNESS & REINFORCEMENT, SEE SHEET Nº 26.



GUMMER & FORD & PARTNERS
ARCHITECTS & STRUCTURAL ENGINEERS
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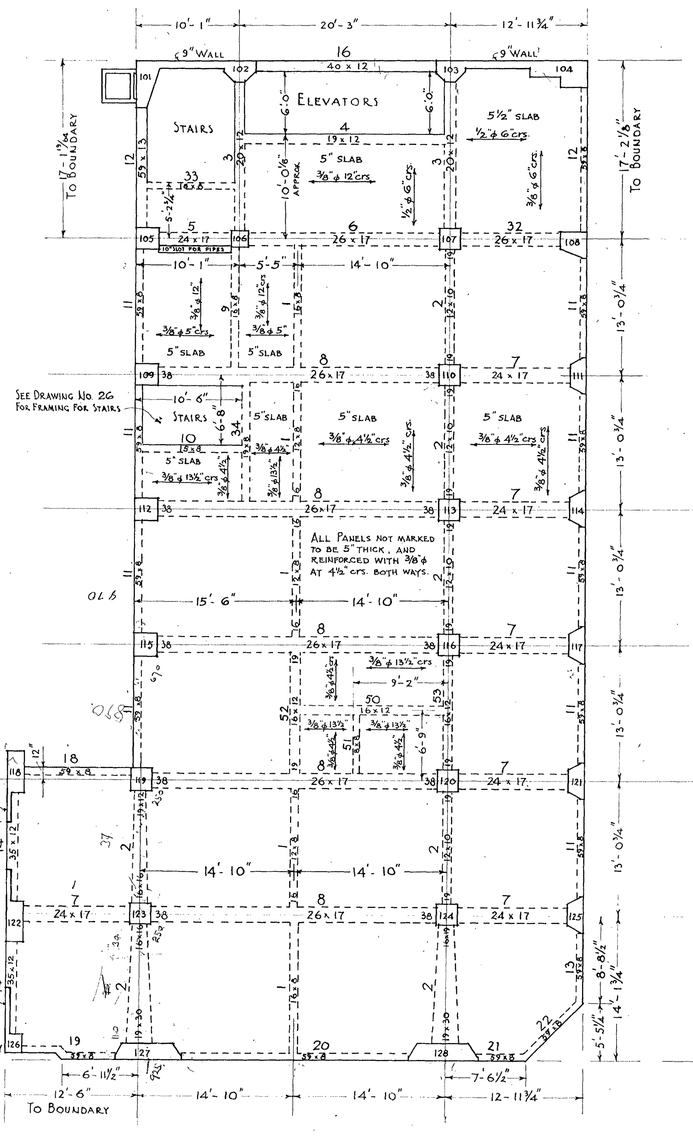
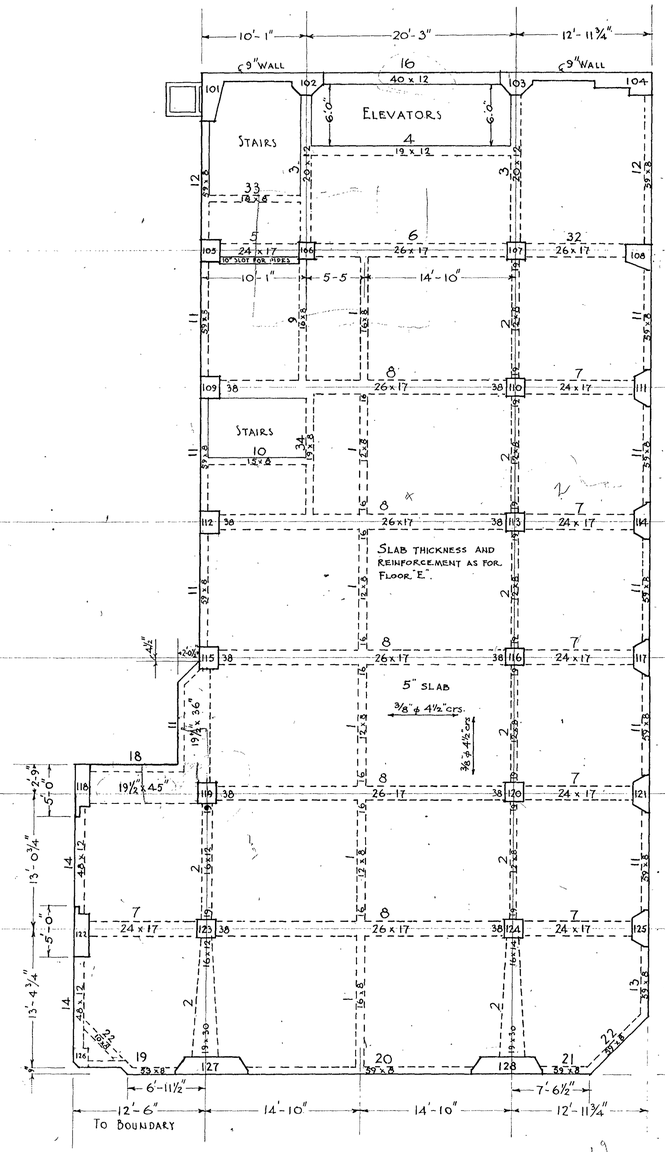
THE NEW ZEALAND INSURANCE BUILDING
@ FEATHERSTON & JOHNSTON STS WELLINGTON

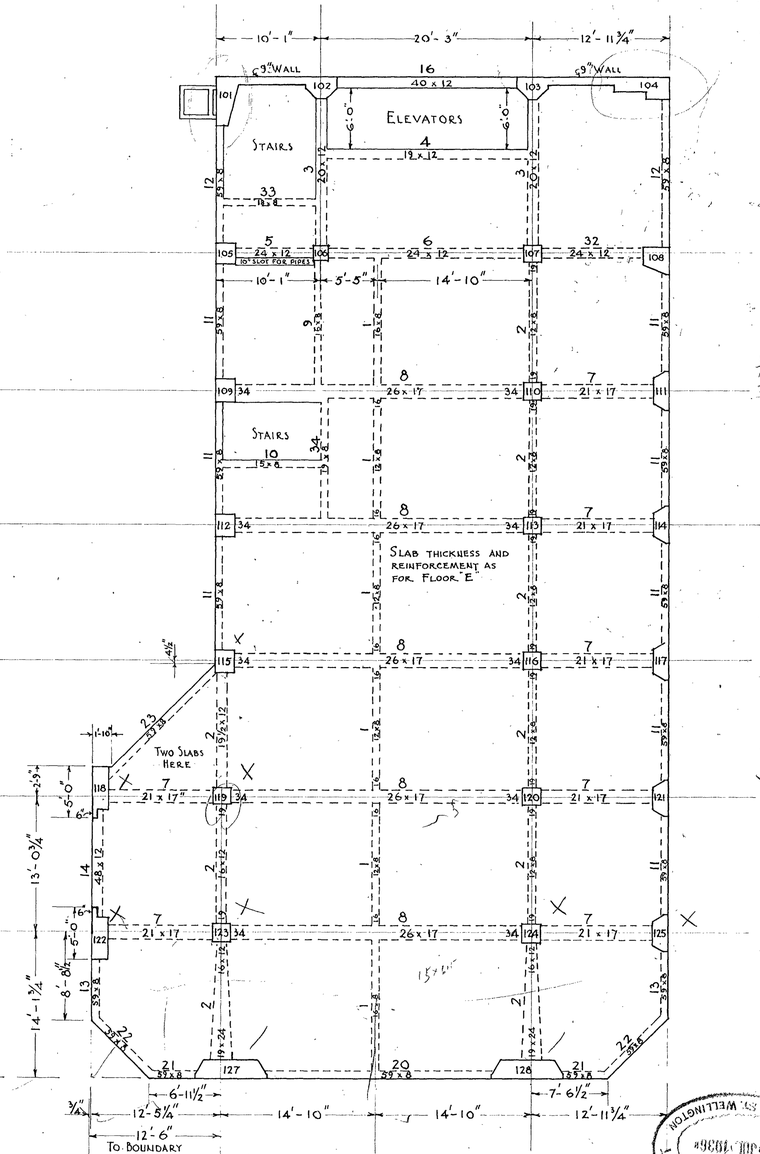
DATE JUNE 1936	FRAMING PLANS OF :- GROUND FLOOR B, 1ST FLOOR C, 2ND FLOOR D	SCALE 1/8" = 1FT.
DRAWN BY K.W.R.		DRAWING No. 22
CHECKED BY C.R.F & K.W.R.		



THIRD FLOOR "E"



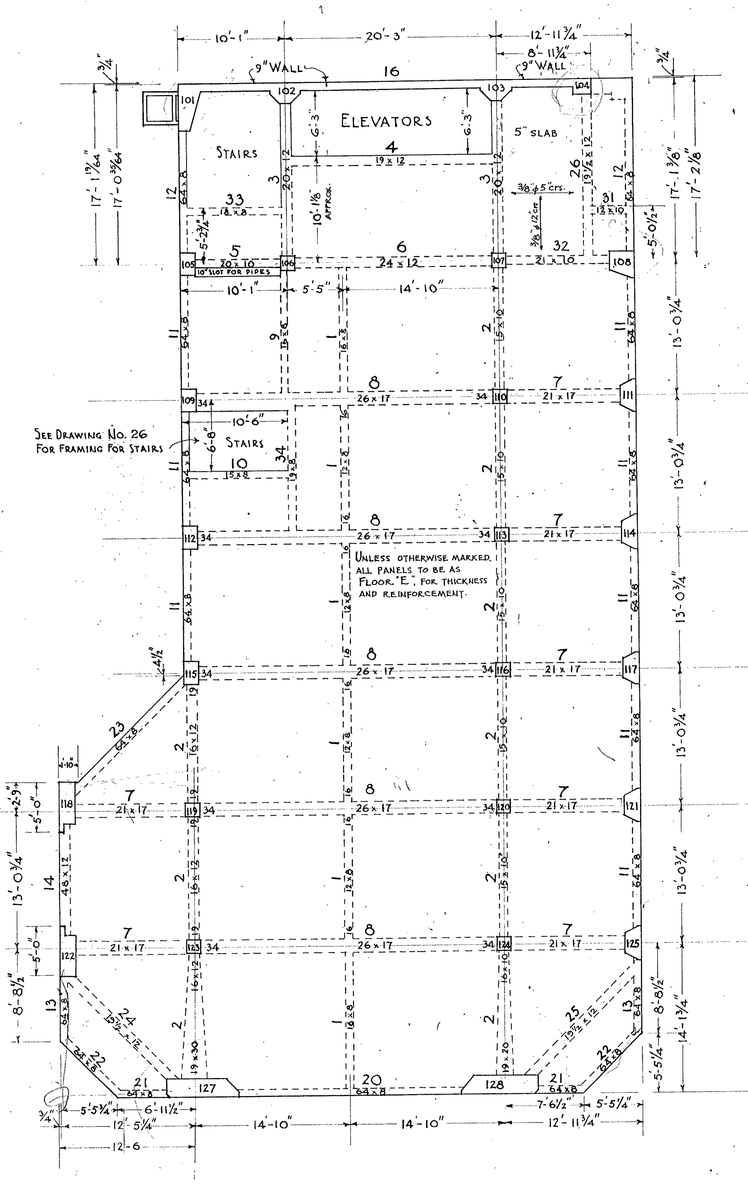
FOURTH FLOOR "F"



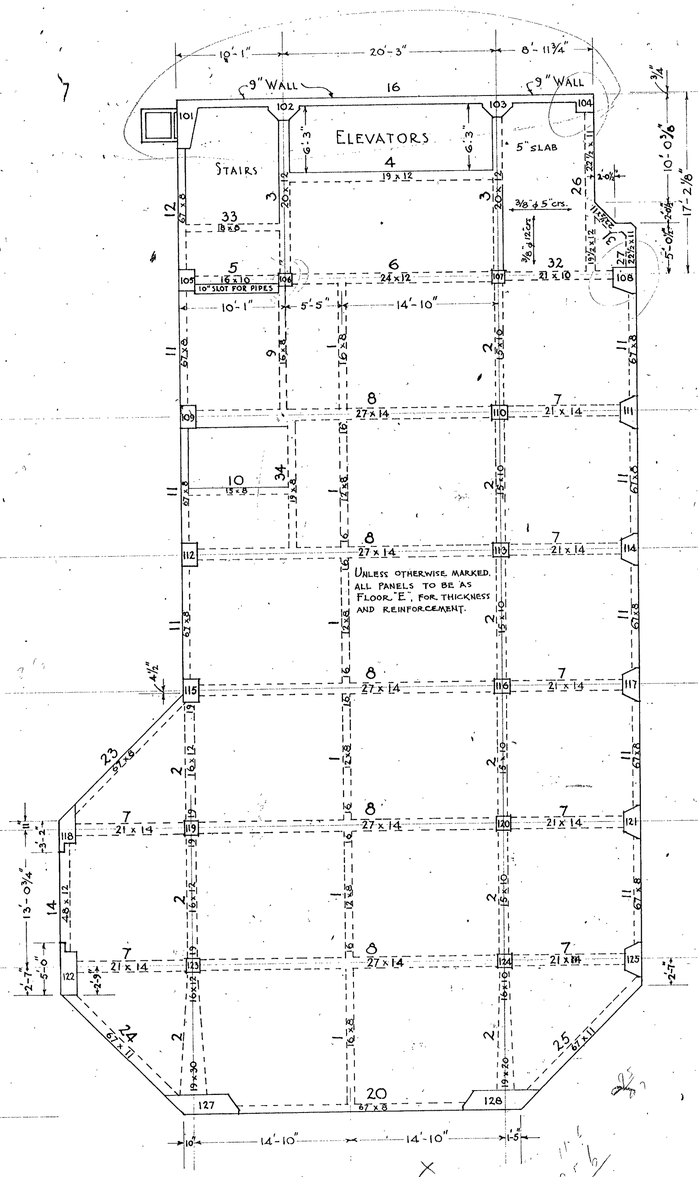
FIFTH FLOOR "G"

NOTE: FOR SLAB THICKNESS & REINFORCEMENT, SEE SHEET No 26.

