APPENDIX 4

Existing Drawings - Public Safety Building
Including Underground Tunnel to City Hall
(architectural, structural, mechanical and electrical, circa 1965)

PUBLIC SAFETY BUILDING

FOR THE CITY OF WINNIPEG · MANITOBA

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MAY 14 1965

LIBLING MICHENER & ASSOCIATES ARCHITECTS
360 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 2-4191

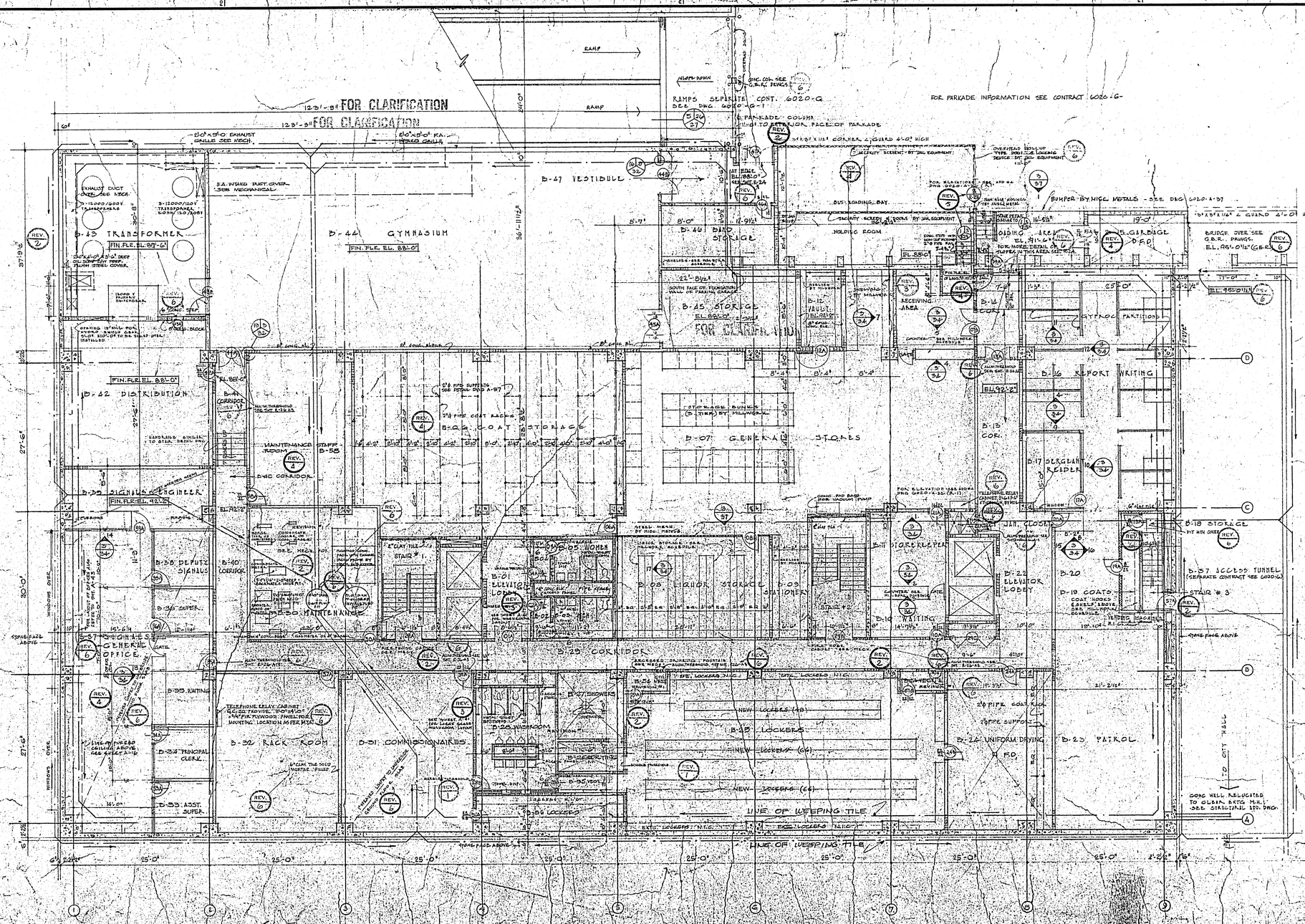
PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

TITLE

SHEET NO. 6020-A-1

B-14
FILE
RETURN TO CIVIC PROPERTIES BUILDING INVENTORY.
4 01 1

issues
dates
project no.
description
Public Safety Building
A-1
sheet no.



GENERAL NOTES

MATERIALS INDICATION

- TYNDALL LIMESTONE
- COMMON BRICK
- CONCRETE
- CONCRETE BLOCK
- GLAZY TILE
- MOVEABLE PARTITION

- ALL DIMENSIONS ARE TO ROUGH FACES
- ALL MASONRY IS 8" CONC. BLOCK UNLESS NOTED OTHERWISE
- DIMENSIONS TO MOVEABLE PARTITIONS ARE TO FINISHED FACES UNLESS NOTED OTHERWISE
- ALL DOOR FRAMES IN MASONRY & HOLLOW MASONRY PARTITIONS SHALL BE PRESSED STEEL
- ALL STAIRWAY DOORS SHALL BE HOLLOW METAL WITH PRESSED STEEL FRAMES
- ALL DOOR OPENINGS OFF CORRIDOR B-13, B-14, B-22, B-29, B-40, B-41 TO HAVE LIGHT THRESHOLD TO DETAIL BY MISC. METALS SEE DOOR SCHEDULE

REV. 6 • GRILLES NOW INDICATED ON DOOR NUMBERS & SIZE GIVEN AS THUS: 24 x 12 FOR DIRECTION OF AIRFLOW SEE MECHANICAL DRAWINGS

6	CLARIFICATION & GEN. REVISIONS	MAY 6, 1965
5	CLARIFICATION 75 CONC. STAIRS P.P.S.	JUNE 25, 1965
4	GENERAL REVISIONS	MAY 10 1965
3	GENERAL REVISIONS	APRIL 1, 1965

CONTRACT AWARDED DEC. 9 0 1964

2) GEN. REVISIONS BY ADDENDA 1 DEC 64 A.M.P.

1 GEN. REVISIONS BY ADDENDA 1 & 2 NOV 64 G.B.

No.	PARTICULARS	DATE	BY
	REVISIONS		

PROVINCE OF MANITOBA — LIBLING MICHENER — REGISTERED ARCHITECT

CHECKED FOR
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL

PRINTING DATE AUG. 20 . 1965

DRAWN BY GB, F.D.P.

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388 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 7-6101

PUBLIC SAFETY BUILDING FOR THE CITY OF WINNIPEG, MANITOBA

TITLE BASEMENT FLOOR PLAN

SHEET NO. 6020-A-3

FOR CONTINUATION OF PLAZA SEE SITE PLAN

999 EMERGENCY

PUBLIC RECEPTION

VESTIBULE

WAITING

CLERK OF COURT

ASSISTANT CLERK

AUDITOR

GENERAL OFFICE CLERK OF COURT

COURT REPORTERS

SUPERINTENDENT

INSPECTOR

INSPECTOR

SERGEANT

CORRIDOR

INTERVIEW

STENOS

MEN

WOMEN

WOMEN REST RM.

LUNCH ROOM

TECHNICIANS' OFFICE AND WORK AREA

UP

ELEVATOR LOBBY

CASHIERS

UP

POLICE COMMISSION VAULT

VAULT

UP

PRESS ROOM

COATS

COATS

ELEVATOR LOBBY

WOMEN

MEN

DOWN

ENTRY VESTIBULE

CORRIDOR

CORRIDOR

CORRIDOR

CONTROL EQUIPMENT

BATTERY

WAITING

SERGEANT

SERGEANT READER

ASSISTANT INSPECTOR

INSPECTOR

STORAGE

COATS

INTERVIEW

INTERVIEW

FIRE ALARM STATION

TRAFFIC GENERAL OFFICE

INTERVIEW INTERVIEW INTERVIEW

TRAFFIC PARADE ROOM

GROUND FLOOR PLAN

0' 5' 10' 20'

GENERAL NOTES

No.	PARTICULARS	DATE	BY
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PUBLIC SAFETY BUILDING

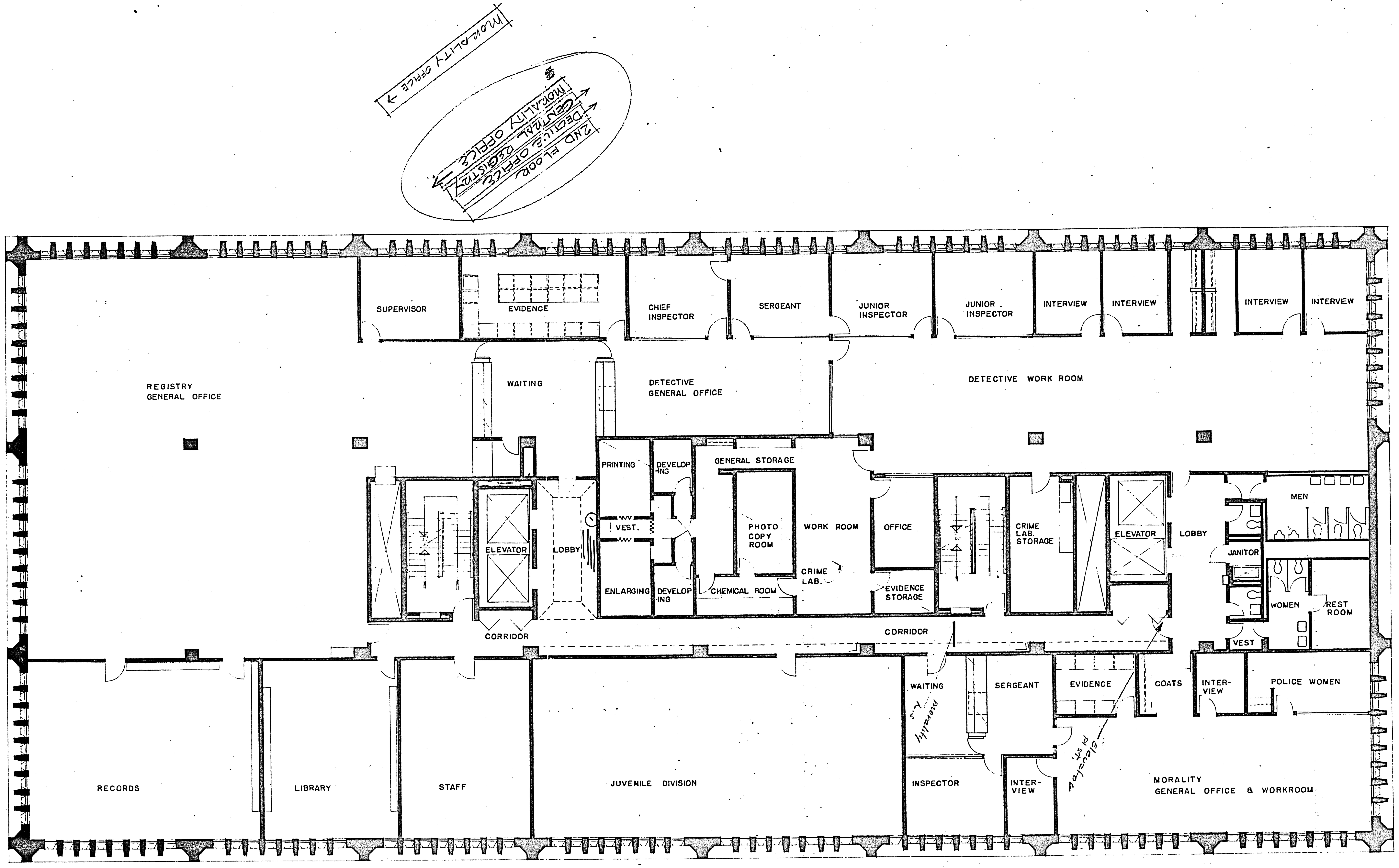
GROUND FLOOR PLAN

TITLE

SHEET NO. A-4

B-14
FILE
RETURN TO CIVIC PROPERTIES BUILDING INVENTORY.
4 | 0 | 1 | 1

W.J.D. 175H



SECOND FLOOR PLAN

0' 5' 10' 20'

GENERAL NOTES

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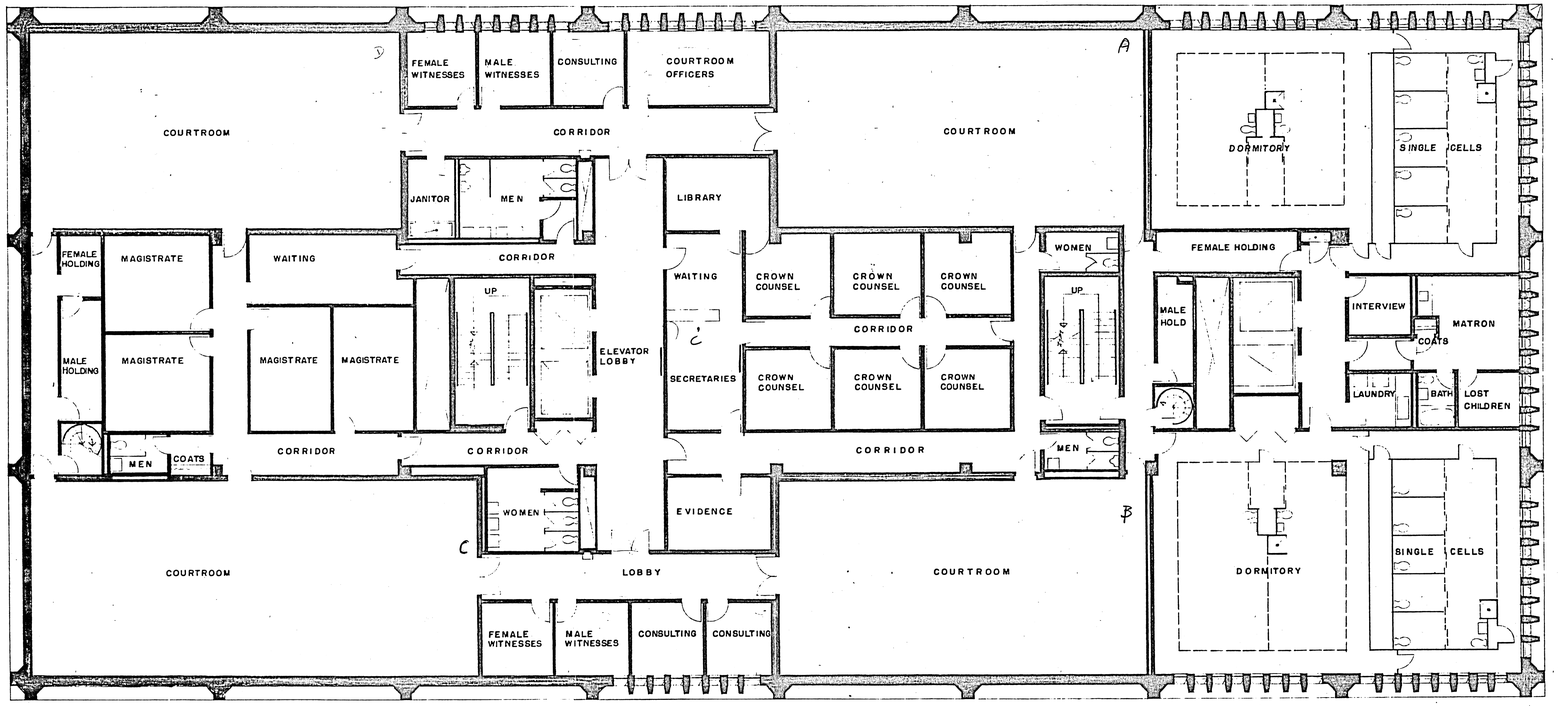
PUBLIC SAFETY BUILDING

TITLE SECOND FLOOR PLAN
SHEET NO. A5

W.J.D. 175H



THIRD FLOOR PLAN

0' 5' 10' 20'

B-14
FILE
RETURN TO CIVIC PROPERTIES BUILDING INVENTORY.
4011

GENERAL NOTES

No.	PARTICULARS	DATE	BY

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368 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 3-4491

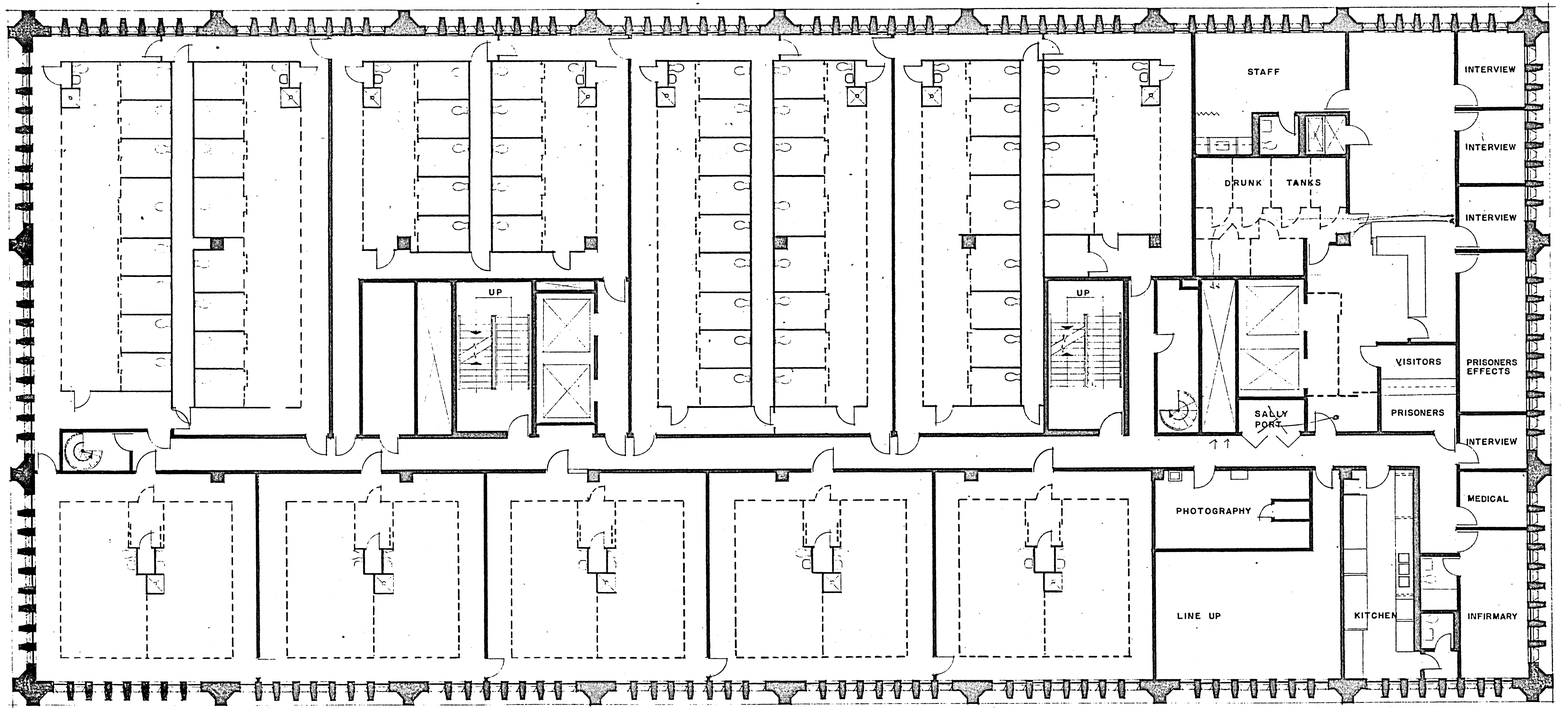
PUBLIC SAFETY BUILDING

TITLE THIRD FLOOR PLAN
SHEET NO. A-6

project no. Public Safety Bldg
description Third Floor Plan

FOLD 1
FOLD 2
FOLD 3
FOLD 4
FOLD 5
FOLD 6

4th Floor Plan
description
Public Safety Bldg



FOURTH FLOOR PLAN

0' 5' 10' 20'

B-14
FILE
RETURN TO CMC
PROPERTIES BUILDING
INVENTORY.
4 011 1

GENERAL NOTES

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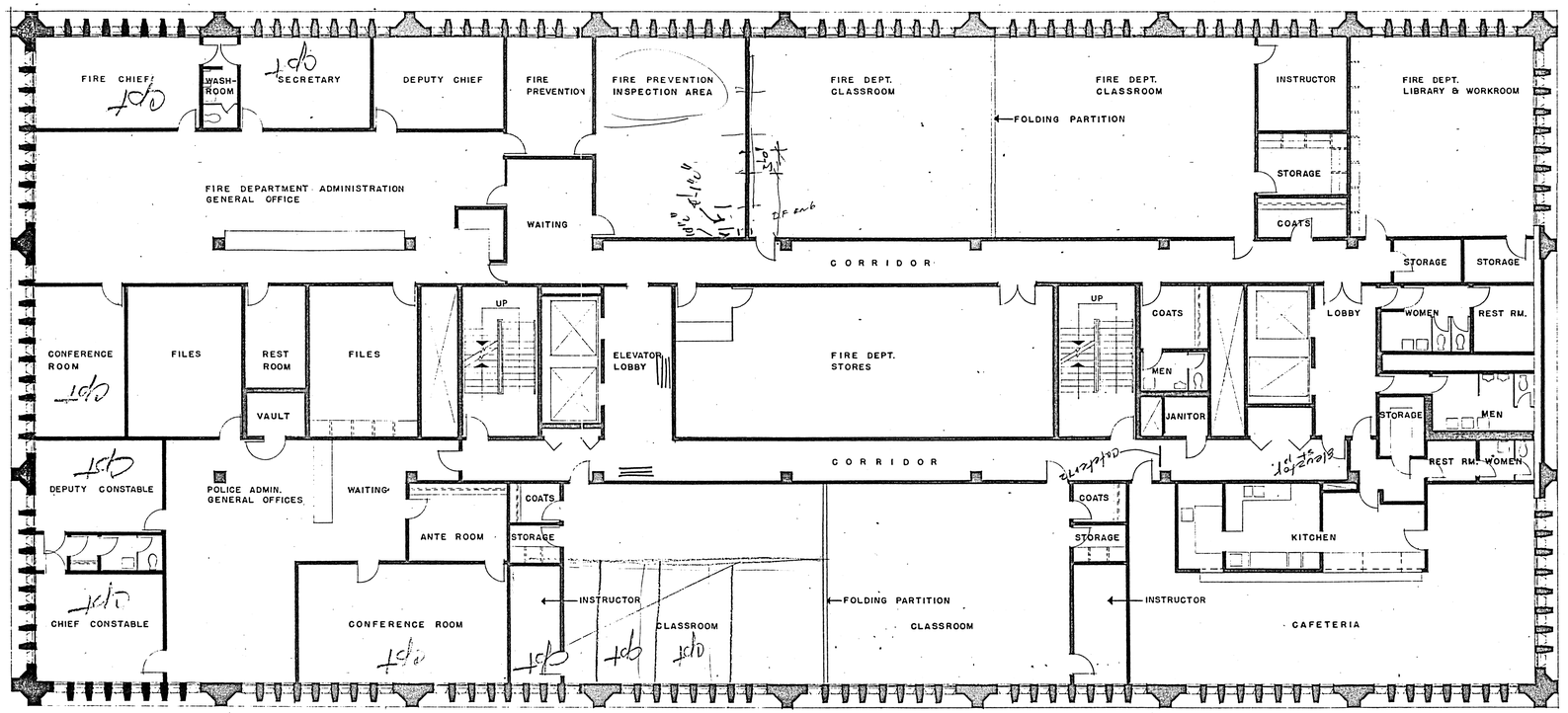
PUBLIC SAFETY BUILDING

TITLE FOURTH FLOOR PLAN

SHEET NO. A-7

W.O.D. 1781



FIFTH FLOOR PLAN

0' 5' 10' 20'

B-14
FILE
RETURN TO CIVIC PROPERTIES BUILDING INVENTORY.
4 | 0 | 1 | 1

GENERAL NOTES

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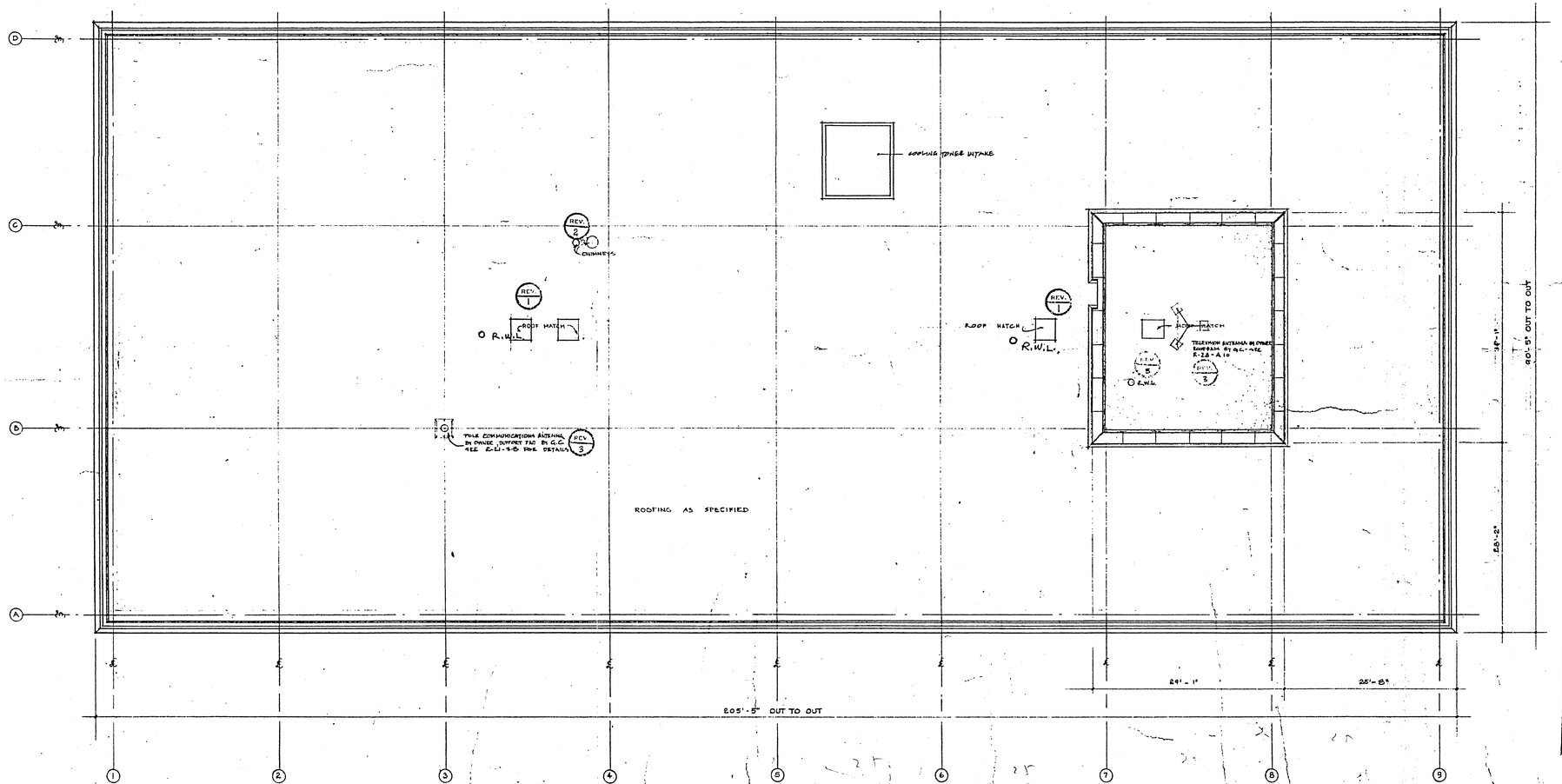
PUBLIC SAFETY BUILDING

TITLE FIFTH FLOOR PLAN
SHEET NO. A-6



ROOF PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES

3. CLARIFICATION & GEN. REVISIONS	JULY 6 '65
2. LOCATION OF CHIMNEYS INDICATED	NOV 11 '64
CONTRACT AWARDED	DEC 30 1964
1. GEN REVISIONS BY APPENDA	16 DEC 64

No.	PARTICULARS	DATE	BY
	REVISIONS		

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ELECTRICAL

PRINTING DATE
[redacted]
JULY. 1965

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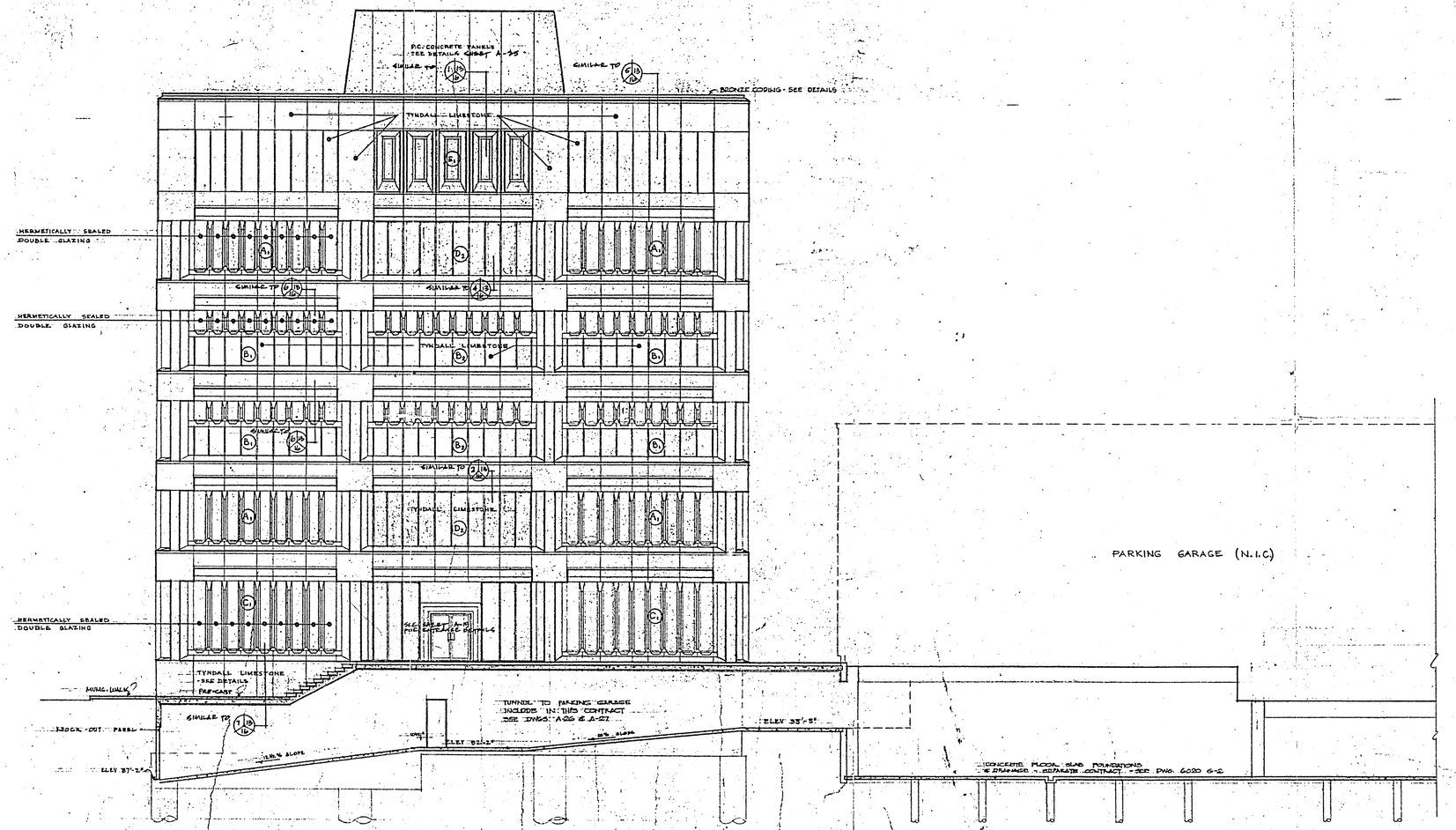
PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG, MANITOBA

TITLE ROOF PLAN
SHEET NO. 6020-A-10

Public Safety Bldg



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LM

LIBLING MICHENER & ASSOCIATES ARCHITECTS
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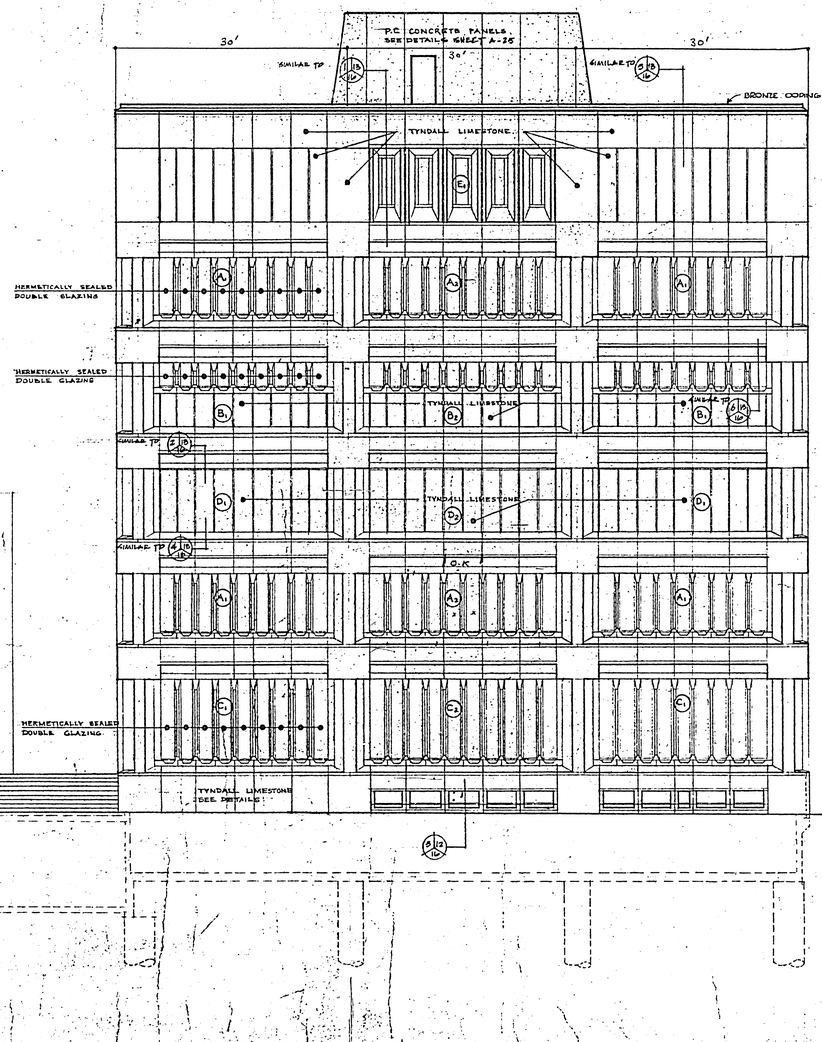
B-14
FILE
RETURN TO CIVIC PROPERTIES BUILDING INVENTORY.
4 01 1

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

Amended
Add. # 1
R.S. 6020
Page 61

TITLE NORTH ELEVATION
SHEET NO. 6020-A-11

A-11
North Elevation
Public Safety Bldg



PARKING GARAGE (N.I.C.)

CONCRETE WALLS WITH BUSH HAMMER FINISH - SEE SH. A-26

GENERAL NOTES

No.	PARTICULARS	DATE	BY
REVISIONS			

PROVINCE OF MANITOBA
LIBLING, MICHENER & ASSOCIATES
REGISTERED ARCHITECTS

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DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL

PRINTING DATE
27. OCT. 1964.

DRAWN BY W.B.

B-14
FILE
RETURN TO CIVIC PROPERTIES BUILDING INVENTORY.
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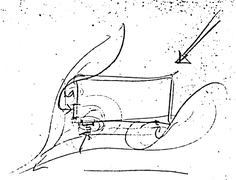
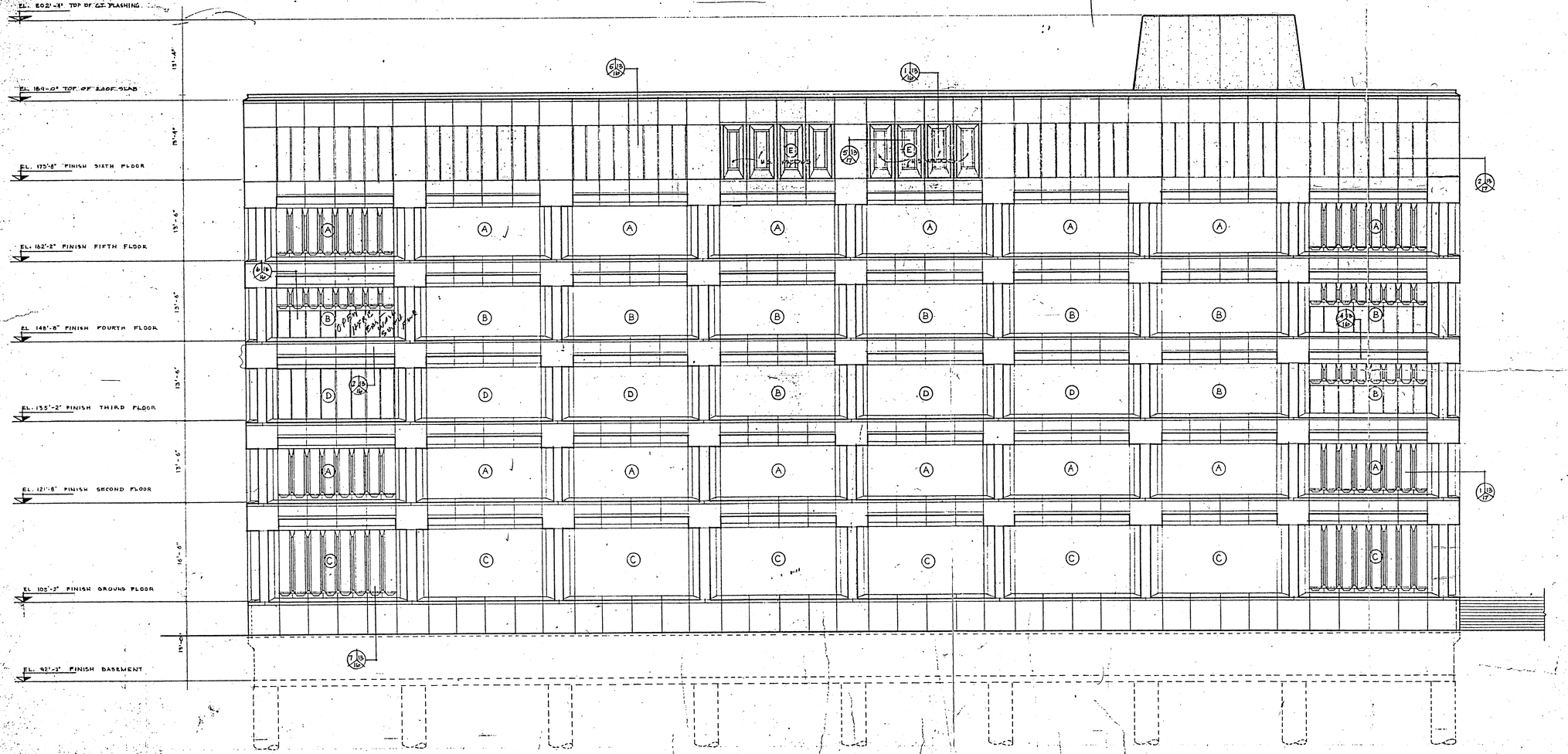
PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

Amended
Add. # 1
15 Oct
Page 6

TITLE SOUTH ELEVATION
SHEET NO. 6020 - A-12

FOLD 1
FOLD 2
Public Safety Building





GENERAL NOTES

No.	PARTICULARS	DATE	BY
REVISIONS			

PROVINCE OF MANITOBA
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DETAILS
STRUCTURE R.C.
MECHANICAL
ELECTRICAL

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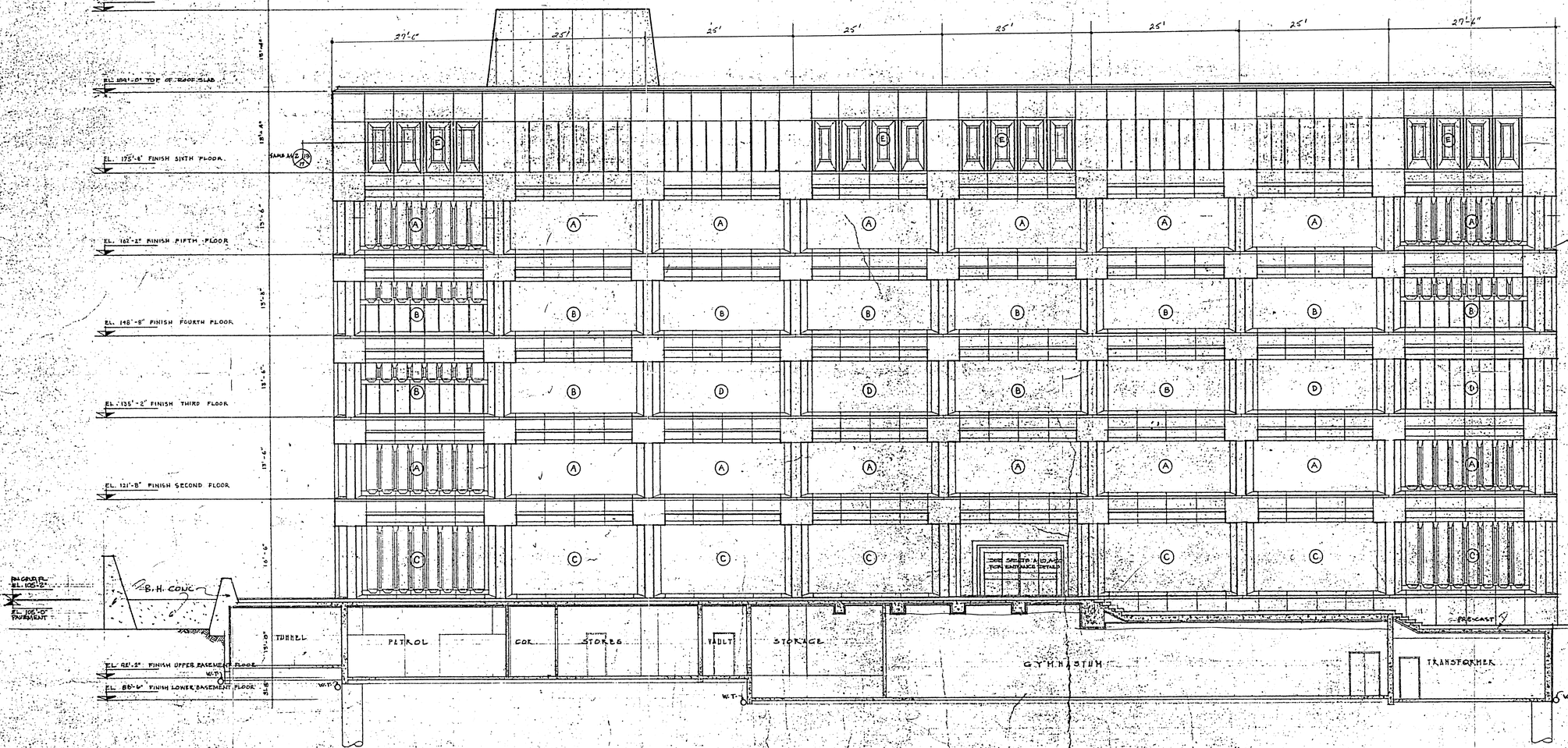
311 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 2-4421

B-14
FILE
RETURN TO CIVIC PROPERTIES BUILDING INVENTORY.
14 01 1

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

TITLE EAST ELEVATION
SHEET NO. 6020:A-8



GENERAL NOTES

- FOR DETAIL REFERENCES SEE SHEET A-13

No.	PARTICULARS	DATE	BY

REVISIONS

PROVINCE OF MANITOBA LIBLING MICHENER REGISTERED ARCHITECTS

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STRUCTURE R.L.
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ELECTRICAL

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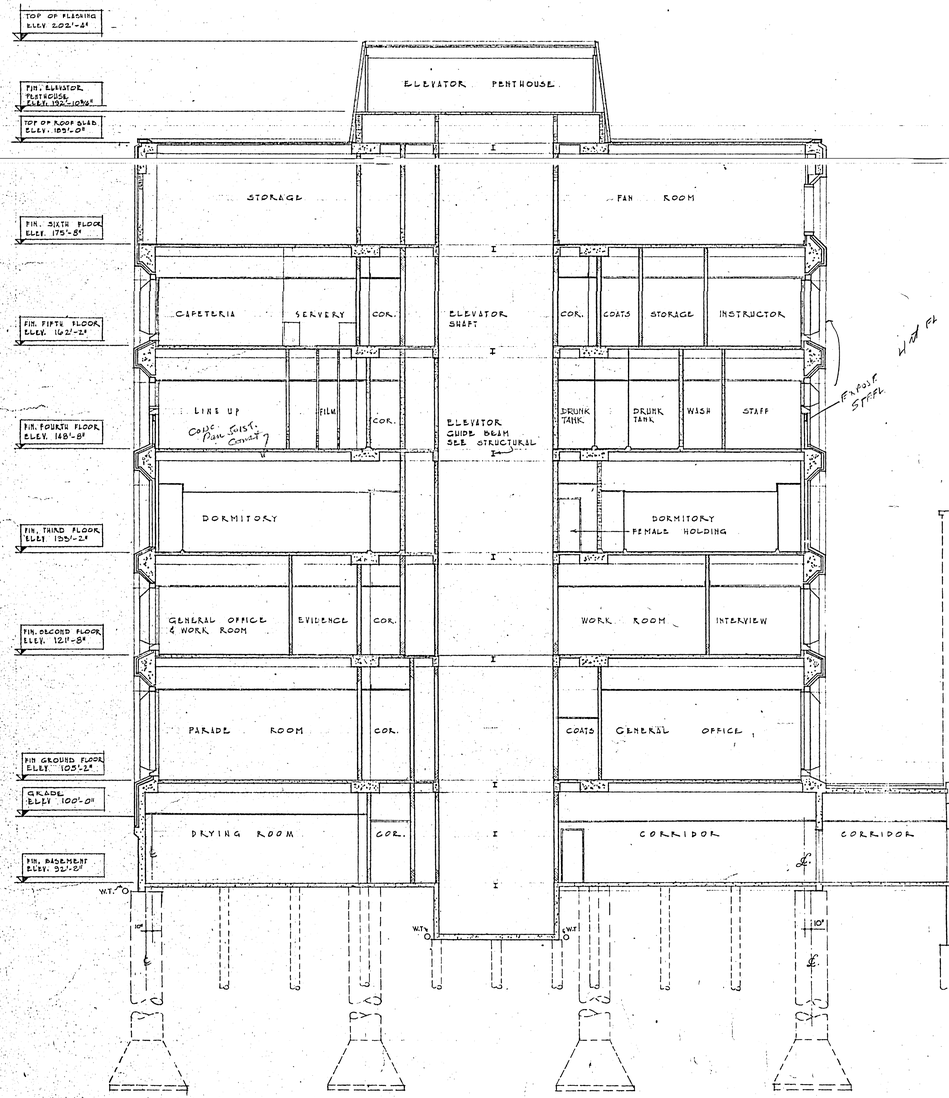
B-14
FILE
RETURN TO CIVIC PROPERTIES BUILDING INVENTORY

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

Amended
Add. # 1
P.S. Bldg.
Page # 6

TITLE WEST ELEVATION
SHEET NO. 6020 - A - 14

Public Safety Bldg



SCALE 1/8"=1'-0"

GENERAL NOTES

No.	PARTICULARS	DATE	BY
REVISIONS			

CHECKED FOR
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL

PRINTING DATE
27. OCT. 1964.

DRAWN BY GB

B-14
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PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

Amended
Add. # 1
By: [illegible]
Page 6.

TITLE BUILDING SECTION
SHEET NO. 6020 - A - 15

FOLD 3

FOLD 4

FOLD 5

Public Safety Bldg.

SECTION
SCALE: 1" = 1'-0"
1/16

SECTION
SCALE: 1" = 1'-0"
2/16

SECTION
SCALE: 1" = 1'-0"
3/16

SECTION
SCALE: 1" = 1'-0"
4/16

SECTION
SCALE: 1" = 1'-0"
5/16

SECTION
SCALE: 1" = 1'-0"
6/16

SECTION
SCALE: 1" = 1'-0"
7/16

GENERAL NOTES

- ALL TYNDALL STONE FACING TO BE 4" THICK UNLESS OTHERWISE NOTED.
- FOR STONE FIXING DETAILS SEE A-10

REVISION - WINDOWS: DETAIL DEC/64 M.L.

NO.	PARTICULARS	DATE
REVISIONS		

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LIBLING, MICHENER & ASSOCIATES
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STRUCTURE R.L.
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ELECTRICAL

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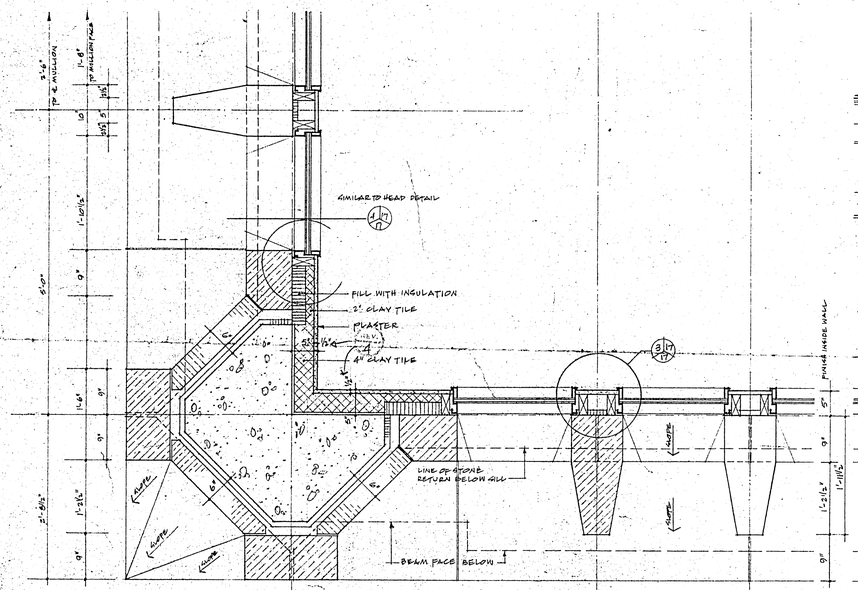
201 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 2-6811

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG, MANITOBA

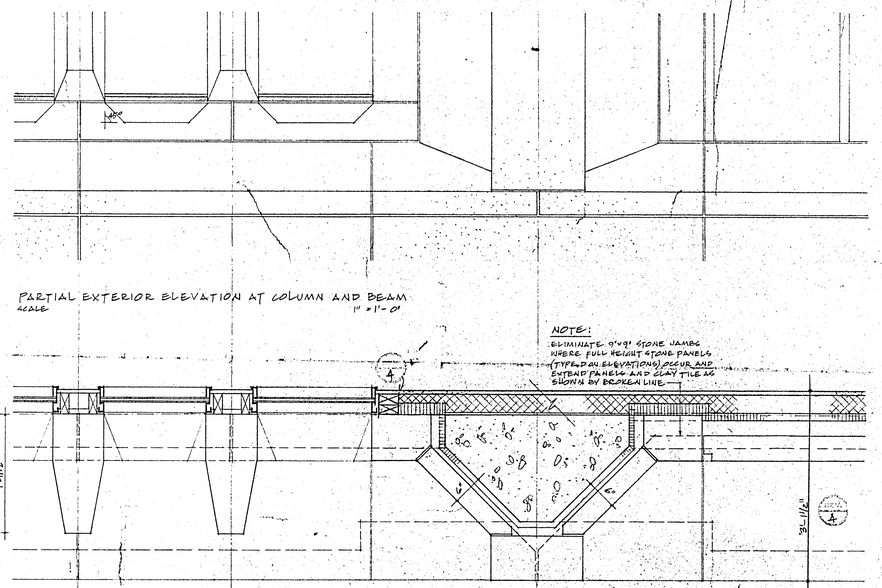
Amended
Per Bulletin
Page 7

TITLE EXTERIOR WALL SECTIONS

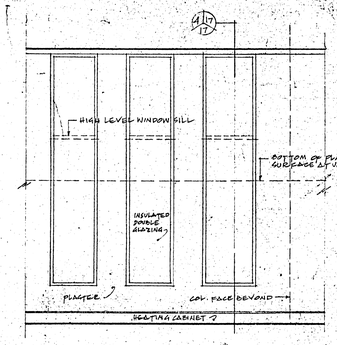
SHEET NO. 6020 - A - 16



PLAN SECTION THROUGH TYPICAL EXTERIOR WALL
SCALE 1" = 1'-0"



PARTIAL EXTERIOR ELEVATION AT COLUMN AND BEAM
SCALE 1" = 1'-0"



PARTIAL INTERIOR ELEVATION OF WINDOW WALL
SCALE 1½" = 1'-0"

GENERAL NOTES

- ALL TYNDALL STONE FACING TO BE 4" THICK UNLESS OTHERWISE NOTED.
- ALL WOOD FURRING MEMBERS SHOWN AT EXTERIOR WALLS TO BE YELLOW CEDAR.
- SEE SHEET A-18 FOR STONE FIXING DETAILS.

- THIS SHEET VALID ONLY AS REFERENCED TO DIMENSIONS OF PROFILES AND STRUCTURAL DIMENSIONS.
- FOR ACTUAL DETAILS SEE SHOP DRAWINGS OF PRECAST STONEWORK & ALUM. WINDOWS.

REVISIONS		
No.	PARTICULARS	DATE BY
4.	CLARIFICATION & GEN. REVISIONS	JAN 5-65 J.K.
3.	SEE ADDITION TO GEN. NOTES ABOVE. HANDLAY	
	CONTRACT AWARDED - DEC 30 1964	
2.	GEN. REVISIONS BY ADDENDA. 16 DEC 64 P.R.	
1	GEN. AL. WIND. DEC 11/64 I.M.L.	

PROVINCE OF MANITOBA
ENGINEERING STUDENT
ARCHITECTURAL STUDENT
ENGINEERED DRAWING

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL

PRINTING DATE
JULY. 1965

DRAWN BY M.N.G.

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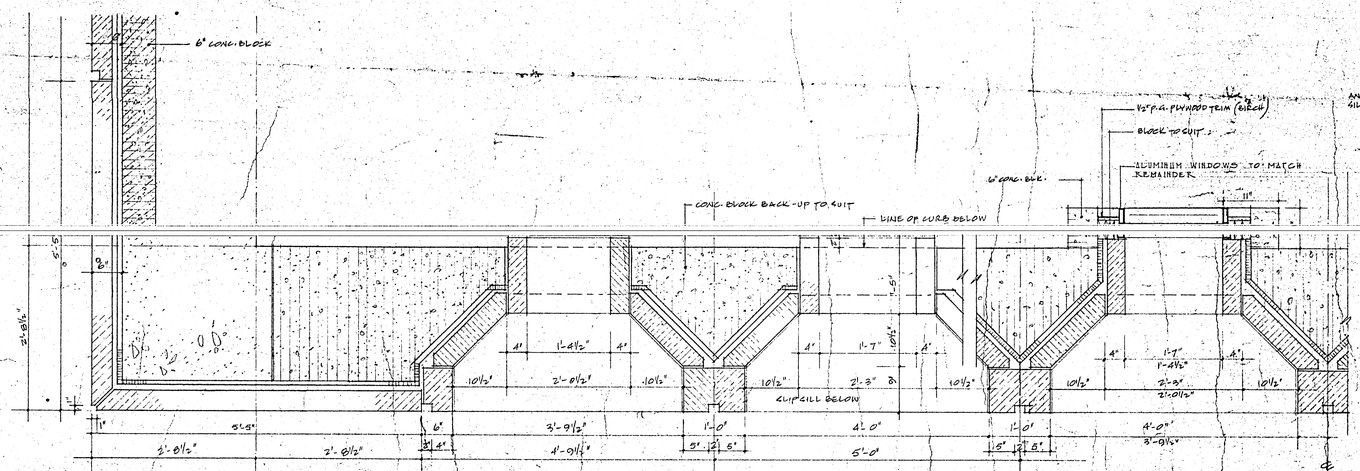
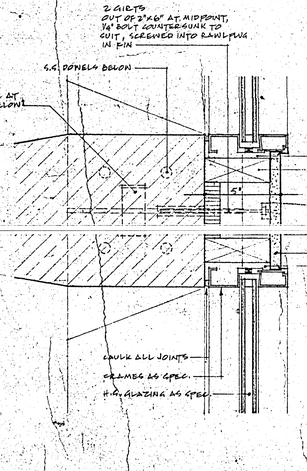
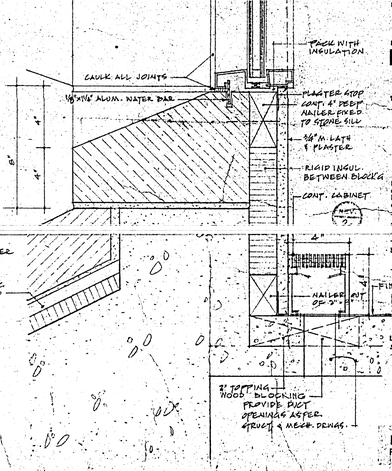


PLAN SECTION THROUGH SIXTH FLOOR EXTERIOR WALL
SCALE 1" = 1'-0"

SIXTH FLOOR WINDOWS
SCALE 1" = 1'-0"



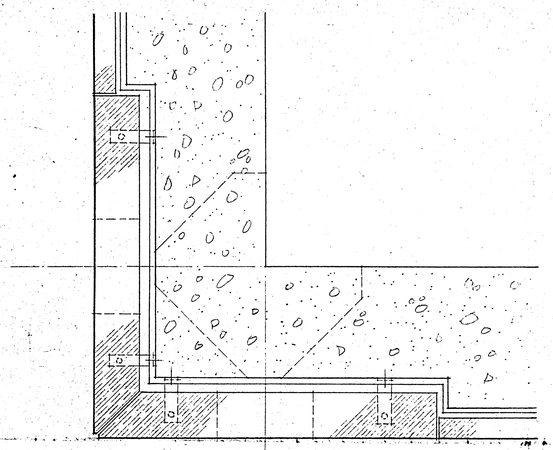
DETAIL
SCALE 3" = 1'-0"



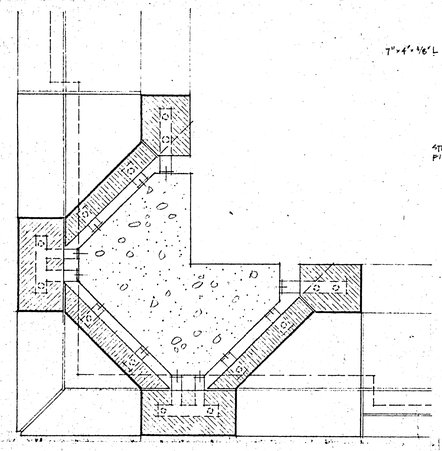
DETAIL
SCALE 3" = 1'-0"

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

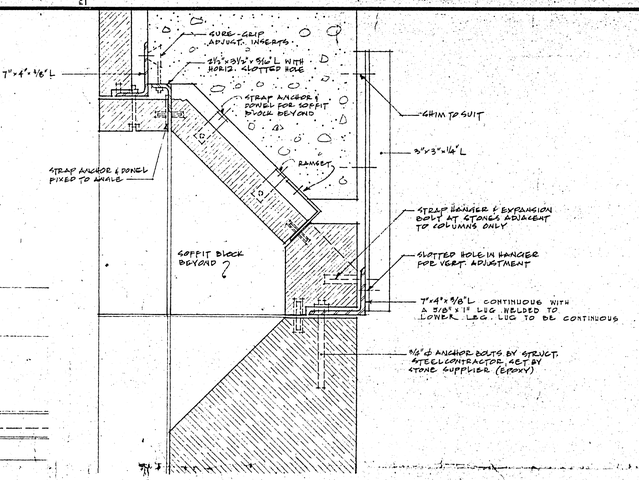
TITLE EXTERIOR WALL & WINDOW DETAILS
SHEET NO. 6020-A-17

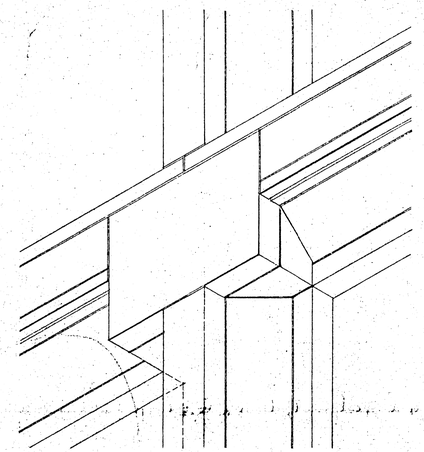


TYPICAL EXTERIOR CORNER AT BEAM LEVEL
SCALE 1" = 1'-0"

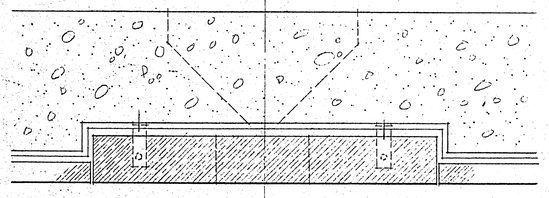


REFLECTED SOFFIT PLAN AT CORNER COLUMN
SCALE 1" = 1'-0"

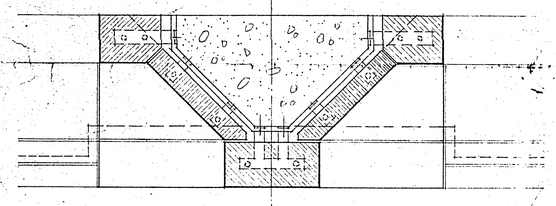




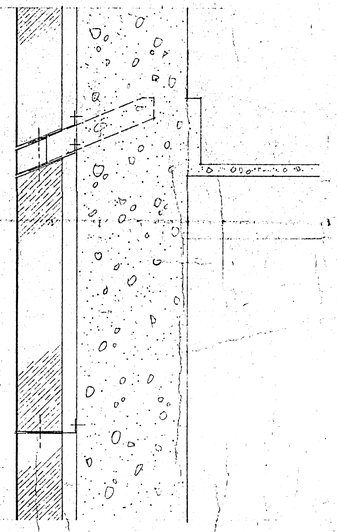
ISOMETRIC VIEW OF TYPICAL COLUMN & BEAM JOINT
SCALE 1½" = 1'-0"



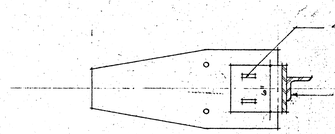
BEAM FACING AT TYPICAL EXTERIOR COLUMN
SCALE 1" = 1'-0"



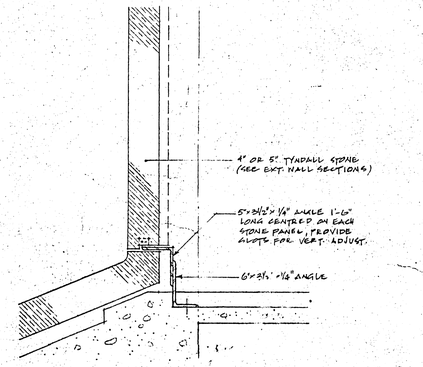
REFLECTED SOFFIT PLAN AT TYPICAL EXTERIOR COLUMN
SCALE 1" = 1'-0"



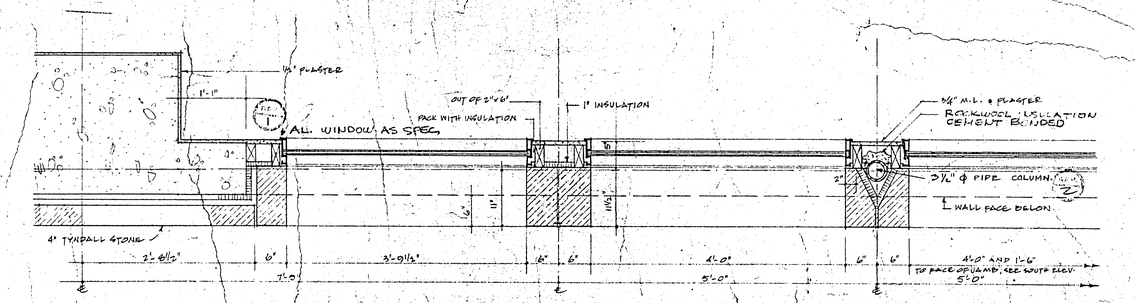
SECTION THROUGH TYPICAL COLUMN
SCALE 1" = 1'-0"



MISCELLANEOUS STONE CONNECTIONS
SCALE 1½" = 1'-0"



STONE PANEL BASE CONNECTION
SCALE 1½" = 1'-0"



PLAN SECTION AT BASEMENT WINDOWS
SCALE 1" = 1'-0"

GENERAL NOTES

1. ALL STRAP ANCHORS ARE TO BE SUPPLIED & INSTALLED BY MASONRY CONTRACTOR.

2. THIS SHEET VALID ONLY AS REFERENCES TO DIMENSIONS OF PROFILES & STRUCTURAL DIMENSIONS. FOR ACTUAL DETAILS SEE SHOP DRAWINGS OF PRECAST STONEWORK & ALUM. WINDOWS.

3. SEE ADDITION TO GEN. NOTES ABOVE. - W/L 1-15-66

CONTRACT AWARDED JAN 31 1966

2 GEN. REVISIONS BY ADDENDA 12 REC'D 64

1 WINDOW DETAIL DEC/64 M.L.

No.	PARTICULARS	DATE	BY
REVISIONS			

PROVINCE OF MANITOBA LIBLING MICHENER & ASSOCIATES REGISTERED ARCHITECTS

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DETAILS
STRUCTURE
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ELECTRICAL

PRINTING DATE JULY. 1965

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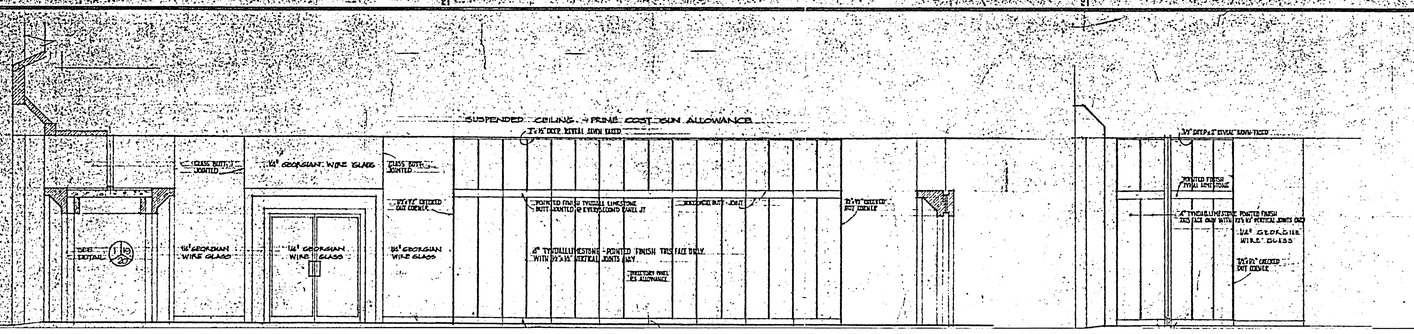
PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

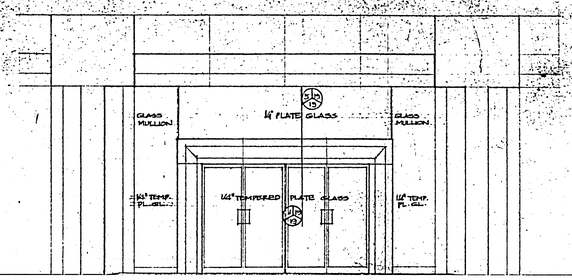
TITLE: EXTERIOR WALL STONE DETAILS

SHEET NO. 60-20-A-16

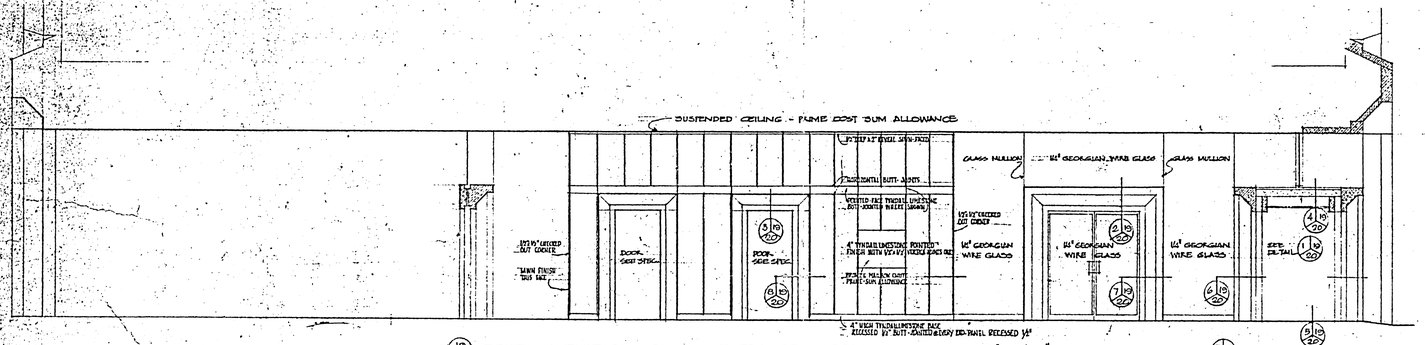


1/20 SECTION VESTIBULE & 1/19 NORTH ELEVATION MAIN ENTRANCE LOBBY SCALE 1/4" = 1'-0"

ELEVATION 1/19

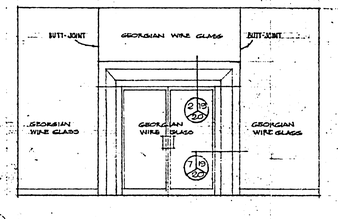


ELEVATION OF MAIN ENTRANCE

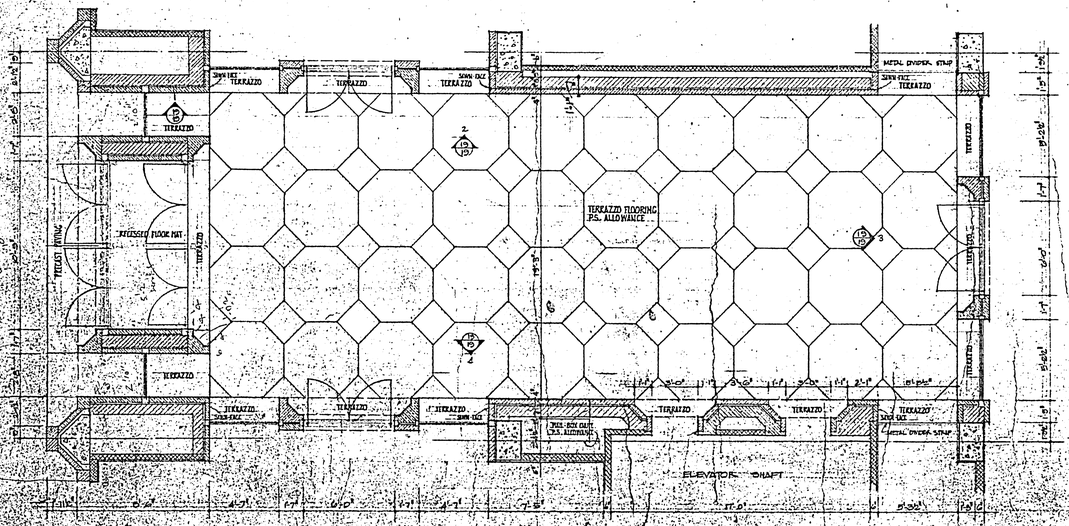


4 19/19 SOUTH ELEVATION OF MAIN ENTRANCE LOBBY SCALE 1/4" = 1'-0"

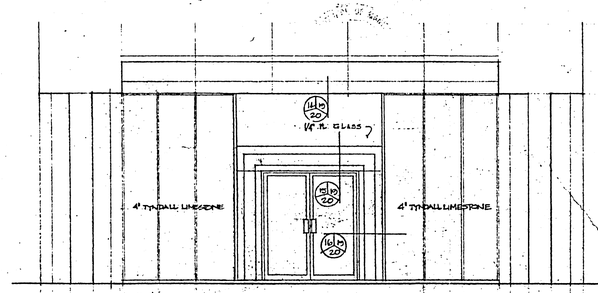
5/19 5/20 SECTION - VESTIBULE



3 16/19 EAST ELEVATION OF MAIN LOBBY



PLAN OF MAIN ENTRANCE LOBBY & VESTIBULE



ELEVATION OF NORTH ENTRANCE

PLAN OF NORTH ENTRANCE

GENERAL NOTES

No.	PARTICULARS	DATE	BY
REVISIONS			

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LIBLING, MICHENER
REGISTERED ARCHITECTS

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MECHANICAL
ELECTRICAL

PAINTING DATE

29 OCT. 1964

DRAWN BY G.B.

B-14
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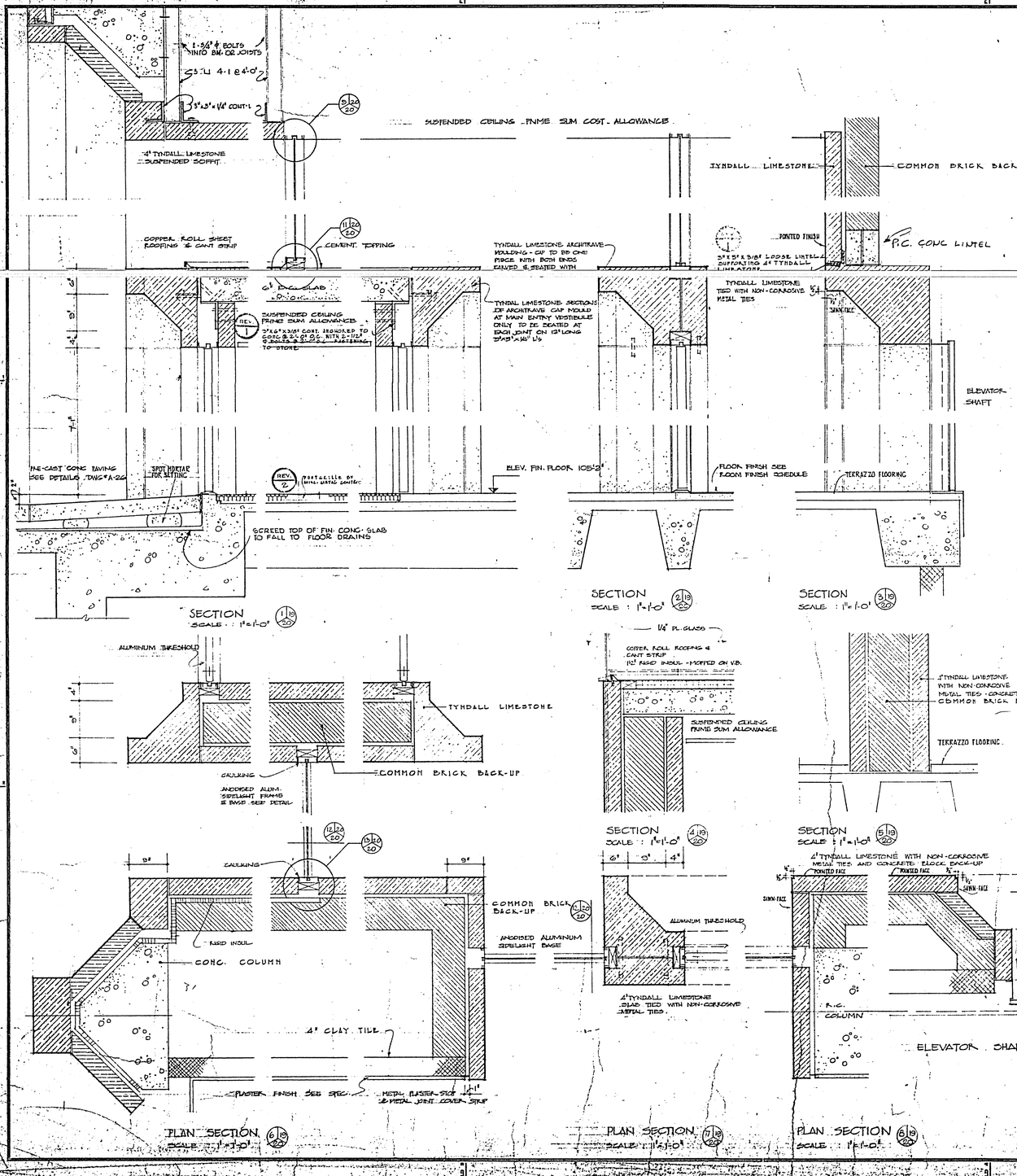
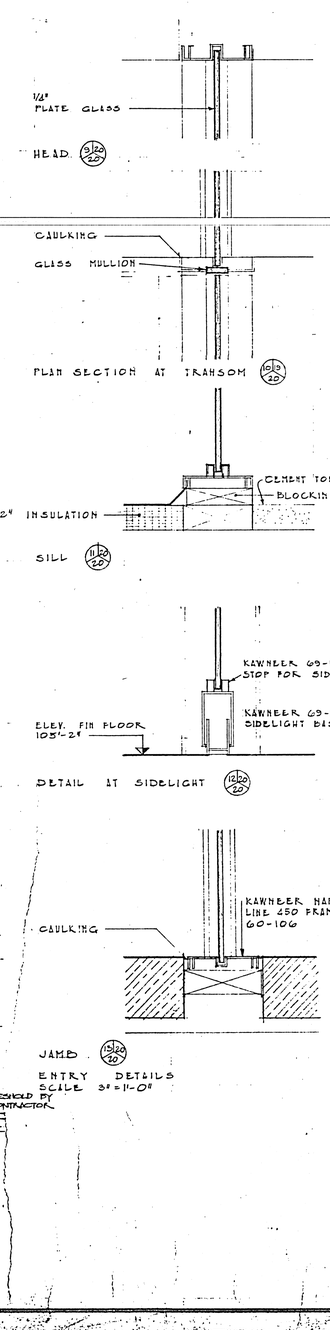
PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG - MANITOBA

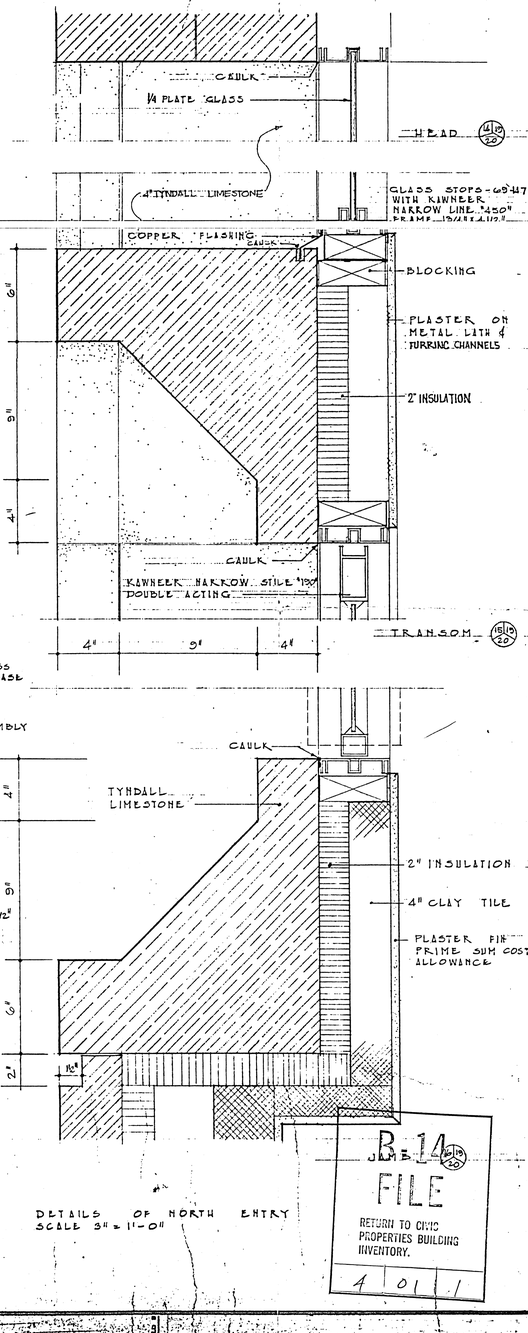
Approved
Mar 8 1965
Plans

TITLE ENTRANCE PLAN & ELEVATIONS

SHEET NO 6020 - A - 19







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- FOR ACTUAL DETAILS SEE SHOP DRAWINGS OF PRECAST STONEWORK & ALUM. WINDOWS.

No.	PARTICULARS	DATE	BY
REVISIONS			
3.	SEE GENERAL NOTES ABOVE	NOV. 8/65	D.K.
2.	REVISED FRONT GRILLE	MAR. 10/65	I.P.M.
	CONTRACT AWARDED	DEC 30 1964	
1	GEN. REVISIONS BY ADDENDA - 16 DEC 64		P.E.P.

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DESIGN
DETAILS
STRUCTURE
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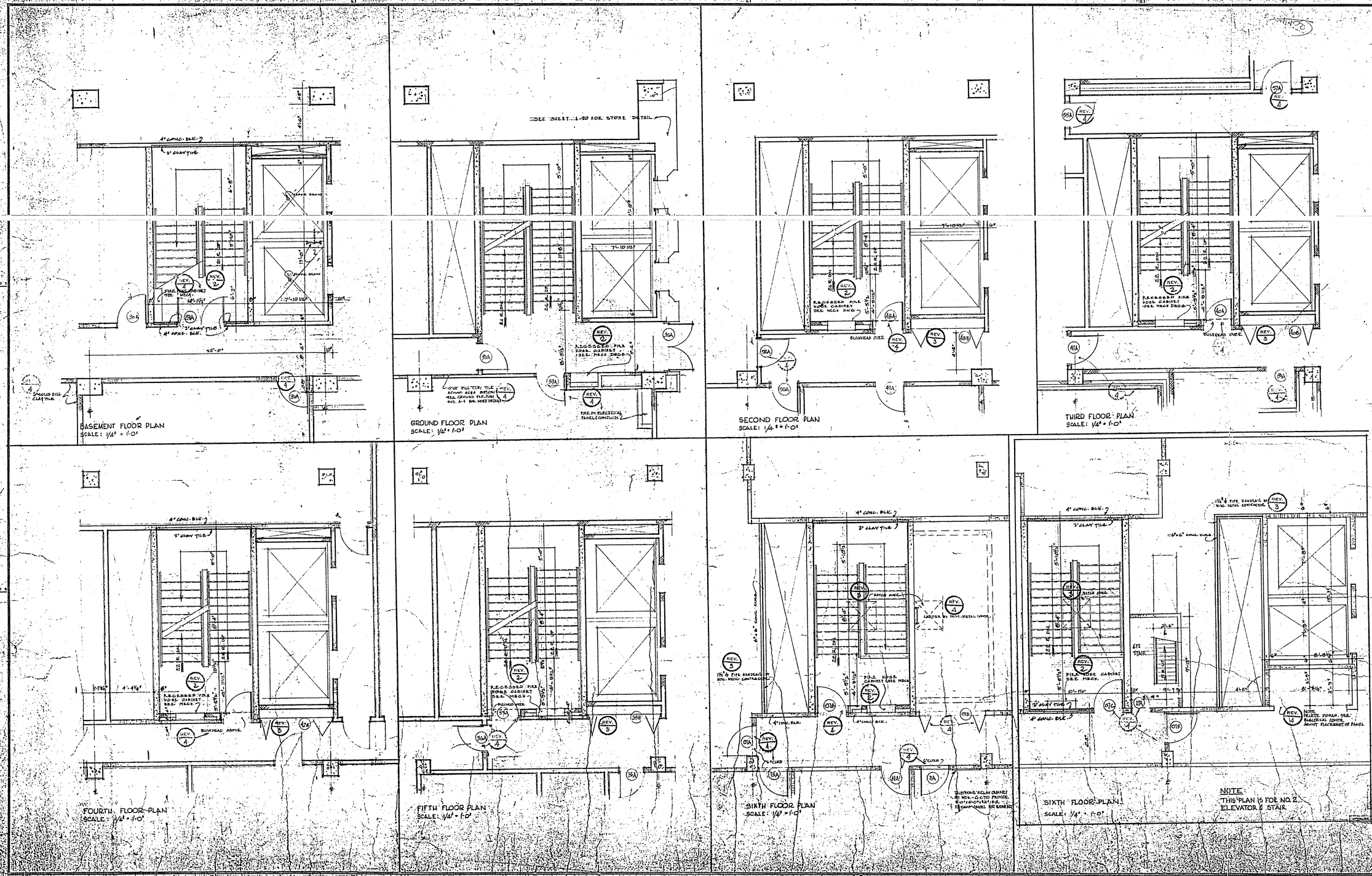
FILE
RETURN TO CIVIC PROPERTIES BUILDING INVENTORY.
4 01 1

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

TITLE ENTRANCE DETAILS
SHEET NO. 60.20 - A - 20.

Public Safety Bldg



GENERAL NOTES

- ALL DIMENSIONS RISER TO RISER
- " " TO ROUGH FACES
- ALL STAIRWAY DOORS SHALL BE HOLLOW METAL WITH PRESSED STEEL FRAMES

No.	PARTICULARS	DATE	BY
4.	CLARIFICATION & GEN. REVISIONS	JAN 6 '65	L.Y.
3.	GENERAL REVISIONS	MAR. 10/65	J.R.M.
	CONTRACT AWARDED DEC 30 1964		
2	GEN REVISIONS BY ADDEND A 16 DEC 64		F.R.F.
1	GEN. DIMENSIONS DEC 1/64		M.L.

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STRUCTURE
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DRAWN BY: Z.T.

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B-14
JULY 1965
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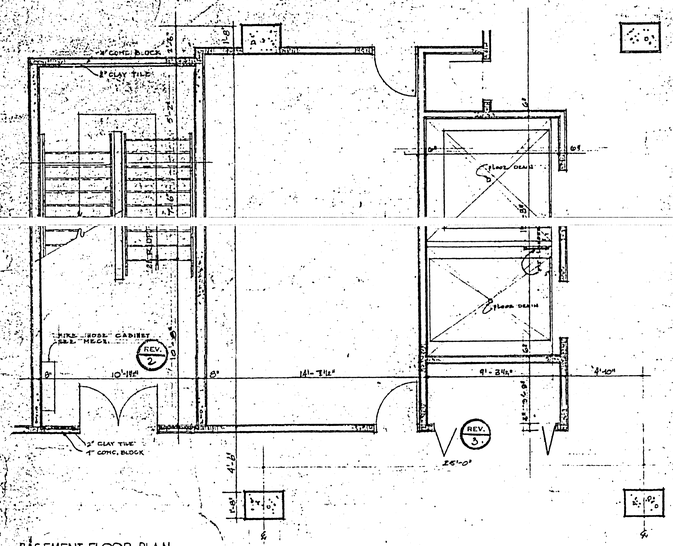
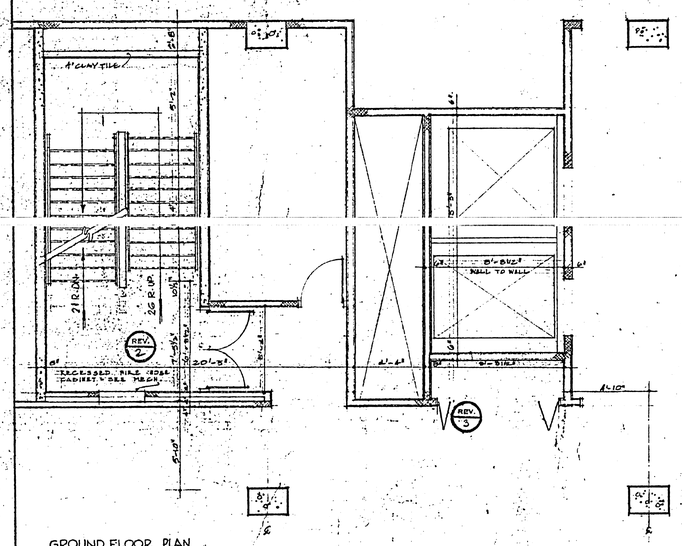
PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG, MANITOBA

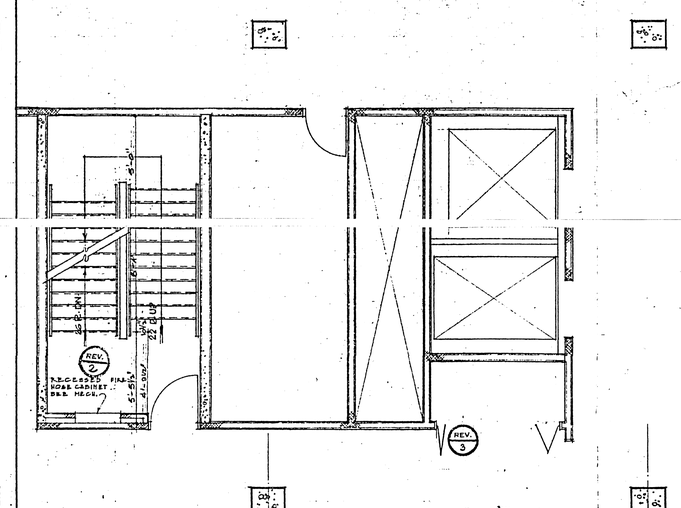
TITLE: NO. 1 ELEVATOR & STAIR PLANS
SHEET NO.: 5020-A-21



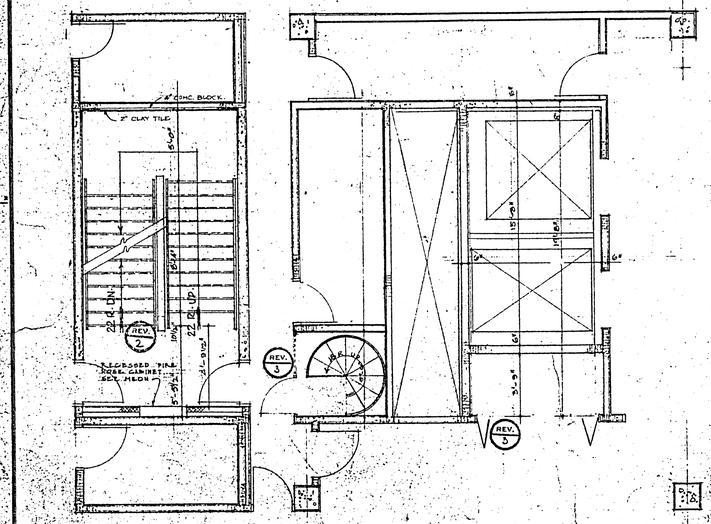
BASEMENT FLOOR PLAN
SCALE: 1/4" = 1'-0"



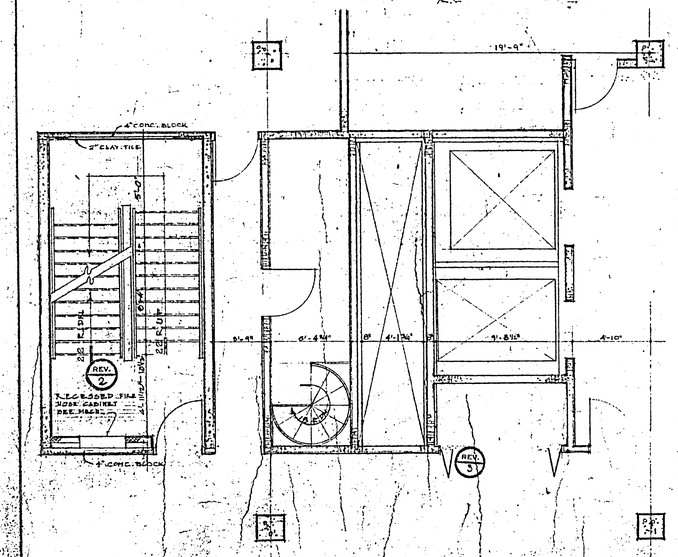
GROUND FLOOR PLAN
SCALE: 1/4" = 1'-0"



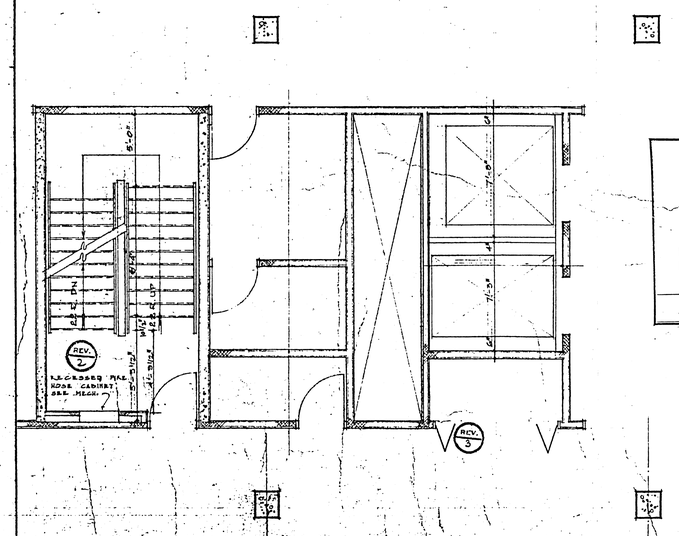
SECOND FLOOR PLAN
SCALE: 1/4" = 1'-0"



THIRD FLOOR PLAN
SCALE: 1/4" = 1'-0"



FOURTH FLOOR PLAN
SCALE: 1/4" = 1'-0"



FIFTH FLOOR PLAN
SCALE: 1/4" = 1'-0"

GENERAL NOTES

- ALL STAIR DIMENSIONS RISER TO RISER
- FOR SIXTH FLOOR PLAN OF STAIR NO. 2 SEE A-21
- ALL DIMENSIONS TO ROUGH FACES
- ALL STAIRWAY DOORS SHALL BE HOLLOW METAL WITH PRESSED STEEL FRAMES

No.	PARTICULARS	DATE	BY
3	GEN. REVISIONS	MAR. 10/65	
	CONTRACT AWARD	DEC 30 1965	
2	GEN REVISIONS BY ADDENDA	16 DEC 64	
1	GEN. DIMENSIONS	DEC 1/64	M.L.

REVISIONS

PROVINCE OF MANITOBA LIBLING, MICHENER REGISTERED ARCHITECTS

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ELECTRICAL

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DRAWN BY: Z.I F.D.F.

B-14
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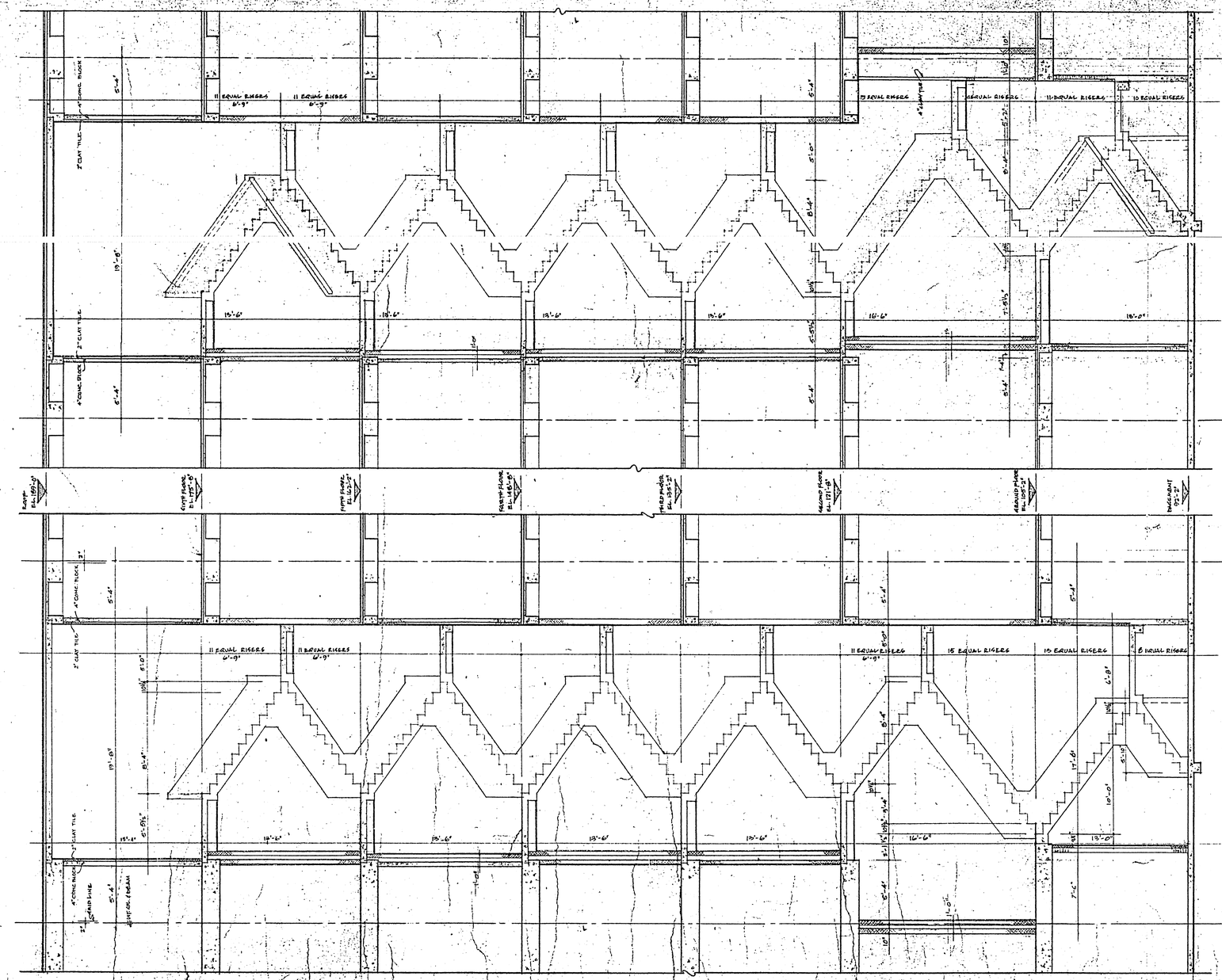
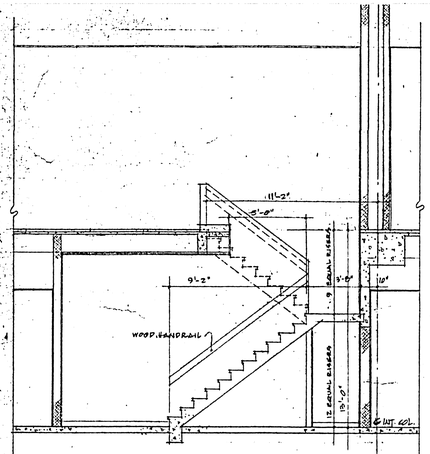
PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

TITLE NO. 2 ELEVATOR & STAIR PLANS
SHEET NO. 6020 - A - 22

Public Safety Bldg



STAIR NO. 2 - SECTION
SCALE 1/4" = 1'-0"



STAIR NO. 3 - SECTION
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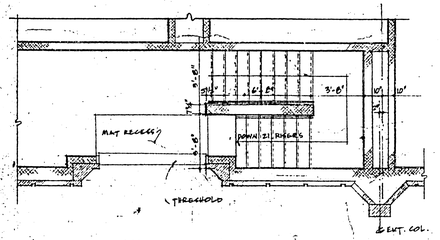

STAIR NO. 3 - GROUND FLOOR PLAN
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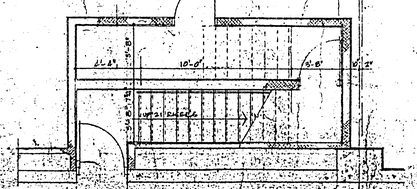

STAIR NO. 3 - BASEMENT FLOOR PLAN
SCALE

GENERAL NOTES

- ALL STAIR DIMENSION SHOWN TO RISER FACES, ALL OTHERS TO ROUGH FACES
- ALL STAIRWAY DOORS SHALL BE HOLLOW METAL WITH PRESSED STEEL FRAMES

CONTRACT AWARDED DEC 3 0 1964

No.	PARTICULARS	DATE	BY
REVISIONS			

PROVINCE OF MANITOBA
LIBLING, MICHENER
REGISTERED ARCHITECTS

CHECKED
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL

PRINTING DATE

DRAWN BY G.B.

B-14
FILE
RETURN TO CIVIC PROPERTIES BUILDING
INVENTORY.
401

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LM

LIBLING MICHENER & ASSOCIATES ARCHITECTS
302 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 4-4401

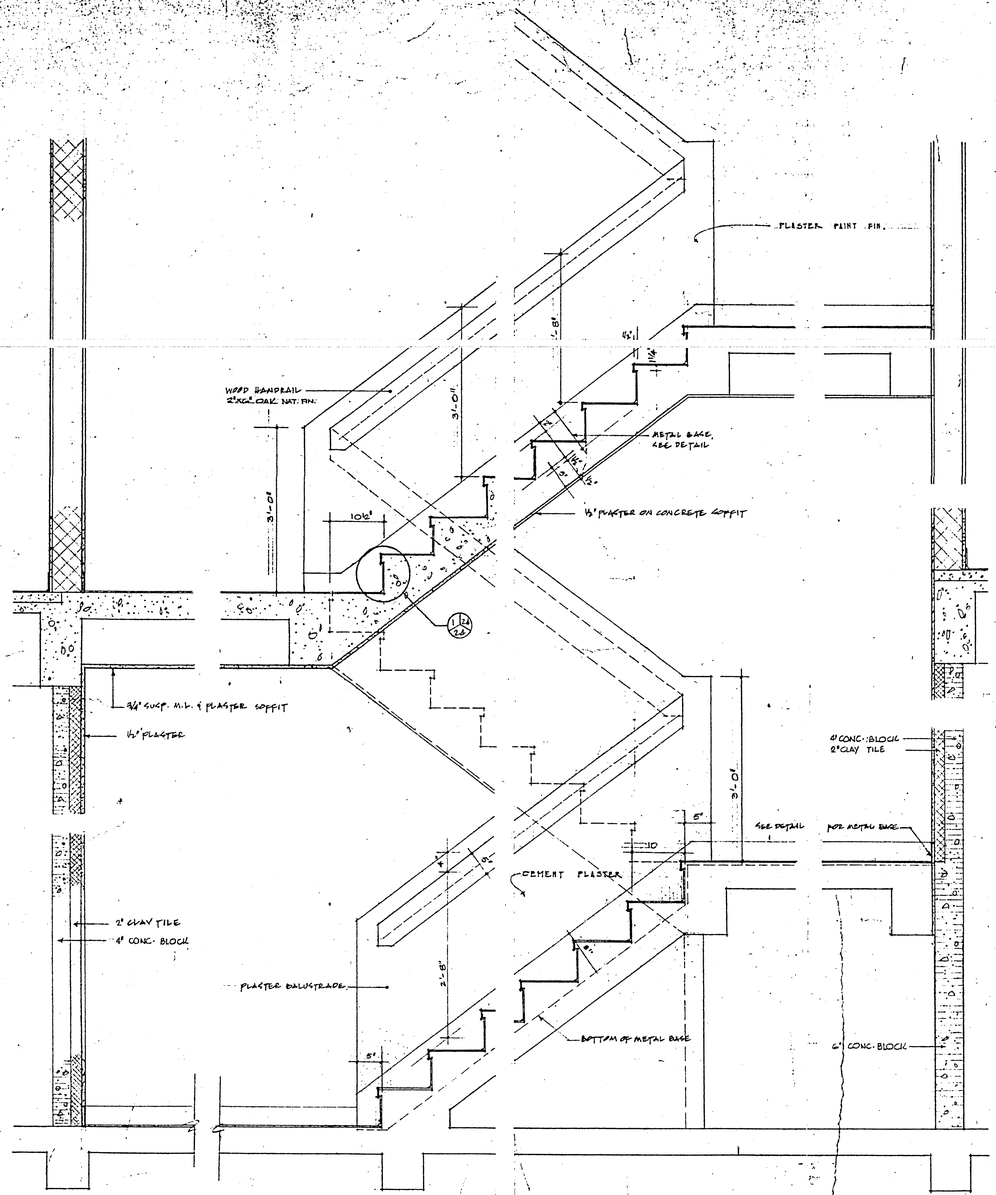
STAIR NO. 1 - SECTION
SCALE 1/4" = 1'-0"

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

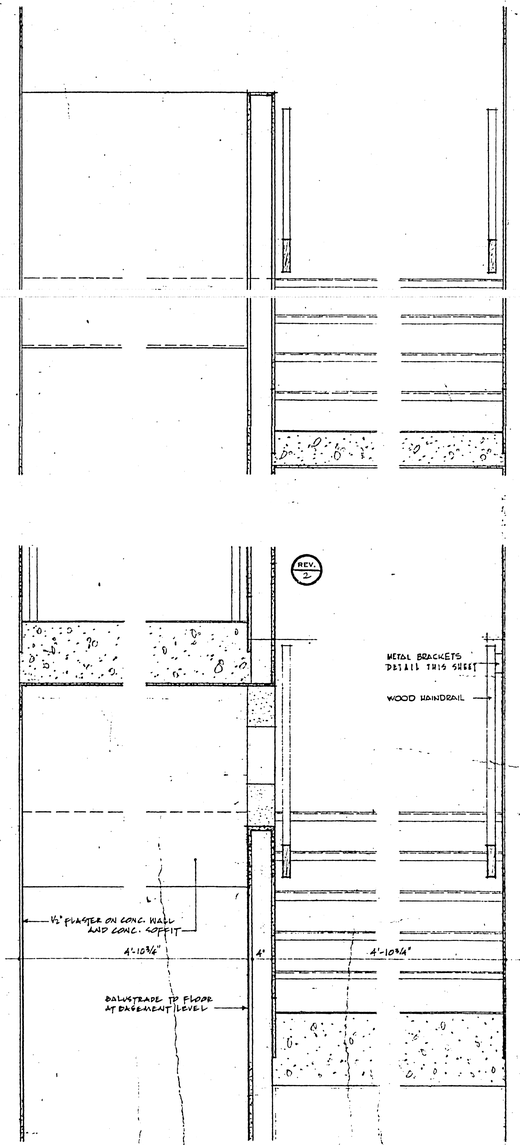
TITLE STAIR SECTIONS
SHEET NO. 6020 - A - 23

A-23
Stair Sections
Public Safety Bldg
project no
description

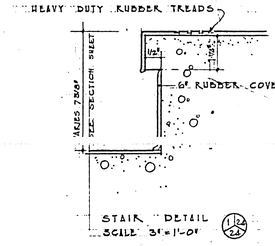
FOLD



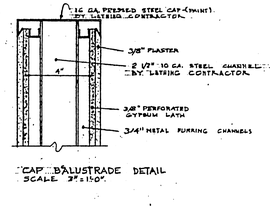
TYPICAL DETAIL SECTIONS
SCALE 1" = 1'-0"



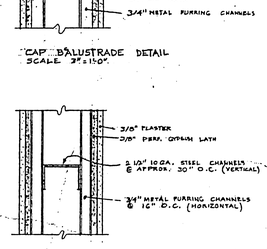
TYPICAL DETAIL SECTIONS
SCALE 1" = 1'-0"



STAIR DETAIL
SCALE 3" = 1'-0"



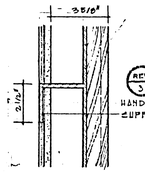
CAP BALUSTRADE DETAIL
SCALE 3" = 1'-0"



PLAN-SECTION THRU BALUSTRADE
SCALE 3" = 1'-0"

DETAIL OF HANDRAIL SUPPORT
SCALE 3" = 1'-0"

BALUSTRADE BASE DETAIL
SCALE 3" = 1'-0"



HANDRAIL BRACKET SUPPORT @ 4'-0" O.C.

PLAN SECTION OF HANDRAIL SUPPORT

GENERAL NOTES

ALL STAIR DIMENSIONS NOSING TO NOSING

No.	PARTICULARS	DATE	BY
3	GEN. REVISIONS	MAR. 10/65	L.E./M.L.
	CONTRACT AMENDMENT DEC 30 1964		
2	GEN. REISIONS BY APPENDA 16 DEC 64		
1	GENERAL	DEC 4/64	M.L.

REVISIONS

PROVINCE OF MANITOBA — LIBLING, MICHENER & ASSOCIATES — REGISTERED ARCHITECTS

CHECKED FOR
DESIGN
DETAILS
STRUCTURE E.L.
MECHANICAL
ELECTRICAL

PRINTING DATE MAY 14 1965

DRAWN BY C.S.

B-14
FILE
RETURN TO CIVIC PROPERTIES BUILDING INVENTORY.
4 01 1

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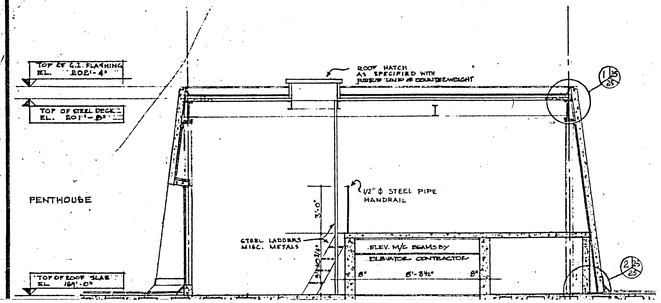
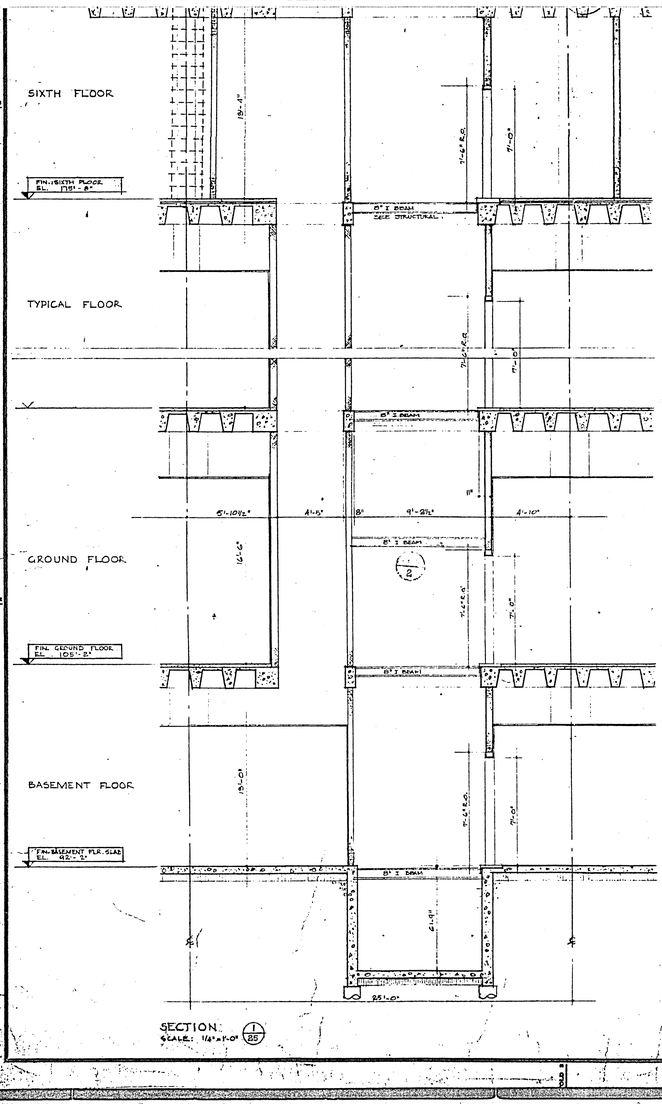
LIBLING MICHENER & ASSOCIATES ARCHITECTS
365 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 2-4481

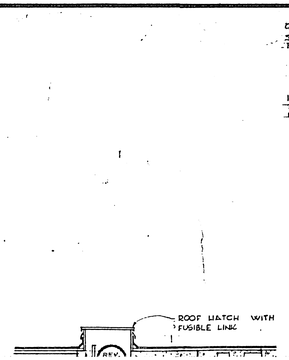
PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

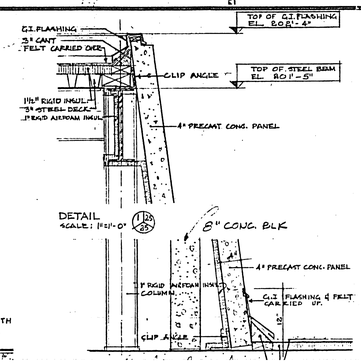
TITLE STAIR DETAILS
SHEET NO. 6020 - A - 24

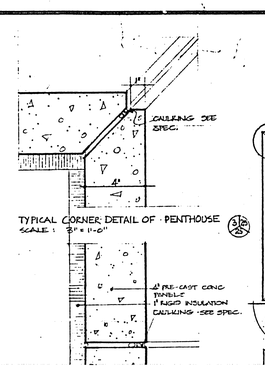
Public Safety Bldg

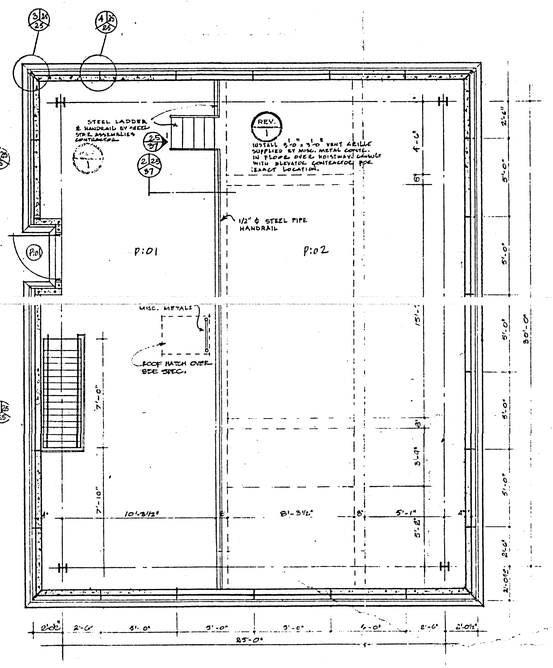












GENERAL NOTES

2. 8" I BM. ADDED BETWEEN MAIN & SECOND FLOOR MAY 25/66

1 GEN. REVISIONS. MAR. 10/69 L.P.M.

SUBSTRUCTURE REVISIONS OCT. 31/68

NO.	PARTICULARS	DATE	BY
REVISIONS			

PROVINCE OF MANITOBA LIBLING MICHENER ENGINEER ARCHITECT

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL

PRINTING DATE JUN 14 1965

DRAWN BY

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FILE
RETURN TO CIVIC PROPERTIES BUILDING INVENTORY.
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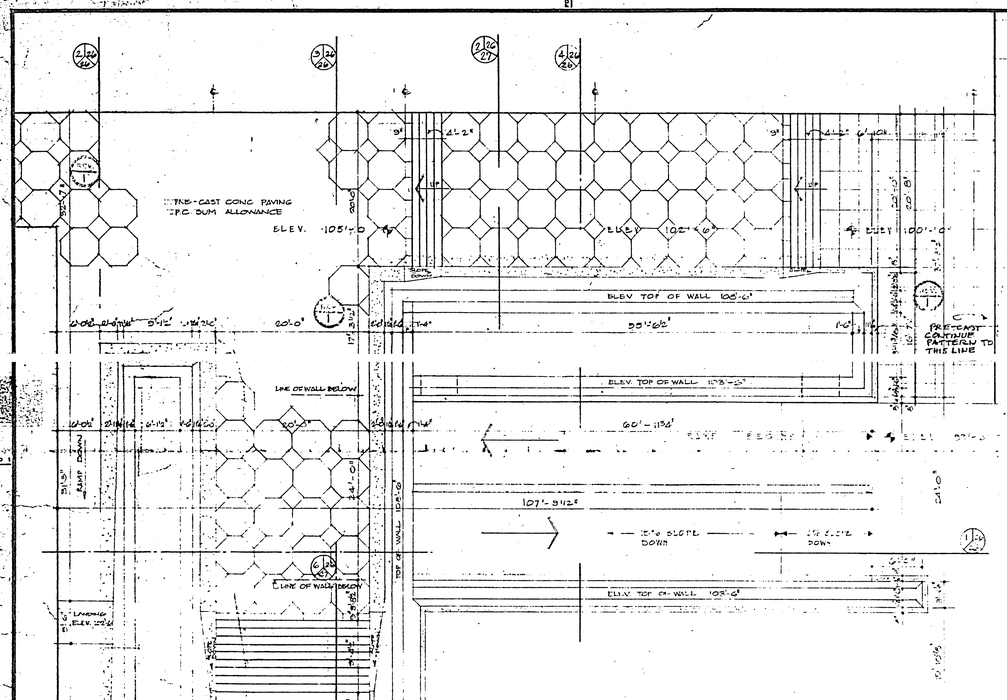
388 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 3-4491

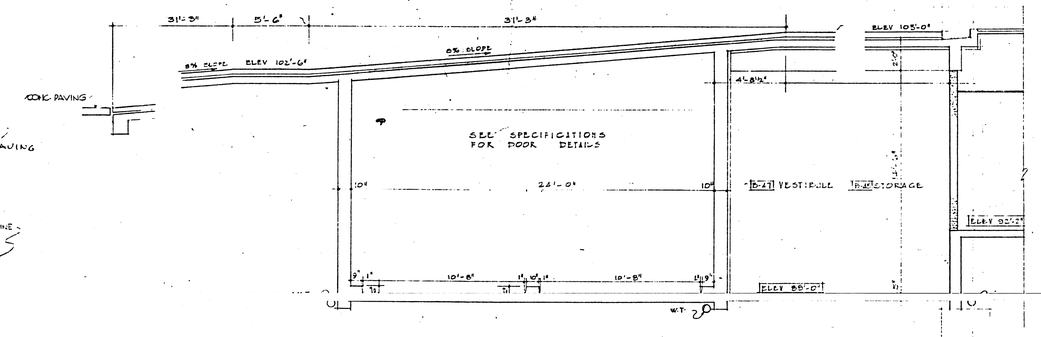
PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

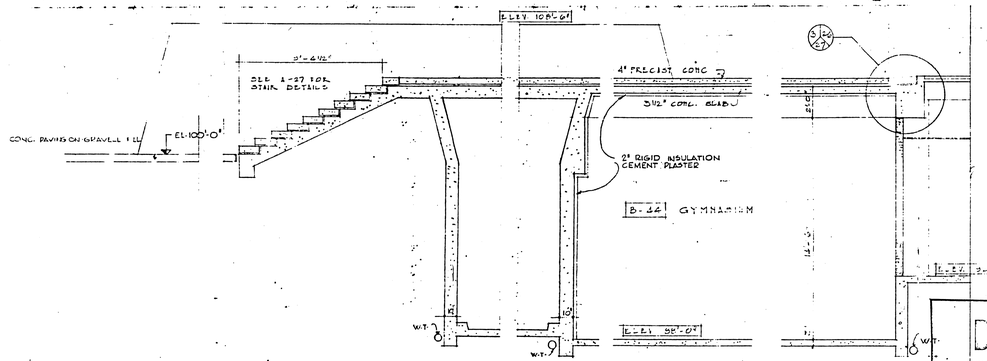
TITLE ELEVATOR & PENTHOUSE DETAILS

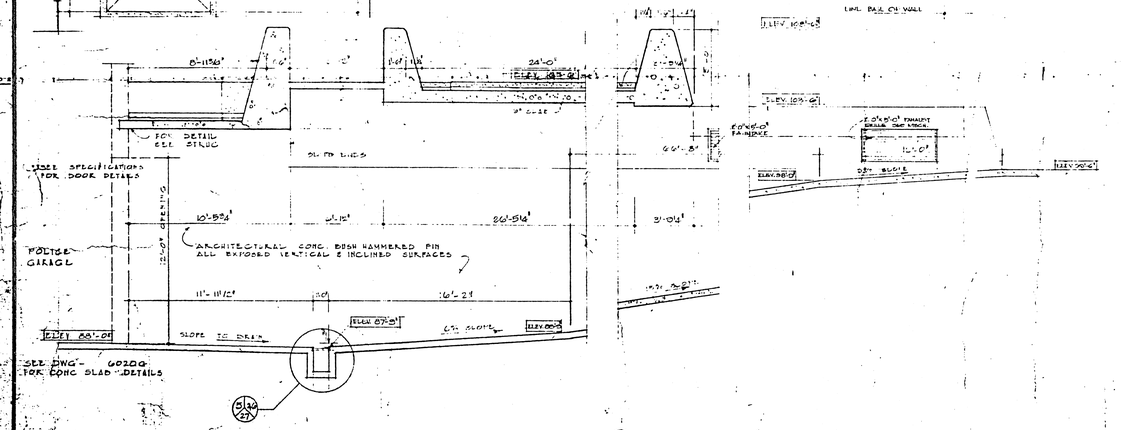
SHEET NO. 6020 - A - 25

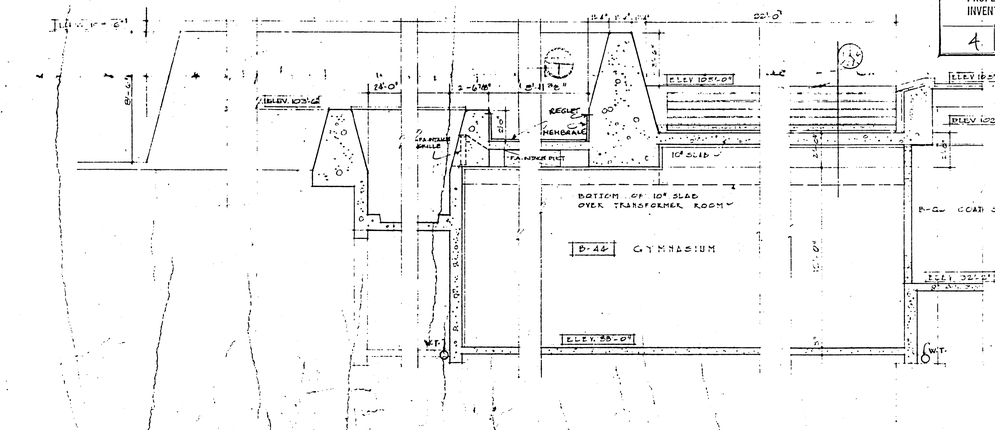
Public Safety Bldg
description











GENERAL NOTES

ARCHITECTURAL CONC. BUSH HAMMERED FIN ALL EXPOSED VERTICAL & INCLINED SURFACES.

No.	PARTICULARS	DATE	BY
	REVISIONS		
1	GEN REVISIONS BY ADDENDA 1 DEC 66 P.D.P.		

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL

PRINTING DATE JULY. 1965

DRAWN BY P.D.P.

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LIBLING MICHENER & ASSOCIATES, ARCHITECTS
365 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 2-6481

PROVINCE OF MANITOBA LIBLING, MICHENER REGISTERED ARCHITECTS

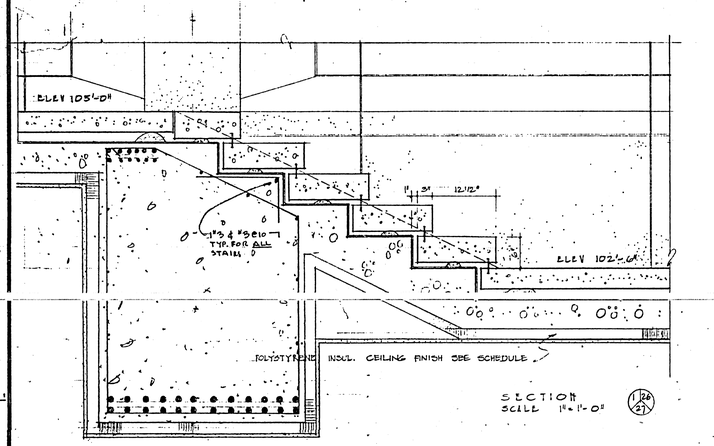
D-14 FILE
RETURN TO CIVIC PROPERTIES BUILDING INVENTORY.
4 01 1

THIS SEPIA OF ORIGINAL IS APR 14 1977

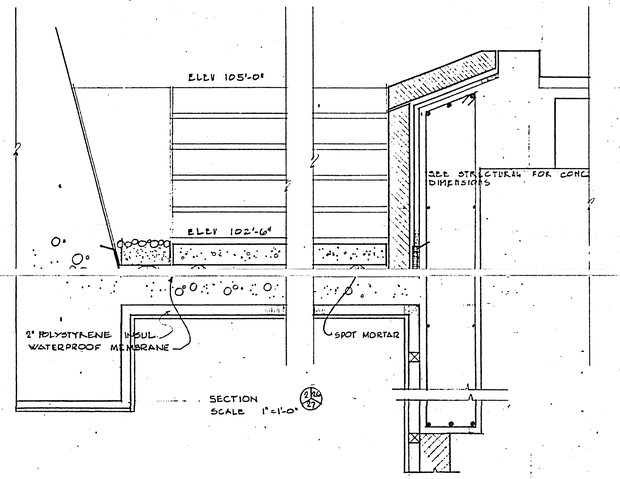
PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

TITLE EXTERIOR RAMP, PAVING PLANS & SECTIONS.
SHEET NO. 6020 - A - 26

Public Safety Bldg



SECTION
SCALE 1"=1'-0" (1/26/27)



SECTION
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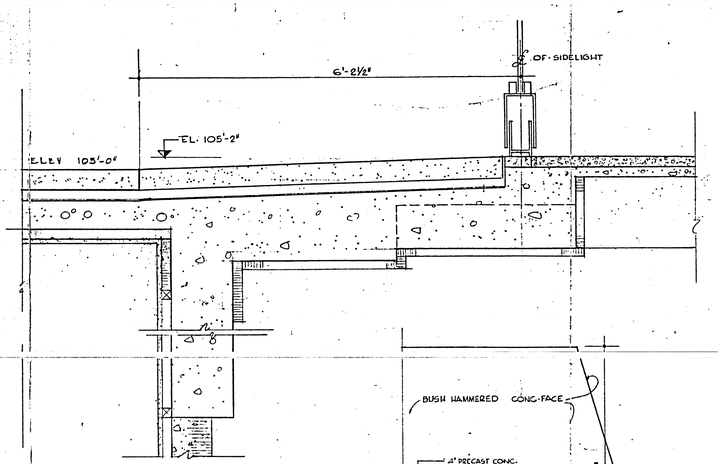
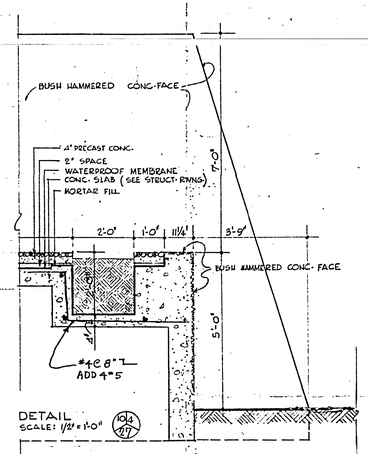
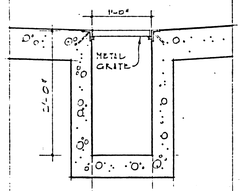


SECTION
SCALE 1"=1'-0" (3/26/27)



DETAIL
SCALE: 1½"=1'-0" (4/26/27)



DETAIL
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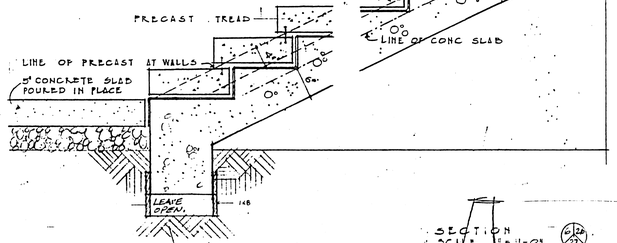
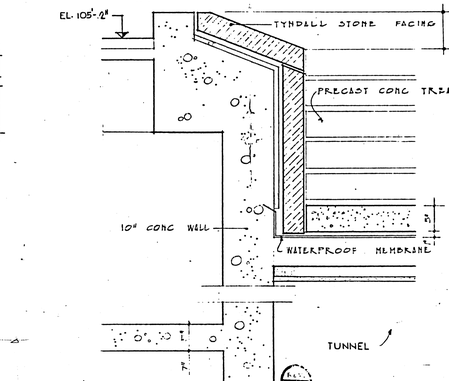


SECTION
SCALE 1/4"=1'-0" (6/26/27)

SECTION
SCALE 1"=1'-0" (6/26/27)



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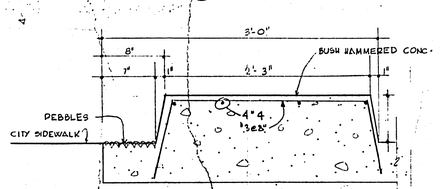

SECTION
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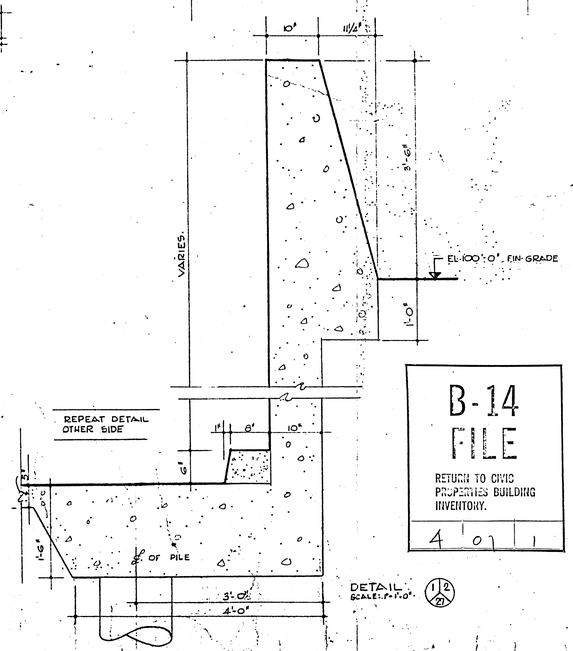

DETAIL
SCALE: 1"=1'-0" (1/8/27)

GENERAL NOTES

CONTRACT AWARDED APRIL 2, 1964

1 GEN REVISIONS BY ADDENDA 1 DEC 64 ADD.

No.	PARTICULARS	DATE	BY
REVISIONS			

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE R.L.
MECHANICAL
ELECTRICAL

PRINTING DATE MAY 14 1965

DRAWN BY F.D.F. Z.I.

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388 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 3-4431

B-14
FILE
RETURN TO CIVIC PROPERTIES BUILDING INVENTORY.
4 07 1

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

TITLE RAMP & PAVING DETAILS
SHEET NO. 6020-A-27

FOLD 1 FOLD 2 Public Safety Bldg.

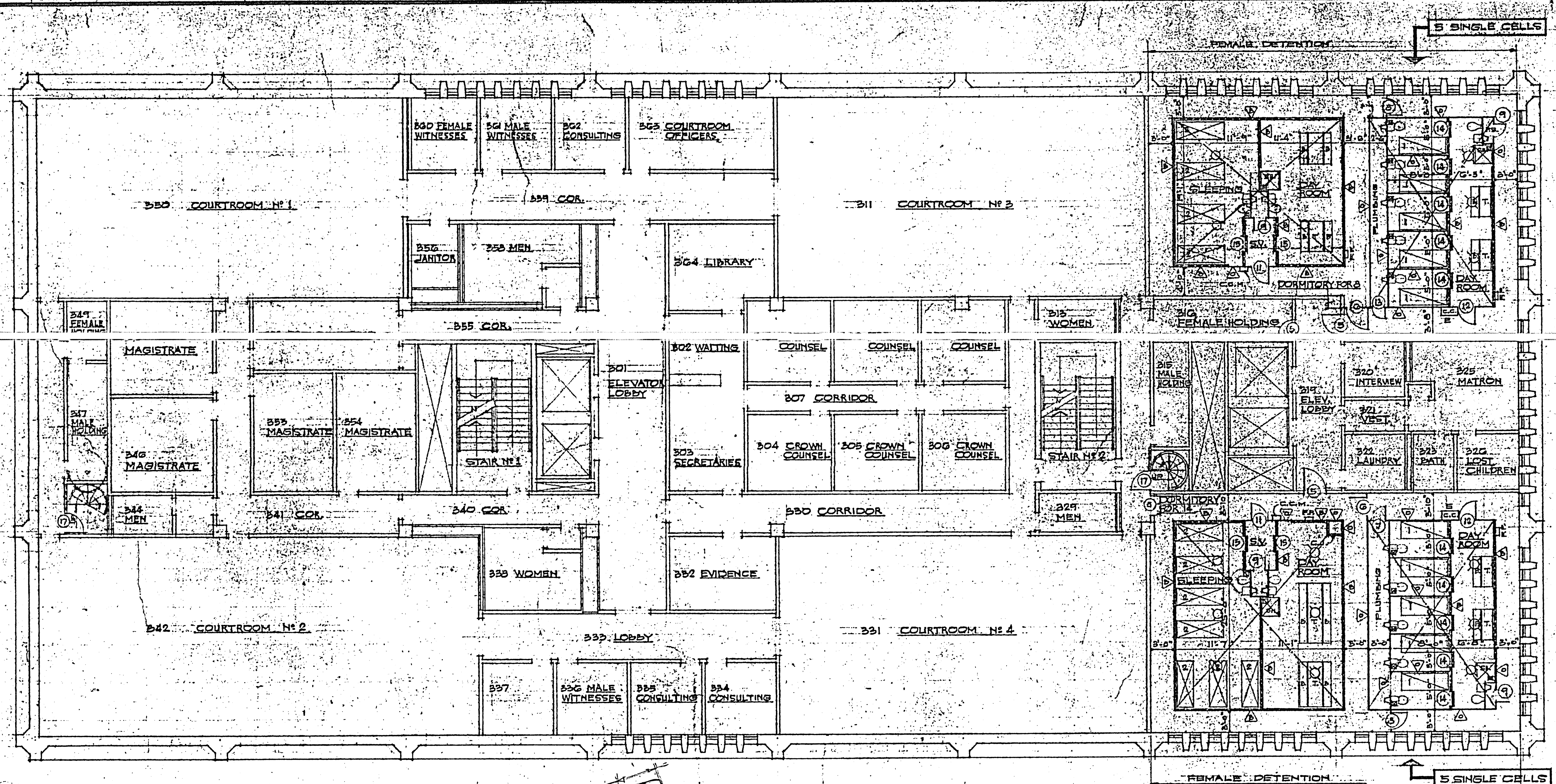
SCHEDULE OF JAIL DOORS

DOOR MARK	JAMB TYPE	SIZE	MATERIAL	MATERIAL: 3/16" O.H. PLATE	MATERIAL	MATERIAL: TYPE 'B' GRATING	LOCK	EQUIPMENT: OBSERVATION PANEL	EQUIPMENT: SPEAKING DEVICE	EQUIPMENT: FOOD PASS	EQUIPMENT: SHUTTER	EQUIPMENT	EQUIPMENT: DOOR STOPS	REMARKS
(2)	A	3'-0"x6'-8"		●			2-WAY	●					●	
(5)	A	3'-0"x6'-8"		●			2-WAY	●					●	
(6)	H	3'-0"x6'-8"		●			2-WAY	●					●	
(7)	H	2'-0"x6'-0"		●			1-WAY							
(8)	H	2'-4"x6'-8"		●			2-WAY	●						
(9)	C	1'-8"x4'-0"		●			1-WAY							
(11)	H	2'-4"x6'-0"		●			1-WAY	●						
(12)	D	2'-4"x7'-0"		●			KEYLESS	●	●		●			SEE DOOR OPERATION NOTE Nº 1
(13)	H	1'-8"x6'-0"		●			1-WAY							
(14)	E	2'-1"x4'-0"				●	KEYLESS							SEE DOOR OPERATION NOTE Nº 2
(15)	*	2'-2"x6'-0"				●	KEYLESS							SEE DOOR OPERATION NOTE Nº 3
(17)	A	2'-4"x6'-8"		●			2-WAY	●					●	
(18)	H	2'-0"x6'-8"		●			2-WAY	●					●	
(19)	A	3'-0"x6'-8"		●			2-WAY	●					●	
(20)	H	2'-4"x6'-8"		●			1-WAY	●	●		●			
(21)	B	2'-4"x6'-8"		●			SPECIAL	●			●		●	DOORS Nº 21 AND 22 TO BE LOCKED AND UNLOCKED BY
(22)	B	2'-4"x6'-8"		●			SPECIAL	●			●		●	VERTICAL LOCK BAR OPERATED FROM WITHIN LOCK BOX.
(23)	F	1'-2"x6'-0"		●			1-WAY						●	
(24)	A	2'-4"x6'-8"		●			1-WAY	●					●	

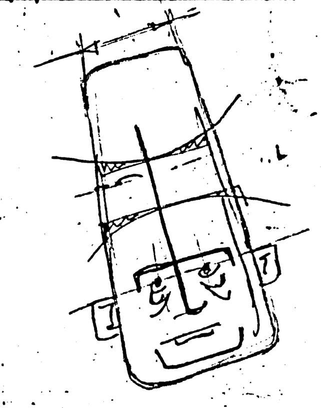
DOOR OPERATION NOTES:

1. DOORS NUMBERED (12) ARE LOCKED AND UNLOCKED FROM WITHIN CONTROL CABINET.
2. DOORS NUMBERED (14) ARE LOCKED, UNLOCKED AND OPERATED BY DUAL ELECTRIC/MANUAL MEANS FROM CONTROL CABINET.
3. DOORS NUMBERED (15) ARE LOCKED, UNLOCKED AND OPERATED BY MANUAL MEANS FROM CONTROL CABINET.

* JAMBS FOR DOORS NUMBERED (15) TO BE CONSTRUCTED OF SPECIAL STEEL SHAPES FOR SLIDING GRATING DOORS.



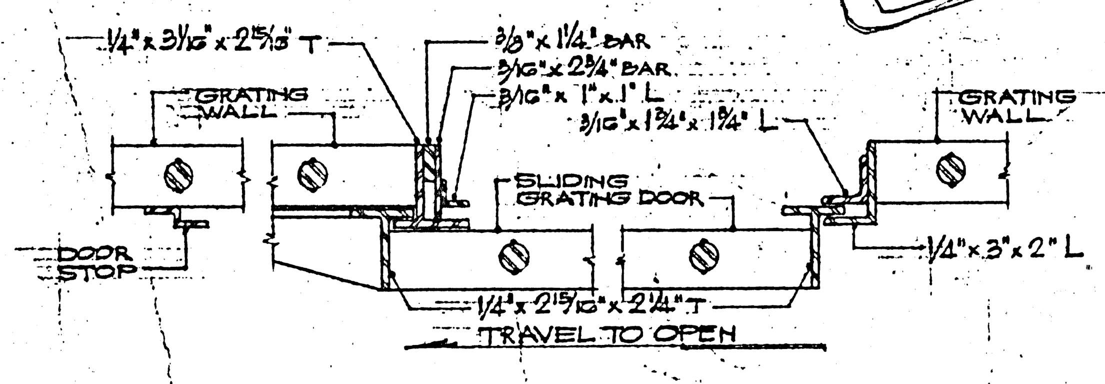
THIRD FLOOR PLAN
SCALE: 1/8" = 1'-0"



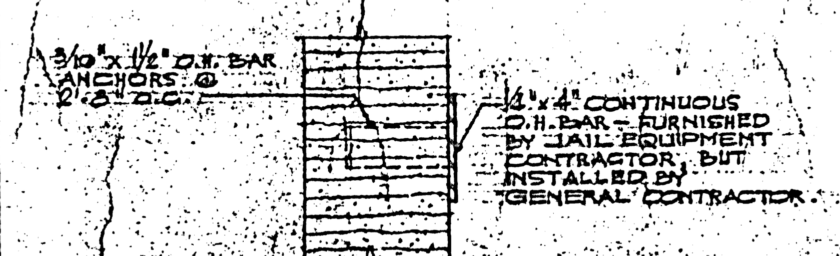
LEGEND FOR JAIL EQUIPMENT

- 3/16" OPEN HEARTH STEEL PLATE
- TYPE 'B' GRATING
- SWINGING PLATE DOOR
- SLIDING GRATING DOOR
- ONE BUNK
- TWO BUNKS
- TABLE WITH ONE BENCH
- TABLE WITH TWO BENCHES
- SHOWER STALL
- ELECTRIC LIGHT ASSEMBLY IN PLATE WALL
- TYPICAL VISITING PANELS
- FOOD PASS IN GRATING WALL (F.P.)
- COLUMN JACKET (C.J.)
- CONTROL CABINET (DUAL ELECTRIC/MANUAL) (C.C.E.)
- CONTROL CABINET (MANUAL) (C.C.M.)
- 3/16" OPEN HEARTH STEEL PLATE CEILING (FOURTH FLOOR ONLY)
- NO.10 GA. OPEN HEARTH STEEL PLATE CEILING (THIRD FLOOR ONLY)
- ELECTRIC LIGHT ASSEMBLY IN PLATE CEILING.

LEGEND FOR JAIL



SECTION THRU JAMB TYPE "E" — FOR SLIDING GRATING CELL DOORS NUMBERED (14) — LOCKED, UNLOCKED AND OPERATED BY DUAL ELECTRIC/MANUAL MEANS FROM CONTROL CABINET.