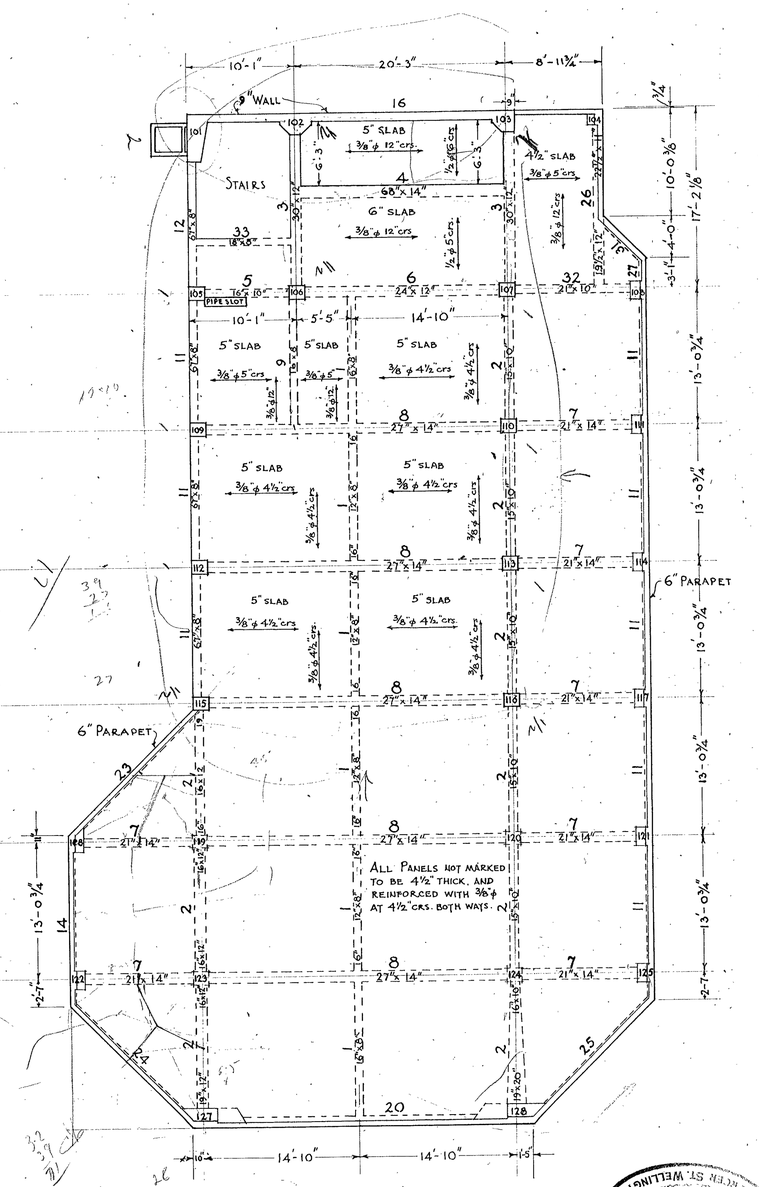
GUMMER & FORD & PARTNERS ARCHITECTS & STRUCTURAL ENGINEERS AUCKLAND - - - NEW ZEALAND		
THE NEW ZEALAND INSURANCE BUILDING ℄ FEATHERSTON & JOHNSTON Sts WELLINGTON		
DATE JUNE 1936	FRAMING PLANS OF :- 3RD FLOOR E 4TH FLOOR F 5TH FLOOR G	SCALE ⅛" = 1 FT.
DRAWN BY K.W.R.		DRAWING No. 23
CHECKED BY C.R.F. & K.W.R.		



SIXTH FLOOR "H"



SEVENTH FLOOR "I"



MAIN ROOF "J"

NOTE: FOR SLAB THICKNESS & REINFORCEMENT, SEE SHEET Nº 26.

GUMMER & FORD & PARTNERS
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AUCKLAND - - - NEW ZEALAND

THE NEW ZEALAND INSURANCE BUILDING
FEATHERSTON & JOHNSTON STS WELLINGTON

DATE JUNE, 1936	FRAMING PLANS OF :- 6TH FLOOR H. 7TH FLOOR I. MAIN ROOF J.	SCALE ⅛" = 1FT.
DRAWN BY K.W.R.		DRAWING No. 24
CHECKED BY C.R.F. & K.W.R.		

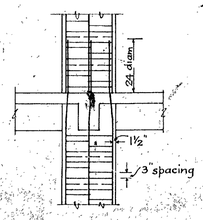
COLUMN SCHEDULE

FLOOR	101 ✓	102 . 103 ✓	104	105 ✓	106 ✓	107 ✓	108 ✓	109 . 112 . 115	110 . 113 . 116	111 . 114 ✓ 117 . 121 . 125	118 . ✓122 .	119 . ✓120 . 123 . 124	126	127 . 128 .
J MAIN ROOF TO CARETAKERS ROOF	AS FLOOR H	16-1¼"φ 3 types links COL 103 J ONLY. COL. 102 J: FOR TOP 4'-0" ONLY 11-1¼"φ 3 types links COL. 102 J: LOWER PORTION AS FLOOR B.	4-1¼"φ Links at 6"crs. SECTION. COL. ABOVE ROOF LEVEL	4-1¼"φ	4-1¼"φ	AS FLOOR H	8-1¼"φ Links at 6"crs. SECTION. COL. ABOVE ROOF LEVEL.	8-1¼"φ 3 types of links.	8-1¼"φ 3 types of links	6-1¼"φ Links at 6"crs. SECTION. COL. ABOVE ROOF LEVEL.	4-1¼"φ Links at 6"crs. SECTION. COL. 118 ABOVE ROOF LEVEL. COL. 122 ABOVE ROOF: 22"x18"			6-1¼"φ Links at 6"crs. SECTION. COL. ABOVE ROOF LEVEL. COL. 128 REVERSE HAND & ℄ OVER 7"
I 7TH FLOOR TO MAIN ROOF	AS FLOOR H	COLS. 102 & 103 I: AS FLOOR B.	AS FLOOR H	AS FLOOR H	AS FLOOR H	AS FLOOR H	AS FLOOR H	AS FLOOR H	AS FLOOR H	AS FLOOR H	COL. 118. I ONLY 5 types of links. COL. 122. I: AS FLOOR F, BUT WITH 2"x2" SPLAY OFF N.W. CORNER.	AS FLOOR H		COL. 128 REVERSE HAND & ℄ OVER 7" 18-1¼"φ 4 types of links.
H 6TH TO 7TH FLOOR	6-1¼"φ each end 4-¾"φ in centre 3 types of links	AS FLOOR B	4-1¼"φ	8-1¼"φ 2 types of links.	12-1¼"φ 5 types of links	8-1¼"φ 2 types of links.	16-1¼"φ 5 types of links	10-1¼"φ 5 types of links	12-1¼"φ 5 types of links.	10-1¼"φ 5 types of links	AS FLOOR F	8-1¼"φ 2 types of links		COL. 128 REVERSE HAND, & ℄ OVER 7" 18-1¼"φ 4 types of links
G 5TH TO 6TH FLOOR	AS FLOOR F	AS FLOOR B	AS FLOOR F	AS FLOOR F	AS FLOOR F	AS FLOOR F	AS FLOOR F	AS FLOOR F	AS FLOOR F	AS FLOOR F	AS FLOOR F	AS FLOOR F		AS FLOOR D
F 4TH TO 5TH FLOOR	8-1¼" each end 4-¾"φ in centre 4 types of links	AS FLOOR B	19-1¼"φ 4 types of links	8-1¼"φ 2 types of links	12-1¼"φ 5 types of links	12-1¼"φ 5 types of links	16-1¼"φ 5 types of links	20-1¼"φ 5 types of links	16-1¼"φ 5 types of links	10-1¼"φ 5 types of links	14-1¼"φ 5 types of links	16-1¼"φ 5 types of links	6-1¼"φ Links at 6"crs. Column only extends to height of parapet.	AS FLOOR D
E 3RD TO 4TH FLOOR	AS FLOOR C	AS FLOOR B	AS FLOOR C	AS FLOOR D	AS FLOOR D	AS FLOOR D	AS FLOOR C but without 1" packing.	22-1¼"φ 5 types of links	20-1¼"φ 5 types of links	AS FLOOR D	4 types of links. COL. 118 Col. AS FLOOR D ⅜"φ wall rods taken to end of wall. 8-⅝"φ at 3"crs, lapped as Col. rods. Links at 8"crs.	20-1¼"φ 5 types of links.	AS FLOOR C Including, 8-⅝"φ at end of 6" wall. See Col. 118 E.	AS FLOOR D
D 2ND TO 3RD FLOOR	AS FLOOR C	AS FLOOR B	AS FLOOR C but without 1" packing.	10-1¼"φ 5 types of links	16-1¼"φ 5 types of links.	20-1¼"φ 5 types of links.	AS FLOOR C but without 1" packing.	24-1¼"φ 5 types of links	20-1¼"φ 5 types of links.	20-1¼"φ 5 types of links	Also 8-⅝"φ at end of 6" wall. 16-1¼"φ 4 types of links.	20-1¼"φ 5 types of links.	AS FLOOR C Including 8-⅝"φ at end of 6" wall. See Col. 118 E.	Col. 128 Reverse Hand, & ℄ over 7" 18-1¼"φ 4 types of links.
C 1ST TO 2ND FLOOR	10-1¼"φ each end 4-¾"φ in centre. 4 types of links	AS FLOOR B	21-1¼"φ 4 types of links. 1" packing above granite.	20-1¼"φ 5 types of links.	AS FLOOR B	20-1¼"φ 5 types of links.	24-1¼"φ 5 types of links. 1" packing above granite.	28-1¼"φ 5 types of links.	20-1¼"φ 5 types of links.	20-1¼"φ 5 types of links. 1" packing above granite.	AS FLOOR B Including 8-⅝"φ at end of 6" wall. See Floor E.	20-1¼"φ 5 types of links.	6-1¼"φ 3 types of links	AS FLOOR B But with 1" packing on West side above granite line.
B GROUND TO 1ST FLOOR	10-1¼"φ each end 4-¾"φ in centre 4 types of links. 1½" out from Building Line.	16-1¼"φ 3 types of links COL. 103 Reverse Hand.	29-1¼"φ 4 types of links.	20-1¼"φ 5 types of links.	20-1¼"φ 5 types of links.	28-1¼"φ 5 types of links.	29-1¼"φ 5 types of links.	28-1¼"φ 5 types of links.	28-1¼"φ 5 types of links.	20-1¼"φ 5 types of links	4 types of links. COL. 122 Reverse Hand.	28-1¼"φ 5 types of links	6-1¼"φ 3 types of links.	COL. 128 Reverse Hand and ℄ moved 7" nearer to centre of Col. 6 types of links at 6"crs. not staggered. 18-1¼"φ 4 types of links
A BASEMENT TO GROUND FLOOR	AS FLOOR B	AS FLOOR B	AS FLOOR B	AS FLOOR B	20-1¼"φ 5 types of links.	AS FLOOR B	AS FLOOR B	AS FLOOR B	AS FLOOR B	AS FLOOR B	AS FLOOR B But without the 8-⅝"φ	AS FLOOR B	AS FLOOR B Including 8-⅝"φ at end of 6" wall. See COL. 118 E.	AS FLOOR B

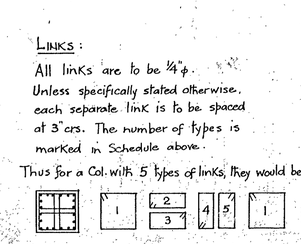
	129 . 130.	131 . 132 . 133 . 134 . 135
B GROUND TO 1ST FLOOR	8-1"φ ¼"φ Spiral binding at 3" pitch.	6-¾"φ ¼"φ links at 6"crs.
A. BASEMENT TO GR. FL.	AS FLOOR B.	AS FLOOR B.

LAPS IN VERTICAL REINFORCEMENT:
All column rods to be lapped for a length equal to 24 times the diam. of the rod, the laps to be made immediately above the floor level.

COVER:
The clear concrete cover to the vertical rods to be 1½"



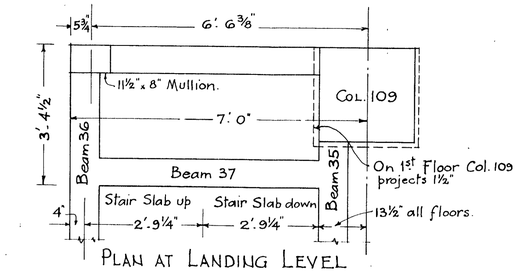
LINKS:
All links are to be ¼"φ.
Unless specifically stated otherwise, each separate link is to be spaced at 3"crs. The number of types is marked in Schedule above.
Thus for a Col. with 5 types of links, they would be shaped as below:



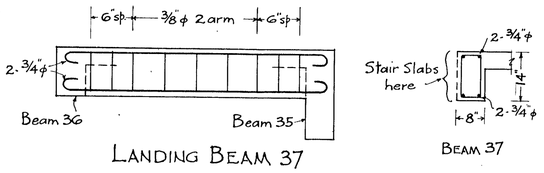
GUMMER & FORD & PARTNERS
ARCHITECTS & STRUCTURAL ENGINEERS
AUCKLAND - - - NEW ZEALAND

THE NEW ZEALAND INSURANCE BUILDING
℄ FEATHERSTON ℄ JOHNSTON STS WELLINGTON

DATE JUNE 1936	COLUMN SCHEDULE	SCALE ¼" = 1FT.
DRAWN BY K.W.R.		DRAWING No. 25
CHECKED BY C.R.F. & K.W.R.		