DETAIL-BAR FOR ANCHORING STEEL JAIL WALLS TO BUILDING WALLS
SCALE: 1 1/2" = 1'-0"

GENERAL NOTES:

1. GENERAL CONTRACTOR SHALL INSTALL ALL JAIL EQUIPMENT TO BE SET IN MASONRY OR CONCRETE WORK, SUCH AS: STEEL DOOR FRAMES, ANCHOR BARS, ANCHOR BOLTS, ETC., IN ACCORDANCE WITH THE DETAILED DRAWINGS. THIS MATERIAL SHALL BE FURNISHED AND DELIVERED TO THE JOB SITE BY THE JAIL EQUIPMENT CONTRACTOR, TOGETHER WITH APPROVED SETTING DIAGRAMS IN TIME SO AS NOT TO DELAY PROGRESS OF THE WORK.
2. GENERAL CONTRACTOR SHALL PROVIDE OPENING OF NOT LESS THAN 6'-0" x 8'-0" IN EXTERIOR WALL OF BUILDING ON EACH JAIL FLOOR FOR INGRESS OF JAIL EQUIPMENT.
3. GENERAL CONTRACTOR SHALL BE ENTIRELY RESPONSIBLE FOR ACCURACY OF BUILDING CONSTRUCTION, SUCH AS: LOCATIONS OF COLUMNS, CONCRETE AND MASONRY WALLS AND FOR ACCURACY IN CONCRETE AND MASONRY WORK. ANY CHIPPING OF CONCRETE OR POINTING UP BETWEEN THE JAIL STEEL AND THE BUILDING CONSTRUCTION THAT MAY BE NECESSARY DUE TO UNEVENNESS OF CONCRETE SHALL BE DONE BY THE GENERAL CONTRACTOR.
4. GENERAL CONTRACTOR SHALL PROVIDE WATER-PROOFING MEMBRANE, FLOOR FINISH AND CURBS UNDER STEEL JAIL WALLS AFTER THE JAIL EQUIPMENT HAS BEEN ERECTED IN PLACE.
5. JAIL EQUIPMENT CONTRACTOR SHALL CUT ALL NECESSARY HOLES IN JAIL STEEL FOR THE MECHANICAL AND ELECTRICAL SUB-CONTRACTORS IN THE FIELD, BUT ALL SUB-CONTRACTORS REQUIRING SUCH HOLES SHALL LOCATE AND SCRIBE ALL HOLES WITH CENTER-PUNCH MARKS BEFORE ERECTION OF JAIL WORK IS COMPLETED.
6. ELECTRICAL SUB-CONTRACTOR SHALL FURNISH AND INSTALL ALL CONDUIT AND WIRING REQUIRED FROM SOURCE OF POWER TO JUNCTION BOX LOCATE IN THE LOWER COMPARTMENT OF ALL DUAL ELECTRIC/MANUAL CONTROL CABINETS FOR THE ELECTRIC/MANUAL OPERATION OF SLIDING DOORS. (MOTOR IN EACH CONTROL CABINET OF THIS TYPE IS 1/2 HORSEPOWER, 208/220/440 VOLT, 3 PHASE, 60 CYCLE). ELECTRICAL SUB-CONTRACTOR SHALL MAKE ALL NECESSARY ELECTRICAL CONNECTIONS FOR THESE ITEMS, INCLUDING CONNECTIONS TO SOURCE OF ELECTRICAL POWER. THE ELECTRICAL SUB-CONTRACTOR SHALL ALSO FURNISH AND INSTALL ALL CONDUIT, WIRING AND LAMPS AND SHALL MAKE ALL NECESSARY ELECTRICAL CONNECTIONS FOR THE JAIL TYPE ELECTRIC LIGHT ASSEMBLIES.
7. JAIL EQUIPMENT CONTRACTOR SHALL FURNISH AND INSTALL ALL JAIL TYPE STEEL SHOWERS AND SHALL FURNISH THE SHOWER DRAINS FOR THESE SHOWERS, BUT THE PLUMBING SUB-CONTRACTOR SHALL INSTALL THE SHOWER DRAINS AND HE SHALL ALSO FURNISH AND INSTALL ALL OTHER PLUMBING MATERIAL SUCH AS: GASKETS FOR THE SHOWER DRAINS, SHOWER HEADS, VALVES, PIPE, ETC., REQUIRED FOR THE JAIL TYPE STEEL SHOWERS.
8. JAIL EQUIPMENT SHALL BE PAINTED ONE COAT OF RED OXIDE PRIMER BEFORE SHIPMENT FROM FACTORY. ALL CLEANING, TOUCHING UP AND FIELD PAINTING OF JAIL EQUIPMENT SHALL BE DONE BY GENERAL CONTRACTOR AFTER THE JAIL EQUIPMENT IS ERECTED IN PLACE.
9. ALL FIELD WELDS SHALL BE SKIP WELDS 1" LONG, SPACED APPROXIMATELY 1'-0" APART, STAGGERED.

B-14 FILE
RETURN TO CITY PROPERTIES BUILDING INVENTORY
A 01 1

Public Safety Bldg

GENERAL NOTES

CONTRACT AWARDED DEC 30 1964

No.	PARTICULARS	DATE	BY

REVISIONS

PROVINCE OF MANITOBA — LIBLING, MICHENER — REGISTERED ARCHITECT

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL

PRINTING DATE MAY 14 1965

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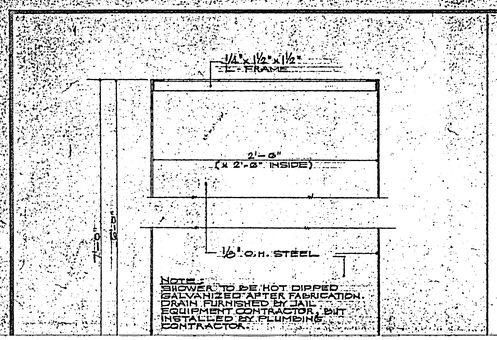
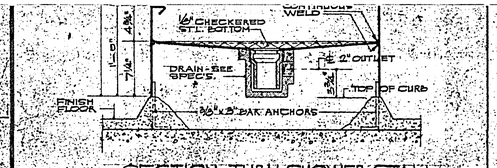
LIBLING MICHENER & ASSOCIATES ARCHITECTS
348 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 2-4491

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG, MANITOBA

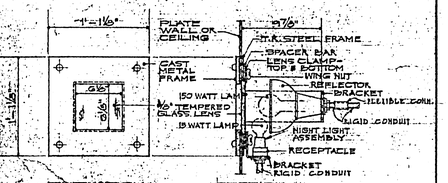
TITLE THIRD FLOOR LAYOUT - JAIL EQUIPMENT
SHEET No. 6020-A-28



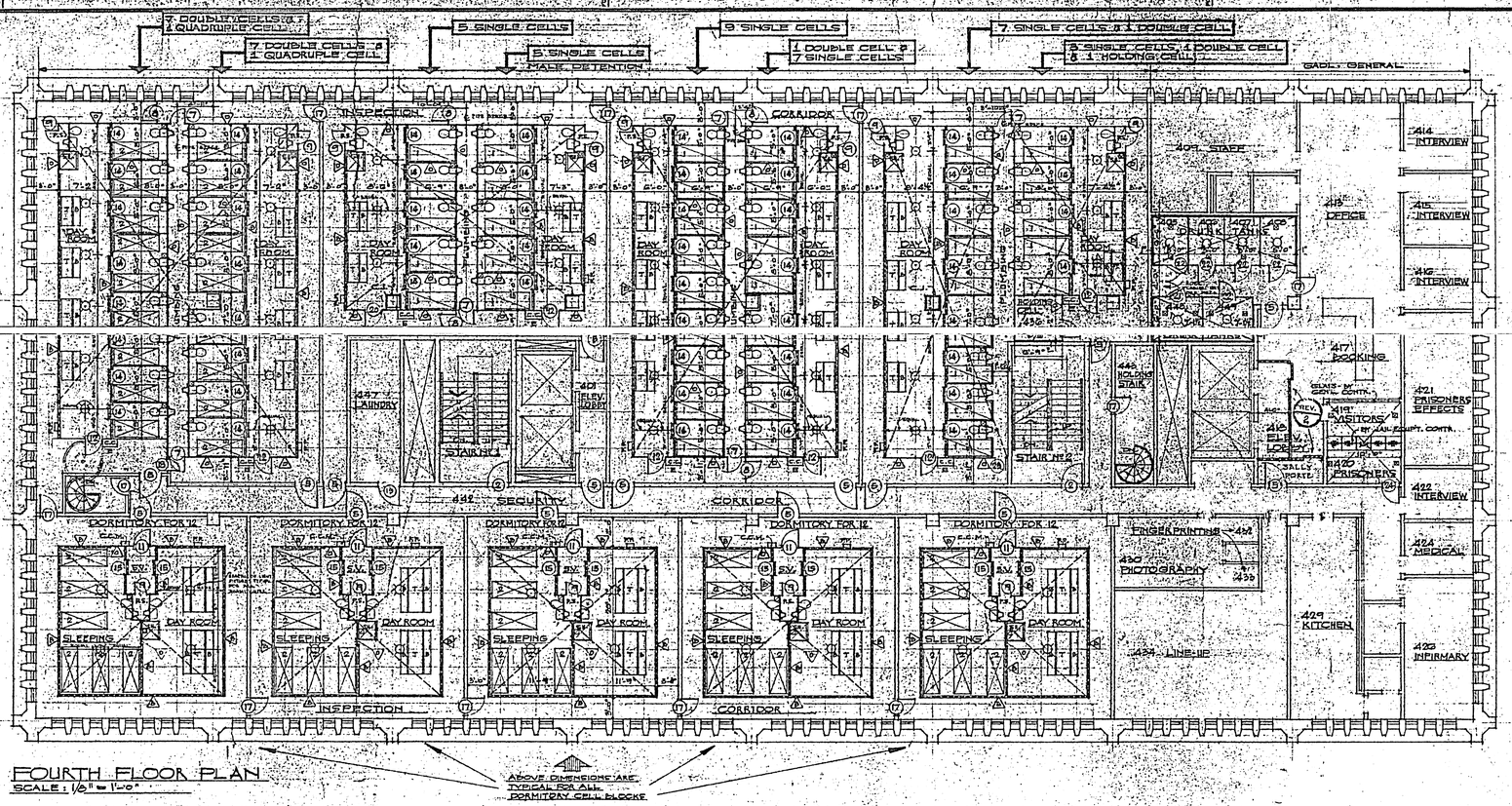


SECTION THRU SHOWER STALL
SCALE: 1½" = 1'-0"

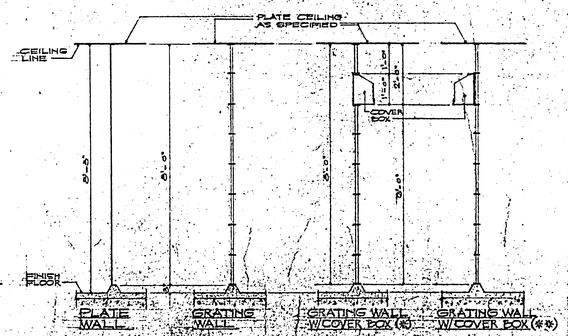
NOTE: - TYPE ELECTRIC LIGHT ASSEMBLIES FURNISHED AND INSTALLED BY JAIL EQUIPMENT CONTRACTOR; CONDUIT, WIRING, LAMPS AND ELECTRICAL CONNECTIONS BY ELECTRICAL CONTRACTOR. REFLECTOR AND SOCKETS TO BE AS MANUFACTURED BY: QUADRANGLE MANUFACTURING CO.; 52 SOUTH PEORIA ST.; CHICAGO, ILL.



ELECTRIC LIGHT ASSEMBLY
SCALE: 1½" = 1'-0"

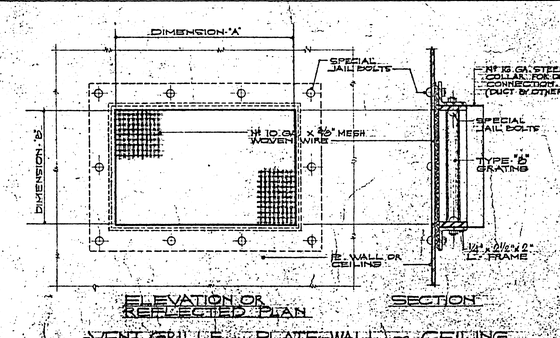


FOURTH FLOOR PLAN
SCALE: 1/8" = 1'-0"



TYPICAL SECTIONS THRU STEEL JAIL WALLS
SCALE: ¾" = 1'-0"

(*) - FOR DOORS OPERATED FROM DIAL ELECTRIC / MANUAL CONTROL CABINETS
(**) - FOR DOORS OPERATED FROM MANUAL CONTROL CABINETS



VENT GRILLE IN PLATE WALL OR CEILING
DO NOT SCALE

SCHEDULE OF VENT GRILLES

MARK	DIMENSIONS "A"	DIMENSIONS "B"	MARK	DIMENSIONS "A"	DIMENSIONS "B"
⊠	10"	6"			
⊠	10"	10"			
⊠	12"	12"			

GENERAL NOTES

E. ERICSON @ 418 EL. LOBBY (SALLY PORT) JAIL EQUIP. CONTRACT

CONTRACT AWARDED DEC 3 0 1954

No.	PARTICULARS	DATE	BY
	REVISIONS		

PROVINCE OF MANITOBA — LIBLING, MICHENER — REGISTERED ARCHITECTS

CHECKED FOR: DESIGN, DETAILS, STRUCTURE, MECHANICAL, ELECTRICAL

PRINTING DATE: APR 4 1955

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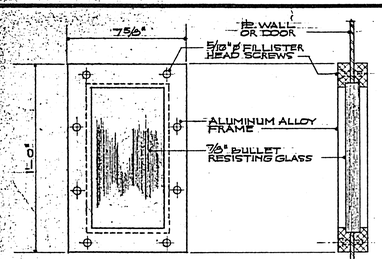
352 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 4-6611

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

TITLE: FOURTH FLOOR LAYOUT - JAIL EQUIPMENT
SHEET NO. 6020 - A - 29

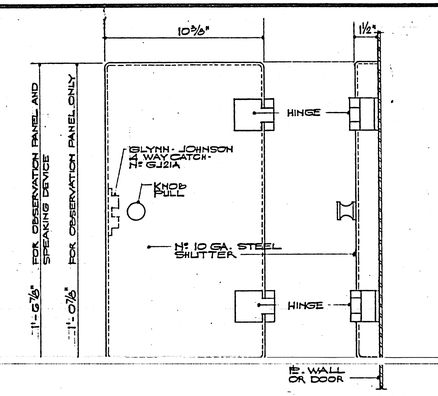
ISSUED
YSI Princess
address
project no. A-29
drawing no. 4th floor layout - Jail Equipt
description Public Safety Bldg



ELEVATION SECTION

OBSERVATION PANEL

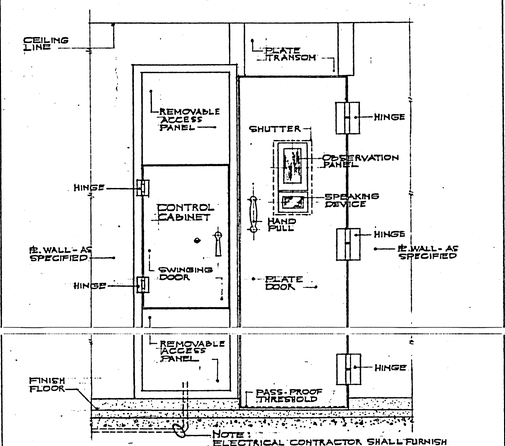
SCALE: 3"=1'-0"



FRONT VIEW SIDE VIEW

STEEL SHUTTER

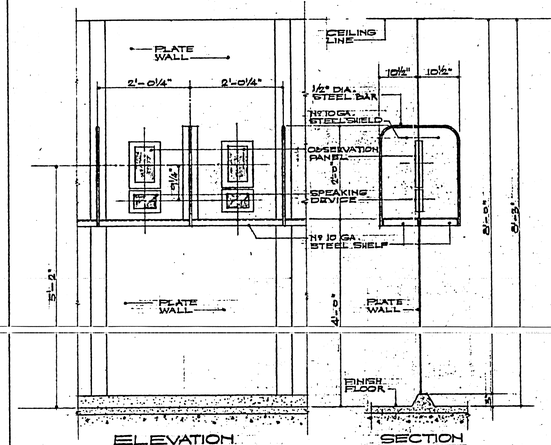
SCALE: 3"=1'-0"



NOTE:
ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY CONDUIT AND WIRING FROM SOURCE OF POWER TO BOTTOM OF CONTROL CABINET AND SHALL MAKE ALL FINAL ELECTRICAL CONNECTIONS. MOTOR IS ½ H.P., 208/220/440 V, 3 PH., 60 CY.

ELEVATION OF DUAL (ELECTRIC/MANUAL) CONTROL CABINET AND PLATE DOOR TO CELL AREA.

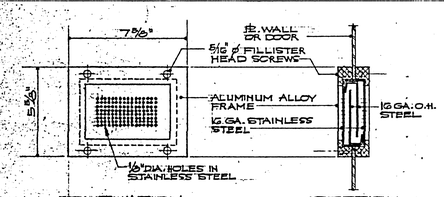
SCALE: 3/4"=1'-0"



ELEVATION SECTION

TYPICAL VISITING PANELS BETWEEN SPACES 419 AND 420

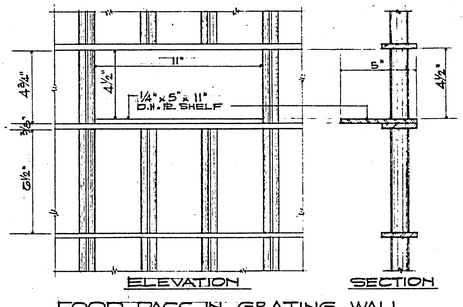
SCALE: 3/4"=1'-0"



ELEVATION SECTION

SPEAKING DEVICE

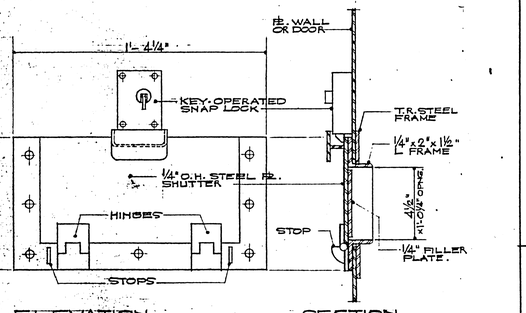
SCALE: 3"=1'-0"



ELEVATION SECTION

FOOD PASS IN GRATING WALL

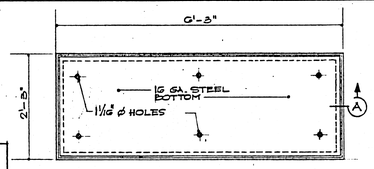
SCALE: 3"=1'-0"



ELEVATION SECTION

FOOD PASS IN PLATE WALL OR DOOR

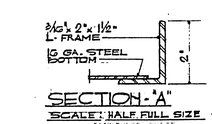
SCALE: 3"=1'-0"



PLAN OF BUNK

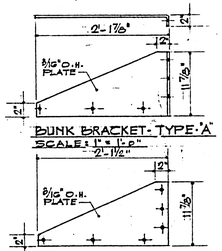
SCALE: 3/4"=1'-0"

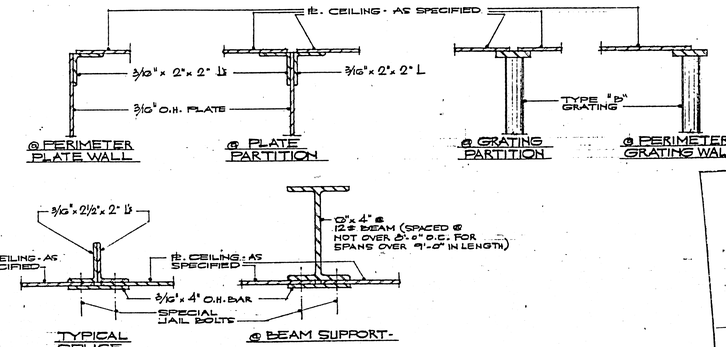
BUNK AND BUNK BRACKET DETAILS



SECTION-"A"

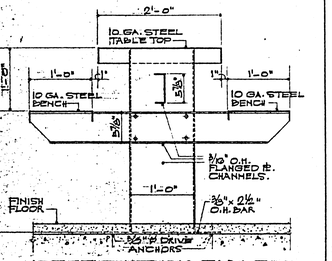
SCALE: HALF FULL SIZE





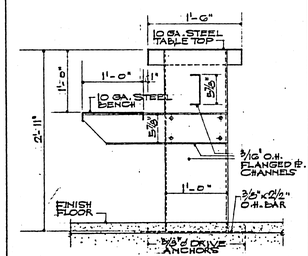
TYPICAL DETAILS OF STEEL PLATE CEILING CONNECTIONS

SCALE 1 3/16"=1"



SECTION THRU TABLE WITH TWO BENCHES

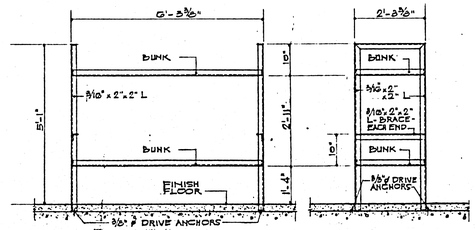
SCALE: 1"=1'-0"



SECTION THRU TABLE WITH ONE BENCH

SCALE: 1"=1'-0"

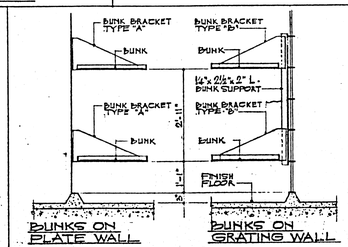
NOTE:
BUNK BRACKETS TYPE "A" ARE FOR BUNKS ON PLATE WALLS.
BUNK BRACKETS TYPE "B" ARE FOR BUNKS ON GRATING WALLS.



SIDE ELEVATION END ELEVATION

DETAILS OF "FREE STANDING" BUNKS

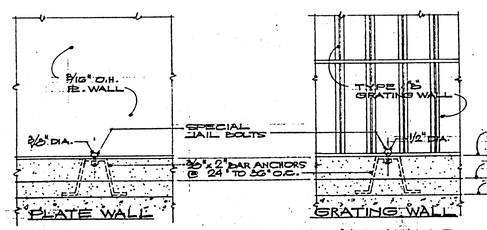
SCALE: 1/2"=1'-0"



BUNKS ON PLATE WALL BUNKS ON GRATING WALL

BUNK SUPPORT DETAILS

SCALE: 1½"=1'-0"



FLOOR ANCHORS FOR STEEL JAIL WALLS

SCALE: 1½"=1'-0"

GENERAL NOTES

No.	PARTICULARS	DATE
REVISIONS		

PROVINCE OF MANITOBA — LIESUM — MICHENER — REGISTERED ARCHITECTS

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL

PRINTING DATE

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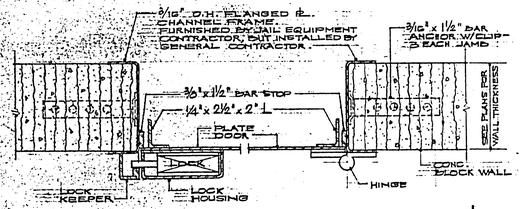
261 Main Street, Winnipeg 2, Manitoba, Telephone WHitehall 2-4811

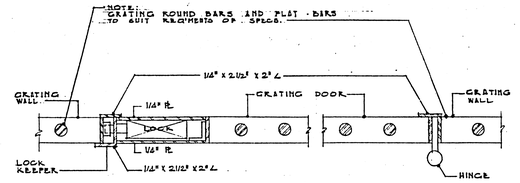
PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG, MANITOBA

TITLE JAIL EQUIPMENT DETAILS
SHEET NO. 6020-A-30

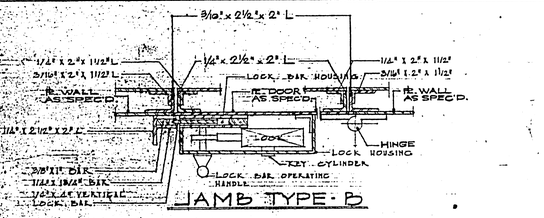
Jail Equipment Details
Public Safety Building



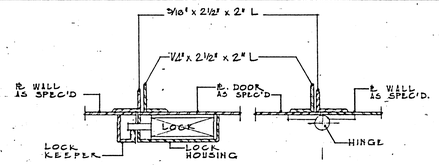
JAMB TYPE - A



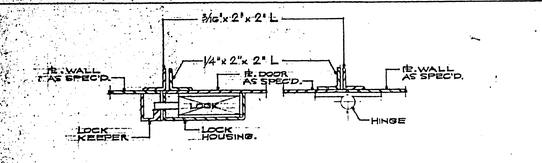
JAMB SECTION - SWINGING GRATING DOOR



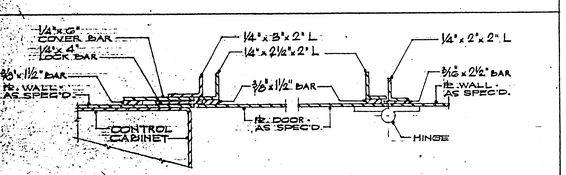
JAMB TYPE - B



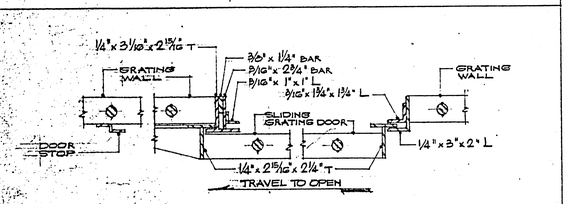
JAMB TYPE - H



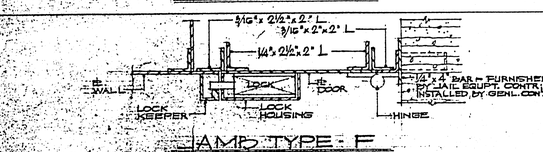
JAMB TYPE - C



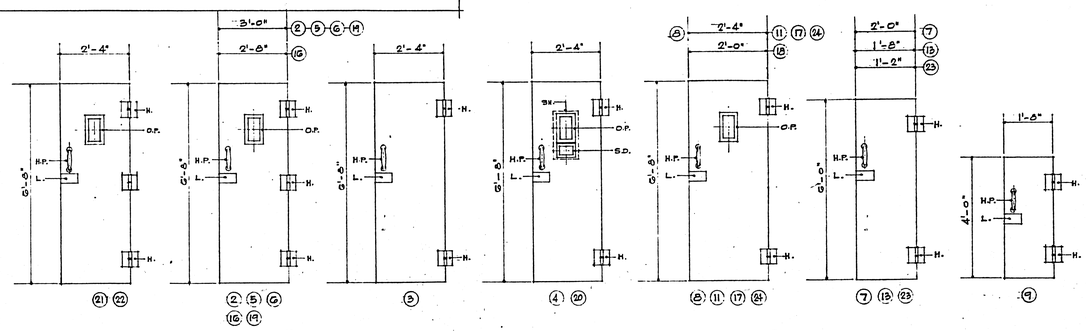
JAMB TYPE - D



JAMB TYPE - E



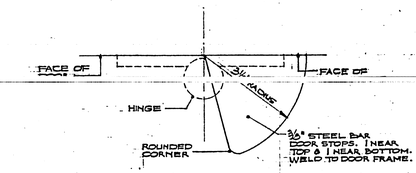
JAMB TYPE - F



EQUIPMENT ABBREVIATIONS USED ON JAIL DOOR ELEVATIONS:

H.P. - HAND PULL	S.D. - SPEAKING DEVICE
L. - LOCK	F.P. - FOOD PASS
SH. - SHUTTER	H. - HINGE.
O.P. - OBSERVATION PANEL	

ELEVATIONS OF JAIL DOORS.



DETAIL OF STEEL STOP FOR JAIL DOORS

SCALE : HALF FULL SIZE

GENERAL NOTES

No.	PARTICULARS	DATE	BY
REVISIONS			

PROVINCE OF MANITOBA LIBLING MICHENER ARCHITECT REGISTERED ARCHITECT

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MECHANICAL
ELECTRICAL

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LIBLING MICHENER & ASSOCIATES ARCHITECTS
303 Main Street, Winnipeg 1, Manitoba, Telephone 942-0461

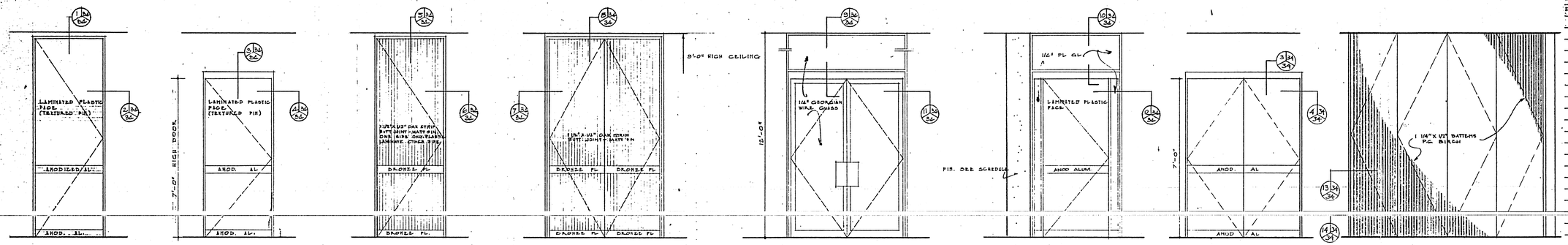
B-14
FILE
RETURN TO CITY PROPERTIES BUILDING INVENTORY.
4 - 0 1 1

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG - MANITOBA

TITLE: JAIL EQUIPMENT DETAILS

SHEET NO. 6020 - A - 31

ASI Princess
A-31
Detail Equipment Details
Public Safety Bldg



TYPE A
F.W. GARDINER NE PLUS ULTRA
TYPE J. (HOLLOW METAL)

TYPE B
F.W. GARDINER NE PLUS ULTRA
TYPE K (HOLLOW METAL)

TYPE C

TYPE D

TYPE E

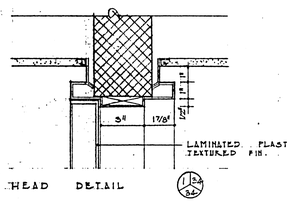
TYPE F
F.W. GARDINER NE PLUS ULTRA

TYPE G (PLASTIC LAMINATE)
TYPE L (HOLLOW METAL)

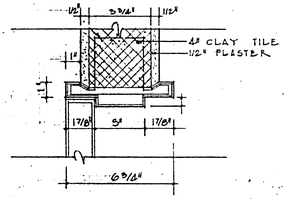
TYPE H NORTH & SOUTH ELECT PANELS

ENTRANCE TYPES

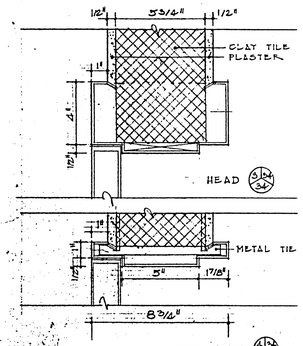
SCALE 1/2" = 1'-0"



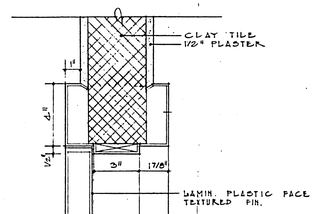
HEAD DETAIL 1 3/4 5A



JAMB DETAIL 2 3/4 5A 4 3/4 5A
SCALE 3" = 1'-0"



JAMB 5 3/4 5A



HEAD DETAIL
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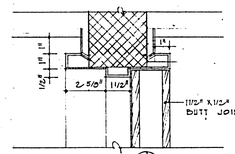
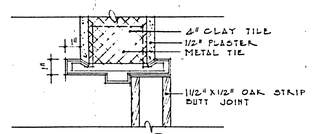


HEAD DETAIL 5 3/4 5A



JAMB DETAIL 6 3/4 5A

DETAILS - TYPE C
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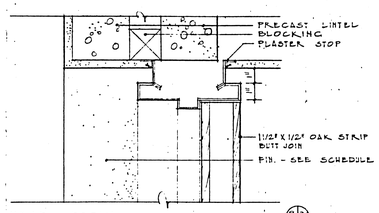
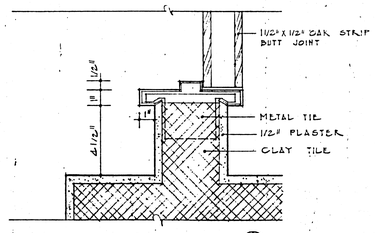


HEAD DETAIL 8 3/4 5A

JAMB - SIDE ENTRY 7 3/4 5A



JAMB - MAIN ENTRY 7 3/4 5A

DETAILS - TYPE D
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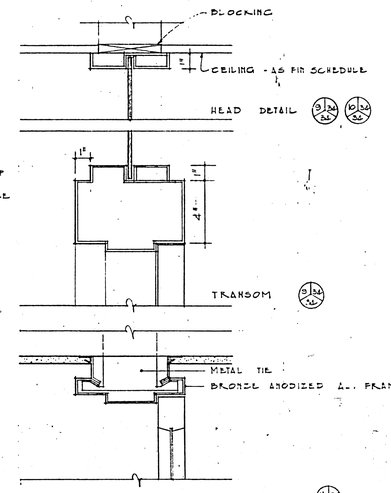
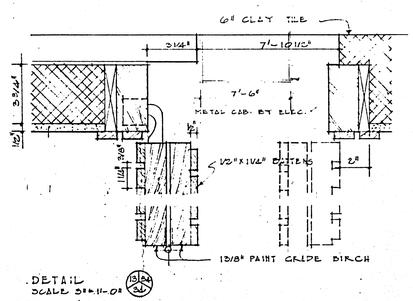
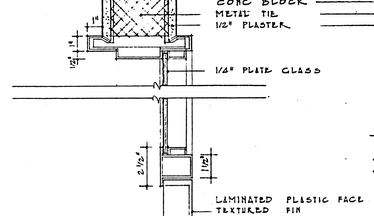


TYPE E DETAILS
SCALE 3" = 1'-0"



DETAIL 13 3/4 5A
SCALE 3" = 1'-0"



JAMB DETAIL 12 3/4 5A
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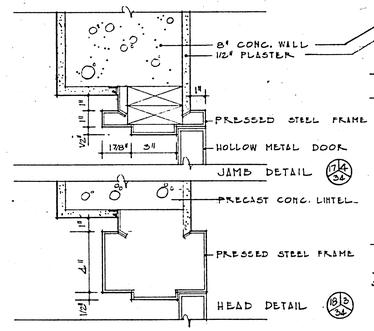
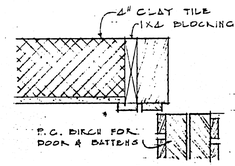
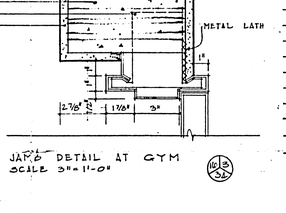


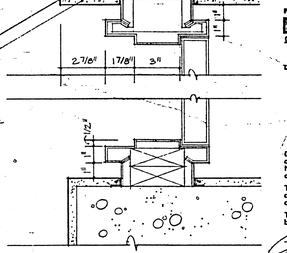
ENTRY DETAILS AT STAIR N° 2
SCALE 3" = 1'-0" (GRND FLR)



DETAIL AT NORTH ELECTRICAL PANEL
14 3/4 5A 15 3/4 5A



JAMB DETAIL AT GYM
SCALE 3" = 1'-0" 16 3/4 5A



JAMB DETAIL
SCALE 3" = 1'-0" 18 3/4 5A

GENERAL NOTES

BRONZE ANODIZED ALUMINUM FRAMES AT GROUND FLOOR ONLY - ALL OTHER DOOR FRAMES PRESSED STEEL.

No.	PARTICULARS	DATE	BY
REVISIONS			

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL

PRINTING DATE
DEC-1/64.

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568 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 2-4491

B-14
FILE
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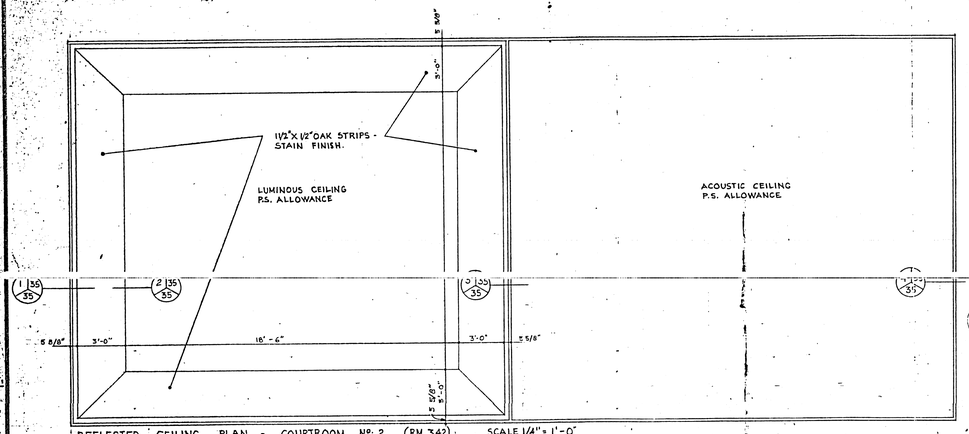
4 01 1

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

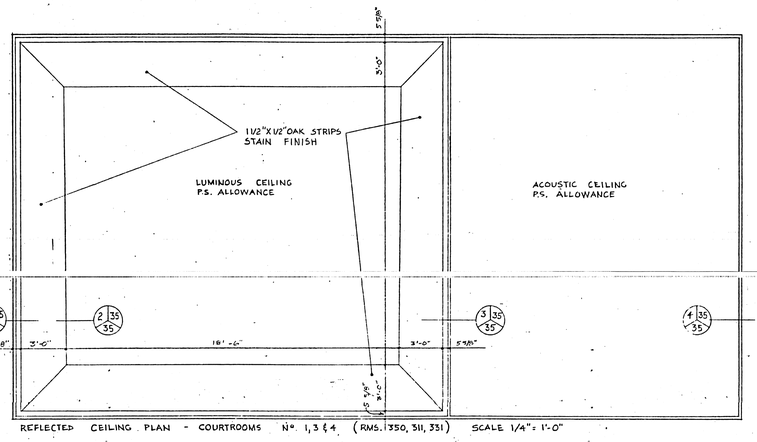
Amended
Add. # 4
Page 8

TITLE INTERIOR ENTRANCE DETAILS
SHEET NO. 6020 A-32

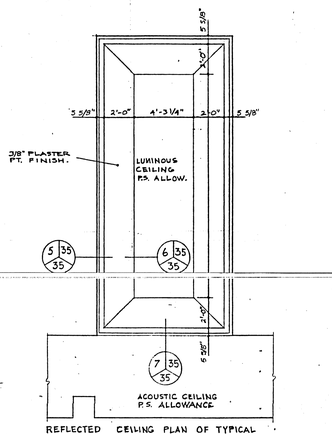
Public Safety Building



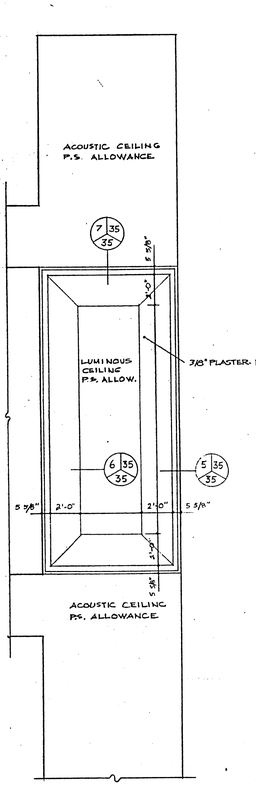
REFLECTED CEILING PLAN - COURTROOM No. 2 (RM. 342) SCALE 1/4" = 1'-0"



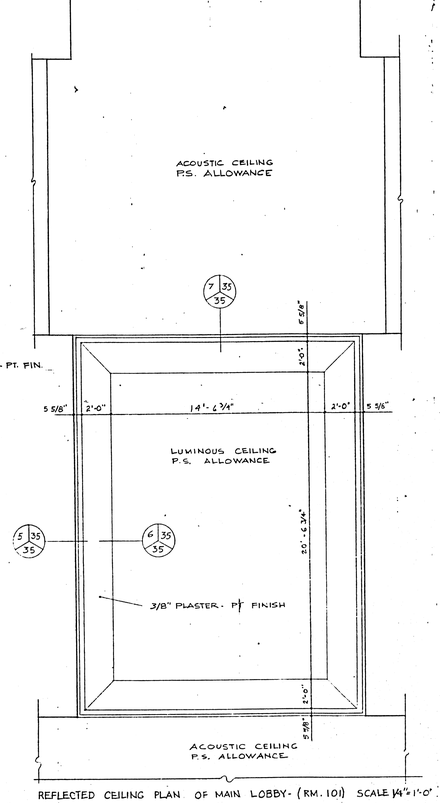
REFLECTED CEILING PLAN - COURTROOMS No. 1, 3 & 4 (RMS. 350, 311, 331) SCALE 1/4" = 1'-0"



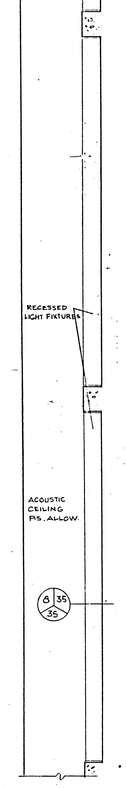
REFLECTED CEILING PLAN OF TYPICAL ELEVATOR LOBBY (RMS. 201, 301) SCALE 1/4" = 1'-0"



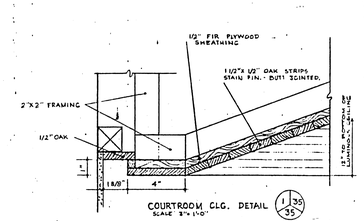
REFLECTED CLG. PLAN OF THIRD FLOOR LOBBY - (RM. 301) SCALE 1/4" = 1'-0"



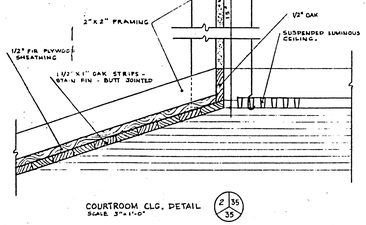
REFLECTED CEILING PLAN OF MAIN LOBBY - (RM. 101) SCALE 1/4" = 1'-0"



REFLECTED CLG PLAN OF TYPICAL CORRIDOR - SCALE 1/4" = 1'-0"



COURTROOM CLG. DETAIL SCALE 3" = 1'-0"



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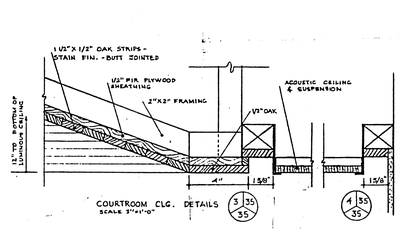

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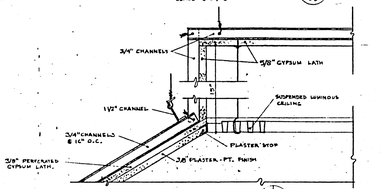
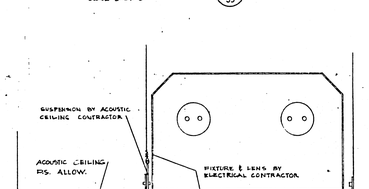
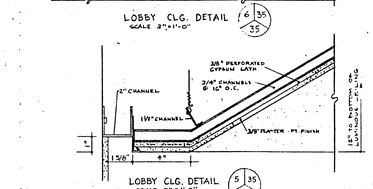


LOBBY CLG. DETAIL SCALE 3" = 1'-0"



CORRIDOR LIGHTING DETAIL SCALE 3" = 1'-0"



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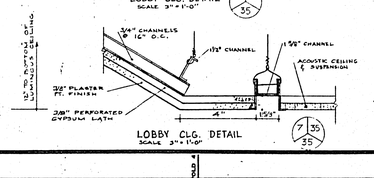

LOBBY CLG. DETAIL SCALE 3" = 1'-0"

GENERAL NOTES

No.	PARTICULARS	DATE	BY
REVISIONS			

CHECKED FOR:
DESIGN MDI
DETAILS MDI
STRUCTURE
MECHANICAL
ELECTRICAL

PRINTING DATE
DEC. 1/64

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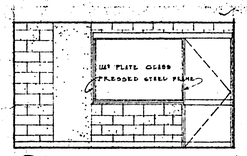
PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

Amended
Add. # 4
MS Bldg
Page 844

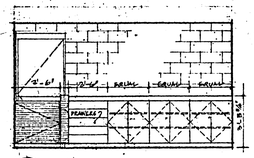
TITLE **REFLECTED CEILING PLANS & DETAILS**

SHEET NO. **6020 A-33**

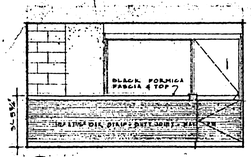
VSI Princess
A-33
SHEET NO.
PROJECT NO.
Reflected ceiling plans + details
DESCRIPTION
Public Safety Bldg



1 3/34 STOREKEEPER



2 3/34 STOREKEEPER
SIMILAR TO "STORES-RECEIVING COUNTER



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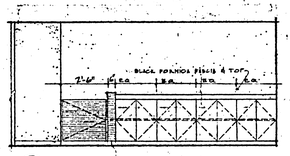

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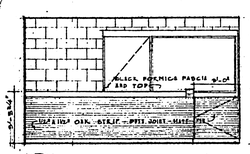

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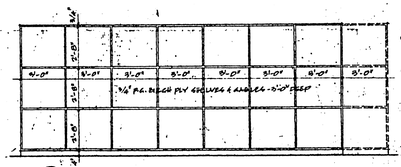
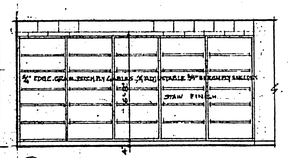


6 3/34 STORES - STORAGE BUNKS



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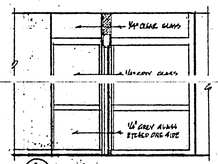
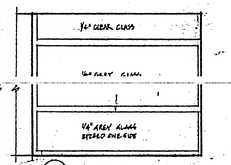


8 3/34 PATROL SGT. READER



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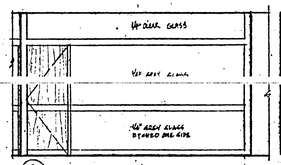

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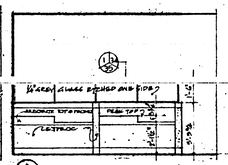
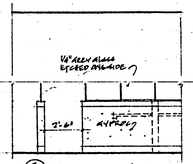
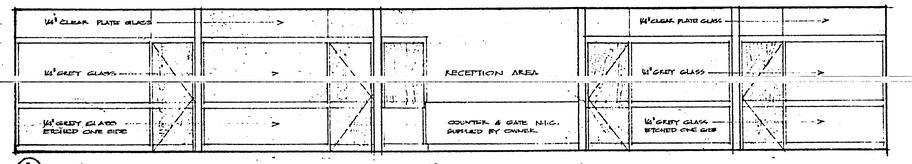


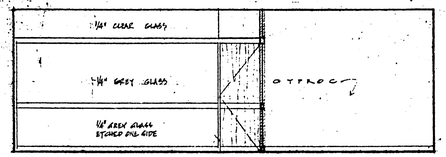
11 5/34 PATROL - REPORT CUBICLES



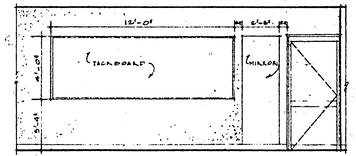
12 3/34 PATROL - CUBICLES



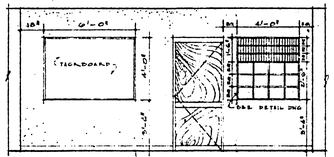
13 5/34 SIGNALS OFFICES



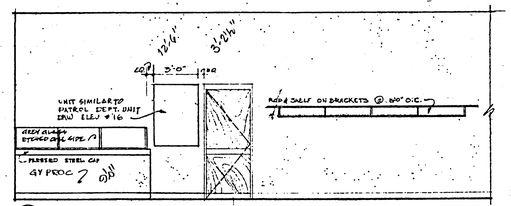
14 3/34 SIGNALS ENGINEER



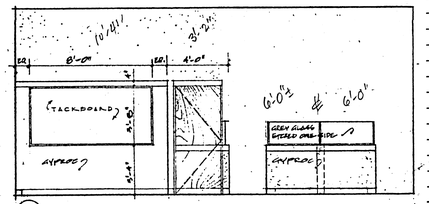
15 3/34 PATROL



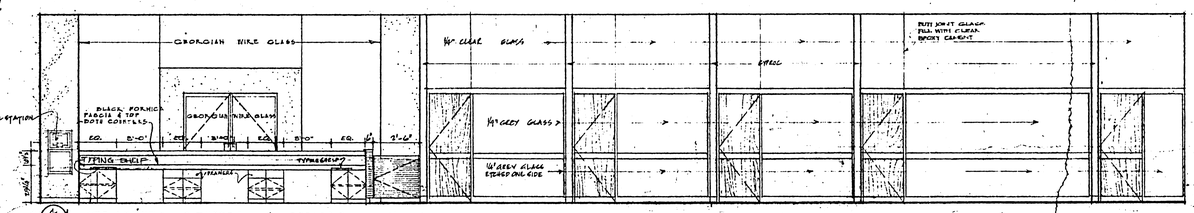
16 3/34 PATROL



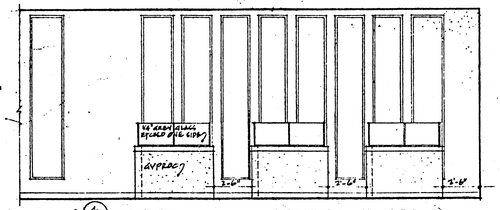
1 4/34 TRAFFIC - PARADE RM.



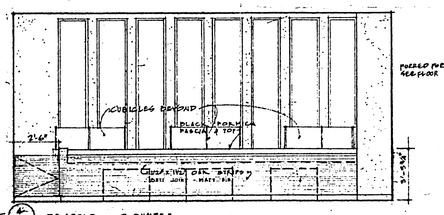
2 4/34 PARADE - INTERVIEW ROOMS



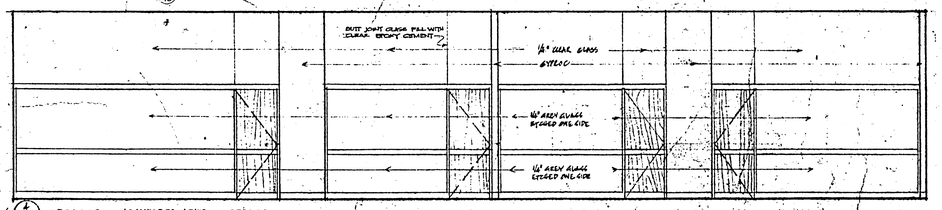
3 4/34 TRAFFIC - COUNTER & OFFICES
SEE SHT. A40 (D/40) DETAIL OF COUNTER



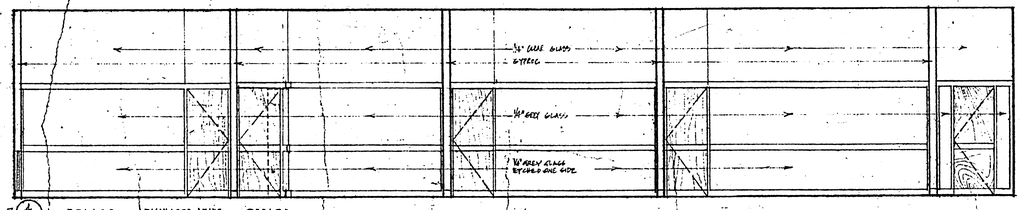
4 4/34 TRAFFIC INTERVIEW CUBICLES



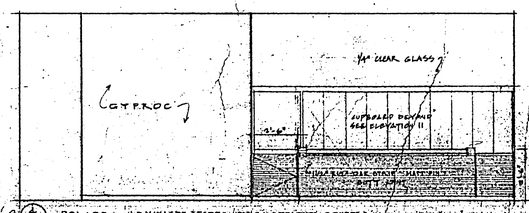
5 4/34 TRAFFIC COUNTER



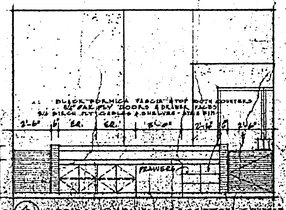
6 4/34 POLICE - ADMINISTRATIVE OFFICES



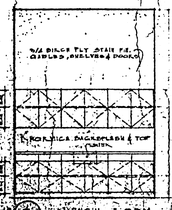
7 4/34 POLICE ADMINISTRATIVE OFFICE



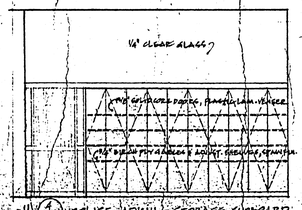
8 4/34 POLICE ADMINISTRATION - RECEPTION COUNTER



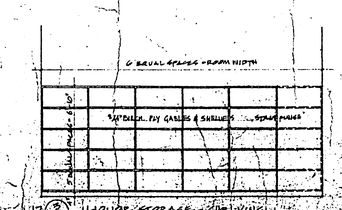
9 4/34 POLICE ADMIN. - RECEPTION COUNTER



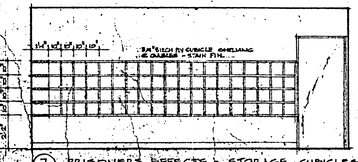
10 4/34 LUNCH ROOM



11 4/34 POLICE ADMIN - STORAGE CUPBOARD



12 5/34 LIQUOR STORAGE - SHELVING



1 4/34 PRISONERS EFFECTS - STORAGE CUBICLES

GENERAL NOTES

- ALL COUNTERS - UNLESS OTHERWISE NOTED - WILL HAVE 1½" x 1½" OAK GRIP FACING WITH BUTT JOINTS AND MATTE FINISH, BLACK FORMICA TOPS AND EDGES, OAK PLY DOORS AND DRAWER FRONTS
- ALL BIRCH PLY TO BE STAINED & VARNISH FINISH WITH SOLID BIRCH EDGING ON ALL STORAGE SHELVING.

No.	PARTICULARS	DATE	BY
REVISIONS			

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL

PRINTING DATE

DRAWN BY C.I.S.

B-14
FILE
RETURN TO CIVIC MAY PROPERTIES BUILDING INVENTORY.
F. D. R. NO. 4 01 1

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LIBLING MICHENER & ASSOCIATES ARCHITECTS
368 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 3-4491

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

TITLE INTERIOR ELEVATIONS
SHEET NO. 6020 A-34

Public Safety Bldg

GENERAL NOTES

- ALL COUNTERS - UNLESS OTHERWISE NOTED - WILL HAVE 1/2" x 1 1/2" OAK STRIP FACING WITH BUTT JOINTS AND MATTE FINISH; BLACK FORMICA TOPS AND EDGES, OAKPLY DOORS & DRAWER FRONTS
- ALL BIRCH PLY TO BE STAIN & VARNISH FINISH WITH SOLID BIRCH EDGING

No.	PARTICULARS	DATE	BY
REVISIONS			

CHECKED FOR
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL

PRINTING DATE

B-14 FILE
RETURN TO CIVIC PROPERTIES BUILDING INVENTORY

DRAWN BY G.B. F.B.P. WTS 4 | 01 | 1

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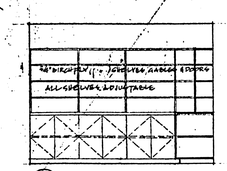
368 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 3-4491

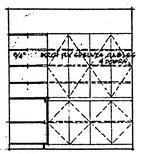
PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

TITLE INTERIOR ELEVATIONS
SHEET NO. 6020 ; A-35.

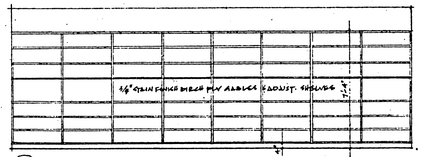
Public Safety Bldg



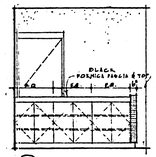
1 (B/36) STORAGE ROOM



2 (B/36) STORAGE ROOM

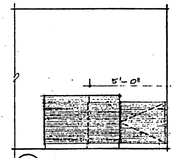


3 (B/36) FIRE DEPT. LIBRARY

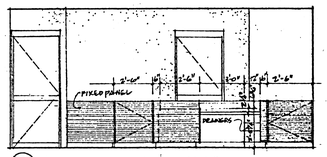


4 (B/36) STORES

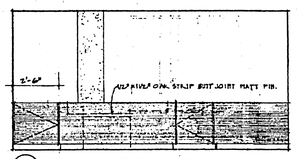
5 (B/36) STORES



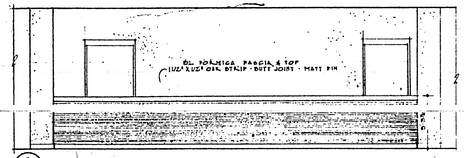
6 (B/36) STORES



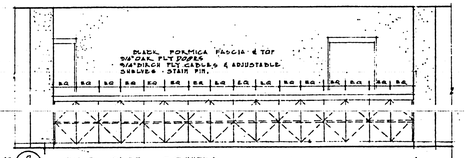
7 (B/36) FIRE DEPT RECEPTION



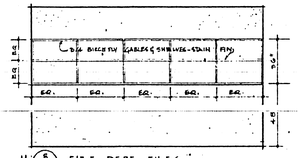
8 (B/36) FIRE DEPT RECEPTION



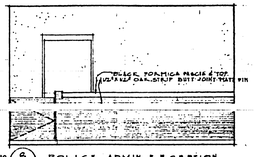
9 (B/36) FIRE DEPT. COUNTER



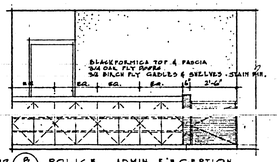
10 (B/36) FIRE DEPT. COUNTER
SEE SHT. A40 (15/A40) DETAIL FOR COUNTER



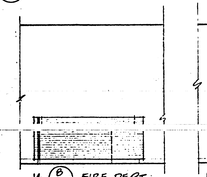
11 (B/36) FIRE DEPT FILES



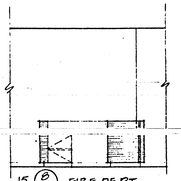
12 (B/36) POLICE ADMIN RECEPTION



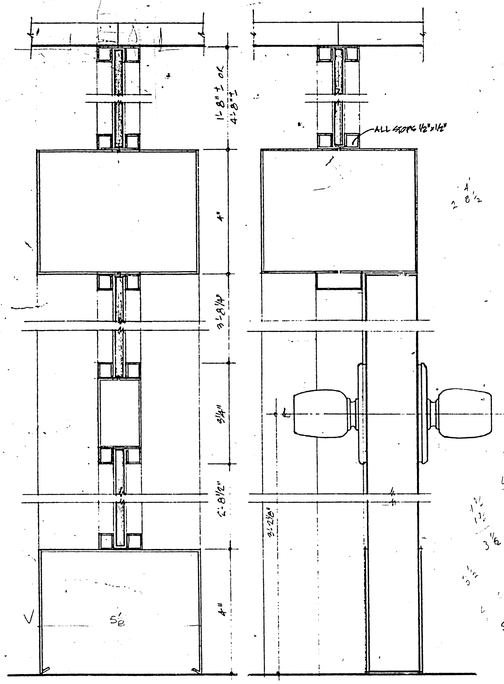
13 (B/36) POLICE ADMIN RECEPTION
COUNTER SIMILAR TO FIRE DPT. COUNTER 10 (B/36)



14 (B/36) FIRE DEPT.
COUNTER SIMILAR TO (12/A40)

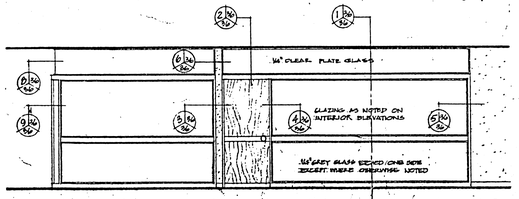


15 (B/36) FIRE DEPT.

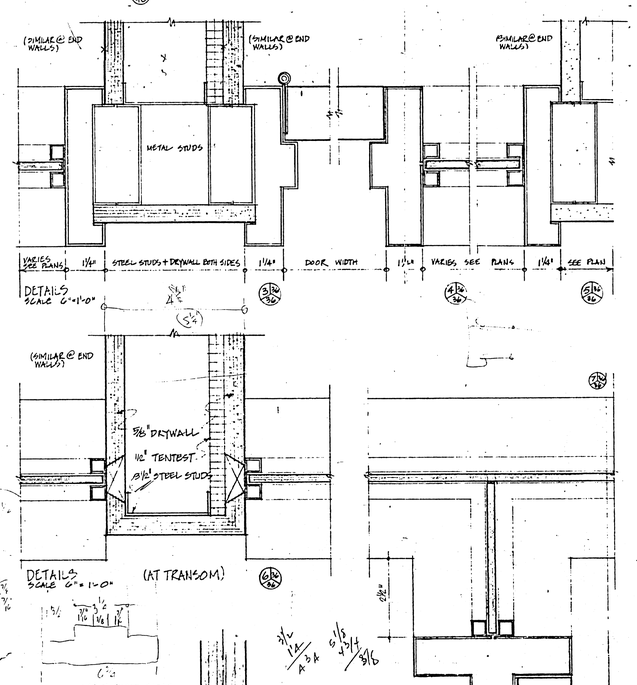


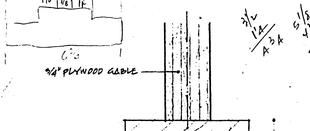
TYPICAL SECTION GLAZED PARTITION (1/B/36)
SCALE 6" = 1'-0"

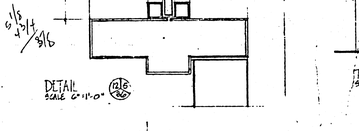
TYPICAL SECTION PARTITION AT DOOR (2/B/36)
SCALE 6" = 1'-0"



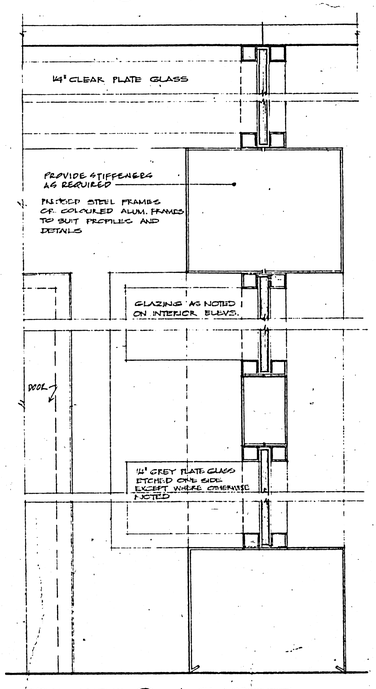
TYPICAL ELEVATION
SCALE 1/4" = 1'-0"

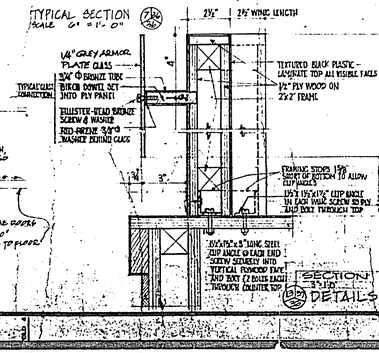




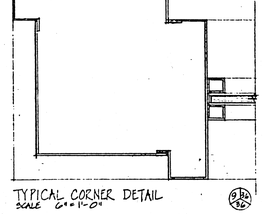


EVIDENCE STORAGE BUNK DOORS - DETAILS
SCALE 1" = 1'-0"

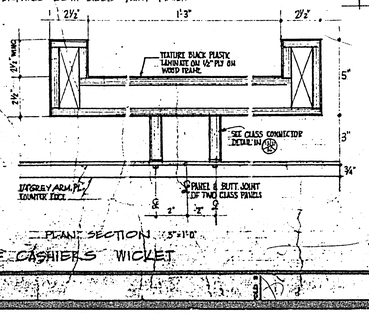




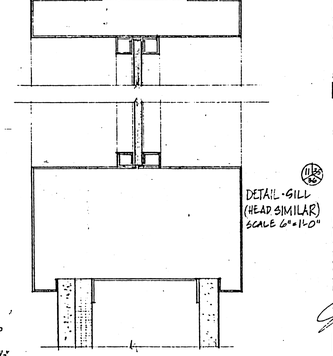
TYPICAL DETAIL @ CORNER - TRANSOM (B/36)
SCALE 6" = 1'-0"



TYPICAL CORNER DETAIL
SCALE 6" = 1'-0"



NOTE:
SUPPLY AND INSTALL ALL PRESSED STEEL FRAMES OR COLOURED ALUMINUM TO PROFILES & DETAILS SHOWN. SUPPLY & INSTALL ALL GLASS & GLAZING AS NOTED ON INTERIOR ELEVATIONS & DETAILS. FRAMES SUPPLIER SHALL MAKE PROVISIONS FOR DOORS & HARDWARE, INSTALLED BY GENERAL CONTR. SUPPLY & INSTALL ALL SOLID DIVIDER PARTITIONS WITH STEEL STUDS, TENTEST ONE SIDE & CLAD WITH MECH TAPED DRYWALL BOTH SIDES - PAINT FINISH



DETAIL SCALE 6"=1'-0" (12/B/36)

DETAIL - SILL (HEAD SIMILAR) SCALE 6"=1'-0" (11/B/36)

GENERAL NOTES

- ALL COUNTERS - UNLESS OTHERWISE NOTED - WILL HAVE 1 1/2" x 1 1/2" OAK STRIP FACING WITH BUTT JOINTS AND MATTE FINISH, BLACK FORMICA TOPS AND EDGES, AND OAK PLY DOORS AND DRAWER FRONTS
- ALL DRYWALL SURFACES TO HAVE PROPER GALV. STEEL CORNER BEAD, CORNERITE, REINFORCEMENT LATH AND CHANNEL STOPS. PROVIDE CHANNEL STOPS AT ALL TERMINATIONS OF DRYWALL. FIL & SAND ALL JOINTS & EDGES OR TERMINATIONS USING JOINT FILLER.
- ALL BIRCH PLYWOOD SHELVING TO BE STAIN & VARNISH FIN WITH SOLID BIRCH EDGING.

No.	PARTICULARS	DATE	BY
REVISIONS			

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL

PRINTING DATE
MAY 2 3 1965

DRAWN BY P.D.P. 4/5

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LIBLING MICHENER & ASSOCIATES ARCHITECTS
588 Main Street, Winnipeg 3, Manitoba, Telephone WHitehall 3-4481

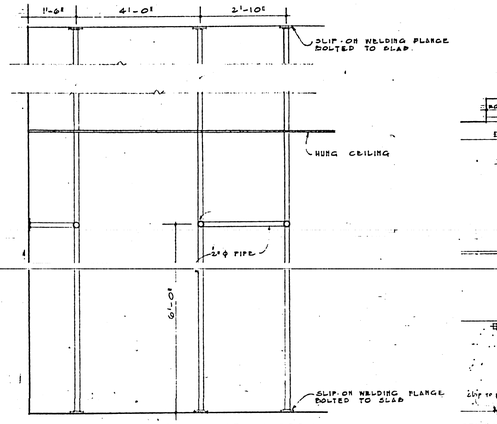
B-14 FILE
RETURN TO CIVIC PROPERTIES BUILDING INVENTORY.
4 01 1

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

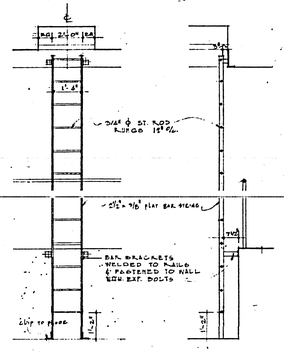
TITLE INTERIOR, ELEVATIONS & DETAILS
SHEET NO. 6020 A-36

FOLD 1 FOLD 2 FOLD 3 FOLD 4 FOLD 5 FOLD 6

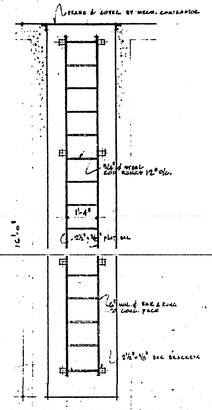
Public Safety Bldg



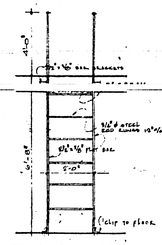
TYPICAL PIPE RAIL COAT HANGERS
SCALE 1/2" = 1'-0"



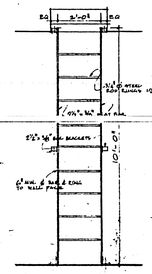
STEEL LADDER AT PENTHOUSE
SCALE 3/8" = 1'-0"



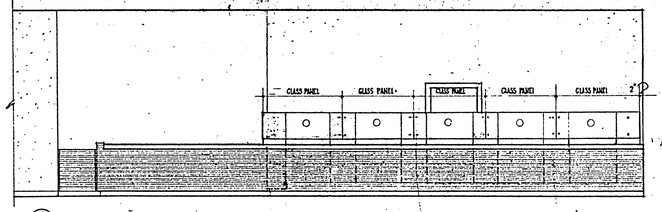
SUMP PIT LADDER - M.M. B-30
SCALE 3/8" = 1'-0"



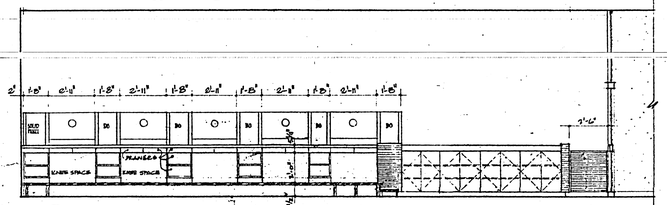
TYPICAL STEEL LADDER AT ELEVATOR PITS
SCALE 3/8" = 1'-0"



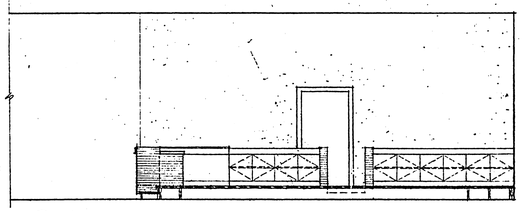
STEEL LADDER MACHINE R.M. - G10



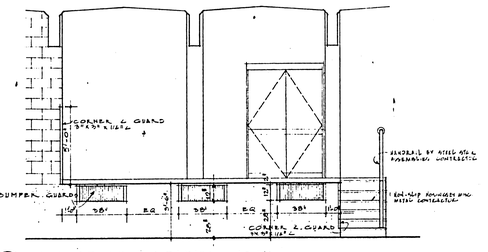
1 (4/37) CLERK OF COURT - RECEPTION COUNTER - CASHIERS
SEE SHT. A-40 (21/40), A-36 (13B/36) & THIS SHT. B (36/37) FOR DETAILS



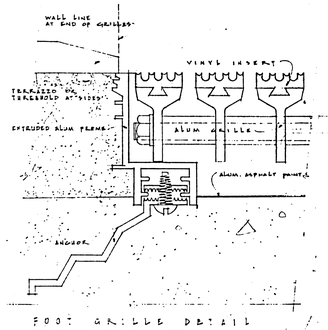
2 (4/37) CLERK OF COURT-RECEPTION COUNTER - CASHIERS
SEE SHT. A-40, A-36 & THIS SHT. FOR DETAILS



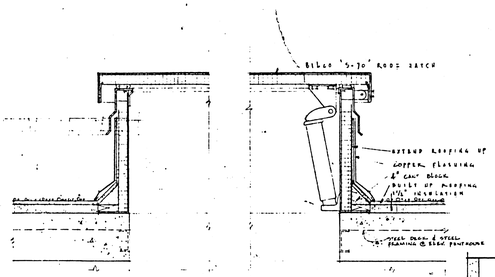
3 (4/37) CLERK OF COURT - BACK COUNTER
COUNTER SIMILAR TO DETAIL (18/40) SHT. A40



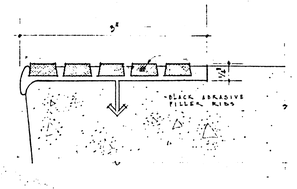
1 (5/37) ELEVATION - LOADING AREA
SCALE 1/4" = 1'-0"



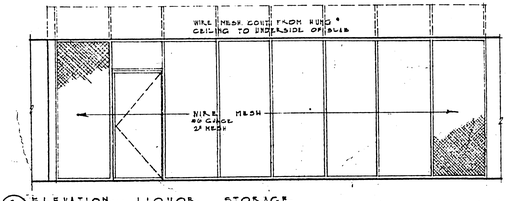
FOOT GRILLE DETAIL
SCALE FULL SIZE



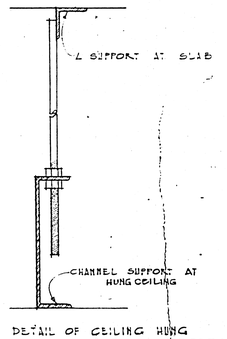
ROOF HATCH DETAIL
SCALE 1" = 1'-0"



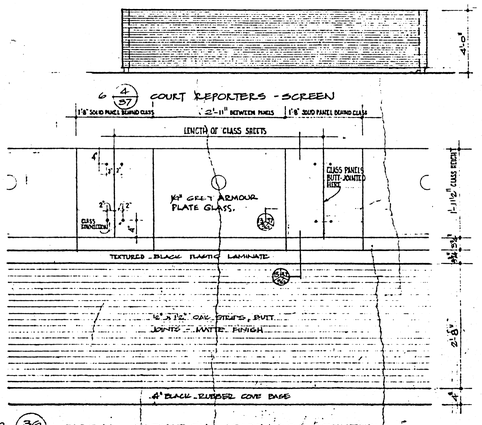
DETAIL OF TREAD NOSING
SCALE FULL SIZE

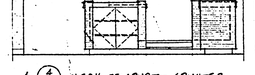


2 (5/37) ELEVATION - LIQUOR STORAGE
SCALE 1/4" = 1'-0"



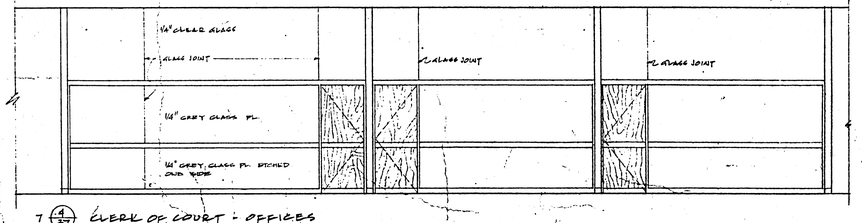
DETAIL OF CEILING HUNG TOILET PARTITION SUPPORT
SCALE 3" = 1'-0"





4 (4/37) CLERK OF COURT - COUNTER

5 (4/37) CLERK OF COURT - BACK COUNTER
COUNTER SIMILAR TO DETAIL (18/40) SHT. A40



7 (4/37) CLERK OF COURT - OFFICES

GENERAL NOTES

No.	PARTICULARS	DATE	BY
REVISIONS			

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL

PRINTING DATE

DRAWN BY F.D.F.