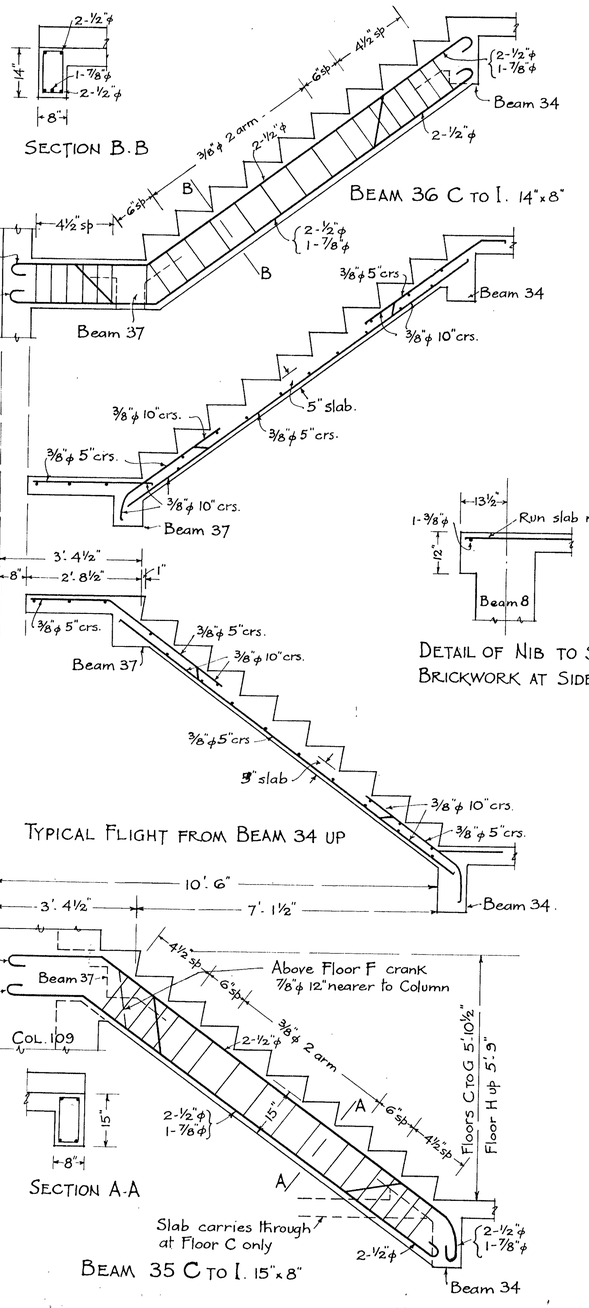


PLAN AT LANDING LEVEL

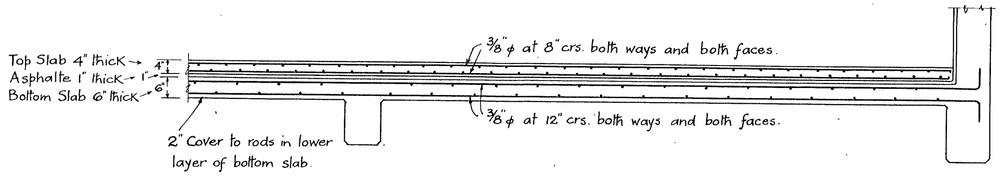


LANDING BEAM 37

BEAM 37

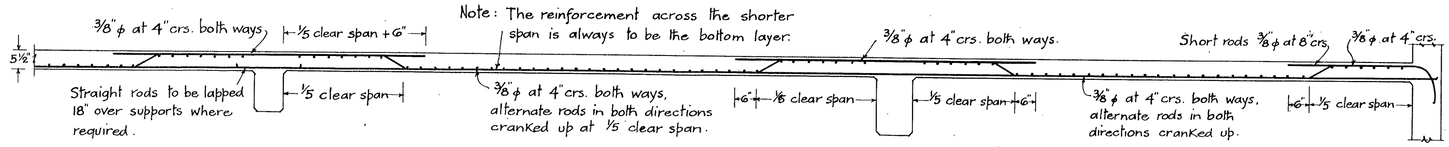


DETAIL OF NIB TO SUPPORT BRICKWORK AT SIDE OF STAIRS.



BASEMENT SLAB.

All slabs in Basement to be as above.



TYPICAL INTERIOR SPAN.

TYPICAL END SPAN.

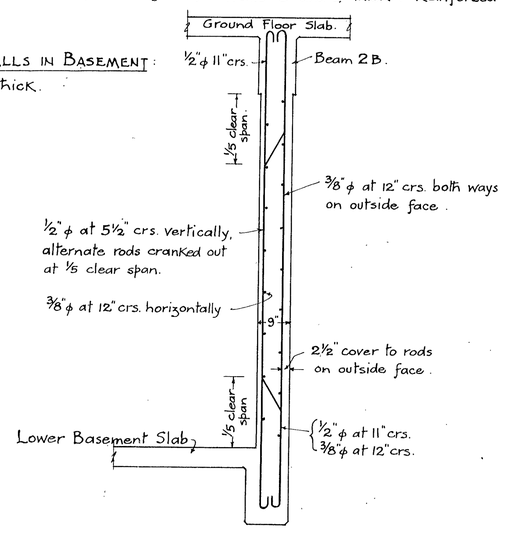
TYPICAL METHOD OF SLAB REINFORCEMENT.

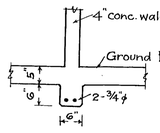
FLOOR SLABS :

GROUND FLOOR:	Between Beams 4 & 6	: 5½" thick,	reinforced with	½"ϕ at 6" crs, alternate rods cranked, and	⅜"ϕ distributing rods at 12" crs. straight.	
" "	3 x 12 S, 12 & 48	: 5½" "	" "	½"ϕ " 6"	" "	⅜"ϕ " 6" " "
" "	1-9-2 N.	: 5" "	" "	⅜"ϕ " 4½"	" "	⅜"ϕ " 12" " "
" "	8 & 28	: 5" "	" "	⅜"ϕ " 4½"	" "	⅜"ϕ " 12" " "
" "	7-55-7	: 5" "	" "	⅜"ϕ " 4½"	" "	⅜"ϕ " 12" " "
" "	48 x 54	: 5" "	" "	⅜"ϕ " 4½"	" "	⅜"ϕ " 12" " "
All other Spans		: 5½" "	" "	⅜"ϕ " 4" crs, both ways, alternate rods in both directions cranked.		
1st TO 7th FLOORS:	Between Beams 4 & 6	: 5" "	" "	½"ϕ " 6" crs. alternate rods cranked, and	⅜"ϕ distributing rods at 12" crs. straight.	
" "	3 & 12, C-G	: 5½" "	" "	½"ϕ " 6" "	" "	⅜"ϕ " 6" " "
" "	1-9-11	: 5" "	" "	⅜"ϕ " 5" "	" "	⅜"ϕ " 12" " "
" "	8 & 28, C & D	: 5" "	" "	⅜"ϕ " 5" "	" "	⅜"ϕ " 12" " "
" "	3 & 26, H & I	: 5" "	" "	⅜"ϕ " 5" "	" "	⅜"ϕ " 12" " "
" "	1 & 34	: 5" "	" "	⅜"ϕ " 4½" "	" "	⅜"ϕ " 13½" " "
" "	10 & 8	: 5" "	" "	⅜"ϕ " 4½" "	" "	⅜"ϕ " 13½" " "
" "	8-50-8 E	: 5" "	" "	⅜"ϕ " 4½" "	" "	⅜"ϕ " 13½" " "
(Top slab) "	28-20 D	: 5" "	" "	⅜"ϕ " 10" crs. straight at bottom, and ⅜"ϕ at 5" crs. straight at top, and ⅜"ϕ distr. rods at 12" crs. straight.		
(Lower slab) "	28-20 D	: 3" "	" "	⅜"ϕ " 6" "	" "	⅜"ϕ distributing rods at 12" crs. straight.
(Lower slab) "	7-2-23 G	: 3" "	" "	⅜"ϕ " 8" "	both ways, straight at bottom.	
Motor Room Floor "	4 & 6 J	: 6" "	" "	½"ϕ " 5" "	alternate rods cranked, and ⅜"ϕ distributing rods at 12" crs. straight.	
" " "	4 & 16 J	: 5" "	" "	½"ϕ " 6" "	" "	⅜"ϕ " 12" " "
Pavement Light Slab		: 4" "	" "	⅜"ϕ " 6" "	cranked, and ⅜"ϕ distributing rods at 12" crs. straight.	
All other spans		: 5" "	" "	⅜"ϕ " 4½"	crs, both ways, alternate rods in both directions cranked.	
CARETAKERS FLOOR J:	All spans	: 5" "	" "	⅜"ϕ " 4½"	" "	" " " "
MAIN ROOF J :	Between Beams 3 & 26 J	: 4½" "	" "	⅜"ϕ " 5" crs. alternate rods cranked, and ⅜"ϕ distributing rods at 12" crs. straight.		
	All other spans	: 4½" "	" "	⅜"ϕ " 4½" "	both ways, alternate rods in both directions cranked.	
CARETAKERS ROOF K:	Between Beams 3 x 12 K	: 5" "	" "	½"ϕ " 6" crs, alternate rods cranked, and	⅜"ϕ distributing rods at 12" crs. straight.	
" "	3 x 30 K	: 3½" "	" "	⅜"ϕ " 6" "	" "	⅜"ϕ " 12" " "
All other spans		: 4½" "	" "	⅜"ϕ " 4½" "	both ways, alternate rods in both directions cranked.	

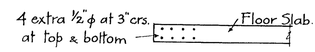
CONCRETE WALLS : Walls of Ventilator in Area, above Roof, 4" thick, reinforced with ⅜"ϕ at 8" crs. both ways & both faces. All other 4" thick walls: ⅜"ϕ at 8" crs. both ways in centre of wall.
(except Retaining Walls) Walls 6" and 9" thick : Reinforced with ⅜"ϕ at 8" crs. both ways and both faces. Lap rods 1'.6" without hooks where required.

RETAINING WALLS IN BASEMENT: 9" thick.

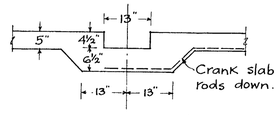




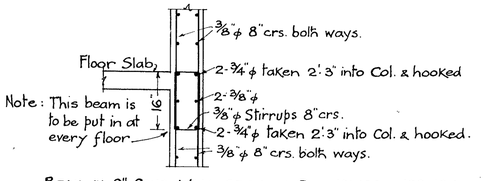
DROPPED SLAB UNDER 4" SIDE WALLS OF ENTRANCE VESTIBULE, BETWEEN BEAMS 8 & 28 B. 4" CEILING SLAB OVER ENTRANCE VESTIBULE. REINFORCED WITH ⅜"ϕ AT 8" CRS. BOTH WAYS.



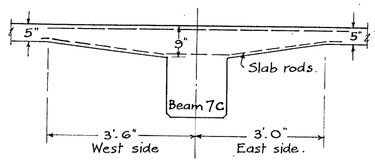
SLAB UNDER WALL ALONG EDGE OF PIPE DUCT, AT EVERY FLOOR.



DROPPED SLAB UNDER URINAL STALLS.



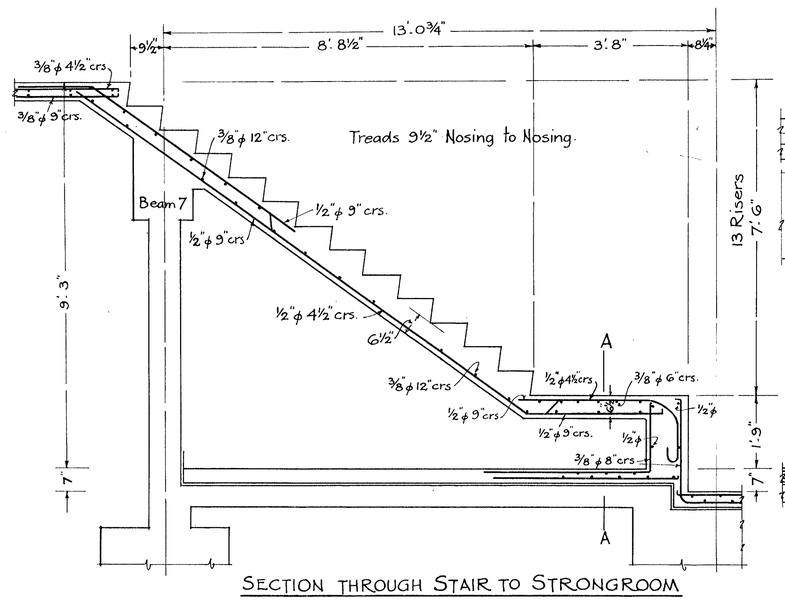
BEAM IN 9" CONC. WALL BETWEEN COLS. 101-102, & 103-104.



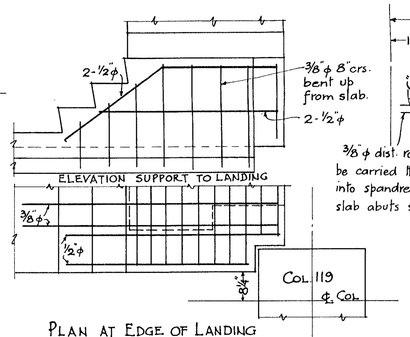
SLAB UNDER STRONG ROOM, FLOOR C

Between Cols. 122 & 123.

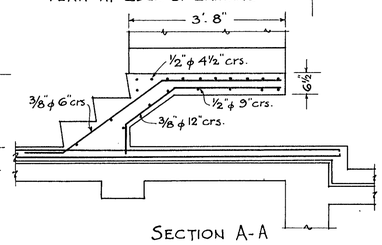
GUMMER & FORD & PARTNERS		
ARCHITECTS & STRUCTURAL ENGINEERS AUCKLAND - - - NEW ZEALAND		
THE NEW ZEALAND INSURANCE BUILDING @ FEATHERSTON & JOHNSTON Sts WELLINGTON		
DATE JUNE. 1936	SLAB, STAIR & WALL DETAILS.	SCALE ½" = 1 FT.
DRAWN BY K.W.R.		DRAWING No. 26
CHECKED BY C.R.F. & K.W.R.		



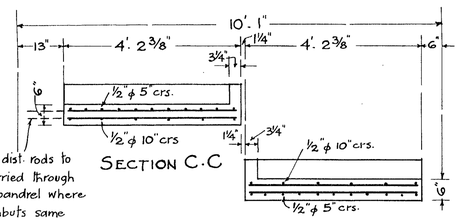
SECTION THROUGH STAIR TO STRONGROOM



PLAN AT EDGE OF LANDING



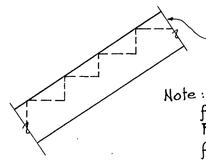
SECTION A-A



3/8"ϕ dist. rods to be carried through into spandrel where slab abuts same

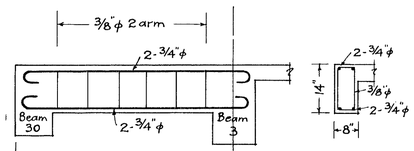
SECTION C.C

SECTION D.D

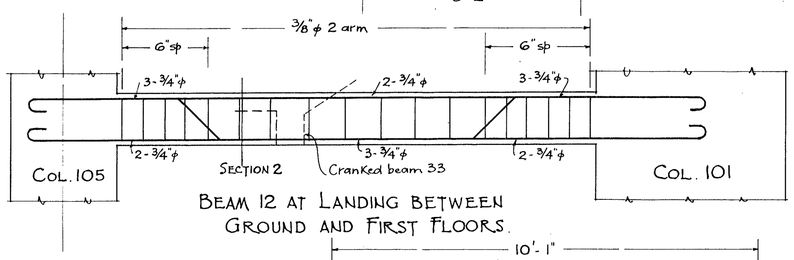


3¼" Curb flush with top of riser.

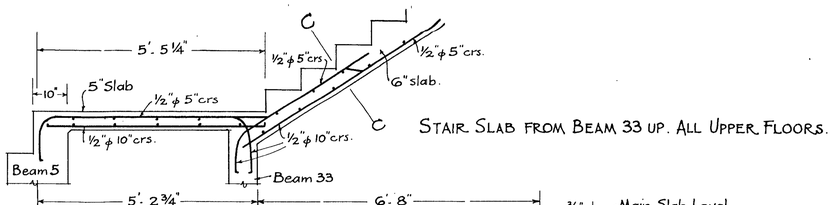
Note: Curb to commence at first landing from Ground Floor, and to carry up all flights of Main Stair.



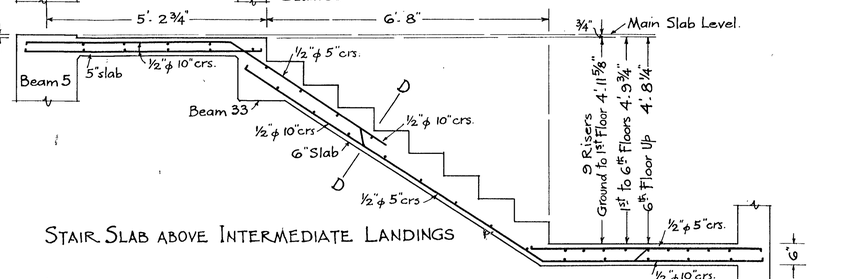
BEAM 33B



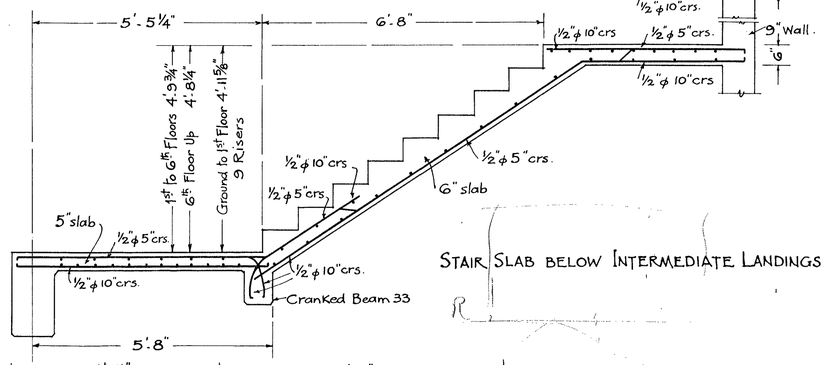
BEAM 12 AT LANDING BETWEEN GROUND AND FIRST FLOORS.



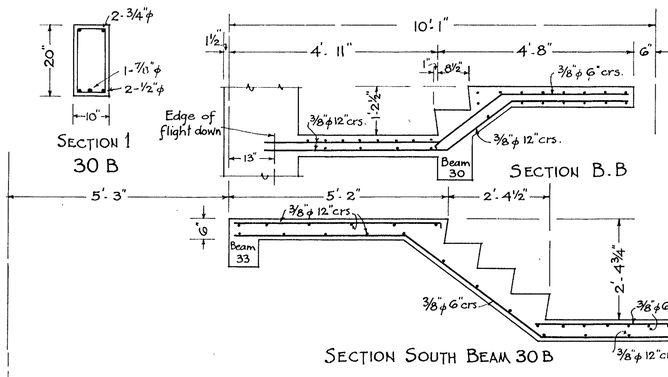
STAIR SLAB FROM BEAM 33 UP. ALL UPPER FLOORS.



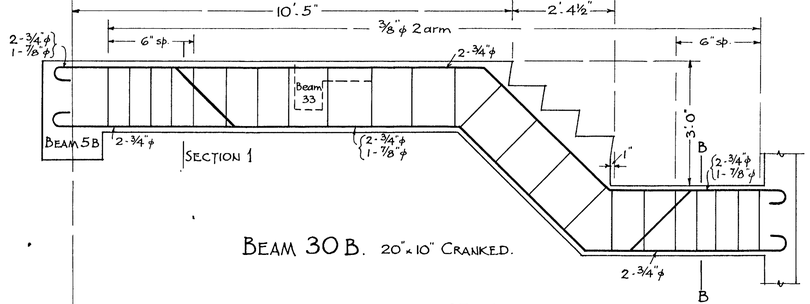
STAIR SLAB ABOVE INTERMEDIATE LANDINGS



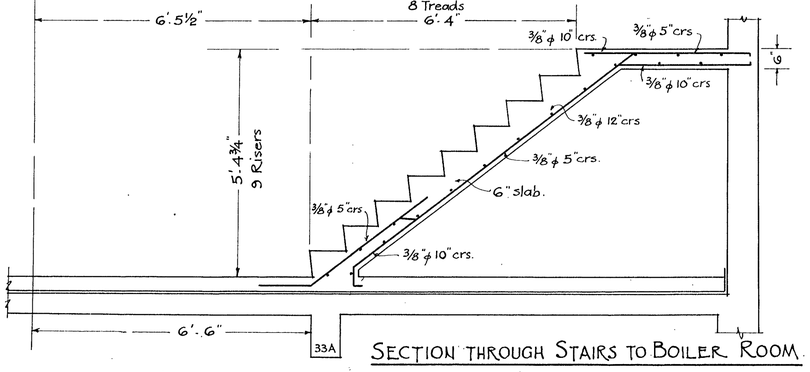
STAIR SLAB BELOW INTERMEDIATE LANDINGS



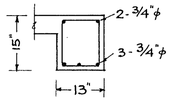
SECTION SOUTH BEAM 30 B



BEAM 30 B. 20" × 10" CRANKED.

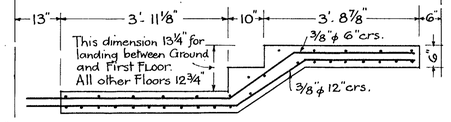


SECTION THROUGH STAIRS TO BOILER ROOM



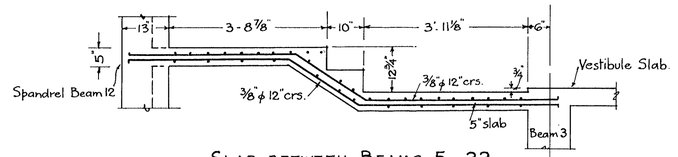
SECTION 2

BEAM 12 ABOVE

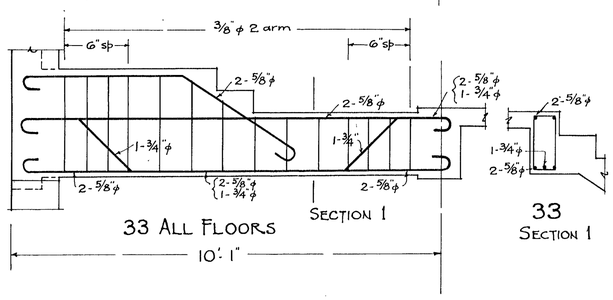


3/8"ϕ Distr. rods carried into Col. 101.

SECTION THROUGH TYPICAL INTERMEDIATE LANDING.

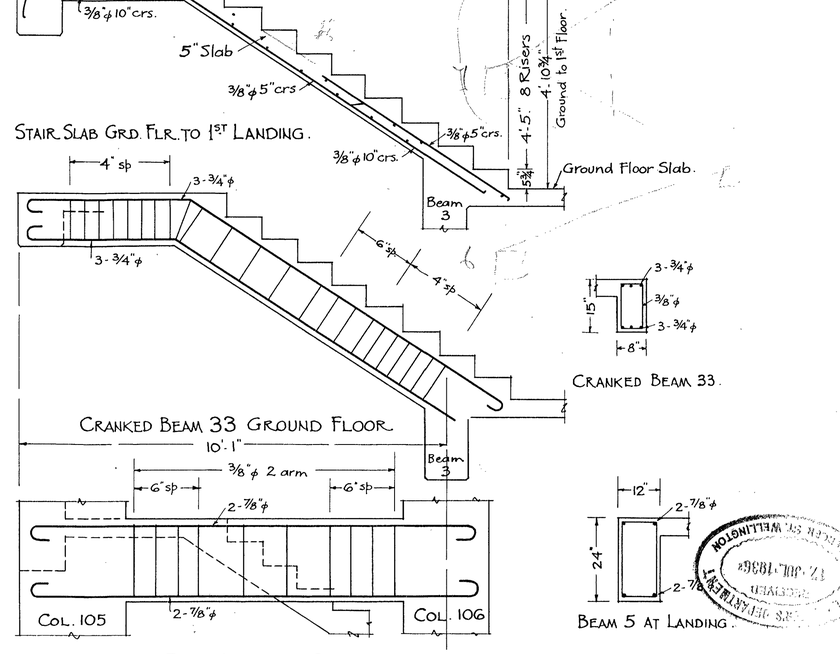


SLAB BETWEEN BEAMS 5 & 33



33 ALL FLOORS

33 SECTION 1



BEAM 5 AT LANDING BETWEEN GROUND AND FIRST FLOORS.

BEAM 5 AT LANDING.

DETAILS OF MAIN STAIRS.

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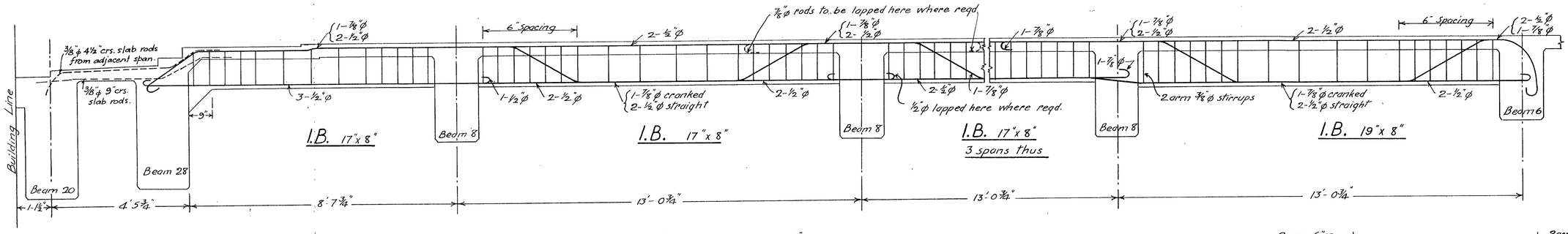
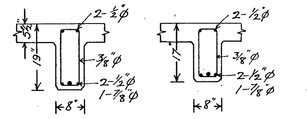
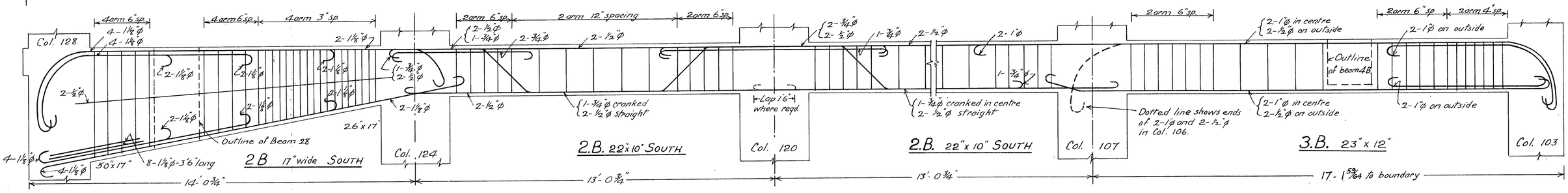
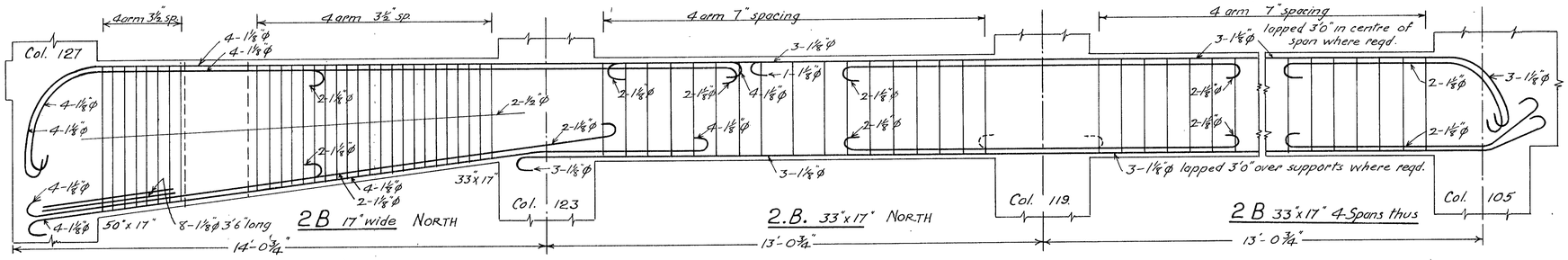
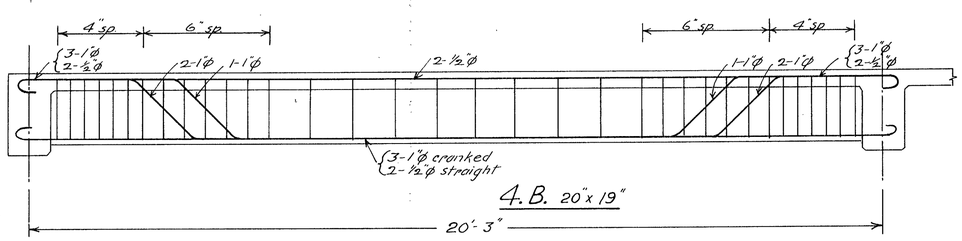
DATE JUNE 1936	STAIR DETAILS.	SCALE ½" = 1 FT.
DRAWN BY G.N.C.		DRAWING No. 27
CHECKED BY C.R.F. & K.W.R.		