B-14
FILE
RETURN TO CIVIC PROPERTIES BUILDING INVENTORY.
4 01 1

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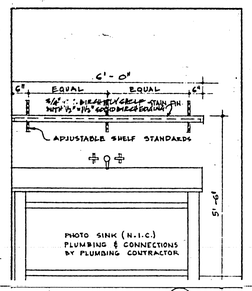
LIBLING MICHENER & ASSOCIATES ARCHITECTS
388 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 2-4481

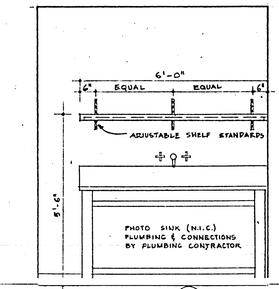
PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

TITLE MISC. DETAILS & ELEVATIONS
SHEET NO. 6020 - A - 37

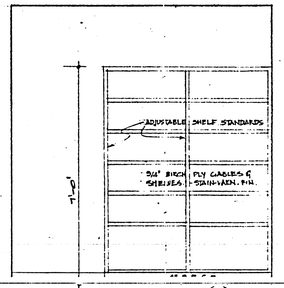
FOLD 1
FOLD 2
Public Safety Bldg
description



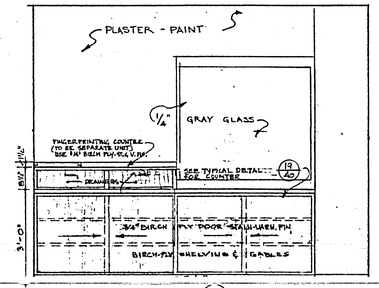
ELEVATION - DEVELOPING 1 (38/39)



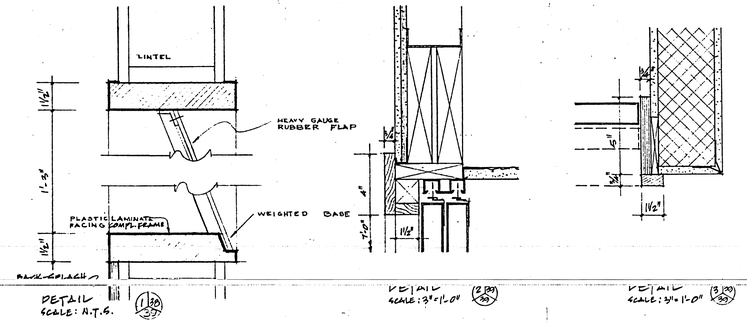
ELEVATION - DEVELOPING 4 (38/39)



ELEVATION - EVIDENCE STORAGE 8 (38/39)



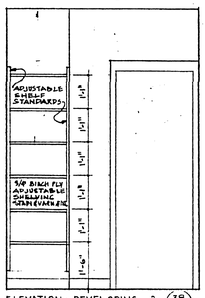
ELEVATION - WORK ROOM 12 (38/39)



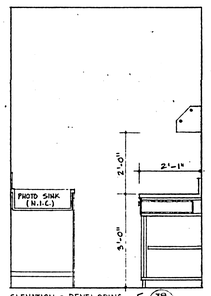
DETAIL SCALE: N.T.S. (1/38/39)

DETAIL SCALE: 3"=1'-0" (3/38/39)

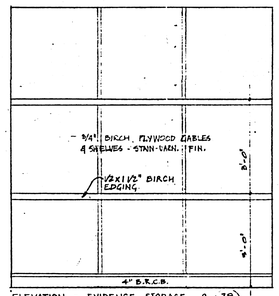
DETAIL SCALE: 3"=1'-0" (3/38/39)



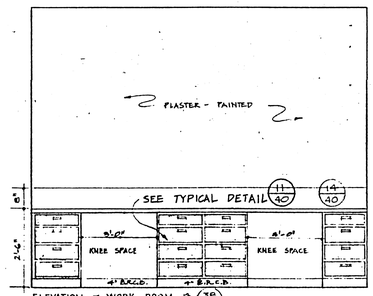
ELEVATION - DEVELOPING 2 (38/39)



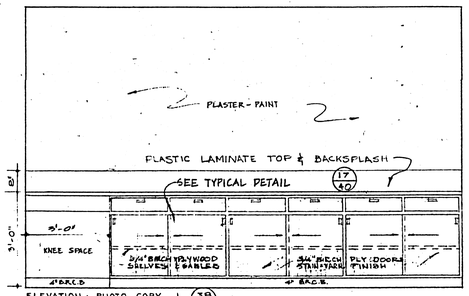
ELEVATION - DEVELOPING 5 (38/39)



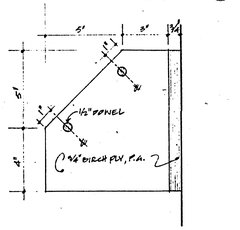
ELEVATION - EVIDENCE STORAGE 9 (38/39)



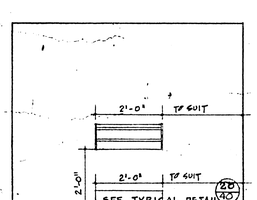
ELEVATION - WORK ROOM 13 (38/39)



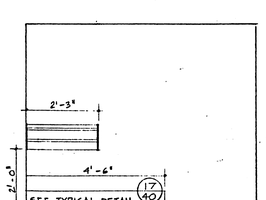
ELEVATION - PHOTO COPY 1 (38/39)



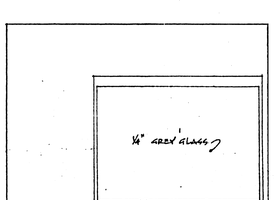
FILM RACK DETAIL SCALE: 3"=1'-0" (4/38/39)



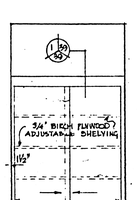
ELEVATION - DEVELOPING 3 (38/39)



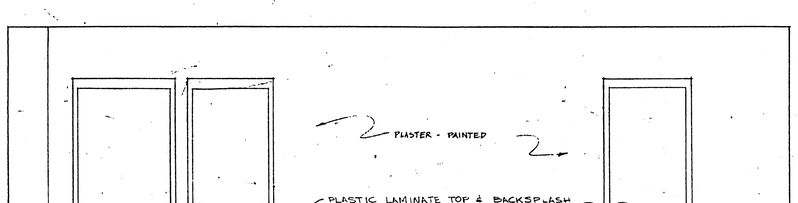
ELEVATION - DEVELOPING 6 (38/39)



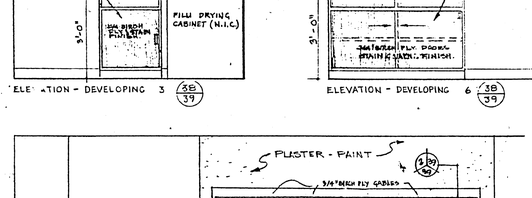
ELEVATION - OFFICE 10 (38/39)



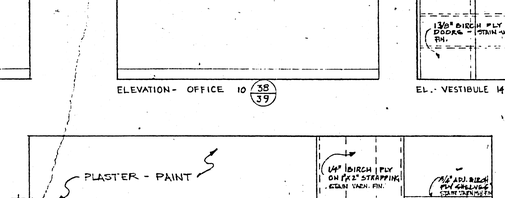
EL. VESTIBULE 14 (38/39)



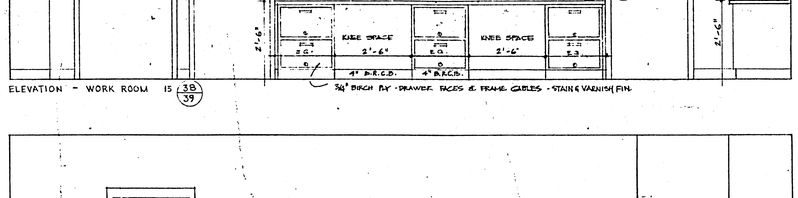
ELEVATION - WORK ROOM 15 (38/39)



ELEVATION - GENERAL STORAGE 7 (38/39)



ELEVATION - CHEMICAL STORAGE 11 (38/39)



ELEVATION - WORK ROOM 16 (38/39)

GENERAL NOTES

- 4" B.R.C.B. - WALLS & BACKS OF BUILT-IN EQUIPMENT
- ALL COUNTER UNITS TO HAVE LAMINATED PLASTIC TOP & BACKSPLASH
- ALL LAMINATED PLASTIC TOPS & SPLASHES TO BE OF CHEMICAL & FIRE RESISTANT QUALITY
- ALL 3/4" BIRCH PLYWOOD SHELVING TO BE IN STAIN VARNISH FINISH WITH SOLID BIRCH EDGING. VARNISH TO BE CHEMICAL RESISTANT TYPE

No.	PARTICULARS	DATE	BY
REVISIONS			

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL

PRINTING DATE [redacted] MAY 1 6 1961

DRAWN BY [redacted]

B-14 FILE
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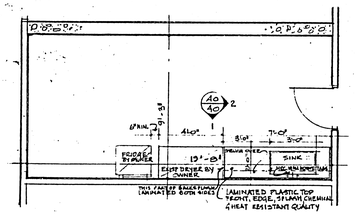
LIBLING MICHENER & ASSOCIATES ARCHITECTS
388 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 3-4491

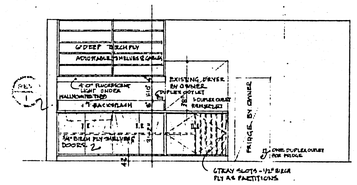
PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

TITLE CRIME LAB ELEVATIONS
SHEET NO. 6020 A— 39

Public Safety Bldg

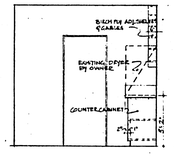


PLAN - CRIME LAB STORAGE - ROOM No: 227
SCALE 1/4" = 1'-0"

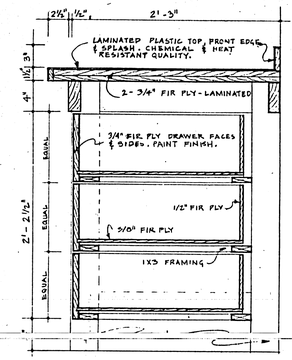


ELEVATION No: 1 (40/40)
SCALE 1/4" = 1'-0"

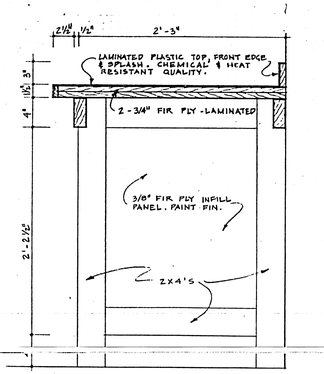
NOTE:
COUNTER SIMILAR TO PETRO/CHEM EXCEPT NO DRAWERS (40/40)



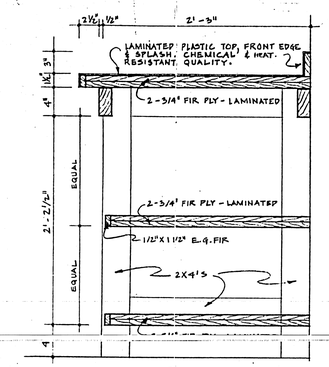
ELEVATION No: 2 (40/40)
SCALE 1/4" = 1'-0"



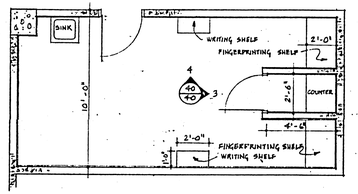
COUNTER TYPE "A" - SECTION (10/40)
SCALE 1 1/2" = 1'-0"



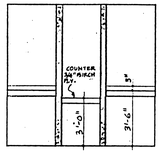
COUNTER TYPE "A" - SECTION (15/40)
SCALE 1 1/2" = 1'-0"



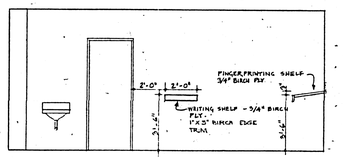
COUNTER TYPE "B" - SECTION (16/40)
SCALE 1 1/2" = 1'-0"



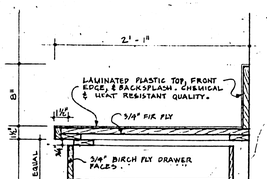
PLAN - PHOTOGRAPHY & FINGERPRINTING
SCALE 1/4" = 1'-0"



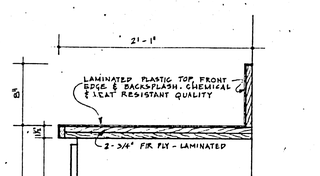
ELEVATION - No. 3 (40/40)
SCALE 1/4" = 1'-0"



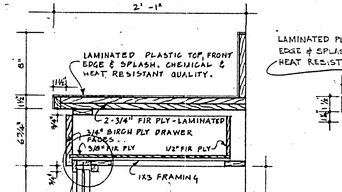
ELEVATION - No. 4 (40/40)
SCALE 1/4" = 1'-0"



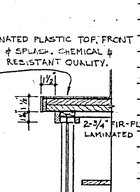
COUNTER TYPE 'C' - SECTION (11/40)
SCALE 1 1/2" = 1'-0"
SEE SHT. A-39



COUNTER TYPE 'C' - SECTION (14/40)
SCALE 1 1/2" = 1'-0"
SEE SHT. A-39



COUNTER TYPE "D" - SECTION (17/40)
SCALE 1 1/2" = 1'-0"
SEE SHT. A-38, A-39 FOR LOCATION OF COUNTERS



SECTION (19/40)
SCALE 1 1/2" = 1'-0"
SEE SHT. A-38 & A-39 FOR LOCATION OF COUNTERS.

GENERAL NOTES

- ALL BIRCH PLY SHELVING TO BE STAIN & VARNISH FINISH UNLESS OTHERWISE NOTED.

No.	PARTICULARS	DATE	BY
REVISIONS			
1.	CLARIFICATIONS GEN REVISIONS	JULY 7, 65	L.M.

CHECKED FOR: DESIGN / DETAILS / STRUCTURE / MECHANICAL / ELECTRICAL

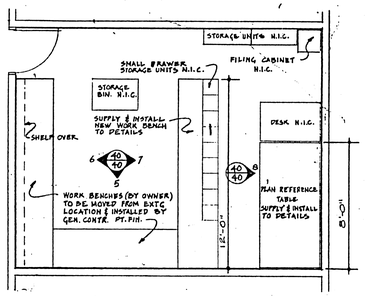
PRINTING DATE [redacted]

DRAWN BY G. D.

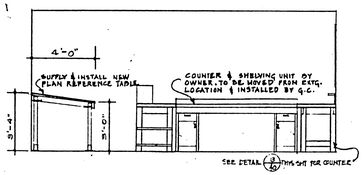
B-14
JOB FILE 1965

RETURN TO CIVIC PROPERTIES BUILDING INVENTORY.

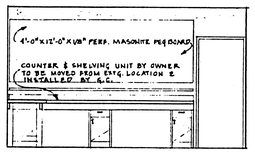
4 | 01 | 1



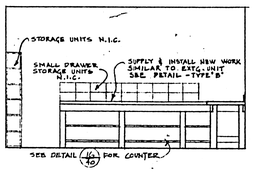
PLAN - TECHNICIANS WORKSHOP - ROOM No: 148
SCALE 1/4" = 1'-0"



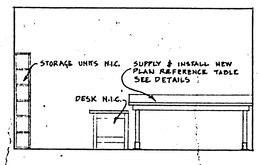
ELEVATION - No: 5 (40/40)
SCALE 1/4" = 1'-0"



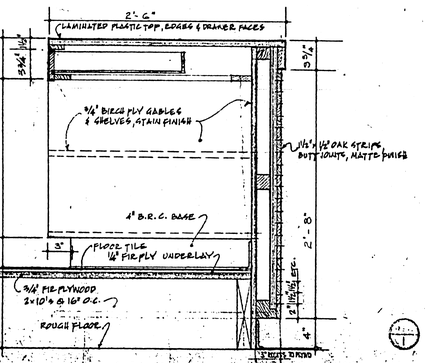
ELEVATION - No: 6 (40/40)
SCALE 1/4" = 1'-0"



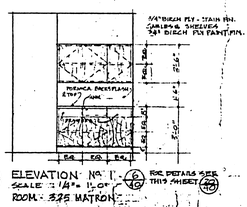
ELEVATION - No: 7 (40/40)
SCALE 1/4" = 1'-0"



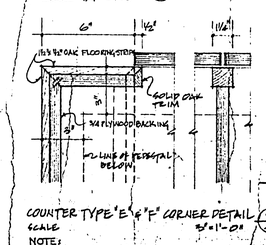
ELEVATION - No: 8 (40/40)
SCALE 1/4" = 1'-0"



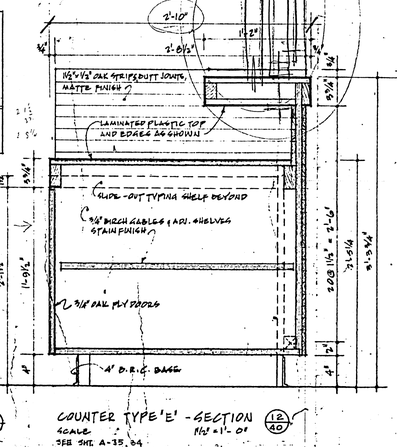
2 COUNTER TYPE 'A' - SECTION (21/40)
SCALE 1½" = 1'-0"
SEE SHT. A-37 FOR LOCATION OF COUNTER



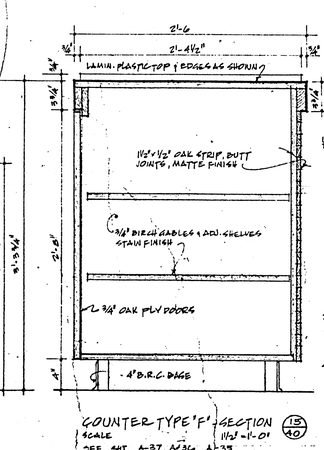
ELEVATION No: 1 (6/40)
SCALE: 1½" = 1'-0"
ROOM: 325 MATRON
FOR DETAILS SEE THIS SHEET (4/40)



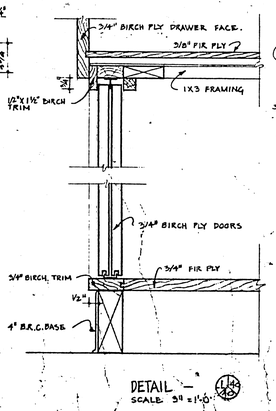
COUNTER TYPE 'E' 'G' 'F' CORNER DETAIL (9/40)
SCALE
NOTE:
- OAK FLOORING STRIPS TO BE GLUED TO PLYWOOD BACKING
- DO NOT GLUE JOINTS BETWEEN FLOORING STRIPS
- MITRE CUT CORNERS OF PANELS REQUIRED ONLY AFTER FLOORING HAS BEEN GLUED TO PLY BACKING AS A TESTED PANEL.



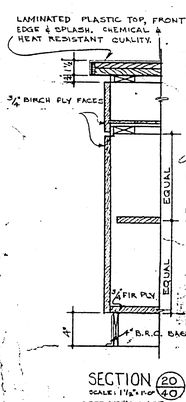
COUNTER TYPE 'E' - SECTION (12/40)
SCALE
SEE SHT. A-35, 36 FOR LOCATION OF COUNTER



COUNTER TYPE 'F' - SECTION (15/40)
SCALE
SEE SHT. A-37, A-36, A-39 FOR LOCATION OF COUNTER



DETAIL (1/40)
SCALE 3" = 1'-0"



SECTION (20/40)
SCALE: 1½" = 1'-0"
SEE SHT. A-41, A38 FOR LOCATION OF COUNTER

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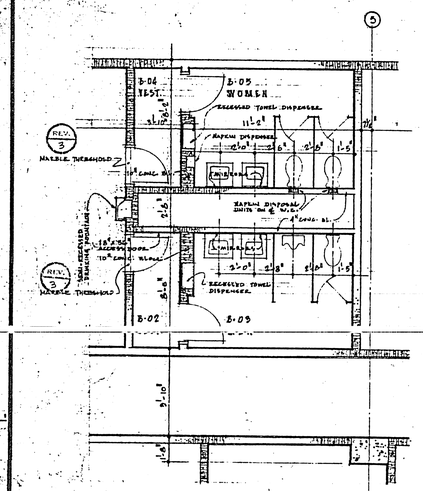
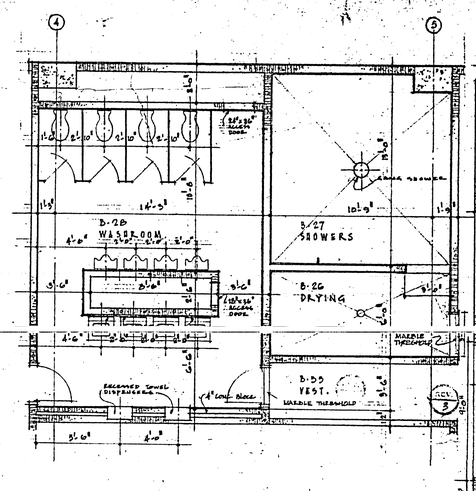
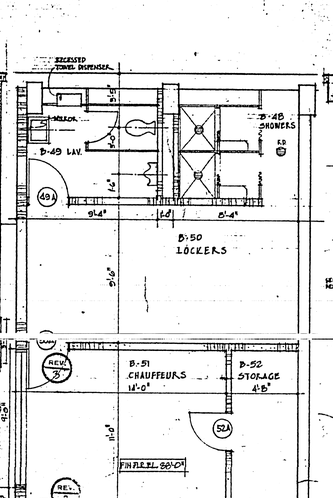
LIBLING MICHENER & ASSOCIATES ARCHITECTS
368 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 3-4482

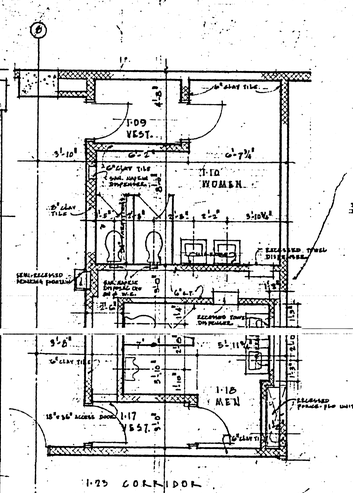
PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

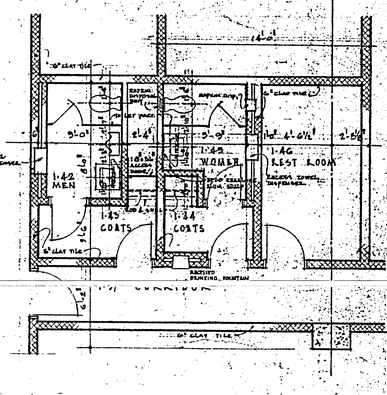
TITLE INTERIOR ELEVATIONS & COUNTER DETAILS
SHEET NO. 6020 A-40

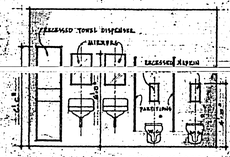




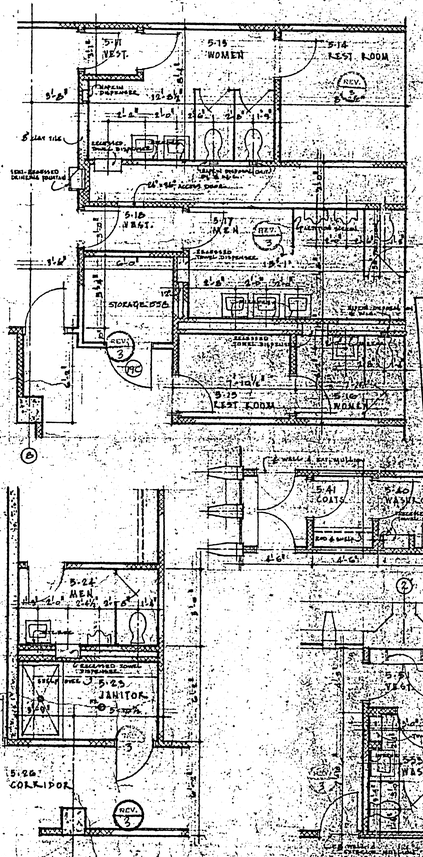


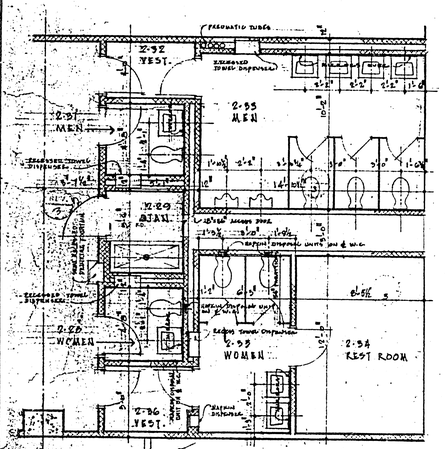


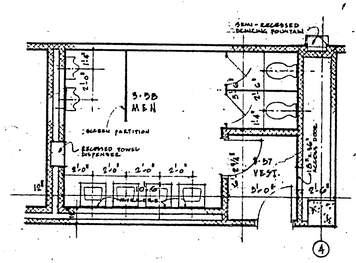


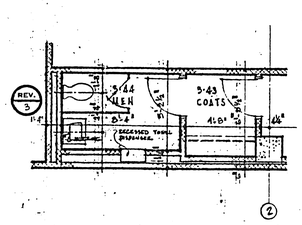


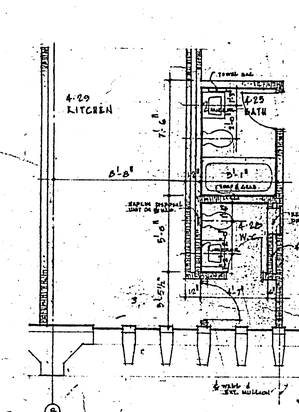
EAST WALL 1-10 WOMEN SHOWING TYPICAL MOUNTING HEIGHTS
SCALE 1/4" = 1'-0"

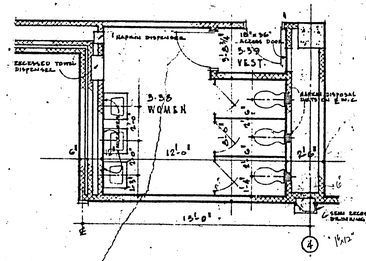


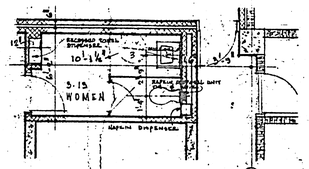


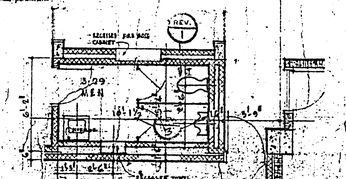


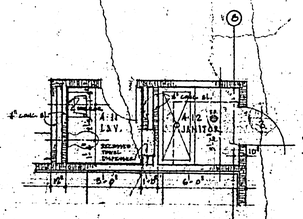


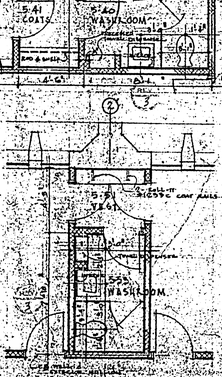


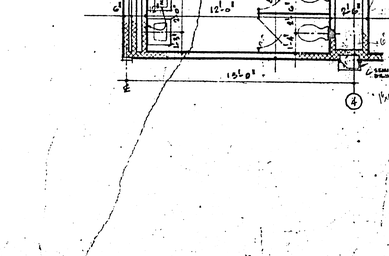












WASHROOM PLANS
SCALE 1/4" = 1'-0"

REVISED PLAN OF CHAUFFEURS, LOCKER RM. SHOWER RM. & WASHROOM LOCATED@WEST WALL OF PARKING GARAGE BASEMENT. PLAN SHEET - G-1

GENERAL NOTES
MATERIAL INDICATION
CONCRETE
CONCRETE BLOCK
CLAY TILE
ALL DIMENSIONS TO ROUGH FACES.
ALL CONC. BLOCK 6" UNLESS OTHERWISE NOTED.
ALL CLAY TILE IS 4" UNLESS OTHERWISE NOTED.
ACCESS DOORS SHALL BE 30" x 36" WHERE BOTTOM 2'-0" FROM FLOOR.
ALL TOILET PARTITIONS ARE 5'-7" LONG UNLESS OTHERWISE NOTED.

96 MAIN

No.	PARTICULARS	DATE
REVISIONS		
3.	CLARIFICATIONS & ITEMS REVISIONS	
2.	REVISION TO CHAUFFEURS WASHROOM & SHOWER AREA	
1.	RELOCATION OF TOILETS 5-29 THRU 5-26	

CHECKED
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL

PRINTING DATE
JULY. 1965

DRAWN BY

PROVINCE OF MANITOBA LIBLING MICHENER REGISTERED ARCHITECT

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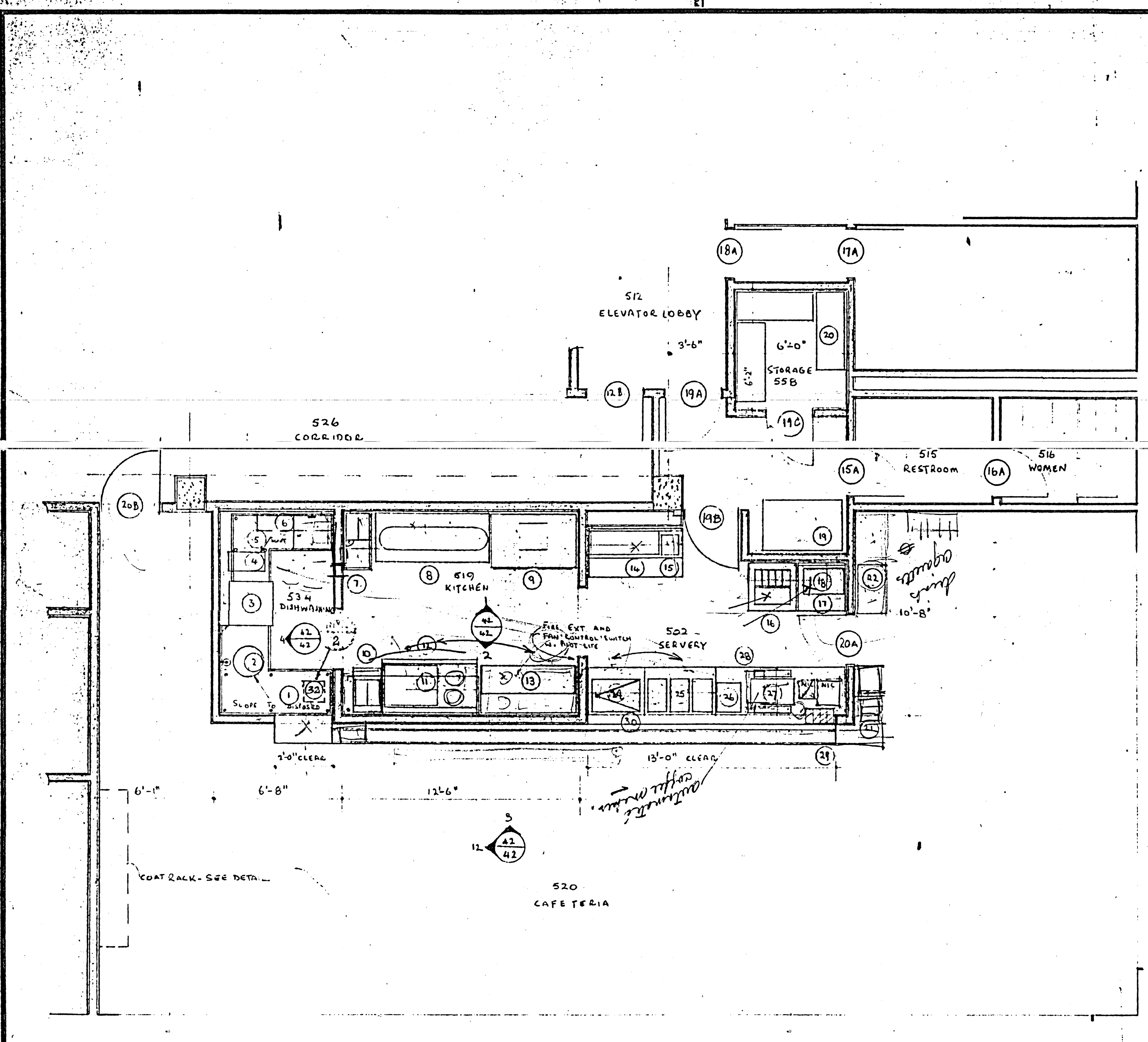
PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

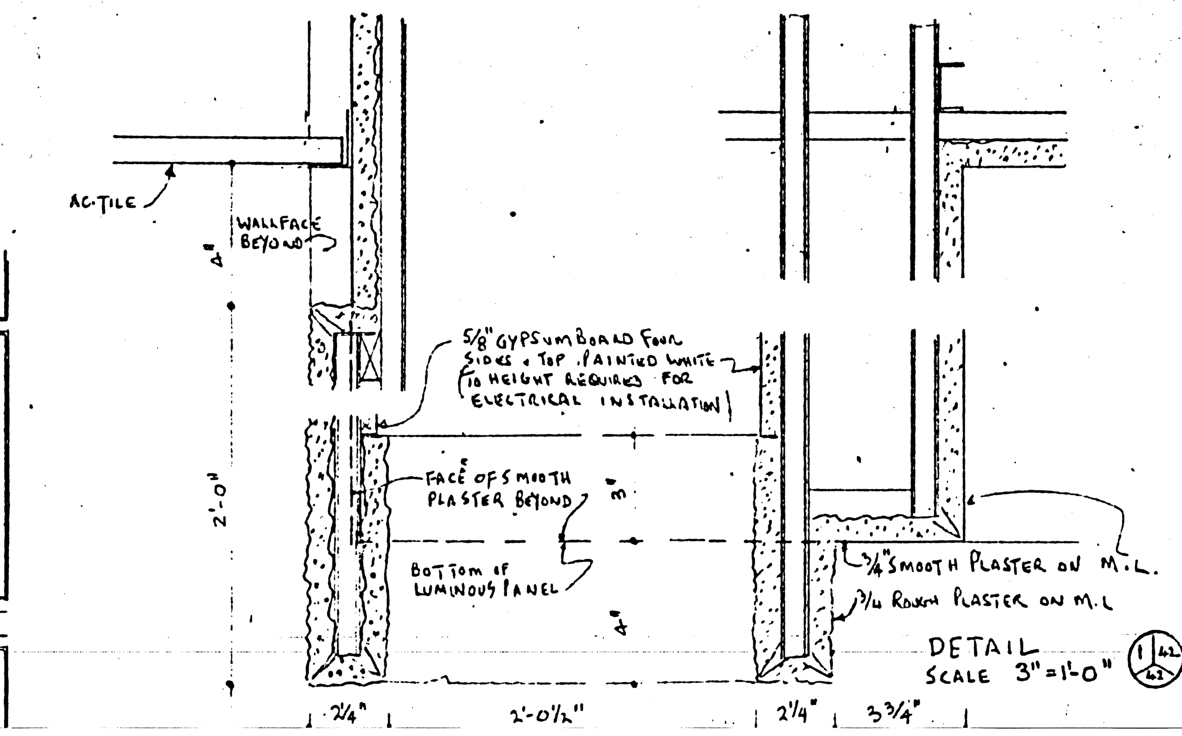
TITLE WASHROOM LAYOUTS
SHEET NO. 6020 - A - 41

B-14 FILE
RETURN TO CIVIC PROPERTIES-BUILDING INVENTORY

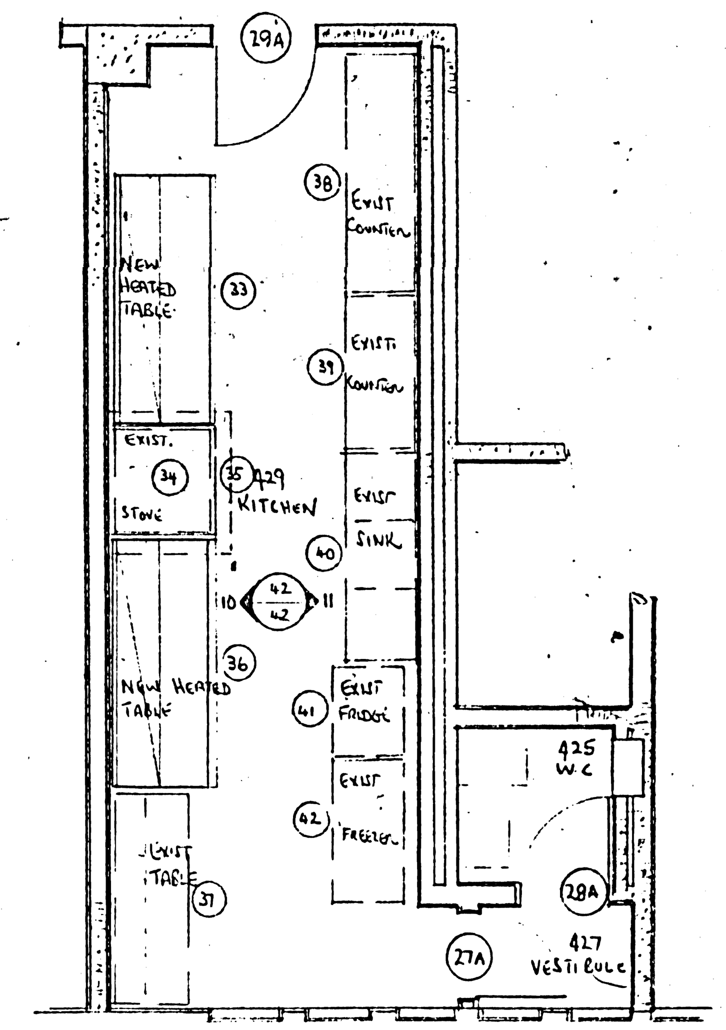
A-41
sheet no.
Washroom layout
Public Safety Bldg
project no.
address
by



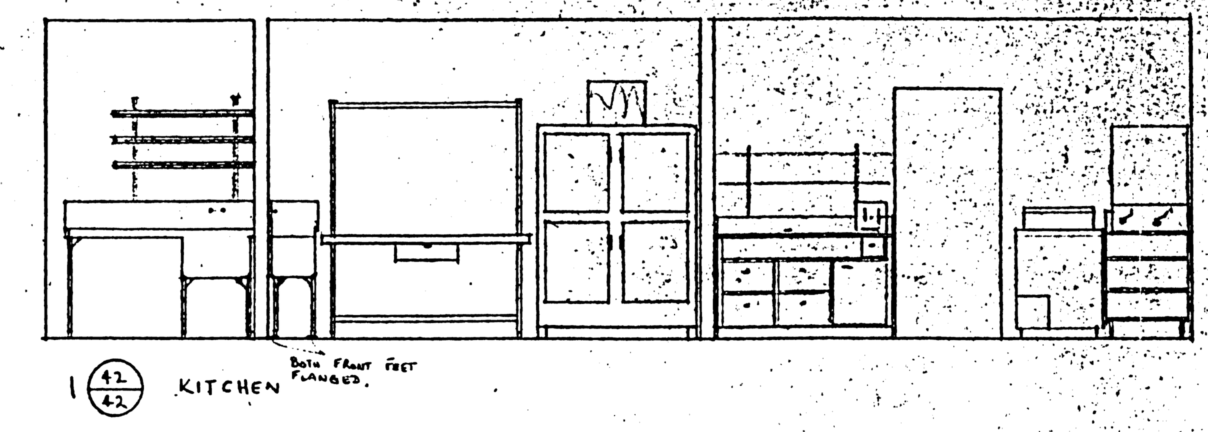
KITCHEN & CAFETERIA PLAN
SCALE 1/4" = 1'-0"



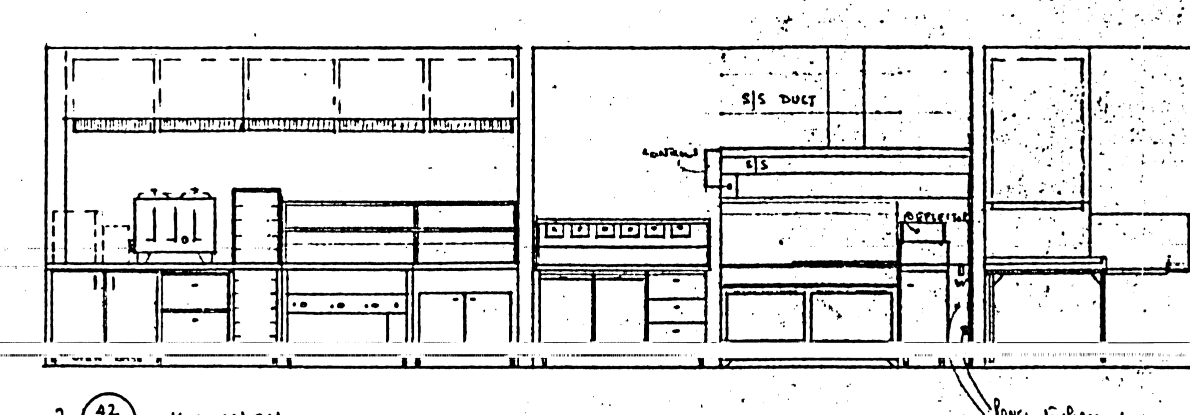
DETAIL
SCALE 3" = 1'-0"



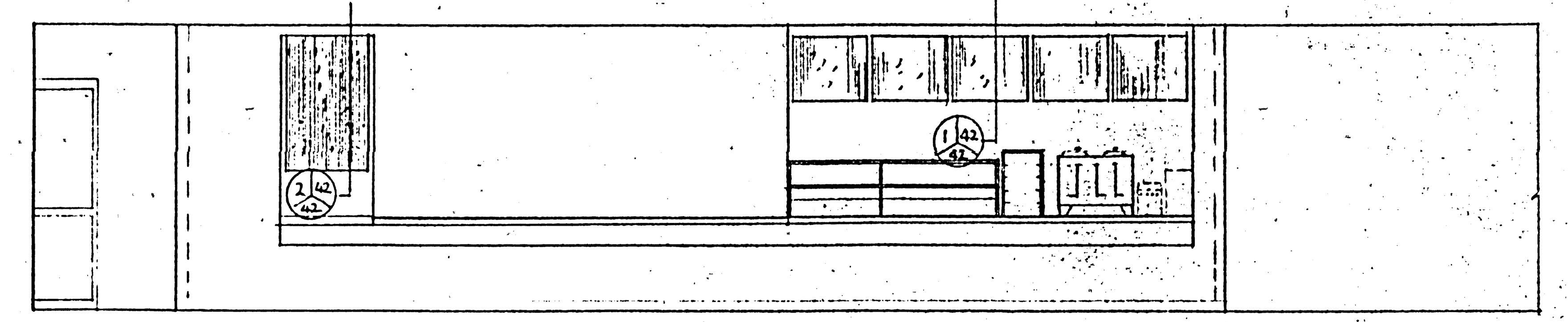
JAIL KITCHEN PLAN
SCALE 1/4" = 1'-0"



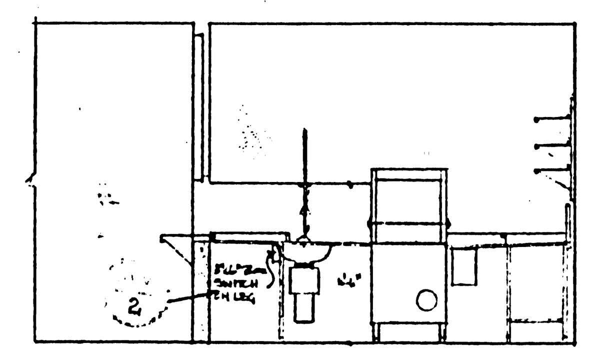
1 (42/42) KITCHEN



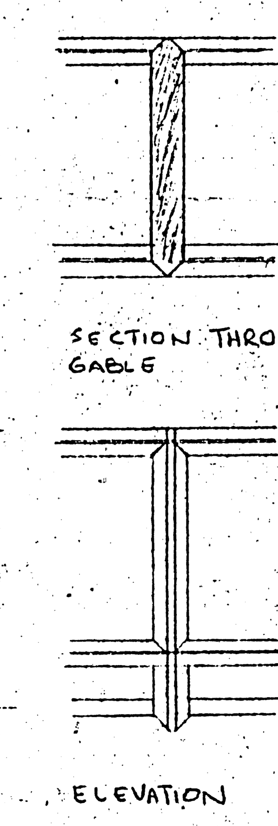
2 (42/42) KITCHEN



3 (42/42) KITCHEN

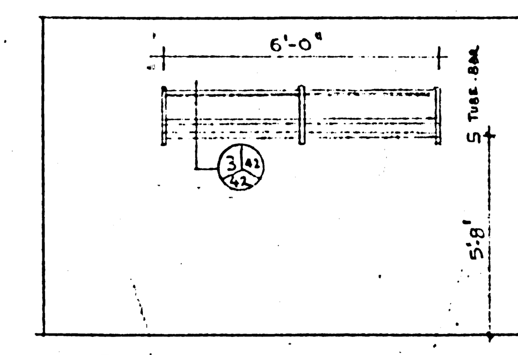


4 (42/42) DISHWASHING

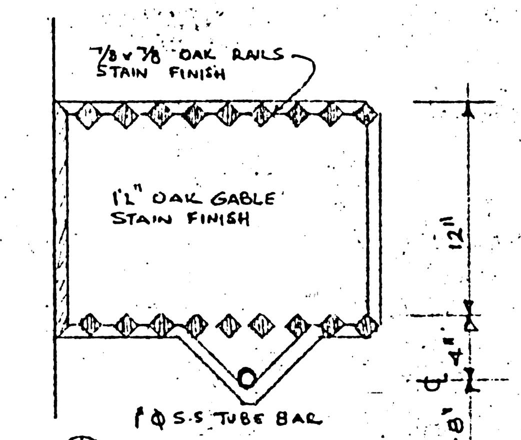


SECTION THRO' GABLE

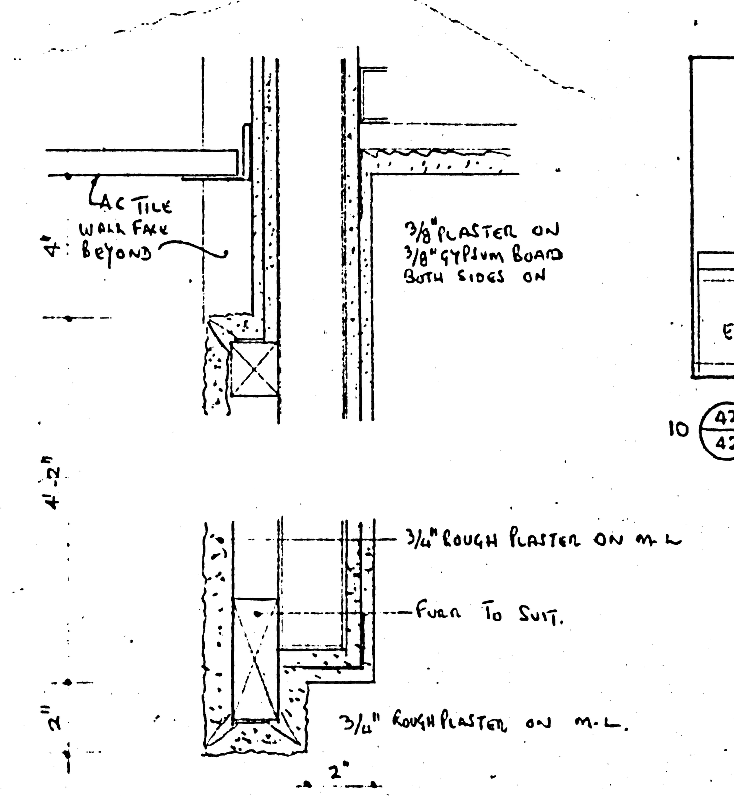
ELEVATION



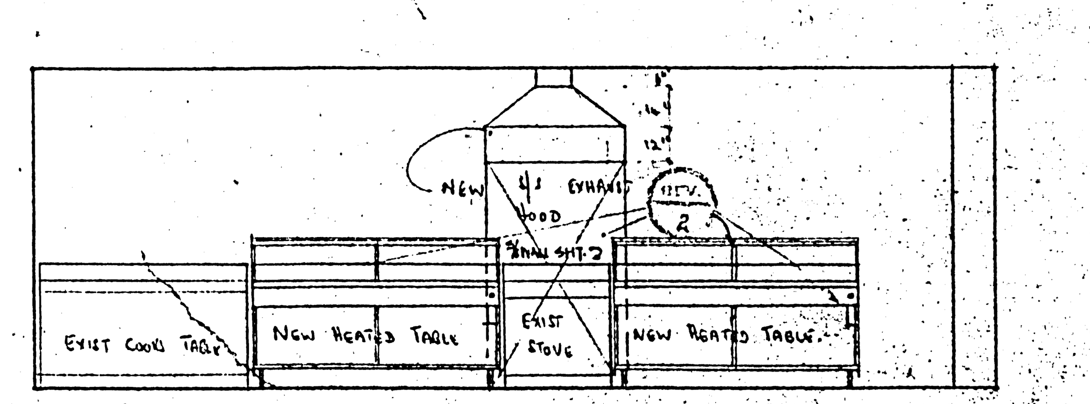
12 (42/42) CAFETERIA



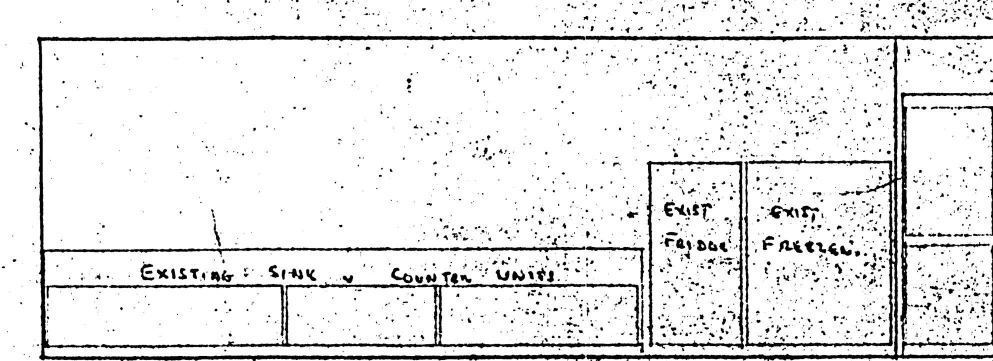
(13) DETAIL SECTION



DETAIL
SCALE 3" = 1'-0" (42)



10 (42/42) JAIL KITCHEN



11 (42/42) JAIL KITCHEN

ITEM (KIT. & CAFETERIA)	ELECTRICAL V	Ø	HP	KW		VENT C.F.M.	GAS	BTU	PLUMBING C	H	W	
1 SOILED DISH TABLE												
2 GARBAGE DISPOSER AND OVER SPRAY	208	3	1 1/2		5.7 AMPS (2)				3/4"	1/2"	1 1/2"	BY PASS GREASE TRAP
3 DISHWASHER	208	1	1 HP	7.5	SUPPLY WALL DISCONNECT WITH RED PILOT LITE FOR HEATER					(2) 3/4"	2"	(15 lb)
4 RINSE BOOSTER	208	3		12.0	33. AMPS SUPPLY WALL DISCONNECT W. RED PILOT LITE.					3/4"		TO ITEM 3
5 CLEAN DISHTABLE & SINK									1/2"	1/2"	1 1/2"	C/W FAUCET
6 SHELVING												
7 COOKS SINK									1/2"	1/2"	1 1/2"	C/W FAUCET
8 COOKS TABLE												
9 REFRIGERATOR	110	1	1/4		C/W CORD & PLUG							HAS AUTO CONDENSATE EVAPORATOR
10 FAT FRYER							3/4	130,000				(NOTE - USE 24" FLEX CONNECTION)
11 GAS RANGE							1"	110,000				
12 GAYLORD VENTILATOR	110	1			SEE DETAIL BOOKLET	1500 CFM				(408) 3/4" 180°	1 1/2	TO GREASE TRAP VIA 4" FLOOR FUNNEL.
13 BAKERS TABLE												
14 SANDWICH TABLE	110	1	1/6		WIRE TO DUPLEX AND BLOWER MOTOR						1 1/2"	TO OPEN DRAIN
15 TOASTER	208	1		2.5								
16 ICE CREAM CABINET	110		1/8		C/W CORD & PLUG							
17 STAND WITH SHELVES												
18 MILK DISPENSER	110		1/8		C/W CORD & PLUG							
19 DEEP FREEZE	110		1/4		C/W CORD & PLUG							
20 SHELF SECTIONS 4 ONLY												
21 WATER STATION	—		—						3/8 CHILLED WATER LINE (2)		1 1/4"	
22 DISH CART												
23 COMPRESSORS 2 ONLY	110		1/4 EACH		LOCATED IN FAN ROOM							
24 DESSERT SECTION	110		1/8		BLOWER MOTOR						1 1/4"	TO FLOOR DRAIN
25 HOT FOOD TABLE	208	1		6.0								
26 TRAY STAND												
27 COFFEE URN	208	3		6.0						1/2"	1 1/4"	SUPPLIED WITH SC WATER INLET VALVE.
28 BEVERAGE COUNTER												
29 TRAY SLIDE												
30 DOUBLE OVERSHELF.												
31 ADJUSTABLE GLASS SNEEZE GUARD					(REV. 2)							
32 GREASE TRAP	N.I.C.											

ITEM (JAIL KITCHEN)	ELECTRICAL V	P	HP	KW	VENT CFM	GAS BTU	PLUMBING C	H	W
33 HEATED TABLE C/W SINGLE OVERSHELF	208	1	8.0						
34 EXISTING STOVE									
35 EXHAUST HOOD					800 CFM				
36 HEATED TABLE C/W SINGLE OVERSHELF.	208	1	8.0						
37 EXISTING TABLE									
38 EXISTING COUNTER									
39 EXISTING COUNTER									
40 EXISTING SINK									
41 EXISTING FRIDGE									
42 EXISTING FREEZER.									

GEN CONTR TO CHECK "EXISTING" EQUIPMENT FOR ACCESS TO, AND REUSE IN, JAIL KITCHEN.

ELECTRICIAN DISCONNECTS FOR ITEMS 3 (HEATERS) AND ITEM 4 (BOOSTER) BOTH TO WALL MOUNTED ABOVE BOOSTER LOCATION AND BE C/W RED PILOT LITE INDICATOR.

PLUMBER 2-BRING VACUUM BREAKER SUPPLIED WITH ITEM 2 UP BEHIND DISHWASHER
3-DISHWASHER RINSE FROM ITEM 4. ALSO WASH TANK HOT WATER (140°) CONNECTION. PROVIDE PRESSURE RED. VALVE (15 lbs)
4-RINSE BOOSTER SUPPLIED WITH (40#) PRESSURE REDUCING VALVE, TEMP PRESSURE RELIEF & CHECK VALVE.
12-VENTILATOR REQUIRES 3/4" 180° FROM BOOSTER. DRAIN TO GREASE TRAP
PROVIDE STRAINER AHEAD OF ITEM 4 - BOOSTER TO PROTECT SOLENOID ON ITEMS 3 AND 12

SEE SHEET A12B FOR ADDITIONAL DATA

GENERAL NOTES

No.	PARTICULARS	DATE	BY
2	GENERAL REVISIONS	JULY 20.66	
1	GENERAL REVISION	JULY 16.66	

REVISIONS

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DETAILS
STRUCTURE
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PROVINCE OF MANITOBA — LIBLING, MICHENER — REGISTERED ARCHITECTS

PRINTING DATE [redacted] JULY 23, 1965

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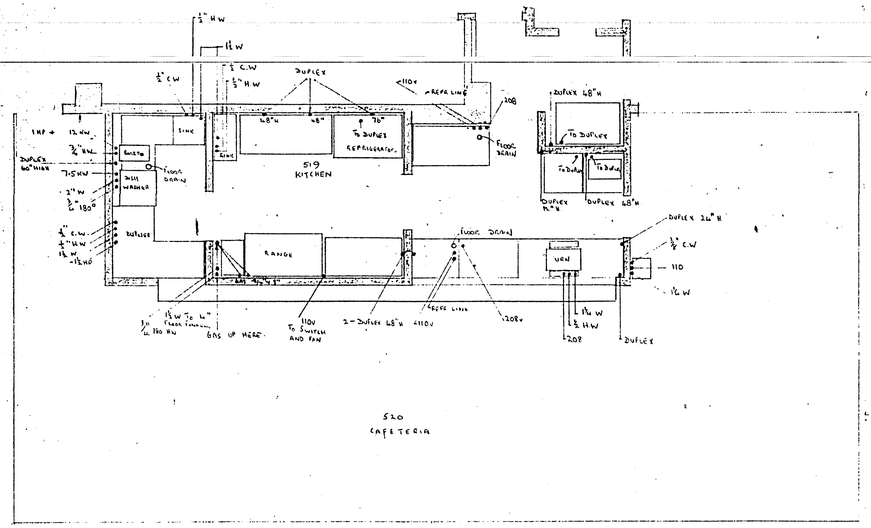
368 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 3-4491

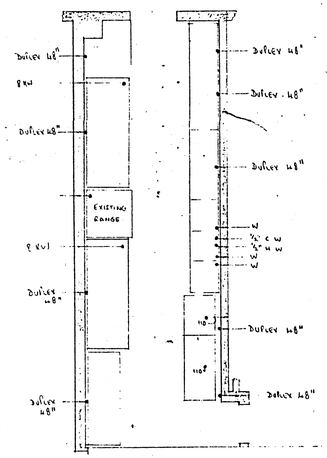
PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

REV. 1

TITLE EQUIPMENT SCHEDULE
FLOOR PLANS, ELEVATIONS
REVISED KITCHEN DETAILS

SHEET NO. 6020-A-42A





C.W. = COLD WATER
H.W. = 140° WATER
W = WASTE
DUPLEX = HEIGHT NOTED ON THIS PAGE.

NOTES – EQUIPMENT SUPPLIER TO BE ADVISED OF ANY DEVIATIONS FROM THIS ROUGH-IN DATA

GENERAL NOTES

No.	PARTICULARS	DATE	BY
1	GENERAL REVISION		

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PROVINCE OF MANITOBA
LIBLING MICHENER
REGISTERED ARCHITECTS

PRINTING DATE: JULY 1965

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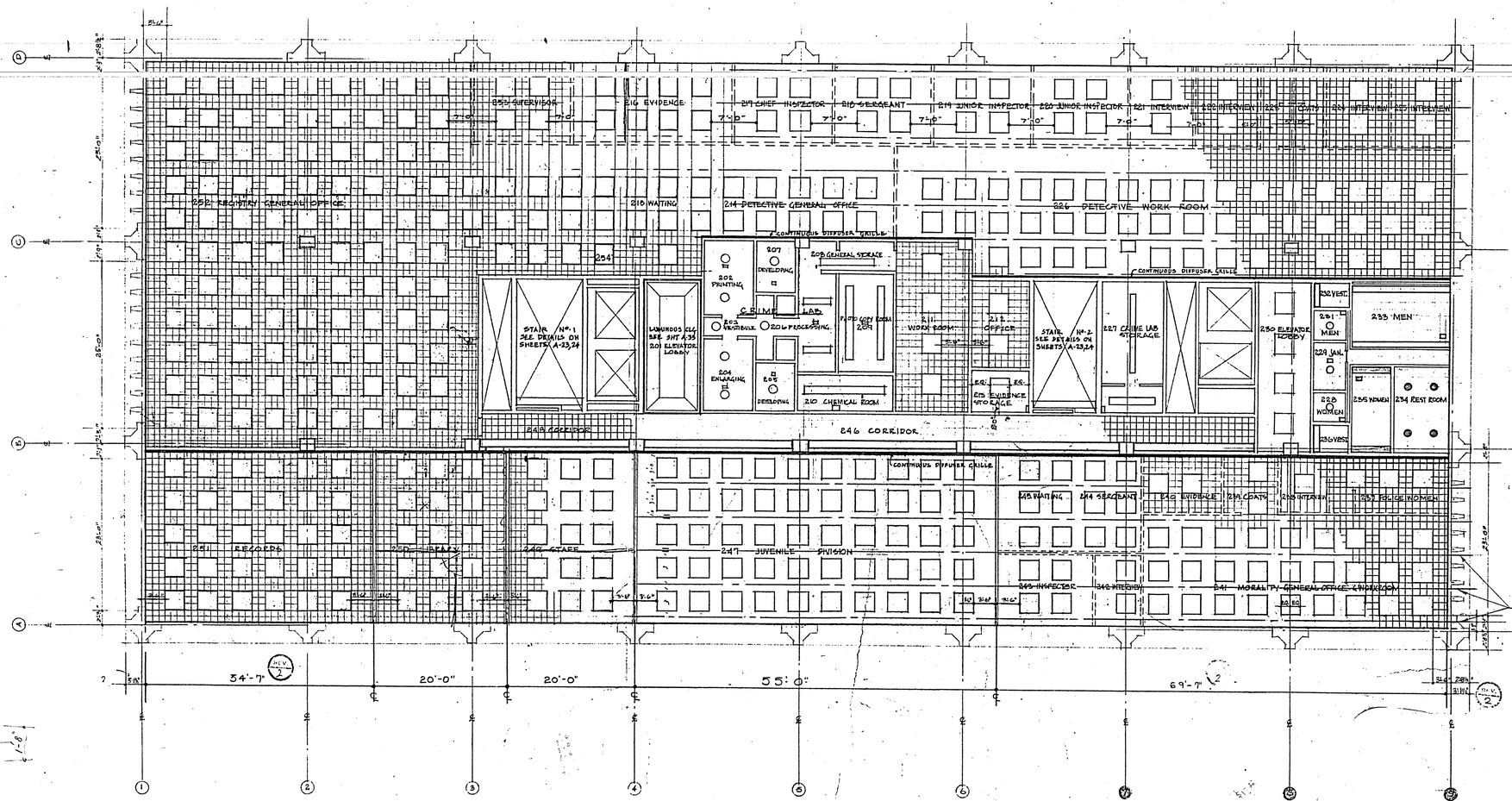
PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

REV. 1

TITLE: ROUGHING IN FLOOR PLANS
REVISED KITCHEN DETAILS
SHEET NO. 6020-A-42B

W.J.D. 175H



SECOND FLOOR REFLECTED CEILING PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES

2. DIMENSION CHANGE OF EXTERIOR WALL JULY 1965 L.S.
1. CLARIFICATION ON LIGHT FIXTURE & ACOUSTIC TILE LOCATIONS CALLING UP AREAS JUNE 21.65 N.Y.

No.	PARTICULARS	DATE	BY

REVISIONS

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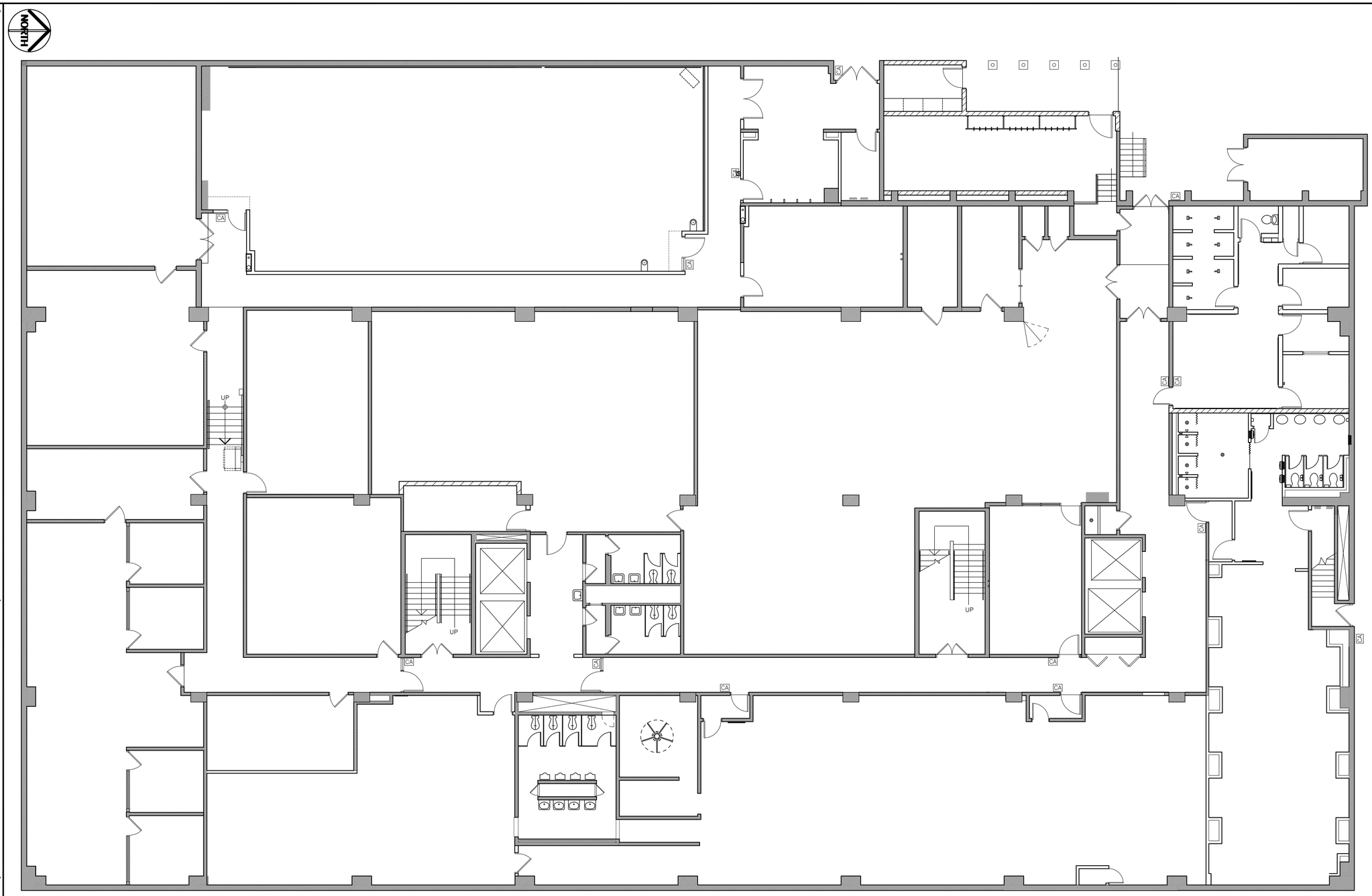
PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

TITLE SECOND FLOOR REFLECTED CEILING PLAN
SHEET NO. 6020 A 5B

Public Safety Bldg

Address 151 Princess St. Project No. Description Basement Floor Plan Date 2002.07.25 File Name 0151PROB.dwg



NOTES :

NO.	REVISION/DESCRIPTION	BY	DATE

SEALS

DRAWN BY MMK	CHECKED BY	APPROVED
DATE 2002.07.25	USER APPROVAL	

Winnipeg
CITY OF WINNIPEG
PLANNING, PROPERTY & DEVELOPMENT DEPARTMENT
CIVIC ACCOMMODATIONS DIVISION
300 – 65 GARRY ST. R3C 4K4

PROJECT

Police Services
Public Safety Building

151 PRINCESS STREET

SHEET TITLE

Basement Floor PLan

SCALE	PROJECT NO.	SHEET NO.
1/8" = 1'–0"		A1

GENERAL NOTES

CONCRETE STRENGTH @ 28 DAYS:
CAISSON & PILES 2500 P.S.I.
ALL OTHER CONCRETE 4000 P.S.I.
MAXIMUM AGGREGATE SIZE 1½"
MAXIMUM SLUMP 3"
USE SULPHATE RESISTANT CEMENT IN CAISSONS & PILES
REINF STEEL TO BE DEFORMED NEW BILLET STEEL, MINIMUM YIELD 60,000 PSI AND DETAILED IN ACCORDANCE WITH N.B.C 1960
PROVIDE 6x6 8/8 W.W. MESH IN 2" SLAB OVER 1" CORK IN MECH. AREA (6TH FLR)
PROVIDE 2#6 T.&B. & ALL SIDES AT OPENINGS.