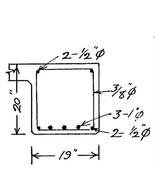


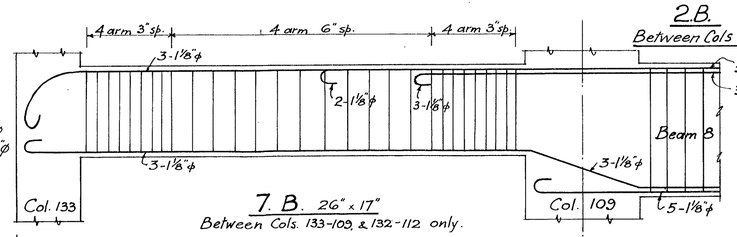


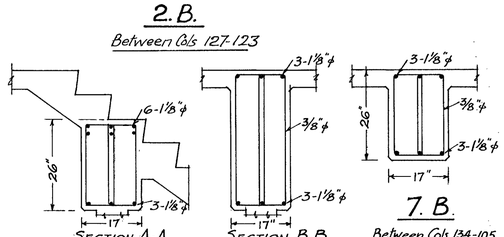


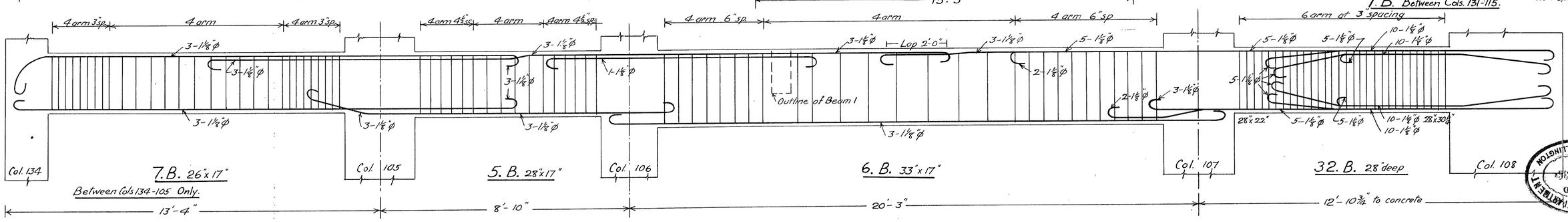


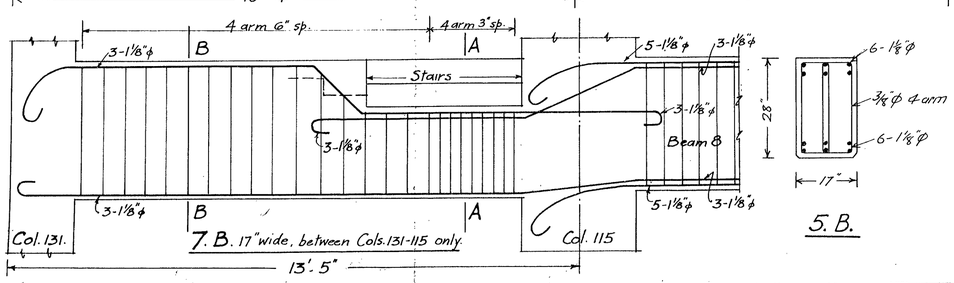


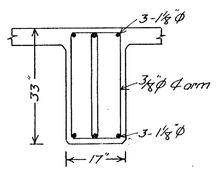


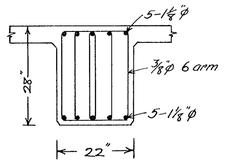


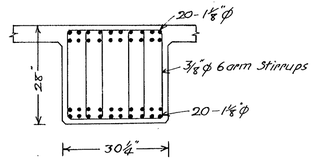












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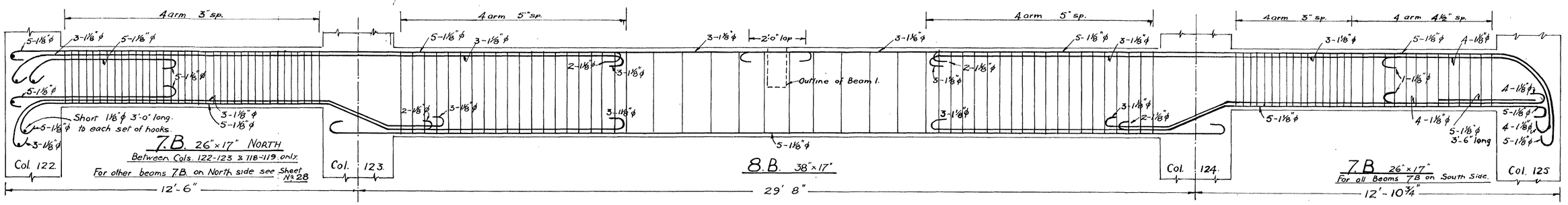
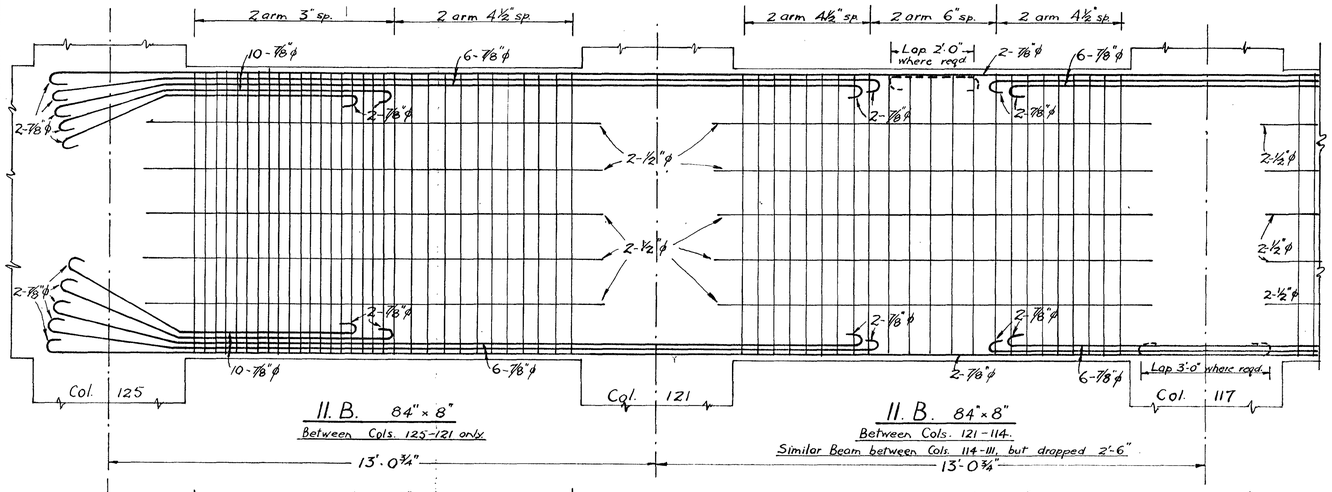
DATE JUNE. 1936	GROUND FLOOR BEAMS. B	SCALE ½" = 1 FT.
DRAWN BY K.W.R.		DRAWING No. 28
CHECKED BY C.R.F. & K.W.R.		



7.B. 26"×17" NORTH
Between Cols. 122-123 & 118-119 only.
For other beams 7.B. on North side see Sheet No 28

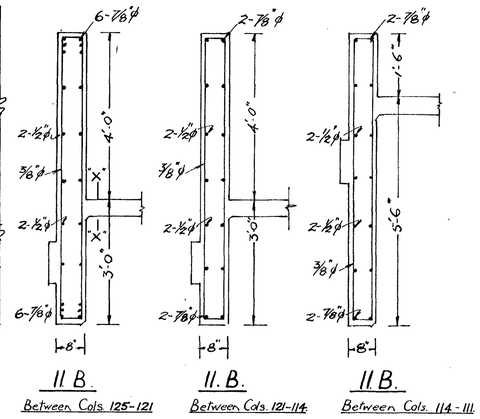
8.B. 38"×17"

7.B 26"×17"
For all Beams 7.B on South Side.



11.B. 84"×8"
Between Cols. 125-121 only.

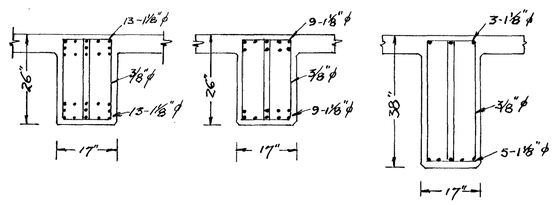
11.B. 84"×8"
Between Cols. 121-114.
Similar Beam between Cols. 114-111, but dropped 2'-6"



11.B.
Between Cols. 125-121

11.B.
Between Cols. 121-114

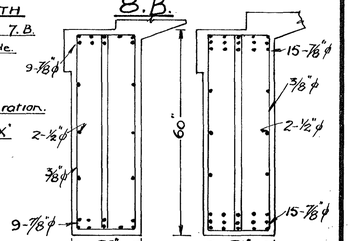
11.B.
Between Cols. 114-111



7.B. NORTH
Between Cols. 118-119 and Cols. 122-123

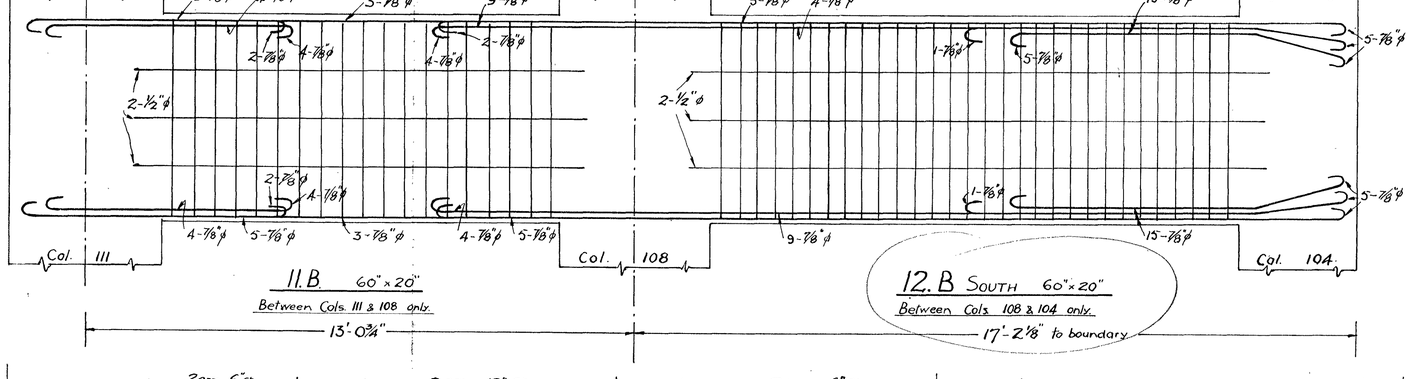
7.B. SOUTH
For all Beams 7.B. on South side.

Note: Spandrels to be poured in one operation.
If necessary stop floor slab on line "XX"



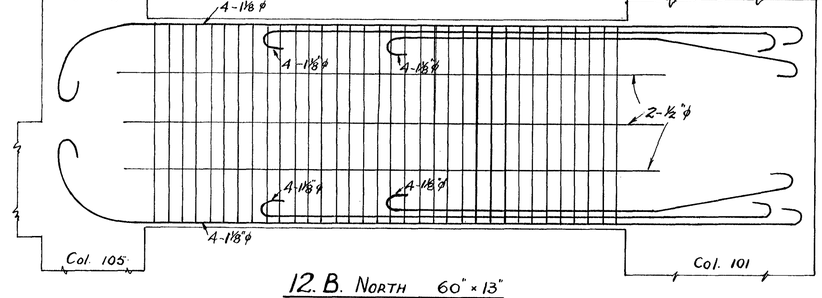
11.B.
Cols. 111-108

12.B SOUTH.
Cols 108-104.

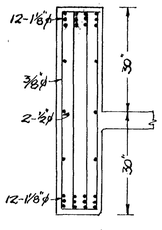


11.B 60"×20"
Between Cols. 111 & 108 only.

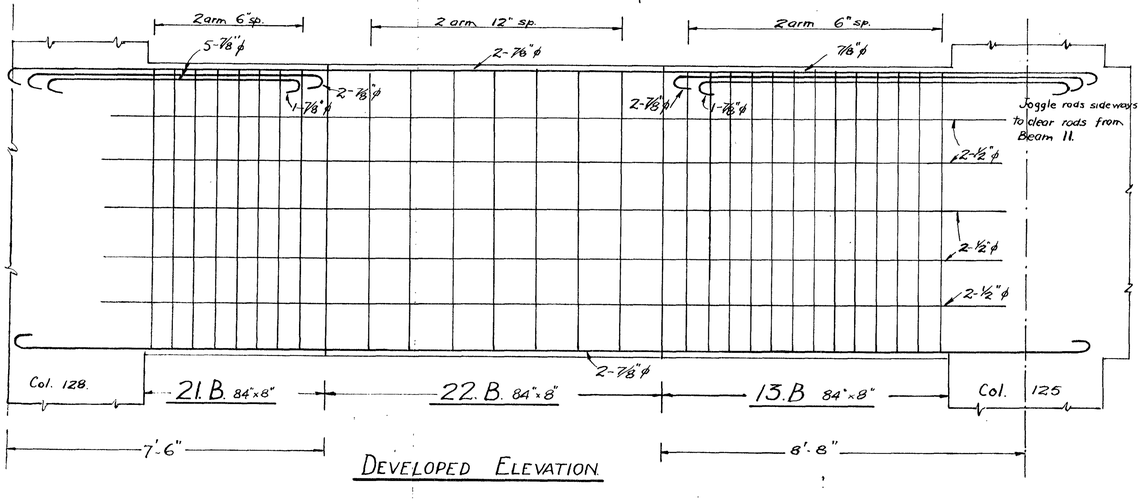
12.B SOUTH 60"×20"
Between Cols 108 & 104 only.



12.B. NORTH 60"×13"
Between Cols. 105 & 101 only.

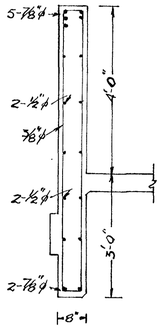


12.B. NORTH
Cols 105-101

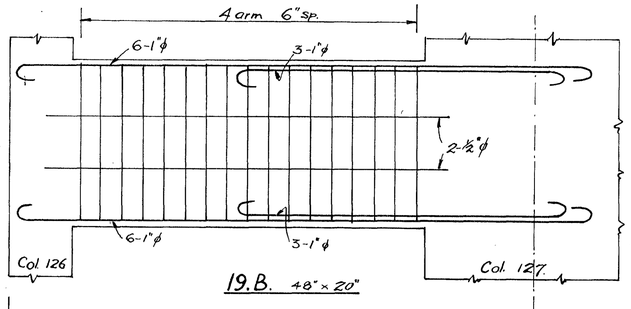


21.B. 84"×8"
22.B. 84"×8"
13.B 84"×8"

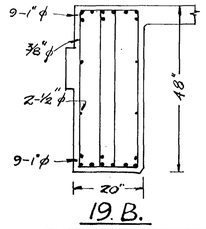
DEVELOPED ELEVATION.