MECH FLOOR LL = 150 P.S.F
OTHER FLOORS LL = 100 P.S.F

USE A.S.T.M.-A36 STEEL FOR ALL STRUCTURAL STEEL MEMBERS
ALL STEEL MEMBERS, B.R, COL CAP R, BOLTS ETC. TO BE SUPPLIED BY STRUCT. STEEL SUB-TRADE
ALL STEEL MEMBERS & CONNECTIONS FOR P.C & STONE FACINGS TO BE GALVANIZED

PITS REINF.
8" WALLS, 12" BASES
#4 @ 12" EA. WAY. EA. FACE
2#8 T.& BOT. 4 SIDES

No.	PARTICULARS	DATE	BY
2.	PILE ELEVATIONS	JAN. 25/65	J.W.
1.	GENERAL REVISIONS	DEC. 16/64	J.W.

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B-14 FILE
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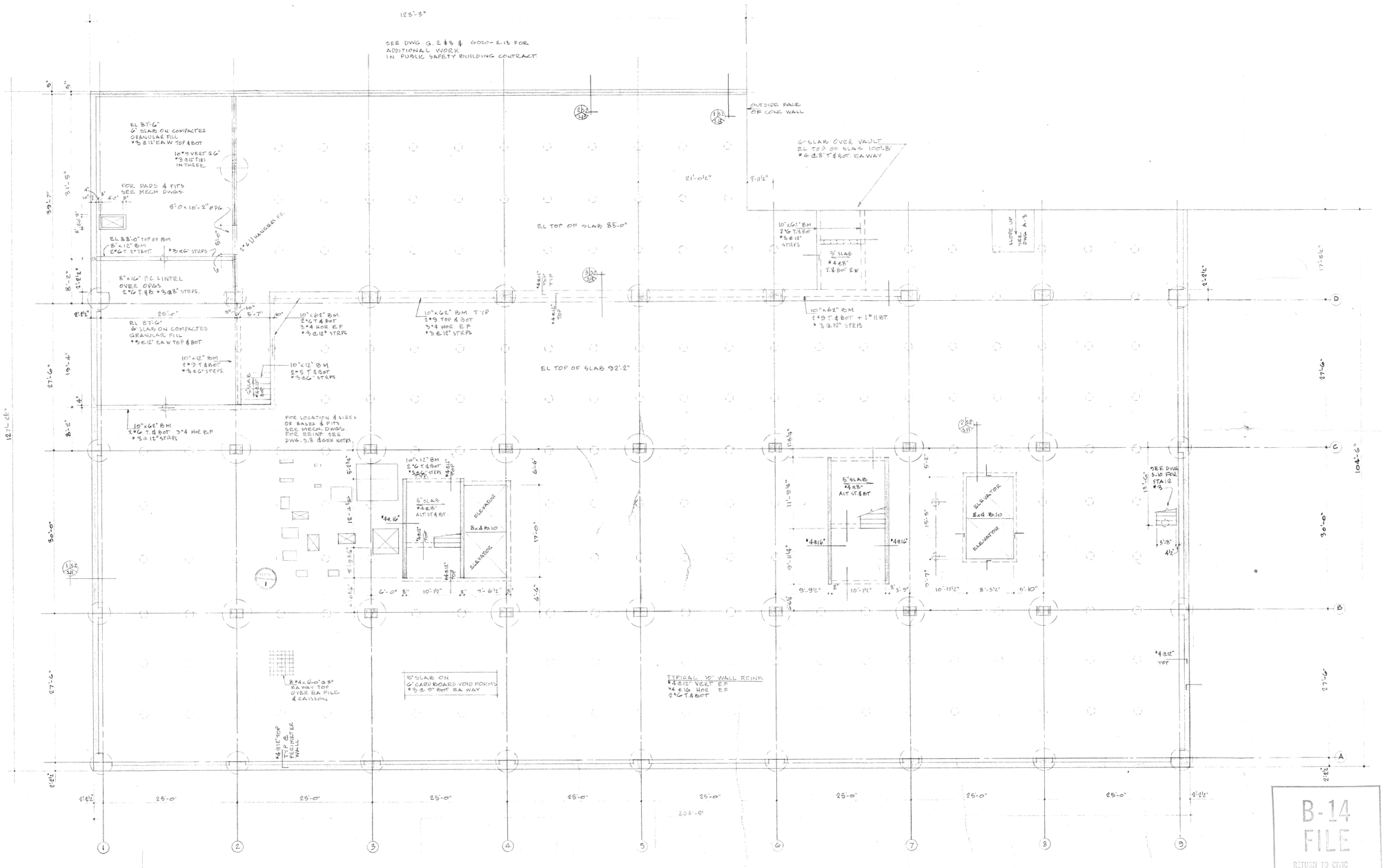
4 01 11

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

TITLE FOUNDATION PLAN
SHEET NO. 6020-S-1



BASEMENT FLOOR FRAMING PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES

No.	PARTICULARS	DATE	BY
2	GENERAL REVISION	DEC. 16/64	J.W.
1	CONC. PIT	DEC. 1/64	H.L.

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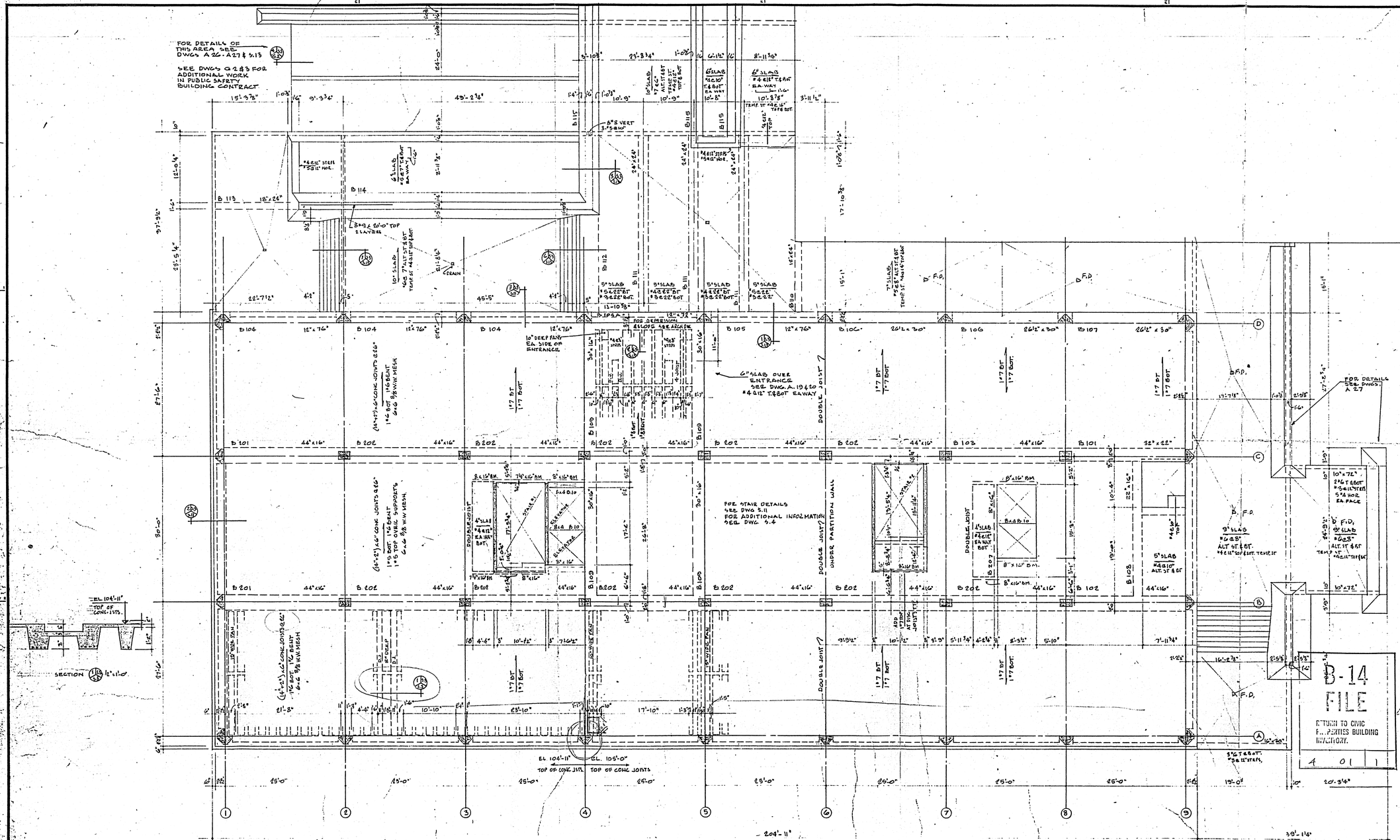
PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

TITLE BASEMENT FLOOR FRAMING PLAN
SHEET NO. 6020 - S - 2

151 Princess Street - 6020
Main Flr Framing Plan S-2/3
Public Safety Bldg.
Original Const. Drawing -1965



GENERAL NOTES

No.	PARTICULARS	DATE	BY
1	GENERAL REVISION	DEC 10/64	J.W.

REVISIONS

PROVINCE OF MANITOBA
LIBLING, MICHENER & ROSENBERG
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N. LAZAR
REGISTERED ENGINEER

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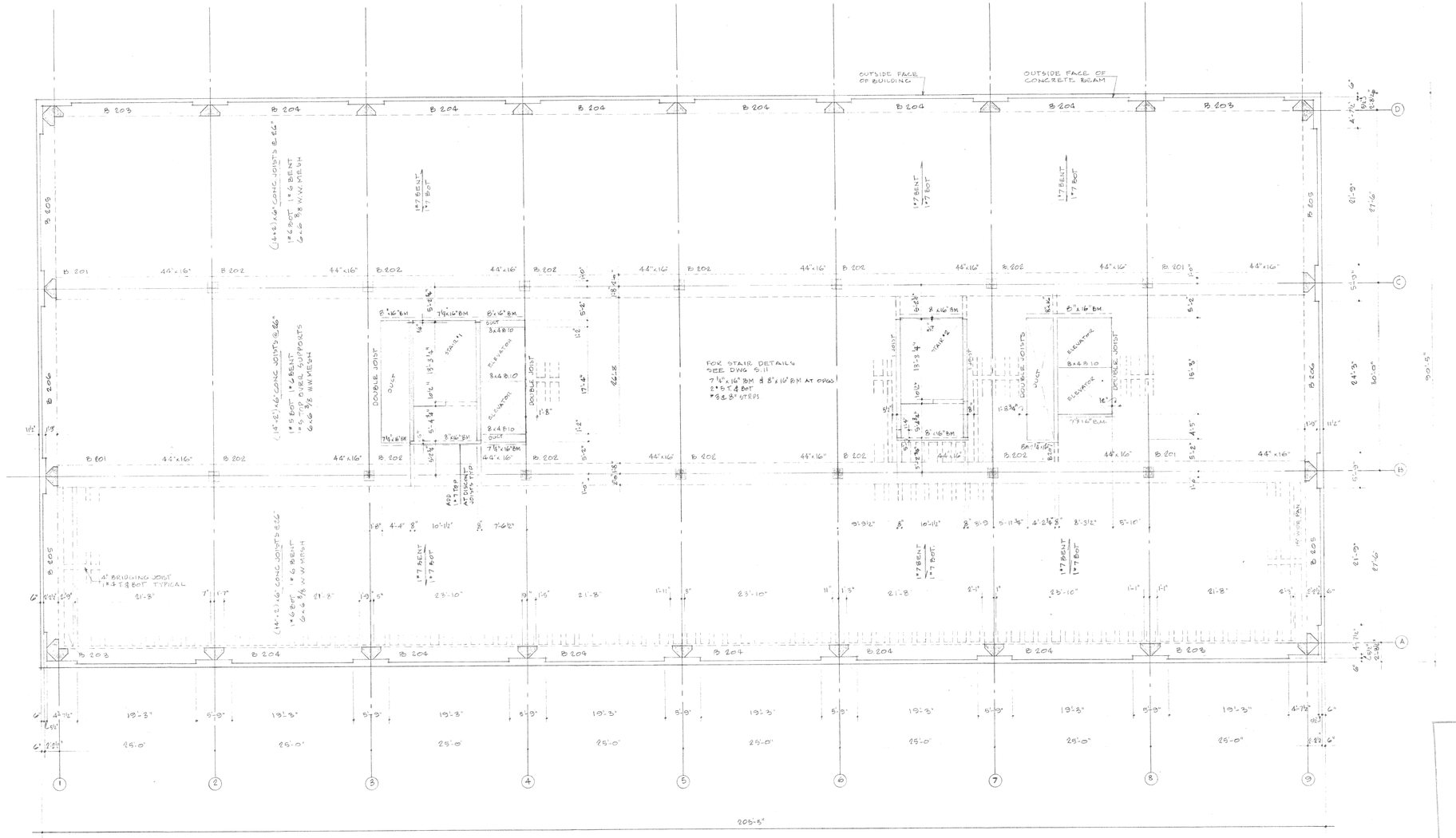
FOR THE CITY OF WINNIPEG MANITOBA

TITLE GROUND FLOOR FRAMING PLAN
SHEET NO. 6020 - S - 3



GENERAL NOTES

No.	PARTICULARS	DATE	BY
1	GENERAL REVISIONS	DEC 16/04	JW

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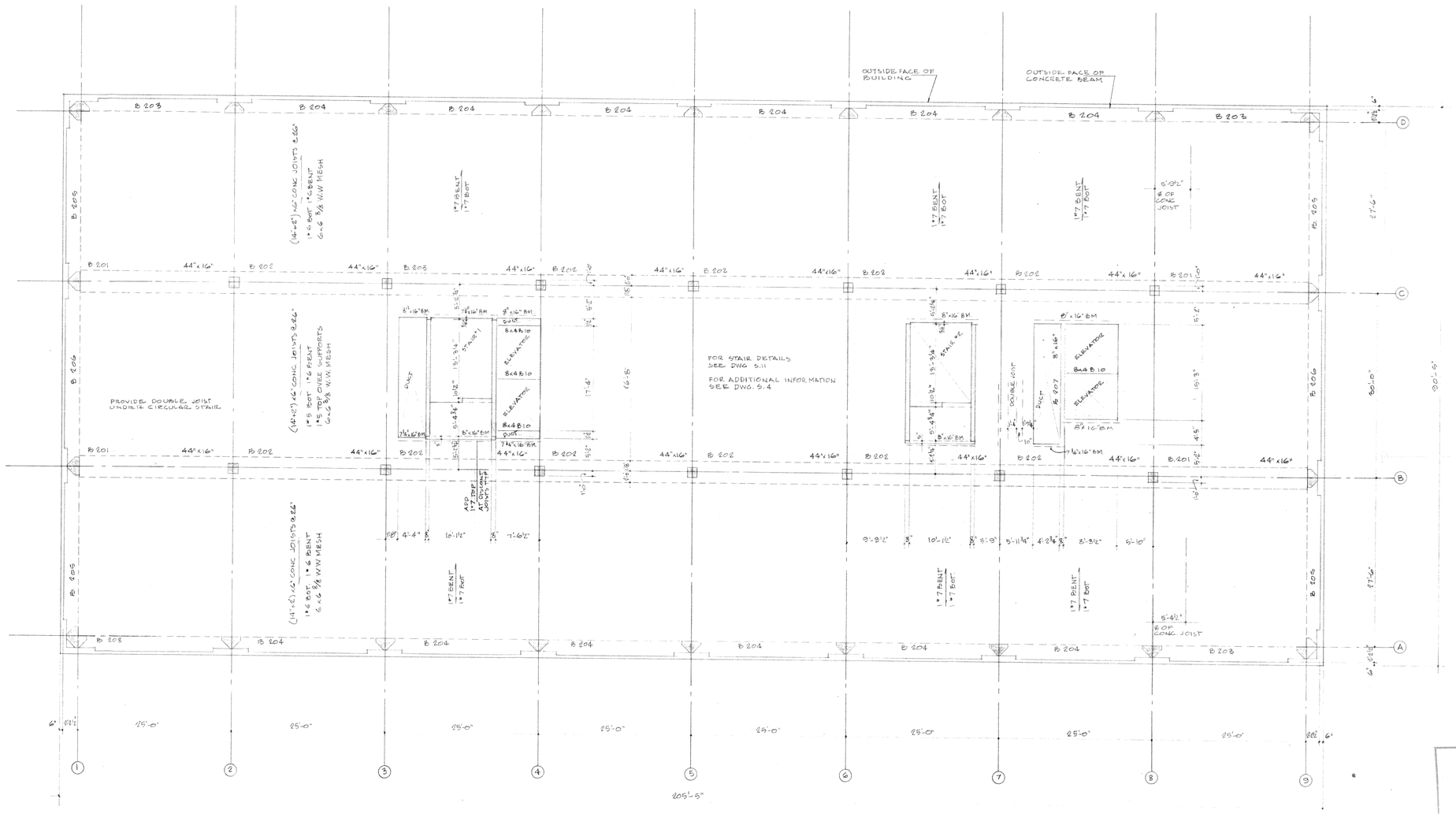
PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

TITLE SECOND FLOOR FRAMING PLAN
SHEET NO. 6020-S-4



THIRD FLOOR FRAMING PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES

No.	PARTICULARS	DATE	BY
1	GENERAL REVISION	DEC 16/64	J.W.

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PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

TITLE THIRD FLOOR FRAMING PLAN
SHEET NO. 6020 - S - 5

FOURTH FLOOR FRAMING PLAN

SCALE: 1/8" = 1'-0"

GENERAL NOTES

No.	PARTICULARS	DATE	BY
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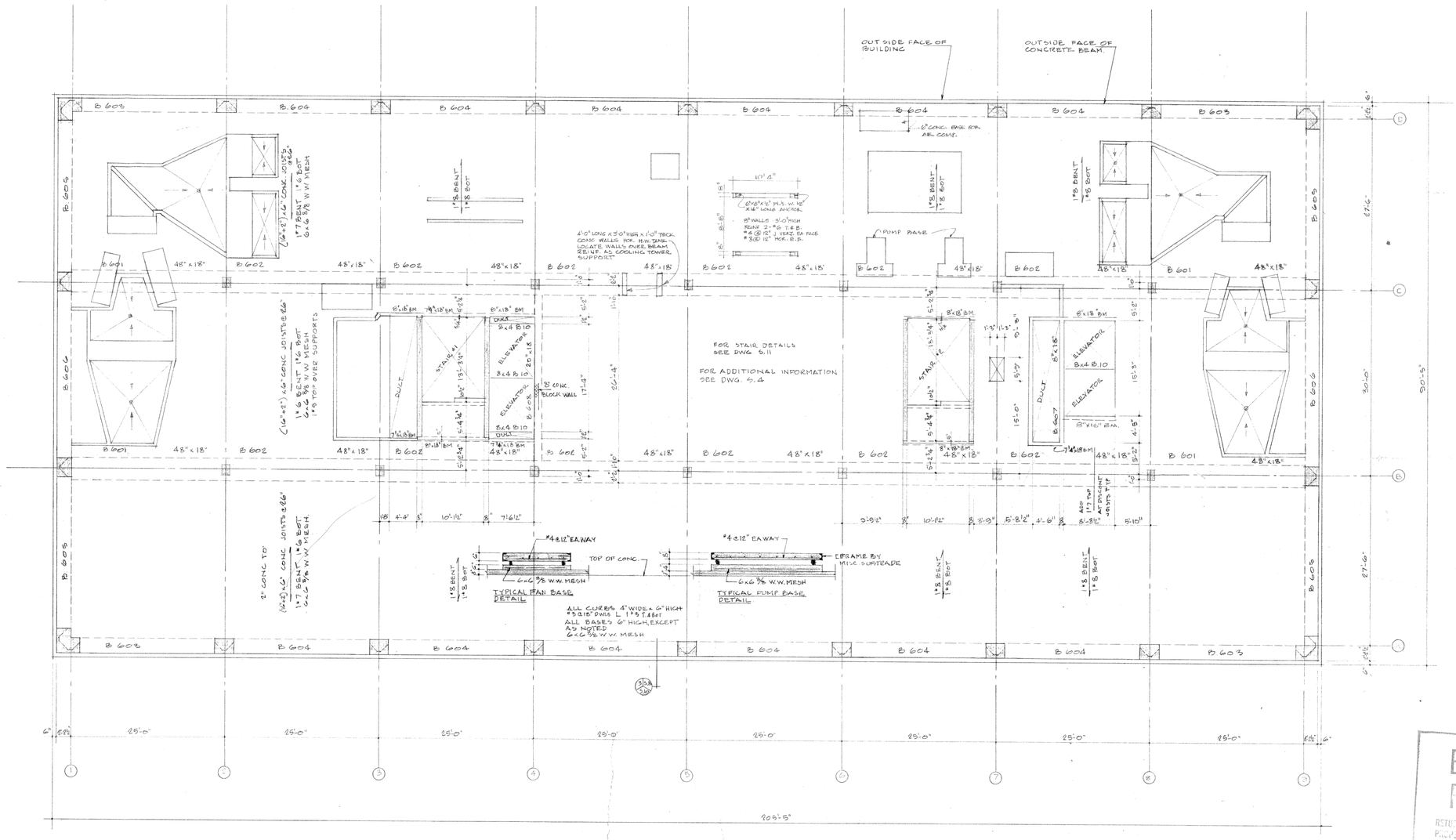
PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

TITLE FOURTH FLOOR FRAMING PLAN

SHEET NO. 6020 - S - 6



SIXTH FLOOR FRAMING PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES

No.	PARTICULARS	DATE	BY
1	GENERAL REVISION	DEC 16/04	J.W.

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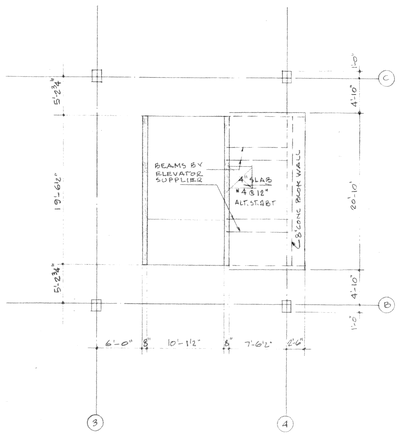
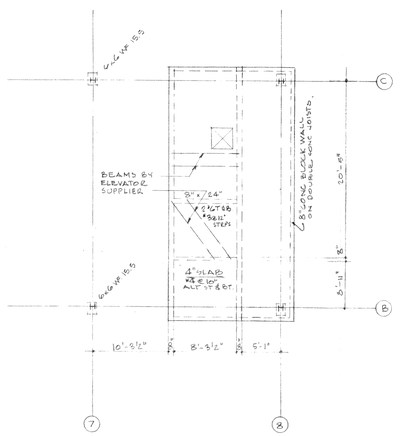
PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

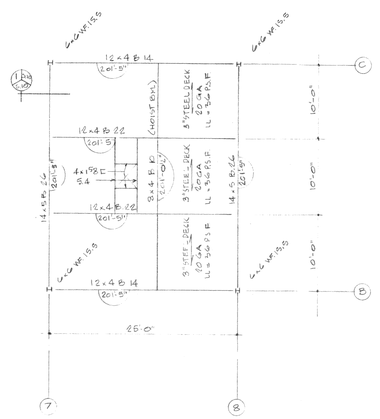
TITLE SIXTH FLOOR FRAMING PLAN
SHEET NO. 6020 - S - 8



ELEVATOR MACHINE FLOOR FRAMING PLAN
EL. TOP OF CONC. SLAB: 173'-2"
SCALE: 1/8" = 1'-0"

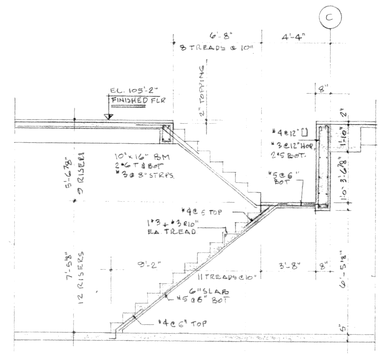


ELEVATOR MACHINE FLOOR FRAMING PLAN
EL. TOP OF SLAB: 182'-10⅝"
SCALE: 1/8" = 1'-0"

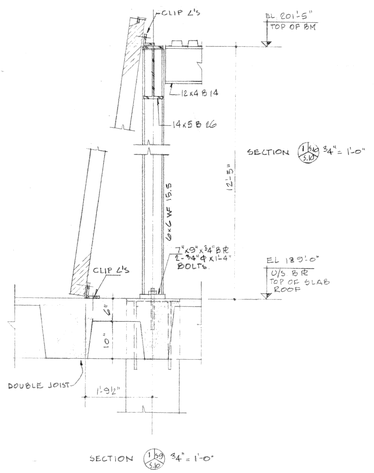


PENTHOUSE ROOF FRAMING PLAN

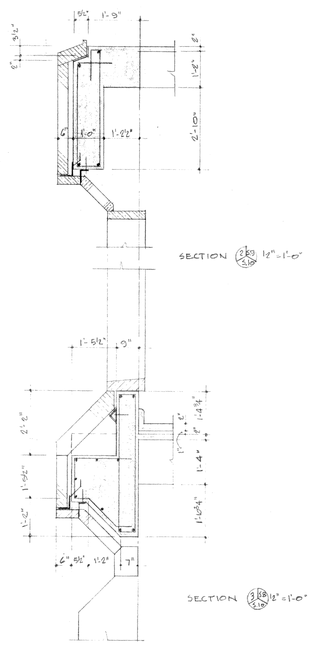
SCALE: 1/8" = 1'-0"



STAIR #3
SCALE: 1/4" = 1'-0"



SECTION 1/S-10 3/4" = 1'-0"



SECTION 2/S-10 1½" = 1'-0"

SECTION 3/S-10 1½" = 1'-0"

GENERAL NOTES

No.	PARTICULARS	DATE	BY
1	GENERAL REVISION	DEC 15/64	J.W.

REVISIONS

PROVINCE OF MANITOBA — LIBLING MICHENER — REGISTERED ARCHITECTS

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STRUCTURE R.L.
MECHANICAL
ELECTRICAL

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4 | 61 | 1

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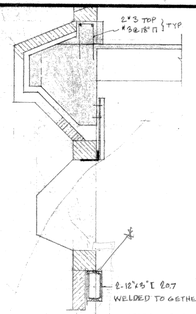
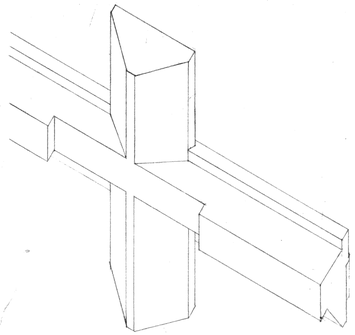
PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

TITLE: ELEVATOR MACHINE FLOOR & PENTHOUSE ROOF FRAMING PLAN

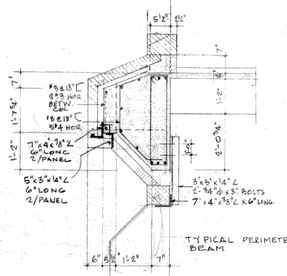
SHEET NO. 6020-S-10



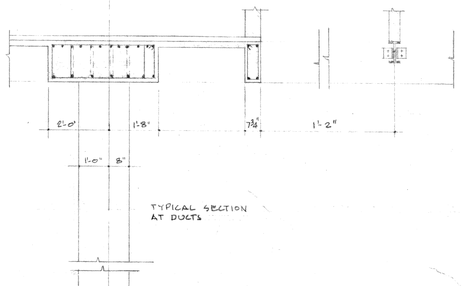
TYPICAL PERIMETER BEAM



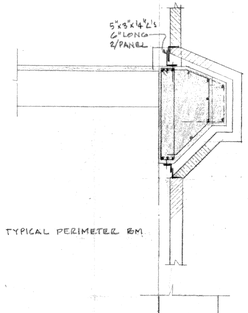
ISOMETRIC VIEW OF COL & BEAM



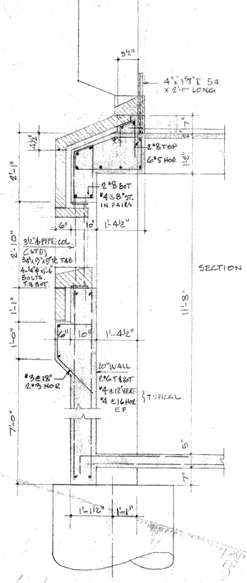
TYPICAL PERIMETER BEAM



TYPICAL SECTION AT DUCTS



TYPICAL PERIMETER BM.



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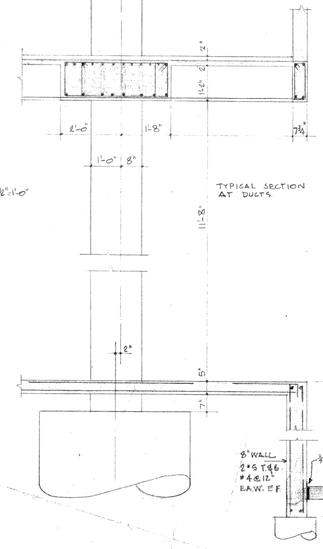
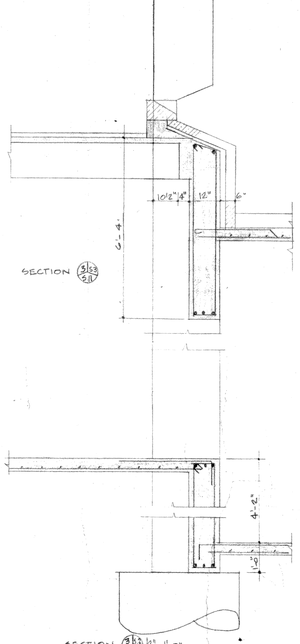
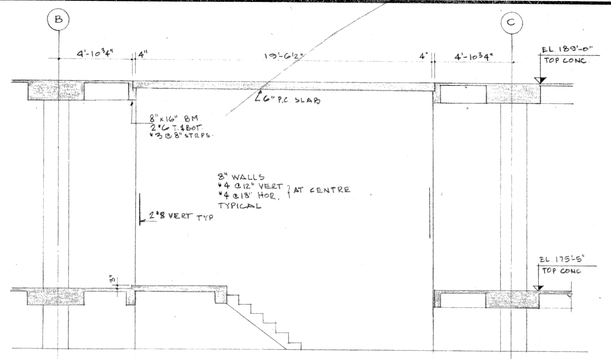
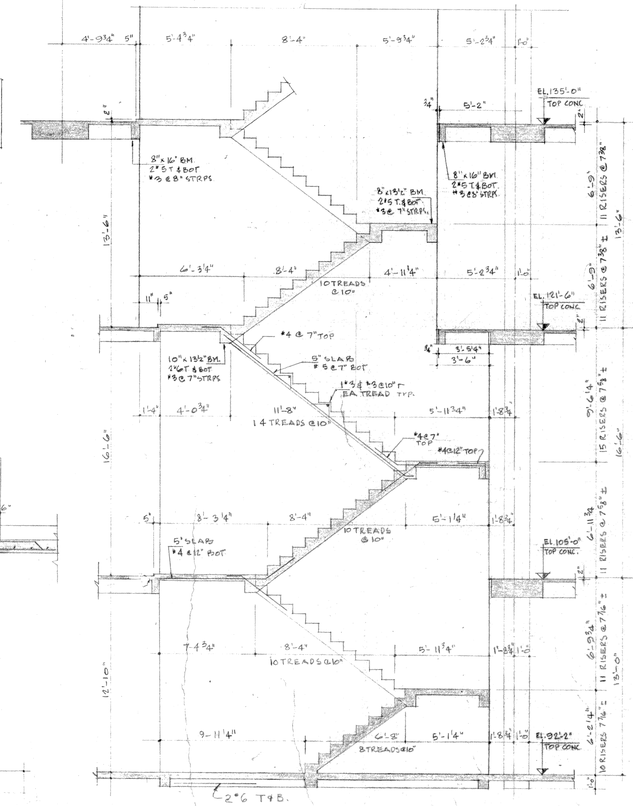


SECTION (3/S3) 1/2"=1'-0"

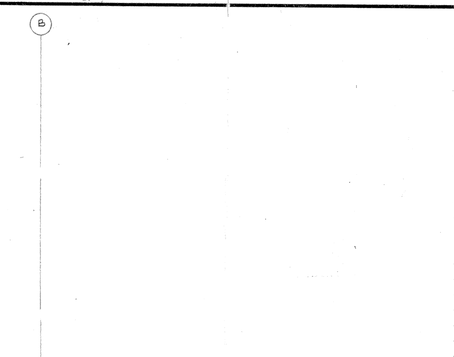


SECTION (3/S3) 1/2"=1'-0"





STAIR NO. 2
SCALE: ¼"=1'-0"



STAIR NO. 1
SCALE: ¼"=1'-0"

GENERAL NOTES

NO.	PARTICULARS	DATE	BY
1	GENERAL REVISION	DEC. 16/64	J.W.
REVISIONS			

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE R.L.
MECHANICAL
ELECTRICAL

PRINTING DATE [redacted]

DRAWN BY J.W.

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LIBLING MICHENER & ASSOCIATES ARCHITECTS
303 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 2-4471

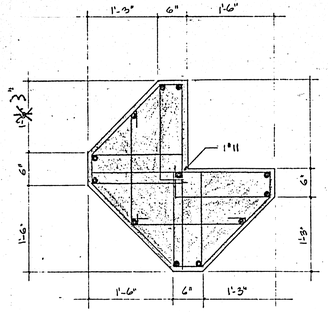
B-14
FILE
RETURN TO CIVIC PROPERTIES BUILDING INVENTORY.
4 01 C

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

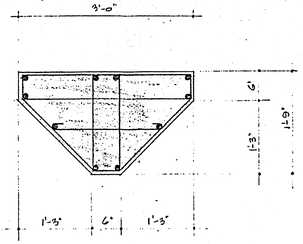
TITLE STRUCTURAL DETAILS
SHEET NO. 6020 - S - 11

COLUMN SCHEDULE

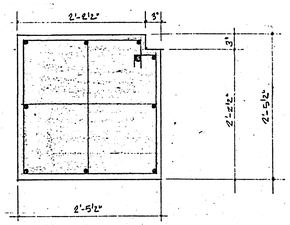
ELEVATION TOP OF CONC. FLOOR	B1, B3, B4, B5, B6, B7, B8 C2, C3, C4, C5, C6, C7, C8				A2, A3, A4, A5, A6, A7, A8 D2, D3, D4, D5, D6, D7, D8 B1, C1, B9, C9				A1, A9 D1, D9			
	SIZE	SHAPE	REINFORCING VERTICAL	REINFORCING TIES	SIZE	SHAPE	REINFORCING VERTICAL	REINFORCING TIES	SIZE	SHAPE	REINFORCING VERTICAL	REINFORCING TIES
BL 180'-0" TOP OF ROOF												
TOP ft.	12"x 18"x 3/8"		4 #8 x 6'-0" WELDED TO ft.		16"x 28½"x 3/8"		8 #7 x 2'-0"		24"x 24"x 3/8"		9 #7 & 1 #11	
EL 176'-5" TOP OF 6TH FLOOR	14"x 20"		4 #8	#3 @ 16"	16"x 26½" SEE DETAIL 4		8 #7	#3 @ 10"	SEE DETAIL 3		9 #7 & 1 #11	#3 @ 12" 2 #3 @ 12"
EL 162'-0" TOP OF 5TH FLOOR	18"x 20"		6 #8	#3 @ 18" IN PAIRS	SEE DETAIL 2		10 #7	#3 @ 12" 1 #5 @ 12"	SEE DETAIL 1		11 #7 & 1 #11	do
EL 147'-6" TOP OF 4TH FLOOR	20"x 20"		8 #9	#3 @ 20" IN PAIRS	do		10 #7	do	do		do	do
EL 135'-0" TOP OF 3RD FLOOR	20"x 20"		8 #11 & 2 #9	#3 @ 20" IN THREE	do		10 #7	do	do		do	do
EL 121'-6" TOP OF 2ND FLOOR	26"x 20"		8 #10 & 2 #9	#3 @ 20" IN THREE	do		10 #7	do	do		do	do
EL 109'-0" TOP OF GROUND FLR.	30"x 20"		8 #10 & 2 #9	#3 @ 20" IN THREE	do		10 #8	do	do		do	do
EL 92'-0" TOP OF BSMT. FLOOR	30"x 20"		10 #11	#3 @ 6" IN THREE	36"x 26½"		10 #9	#3 @ 12"	do		do	
DOWELS	10 #11				10 #9				11 #7 + 1 #11			



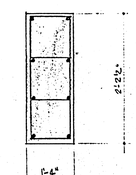
DETAIL 1



DETAIL 2



DETAIL 3



DETAIL 4

BEAM SCHEDULE

BEAM MARK	SIZE	BARS IN TOP CONT.	BARS IN TOP OVER SUPP	BENT BARS	BARS IN BOT	STIRRUPS SIZE	STIRRUPS SPACING	REMARKS
B.701	12"x 30"	2 #7	2 #7		3 #7 + 1 #6	#4	3@9", REM. @ 12"	3 #4 HOR E.F.
B.702	12"x 30"	2 #7	2 #6		3 #7	#4	do	do
B.703	12"x 30"	2 #6	2 #5		2 #7	#3	@ 12"	3 #4 HOR E.F.
B.704	8"x 63¾"	2 #5			2 #9	#3	@ 12"	
B.705	8"x 63¾"	2 #6			2 #6	#3	@ 12"	
B.706	18"x 16"			3 #11	2 #11	#3	@ 8"	
B.707	12"x 16"	2 #6			2 #5	#3	@ 8"	
B.601	48"x 18"	4 #9		6 #9	6 #9	#8 IN PAIRS	6@3½", REM 29" SINGLE	
B.602	48"x 18"	4 #9		4 #9	4 #9	do	do	
B.603	SEE SECT	2 #10	1 #11		2 #10 + 1 #11	#4	12@3½" REM. @ 16"	6 #4 HOR
B.604	do	2 #10	1 #9		2 #10	#4	do	do
B.605	do	2 #10			3 #7 + 1 #6	#3	3@9" REM. @ 12"	do
B.606	do	2 #10			3 #7	#4	do	do
B.607	8"x 18"	2 #6			2 #8	#4	@ 9"	
B.608	20"x 18"	6 #6		3 #11	3 #11	#4	@ 9"	
B.401	8"x 16"	2 #6			2 #9	#3	@ 8"	
B.402	10"x 16"	2 #6			2 #9	#3	@ 8"	

BEAM MARK	SIZE	BARS IN TOP CONT.	BARS IN TOP OVER SUPP	BENT BARS	BARS IN BOT	STIRRUPS SIZE	STIRRUPS SPACING	REMARKS
B 201	44"x 16"	4 #8		6 #9	6 #8	#4 IN PAIRS	12@4", REM. @ 8" SINGLE	
B 202	44"x 16"	4 #8		4 #9	4 #8	do	do , do	
B 203	SEE SECT	2 #9	1 #11		3 #9	#4	6@7", REM. @ 12"	5 #4 HOR
B 204	do	2 #9	1 #9		2 #9 + 1 #5	#4	do , do	do
B 205	do	2 #8	1 #7		2 #8 - 1 #6	#4	@ 12"	5 #4 HOR
B 206	do	2 #8			2 #8	#4	do	do
B 207	8"x 16"	2 #6			2 #6	#4	@ 8"	
B 101	32"x 22"	2 #11		4 #11	3 #9	#4 IN PAIRS	1@4", REM @ 8" SINGLE	
B 102	44"x 16"	4 #8		6 #9	6 #9	do	do, do	
B 103	44"x 16"	2 #11		4 #11	6 #8	do	do, do	
B 104	12"x 76"	3 #10			3 #10	#4	9@8", REM. @ 16"	3 #4 HOR E.F.
B 104 A	12"x 72"	3 #10			4 #10	#4	10@6", REM. @ 16"	do
B 105	12"x 76"	3 #10	2 #9 FROM B 106	2 #9 FROM 106	3 #10	#4	9@8", REM. @ 16"	do
B 106	26½"x 30"	2 #9		2 #9	2 #9	#4	8@4", REM. @ 12"	
B 107	26½"x 30"	2 #9		3 #9	3 #9	#4	do, do	
B 108	42"x 16"			4 #10	3 #10	#3	@ 8"	
B 109	30"x 16"			5 #10	4 #10	#4	@ 8"	
B 110	12"x 24"	2 #6			2 #8	#3	@ 12"	
B 111	24"x 24"			4 #10	4 #10	#4	12@4", REM. @ 12"	
B 112	SEE SECTION	12 #9			24 #10 IN 2 LAYERS	#4	@ 12"	#5@12" HOR E.F.
B 113	18"x 24"	5 #5			5 #9	#4	4@6" REM. @ 12"	
B 114	SEE SECTION				7 #11	#4	@ 12"	#5@12" HOR
B 115	do				6 #9	#4	@ 12"	#5@12" HOR.

GENERAL NOTES

No.	PARTICULARS	DATE	BY

REVISIONS

PROVINCE OF MANITOBA — LIBLING — REGISTERED ARCHITECT

CHECKED FOR: DESIGN DETAILS STRUCTURE RL MECHANICAL ELECTRICAL

PROVINCE OF MANITOBA — R. LAZAR — REGISTERED ENGINEER

PRINTING DATE

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568 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 8-4491

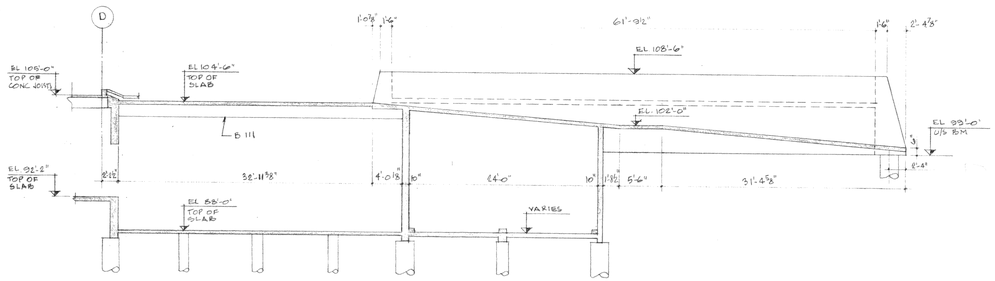
B-14 FILE
RETURN TO CITY PROPERTIES BUILDING INVENTORY.
4 01 1

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

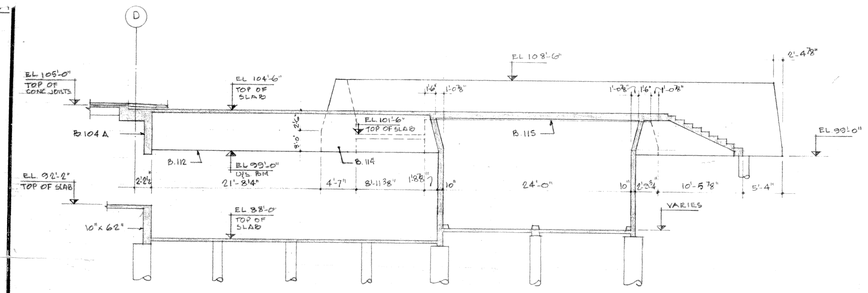
COLUMN SCHEDULE
BEAM SCHEDULE
STRUCTURAL DETAIL

TITLE

SHEET NO. 6020 -S-12



SECTION 1/S3/S15 1/S2/S15 18" = 1'-0" 6/S3/S15



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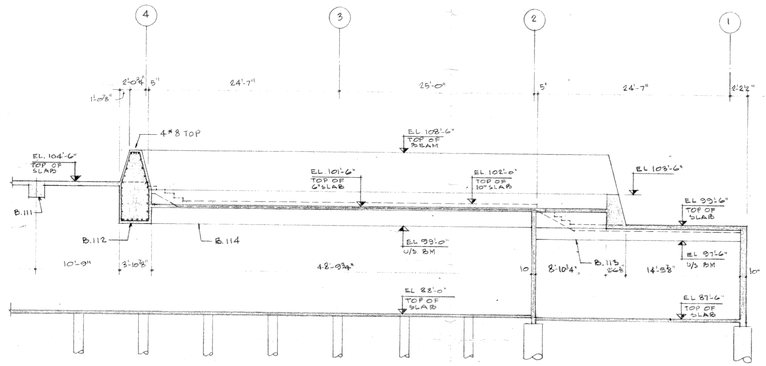
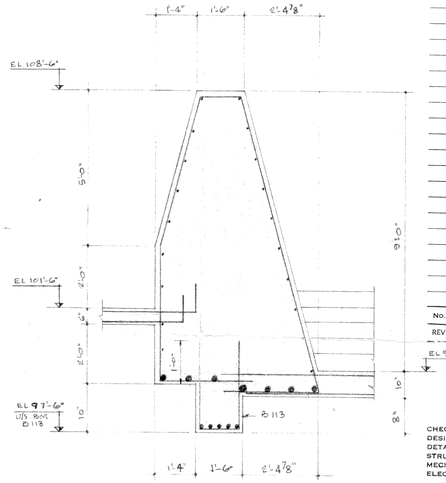
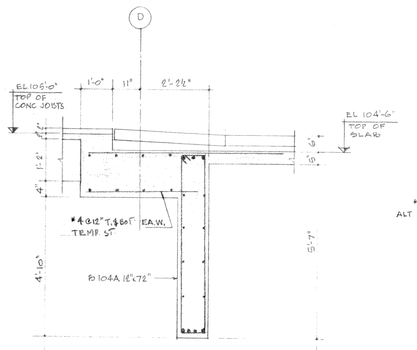


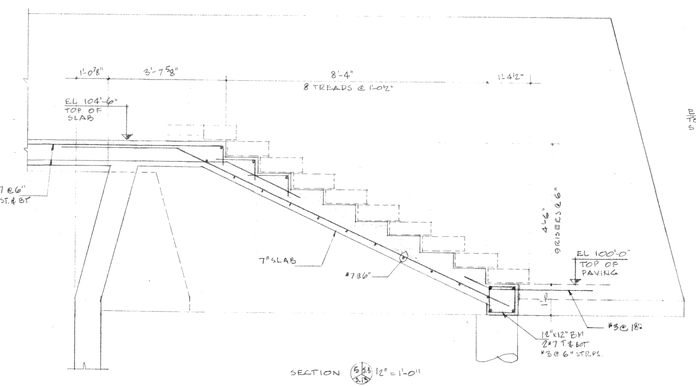
SECTION 3/S3/S15 3/S3/S15 18" = 1'-0"



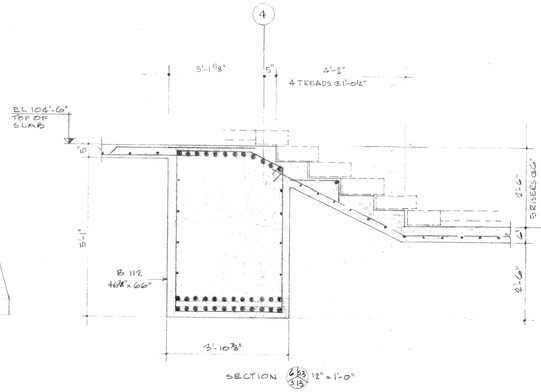
SECTION 8/S3/S15 12" = 1'-0"



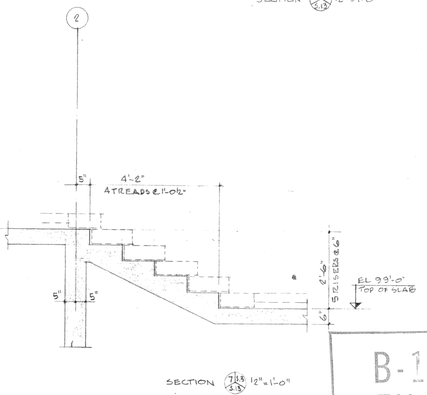
SECTION 4/S3/S15 12" = 1'-0"



SECTION 5/S3/S15 12" = 1'-0"



SECTION 6/S3/S15 12" = 1'-0"



SECTION 7/S3/S15 12" = 1'-0"

GENERAL NOTES

No.	PARTICULARS	DATE	BY

REVISIONS

CHECKED FOR:
DESIGN M.R.L.
DETAILS
STRUCTURE R.C.
MECHANICAL
ELECTRICAL

PRINTING DATE
[redacted]

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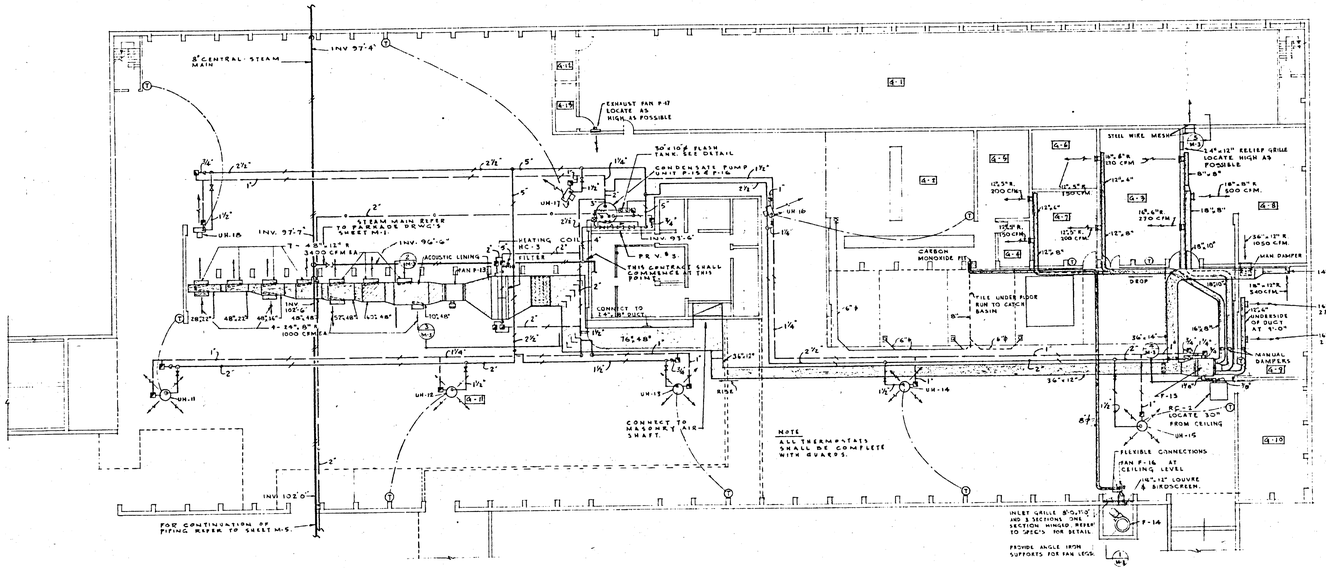
368 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 3-4491

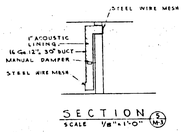
B-14
FILE
RETURN TO CIVIC PROPERTIES BUILDING INVENTORY.
4 | 01 | 1

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

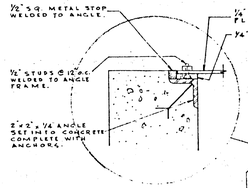
TITLE STRUCTURE DETAILS
SHEET NO. 6020 - S - 13

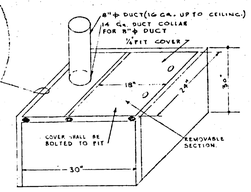


PARKADE BASEMENT FLOOR PLAN
SCALE: 1/16"=1'-0"

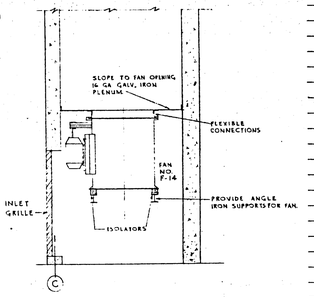


SECTION 5
SCALE 1/8"=1'-0" M-3

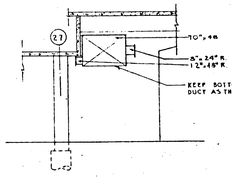




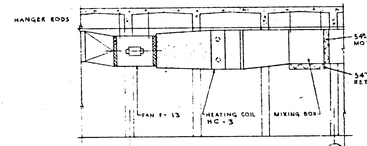
CARBON MONOXIDE PIT COVER
NTS



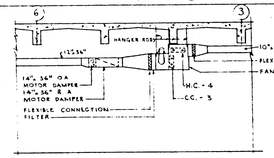
SECTION 1
SCALE ¼"=1'-0" M-3



SECTION 2
SCALE ⅛"=1'-0" M-3



SECTION 3
SCALE ⅛"=1'-0" M-3



SECTION 4
SCALE ⅛"=1'-0" M-3

GENERAL NOTES

No.	PARTICULARS	DATE	BY
REVISIONS			

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL ✓
ELECTRICAL

PRINTING DATE
1, DEC. 1964

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366 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 3-4181
GREEN BLANKSTEIN RUSSELL ASSOCIATES
Mechanical & Electrical Consultants Telephone SP 4-3560

ACCESS & FINISHING TO BASEMENT OF PARKING GARAGE
FOR THE CITY OF WINNIPEG , MANITOBA

PARKADE BASEMENT
TITLE HEATING & AIR CONDITIONING
SHEET NO. 6020.6 - M-3.

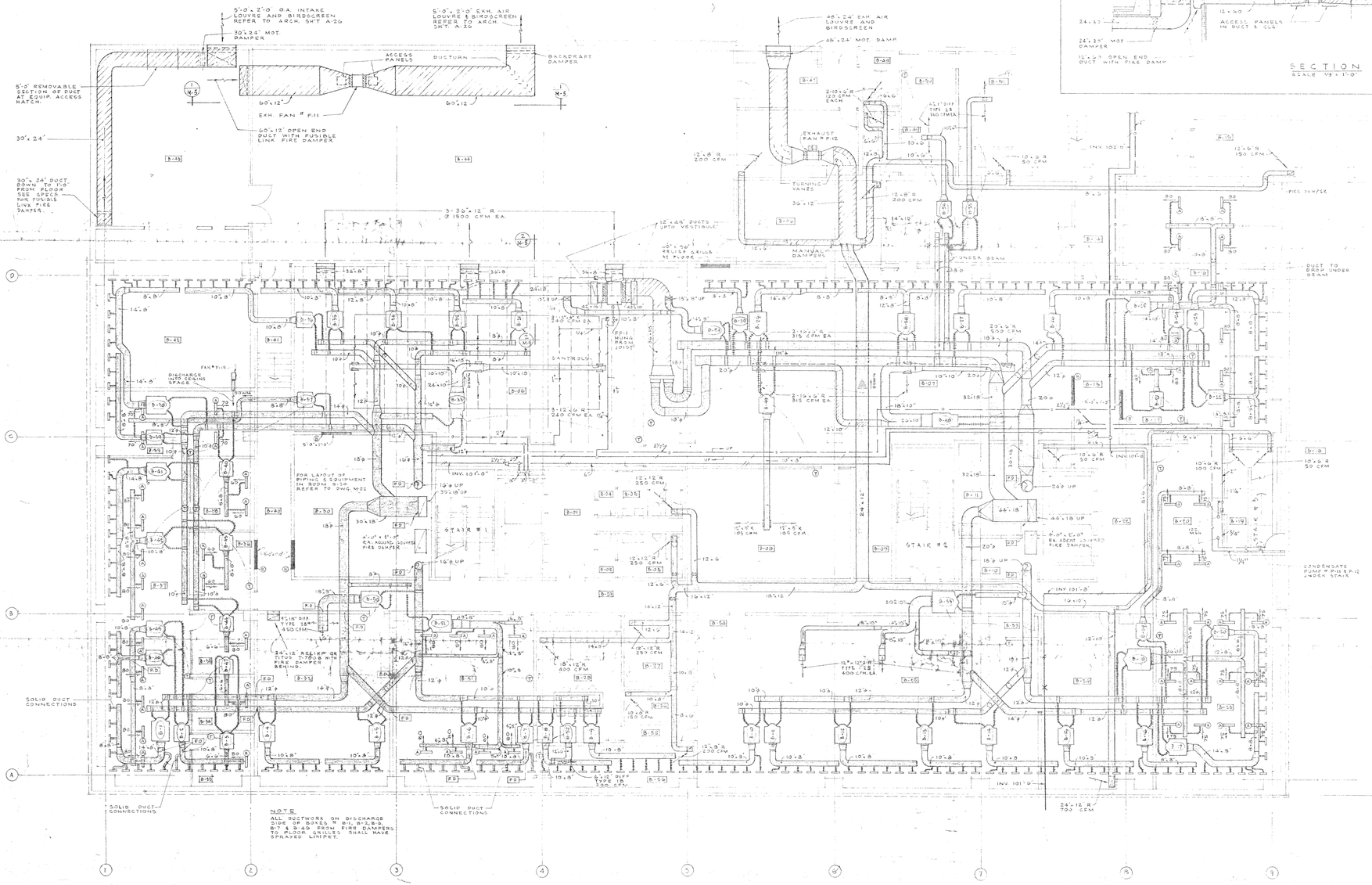
151 PRINCESS ST.
CONTRACT 6020.6 SHEET NO. M-3
PROJECT PARKADE BASEMENT
DESCRIPTION HEATING & AIR CONDITIONING

151 PRINCESS ST
address

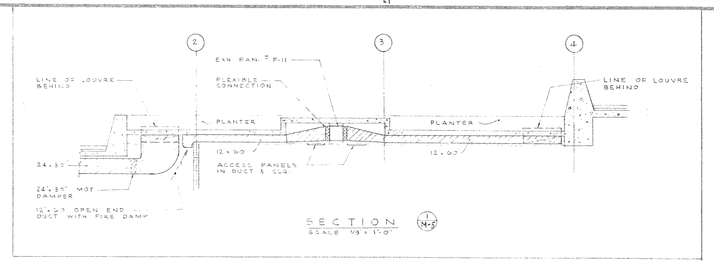
6020-
project no.

M-5
sheet no.

BASEMENT HEATING & AIR CONDITIONING
description



BASEMENT FLOOR PLAN
SCALE: 1/8" = 1'-0"



SECTION
SCALE 3/8" = 1'-0"

GENERAL NOTES

No.	PARTICULARS	DATE	BY
1	FIRE PROTECTION FOR COMMUNICATION AREA ADDED	JULY 9/65	

REVISIONS

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL

PRINTING DATE
1 DEC 1964

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The contractor is to verify dimensions and data noted herein with conditions on the site and is held responsible for reporting any discrepancy to the architects for adjustment.

This drawing is not to be used for building purposes until countersigned by:

LIBLING MICHENER & ASSOCIATES ARCHITECTS
368 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 3-4491

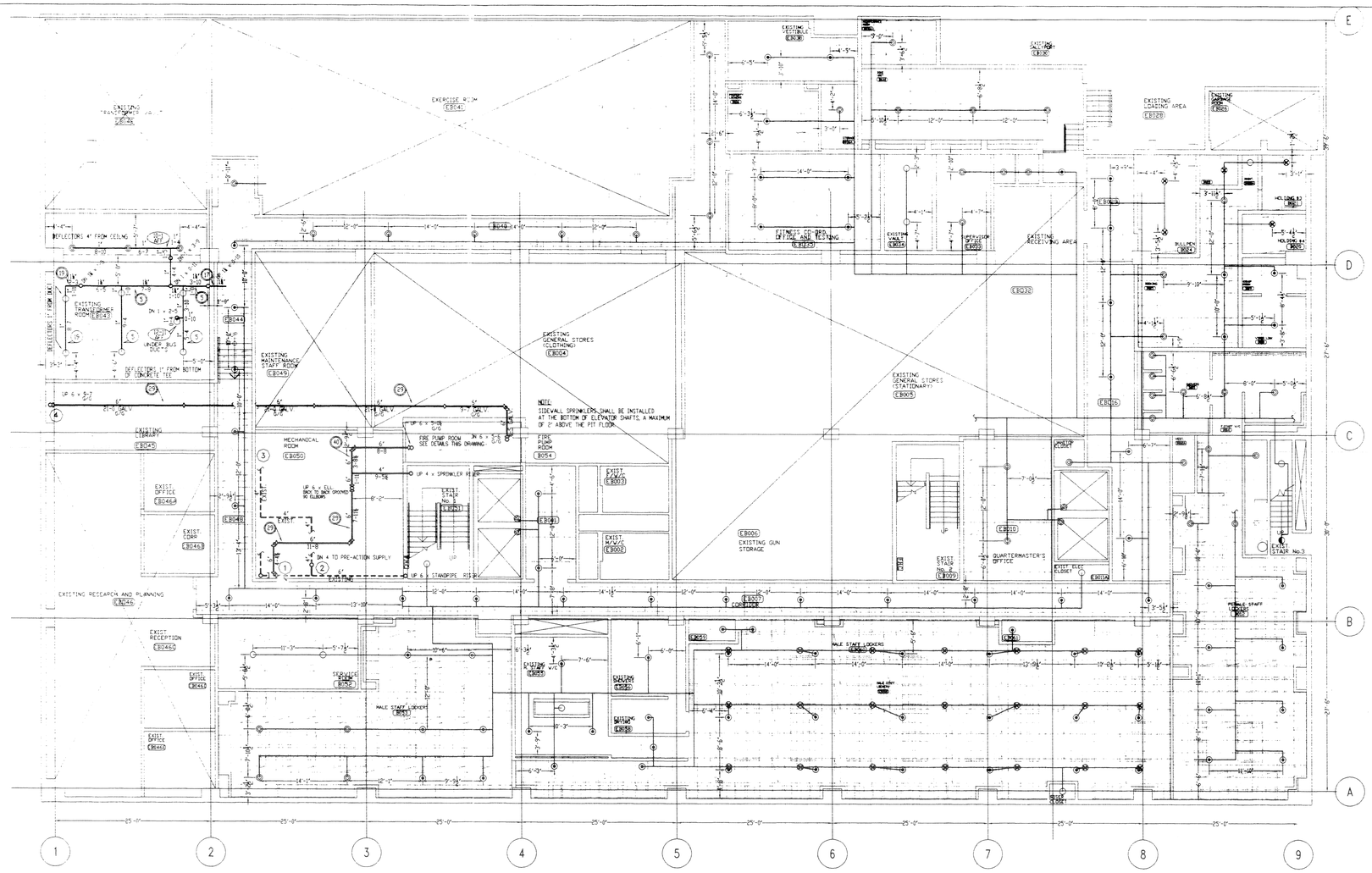
GREEN BLANKSTEIN RUSSELL ASSOCIATES
Mechanical & Electrical Consultants Telephone SP 4-3846

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

TITLE BASEMENT HEATING & AIR CONDITIONING
SHEET NO. 6020 — M-5

151 Princess St.
Fire Protection Layout –Basement Level
AS-BUILTS
Drawing Title
Public Safety Building
Renovations
Project

Project No. 3
Sheet No. 2000
Contract No.



BASEMENT LEVEL

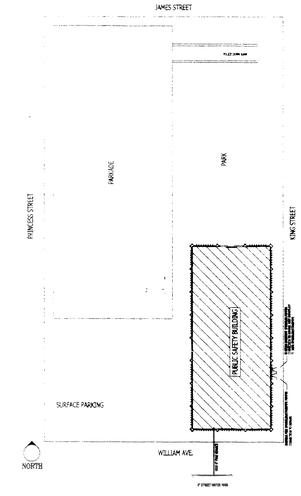
WATER SUPPLY INFORMATION:
DATA PROVIDED BY CITY OF WINNIPEG
DATE OF TEST: AUG. 29, 1997

FLOW HYDRAMT LOCATED AT KING ST. & WILLIAM AVE.

STATIC PRESSURE: 72 PSI
RESIDUAL PRESSURE 1: 68 PSI @ 1332 USGPM
RESIDUAL PRESSURE 2: 66 PSI @ 2439 USGPM

DESIGN PRESSURE: 61 PSI

CUT INTO EXISTING LINES WHEN ADDING NEW HEADS.
IN MOST AREAS, CHANGE HEAD AND RELOCATE TO SUIT NEW CEILING TILE.



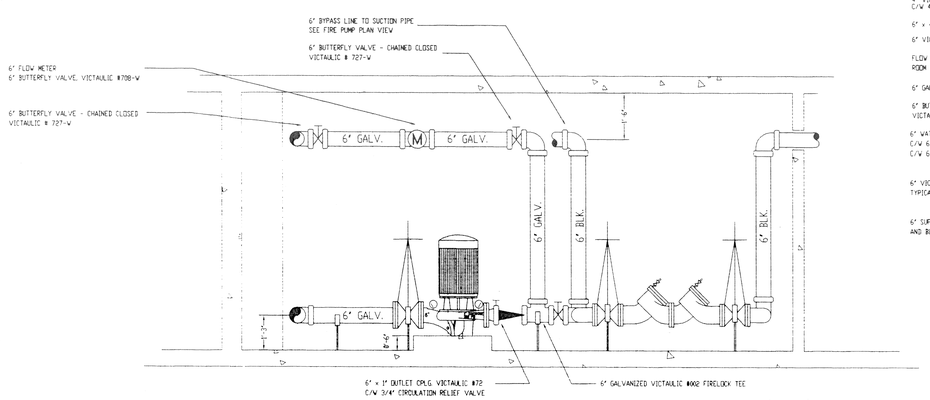
1 SITE PLAN
SCALE: 3/32" = 1'-0"

ARMSTRONG
VERTICAL IN-LINE FIRE PUMP

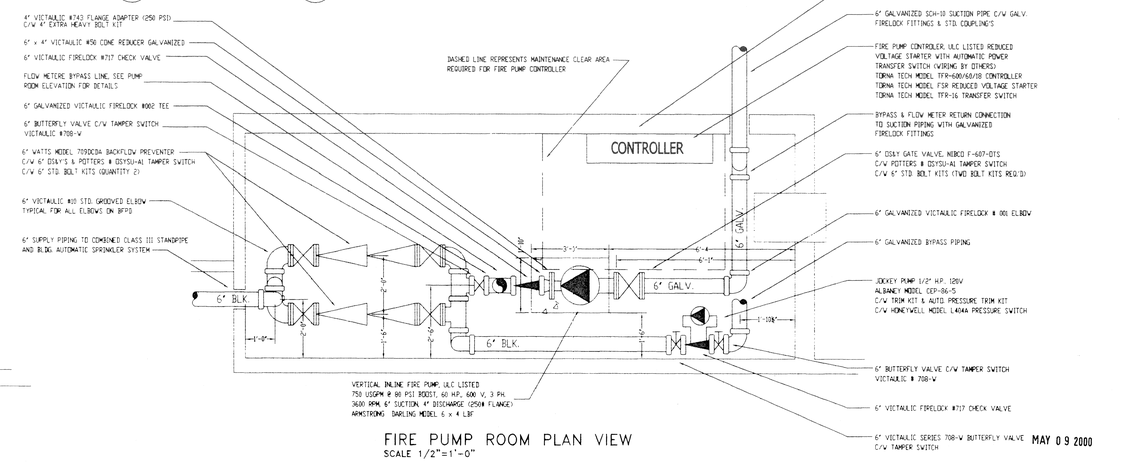
PUMP DATA:
PUMP MODEL : 6" X 4" LB-F WT. = 310 LBS.
CAPACITY = 750 USgpm
PRESSURE BOOST = 80 PSIG
SUCTION PRESSURE = 60 PSIG

MOTOR DATA:
FRAME : 326 60 HP @ 3600 RPM WT. = 475 LBS.

1. REMOVE EXIST 6" NRS GATE VALVE AND 6" SWING CHECK VALVE. CAP 6" LINE TO DOMESTIC WATER C/V 6" BOLTED GALV. FLANGE
2. REMOVE EXIST VIC CHECK VALVE, 4" FLOW SWITCH AND 4" VIC BUTTERFLY VALVE. TIE INTO 4" LINE TO PRE-ACTION SYSTEM CAP 4" CONNECTION TO EXISTING DOMESTIC WATER LINE C/V 4" GALV. VIC CAP.
3. EXISTING 4" PRE-ACTION SYSTEM. SERVES PART OF 5TH FLOOR SEE VIPOND DRAWING # 2666925-1
4. VIPOND TO START AT 6" FLANGE ON INCOMING WATER SERVICE WATER SERVICE & FLANGE BY OTHERS. VIPOND TO PROVIDE 6" VICTAULIC # 708-W BUTTERFLY VALVE AT FLANGE. C/W TAMPER SWITCH



FIRE PUMP ROOM ELEVATION VIEW
SCALE 1/2"=1'-0"



FIRE PUMP ROOM PLAN VIEW
SCALE 1/2"=1'-0"

MAY 0 9 2000

FABRICATION NOTES

SADDLE TYPE STYLE #921 AND #925 MECH TEES ARE NOT ALLOWED ON THIS PROJECT AS WEL AS SNAPLETS.

MAINS:
- MAINS SHALL BE THREADED BLACK EDDYLITE PIPE.
- MAINS SHALL BE JOINED WITH BLACK CAST IRON FITTINGS.

LINES:
- LINES SHALL BE THREADED BLACK EDDYLITE PIPE.
- LINES SHALL BE JOINED WITH BLACK CAST IRON FITTINGS.

NOTES

1. IMPORTANT TO PREVENT FREEZING OF WATER IN "WET" PIPE SPRINKLER PIPING, OWNER (OR OTHERS) TO PROVIDE SUFFICIENT HEAT THROUGHOUT AREAS WHERE SPRINKLER PIPES ARE INSTALLED, UNLESS ANTI-FREEZE SYSTEM IS PROVIDED.
2. ○ ◎ DENOTES DISTANCE IN inches OR mm FROM CENTRE LINE OF MAIN (M) OR OF BRANCH LINE (L) TO UNDERSIDE CEILING, OPEN WOOD JOIST, ROOF DECK OR FLOOR SLAB, UNLESS OTHERWISE NOTED.
3. UNLESS OTHERWISE NOTED ALL SPRINKLER SYSTEM COMPONENTS CONFORM TO LATEST NFPA #13S.
4. ALL SYSTEM COMPONENTS SHALL BE GALVANIZED.

△ WET SYSTEM ◇ DELUGE SYSTEM
◇ DRY SYSTEM ○ PRE-ACTION SYST.

HANGERS
MAINS: C-CLAMP, MT ROD AND RING
CONCRETE INSERT, MT ROD AND RING
LINES: C-CLAMP, MT ROD AND RING
CONCRETE INSERT, MT ROD AND RING
** ALL HANGERS TO BE SPACED & INSTALLED AS PER NFPA 13. **

SPRINKLERS ON THIS DRAWING

SYM.	TEMP	MANUF.	TYPE	MOD.	"K"	NPT	ZONE No. BASEMENT
○	165°F	RELIABLE	QUICK RESPONCE BRONZE UPRIGHT	F1FR	5.62	1/2"	25
⊗	155°F	RELIABLE	QUICK RESPONCE RECESSED CHRM. PEND.	F1FR	5.62	1/2"	44
◐	155°F	RELIABLE	QUICK RESP CHR DRY PENDENT	G3FR	5.7	1"	1
⊙			RELOCATE CHROME PENDENT	F1FR	5.62	1/2"	80
⊗	165°F	RELIABLE	INSTITUTIONAL CHROME PENDENT	ZKOR	5.4	1/2"	5
⊖	200°F	RELIABLE	QUICK RESPONCE BRONZE HORIZ. SIDEWALL	F1FR	5.62	1/2"	4
			TOTAL				159

PROVIDED, INSTALLED OR PERFORMED BY:	VIPOND	OTHERS
MUNICIPAL CONNECTION		XX
WATER SERVICE		XX
EXCAVATING – BACKFILLING		XX
EXCESS PRESSURE PUMP – WIRING		XX
AIR COMPRESSOR WIRING		XX
ALARM WIRING		XX
ALARM SUPERVISORY		XX
PAINTING OF PIPE & EQUIPMENT		XX
CUTTING – PATCHING		XX

REVISIONS			
DATE	NO.	DESCRIPTION	BY
JUNE '99	1	ISSUED FOR CONSTRUCTION (FIRE PUMP ONLY)	GC.
MAY '00	2	ISSUED FOR AS-BUILTS	GC.

NORTH

DESIGN CRITERIA : ALL DESIGNS SHALL MEET THE REQUIREMENTS OF N.F.P.A #13 – 1996 EDITION
QUICK RESPONSE SPRINKLERS SHALL BE USED THROUGHOUT THE ENTIRE PROJECT
CALC AREAS OF THIS DRAWING SHALL DISCHARGE A MINIMUM .15 USGPM/SQFT. OVER THE MOST REMOTE 900 SQFT. PLUS A HOSE DEMAND OF 500 USGPM
UPRIGHTS ARE SPACED FOR ORDINARY HAZARD GROUP I. (MAX. COVERAGE = 130 SQ.FT.)

CONTRACT WITH : DAPLEX PLUMBING & HEATING 100 PLYMOUTH STREET
APPROVAL BY : CITY OF WINNIPEG

INSURANCE	ARCHITECT	GENL. CONT.
FIRE DEPT.	ENGINEER	OWNER

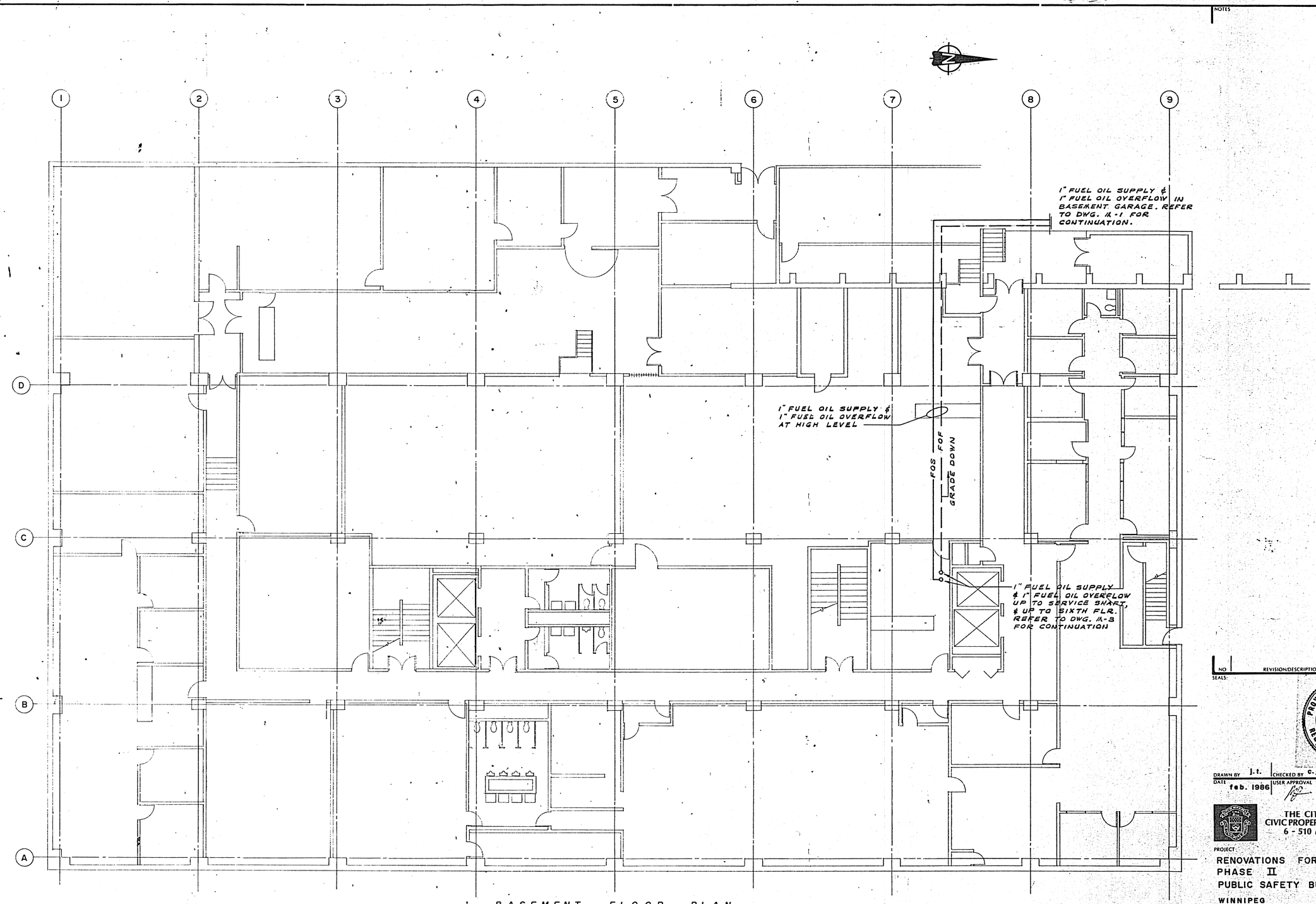
FIRST FOR FIRE PROTECTION
VIPOND FIRE PROTECTION INC.
571 FERRY ROAD
WINNIPEG, MANITOBA. R3H 0T5
PHONE: (204) 783-2420
FAX: (204) 788-1321

PROJECT : PUBLIC SAFETY BUILDING
CITY OF WINNIPEG
151 Princess Street, Winnipeg, Manitoba, Canada

TITLE : FIRE PROTECTION LAYOUT –Basement Level.

DRAWN : C. KLOS	DATE : DEC. 1998	CONTRACT : 618051
CHKD : G. CHERKAS	SCALE : 1/8" = 1'-0"	DWG. NO : 618051-3of3.
OFFICE : 571 FERRY ROAD. WINNIPEG.		PHONE : 783-2420

NOTES



BASEMENT FLOOR PLAN

SCALE 1/8" = 1'-0"

MIKKELSEN-COWARD & CO. LTD.
PLUMBING & HEATING
AS BUILT

Scouten Mitchell Sigurdson
Consulting Engineers
Scouten Mitchell Sigurdson and Associates Limited
770 Bradford Street, Winnipeg, Manitoba R3H 0N3 Telephone (204) 775-0291

NO	REVISION/DESCRIPTION	BY	DATE

SEALS:

PROVINCE OF MANITOBA
Jan 31/86
D. B. SIGURDSON
REGISTERED ENGINEER

DRAWN BY	CHECKED BY	APPROVED
J.t.	C.J.S.	d.b.s.

DATE feb. 1986 USER APPROVAL

THE CITY OF WINNIPEG
CIVIC PROPERTIES DEPARTMENT
6 - 510 Main St. R3B 1B9

PROJECT
RENOVATIONS FOR P.A.R.C.S. PHASE II
PUBLIC SAFETY BUILDING
WINNIPEG MANITOBA

SHEET TITLE
BASEMENT FLOOR PLAN
MECHANICAL

SCALE	PROJECT NO.	SHEET NO.
AS NOTED	PD 86 - 17 85-120-01	M-2

151 PRINCESS ST PHASE II
ADDRESS RENOVATION TO P.S.B.
PROJECT NO. SCANNED
SHEET NO M-2
BASEMENT FLOOR PLAN MECHANICAL

SCALE 1/8"=1'-0" | SCALE 1/4"=1'-0" | SCALE 3/8"=1'-0" | SCALE 1/2"=1'-0" | SCALE 1:200 | SCALE 1:100 | SCALE 1:50

PRINCESS STREET

PARK

WILLIAM AVENUE

RAMP DOWN TO PARKADE

PLANTER

PLANTER

PLANTER

APPROX. LOCATION IN BASEMENT PARKADE LEVEL OF FILM PROCESSORS TO BE RELOCATED. SECTION 15400 SHALL CAP-OFF ALL WATER, DRAIN & VENT LINES AT MAINS & REMOVE ALL PIPING NOT REQUIRED

PARKADE

CONNECT NEW 6" FIRE SERVICE TO EXISTING 8" STREET WATERMAIN AT APPROX. THIS LOCATION PIPE NEW WATER SERVICE MIN. 10'-0" BELOW GRADE.

EXISTING 24" SANITARY SEWER

EXISTING 8" WATERMAIN

EXISTING 76" STORM RELIEF SEWER

NEW 6" SPRINKLER/STANDPIPE WATER SERVICE TO BUILDING. REFER TO DRAWING M1.2 FOR CONT.

PROPERTY LINE

PUBLIC SAFETY BUILDING

NEW FIRE PUMP TEST VALVES AT PENTHOUSE. REFER TO DRAWING M3.5 FOR EXACT LOCATION

EXISTING CONCRETE SIDEWALK

PROPERTY LINE

EXISTING FIRE HYDRANT

EXISTING BASEMENT SPRINKLER PUMPER CONNECTION TO REMAIN. PROVIDE NEW NAMEPLATE TO READ SPRINKLER/STANDPIPE

EXISTING FIRE SPRINKLER/STANDPIPE PUMPER CONNECTION TO REMAIN

APPROX. LOCATION & ROUTING OF EXISTING 10" COMBINED BUILDING DRAIN & 6" DOMESTIC WATER SERVICE.

EXISTING CATCH BASIN

KING STREET

EXISTING 12" STREET SEWER

EXISTING 10 WATERMAIN (ABANDONED)

EXISTING CATCH BASIN

EXISTING MANHOLE TOP ELEV. 759.58 INVERT 746.82

EXISTING MANHOLE TOP ELFV 759.58 INVERT N. 745.60 INVERT E. 745.60 INVERT W. 745.60

SITE PLAN
SCALE 1" = 16'-0"

PARK

AS-BUILT

DAPLEX PLUMBING & HEATING (1992) LTD.

96-171-03

Scouten Mitchell Sigurdson
Consulting Engineers
Scouten Mitchell Sigurdson and Associates Limited
770 Bradford Street, Winnipeg, Manitoba R3H 0N3
Telephone (204) 775-0291 Fax (204) 772-2153

IF THIS SHEET IS NOT 33 1/8" X 23 3/8" (841 X 594mm) IT IS A REDUCED PRINT - READ DWG ACCORDINGLY

KEY TO DETAIL LOCATION

No. DETAIL NUMBER
No. DRAWING NUMBER

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DRAWINGS SHOULD NOT BE SCALED

NO.	REVISION/ISSUE	DATE

CONTRACT ADMINISTRATOR:
NUMBER TEN ARCHITECTURAL GROUP
Contact: HENRY BAKKER
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Fax: (204) 942-9626

CONSULTANTS:

ARCHITECTURAL:
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Contact: ANITA GRANGER
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Fax: (416) 482-5040

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STRUCTURAL:
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Fax: (204) 943-7507

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SCOUTEN MITCHELL SIGURDSON & ASSOCIATES LTD.
Contact: HELMUT WAEDT (Mech.)
CLIFF BROWN (Elec.)
Tel: (204) 775-0291
Fax: (204) 775-2342

THE CITY OF WINNIPEG
PROPERTY AND DEVELOPMENT SERVICES
WINNIPEG POLICE SERVICE

CONSTRUCTION NORTH

Originally sealed by:
SMS Engineering

Carruthers Shaw and Partners Limited Architects
1240 Yonge Street
Toronto, Ontario M4W 2B5
416 482-5002 Fax 482-5040

DRAWN BY: RMP

CHECKED BY: HJW

DATE: 24 AUGUST 1998

PROJECT TITLE:

Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building

151 Princess Street
Winnipeg Manitoba

DRAWING TITLE

SITE PLAN MECHANICAL

SCALE. AS NOTED

PROJECT NO. 98023 | DWG. NO M1.1 OF 6

P.D.No. 98-038

File name: 5:5"-195.DWG Last edited 98/08/14 @ 1C 32

SCALE 1/8"=1'-0" | SCALE 1/4"=1'-0" | SCALE 3/8"=1'-0" | SCALE 1/2"=1'-0" | SCALE 1:200 | SCALE 1:100 | SCALE 1:50

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DRAWING NOTES(#)

1 EXISTING WALL TO BE TORN DOWN AND RE-BUILT BY THE G.C. FOR THE EXISTING GENERATOR REMOVAL AND INSTALLATION OF THE NEW ONE.

2 EXISTING LISTER GENERATOR TO BE REMOVED BY THE G.C. DIV. 15 TO DISCONNECT AND REMOVE SECTIONS OF PIPING FOR THE EXISTING GENERATOR REMOVAL. FUEL OIL PIPING TO BE SALVAGED FOR USE WITH NEW GENERATOR. SUPPLY/RETURN PIPING TO THE EXISTING REMOTE RADIATOR TO BE COMPLETELY REMOVED. THE EXISTING AIR FILTER, EXHAUST PIPE WITH MUFFLER AND REMOTE RADIATOR IN THE CAGE ABOVE TO BE REMOVED BY DIV. 15.

3 G.C. TO PROVIDE MIN. 21" HIGH SPILL CONTAINMENT CURB.

4 REMOVE EXISTING REMOTE RADIATOR LOCATED IN THE MECHANICAL CAGE ABOVE, REPLACE WITH A NEW ONE (SUPPLIED BY DIV. 16) DIV. 15 TO INSTALL THE NEW REMOTE RADIATOR AND TO PROVIDE COOLANT PIPING TO THE NEW GENERATOR. DUCT THE NEW RADIATOR TO THE EXISTING 7'X6' WALL LOUVRE.

5 NEW SUPPLY/RETURN COOLANT LINES (BY DIV. 15) UP TO REMOTE RADIATOR.

6 THREE WAY CONTROL VALVE, SUPPLIED WITH THE GENERATOR BY DIV. 16, INSTALLED AND WIRED TO GENERATOR CONTROLS BY DIV. 15.

7 EXISTING 12X12 EXHAUST PIPE C/W MUFFLER TO BE REMOVED.

8 SILENCER SUPPLIED DIV. 16, INSTALLED BY DIV. 15, SUPPORT SILENCER TO ALLOW THERMAL GROWTH AWAY FROM THE ENGINE.

9 8# EXHAUST PIPE BY DIV. 15. ROUTE THE PIPE TO RE-USE EXISTING WALL OPENINGS REMAINING AFTER THE OLD EXHAUST. DISCHARGE INTO THE EXISTING AREA WAY. G.C. TO PATCH UP THE WALL OPENINGS TO SUIT THE NEW EXHAUST PIPE.

10 NEW DIESEL GENERATOR BY DIV. 16.

11 G.C. TO EXTEND THE EXISTING CAGE TO THE WEST TO ACCOMODATE THE NEW RELIEF DUCT.

12 ON TEMPERATURE RISE F-P-1 TO START AND MA DAMPERS AND RELIEF AIR DAMPERS SHALL MODULATE IN UNISON TO MAINTAIN 60 F SAT.

13 RE-LOCATE EXISTING 250 GALLON FUEL TANK, PRESENTLY WALL-HUNG AT HIGH LEVEL, TO ABOUT 6" AFF. MODIFY EXISTING FUEL PIPING AS REQUIRED, INCLUDING RELOCATION OF FUEL PUMP. DIV. 16 TO MOVE EXISTING CONDUITS AND JUNCTION BOXES. G.C. TO MOVE EXISTING TOOL CABINETS TO SUIT TANK RELOCATION.

14 3# FUEL OIL SUPPLY AND RETURN TO RUN IN 4" WIDE X 2" DEEP TRENCH WITH CHECKER-PLATE COVER. SEAL TRENCH WITH OIL RESISTANT MASTIC.

15 CONNECT MODIFIED TANK VENT, FUEL OIL SUPPLY AND RETURN LINES TO EXISTING.

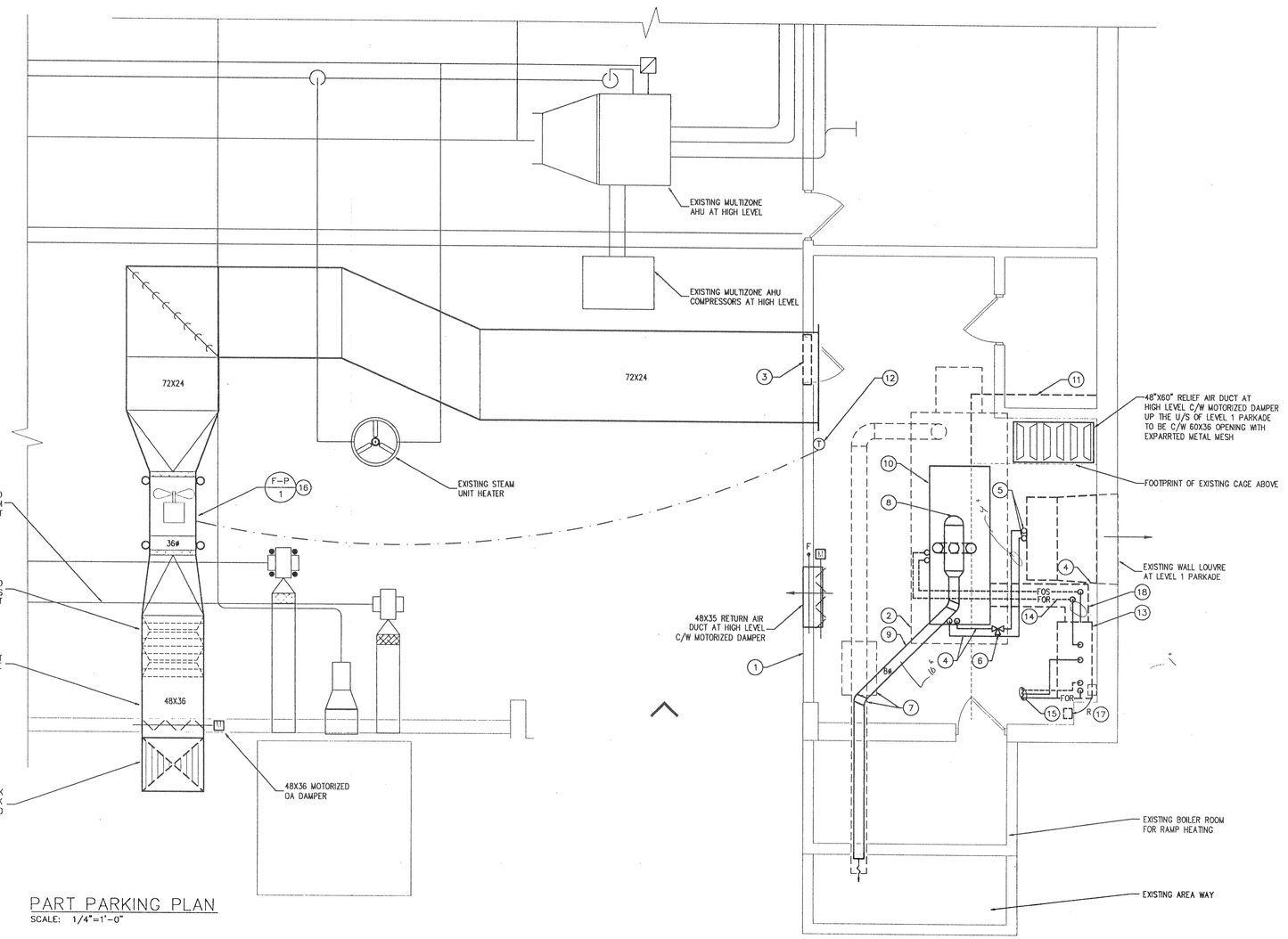
16 GENERATOR ROOM COOLING FAN SUSPENDED FROM STRUCTURE AT HIGH LEVEL, C/W SPRING HANGERS.

17 EXISTING FUEL PUMP TO BE RELOCATED TO ACCOMODATE THE RELOCATED OIL TANK.

18 4" WIDE BY 2" DEEP FLOOR TRENCH FOR OIL PIPING BY G.C.

LEGEND:

- EXISTING TO BE REMOVED (EXCEPT AS NOTED)
- EXISTING TO REMAIN
- NEW WORK
- FIRE DAMPER
- MANUAL BALANCE DAMPER
- RELOCATE EXISTING
- EXISTING LIGHT TROFFER TO REMAIN
- TRANSFER AIR DUCT
- SUPPLY AIR DIFFUSER/REGISTER
- RETURN/EXHAUST AIR GRILLE
- EXISTING THERMOSTAT TO BE REMOVED
- EXISTING THERMOSTAT TO BE RELOCATED
- EXISTING THERMOSTAT TO REMAIN
- NEW OR RELOCATED THERMOSTAT
- ROOM NUMBER
- RS — REFRIGERANT SUCTION
- RL — REFRIGERANT LIQUID
- LPS — LOW PRESSURE STEAM
- LPC — LOW PRESSURE CONDENSATE
- SHUT-OFF VALVE
- CONTROL VALVE
- STRAINER
- VACUUM BREAKER
- STEAM TRAP
- ACOUSTIC INSULATION
- FLEXIBLE DUCT CONNECTION
- EQUIPMENT DESIGNATION OR PLUMBING RISER
- TYP. NECK 2X FLOW — GRILLE/DIFFUSER TYPE; NECK SIZE; QUANTITY OR NUMBER OF; FLOW RATE (CFM) — GRILLE OR DIFFUSER DESIGNATION
- EXISTING DUAL DUCT BOX TO REMAIN
- NEW DUAL DUCT BOX
- NEW VAV BOX



PART PARKING PLAN

SCALE: 1/4"=1'-0"

DAPLEX PLUMBING & HEATING (1992) LTD.

AS-BUILT

Scouten Mitchell Sigurdson
Consulting Engineers
Scouten Mitchell Sigurdson and Associates Limited
770 Bradford Street, Winnipeg, Manitoba R3H 0N3
Telephone (204) 775-0291 Fax (204) 772-2153

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NO.	REVISION/ISSUE	DATE

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CLIFF BROWN (Elec.)
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Fax: (204) 775-2342

THE CITY OF WINNIPEG
PROPERTY AND DEVELOPMENT SERVICES
WINNIPEG POLICE SERVICE

CONSTRUCTION NORTH

Originally sealed by:
SMS Engineering

CS&P Architects
Carruthers Shaw and Partners Limited Architects
23 MS Yonge Street
Toronto, Ontario M4P 2C5
416 482-5002 Fax 482-5040

DRAWN BY: EL/LG
CHECKED BY: PG
DATE: 24 AUGUST 1998

PROJECT TITLE:

Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building

151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:

PART PARKING PLAN HVAC

SCALE: AS NOTED

PROJECT NO.	DWG. NO.
98023	M2.1

P.D.No. 98-038

96023 Project No. | M2.1 Sheet No. | 2000 Const. Year

151 Princess St.
Part Parking Plan HVAC
AS-BUILTS
Drawing Title
Public Safety Building Renovations
Project

File name: 0617HVPD.DWG Last edited: 98/08/19 @ 11:00

96023
Project No.
M2.2
Sheet No.
200C
Const. Year

151 Princess St.
Basement Plan -HVAC
AS-BUILTS
Drawing Title
Public Safety Building
Renovations
Project

BASEMENT FLOOR PLAN
SCALE: 1/8"=1'-0"

DRAWING NOTES

1. EXISTING DUAL DUCT BOX TO BE REMOVED. REMOVE ALL ASSOCIATED DUCTWORK AND CAP HIGH PRESSURE MAIN TAKE-OFFS
2. PROVIDE NEW DUAL DUCT BOX
3. CAP OFF FLOOR GRILLE TAKE-OFF (TYPICAL)
4. TIE-IN TO EXISTING DUCT BRANCH
5. EXISTING DUAL DUCT BOX TO REMAIN (TYPICAL)
6. REMOVE EXISTING RETURN AIR GRILLE. PATCH WALL TO MEET FIRE RATING
7. REMOVE EXISTING DUCTWORK AND GRILLE. CAP AT MAIN (TYPICAL)
8. REMOVE EXISTING SIDEWALL GRILLE, EXTEND THE EXISTING DUCT BRANCH AS REQUIRED. PROVIDE NEW SIDEWALL SUPPLY GRILLE IN THE GYM
9. RELOCATE EXISTING DUAL DUCT BOX. REMOVE ALL ASSOCIATED DUCTWORK AND CAP HIGH PRESSURE MAIN TAKE-OFFS AT PRESENT LOCATION. PROVIDE NEW DUCTWORK AND HIGH PRESSURE MAIN TAKE-OFFS AT THE NEW LOCATION
10. ACOUSTIC LINED TRANSFER AIR DUCT IN CEILING SPACE, ONE UP-TURN 90° ELBOW, SIZE AS INDICATED
11. REPLACE EXISTING DUAL DUCT BOX WITH A NEW ONE IN THE SAME LOCATION.
13. PROVIDE ACOUSTICALLY LINED AIR TRANSFER DUCT IN CEILING SPACE, MINIMUM TWO 90° ELBOWS, SIZE AS INDICATED
14. REMOVE EXISTING DUCT UP TO THE NEW GYMNASIUM WALL. PROVIDE NEW SIDEWALL SUPPLY AIR GRILLE
15. EXISTING BASEMENT EXHAUST FAN F-12 TO REMAIN
16. RELOCATE EXISTING CEILING EXHAUST PRIME TO SUIT NEW ACOUSTIC TILE CEILING
17. SECTION 15800 TO VERIFY FORCE-FLOW OPERATION AND REPORT TO THE ENGINEER

AS-BUILT

xxx

Scouten Mitchell Sigurdson
Consulting Engineers
Scouten Mitchell Sigurdson and Associates Limited
770 Bradford Street, Winnipeg, Manitoba R3H 0N3
Telephone (204) 775-0291 Fax (204) 772-2153

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NO.	REVISION/ISSUE	DATE

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CONSULTANTS:

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Contact: ANITA GRANGER
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Fax: (204) 942-9626

STRUCTURAL:
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MECHANICAL AND ELECTRICAL:
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CLIFF BROWN (Elec.)
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Fax: (204) 775-2342

THE CITY OF WINNIPEG
PROPERTY AND DEVELOPMENT SERVICES
WINNIPEG POLICE SERVICE

CONSTRUCTION NORTH

Originally sealed by:
SMS Engineering

CarruthersShaw and PartnersLimited Architects
2345 Yonge Street
Toronto, Ontario M4P 2E5
416 482-5002 Fax 482-5040

DRAWN BY: EL/LG
CHECKED BY: PG
DATE: 24 AUGUST 1998

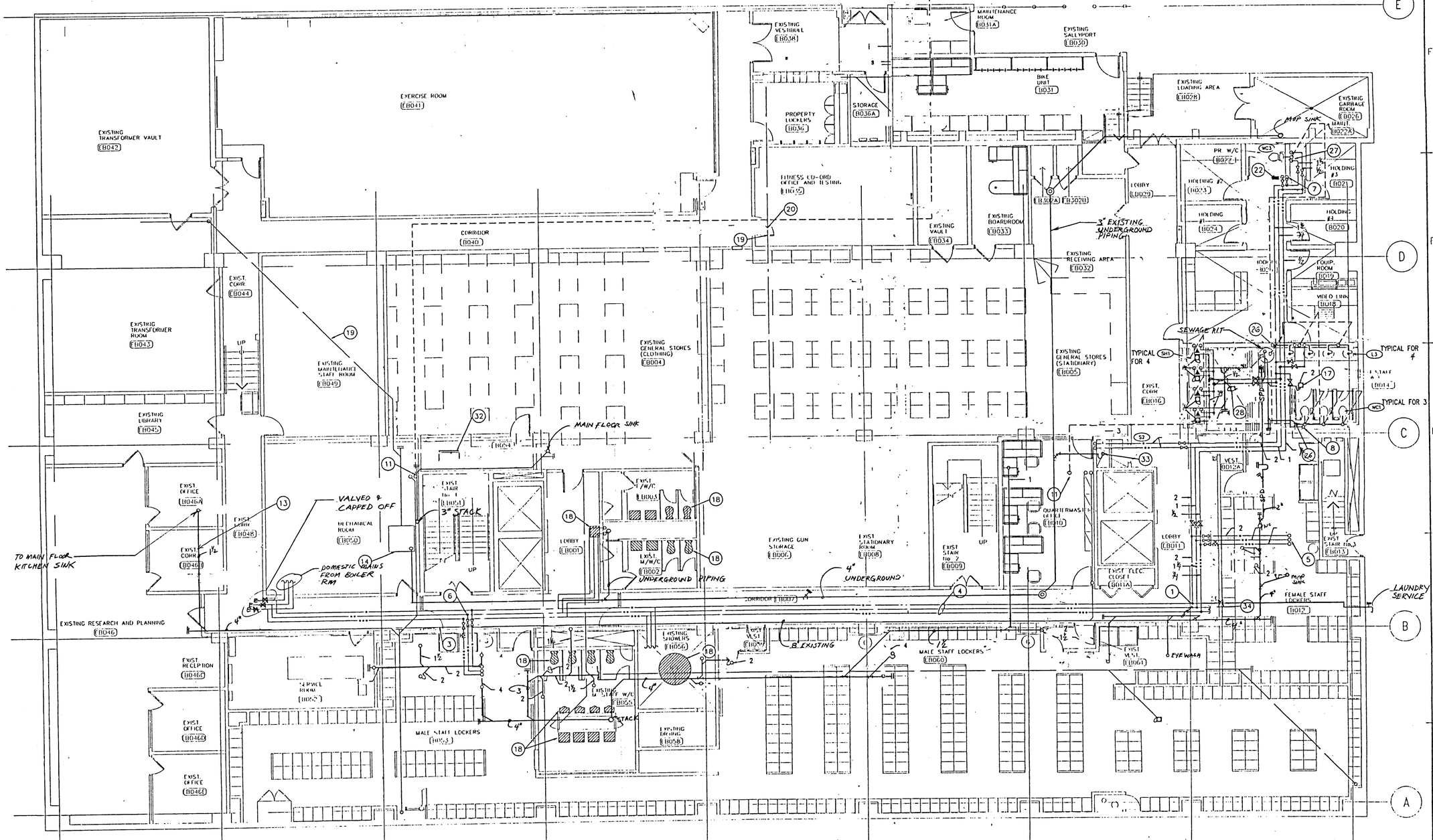
PROJECT TITLE:
Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building
151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:
BASEMENT FLOOR PLAN HVAC

SCALE: AS NOTED
PROJECT NO. 96023
DWG. NO. M2.2

P.D.No. 98-038

SCALE 1/8"=1'-0" SCALE 1/4"=1'-0" SCALE 1:200 SCALE 1:100 SCALE 1:50

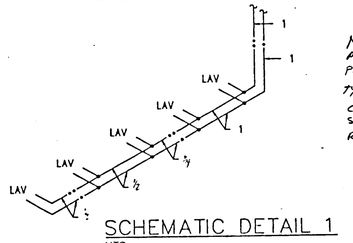


BASEMENT FLOOR PLAN

SCALE: 1/8"=1'-0"

GENERAL NOTES:

1. SECTION 15400 SHALL BE RESPONSIBLE FOR THE DISCONNECTING OF EXISTING FIXTURES, & EQUIPMENT. CAP-OFF EXISTING WATER, DRAIN & VENT LINES AT MAINS & REMOVE ALL PIPING NOT REQUIRED. REFER TO ARCHITECTURAL DEMOLITION DRAWINGS.



SCHEMATIC DETAIL 1

NTS

DRAWING NOTES

1. CONNECT NEW 1¼" HOT, 2" COLD & ¾" RECIRC. WATER LINES TO EXISTING 1¼" HOT, 2½" COLD & ¾" RECIRC. WATER MAINS AT APPROX. THIS LOCATION.
2. CONNECT NEW SANITARY DRAIN LINE TO EXISTING 8" SANITARY DRAIN LINE AT HIGH LEVEL AT APPROX. THIS LOCATION.EXACT LOCATION TO BE DETERMINED ON SITE. DRAIN LINE SIZES AS INDICATED ON DRAWNG.
3. APPROX. LOCATION OF EXISTING 8" SANITARY DRAIN LINE AT HIGH LEVEL.
4. APPROX. LOCATION OF EXISTING WATER LINES LOCATED AT HIGH LEVEL.
5. NEW 1" HOT, 2" COLD & 3" RECIRC. WATER LINES UP TO MAIN FLOOR. REFER TO DRAWING M1.3 FOR CONTINUATION.
6. CONNECT NEW 1" HOT, 2" COLD & 3" RECIRC. WATER LINES TO EXISTING 2" HOT, 2½" COLD & 1" RECIRC. WATER MAINS AT APPROX. THIS LOCATION.
7. 3" HOT & COLD WATER LINES DOWN IN WALL TO WALL HYDRANT.
8. 2" COLD WATER LINE DOWN TO FIXTURES. REFER TO SCHEMATIC DETAIL #1 ON DRAWING M1.5 FOR CONT.
9. 1" HOT & COLD WATER LINES DOWN TO FIXTURES. REFER TO SCHEMATIC DETAIL #1 THIS SHEET FOR CONT.
10. CONNECT NEW 4" SANITARY DRAIN LINE BELOW FLOOR SLAB TO EXISTING BURIED 4" DRAIN LINE AT APPROX. THIS LOCATION. SECTION 15400 TO CONFIRM EXACT LOCATION & DEPTH ON SITE.
11. NEW VENT LINE UP TO MAIN FLOOR IN EXISTING SHAFT. CONNECT TO EXISTING VENT STACK AT MAIN FLOOR.
12. CONNECT NEW SANITARY DRAIN LINE TO EXISTING 6" SANITARY DRAIN LINE AT HIGH LEVEL AT APPROX. THIS LOCATION.EXACT LOCATION TO BE DETERMINED ON SITE. DRAIN LINE SIZES AS INDICATED ON DRAWNG.
13. CONNECT NEW SANITARY DRAIN LINE TO EXISTING 4" SANITARY DRAIN LINE AT HIGH LEVEL AT APPROX. THIS LOCATION.EXACT LOCATION TO BE DETERMINED ON SITE. DRAIN LINE SIZES AS INDICATED ON DRAWNG.
14. EXISTING SEWAGE PIT & PUMPS TO REMAIN.
15. 4" FLOOR DRAIN F.D.-2.
16. NEW 1" HOT, 2" COLD & 3" RECIRC. WATER LINES UP TO MAIN FLOOR. REFER TO DRAWING M1.3 FOR CONTINUATION.
17. 2" FLOOR DRAIN F.D.-1.
18. EXISTING PLUMBING FIXTURES SHOWN HATCHED ARE EXISTING TO REMAIN.
19. APPROXIMATE LOCATION OF EXISTING BURIED DRAIN LINES BELOW FLOOR SLAB. EXACT LOCATIONS TO BE DETERMINED ON SITE.
20. CONNECT NEW 2" SANITARY DRAIN LINE BELOW FLOOR SLAB TO EXISTING BURIED 4" DRAIN LINE AT APPROX. THIS LOCATION. SECTION 15400 TO CONFIRM EXACT LOCATION & DEPTH ON SITE.
21. CONNECT NEW 1" COLD WATER LINE TO EXISTING 11" COLD WATER LINE AT APPROX. THIS LOCATION. EXACT LOCATION TO BE DETERMINED ON SITE.
22. SECTION 15400 TO PROVIDE RECESSED LOCKABLE ACCESS BOX BESIDE PRISONER WASHROOM & LOCATE WATER CLOSET FLUSH VALVE PUSH BUTTON ACTUATOR WITH-IN BOX.
23. CONNECT NEW 3" HOT & COLD & 1" RECIRC. WATER LINES TO EXISTING 1" HOT, 1" COLD & 1" RECIRC. WATER LINES AT APPROX. THIS LOCATION. EXACT LOCATION TO BE DETERMINED ON SITE.
24. PROVIDE 3" HOT & COLD WATER HOSE BIBBS & 11" STANDING WASTE & VENT ON WALL FOR FUTURE CLOTHES WASHER.
25. 2" FLOOR DRAIN F.D-2.
26. PIPE DRAIN LINE FROM FIXTURES ABOVE FLOOR IN PIPE SPACE.
27. PROVIDE TRAP PRIMER ON COLD WATER LINE TO WC/LAV. COMBY. PIPE 1" COLD WATER LINE FROM TRAP PRIMER IN SOFT COPPER BELOW FLOOR SLAB TO FLOOR DRAIN.
29. PIPE NEW VENT LINE UP & CONNECT TO EXISTING VENT STACK.
30. 4" FUNNEL FLOOR DRAIN F.F.D.-1.
31. PROVIDE 4" HUB DRAIN C/W INCREASER TO 6" AT FIRE HEADER.
32. 4" CONCRETE BASE BY GENERAL CONTRACTOR.
33. SECTION 15400 TO REMOVE EXISTING JANITOR SINK & ALL DRAINAGE PIPING NOT REQUIRED. CAP-OFF EXISTING DRAIN LINE BELOW FLOOR SLAB. SUPPLY & INSTALL NEW SINK AS SPEC. & CONNECT TO NEW DRAIN LINE BELOW FLOOR SLAB.
34. CAP-OFF EXISTING 2" COLD, 1" HOT & 3" RECIRC. WATER LINES AT APPROX. THIS LOCATION.

AS-BUILT

DAPLEX PLUMBING & HEATING (1992) LTD.

96-171-03

Scouten Mitchell Sigurdson
Consulting Engineers
Scouten Mitchell Sigurdson and Associates Limited
770 Bradford Street, Winnipeg, Manitoba R3H 0N3
Telephone (204) 775-0291 Fax (204) 772-2153

PRINT - READ DWG ACCORDINGLY

KEY TO DETAIL LOCATION

No. (DETAIL NUMBER) / No. (DRAWING NUMBER)

CONTRACTORS MUST CHECK AND VERIFY ALL DIMENSIONS ON THE JOB AND REPORT ANY DISCREPANCIES TO THE ARCHITECT BEFORE PROCEEDING WITH THE WORK.

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DRAWINGS SHOULD NOT BE SCALED.

NO.	REVISION/ISSUE	DATE

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THE CITY OF WINNIPEG
PROPERTY AND DEVELOPMENT SERVICES
WINNIPEG POLICE SERVICE

CONSTRUCTION NORTH

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SMS Engineering

Carruthers Shaw and Partners Limited Architects
2345 Yonge Street
Toronto, Ontario M4P 2E5
416 482-5002 Fax 482-5040

DRAWN BY: RMP
CHECKED BY: HJW
DATE: 24 AUGUST 1998

PROJECT TITLE:

Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building

151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:

BASEMENT FLOOR PLAN PLUMBING

SCALE: AS NOTED

PROJECT NO.	DWG. NO.
98023	M1.2 OF 6

P.D.No. 98-038

File name: G:\617\FEB\M1-2 Last edited: 98/08/14 @ 10:39

SCALE 1/8"=1'-0" | SCALE 1/4"=1'-0" | SCALE 3/8"=1'-0" | SCALE 1/2"=1'-0" | SCALE 1:200 | SCALE 1:100 | SCALE 1:50

EXIST. FIRING RANGE

PORTABLE DURESS DEVICE INTERCONNECTED WITH DURESS SYSTEM

INTERCOM

FIRE ALARM HORN

EXIST. STAIR

EXIST. SMALL FARTS

EXIST. STORAGE

EXIST. RADIO SHOP

EXIST. SIGNALS

EXIST. TRAFFIC LAB

EXIST. FIRE DEPT. WORKSHOP

EXIST. MACHINE SHOP

DARKROOM P02

IDENT. ROOM P01

EXIST. MAJOR CRIME EXAM ROOM P04

EXIST. OFFICE P06

S/SGT OFFICE P03

EXIST. STORAGE ROOM

EXIST. ELECT. ROOM

EXIST. ELECT ROOM

EXIST. MACHINE RM

EXIST. LOBBY

EXISTING OVERHEAD DOOR MOTOR AND CONTROLS. WIRE AND CONNECT TO ACU-B FOR AUTOMATIC OPERATION FROM RAMP CARD READER.

EXISTING DISTRIBUTION 'B104' (EMERGENCY POWER 120/208V)

MOTOR CONTROL CARD READER DOOR CONTACTS

EXISTING PARKING

RELOCATE LIGHT FOR NEW DUCTWORK

FIRE ALARM RELAYS FOR EMERGENCY GENERATOR RUNNING AND TROUBLE. WIRE AND CONNECT TO NEW CONTROL PANEL

EXISTING 1000 AMP FEEDER BUSDUCT TO EXISTING EMERGENCY DISTRIBUTION. CLEAN ARE-TORQUE BOLTED CONNECTIONS OF THE BUSDUCT. PROVIDE A SERVICE REPORT. PROVIDE NEW 4/0 BARE GROUND TO EMERGENCY DISTRIBUTION (B100)

BUS DUCT STOPS ABOVE. REMOVE EXISTING 1/C COREFLEX REPLACE AS NOTED ON SINGLE LINE SCHEMATIC BELOW.

NEW CARD ACCESS DEVICE MOUNTED IN EXISTING PEDESTAL. WIRE AND CONNECT CARD READER TO OPEN EXISTING OVERHEAD DOOR AT BOTTOM OF RAMP (2' READER). SEE DETAIL SHEET ED-7 FOR RISER SCHEMATIC. REUSE EXISTING CONDUIT IF SUITABLE. (ACU-B)

PROPOSED LOCATION OF TEMPORARY DIESEL GENERATOR 750 KVA/600V/3Φ EXACT LOCATION TO BE DETERMINED ON SITE WITH OWNER

EXISTING OVERHEAD DOOR MOTOR AND CONTROLS. WIRE AND CONNECT TO AACU-B FOR AUTOMATIC OPERATION FROM RAMP CARD READER.

NEW REMOTE RADIATOR MOTOR LOCATED ON PARKADE LEVEL 1 FOR NEW GENERATOR. REMOVE EXISTING. MODIFY MOUNTING AS REQUIRED.

PROPANE STORAGE

EXHAUST PIT

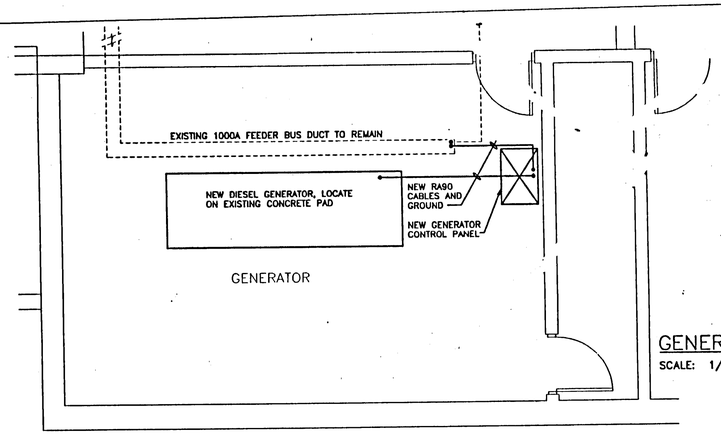
DN TO PARKADE

EXISTING SIX STOREY BUILDING

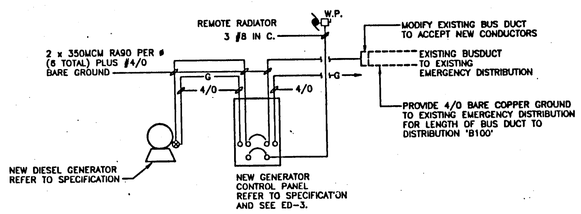
APPROXIMATE LOCATION OF THE EXISTING MAIN ELECTRICAL ROOM AT BASEMENT LEVEL

RAMP DN.

DN.



GENERATOR ROOM DETAIL
SCALE: 1/4"= 1'-0"



EMERGENCY POWER PARTIAL DISTRIBUTION SCHEMATIC
SCALE: N.T.S.

DRAWING NOTES:

1. NEW WALL MOUNTED INTERCOM. LOCATE AS DIRECTED ON SITE BY OWNER (GARAGE ATTENDANT). REFER TO ED-7.
3. REFER TO DETAIL SHEET ED-12.

G. MALLIN ELECTRIC LTD.
638 KEEWATIN ST
WINNIPEG, MB R2X 2R9
PHONE (204) 632-1568

98-171-03

Scouten Mitchell Sigurdson Consulting Engineers
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KEY TO DETAIL LOCATION

No. DETAIL NUMBER
No. DRAWING NUMBER

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NO.	REVISION/ISSUE	DATE

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THE CITY OF WINNIPEG
PROPERTY AND DEVELOPMENT SERVICES
WINNIPEG POLICE SERVICE

CONSTRUCTION NORTH

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416 482-5002 Fax 482-5040

DRAWN BY: C.B./S.D./A.A.
CHECKED BY: B.D.L.
DATE: 24 AUGUST 1998

PROJECT TITLE:

Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building

151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:

SUB-BASEMENT AND PARKING GARAGE POWER AND SYSTEMS

SCALE: 1/8"=1'-0"

PROJECT NO.	DWG. NO.
96023	E2.1

P.D.No. 98-038

SCALE 1/8"=1'-0" | SCALE 1/4"=1'-0" | SCALE 3/8"=1'-0" | SCALE 1/2"=1'-0" | SCALE 1:200 | SCALE 1:100 | SCALE 1:50

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THE CITY OF WINNIPEG
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WINNIPEG POLICE SERVICE

CONSTRUCTION MONITOR

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416 482-5002 Fax 482-5040

DRAWN BY: C.B./S.D./A.A./Y.Z.
CHECKED BY: B.D.L.
DATE: 24 AUGUST 1998

PROJECT TITLE:

Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building

151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:

BASEMENT LEVEL FLOOR PLAN POWER

SCALE: 1/8"=1'-0"

PROJECT NO.	DWG. NO.
96023	E8.1

P.D.No. 98-038

BASEMENT PLAN – POWER

SCALE: 1/8"=1'-0"

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636 KEEWATIN ST PHONE (204) 632-1568
WINNIPEG, MB R2X 2R9
03/28/00

98-171-03

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Scouten Mitchell Sigurdson and Associates Limited
770 Bradford Street, Winnipeg, Manitoba R3H 0N3
Telephone (204) 775-0291 Fax (204) 772-2153

SCALE 1/8"=1'-0" | SCALE 1/4"=1'-0" | SCALE 3/8"=1'-0" | SCALE 1/2"=1'-0" | SCALE 1:200 | SCALE 1:100 | SCALE 1:50

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KEY TO DETAIL LOCATION

No. DETAIL NUMBER
No. DRAWING NUMBER

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DRAWN BY: C.B./S.D./Y.Z./A.A.
CHECKED BY: B.D.L./P.J.I.
DATE: 24 AUGUST 1998

PROJECT TITLE:

Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building

151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:

BASEMENT LEVEL FLOOR PLAN SYSTEMS

SCALE: 1/8"=1'-0"

PROJECT NO.	DWG. NO.
96023	E13.1

P.D.No. 98-038

BASEMENT PLAN – SYSTEMS

SCALE: 1/8"=1'-0"

TYPICAL DOOR SECURITY SYSTEM DETAIL

N.T.S.

. NO SPLICES, ALL WIRING IS TERMINATED AT THE 'ACU' & MAGNETIC LOCK CONTROL PANEL
. ALL WIRING TO BE IN CONDUIT

NOTES:

1. EXISTING TO REMAIN.
2. EXISTING SECURITY SYSTEM PANEL ACU-B. FOR ALL PARKADE AND BASEMENT CONTROLLED DOORS.
3. KEY SWITCH TO BYPASS CARD ACCESS READER.
5. FIRE ALARM SYSTEM RISER. ALL ADDRESSABLES TO BE WIRED VIA THIS JUNCTION BOX RISER.
9. NEW P.A. SYSTEM EQUIPMENT RACK.
11. DURESS ALARM SYSTEM RISER. REFER TO ED-9.
13. B DENOTES TELEPHONE ADDRESSE
10. C DENOTES DATA ADDRESSE

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER • BICSI
EXPIRES 12/31/00
Regis. No. 00857

G. MALLIN ELECTRIC LTD.
636 KEEWATIN ST
WINNIPEG, MB R2X 2R9
PHONE (204) 632-1568
03/28/00

96-171-03

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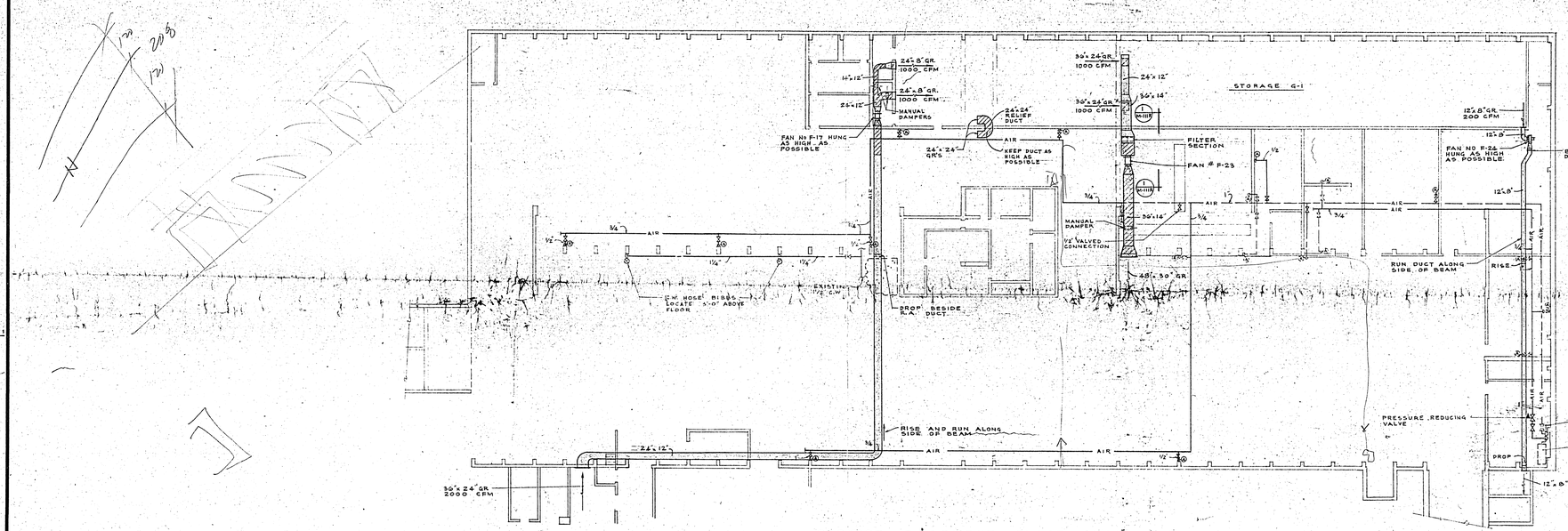
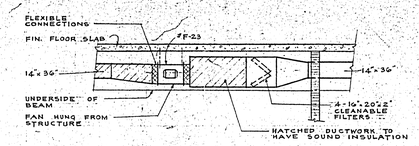


PARKADE BASEMENT FLOOR PLAN (REVISED AIR OUTLETS AND WATER PIPING)
SCALE 1/16" = 1'-0"



SECTION (1/M22)
SCALE 1/4" = 1'-0"

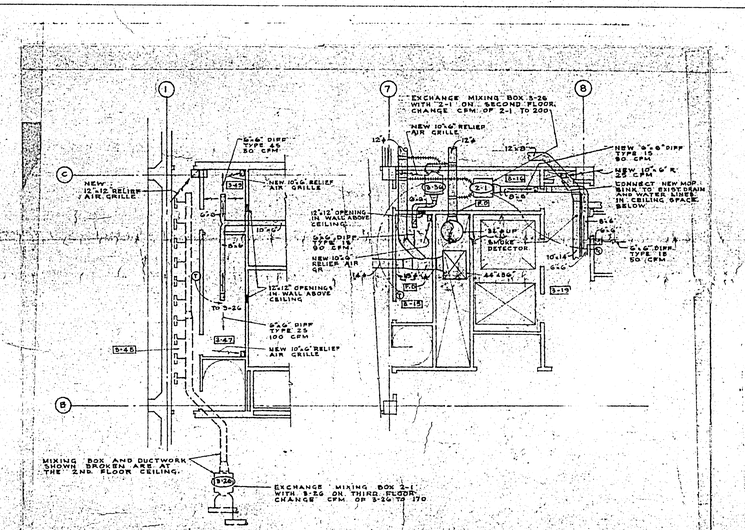
LEGEND

AIR	EXISTING AIR LINE
	NEW SHUT-OFF VALVE
	EXISTING SHUT-OFF VALVE
A	NEW AIR OUTLET
A	EXISTING AIR OUTLET.

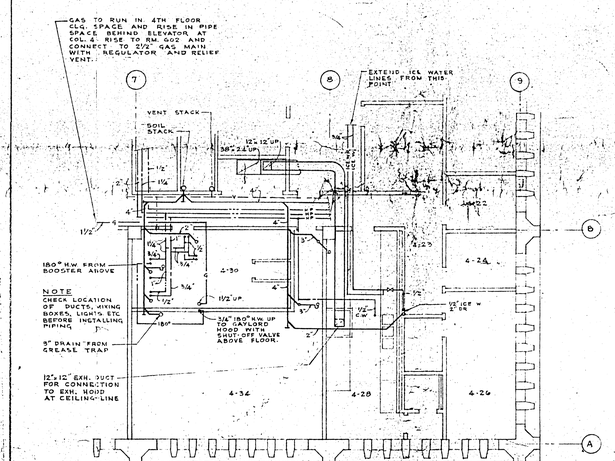
GENERAL NOTES

No.	PARTICULARS	DATE	BY.
1	VENTILATION ADDED FOR STORAGE ROOM G-1	DEC 14/65	J.S.

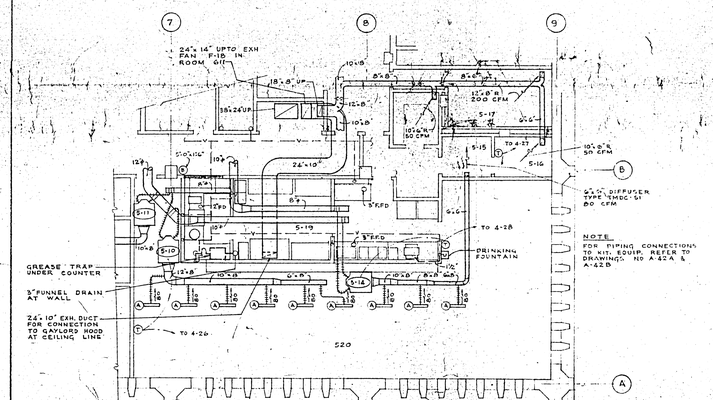
REVISIONS



PART THIRD FLOOR PLAN
SCALE 1/8" = 1'-0"



PART FOURTH FLOOR PLAN
SCALE 1/8" = 1'-0"



PART FIFTH FLOOR PLAN
SCALE 1/8" = 1'-0"

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL

PRINTING DATE
AUG 18 1967
DEC. 14, 1965

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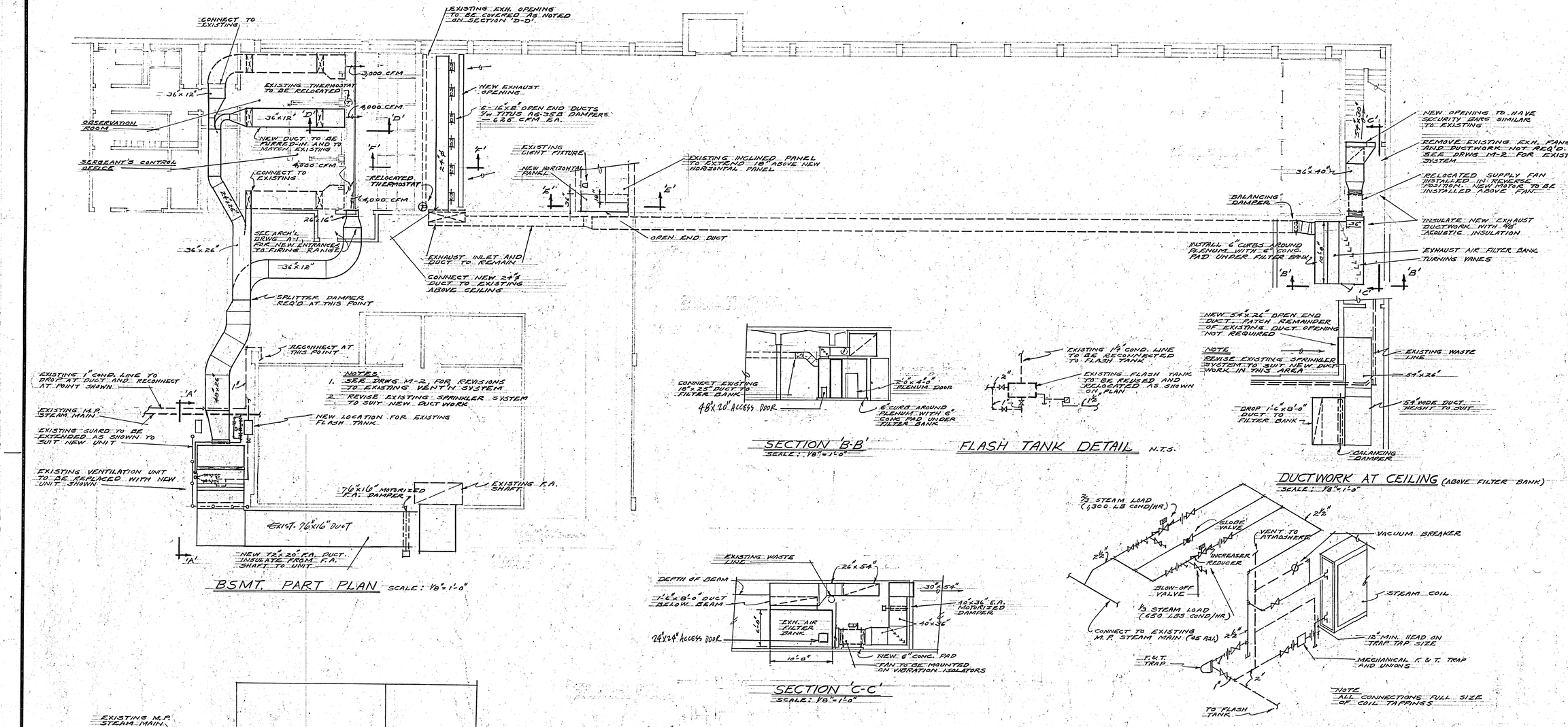
SCOUTEN MITCHELL SIGURDSON & ASSOCIATES LTD.
Consulting Engineers — Telephone 943-6511
1111 Electric Railway Chambers — Winnipeg 2, Canada

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

TITLE GENERAL MECHANICAL REVISIONS

SHEET NO. 6020 — M-III-R



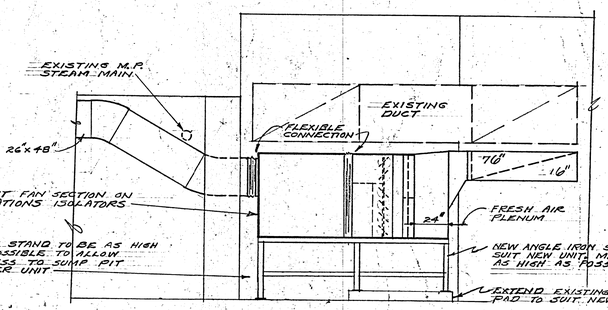
BSMT. PART PLAN SCALE: 1/8"=1'-0"

SECTION 'B-B'
SCALE: 1/8"=1'-0"

FLASH TANK DETAIL N.T.S.

SECTION 'C-C'
SCALE: 1/8"=1'-0"

STEAM COIL HOOK-UP N.T.S.



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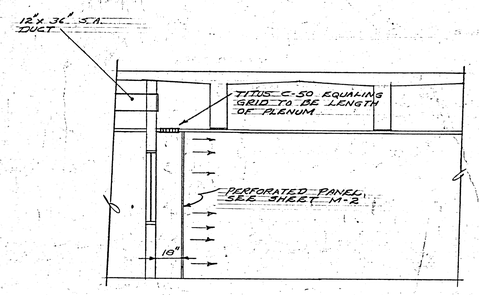


SECTION 'D-D'
SCALE: 1/4"=1'-0"

As Built MAY 1979

PROVINCE OF MANITOBA
RONALD T. SEEPISH
REGISTERED ENGINEER

Ronald Seepish
consulting engineers

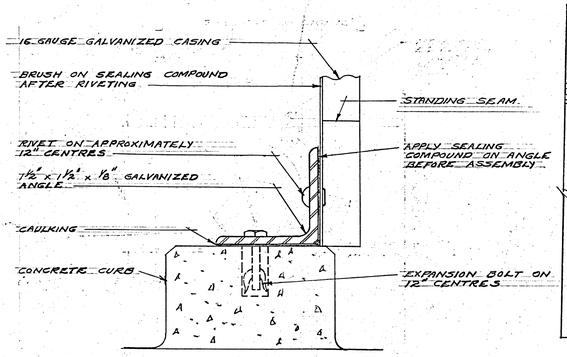
NO.	REVISION	DATE	BY	CHKD.

THE CITY OF WINNIPEG • works and operations dept. • civic properties division • 510 main st. • wpg. • man. • R3B 1B9

CHECKED BY: RTS	DRAWN BY: R.R.	JOB TITLE: CITY OF WINNIPEG FIRING RANGE	SHEET TITLE: VENTILATION LAYOUT
APPROVED BY:	DATE: DEC 30/76		SHEET: M-1
USERS APPROVAL:	SCALE: AS NOTED	FILE NO. 7554	DRAWING NO.

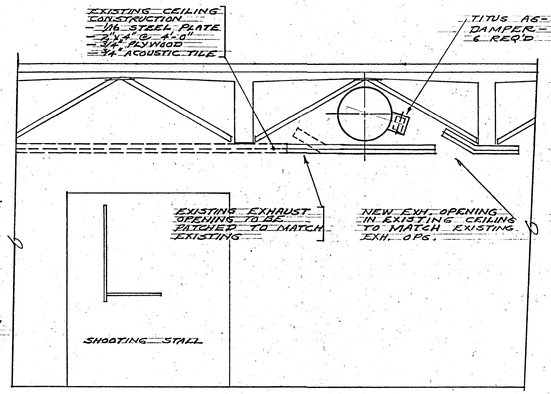
131 Princess
Public Safety Bldg
address
7554 M-2
project no. sheet no.
Basement - Firing Range
description
Ventilation Layout

CENTRAL GRAPHIC winnipeg manitoba 15

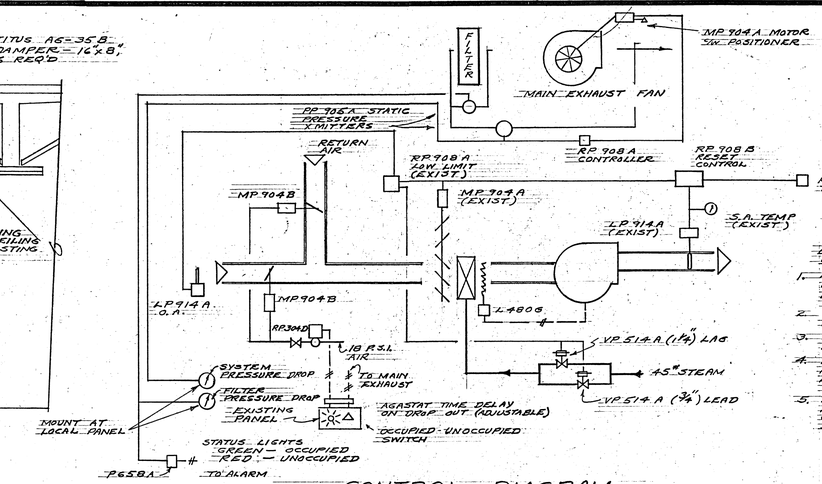


PLENUM TO CURB ATTACHMENT

NOT TO SCALE



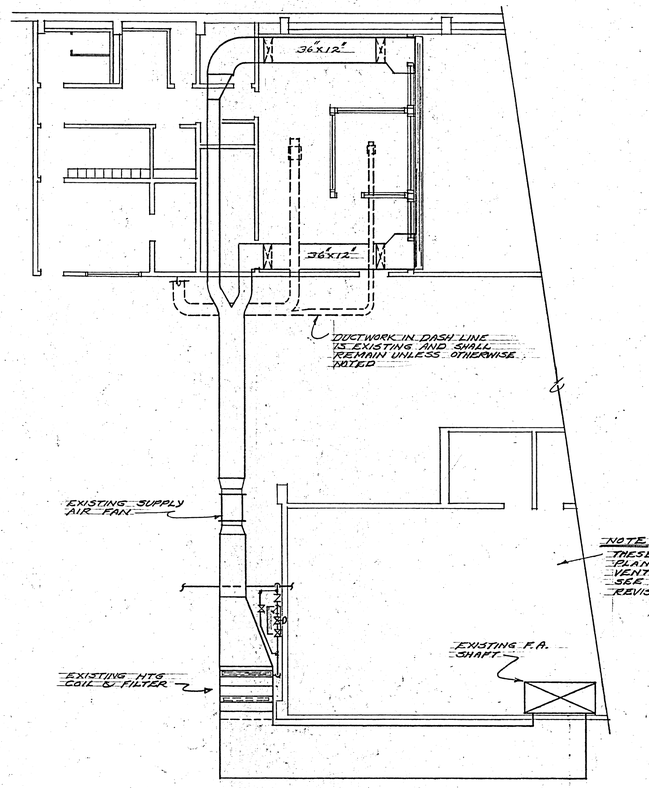
SECTION 'F-F' SCALE: ⅜"=1'-0"



CONTROL DIAGRAM

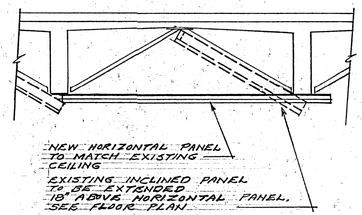
ARCHITECTURAL WORK TO BE CO-ORDINATED BY THE MECHANICAL CONTRACTOR

1. NEW S.A. DUCTWORK IN OFFICE AREAS WHICH INCLUDES OBSERVATION RM.'A' CONTROL RM. SHALL BE FURRED-IN. NEW CEILING FINISHES TO MATCH EXISTING.
2. EXISTING CEILING EXHAUST SLOT SHALL BE RELOCATED AS DETAILED.
3. NEW R.A. DUCT TO AIR HANDLING UNIT SHALL BE CONCEALED FROM THE FIRING PATH AS DETAILED.
4. NEW 6" CONCRETE CURBS AND PADS SHALL BE INSTALLED FOR THE EXHAUST SYSTEM AS SHOWN. EXTEND THE EXISTING CONC. PAD TO SUIT THE NEW SUPPLY AIR UNIT.
5. THE CUTTING OF NEW OPENINGS OR ENLARGING OF EXISTING DUCT OPENINGS FOR THE NEW DUCTWORK SHOWN, ALL OPENINGS RESULTING FROM THE REMOVAL OF EXISTING DUCTWORK SHALL BE PATCHED TO MATCH THE EXISTING



BSMT. PART PLAN (EXISTING VENT'N SYSTEM.)

SCALE: 1/8"=1'-0"



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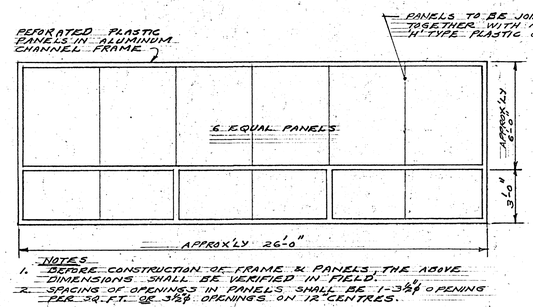


NOTES

1. BEFORE CONSTRUCTION OF FRAME & PANELS THE ABOVE DIMENSIONS SHALL BE VERIFIED IN FIELD.
2. SPACING OF OPENINGS IN PANELS SHALL BE 1-3/4" ø OPENING PER 32 SQ. FT. OF 3/8" ø OPENINGS ON 12" CENTRES.

ELEVATION OF PERFORATED PANEL

NOT TO SCALE

As Built May 1979

PROVINCE OF MANITOBA — RONALD T. SEEPISH — REGISTERED ENGINEER

Ronald Seepish consulting engineers

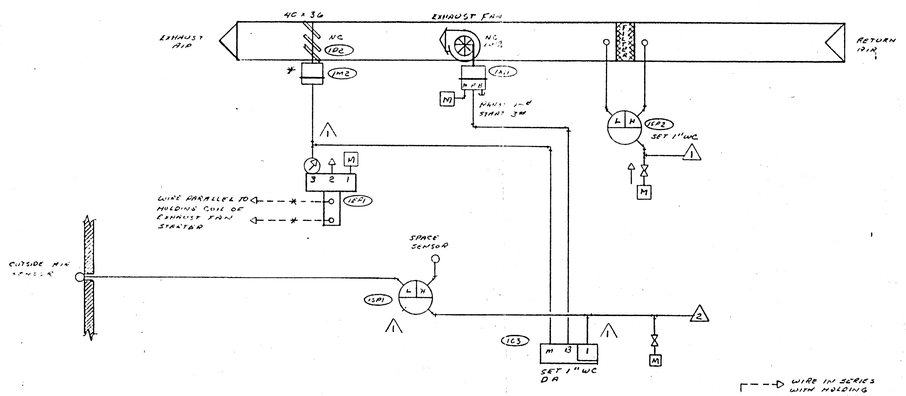
NO.	REVISION	DATE	BY	CHK'D.