13.B
& 21.B



19.B. 48"×20"



19.B.

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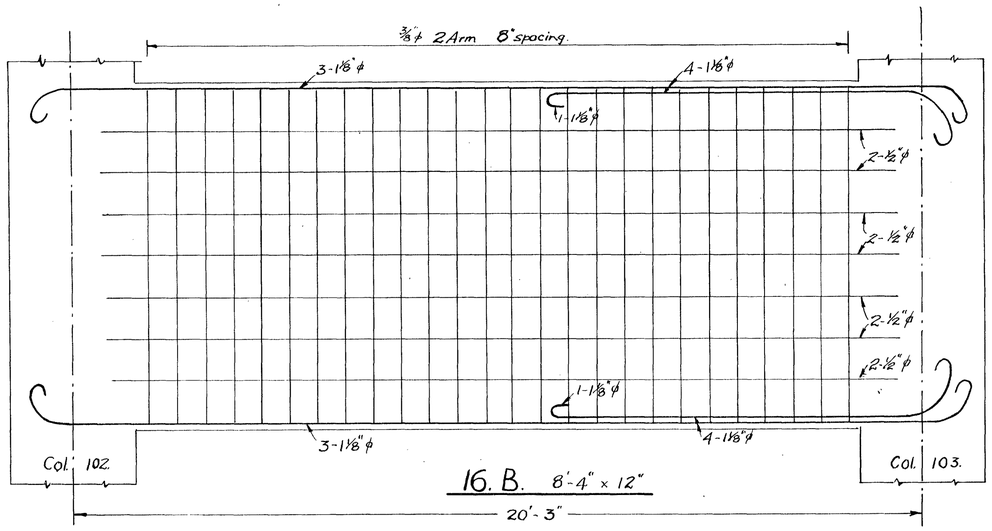
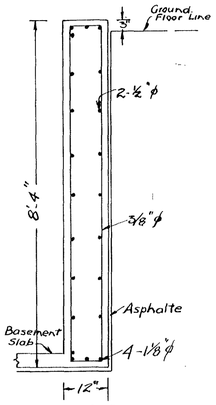
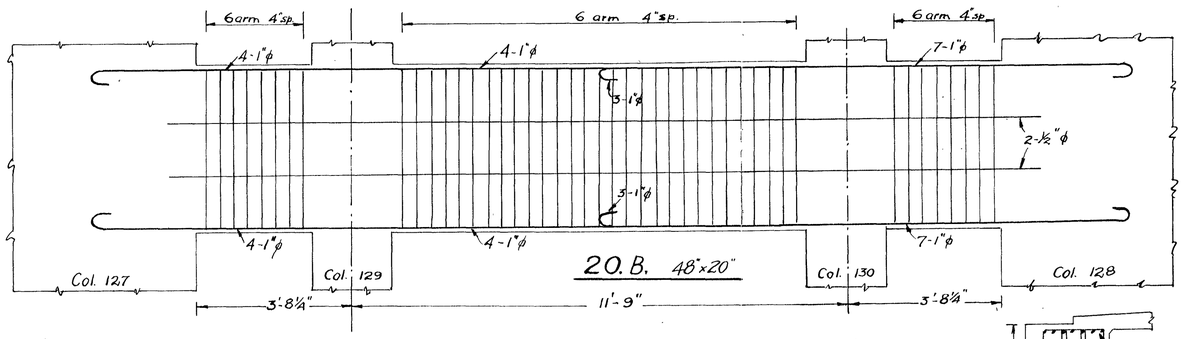
DATE JUNE. 1936	GROUND FLOOR BEAMS, B	SCALE ½" = 1FT.
DRAWN BY K.W.R.		DRAWING No. 29
CHECKED BY C.R.F. & K.W.R.		



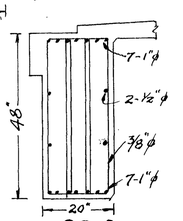
16. B. 8'-4" x 12"



16. B.

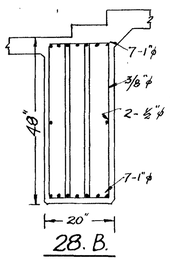


20. B. 48"x20"

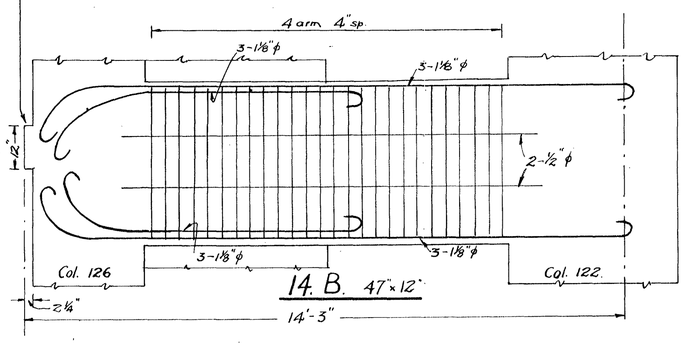


20. B.

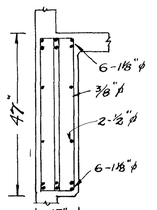
Continuous concrete nib 12" deep x 2¼" wide round all outside wall columns and beams to support granite facing.



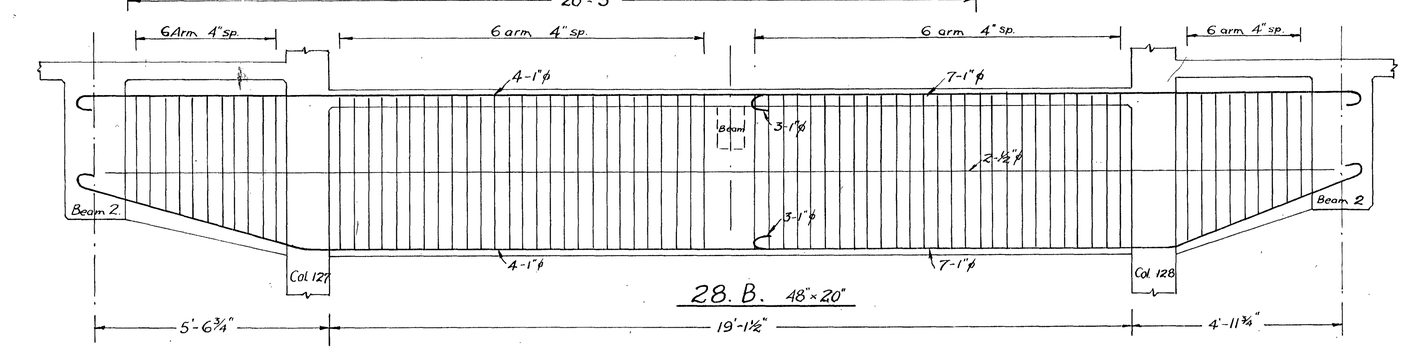
28. B.



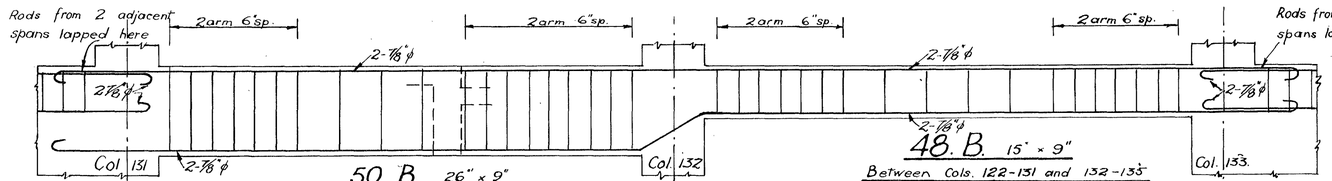
14. B. 47"x12"



14. B.

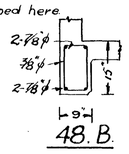


28. B. 48"x20"

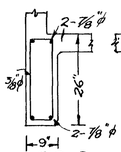


50. B. 26" x 9"

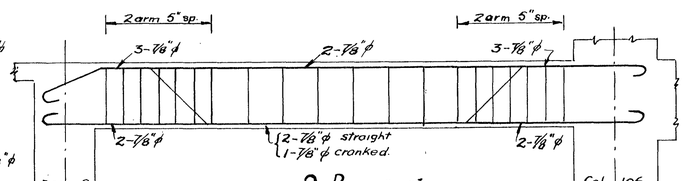
48. B. 15" x 9"
Between Cols. 122-131 and 132-133



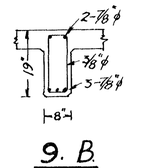
48. B.



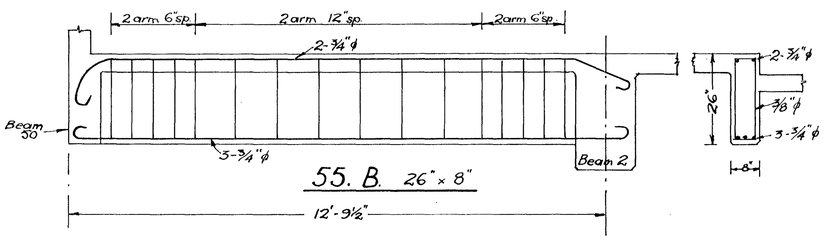
50. B.



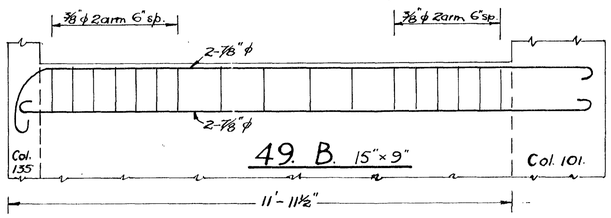
9. B. 19"x 8"



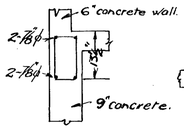
9. B.

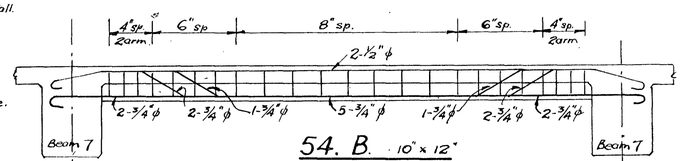


55. B. 26"x 8"
12'-9½"

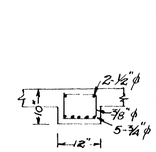


49. B. 15"x 9"





54. B. 10"x 12"



54. B.

REFERENCE TO BEAMS B NOT DETAILED

Beams 30 & 33 : As Stair Details, Sheet No. 27.

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THE NEW ZEALAND INSURANCE BUILDING
@ FEATHERSTON & JOHNSTON STS WELLINGTON

DATE JUNE 1936	GROUND FLOOR BEAMS. B.	SCALE ½" = 1 FT.
DRAWN BY K.W.R.		DRAWING No. 30
CHECKED BY C.R.F. & K.W.R.		

1C WEST END SPAN.

1C 12"×8" 8'-7½"

1C 12"×8" 13'-0¾"

1C 16"×8" 18'-0¾"

1C 1C ALL INTERIOR SPANS. BETWEEN BEAMS B & G.

2C SOUTH 16"×19" 14'-0¾"

2C SOUTH 12"×10" 13'-0¾"

2C

3C 20"×12" SOUTH.

2C ALL INTERIOR SPANS

3C

2C SOUTH. AT COL. 128. WEST COL. 124. AT COL. 127 WEST COL 123

2C NORTH.

2C NORTH. 16"×30" 14'-0¾"

2C NORTH. 19"×12" 13'-0¾"

EAST COL. 123 AT COL. 119.

2C NORTH.

5C 28"×17" 16'-1"

6C 26"×17" 20'-3"

32C 28"×17" 12'-10¾"

5C SECTION 1.

6C SECTION 2.

32C SECTION 3.

8C 26"×17" 30'-4"

7C 26"×17" 12'-10¾"

8C SECTION 1.

7C SECTION 2.

4C 19"×12" 20'-3"

4C

9C 19"×8" 18'-0¾"

20C 32"×10" 29'-8"

20C

34C 19"×8" 13'-0¾"

34C

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AUCKLAND - - - NEW. ZEALAND

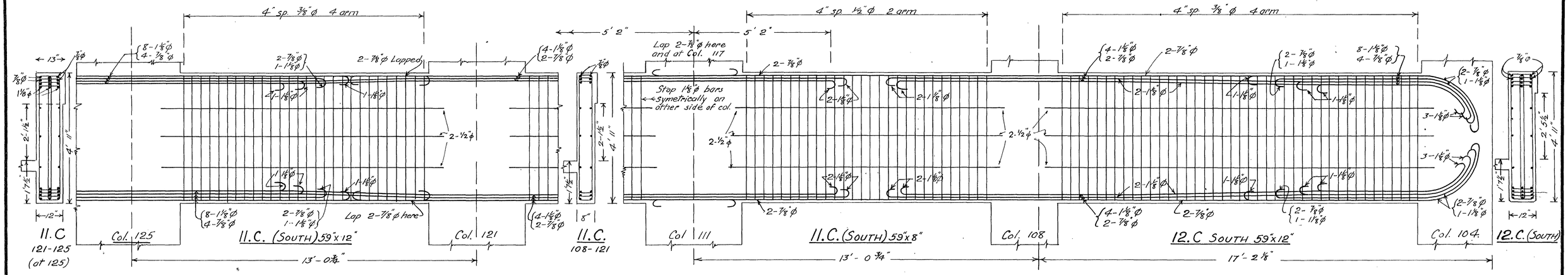
THE NEW ZEALAND INSURANCE BUILDING.
G FEATHERSTON & JOHNSTON STS., WELLINGTON.