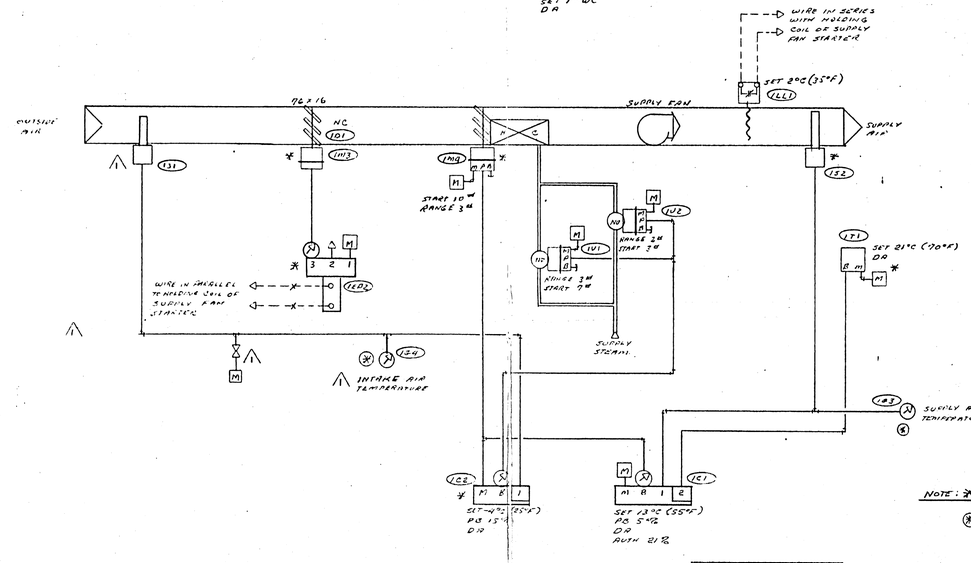
THE CITY OF WINNIPEG ⊛ works and operations dept. ⊛ civic properties division ⊛ 510 main st. ⊛ wpg. ⊛ man. ⊛ R3B 1B9

CHECKED BY: RTS	DRAWN BY: R.R.	JOB TITLE: CITY OF WINNIPEG FIRING RANGE	SHEET: M-2
APPROVED BY:	DATE: DEC 30/77	SHEET TITLE: VENTILATION LAYOUT	
USERS APPROVAL:	SCALE: AS NOTED	FILE NO.: 7554	DRAWING NO.

151 Princess Public Safety Bldg
address
7554 project no.
M-1 sheet no.
Basement description
Fire Range - Ventilation

CENTRAL GRAPHICS winnipeg manitoba 15

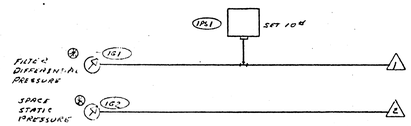




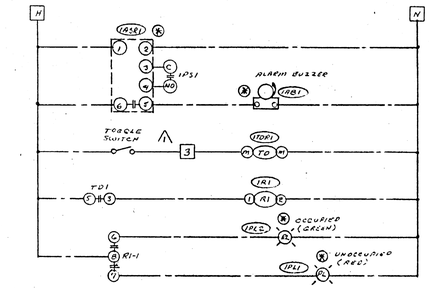
CONTROLLER 1C1 RESET SCHEDULE	
SUPPLY AIR TEMP	INPUT PRESSURE
13°C (55°F)	13#
27°C (80°F)	3#

VENTILATION SYSTEM DEVICE LAYOUT

SYSTEM NO1: FIRING RANGE VENTILATION CONTROL



LOCAL PANEL PNEUMATICS



LOCAL PANEL WIRING

LEGEND

- □ - LOCAL PANEL TERMINALS
- ○ - DEVICE TERMINALS
- △ - PNEUMATIC CONNECTIONS
- ----- - FIELD WIRING
- ——— - LOCAL WIRING
- ⌐ - PNEUMATIC TUBING
- -*- - WIRE NUT

NOTE: * = EXISTING EQUIPMENT TO BE REUSED
(*) PANEL FACE MOUNTED

SYSTEM #1: FIRING RANGE VENTILATION CONTROL

1M1, 1M3	2	MP909B1007	MOTOR
1S1	1	LP914A1011	SENSOR -40 TO 160 DEG. F.
1S2	1	LP914A1003	SENSOR -40 TO 160 DEG. F.
1G3, 1G4	2	804073F	GAUGE -40 TO 160 DEG. F.
1C2	1	RP908A1047	PNEUMATIC CONTROLLER
1EP2	1	RP403D1058	E-P RELAY 120V
1T1	1	TP910A1411	THERMOSTAT
	1	314394-38	COVER
	1	314023A	FITTING
	1	314323	RING
1M4	1	MP904A1038	MOTOR
	5	26026G	CRANK ARM
	2	27518	BALL JOINTS
	2	A27520L	48" PUSHROD
1C1, 1C2, 1EP1, 1EP2	4	305909	0 TO 30 PSI GAUGE
1R1	1	R482C1006	RELAY DPDT 120V
			MVA #1 MOTORIZED VALVE ASSEMBLY
1V2	1	V5011C1276	VALVE 1¼" NPT CV = 16
1V2	1	MP953A1087	5" OPERATOR C/W GRAD
			TAG: STEAM COIL LAG
			MVA #2 MOTORIZED VALVE ASSEMBLY
1V1	1	V5011C1151	VALVE 3/4" NPT CV = 6.3
1V1	1	MP953A1087	5" OPERATOR C/W GRAD
			TAG: STEAM COIL LEAD
1C1	1	RP908B1003	PNEUMATIC CONTROLLER DUAL INPUT
1D1, 1D1	2	D642A	DAMPER
1EP1	1	RP417A1009	E-P RELAY 120V
1M1	1	MP904A1194	PNEUMATIC MOTOR C/W POSITIONER
1M1	1	A27520E	18" PUSHROD
1C3	1	RP908A1005	PNEUMATIC CONTROLLER
1SP1, 1SP2	1	PP905B1008	STATIC PRESSURE SENSOR
1SP1	1	301298B	O.A. STATIC SENSOR
1SP2	2	314922B	DUCT STATIC SENSOR
1LL1	1	L480C1044	FREEZESTAT MANUAL RESET
1ASR1	1	R4155A1049	ALARM SILENCING RELAY
1PS1	1	P658A1005	PRESSURE SWITCH SPDT 120V
1TDR1	1	7022A1T	TIME DELAY RELAY 120V 6 TO 60 MIN.
1AB1	1	SC110	SONALERT ALARM BUZZER 120V
1SW1	1	801736C	TOGGLE SWITCH SPDT
1PL1, 1PL2	2	113594	PILOT LIGHT
1PL1, 1PL2	2	106807	120V BULB
1PL1	1	113610	RED LENS
1PL2	1	113611	GREEN LENS
1G1, 1G2	2	804073H	2½" GAUGE 0 TO 2" W.G.

THIS SYSTEM OPERATES ON AN OCCUPIED/UNOCCUPIED CYCLE, AS DETERMINED BY THE POSITION OF A MANUAL TOGGLE SWITCH 1SW1. WHEN THE SWITCH IS CLOSED, TIME DELAY RELAY 1TDR1 ENERGIZES AND WITHOUT DELAY ENERGIZES RELAY 1R1. CONTACT CLOSURE OF RELAY 1R1 STARTS THE SUPPLY FAN. THE EXHAUST FAN IS INTERLOCKED WITH THE SUPPLY FAN AND ALSO STARTS. E-P RELAYS 1EP1 AND 1EP2 ARE ENERGIZED AT THE SAME TIME AND ADMIT MAIN AIR TO THE DAMPER MOTORS 1M2 AND 1M3 CAUSING THE DAMPERS TO OPEN FULLY.

PNEUMATIC CONTROLLER 1C1 CONTROLS THE POSITION OF FACE AND BYPASS DAMPERS AND ALSO SEQUENCES THE STEAM VALVES 1V1 AND 1V2 TO MAINTAIN THE DISCHARGE TEMPERATURE, AS SENSED BY SENSOR 1S2. DISCHARGE TEMPERATURE IS RESET BY ROOM THERMOSTAT 1T1 ACCORDING TO THE RESET SCHEDULE SHOWN.

WHEN THE O.A. TEMPERATURE, AS SENSED BY SENSOR 1S1, DROPS BELOW -4 DEG. C., PNEUMATIC CONTROLLER 1C2 WILL BLEED AIR PRESSURE FROM THE CONTROL VALVES CAUSING THEM TO OPEN FULLY.

STATIC PRESSURE SENSOR 1SP1, THROUGH PNEUMATIC CONTROLLER 1C3, MODULATES THE VARIABLE INLET VANE OF THE EXHAUST FAN BY SENSING SPACE AND OUTSIDE AIR STATIC TO MAINTAIN THE SET STATIC PRESSURE
STATIC PRESSURE SENSOR 1SP2 MEASURES THE PRESSURE DROP ACROSS THE FILTER AND PANEL INDICATION IS PROVIDED BY GAUGE 1G1. PANEL INDICATION OF SPACE STATIC PRESSURE IS ALSO PROVIDED.

SHOULD THE DIFFERENTIAL PRESSURE ACROSS THE FILTER RISE TOO HIGH, PRESSURE SWITCH 1PS1, WILL CLOSE ITS N.O. CONTACTS CAUSING ALARM SILENCING RELAY 1ASR1 TO ENERGIZE AND SOUND THE ALARM BUZZER 1AB1. THE BUZZER CAN BE RESET BY DEPRESSING PUSHBUTTON ON THE COVER OF 1ASR1.

WHEN THE UNOCCUPIED CYCLE IS SELECTED, BY OPENING 1SW1, THE TIME DELAY RELAY IS DE-ENERGIZED, BUT RELAY 1R1 STAYS ENERGIZED FOR A PRESELECTED PERIOD OF TIME. AFTER THE TIME OUT PERIOD, RELAY 1R1 DE-ENERGIZED, SHUTTING DOWN THE SYSTEM. PANEL MOUNTED PILOT LIGHTS 1PL1 AND 1PL2 INDICATE THE DESIRED CYCLE.

SHOULD THE SUPPLY AIR TEMPERATURE DROP BELOW 2 DEG. C., THE S.F. AND E.F. WILL STOP AND THE O.A. DAMPERS WILL CLOSE.

ARCHITECTS: CITY OF WINNIPEG
ENGINEERS: R. SEEPISH
GENERAL: POWER VENTILATION
MECHANICAL: POWER VENTILATION

SYSTEM #1: FIRING RANGE VENTILATION CONTROL

NO.	REVISION	DATE	DRW.	APP'D.
1	REVISED AS PER INSTALLATION	5-2-79	SFAS	

Honeywell

TITLE: FIRING RANGE ALTERATIONS - PUBLIC SAFETY BLDG. WINNIPEG, MANITOBA

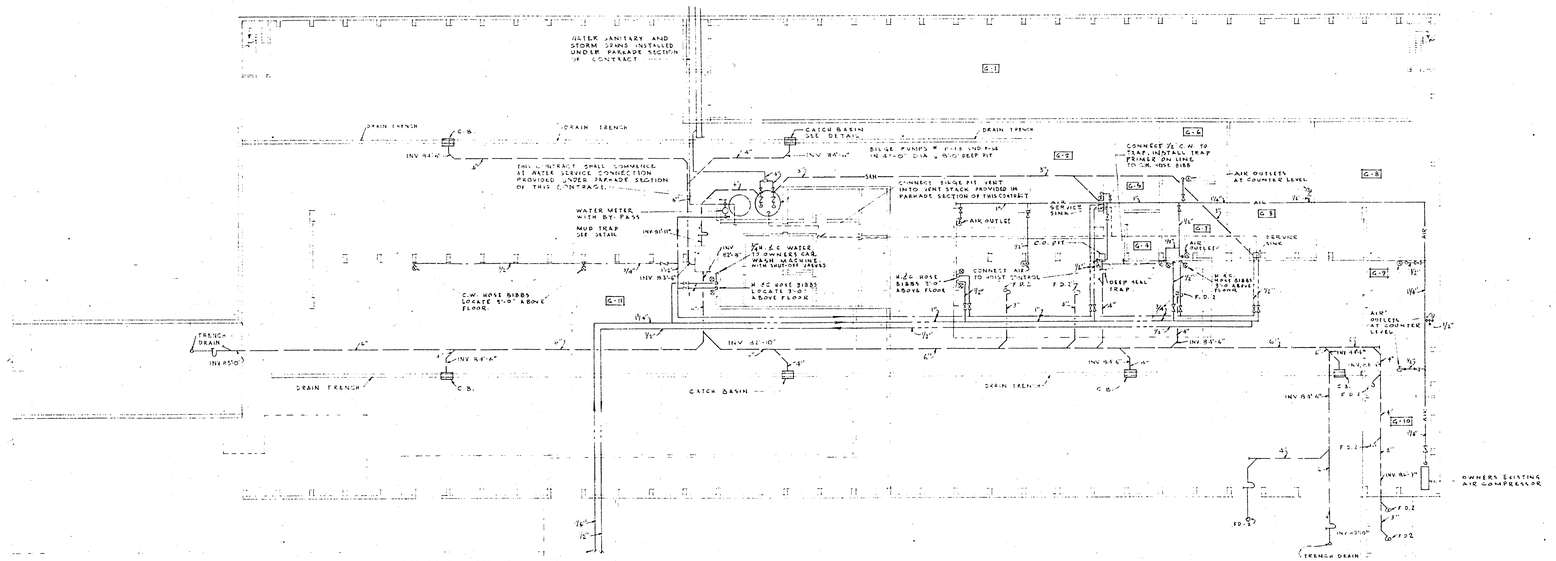
JOB NAME: POWER VENTILATION

DATE	REF.		
APR. 2, 1979	AEB		
DRAWN	CHECKED	APP'D.	DWG. NO. 313057-1/1 REV. 1A

NOTES:

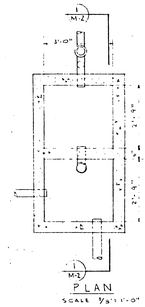
CA 2706-2

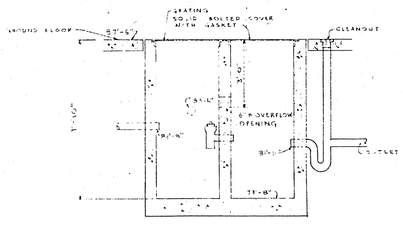
TRANSTEX 13 1800-2-78

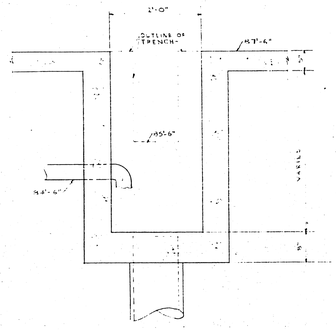


FOR CONTINUATION OF PIPING REFER TO DRWG M-4

PARKADE BASEMENT FLOOR PLAN
SCALE: 1/16" = 1'-0"







DETAIL OF CATCH BASIN
SCALE ¾"=1'-0"

GENERAL NOTES

No.	PARTICULARS	DATE	BY
REVISIONS			

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL

PRINTING DATE
1, DEC. 1954

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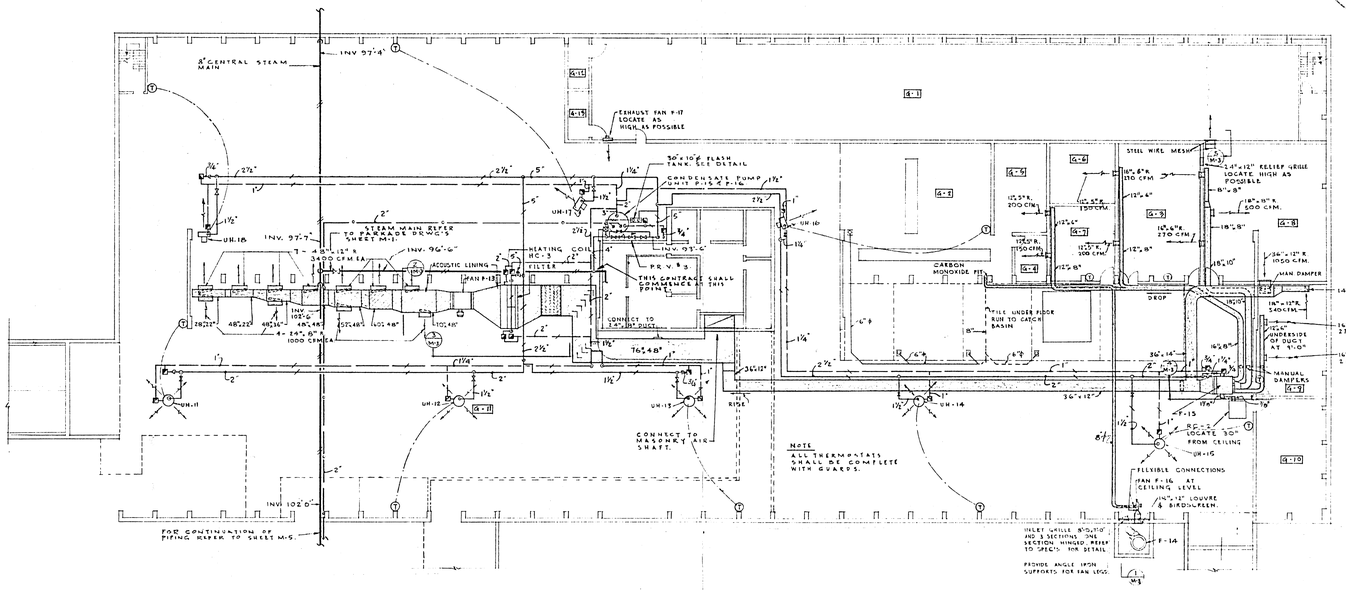
368 Main Street, Winnipeg 1, Manitoba, Telephone, WHitehall 3-4491
GREEN BLANKSTEIN RUSSELL ASSOCIATES
Mechanical & Electrical Consultants Telephone SP 4-3546

ACCESS & FINISHING TO BASEMENT OF PARKING GARAGE

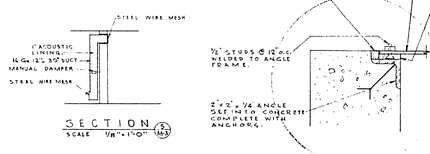
FOR THE CITY OF WINNIPEG , MANITOBA

TITLE PARKADE BASEMENT PLUMBING
SHEET NO. 60206 – M-2.

address 181 PRINCESS ST.
project no. 60206
sheet no. M-2
description PARKADE BASEMENT FLOOR PLAN PLUMBING



PARKADE BASEMENT FLOOR PLAN.
SCALE: 1/16"=1'-0"



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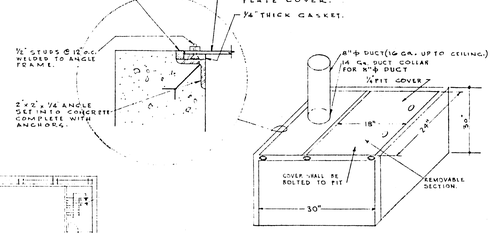
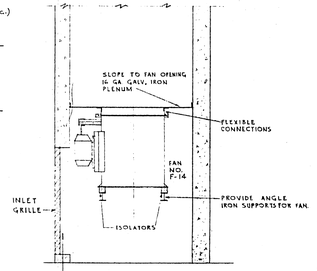


CARBON MONOXIDE PIT COVER
N.T.S.



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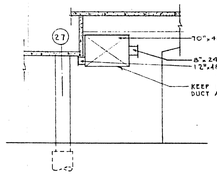

SECTION (2) M-3
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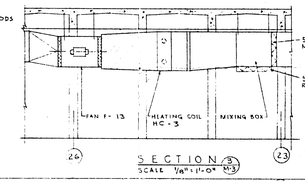

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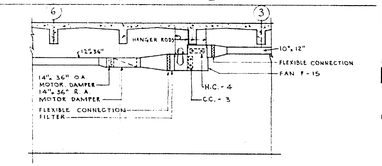

SECTION (4) M-3
SCALE 1/8"=1'-0"

GENERAL NOTES

No.	PARTICULARS	DATE	BY
	REVISIONS		

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL

PRINTING DATE
1, DEC. 1964

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368 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 8-4431

GREEN BLANKSTEIN RUSSELL ASSOCIATES
Mechanical & Electrical Consultants Telephone SP 4-3548

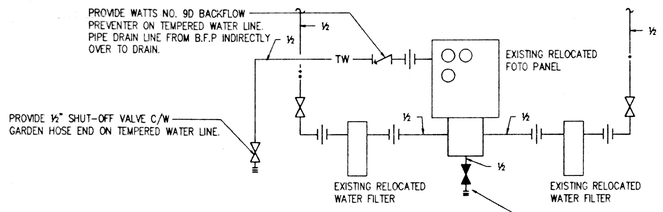
ACCESS & FINISHING TO BASEMENT OF PARKING GARAGE

FOR THE CITY OF WINNIPEG , MANITOBA

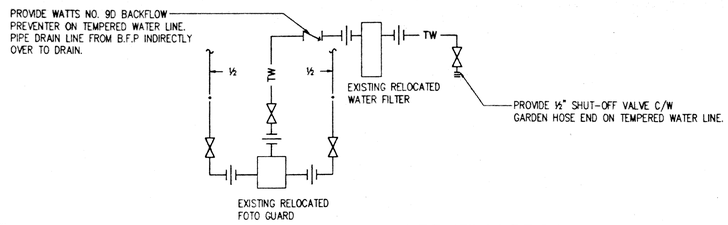
PARKADE BASEMENT
TITLE HEATING & AIR CONDITIONING
SHEET NO. 6020G — M-3.

W.J.D. 1784

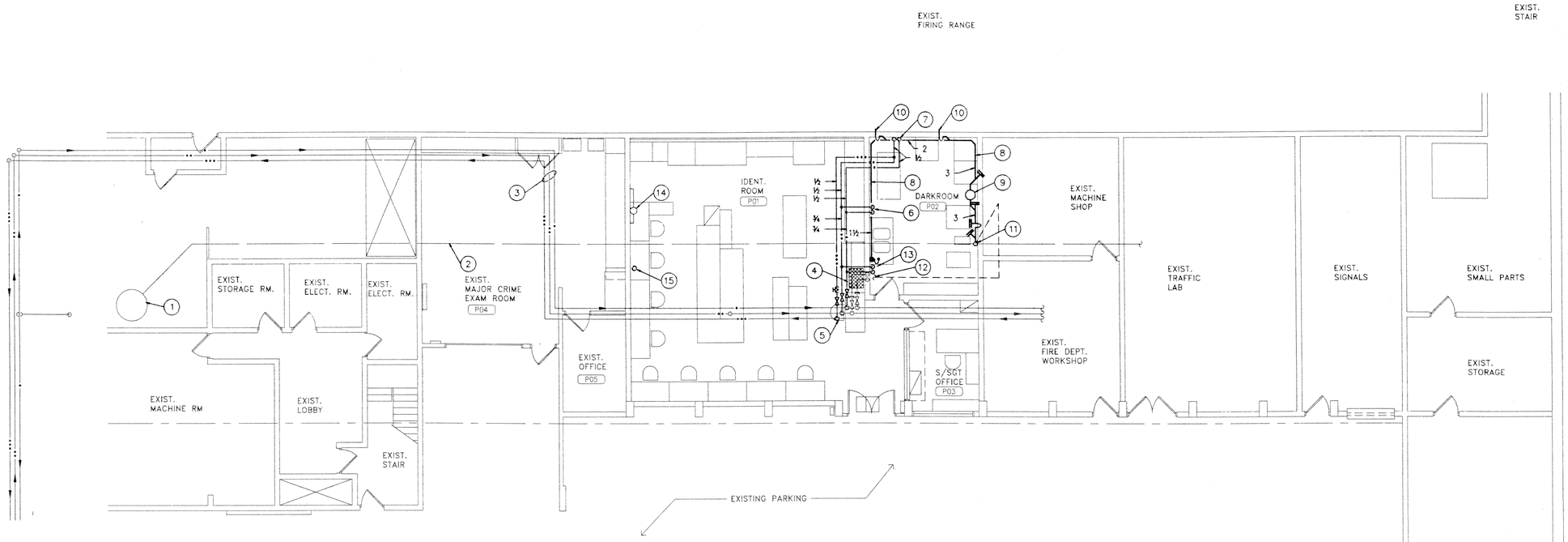
SCALE 1/8"=1'-0" SCALE 1/4"=1'-0" SCALE 3/8"=1'-0" SCALE 1/2"=1'-0" SCALE 1:200 SCALE 1:100 SCALE 1:50



SCHEMATIC DETAIL FOR HOPE FILM PROCESSOR
NTS



SCHEMATIC DETAIL FOR ILFORD FILM PROCESSOR
NTS



DRAWING NOTES: (##)

1. EXISTING SEWAGE PIT & PUMP TO REMAIN.
2. APPROX. LOCATION OF EXISTING 3" SANITARY DRAIN LINE BELOW FLOOR SLAB. EXACT LOCATION TO BE DETERMINED ON SITE.
3. EXISTING HOT, COLD & RECIRC. WATER LINES AT HIGH LEVEL.
4. REMOVE EXISTING JANITORS SINK. CAP-OFF ALL WATER, DRAIN & VENT LINES AT MAINS & REMOVE ALL PIPING NOT REQUIRED. TURN-OVER FIXTURE TO OWNERS.
5. CONNECT NEW ¾" HOT & COLD & ½" RECIRC. WATER LINES TO EXISTING WATER LINES AT HIGH LEVEL APPROX. THIS LOCATION.
6. ½" HOT & COLD WATER LINES DOWN ON WALL TO MIXING VALVE FOR RELOCATED HOPE FILM PROCESSOR. REFER TO SCHEMATIC DETAIL THIS SHEET FOR CONT.
7. ½" HOT & COLD WATER LINES DOWN ON WALL TO MIXING VALVE FOR RELOCATED ILFORD FILM PROCESSOR. REFER TO SCHEMATIC DETAIL THIS SHEET FOR CONT.
8. PIPE NEW ACID WASTE DRAIN LINE ON WALL AS LOW AS POSSIBLE & PIPE TO NEW DILUTION TANK.
9. ACID DILUTION TANK ON FLOOR. REFER TO SPEC.
10. PROVIDE 2" STANDING WASTE C/W INCREASER TO 3" DRAIN LINE ON WALL & PIPE DRAIN LINES FROM FILM PROCESSORS INDIRECTLY OVER STANDING WASTE.
11. PIPE NEW 3" DRAIN LINE FROM ACID DILUTION TANK DOWN THRU FLOOR SLAB & CONNECT TO EXISTING 3" BURIED DRAIN LINE AT APPROX. THIS LOCATION. EXACT LOCATION & DEPTH TO BE DETERMINED ON SITE.
12. CONNECT NEW VENT LINE TO EXISTING VENTING SYSTEM APPROX. HERE.
13. ROUGH-IN ½" HOT & COLD WATER & 1½" ACID WASTE DRAIN LINE TO EXISTING RELOCATED SINK.
14. EXISTING WATER PIPING & FILTER EXPOSED ON WALL TO REMAIN.
15. EXISTING DRAIN & VENT LINE EXPOSED ON WALL TO REMAIN.

GENERAL NOTES:

1. EXISTING SINK TO BE RELOCATED FROM SECOND FLOOR BY GENERAL CONTRACTOR. SECTION 15400 SHALL CAP-OFF ALL EXISTING WATER, DRAIN & VENT LINES FROM SINK & REMOVE ALL PIPING NOT REQUIRED.
2. EXISTING FILM PROCESSOR MIXING VALVES, FILTERS, ETC. TO BE RELOCATED FROM SECOND FLOOR BY SECTION 15400. SECTION 15400 SHALL CAP-OFF ALL EXISTING WATER LINES FROM MIXING VALVES & REMOVE ALL PIPING NOT REQUIRED.

PARKING GARAGE FLOOR PLAN
SCALE 1/8" = 1'-0"

96-171-04

Scouten Mitchell Sigurdson
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Scouten Mitchell Sigurdson and Associates Limited
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PRINT - READ DWG. ACCORDINGLY

KEY TO DETAIL LOCATION

No. DETAIL NUMBER
No. DRAWING NUMBER

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DRAWINGS SHOULD NOT BE SCALED.

NO.	REVISION/ISSUE	DATE

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THE CITY OF WINNIPEG
PROPERTY AND DEVELOPMENT SERVICES
WINNIPEG POLICE SERVICE

CONSTRUCTION NORTH

PROVINCE OF MANITOBA H.J. WAEDT REGISTERED PROFESSIONAL ENGINEER

Carruthers Shaw and Partners Limited Architects
1243 Yonge Street
Toronto, Ontario M4T 1S5
416 482-5002 Fax 482-5040

DRAWN BY: RMP
CHECKED BY: HJW
DATE: 17 AUGUST 1998

PROJECT TITLE:

Temporary Staging For Police Headquarters Renovations City of Winnipeg Public Safety Building
151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:

PART PLAN PLUMBING

SCALE: 1/8" 1'-0"

PROJECT NO.	DWG. NO.
98024	M1.1

RFQ No. 889-98

SCALE 1/8"=1'-0" | SCALE 1/4"=1'-0" | SCALE 3/8"=1'-0" | SCALE 1/2"=1'-0" | SCALE 1:200 | SCALE 1:100 | SCALE 1:50

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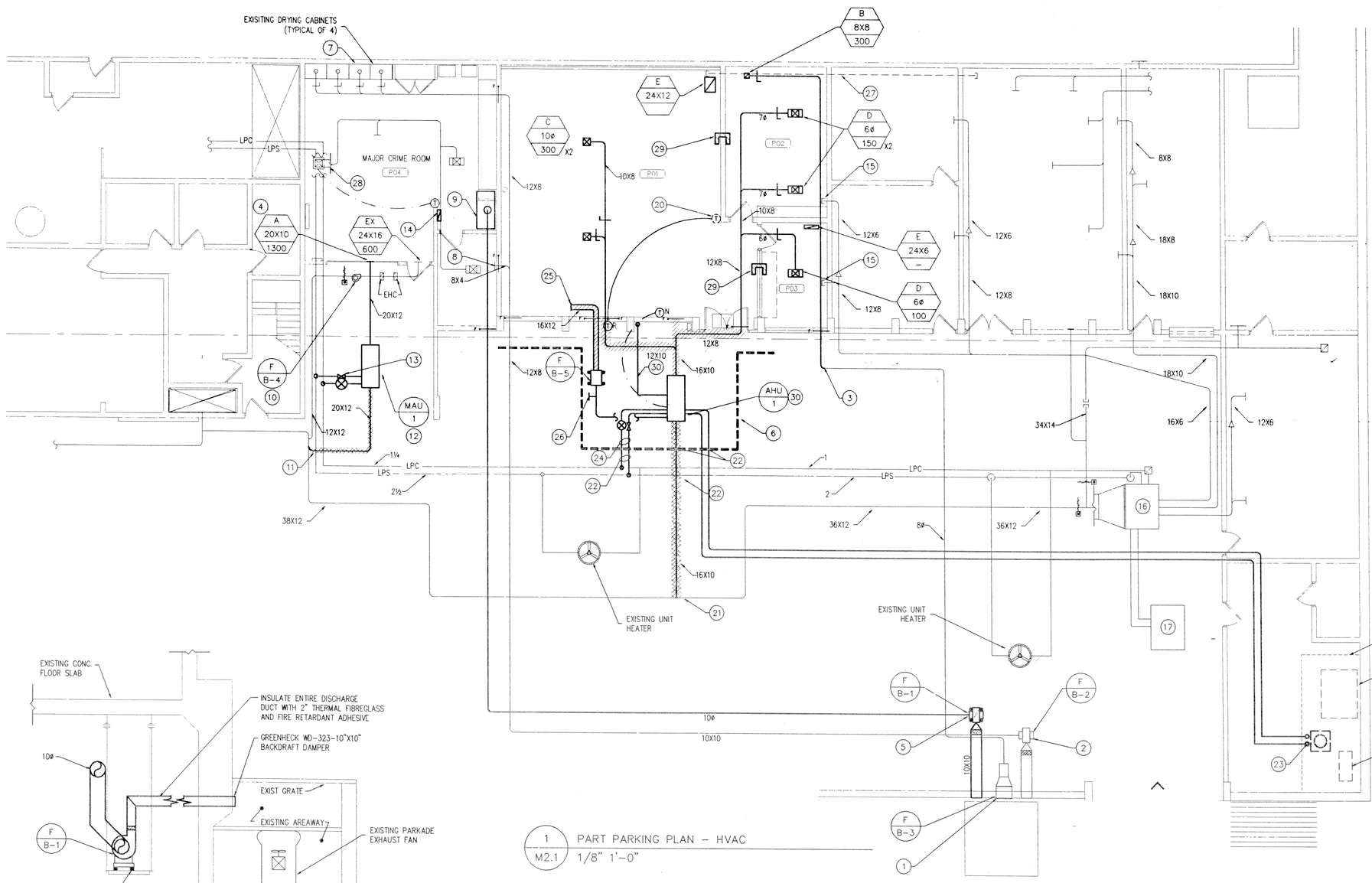
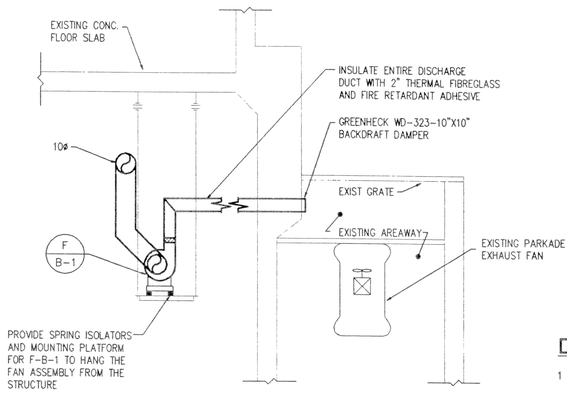


1 / M2.1 PART PARKING PLAN – HVAC
1/8" 1'-0"



2 / M2.1 SECTION THRU AREAWAY
N.T.S.

PARKING GARAGE FLOOR PLAN
SCALE 1/8" = 1'-0"

LEGEND:

- EXISTING TO BE REMOVED (EXCEPT AS NOTED)
- EXISTING TO REMAIN
- NEW WORK
- FIRE DAMPER
- MANUAL BALANCE DAMPER
- RELOCATE EXISTING
- EXISTING LIGHT TROFFER TO REMAIN
- TRANSFER AIR DUCT
- SUPPLY AIR DIFFUSER/REGISTER
- RETURN/EXHAUST AIR GRILLE
- EXISTING THERMOSTAT TO BE REMOVED
- EXISTING THERMOSTAT TO BE RELOCATED
- EXISTING THERMOSTAT TO REMAIN
- NEW OR RELOCATED THERMOSTAT
- 101 ROOM NUMBER
- RS REFRIGERANT SUCTION
- RL REFRIGERANT LIQUID
- LPS LOW PRESSURE STEAM
- LPC LOW PRESSURE CONDENSATE
- SHUT-OFF VALVE
- CONTROL VALVE
- STRAINER
- VACUUM BREAKER
- STEAM TRAP
- ACOUSTIC INSULATION
- FLEXIBLE DUCT CONNECTION
- EQ. NO. EQUIPMENT DESIGNATION OR PLUMBING RISER
- TYPE / NECK / FLOW — GRILLE/DIFFUSER TYPE; NECK SIZE; 2X QUANTITY OR NUMBER OF FLOW RATE (CFM) — GRILLE OR DIFFUSER DESIGNATION
- EXISTING DUAL DUCT BOX TO REMAIN
- NEW DUAL DUCT BOX
- NEW VAV BOX

DRAWING NOTES: (##)

1. EXISTING F-B-3 "CO PIT" EXHAUST FAN ¾ HP, TO BE USED TO EXHAUST THE TEMPORARY PHOTO LAB. SECTION 15800 TO VERIFY THE FAN OPERATION AND ADVISE THE ENGINEER SET AIR FLOW TO 300 CFM
2. EXISTING MAJOR CRIME ROOM EXHAUST FAN (½ HP) TO REMAIN REBALANCE TO 600 CFM. SECTION 15800 INSPECT BLOWER AND ADVISE THE ENGINEER
3. CONNECT NEW TO EXISTING 8ø EXHAUST DUCT.
4. MOUNT SIDEWALL SUPPLY AIR GRILLE AT HIGH LEVEL.
5. EXISTING CML NORTHERN BLOWER SIZE 1350 EXHAUST SET, 1000 CFM AT ¾" W.C. E.S.P., ¼ HP, 115V, O.D.P. MOTOR, AUTO-SHUTTER, DRAIN, SPARK-PROOF CONSTRUCTION, TO BE RELOCATED FROM ITS PRESENT ROOF LOCATION TO THE BASEMENT PARKADE AS SHOWN. THE FAN SHALL EXHAUST THROUGH THE WALL INTO THE AREA WAY. SET TO 1000 CFM. SEE DETAIL 2-M2.1 FOR FAN INSTALLATION. SECTION 15800 TO VERIFY THE FAN OPERATION AND ADVISE THE ENGINEER
6. OVERHEAD CRANE BEAM AT U/S OF PARKADE CEILING STRUCTURE.
7. BALANCE EXHAUST FROM EACH DRYING CABINET TO 100 CFM.
8. BALANCE EXHAUST FROM THE OFFICE TO 100 CFM.
9. EXISTING FUME HOOD 32"DX60"WX96"H RELOCATED FROM 2ND FLOOR CRIME LAB. PROVIDE 10ø S.S. #18 GAUGE EXHAUST DUCT TO FAN F-B-1 AS SHOWN. CONNECT DUCT TO THE COLLAR ON TOP OF THE HOOD.
10. EXISTING MAKE-UP AIR FAN F-B-4 C/W FILTERS, MOTORIZED DAMPER AND TWO ELECTRIC HEATING COILS, 12.5 KW, 208/3ø EACH. SECTION 15800 TO INSPECT THE SYSTEM AND TO REPLACE THE EXISTING FILTERS AND ADVISE THE ENGINEER ABOUT ANY NECESSARY REPAIRS. SECTION 15900 SHALL INTERLOCK THE MAKE-UP SYSTEM OPERATION WITH THE EXHAUST FAN FB-2. SECTION 15985 TO BALANCE F-B-4 TO 600 CFM.
11. CONNECT TO EXISTING OUTSIDE AIR DUCT.
12. MOUNT MAU-1 AT HIGH LEVEL.
13. PROVIDE 1.25ø STEAM AIR ¾ø CONDENSATE CONNECTION FROM EXISTING LINES TO STEAM COIL IN THE MAU-1. REFER TO SPEC DETAIL
14. MAU-1 CONTROL PANEL.
15. REMOVE EXISTING SIDEWALL SUPPLY AIR GRILLES, CAP-OFF THE DUCT ON THE OTHER SIDE OF THE WALL, MAKE WALL GOOD.
16. EXISTING MULTIZONE AIR HANDLER TO REMAIN.
17. EXISTING COMPRESSOR FOR MULTIZONE UNIT TO REMAIN.
18. OUTLINE OF EXISTING GENERATOR SET RADIATOR ABOVE.
19. OUTLINE OF EXISTING CONDENSOR FOR THE PARKADE MULTIZONE UNIT COMPRESSOR.
20. RELOCATE EXISTING THERMOSTAT TO OUTSIDE OF NEW ROOM.
21. CONNECT NEW TO EXISTING OUTDOOR AIR DUCT.
22. RUN THE DUCTS, REFRIGERATION, STEAM, CONDENSATE LINES ABOVE THE CRANE BEAM.
23. SUCTION AND LIQUID LINES FOR AHU-1 UP TO THE MECHANICAL CAGE ABOVE. MOUNT THE CONDENSING UNIT CU-1 WITHIN THE CAGE WHERE SPACE PERMITS, AND IN A MANNER NOT INTERFERING WITH OPERATION OF THE EXISTING UNITS IN THE CAGE.
24. PROVIDE 1.25ø STEAM AND ¾ø CONDENSATE LINES FOR STEAM COIL IN AHU-1. CONNECT TO THE EXISTING STEAM & CONDENSATE LINES.
25. OPEN ENDED ACOUSTICALLY LINED RA DUCT IN CEILING SPACE. SET F-B-5 TO 600 CFM USING SPEED CONTROL. MOUNT THE CONTROLLER BY THE FAN AT HIGH LEVEL.
26. PROVIDE BAROMETRIC RELIEF AIR DAMPER ON DUCT BETWEEN F-B-5 AND AHU-1, SIZE THE DAMPER FOR 1000 CFM.
27. REMOVE EXISTING 30X16 OBSOLETE DUCT, MAKE WALLS GOOD.
28. EXISTING YORK DW-20-6-A WATER COOLED UNIT TO REMAIN.
29. ACOUSTICALLY LINED 12X6 TRANSFER AIR DUCT IN CEILING SPACE.
30. SECTION 15400 TO PROVIDE INDIRECT DRAINAGE FOR THE AHU-1 DX COIL PAN TO THE EXISTING FLOOR TRENCH.

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Consulting Engineers
Scouten Mitchell Sigurdson and Associates Limited
770 Bradford Street, Winnipeg, Manitoba R3H 0N3
Telephone (204) 775-0291 Fax (204) 772-2153

KEY TO DETAIL LOCATION
No. (DETAIL NUMBER) / No. (DRAWING NUMBER)

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THE CITY OF WINNIPEG
PROPERTY AND DEVELOPMENT SERVICES
WINNIPEG POLICE SERVICE

CONSTRUCTION NORTH

PROVINCE OF MANITOBA — 43/1390 — H.J. WAEDT — REGISTERED PROFESSIONAL ENGINEER

Carruthers Shaw and Partners Limited Architects
1941 Yonge Street
Toronto, Ontario M4P 2B5
416 482-5002 Fax 482-5040

DRAWN BY: LG
CHECKED BY: PG
DATE: 17 AUGUST 1998

PROJECT TITLE:

Temporary Staging For Police Headquarters Renovations
City of Winnipeg Public Safety Building
151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:

PART PARKING PLAN HVAC AND DETAILS

SCALE: AS NOTED

PROJECT NO.	DWG. NO.
98024	M2.1

RFQ No. 889-98

SCALE 1/8"=1'-0" | SCALE 1/4"=1'-0" | SCALE 3/8"=1'-0" | SCALE 1/2"=1'-0" | SCALE 1:200 | SCALE 1:100 | SCALE 1:50

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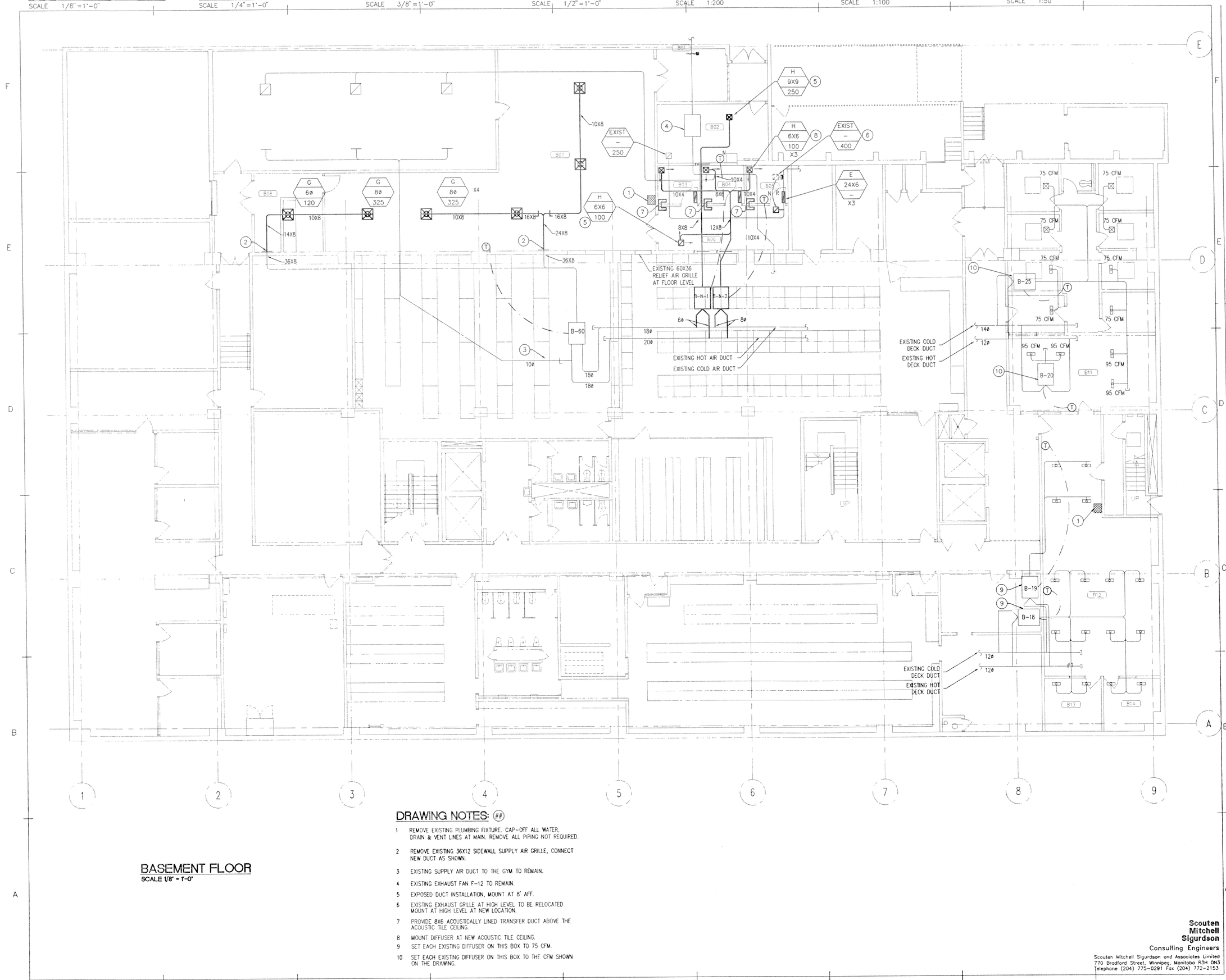

BASEMENT FLOOR
SCALE 1/8" = 1'-0"

DRAWING NOTES: (##)

1 REMOVE EXISTING PLUMBING FIXTURE, CAP-OFF ALL WATER, DRAIN & VENT LINES AT MAIN. REMOVE ALL PIPING NOT REQUIRED.

2 REMOVE EXISTING 36X12 SIDEWALL SUPPLY AIR GRILLE, CONNECT NEW DUCT AS SHOWN.

3 EXISTING SUPPLY AIR DUCT TO THE GYM TO REMAIN.

4 EXISTING EXHAUST FAN F-12 TO REMAIN.

5 EXPOSED DUCT INSTALLATION, MOUNT AT 8' AFF.

6 EXISTING EXHAUST GRILLE AT HIGH LEVEL TO BE RELOCATED MOUNT AT HIGH LEVEL AT NEW LOCATION.

7 PROVIDE 8X6 ACOUSTICALLY LINED TRANSFER DUCT ABOVE THE ACOUSTIC TILE CEILING.

8 MOUNT DIFFUSER AT NEW ACOUSTIC TILE CEILING.

9 SET EACH EXISTING DIFFUSER ON THIS BOX TO 75 CFM.

10 SET EACH EXISTING DIFFUSER ON THIS BOX TO THE CFM SHOWN ON THE DRAWING.

KEY TO DETAIL LOCATION

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No. DRAWING NUMBER

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THE CITY OF WINNIPEG
PROPERTY AND DEVELOPMENT SERVICES
WINNIPEG POLICE SERVICE

CONSTRUCTION NORTH

PROVINCE OF MANITOBA — Aug 13/98 — H.J. WAEDT — REGISTERED PROFESSIONAL ENGINEER

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DRAWN BY: LG/RMP
CHECKED BY: PG
DATE: 17 AUGUST 1998

PROJECT TITLE:

Temporary Staging For Police Headquarters Renovations City of Winnipeg Public Safety Building

151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:

BASEMENT FLOOR PLAN HVAC AND PLUMBING

SCALE: 1/8" = 1'-0"

PROJECT NO.	DWG. NO.
98024	M2.2

RFQ No. 889-98

Scouten Mitchell Sigurdson
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File name: G:\617\104M8.DWG Last edited 98/08/13 @ 11:57

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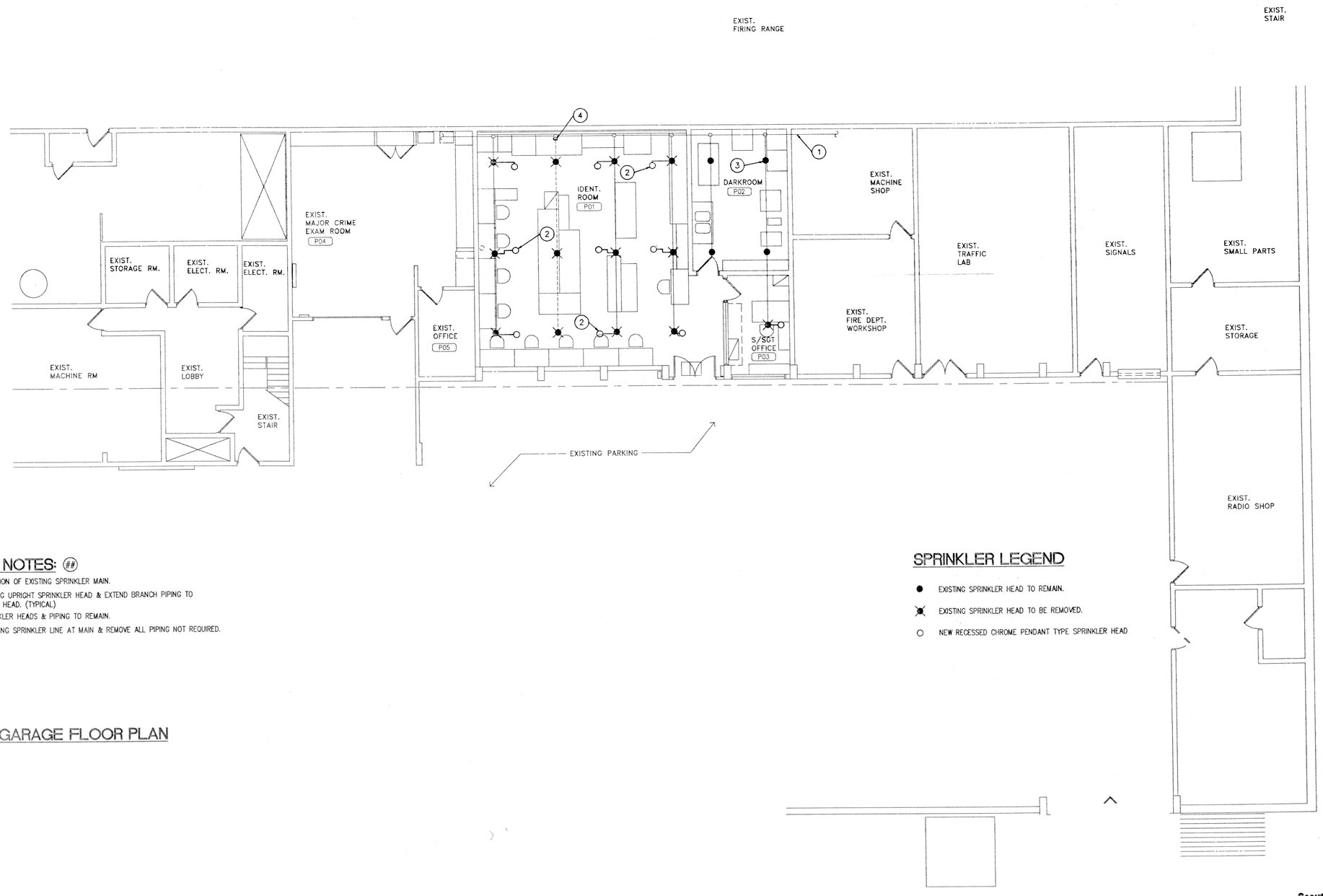

DRAWING NOTES: (##)

1. APPROX. LOCATION OF EXISTING SPRINKLER MAIN.
2. REMOVE EXISTING UPRIGHT SPRINKLER HEAD & EXTEND BRANCH PIPING TO NEW SPRINKLER HEAD. (TYPICAL)
3. EXISTING SPRINKLER HEADS & PIPING TO REMAIN.
4. CAP-OFF EXISTING SPRINKLER LINE AT MAIN & REMOVE ALL PIPING NOT REQUIRED.

SPRINKLER LEGEND

- ● EXISTING SPRINKLER HEAD TO REMAIN.
- ⊗ EXISTING SPRINKLER HEAD TO BE REMOVED.
- ○ NEW RECESSED CHROME PENDANT TYPE SPRINKLER HEAD

PARKING GARAGE FLOOR PLAN

SCALE 1/8"=1'-0"

96-171-04

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THE CITY OF WINNIPEG
PROPERTY AND DEVELOPMENT SERVICES
WINNIPEG POLICE SERVICE

CONSTRUCTION NORTH

PROVINCE OF MANITOBA
H.J. WAEDT
REGISTERED PROFESSIONAL ENGINEER
Aug 13/98

Carruthers Shaw and Partners Limited Architects
2345 Yonge Street
Toronto, Ontario M4P 2E5
416 482-5002 Fax 482-5040

DRAWN BY: RMP
CHECKED BY: HJW
DATE: 17 AUGUST 1998

PROJECT TITLE:

Temporary Staging For Police Headquarters Renovations City of Winnipeg Public Safety Building

151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:

PARKING PLAN
FIRE PROTECTION

SCALE: 1/8" 1'-0"

PROJECT NO. 98024
DWG. NO. M3.1

RFQ No. 889-98

File name: G:617104FP.DWG Last edited: 98/08/13 @ 10:22

0 5 10 25ft. SCALE 1/8"=1'-0" | 0 1 5 10ft. SCALE 1/4"=1'-0" | 0 1 5 8ft. SCALE 3/8"=1'-0" | 0 1 2 5ft. SCALE 1/2"=1'-0" | 0 5 10 15 SCALE 1:200 | 0 1 2 5 8 SCALE 1:100 | 0 .5 1 2 3 4 SCALE 1:50

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ELECTRICAL SPECIFICATION
96–171–04

SECTION 16010 ELECTRICAL GENERAL PROVISIONS

1 GENERAL
.1 PROVIDE ALL MATERIALS, LABOUR, PLANT AND EQUIPMENT NECESSARY TO MAKE A COMPLETE INSTALLATION AS DESCRIBED AND SHOWN. THIS INSTALLATION SHALL BE LEFT COMPLETE AND READY FOR OPERATION.
.2 THE ENTIRE INSTALLATION SHALL BE GUARANTEED FOR ONE YEAR FROM DATE OF FINAL ACCEPTANCE BY THE OWNER. REPLACE AT NO ADDITIONAL COST ANY WORK OR MATERIAL WHICH MAY FAIL OR PROVE DEFECTIVE DURING THE GUARANTEE PERIOD.
.3 THE INSTALLATION SHALL CONFORM IN EVERY RESPECT TO THE RULES AND REGULATIONS OF THE LATEST EDITION OF THE CANADIAN ELECTRICAL CODE AND ALL LOCAL CODES. ALL WORK SHALL BE UNIFORM AND HIGH QUALITY. ALL EQUIPMENT SUPPLIED UNDER THIS CONTRACT SHALL BE NEW AND BUILT IN ACCORDANCE WITH EEMAC STANDARDS AND SHALL BE CSA AND LOCALLY APPROVED. PROVIDE INSPECTION CERTIFICATE UPON COMPLETION OF THE WORK.
.4 CAREFULLY EXAMINE ALL PLANS AND SPECIFICATIONS PERTAINING TO THIS CONTRACT AND VISIT SITE TO DETERMINE ALL FACTORS AFFECTING COSTS AND INCLUDE SAME IN TENDER. NOTIFY ENGINEER OF DISCREPANCIES OR CONFLICTS WITH ANY REGULATION BEFORE SUBMITTING PRICE. FAILING SUCH NOTIFICATION, THIS CONTRACTOR SHALL MEET ALL SUCH REQUIREMENTS WITHOUT EXTRA COST TO THE OWNER.
.5 OBTAIN ALL NECESSARY PERMITS, PAY ALL NECESSARY FEES, GIVE ALL NECESSARY NOTICES AND OBTAIN APPROVAL OF THE ELECTRICAL AUTHORITIES HAVING JURISDICTION.
.6 THESE SPACES ARE ?TEMPORARY? EXCEPT FOR THOSE AREAS LOCATED IN THE PARKING GARAGE WHICH ARE PERMANENT SPACES.

2 SHOP DRAWINGS
.1 SUBMIT SIX (6) COPIES OF SHOP DRAWINGS FOR ALL EQUIPMENT.
.2 EQUIPMENT PROPOSED SHALL MEET THE SAME STANDARDS OF PERFORMANCE, QUALITY AND WORKMANSHIP AS THAT SPECIFIED.

3 AS–BUILTS
.1 PROVIDE TWO COPIES OF "AS–BUILT" DRAWINGS.

4 OPERATION AND MAINTENANCE MANUALS
.1 PROVIDE DATA FOR INCORPORATION INTO MAINTENANCE MANUAL. MANUAL SHALL INCLUDE INSTRUCTIONS FOR ALL EQUIPMENT SUPPLIED, COPY OF REVIEWED SHOP DRAWINGS AND TECHNICAL DATA SUCH AS PARTS LISTS, OPERATING INSTRUCTIONS, MAINTENANCE INSTRUCTIONS, ETC. THREE (3) HARD COVER COPIES OF MAINTENANCE MANUALS ARE TO BE SUBMITTED.

5 REMOVALS
.1 REMOVE ALL UNNECESSARY EXISTING ELECTRICAL EQUIPMENT, WIRING AND FIXTURES IN THOSE PORTIONS OF THE EXISTING BUILDING WHICH ARE BEING REMODELLED OR DEMOLISHED. THE EQUIPMENT MAY BE REUSED ON THIS PROJECT IF, IN THE OPINION OF THE CONSULTANT, SUCH EQUIPMENT IS IN SATISFACTORY CONDITION AND MEETS THE STANDARDS ESTABLISHED. THE OWNER MAY SELECT FROM THE MATERIALS AND/OR EQUIPMENT REMAINING WHICH HE WISHES TO RETAIN AND THE REMAINDER SHALL BE REMOVED FROM THE SITE.
.2 ANY ELECTRICAL EQUIPMENT IN REMODELLED SECTIONS OR IN STRUCTURES REMOVED OR ALTERED, ADJACENT TO NEW WORK, NECESSARY FOR THE OPERATION OF THE EXISTING BUILDING, SHALL BE RELOCATED AS NECESSARY.
.3 ALL EXISTING EQUIPMENT REUSED SHALL BE MADE GOOD AND GUARANTEED.
.4 POWER INTERRUPTIONS SHALL BE KEPT TO A MINIMUM AND SHALL BE A TIME SUITABLE TO THE BUILDING OCCUPANT(S).

6 WORK IN EXISTING BUILDING
.1 CO–ORDINATION.
.1 THE BUILDING SHALL REMAIN OPEN AND IN NORMAL OPERATION DURING THE CONSTRUCTION PERIOD.
.2 WHERE EXISTING SERVICES SUCH AS ELECTRICAL POWER, FIRE ALARM SYSTEM, SOUND SYSTEM, ETC. ARE REQUIRED TO BE DISRUPTED AND/OR SHUT DOWN, CO–ORDINATE THE SHUTDOWNS WITH THE OWNER AND CARRY OUT THE WORK AT A TIME AND IN A MANNER ACCEPTABLE TO THEM. CAREFULLY SCHEDULE ALL DISRUPTION AND/OR SHUT–DOWNS AND ENSURE THAT THE DURATION OF SAME IS KEPT TO THE ABSOLUTE MINIMUM. SUBMIT FOR APPROVAL A WRITTEN, CONCISE SCHEDULE OF EACH DISRUPTION AT LEAST 120 HOURS IN ADVANCE OF PERFORMING WORK AND OBTAIN OWNER'S WRITTEN CONSENT PRIOR TO IMPLEMENTING.
.3 SHOULD ANY TEMPORARY CONNECTIONS BE REQUIRED TO MAINTAIN SERVICES DURING WORK IN THE EXISTING BUILDING, SUPPLY AND INSTALL ALL NECESSARY MATERIAL AND EQUIPMENT AND PROVIDE ALL LABOUR AT NO EXTRA COST. SHOULD ANY EXISTING SYSTEM BE DAMAGED, MAKE FULL REPAIRS WITHOUT EXTRA COST, AND TO THE SATISFACTION OF THE OWNER AND CONSULTANT.
.4 IF EXISTING EQUIPMENT SHOWN ON DRAWINGS IS DEFECTIVE IT SHOULD BE BROUGHT TO THE CONSULTANT AND OWNERS ATTENTION PRIOR TO WORK COMPLETION.
.2 INSTALLATION
.1 INSTALL BOXES, CONDUIT AND WIRING THROUGH EXISTING AREAS AS REQUIRED FOR THE NEW INSTALLATION.
.2 ADD MODULES, SWITCHES, ETC. IN EXISTING CONTROL PANELS, AS REQUIRED, TO EXTEND EXISTING SYSTEMS TO NEW OR RENOVATED AREAS.
.3 WIRING IN ALL AREAS MAY BE INSTALLED SURFACE OR RECESSED ON/IN EXISTING WALLS, WHERE SPACES ARE DESIGNATED "TEMPORARY". ONLY SPACES LOCATED IN THE PARKADE SHALL BE CONSTRUCTED AS "PERMANENT".
.4 WHERE NEW CABLES OR CONDUITS HAVE BEEN INSTALLED THROUGH EXISTING FIRE RATED WALLS, SEAL OPENING AROUND CABLES AND CONDUIT TO MAINTAIN FIRE RATING.
.3 ALL EXISTING EQUIPMENT REUSED SHALL BE MADE GOOD AND GUARANTEED.
.4 POWER INTERRUPTIONS SHALL BE KEPT TO A MINIMUM AND SHALL BE A TIME SUITABLE TO THE BUILDING OCCUPANT(S).

SECTION 16100 ELECTRICAL MATERIALS AND INSTALLATION

1 WIRING METHOD
.1 FOR GENERAL PURPOSE WIRING: DRY LOCATIONS IN MASONRY AND METAL STUD USE TYPE AC–90 ARMOURED CABLE WITH INTEGRAL GROUND. WIRING MAY BE SURFACE MOUNTED FOR "TEMPORARY" AREAS.
.2 FOR CONNECTION TO MOTORS AND MISCELLANEOUS MECHANICAL EQUIPMENT USE LIQUIDTIGHT FLEXIBLE CONDUIT.
.3 RUN ALL CONDUIT AND CABLE CONCEALED, WHERE POSSIBLE IN "PERMANENT" AREAS PARALLEL AND PERPENDICULAR TO BUILDING LINES, STAPLED AND/OR CLIPPED IN A NEAT WORKMANLIKE MANNER.
.4 ALL CONDUCTORS SHALL BE COPPER. MINIMUM CONDUCTOR SIZE SHALL BE #12 AWG EXCEPT AS NOTED.

2 GROUNDING
.1 THE ENTIRE INSTALLATION SHALL BE GROUNDED IN CONFORMANCE TO THE LATEST EDITION OF THE CANADIAN ELECTRICAL CODE.

3 BOXES
.1 OUTLET, JUNCTION AND SWITCH BOXES SHALL BE GALVANIZED STEEL AND SIZED ACCORDING TO THE ELECTRICAL CODE TO SUIT EACH APPLICATION.

4 WIRING DEVICES
.1 PROVIDE WIRING DEVICES FOR ALL OUTLETS AS REQUIRED AND INDICATED. COLOUR AND MOUNTING TO MATCH EXISTING.
.2 STANDARD ACCEPTANCE FOR DEVICES SHALL BE AS FOLLOWS:
.1 SINGLE POLE, 2–POLE, 3–WAY AND 4–WAY MOUNTED GENERAL PURPOSE SWITCHES SHALL BE PREMIUM SPECIFICATION TOGGLE TYPE 15A 125VAC. TO BE SERIES HUBBELL NO. 1201, ARROW HART NO. 1891, BRYANT NO. 4801, SMITH & STONE NO. 4801 OR LEVITION NO. 1201.
.3 NEMA 5–15R 15A 125VAC RECEPTACLES SHALL BE U–GROUND PARALLEL SLOT SIDE WIRED AS FOLLOWS:
.1 GENERAL PURPOSE DUPLEX AND SIMPLEX TO BE SERIES HUBBELL NO. 5262, ARROW HART NO. 5262, BRYANT NO. 5262, CGE NO. 4065 OR LEVITON NO. 5262.
.4 COVERPLATES FOR DEVICES SHALL BE PLASTIC IN "TEMPORARY" AREAS, STAINLESS STEEL IN "PERMANENT" AREAS.

5 LIGHTING SYSTEM – GENERAL
.1 PROVIDE FIXTURES EQUAL TO THOSE SPECIFIED WITH LAMPS, SUSPENSION HARDWARE, LENSES AND ALL OTHER ACCESSORIES REQUIRED TO COMPLETE THE INSTALLATION.
.2 FLUORESCENT FIXTURE BALLASTS SHALL BE T–8 ELECTRONIC TYPE. BALLAST MUST BE LISTED BY MANITOBA HYDRO AS ACCEPTABLE BY THEIR POWER SMART REBATE PROGRAM.

6 TELEPHONE WIRING/DATA WIRING
.1 PROVIDE AND INSTALL OUTLET BOXES AND CONDUITS IN WALLS FOR THE TELEPHONE/DATA SYSTEM AS SHOWN ON THE DRAWINGS (PERMANENT AREAS ONLY). CONDUIT INSTALLATION FOR PERMANENT OUTLETS SHALL BE CARRIED OUT IN CONJUNCTION WITH AND TO THE SATISFACTION OF THE CONSULTANT. "TEMPORARY" OUTLET LOCATIONS DO NOT REQUIRE OUTLET BOXES. WIRING SHALL BE SURFACE ON THE EXISTING WALL, DIRECT TO A CONNECTOR. ALL PHONE AND DATA WIRING IS BY THE OWNER. OUTLETS SHOWN IN "TEMPORARY" AREAS ARE FOR COORDINATION PURPOSES ONLY.

7 MOUNTING HEIGHTS
.1 MOUNTING HEIGHT IS CENTERLINE OF EQUIPMENT ABOVE FINISHED FLOOR. IF MOUNTING HEIGHT IS NOT INDICATED VERIFY BEFORE PROCEEDING WITH INSTALLATION. MOUNT SAME HEIGHT AS EXISTING IF DIFFERENT FROM THAT SHOWN HERE UNLESS INDICATED OTHERWISE ON DRAWING.
.2 MOUNTING HEIGHTS ARE AS FOLLOWS:
.1 LOCAL SWITCHES: 54 INCHES (1350MM)
.2 WALL RECEPTACLES:
.1 GENERAL: 14 INCHES (350MM)
.2 ABOVE COUNTER OR SPLASHBACK: 7 INCHES (175MM)
.3 IN SERVICE ROOMS: 54 INCHES (1350MM)
.3 TELEPHONE OUTLETS:
.1 GENERAL: 14 INCHES (350MM)
.2 WALL MOUNTED: 48 INCHES (1200MM)
.4 COMPUTER OUTLET: 14 INCHES (350MM)

8 MECHANICAL EQUIPMENT CONNECTIONS
.1 REFER TO MECHANICAL DRAWINGS FOR THE EXACT LOCATION OF MOTOR CONTROL DEVICES, AND OTHER MECHANICAL EQUIPMENT REQUIRING AN ELECTRICAL CONNECTION.
.2 OBTAIN FULL INFORMATION FROM DIV. 15, REGARDING WIRING, CONTROLS, OVERLOAD HEATERS, EQUIPMENT RATINGS AND OVERCURRENT PROTECTION. NOTIFY THE DIV. 15 SUBCONTRACTOR, AT ONCE, IF ANY INFORMATION PROVIDED IS INCORRECT OR UNSATISFACTORY.
.3 CO–ORDINATE CONTROL WIRING REQUIREMENTS WITH DIV. 15.DIV. 15 TO PROVIDE ALL INTERLOCKING WIRE CONDUITS.

9 CONDUITS AND CABLE
.1 DRAWINGS DO NOT INDICATE ALL CONDUIT AND CABLE RUNS. THOSE INDICATED ARE IN DIAGRAMMATIC FORM ONLY.
.2 MINIMUM CONDUIT SIZE SHALL BE 3/4" UNLESS INDICATED OTHERWISE.

10 CONDUITS, FASTENINGS AND FITTINGS
.1 ONE HOLE STEEL STRAPS TO SECURE SURFACE CONDUITS 50MM AND SMALLER.
.2 FITTINGS FOR RACEWAYS: TO CSA C22.2 NO. 18
.3 FITTINGS: MANUFACTURED FOR USE WITH CONDUIT SPECIFIED COATING SAME AS CONDUIT.
.4 FACTORY "ELLS" WHERE 90° BENDS ARE REQUIRED FOR 25MM AND LARGER CONDUITS.

11 DISCONNECT SWITCHES
.1 FUSIBLE AND NON–FUSIBLE DISCONNECT SWITCH IN CSA ENCLOSURE.
.2 PROVISION FOR PADLOCKING ON ON–OFF SWITCH POSITION BY THREE LOCKS.
.3 MECHANICAL INTERLOCKED DOOR TO PREVENT OPENING WHEN HANDLE IN ON POSITION.
.4 QUICK–MAKE, QUICK–BREAK ACTION.
.5 ON–OFF SWITCH POSITION INDICATION ON SWITCH ENCLOSURE COVER.
.6 INSTALL DISCONNECT SWITCHES AS INDICATED ON DRAWINGS.
.7 WEATHERPROOF WHERE REQUIRED.

12 MANUAL MOTOR STARTERS
.1 MANUAL MOTOR STARTERS WITH COMPONENTS AS FOLLOWS:
.1 SWITCHING MECHANICAL QUICKMAKE AND BREAK.
.2 OVERLOAD HEATERS, MANUAL RESET, TRIP INDICATING HANDLE.
.2 ACCESSORIES:
.1 TOGGLE SWITCH LABELLED.
.2 INDICATING LIGHT: TYPE AND COLOR TO MATCH EXISTING STARTERS.

13 FULL VOLTAGE MAGNETIC STARTERS
.1 MAGNETIC OF SIZE, TYPE, RATING AND ENCLOSURE TYPE AS INDICATED WITH COMPONENTS AS FOLLOWS:
.1 CONTACTOR SOLENOID OPERATED, RAPID ACTION TYPE.
.2 MOTOR OVERLOAD PROTECTIVE DEVICE IN EACH PHASE, MANUALLY RESET FROM OUTSIDE ENCLOSURE.
.3 POWER AND CONTROL TERMINALS.
.4 WIRING AND SCHEMATIC DIAGRAM INSIDE STARTER ENCLOSURE IN VISIBLE LOCATION.
.5 IDENTIFY EACH WIRE AND TERMINAL FOR EXTERNAL CONNECTIONS, WITHIN STARTER, WITH PERMANENT NUMBER MARKING IDENTICAL TO DIAGRAM.
.6 CONTROL TRANSFORMER.
.2 ACCESSORIES:
.1 PUSHBUTTONS AND SELECTOR SWITCHES: LABELLED AS INDICATED.
.2 INDICATING LIGHTS: TYPE AND COLOR AS INDICATED.
.3 SINGLE PHASE, DRY TYPE, CONTROL TRANSFORMER WITH PRIMARY VOLTAGE AS INDICATED AND 120V SECONDARY, COMPLETE WITH SECONDARY FUSE, INSTALLED IN WITH STARTER AS INDICATED.
.4 SIZE CONTROL TRANSFORMER FOR CONTROL CIRCUIT LOAD PLUS 20% SPARE CAPACITY.