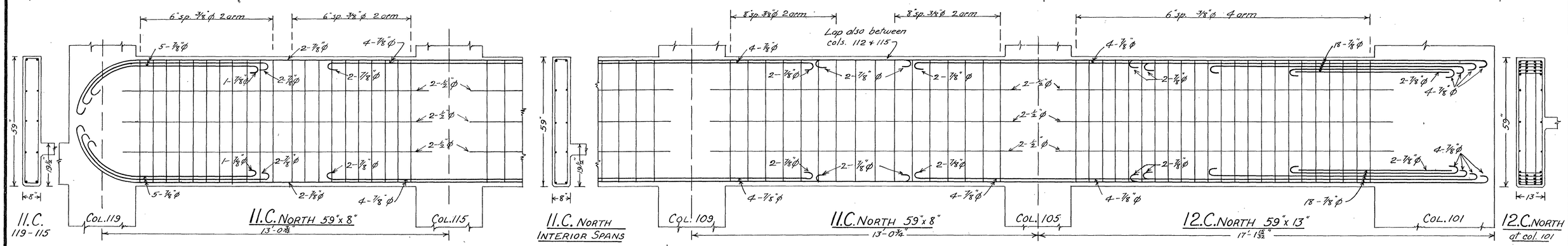
DATE JUNE. 1936
DRAWN BY G.N.C.
CHECKED BY C.R.F. & K.W.R.

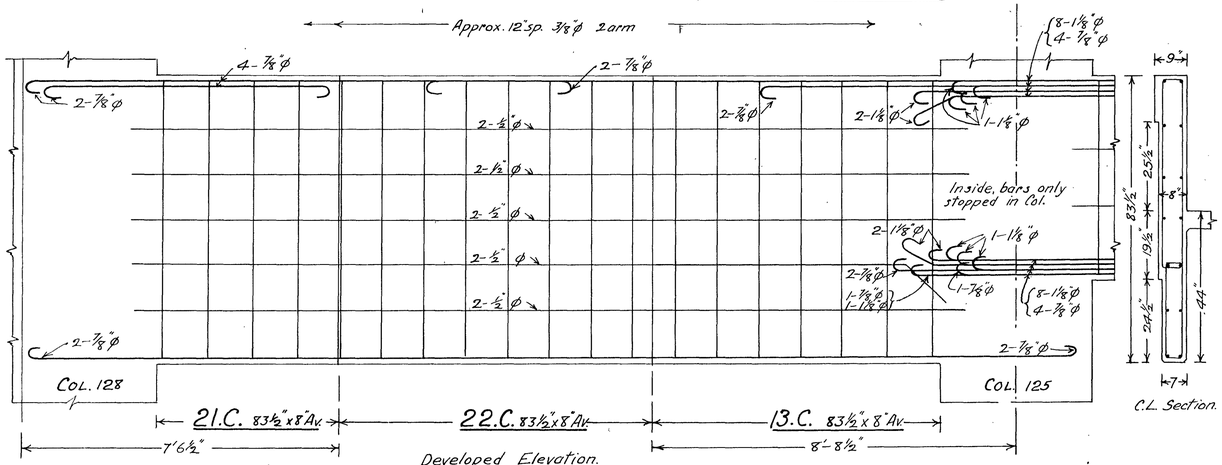
Reinforcing Details for First Floor Beams, C.

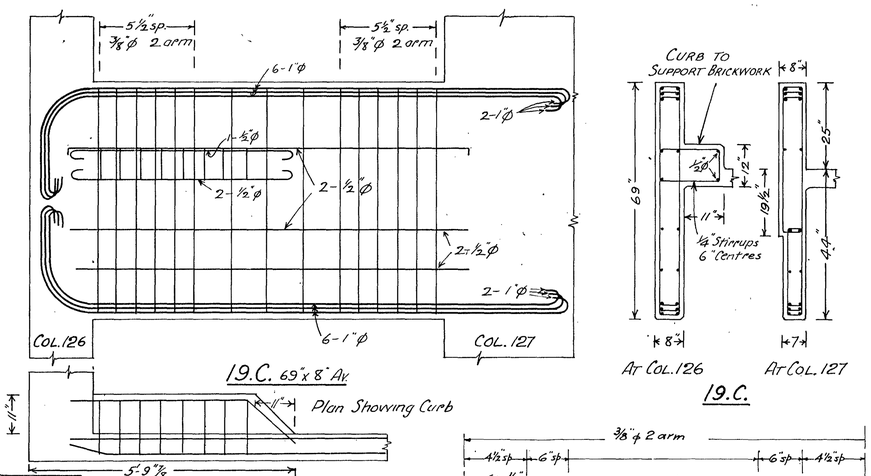
SCALE ½" = 1 FT.

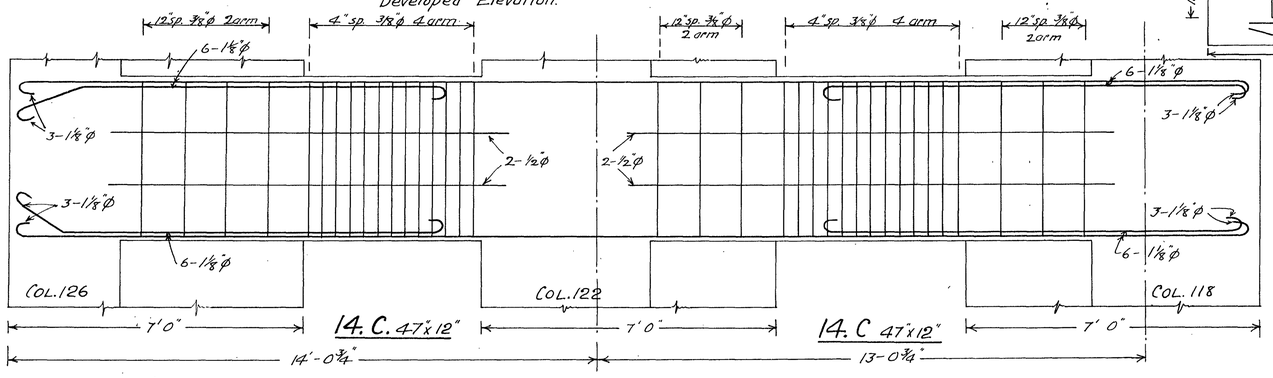
DRAWING No. 31

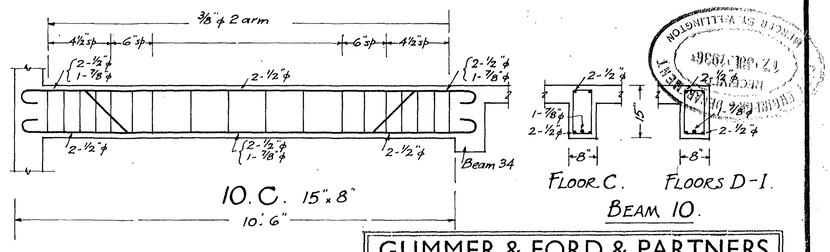








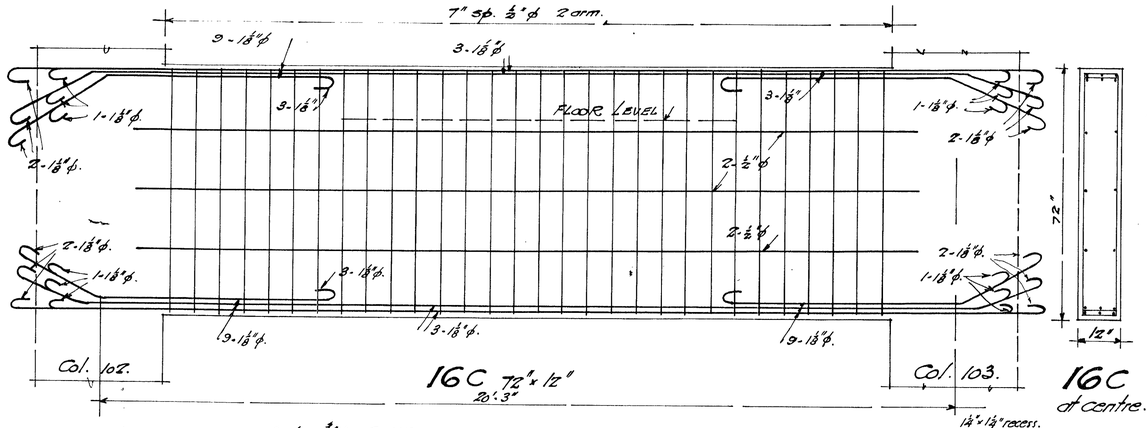




GUMMER & FORD & PARTNERS
ARCHITECTS & STRUCTURAL ENGINEERS
AUCKLAND - - - NEW ZEALAND

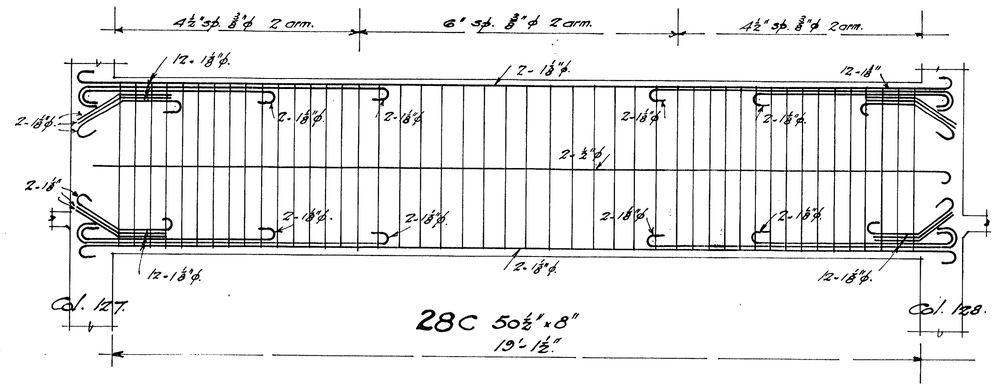
THE NEW ZEALAND INSURANCE BUILDING
® FEATHERSTON & JOHNSTON STS WELLINGTON

DATE JUNE 1936	1ST FLOOR BEAMS. C.	SCALE ½" = 1 FT.
DRAWN BY G.N.C.		DRAWING No. 32
CHECKED BY C.R.F. & K.W.R.		

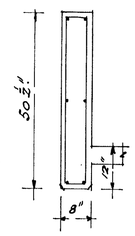


16C 72" x 12"
20'-3"

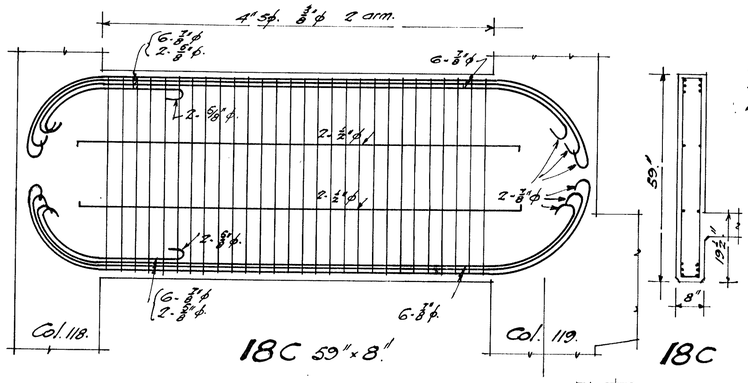
16C at centre.



28C 50½" x 8"
19'-1½"

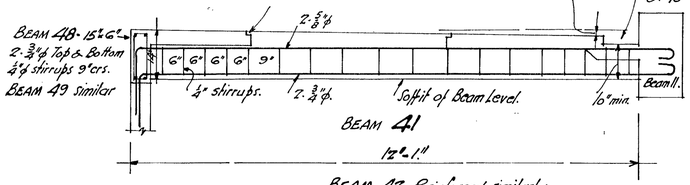


28C at centre.



18C 59" x 8"

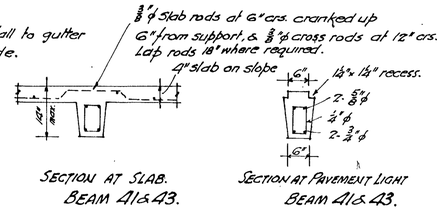
18C at centre.



BEAM 41

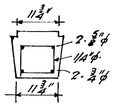
12'-1"

BEAM 42 Reinforced similarly.

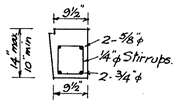


SECTION AT SLAB. BEAM 41 & 43.

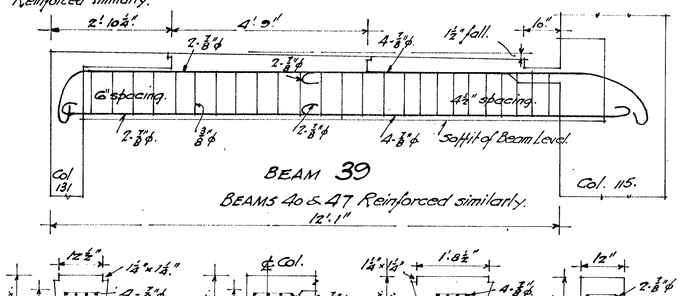
SECTION AT PAVEMENT LIGHT BEAM 41 & 43.



BEAM 44.



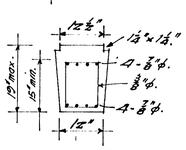
BEAM 42.



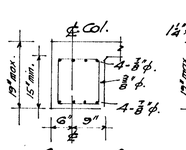
BEAM 39

BEAMS 40 & 47 Reinforced similarly.

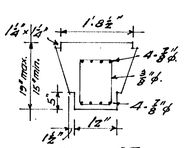
12'-1"



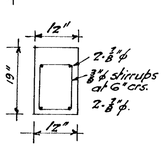
BEAM 39.



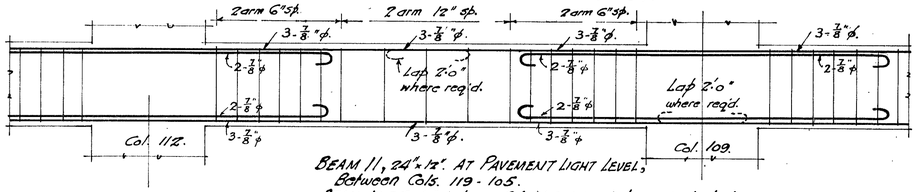
BEAM 40.



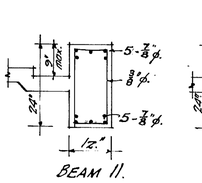
BEAM 47.
Between Col. 105 & Beam 45



BEAM 47.
Between Beam 45 & Col. 134.

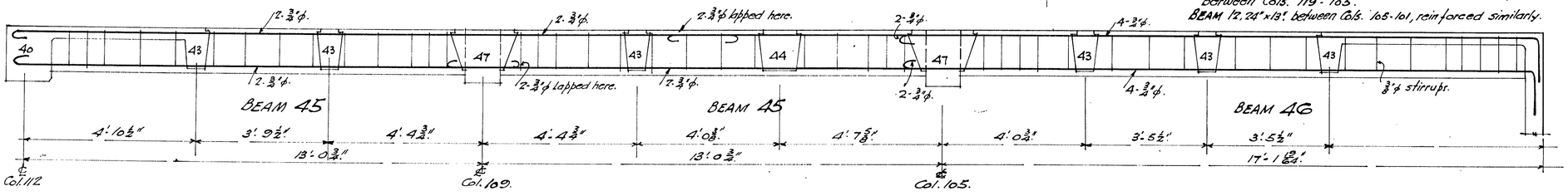


BEAM 11, 24" x 12". AT PAVEMENT LIGHT LEVEL, Between Cols. 119 - 105.
BEAM 12, 24" x 13". between Cols. 105-101, reinforced similarly.



BEAM 11. Between Cols. 119-105. AT PAVEMENT LIGHT LEVEL.

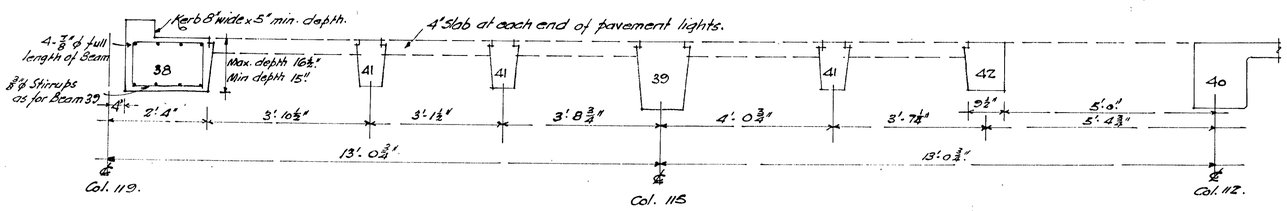
BEAM 12. Between Cols. 105-101.

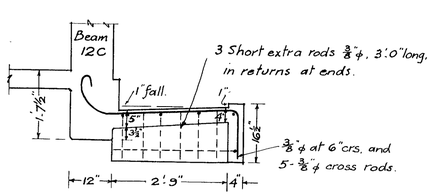


BEAM 45

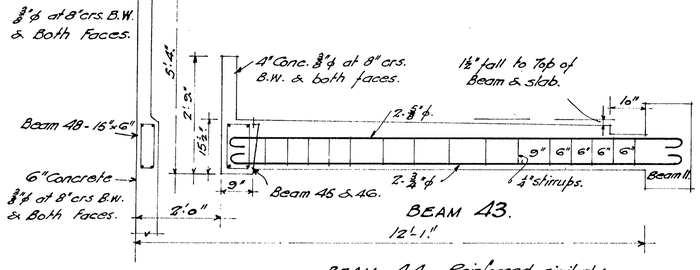
BEAM 45

BEAM 46





VERANDAH OVER BACK ENTRANCE.



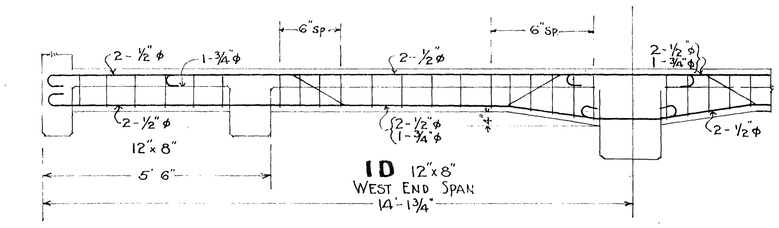
BEAM 43.

12'-1"

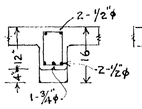
BEAM 44 Reinforced similarly.

GUMMER & FORD & PARTNERS ARCHITECTS & STRUCTURAL ENGINEERS AUCKLAND - - - NEW ZEALAND	
THE NEW ZEALAND INSURANCE BUILDING & FEATHERSTON & JOHNSTON Sts WELLINGTON	
DATE JUNE. 1936	1ST FLOOR BEAMS C.
DRAWN BY G.N.C. & K.W.R.	PAVEMENT LIGHT BEAMS.
CHECKED BY C.R.F. & K.W.R.	VERANDAH DETAIL.
SCALE ½" = 1FT.	
DRAWING No. 33	

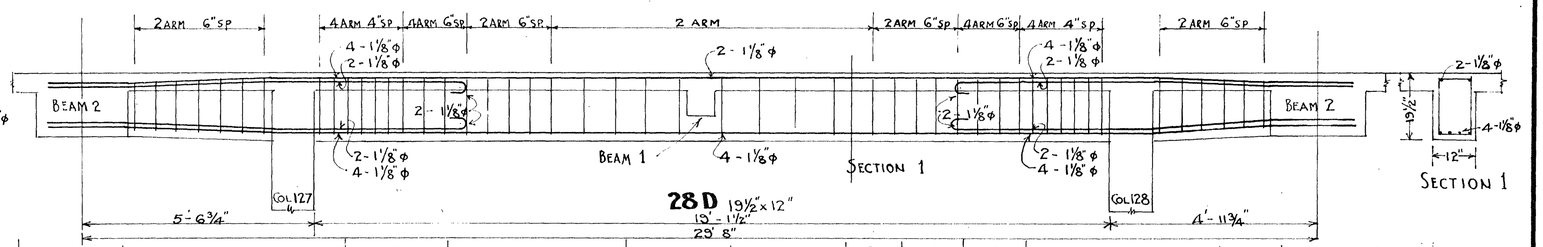
BEAM 33C : AS STAIR DETAILS, SHEET Nº 27.



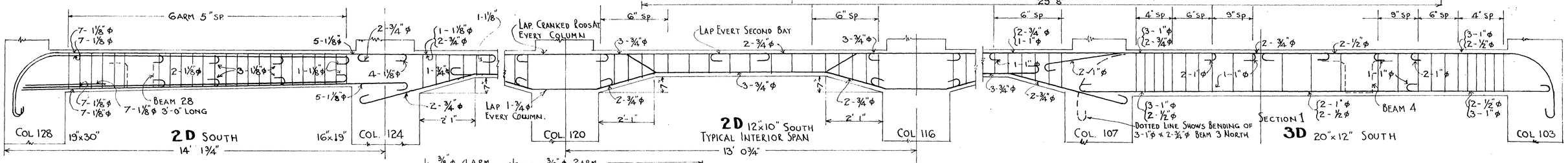
1D 12"x8"
WEST END SPAN



1D
WEST END SPAN



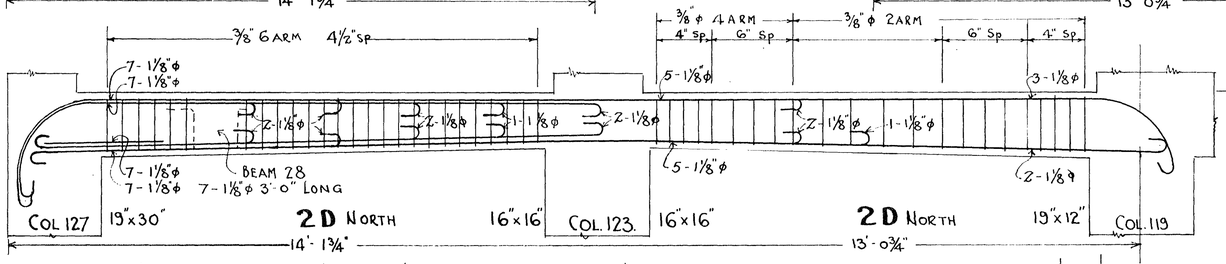
28D 19½"x12"
15'-1½"



2D 12"x10" SOUTH
TYPICAL INTERIOR SPAN

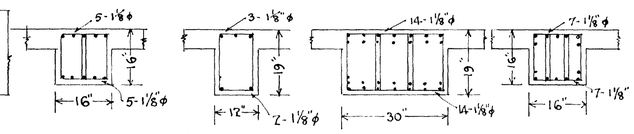
2D SOUTH

3D 20"x12" SOUTH



2D NORTH

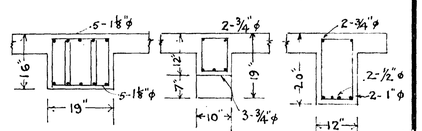
2D NORTH



EAST COL 123 WEST COL 119 EAST COLS 127 & 128 WEST COL. 123

2D

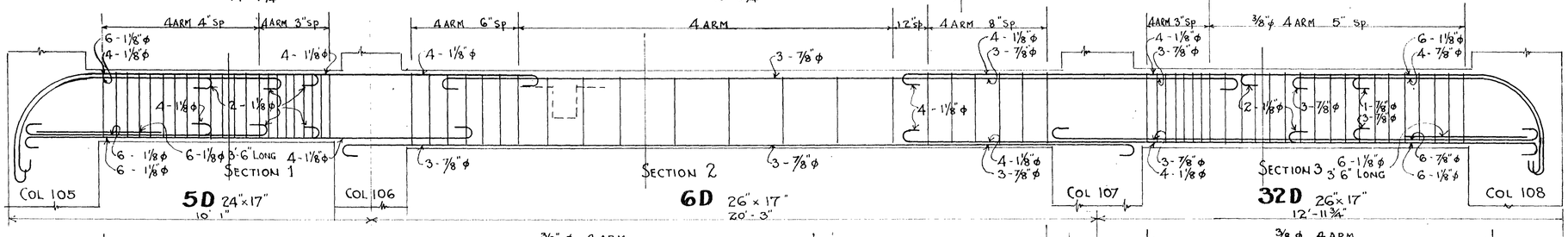
2D



WEST COL. 124 INTERIOR SPANS SECTION 1

2D SOUTH.

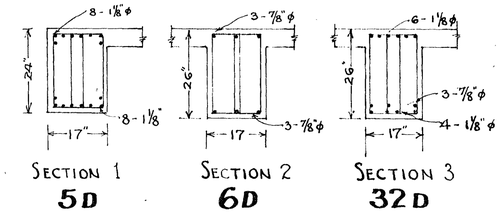
3D



5D 24"x17"

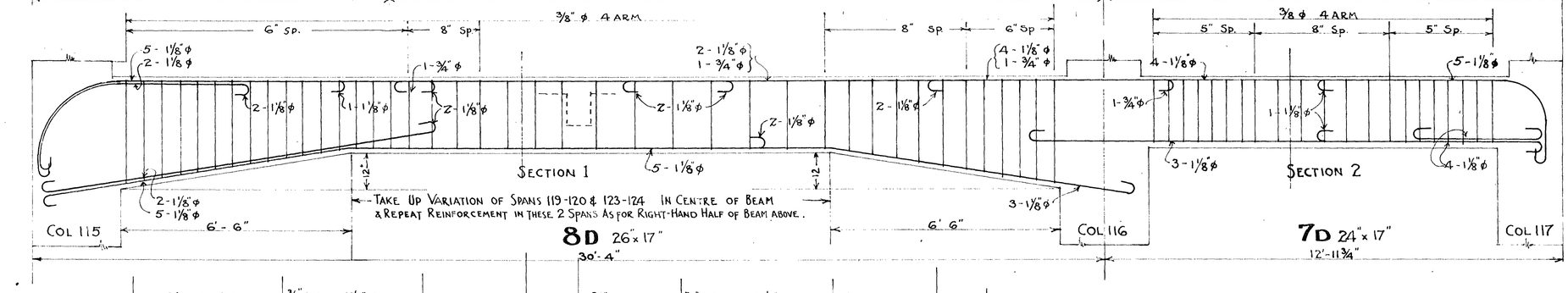
6D 26"x17"

32D 26"x17"



SECTION 1 SECTION 2 SECTION 3

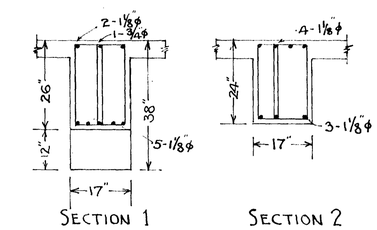
5D **6D** **32D**



SECTION 1 SECTION 2

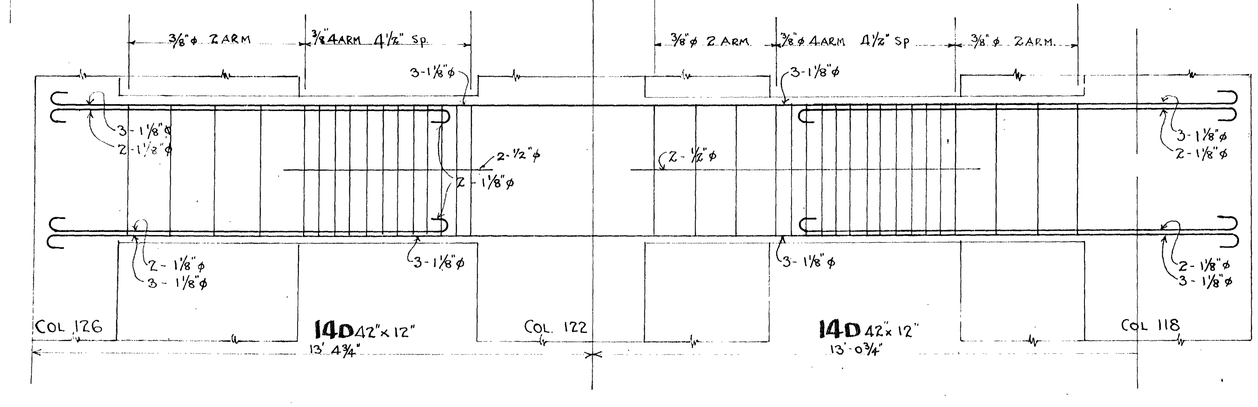
8D 26"x17"

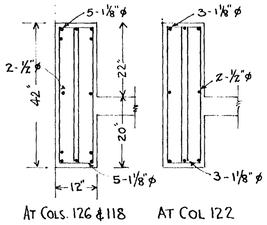
7D 24"x17"



SECTION 1 SECTION 2

8D **7D**





AT COLS. 126 & 118 AT COL 122

14D

GUMMER & FORD & PARTNERS ARCHITECTS & STRUCTURAL ENGINEERS AUCKLAND - - - NEW ZEALAND		
THE NEW ZEALAND INSURANCE BUILDING @ FEATHERSTON & JOHNSTON STS WELLINGTON		
DATE JUNE. 1936	2ND FLOOR BEAMS. D.	SCALE ½"=1FT.
DRAWN BY G.N.C.		DRAWING No. 34
CHECKED BY C.R.F & K.W.R.		