14 POWER DISTRIBUTION SYSTEM (PANEL "FF" – PARKING GARAGE ONLY)
.1 PROVIDE ALL BREAKERS, CONDUIT, DISCONNECTS, CONDUCTORS AND ACCESSORIES REQUIRED FOR THE INSTALLATION OF PANELBOARDS AS INDICATED ON THE DRAWING AND IN THIS SPECIFICATION.
.2 SUBMIT SHOP DRAWINGS IN ACCORDANCE WITH SECTION 16010.
.3 DRAWINGS TO INCLUDE ELECTRICAL DETAIL OF PANEL, BRANCH BREAKER TYPE, QUANTITY, AMPACITY AND ENCLOSURE DIMENSION.
.4 IN ADDITION TO CSA REQUIREDMENTS, MANUFACTURER'S NAMEPLATE MUST SHOW FAULT CURRENT THAT THE PANEL, INCLUDING BREAKERS, HAS BEEN BUILT TO WITHSTAND.
.5 PANELBOARDS: TO CSA C–22.2 NO. 29.
.6 PANELBOARDS: PRODUCT OF ONE MANUFACTURER.
.7 250V BRANCH CIRCUIT PANELBOARDS: BUS AND BREAKERS RATED FOR 10KA (SYMMETRICAL) INTERRUPTING CAPACITY MINIMUM OR AS INDICATED.
.8 SEQUENCE PHASE BUSSING SUCH THAT CIRCUIT BREAKERS WILL BE NUMBERED IN CONSECUTIVE ORDER, WITH EACH BREAKER IDENTIFIED BY PERMANENT NUMBER IDENTIFICATION AS TO CIRCUIT NUMBER AND PHASE.
.9 PANELBOARDS: MAINS, NUMBER OF CIRCUITS, AND NUMBER AND SIZE OF BRANCH CIRCUIT BREAKERS AS INDICATED.
.10 PROVIDE PANEL COVERS FOR ALL PANELBOARDS AND SUPPLY TWO KEYS FOR EACH PANELBOARD AND KEY PANELBOARDS ALIKE.
.11 ALUMINUM BUS WITH NEUTRAL OF SAME AMPERE RATING AS MAINS.
.12 MAIN: SUITABLE FOR BOLT–ON 25MM WIDE BREAKERS.
.13 MULTI–POLE BREAKERS SHALL BE OF ONE–PIECE CONSTRUCTION WITH COMMON TRIP.
.14 PROVIDE BREAKERS AS INDICATED IN THE PANEL SCHEDULE AND AS INDICATED ON THE DRAWING.
.15 ALL NEW BREAKERS SHALL MATCH PANEL VOLTAGE UNLESS INDICATED OTHERWISE. CIRCUIT BREAKERS SHALL BE THERMAL MAGNETIC TYPE.
.16 NAMEPLATE FOR EACH PANELBOARD 20 X 90MM ENGRAVED AS INDICATED.
.17 COMPLETE CIRCUIT DIRECTORY WITH TYPEWRITTEN LEGEND SHOWING LOCATION AND LOAD OF EACH CIRCUIT.
.18 ACCEPTABLE MANUFACTURERS: FPE.
.19 LOCATE PANELBOARDS AS INDICATED AND MOUNT SECURELY, PLUMB, TRUE AND SQUARE, TO ADJOINING SURFACES.
.20 WIRING IN PANELBOARDS SHALL BE NEAT AND SET IN AS IF LACED. ALL NEUTRAL CONDUCTORS SHALL BE IDENTIFIED IN THE PANEL WITH THEIR ASSOCIATED CIRCUIT NUMBERS BY MEANS OF BRADY MARKERS.
.21 ALL PANELBOARDS THROUGHOUT THE BUILDING SHALL BE PHASED TOGETHER SUCH THAT THE LEFT–HAND, CENTRE AND RIGHT–HAND PANELBOARD BUSSES REPRESENT PHASES A, B AND C RESPECTIVELY. ALL INDICATING METERS SHALL BE IDENTIFIED TO THIS SEQUENCE.
.22 INTERRUPTING CAPACITY OF BREAKERS SHALL MATCH EXISTING.

15 PA SYSTEM
.1 PROVIDE AND INSTALL ALL MATERIAL AND LABOUR AS REQUIRED TO PROVIDE A LOCAL PA SYSTEM TO BE LOCATED ON THE BASEMENT LEVEL, DWG. E3.1. THE PA SYSTEM WILL CONSIST OF A SINGLE CHANNEL PA AMPLIFIER C/W MICROPHONE INPUT AND A SINGLE CHANNEL OUTPUT. SPEAKER WIRING (FT 4) SHALL BE INSTALLED "OPEN" WHERE SHOWN. SPEAKERS SHALL BE C/W SEALED BACKBOX AMD MULTI–TAP TRANSFORMERS. BALANCE AUDIO OUTPUT AS PER THE OWNER'S REQUIREMENTS.

AMPLIFIER – DUKANE NO. 1A–1620
MICROPHONE – DUKANE NO. 7A766
SPEAKERS/BAFFLE/BACKBOX – BURTEK NO. COMB855B/BRM11/ER8

DRAWING LIST:

E1.1 SYMBOLS, SPECIFICATIONS, DRAWING LIST AND SCHEDULES
E2.1 PARKING GARAGE PART PLANS – LIGHTING, POWER AND SYSTEMS
E3.1 BASEMENT LEVEL PART PLANS – LIGHTING, POWER ANBD SYSTEMS
E4.1 GROUND FLOOR AND THIRD FLOOR PART PLANS – LIGHTING, POWER AND SYSTEMS

SYMBOL LEGEND

A1-B	FLUORESCENT FIXTURE, A1–PANEL AND CIRCUIT NUMBER, B–CONTROL
	DENOTES LIGHTING FIXTURE CONNECTED TO EMERGENCY POWER
	SINGLE POLE SWITCH
	SINGLE POLE SWITCHES IN MULTIPLE GANG
	SINGLE RECEPTACLE
	DUPLEX RECEPTACLE
	FOURPLEX RECEPTACLE
	SPECIAL RECEPTACLE
	POWER POLE
	JUNCTION AND/OR OUTLET BOX
	MOTOR OUTLET
	MAGNETIC STARTER
	MANUAL STARTER OR TOGGLE SWITCH
	DISCONNECT SWITCH
	POWER AND/OR LIGHTING PANEL
	TELEPHONE OUTLET (1 GANG)
	COMPUTER OUTLET (1 GANG)
	COMBINATION VOICE/DATA OUTLET (2 GANG)
	C.C.T.V. CAMERA OUTLET
	MICROPHONE OUTLET
	CEILING SOUND OUTLET, PAGING SYSTEM
	STUBBED CONDUIT RUN (1" MINIMUM FOR PHONE/DATA)
	EMERGENCY PUSHBUTTON
a	ADJACENT TO SYMBOL DENOTES "MOUNTED ABOVE COUNTER"
ER	ADJACENT TO SYMBOL DENOTES "EXISTING TO BE RELOCATED"
1D	ADJACENT TO SYMBOL DENOTES "NUMBER OF DATA JACKS REQUIRED" (BY OWNER)
1P	ADJACENT TO SYMBOL DENOTES "PARCS" COMPUTER SYSTEM DATA CONNECTIONS
1T	ADJACENT TO SYMBOL DENOTES "NUMBER OF TELEPHONE JACKS REQUIRED" (BY OWNER)

ALL ELECTRICAL EQUIPMENT IN DASHED LINES IS EXISTING TO REMAIN UNLESS OTHERWISE NOTED

FIXTURE SCHEDULE

TYPE	MANUFACTURER	CATALOGUE NUMBER	LAMPS	VOLTS	REMARKS
M	ALKCO	R–2058–3	2–15W A15 1–200W A23	120V	DARKROOM SAFELIGHT, 3 COMPARTMENTS – 2 FILTERED, 1 GENERAL ILLUMINATION. PROVIDE 'KODAK' FILTERS AS DIRECTED BY OWNER AT TIME OF SHOP DRAWINGS.
PD	CFI METALUX YORK	AA348–AA 2GPXF–340A.125 JH348–122–.125	3–F32W T8	120V	2' x 4' 3 LAMP FLUORESCENT FIXTURE IN T–BAR CEILING. CENTER LAMP TO BE ON ONE SWITCH, AND THE TWO OUTER LAMPS TO BE ON ANOTHER SWITCH. FIXTURE TO BE C/W HINGED FRAMED K12 LENS AND TWO ELECTRONIC BALLASTS.
RIU	READYLITE	RX5000–FH–120–RIU	2–PL7	120V	"ROOM IN USE" SIGN

MOTOR SCHEDULE

MOTOR NO.	DESCRIPTION	LOCATION	KW	H.P.	VOLTS	STARTER & ACCESS MAN.	MAG.	P.L.	H.O.A.	CIRCUIT	STARTER LOCATION	FEEDER SIZE	REMARKS
AHU–1	AIR HANDLER	PARKADE		1.5	208V/3ø					FF–6,7,8		3 #12	PACKAGED UNIT, C/W STARTER AND OVERLOADS. DIVISION 15 TO INTERLOCK WITH F–B–5.
CU–1	CONDENSING UNIT	PARKADE (SEE MECHANICAL)	(17A)		208V/3ø					F–1,2,3		3 #8	PACKAGED UNIT, DIVISION 15 TO INTERLOCK WITH AHU–1. PROVIDE 30A–3P BREAKER IN PANEL "F".
F–B–1	FUME HOOD EXHAUST FAN	PARKADE		0.25	120V/1ø	X		X		FF–5		2 #12	EXISTING FAN TO BE RELOCATED. DIVISION 15 TO INTERLOCK WITH MAU–1. PROVIDE AUXILIARY CONTACT ON MANUAL STARTER.
F–B–5	RETURN AIR FAN	PARKADE	0.387		120V/1ø		X	X	X	FF–4		2 #12	DIVISION 15 TO INTERLOCK WITH AHU–1.
MAU–1	MAKE–UP AIR UNIT	PARKADE		1	208V/3ø					FF–1,2,3		3 #12	PACKAGED UNIT, C/W STARTER AND OVERLOADS. DIVISION 15 TO INTERLOCK WITH F–B–1, SO THAT MAU–1 RUNS WHEN F–B–1– IS ON.

KEY TO DETAIL LOCATION
No. DETAIL NUMBER
No. DRAWING NUMBER

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DRAWINGS SHOULD NOT BE SCALED.

NO.	REVISION/ISSUE	DATE

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THE CITY OF WINNIPEG
PROPERTY AND DEVELOPMENT SERVICES
WINNIPEG POLICE SERVICE

PROVINCE OF MANITOBA A.M. LOHSE REGISTERED ENGINEER Aug 13/98

Carruthers Shaw and Partners Limited Architects
2345 Yonge Street Toronto, Ontario M4P 2E5 416 482-5002 Fax 482-5040

DRAWN BY: S.D.
CHECKED BY: C.B.
DATE: 17 AUGUST 1998
PROJECT TITLE:

Temporary Staging For Police Headquarters Renovations City of Winnipeg Public Safety Building
151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:
SYMBOL LEGEND, SPECIFICATIONS, DRAWING LIST AND SCHEDULES

SCALE: N.T.S.
PROJECT NO. 98024
DWG. NO. E1.1

RFQ No. 889–98

96–171–04

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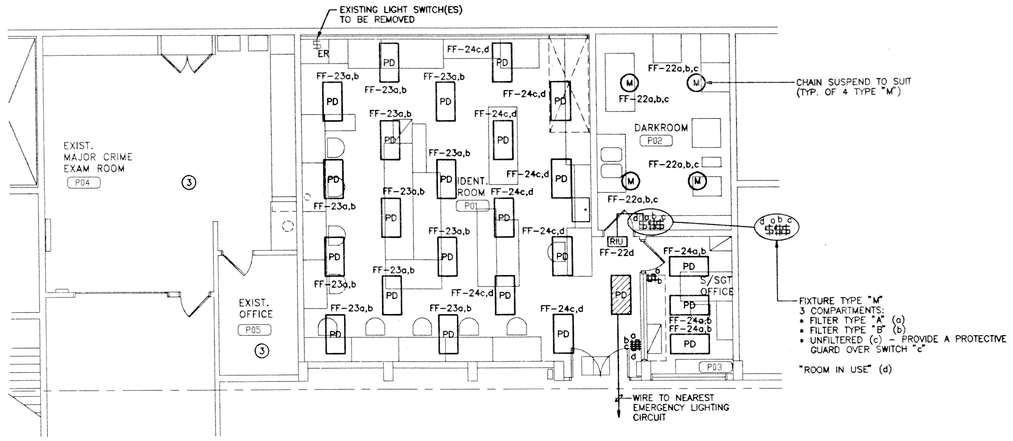
File name: G:\PROJECTS\1996\96171CS.PSB\04\CADD\E\6171E1.DWG Last edited: 98/08/13 @ 09:36

SCALE 1/8"=1'-0" | SCALE 1/4"=1'-0" | SCALE 3/8"=1'-0" | SCALE 1/2"=1'-0" | SCALE 1:200 | SCALE 1:100 | SCALE 1:50



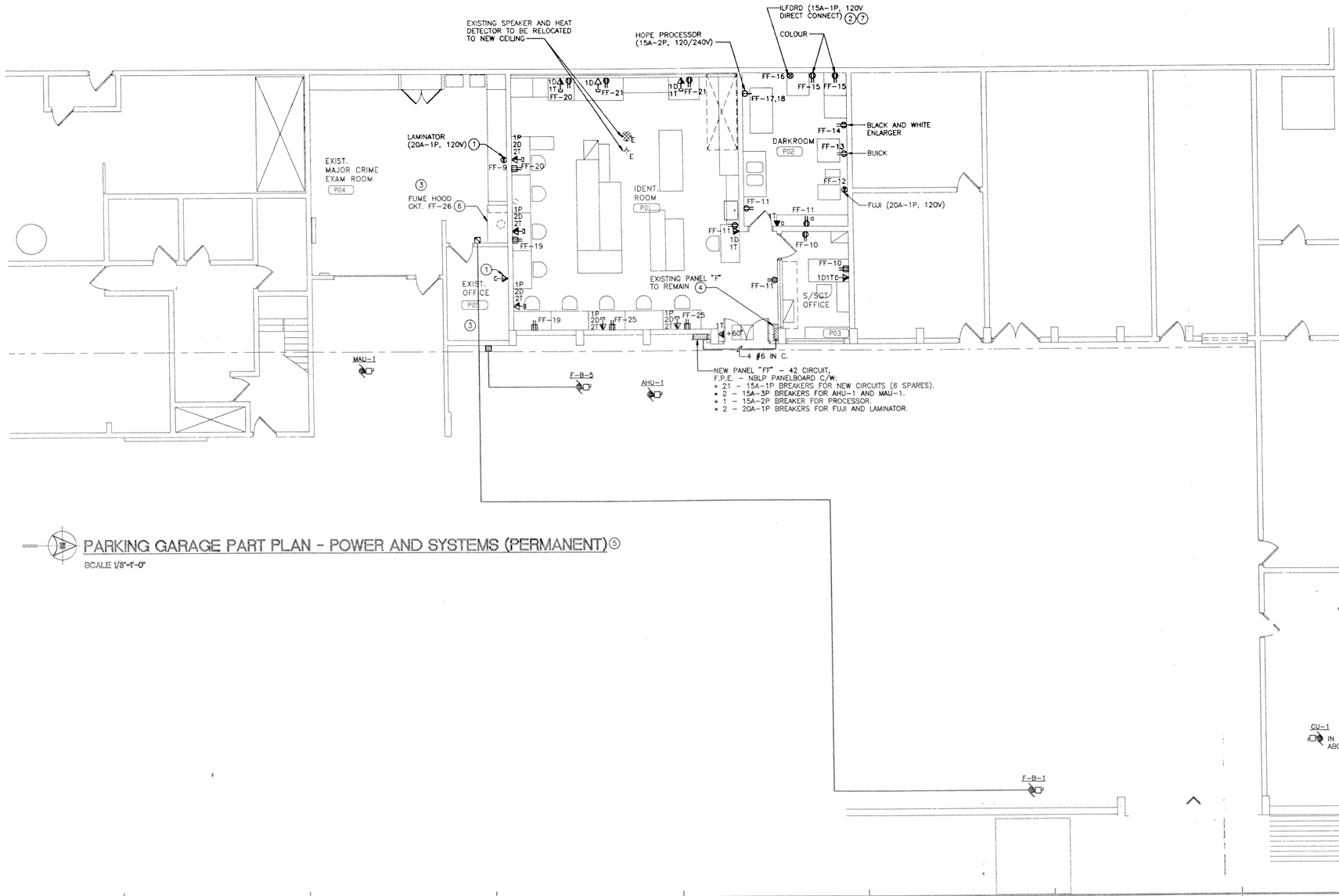
PARKING GARAGE PART PLAN - LIGHTING (PERMANENT) ⑤

SCALE 1/16"-1'-0"

NOTES:

1. EXACT LOCATION TO BE DETERMINED ON SITE WITH OWNER.
2. CONFIRM OUTLET REQUIREMENT ON SITE WITH OWNER.
3. EXISTING LIGHTING, POWER AND SYSTEMS TO REMAIN EXCEPT AS SHOWN.
4. EXISTING PANEL "F", 30 CIRCUIT, C/W:
   - 27 – 15A-1P BREAKERS
   - 1 SPACE
   - 1 – 50A-2P BREAKER.

   TRACE OUT EXISTING CIRCUITS, REMOVE OBSOLETE/ABANDONED CIRCUIT WIRING. REUSE EXISTING BREAKERS FOR NEW CIRCUITS. SUBFEED NEW PANEL "FF" AS SHOWN. PROVIDE 60A-3P BREAKER FOR PANEL "FF" AND 30A-3P BREAKER FOR CU-1. TRANSFER CIRCUITS TO PANEL "FF" IF REQUIRED, EXTEND BRANCH CIRCUIT WIRE AND CONDUIT AS REQUIRED.
5. CIRCUIT NUMBERS SHOWN ARE FOR CIRCUIT LOADING ONLY. EXACT CIRCUIT NUMBERS TO BE DETERMINED ON SITE BY ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO PROVIDE ALL NECESSARY BREAKERS, ETC., AS REQUIRED.
6. WIRE AND CONNECT BUILT-IN LIGHT AND OUTLET.
7. PROVIDE A 7-DAY/24 HOUR TIME CLOCK, DIRECT WIRE TO THE ILFORD PROCESSOR, MOUNT TIME CLOCK ON WALL BY ILFORD.



PARKING GARAGE PART PLAN - POWER AND SYSTEMS (PERMANENT) ⑤

SCALE 1/8"-1'-0"

96-171-04

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IF THIS SHEET IS NOT 33 1/8" X 23 3/8" (841 X 594mm) IT IS A REDUCED PRINT – READ DWG. ACCORDINGLY

KEY TO DETAIL LOCATION

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Public Safety Building
151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:
PARKING GARAGE PART PLAN – LIGHTING, POWER AND SYSTEMS

SCALE: AS NOTED

PROJECT NO.	DWG. NO.
98024	E2.1

RFQ No. 889-98

File name: G:\PROJECTS\1996\96171CS.PSB\04\CADD\EX\6171E2.DWG Last edited: 98/08/13 @ 09:53

SCALE 1/8"=1'-0" | SCALE 1/4"=1'-0" | SCALE 3/8"=1'-0" | SCALE 1/2"=1'-0" | SCALE 1:200 | SCALE 1:100 | SCALE 1:50

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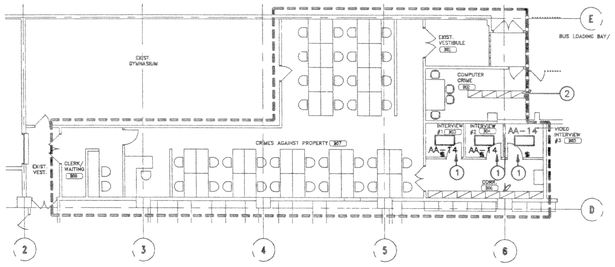
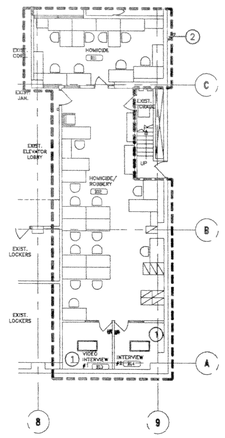


BASEMENT LEVEL PART PLAN -LIGHTING (TEMPORARY)

SCALE 1/16"=1'-0"



BASEMENT LEVEL PART PLAN - LIGHTING (TEMPORARY)

SCALE 1/16"=1'-0"

NOTES:

1. PROVIDE 120V, 4 LAMP 2' x 4' FLUORESCENT T-BAR FIXTURE WITH LAY-IN K12 LENS. WIRE AND CONNECT TO AN EXISTING SWITCH AT DOOR WHERE SHOWN. REUSE EXISTING CIRCUITS.
2. EXISTING LIGHTING TO REMAIN EXCEPT WHERE NOTED.
3. INSTALL VIDEO CAMERAS AND MICROPHONE, WIRE AND CONNECT TO VIDEO EQUIPMENT LOCATED IN ROOM B05. EQUIPMENT IS SUPPLIED BY OWNER. WIRING TO BE SUPPLIED BY CONTRACTOR.
4. INSTALL VIDEO CAMERAS AND MICROPHONE, WIRE AND CONNECT TO VIDEO EQUIPMENT LOCATED IN ROOM B13. EQUIPMENT IS SUPPLIED BY OWNER. WIRING TO BE SUPPLIED BY CONTRACTOR.
5. PUSHBUTTON AND BUZZER TO BE EDWARDS NO. 854/147-725 C/W L.V. TRANSFORMER, OR EQUAL.
6. CIRCUIT NUMBERS SHOWN ARE FOR CIRCUIT LOADING ONLY. EXACT CIRCUIT NUMBERS TO BE DETERMINED ON SITE BY ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO PROVIDE ALL NECESSARY BREAKERS, ETC., AS REQUIRED.
7. PROVIDE 20 WATT AMP C/W PAGING MICROPHONE. WIRE TO NEW SPEAKERS AS SHOWN.

BASEMENT LEVEL PART PLAN - POWER AND SYSTEMS (TEMPORARY)

SCALE 1/8"=1'-0"

BASEMENT LEVEL PART PLAN POWER AND SYSTEMS (TEMPORARY)

SCALE 1/8"=1'-0"

KEY TO DETAIL LOCATION

No. — DETAIL NUMBER
No. — DRAWING NUMBER

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DRAWINGS SHOULD NOT BE SCALED.

NO.	REVISION/ISSUE	DATE

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CLIFF BROWN (Elec.)
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THE CITY OF WINNIPEG
PROPERTY AND DEVELOPMENT SERVICES
WINNIPEG POLICE SERVICE

PROVINCE OF MANITOBA — A.M. LOHSE — REGISTERED ENGINEER

Carruthers Shaw and Partners Limited Architects
1941 Yonge Street
Toronto, Ontario M4T 2B5
416 482-5002 Fax 482-5040

DRAWN BY: S.D.
CHECKED BY: C.B.
DATE: 17 AUGUST 1998

PROJECT TITLE:

Temporary Staging For Police Headquarters Renovations City of Winnipeg Public Safety Building
151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:
BASEMENT LEVEL PART PLANS – LIGHTING, POWER AND SYSTEMS

SCALE: AS NOTED

PROJECT NO.	DWG. NO.
98024	E3.1

RFQ No. 889-98

96-171-04

Scouten Mitchell Sigurdson
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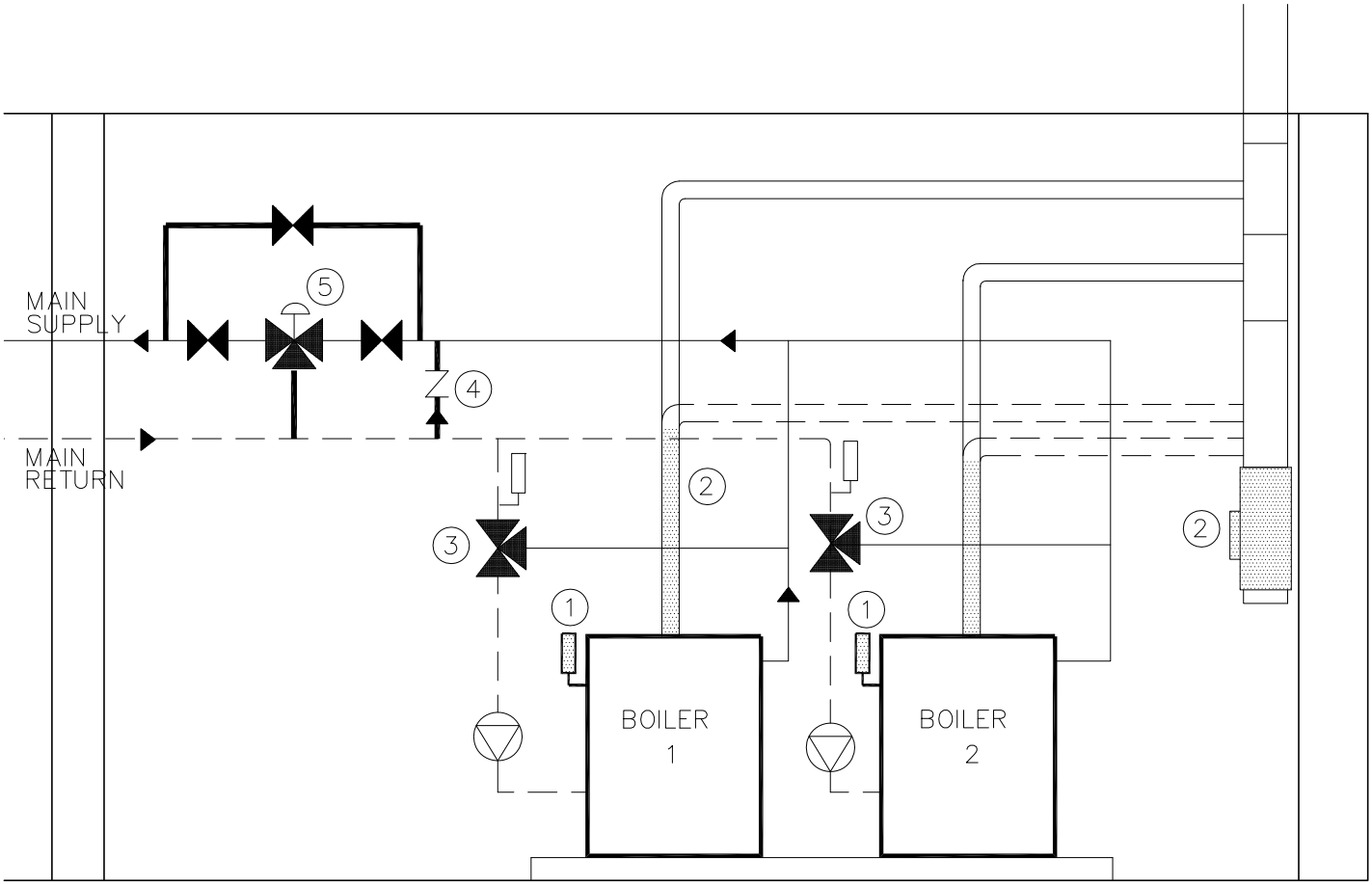
File name: G:\PROJECTS\1998\96171CS.PSB\04\CADD\E\61711E3.DWG Last edited: 98/08/13 @ 09:37



1. RELOCATE HIGH TEMP LIMIT CUT–OFF TO BOILER UNITS AS INDICATED
2. EXTEND CHIMNEY BREACHING UP APPROX. 3'–0" TO ACCOMMODATE NEW INSPECTION TEE ON 12"? CHIMNEY. PROVIDE NEW INSPECTION & ACCESS FOR DEPT. OF LABOR INSPECTION.
3. PROVIDE NEW 3 WAY VALVE (FOR BOILER PROTECTION). VALVE TO AUTOMATICALLY CLOSE AT RETURN WATER TEMP OF 135?F TO FORM A CLOSED LOOP.
4. PROVIDE PIPING CONNECTION FROM MAIN RETURN LINE TO MAIN SUPPLY LINE C/W CHECK VALVE.
5. PROVIDE NEW TEMPERATURE CONTROLLED MIXING VALVE (adj.) TO MAIN SUPPLY LINE. (ADJUST SETPOINT TO 130?)

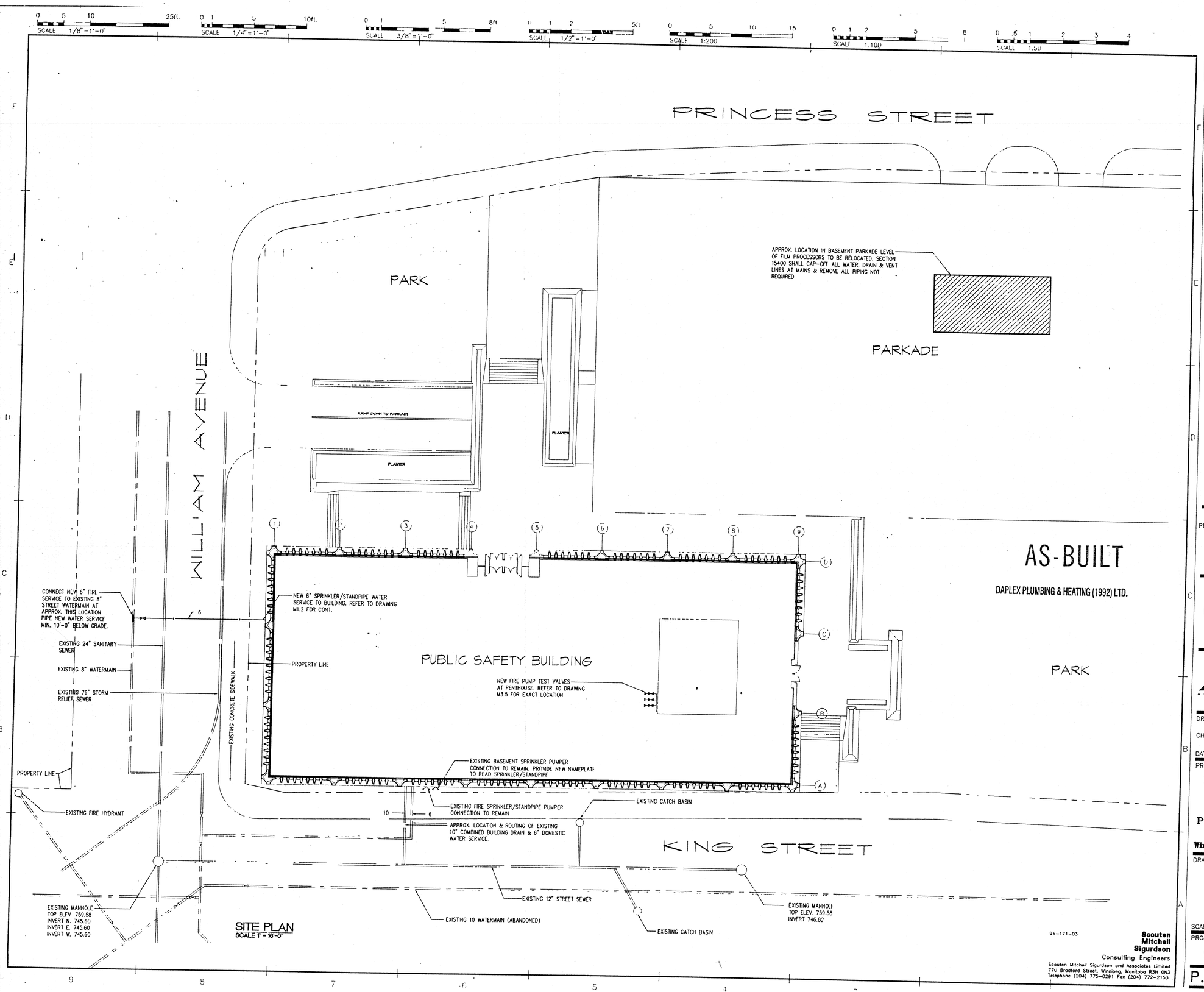
Winnipeg

CITY OF WINNIPEG
PLANNING, PROPERTY & DEVELOPMENT DEPARTMENT
CIVIC ACCOMMODATIONS DIVISION
300 – 65 GARRY ST. R3C 4K4

PROJECT **CONCRETE RAMP RENEWAL/SNOW MELT**

SHEET TITLE **151 PRINCESS STREET BOILER ROOM PIPING CHANGES**

DRAWN BY	CHECKED BY	APPROVED BY	DATE	SCALE	PROJECT/SHEET NO.
MBD	**JAD**	**DP**	**2002 07 22**	**NTS**	**2001-039 D-3**



151 Princess St.
Site Plan -Mechanical
AS-BUILTS
Drawing Title
Public Safety Building Renovations
Project
96023
Project No.
M1.1
Sheet No.
2000
Const. Year
PDF AVAIL.

File name: G:\...\PS.DWG Last edited 98/08/14 @ 10:32

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WINNIPEG POLICE SERVICE

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416 482-5002 Fax 482-5040

DRAWN BY: RMP
CHECKED BY: HJW
DATE: 24 AUGUST 1998

PROJECT TITLE:
Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building
151 Princess Street
Winnipeg Manitoba

DRAWING TITLE.
SITE PLAN MECHANICAL

SCALE. AS NOTED
PROJECT NO. 98023
DWG. NO M1.1 OF 6
P.D.No. 98-038

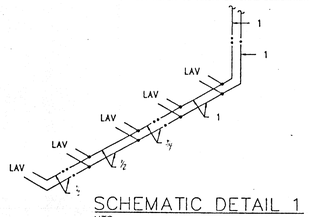
SCALE 1/4"=1'-0" SCALE 1:200 SCALE 1:100

EXERCISE ROOM (B041)
EXISTING TRANSFORMER VAULT (B042)
EXIST. CORR (B044)
EXISTING TRANSFORMER ROOM (B043)
EXISTING LIBRARY (B045)
EXIST. OFFICE (B046A)
EXIST. CORR (B048)
EXIST. CORR (B046C)
EXISTING RESEARCH AND PLANNING (B046)
EXIST. RECEPTION (B046B)
EXIST. OFFICE (B046D)
EXIST. OFFICE (B046E)
CORRIDOR (B040)
EXISTING MAINTENANCE STAFF ROOM (B049)
EXISTING GENERAL STORES (CLOTHING) (B004)
EXIST. STAIR No 1 (B041)
EXIST. W/C (B003)
EXIST. W/C (B002)
EXISTING GUN STORAGE (B006)
EXIST. STATIONARY ROOM (B008)
EXIST. STAIR No 2 (B009)
LOBBY (B001)
MECHANICAL ROOM (B050)
SPACE ROOM (B053)
EXISTING SHOWERS (B056)
EXIST. W/C (B054)
EXISTING STAFF W/C (B055)
EXISTING DRYING (B058)
MALE STAFF LOCKERS (B060)
EXIST. W/C (B061)
EYE WASH
EXISTING VESTIBULE (B038)
PROPERTY LOCKERS (B036)
STORAGE (B036A)
FITNESS CO-ORD. OFFICE AND TESTING (B035)
MAINTENANCE ROOM (B031A)
EXISTING SALLYPORT (B030)
BIKE UNIT (B031)
EXISTING VAULT (B034)
EXISTING BOARDROOM (B033)
EXISTING RECEIVING AREA (B032)
EXISTING GENERAL STORES (STATIONARY) (B005)
EXIST. CORR (B006)
QUARTERMASTER OFFICE (B010)
EXIST. FILE CLOSET (B011A)
EXIST. VEST. (B012A)
EXISTING LOADING AREA (B027H)
EXISTING GARBAGE ROOM (B026)
JANITOR (B027A)
MOP SINK
PR W/C (B027)
HOLDING #3 (B023)
HOLDING #2 (B033)
HOLDING #1 (B024)
LOBBY (B029)
(B202A) (B202H)
HOLDING #3 (B021)
HOLDING #4 (B020)
COMP. ROOM (B019)
VIDEO LINK (B018)
SEWAGE KIT
EXIST. STAIR No 4 (B014)
FEMALE STAFF LOCKERS (B012)
LAUNDRY SERVICE
EXIST. STAIR No 3 (B013)
3" EXISTING UNDERGROUND PIPING
4" UNDERGROUND
B" EXISTING
MAIN FLOOR SINK
VALVED & CAPPED OFF
3" STACK
DOMESTIC WATER FROM BOILER RM
TO MAIN FLOOR KITCHEN SINK
UP

BASEMENT FLOOR PLAN
SCALE: 1/8"=1'-0"

GENERAL NOTES:

1. SECTION 15400 SHALL BE RESPONSIBLE FOR THE DISCONNECTING OF EXISTING FIXTURES, & EQUIPMENT. CAP-OFF EXISTING WATER, DRAIN & VENT LINES AT MAINS & REMOVE ALL PIPING NOT REQUIRED. REFER TO ARCHITECTURAL DEMOLITION DRAWINGS.



NOTE
PLUMBING & FIRE PROT.. PIPE DIMENSION TYPING ERROR
C = ½
S = ¾
R = ¼

SCHEMATIC DETAIL 1
NTS

DRAWING NOTES(##)

1. CONNECT NEW 1¼ HOT, 2" COLD & ¾" RECIRC. WATER LINES TO EXISTING 1½ HOT, 2½ COLD & ¾" RECIRC. WATER MAINS AT APPROX. THIS LOCATION.
2. CONNECT NEW SANITARY DRAIN LINE TO EXISTING 8" SANITARY DRAIN LINE AT HIGH LEVEL AT APPROX. THIS LOCATION.EXACT LOCATION TO BE DETERMINED ON SITE. DRAIN LINE SIZES AS INDICATED ON DRAWNG.
3. APPROX. LOCATION OF EXISTING 8" SANITARY DRAIN LINE AT HIGH LEVEL.
4. APPROX. LOCATION OF EXISTING WATER LINES LOCATED AT HIGH LEVEL.
5. NEW 1" HOT, 2" COLD & 3" RECIRC. WATER LINES UP TO MAIN FLOOR. REFER TO DRAWING M1.3 FOR CONTINUATION.
6. CONNECT NEW 1" HOT, 2" COLD & 3" RECIRC. WATER LINES TO EXISTING 2" HOT, 2½" COLD & 1" RECIRC. WATER MAINS AT APPROX. THIS LOCATION.
7. 3" HOT & COLD WATER LINES DOWN IN WALL TO WALL HYDRANT.
8. 2" COLD WATER LINE DOWN TO FIXTURES. REFER TO SCHEMATIC DETAIL #1 ON DRAWING M1.5 FOR CONT.
9. 1" HOT & COLD WATER LINES DOWN TO FIXTURES. REFER TO SCHEMATIC DETAIL #1 THIS SHEET FOR CONT.
10. CONNECT NEW 4" SANITARY DRAIN LINE BELOW FLOOR SLAB TO EXISTING BURIED 4" DRAIN LINE AT APPROX. THIS LOCATION. SECTION 15400 TO CONFIRM EXACT LOCATION & DEPTH ON SITE.
11. NEW VENT LINE UP TO MAIN FLOOR IN EXISTING SHAFT. CONNECT TO EXISTING VENT STACK AT MAIN FLOOR.
12. CONNECT NEW SANITARY DRAIN LINE TO EXISTING 6" SANITARY DRAIN LINE AT HIGH LEVEL AT APPROX. THIS LOCATION.EXACT LOCATION TO BE DETERMINED ON SITE. DRAIN LINE SIZES AS INDICATED ON DRAWNG.
13. CONNECT NEW SANITARY DRAIN LINE TO EXISTING 4" SANITARY DRAIN LINE AT HIGH LEVEL AT APPROX. THIS LOCATION.EXACT LOCATION TO BE DETERMINED ON SITE. DRAIN LINE SIZES AS INDICATED ON DRAWNG.
14. EXISTING SEWAGE PIT & PUMPS TO REMAIN.
15. 4" FLOOR DRAIN F.D.-2.
16. NEW 1" HOT, 2" COLD & 3" RECIRC. WATER LINES UP TO MAIN FLOOR. REFER TO DRAWNG M1.3 FOR CONTINUATION.
17. 2" FLOOR DRAIN F.D.-1.
18. EXISTING PLUMBING FIXTURES SHOWN HATCHED ARE EXISTING TO REMAIN.
19. APPROXIMATE LOCATION OF EXISTING BURIED DRAIN LINES BELOW FLOOR SLAB. EXACT LOCATIONS TO BE DETERMINED ON SITE.
20. CONNECT NEW 2" SANITARY DRAIN LINE BELOW FLOOR SLAB TO EXISTING BURIED 4" DRAIN LINE AT APPROX. THIS LOCATION. SECTION 15400 TO CONFIRM EXACT LOCATION & DEPTH ON SITE.
21. CONNECT NEW 1" COLD WATER LINE TO EXISTING 11" COLD WATER LINE AT APPROX. THIS LOCATION. EXACT LOCATION TO BE DETERMINED ON SITE.
22. SECTION 15400 TO PROVIDE RECESSED LOCKABLE ACCESS BOX BESIDE PRISONER WASHROOM & LOCATE WATER CLOSET FLUSH VALVE PUSH BUTTON ACTUATOR WITH-IN BOX.
23. CONNECT NEW 2" HOT & COLD & 1" RECIRC. WATER LINES TO EXISTING 1" HOT, 1¼" COLD & ¾" RECIRC. WATER LINES AT APPROX. THIS LOCATION. EXACT LOCATION TO BE DETERMINED ON SITE.
24. PROVIDE 3" HOT & COLD WATER HOSE BIBBS & 11" STANDING WASTE & VENT ON WALL FOR FUTURE CLOTHES WASHER.
25. 2" FLOOR DRAIN F.D.-2.
26. PIPE DRAIN LINE FROM FIXTURES ABOVE FLOOR IN PIPE SPACE.
27. PROVIDE TRAP PRIMER ON COLD WATER LINE TO WC/LAV. COMBY. PIPE ¼" COLD WATER LINE FROM TRAP PRIMER IN SOFT COPPER BELOW FLOOR SLAB TO FLOOR DRAIN.
29. PIPE NEW VENT LINE UP & CONNECT TO EXISTING VENT STACK.
30. 4" FUNNEL FLOOR DRAIN F.F.D.-1.
31. PROVIDE 4" HUB DRAIN C/W INCREASER TO 6" AT FIRE HEADER.
32. 4" CONCRETE BASE BY GENERAL CONTRACTOR.
33. SECTION 15400 TO REMOVE EXISTING JANITOR SINK & ALL DRAINAGE PIPING NOT REQUIRED. CAP-OFF EXISTING DRAIN LINE BELOW FLOOR SLAB. SUPPLY & INSTALL NEW SINK AS SPEC. & CONNECT TO NEW DRAIN LINE BELOW FLOOR SLAB.
34. CAP-OFF EXISTING 2½" COLD, 1½" HOT & 3" RECIRC. WATER LINES AT APPROX. THIS LOCATION.

AS-BUILT
DAPLEX PLUMBING & HEATING (1992) LTD.

96-171-03

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WINNIPEG POLICE SERVICE

CONSTRUCTION NORTH

Originally sealed by:
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Toronto, Ontario M5T 2C7
416 482-5002 Fax 482-5040

DRAWN BY: RMP
CHECKED BY: HJW
DATE: 24 AUGUST 1998

PROJECT TITLE:
Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building
151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:
BASEMENT FLOOR PLAN PLUMBING

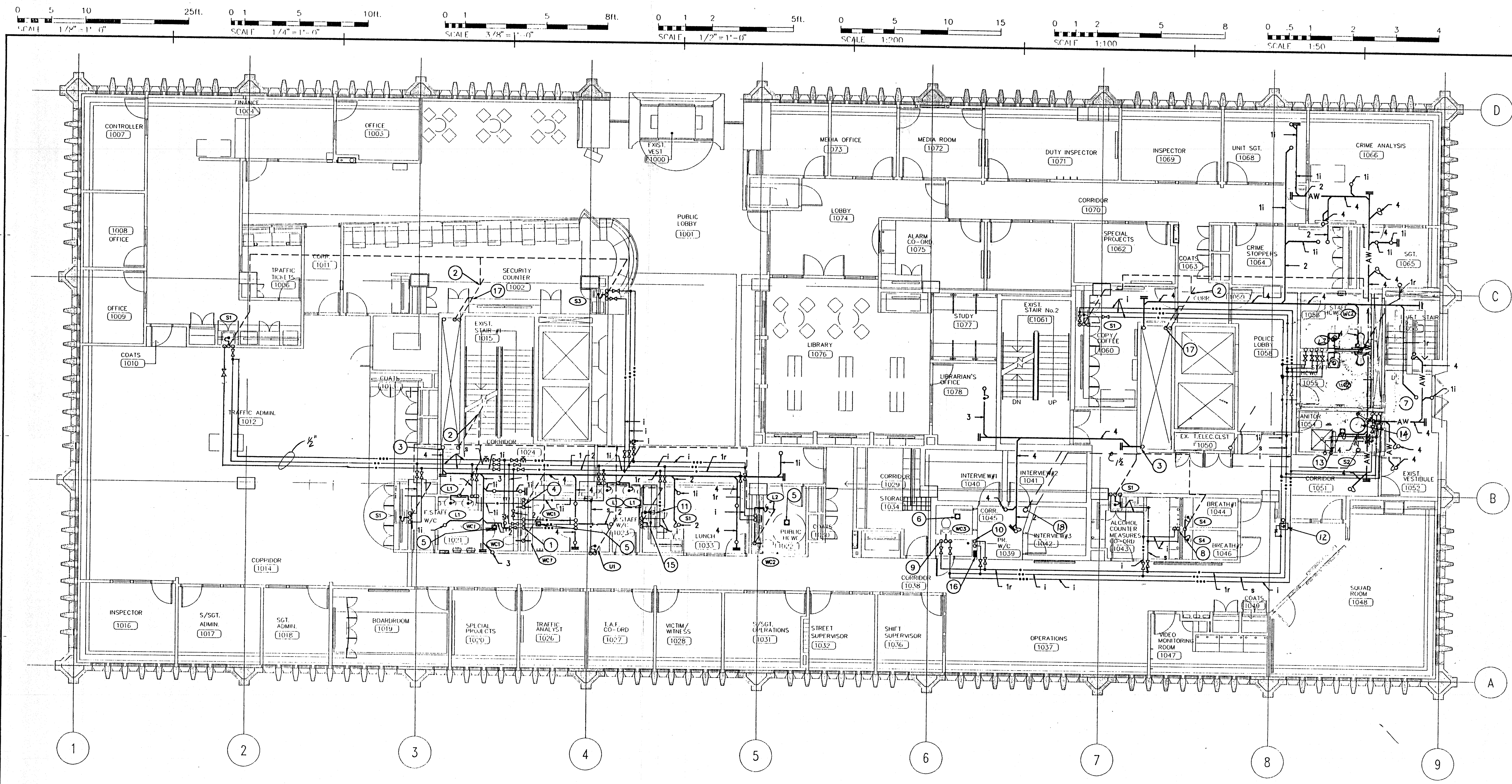
SCALE: AS NOTED

PROJECT NO.	DWG. NO.
98023	M1.2 of 6

P.D.No. 98-038

151 Princess St.
Main Floor Plan -Plumbing
AS-BUILTS
Drawing Title
Public Safety Building Renovations
Project

96023 Project No.
M1.3 Sheet No.
2000 Const. Year



PIPE DIMENSIONS:
R= 1/4, C= 1/2, S= 3/4

MAIN FLOOR PLAN

SCALE: 1/8"=1'-0"

GENERAL NOTES:

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DRAWING NOTES (##)

1. NEW 1" HOT, 2" COLD & s" RECIRC. WATER LINES UP FROM BELOW. OFFSET AT HIGH LEVEL & PIPE UP TO SECOND FLOOR. REFER TO DRAWING M1.4 FOR CONT.
2. CONNECT NEW VENT LINE TO EXISTING VENT STACK AT APPROX. THIS LOCATION.
3. CONNECT NEW SANITARY DRAIN LINE TO EXISTING 6" SOIL STACK AT APPROX. THIS LOCATION. EXACT LOCATION TO BE DETERMINED ON SITE. DRAIN LINE SIZE AS INDICATED ON DRAWINGS.
4. 1i" COLD WATER LINE DOWN TO FIXTURES. REFER TO SCHEMATIC DETAIL 2 ON DRAWING M1.5 FOR CONT.
5. 2" FLOOR DRAIN F.D-1. } FLOOR DRAINS UNDER PARTITIONS
6. 4" FLOOR DRAIN F.D-2.
7. 1" HOT, 2" COLD & s" RECIRC. WATER RISERS UP FROM BELOW. RISE UP TO HIGH LEVEL & PIPE UP TO SECOND FLOOR. REFER TO DRAWING M1.44 FOR CONT.
8. PIPE i" HOT & COLD WATER LINES DOWN IN WALL & TO 2 – SINK CONTROLS LOCATED IN ROOM 1043. PIPE i" WATER LINE FROM SINK CONTROLS TO SINK SPOUT LOCATED AT SINK IN ROOMS 1044 & 1046. REFER TO ARCHITECTURAL DRAWINGS FOR DETAILS.
9. PROVIDE TRAP PRIMER ON COLD WATER LINE TO LAV/COMBY. PIPE i" COLD WATER LINE FROM TRAP PRIMER TO FLOOR DRAIN.
10. s" HOT & COLD WATER LINES DOWN IN WALL TO WALL HYDRANT. REFER TO SPEC.
11. PROVIDE A i" VALVED & CAPPED COLD WATER LINE BELOW SINK IN CUPBOARD SPACE FOR COFFEE MAKER.
12. PIPE s" COLD WATER LINE DOWN TO EYEWASH EW-2. PIPE 1r" DRAIN LINE FROM EYEWASH TO SANITARY SYSTEM.
13. 2" FLOOR DRAIN F.D-2.
14. 4" ACID WASTE DRAIN LINES FROM ABOVE. DROP DOWN & PIPE TO ACID DILUTION TANK LOCATED ON FLOOR STAND. REFER TO SPEC.
15. PIPE i" VALVED COLD WATER LINE TO WATER FILTER LOCATED IN CUPBOARD SPACE BELOW SINK. PIPE FROM FILTER UP TO FAUCET LOCATED BESIDE SINK. REFER TO SCHEMATIC DETAIL 6 ON DRAWING M1.5 FOR CONT.
16. SECTION 15400 TO PROVIDE RECESSED LOCKABLE ACCESS BOX BESIDE PRISONER WASHROOM & LOCATE WATER CLOSET FLUSH VALVE PUSH BUTTON ACTUATOR WITH-IN BOX.
17. VENT LINE UP FROM BASEMENT & CONNECT TO EXISTING VENT STACK.
18. 1½" VENT ABOVE

DAPLEX PLUMBING & HEATING (1992) LTD.

AS-BUILT

96-171-03

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THE CITY OF WINNIPEG
PROPERTY AND DEVELOPMENT SERVICES
WINNIPEG POLICE SERVICE

CONSTRUCTION NORTH

Originally sealed by:
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CarruthersShaw andPartnersLimited Architects
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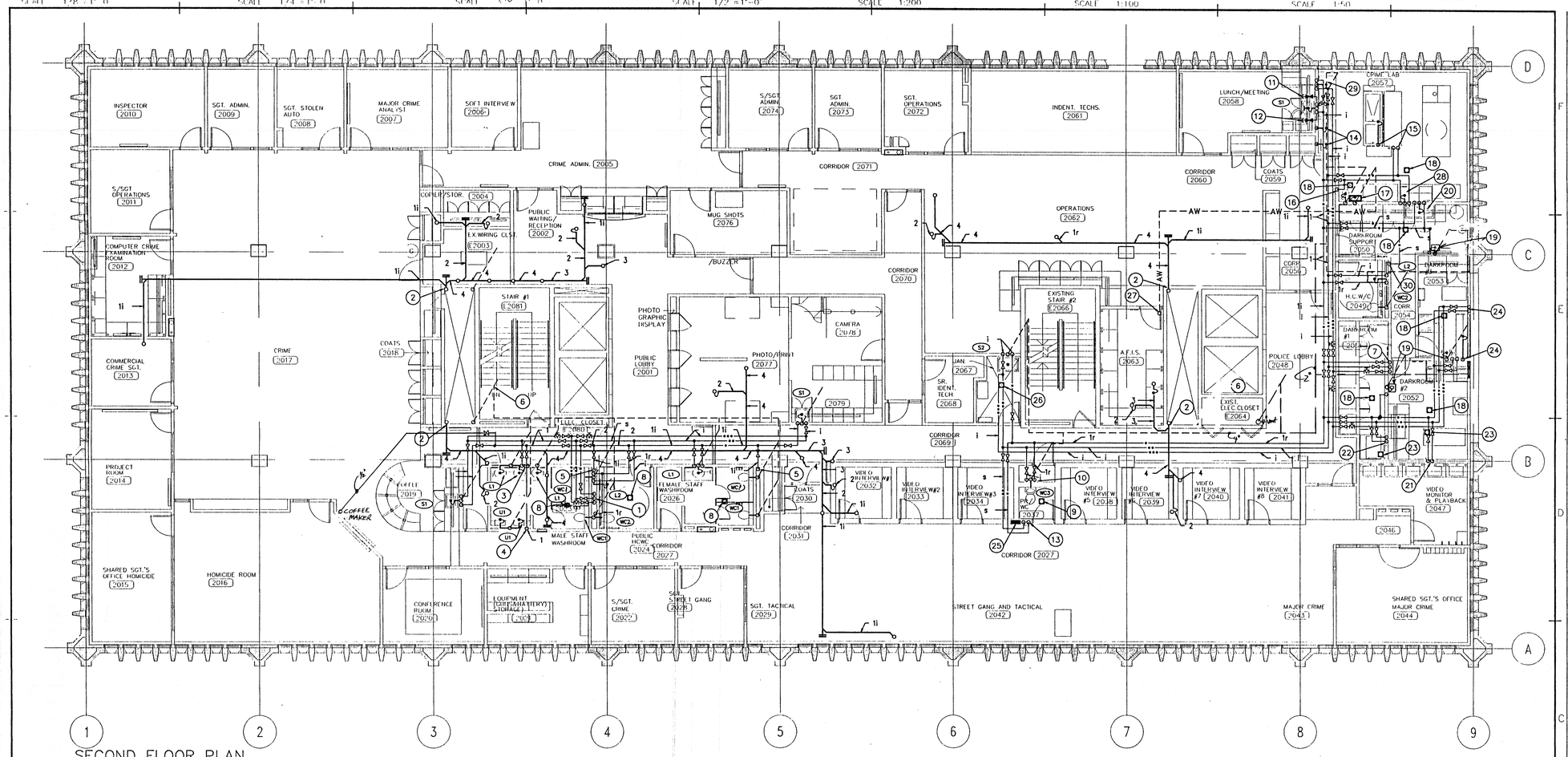
Toronto, Ontario M4P 2E5
416 482-5002 Fax 482-5040

DRAWN BY: RMP
CHECKED BY: HJW
DATE: 24 AUGUST 1998

PROJECT TITLE:
Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building
151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:
MAIN FLOOR PLAN PLUMBING

SCALE: AS NOTED
PROJECT NO. 98023
DWG. NO. M1.3 OF 6
P.D.No. 98-038



SECOND FLOOR PLAN

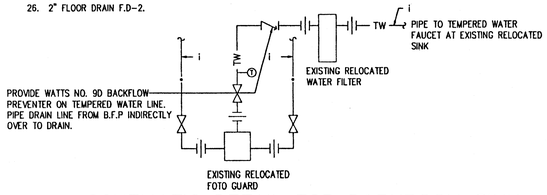
SCALE: 1/8"=1'-0"

GENERAL NOTES:

1. SECTION 15400 SHALL BE RESPONSIBLE FOR THE DISCONNECTING OF EXISTING FIXTURES, & EQUIPMENT. CAP-OFF EXISTING WATER, DRAIN & VENT LINES AT MAINS & REMOVE ALL PIPING NOT REQUIRED. REFER TO ARCHITECTURAL DEMOLITION DRAWINGS.

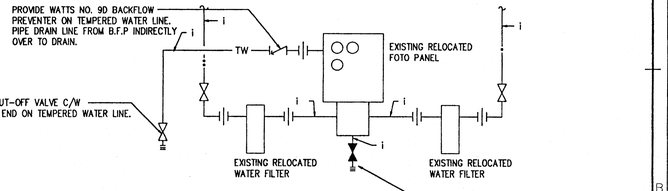
DRAWING NOTES(#)

1. NEW 1" HOT, 2" COLD & ½" RECIRC. WATER LINES UP FROM MAIN FLOOR. REFER TO DRAWING M1.3 FOR CONTINUATION.
2. CONNECT NEW SANITARY DRAIN LINE TO EXISTING 6" SOIL STACK AT APPROX. THIS LOCATION. EXACT LOCATION TO BE CONFIRMED ON SITE. DRAIN LINE SIZE AS INDICATED ON DRAWINGS.
3. ¾" HOT & COLD WATER LINES DOWN TO FIXTURES. REFER TO SCHEMATIC DETAIL 4 (SIMILAR) ON DRAWING M1.5 FOR CONT.
4. 1" COLD WATER LINE DOWN TO FIXTURES. REFER TO SCHEMATIC DETAIL 5 ON DRAWING M1.5 FOR CONT.
5. 1½" COLD WATER LINE DOWN TO FIXTURES. REFER TO SCHEMATIC DETAIL 2 ON DRAWING M1.5 FOR CONT.
6. CONNECT NEW VENT LINE TO EXISTING VENT STACK AT APPROX. THIS LOCATION.
7. NEW 1" HOT, 2" COLD & ½" RECIRC. WATER LINES UP FROM BELOW. RISE UP TO CEILING SPACE & PIPE TO FIXTURES. REFER TO DRAWING M1.3 FOR CONT.
8. 2" FLOOR DRAIN F.D-1.
9. 4" FLOOR DRAIN F.D-2.
10. PROVIDE TRAP PRIMER ON COLD WATER LINE TO LAV/COMBY UNIT. PIPE ½" COLD WATER LINE FROM TRAP PRIMER TO FLOOR DRAIN.
11. ROUGH-IN ½" VALVED HOT WATER LINE BELOW SINK IN CUPBOARD SPACE FOR DISHWASHER. PROVIDE DRAIN CONNECTION FOR DISHWASHER ON FIXTURE LEG OF SINK.
12. ROUGH-IN ½" VALVED COLD WATER LINE BELOW SINK IN CUPBOARD SPACE FOR COFFEE MACHINE.
13. PIPE ¾" HOT & COLD WATER LINES DOWN IN WALL TO WALL HYDRANT. REFER TO SPEC.
14. ROUGH-IN IN & CONNECT 1½" ACID WASTE DRAIN LINE TO DRYING CABINET. PROVIDE DRAIN LINE FOR TWO CABINETS.
15. ROUGH- IN & CONNECT ½" HOT & COLD WATER & 1½" ACID WASTE DRAIN LINE TO WET BENCH. REFER TO ARCHITECTURAL DRAWINGS FOR DETAILS.
16. 1¼" COLD WATER LINE DOWN TO EMERGENCY EYEWASH\SHOWER COMBINATION UNIT. REFER TO SPEC.
17. PIPE ½" COLD WATER LINE C/W SHUT-OFF VALVE, SOLENOID VALVE & SHOCK ABSORBER & PIPE TO WALL HUNG URINAL FLUSH TANK AT HIGH LEVEL. WIRING SOLENOID VALVE BY DIV. 16.
18. 4" FLOOR DRAIN F.D-3.
19. PIPE ¾" COLD WATER LINE DOWN TO EMERGENCY EYEWASH EW-2. PIPE 1¼" DRAIN LINE FROM EYEWASH TO SANITARY SYSTEM. REFER TO SPEC.
20. ROUGH-N & CONNECT 1½" ACID WASTE & ½" HOT & COLD WATER LINES TO EXISTING RELOCATED SINK. REFER TO ARCHITECTURAL DRAWINGS FOR EXISTING SINK LOCATION.
21. ½" HOT & COLD WATER LINES DOWN TO MIXING VALVE SERVING RELOCATED HOPE FILM PROCESSOR. REFER TO SCHEMATIC DETAIL THIS SHEET FOR CONT.
22. ½" HOT & COLD WATER LINES DOWN TO MIXING VALVE SERVING RELOCATED ILFORD FILM PROCESSOR. REFER TO SCHEMATIC DETAIL THIS SHEET FOR CONT.
23. PROVIDE 4" ACID RESISTING HUB DRAIN FOR FILM PROCESSOR.
24. ROUGH-IN 1½" ACID WASTE DRAIN, ½" HOT & COLD WATER LINES TO RELOCATED DARKROOM SINK. PIPE ½" HOT & COLD WATER LINES TO RELOCATED MIXING VALVE & FILTER. REFER TO SCHEMATIC DETAIL THIS SHEET FOR CONT.
25. SECTION 15400 TO PROVIDE RECESSED LOCKABLE ACCESS BOX BESIDE PRISONER WASHROOM & LOCATE WATER CLOSET FLUSH VALVE PUSH BUTTON ACTUATOR WITH-IN BOX.
26. 2" FLOOR DRAIN F.D-2.
27. PIPE NEW ACID WASTE VENT UP TO THIRD FLOOR. REFER TO DRAWING M1.5 FOR CONT.
28. ROUGH-IN & CONNECT 1½" ACID WASTE DRAIN & ½" HOT & COLD WATER LINES TO LAB SINK. SINK & FAUCET SUPPLIED UNDER ARCHITECTURAL SECTION.
29. ROUGH-IN & CONNECT ½" HOT & COLD WATER & 1½" ACID WASTE DRAIN LINE TO FUME HOOD.
30. ¾" COLD WATER LINE DOWN TO ELECTRONIC TRAP PRIMING MANIFOLD LOCATED IN CABINET & RECESSED IN WALL. PIPE ½" TRAP PRIMING LINE FROM MANIFOLD TO FLOOR DRAIN LOCATED IN THE FOLLOWING ROOMS 2050, 2051, 2052, 2053 & 2057.



SCHEMATIC DETAIL FOR DARKROOM SINK

NTS



SCHEMATIC DETAIL FOR HOPE FILM PROCESSOR

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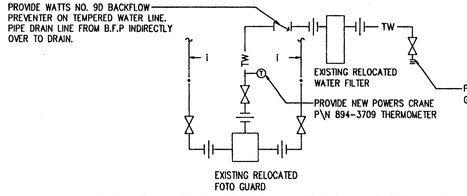

SCHEMATIC DETAIL FOR ILFORD FILM PROCESSOR 96-171-03

NTS

AS-BUILT

DAPLEX PLUMBING & HEATING (1992) LTD.

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Scouten Mitchell Sigurdson and Associates Limited
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KEY TO DETAIL LOCATION

No. ____ DETAIL NUMBER
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DRAWINGS SHOULD NOT BE SCALED.

NO.	REVISION/ISSUE	DATE

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THE CITY OF WINNIPEG
PROPERTY AND DEVELOPMENT SERVICES
WINNIPEG POLICE SERVICE

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Toronto, Ontario M4P 2E5
416 482-5002 Fax 482-5040

DRAWN BY: RMP
CHECKED BY: HJW
DATE: 24 AUGUST 1998

PROJECT TITLE:

Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building
151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:

SECOND FLOOR PLAN PLUMBING

SCALE: AS NOTED

PROJECT NO.	DWG. NO.
98023	M1.4 OF 6

P.D.No. 98-038

96023 Project No.
M1.4 Sheet No.
2000 Const. Year

151 Princess St.
Second Floor Plan -Plumbing
AS-BUILTS Drawing Title
Public Safety Building Renovations Project

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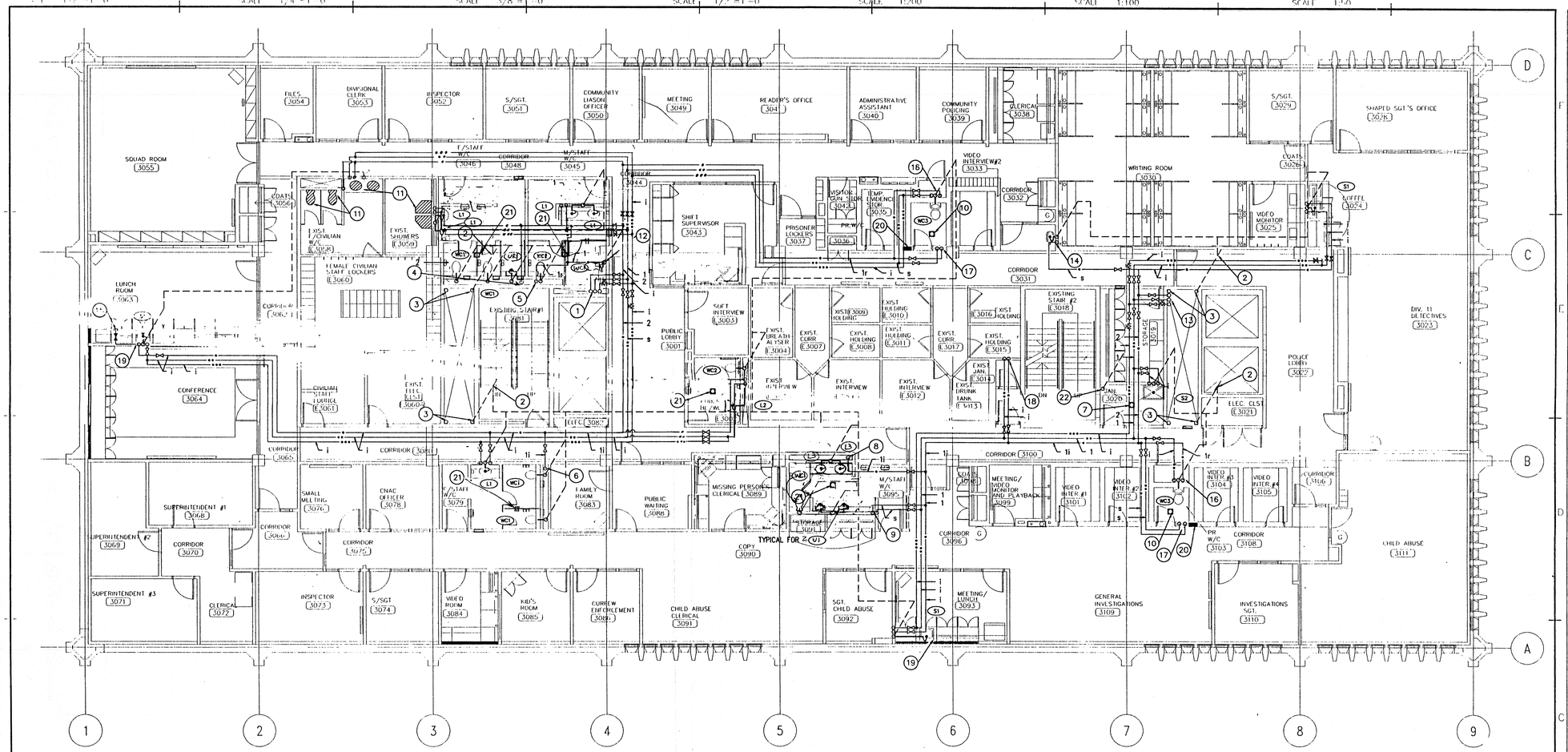


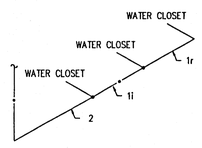
THIRD FLOOR PLAN
SCALE: 1/8"=1'-0"

GENERAL NOTES:

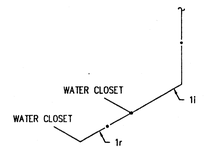
1. SECTION 15400 SHALL BE RESPONSIBLE FOR THE DISCONNECTING OF EXISTING FIXTURES, & EQUIPMENT. CAP-OFF EXISTING WATER, DRAIN & VENT LINES AT MAINS & REMOVE ALL PIPING NOT REQUIRED. REFER TO ARCHITECTURAL DEMOLITION DRAWINGS.

DRAWING NOTES(##)

1. CONNECT NEW 1" HOT, 2" COLD, & 1" RECIRC. WATER LINES C/W SHUT-OFF VALVE TO EXISTING 2" HOT, 3" COLD & 1" RECIRC. WATER RISERS AT APPROX. THIS LOCATION. EXACT LOCATION TO BE CONFIRMED ON SITE.
2. CONNECT NEW VENT LINE TO EXISTING VENT STACK AT APPROX. THIS LOCATION.
3. EXISTING SOIL STACK & VENT STACK TO REMAIN.
4. 2" COLD WATER LINE DOWN TO FIXTURES. REFER TO SCHEMATIC DETAIL 1 THIS SHEET FOR CONTINUATION.
5. 1r" COLD WATER LINE DOWN TO WATER CLOSET.
6. 1l" COLD WATER LINE DOWN TO FIXTURES. REFER TO SCHEMATIC DETAIL 2 THIS SHEET FOR CONTINUATION.
7. 2" FLOOR DRAIN F.D-2.
8. 1l" COLD WATER LINE DOWN TO FIXTURES. REFER TO SCHEMATIC DETAIL 4 THIS SHEET FOR CONTINUATION.
9. s" HOT & COLD WATER LINES DOWN TO FIXTURES. REFER TO SCHEMATIC DETAIL 3 THIS SHEET FOR CONT.
10. 4" FLOOR DRAIN F.D-2.
11. PLUMBING FIXTURES SHOWN HATCHED ARE EXISTING TO REMAIN.
12. 1" COLD WATER LINE DOWN TO FIXTURES. REFER TO SCHEMATIC DETAIL 5 THIS SHEET FOR CONT.
13. CONNECT NEW 1" HOT, 2" COLD, & 1" RECIRC. WATER LINES C/W SHUT-OFF VALVE TO EXISTING 1l" HOT, 2l" COLD & s" RECIRC. WATER RISERS AT APPROX. THIS LOCATION. EXACT LOCATION TO BE CONFIRMED ON SITE.
14. PIPE s" COLD WATER LINE DOWN TO EMERGENCY EYEWASH EW-2. PIPE 1r" SANITARY DRAIN TO EYEWASH.
15. ROUGH-IN 1" VALVED HOT WATER LINE FROM SINK SUPPLY FOR DISHWASHER. PROVIDE DRAIN CONNECTION FOR DISHWASHER ON FIXTURE LEG OF SINK TRAP.
16. PROVIDE TRAP PRIMER ON COLD WATER LINE TO LAV/WC COMBY & PIPE 1" COLD WATER LINE FROM TRAP PRIMER TO FLOOR DRAIN.
17. PIPE s" HOT & COLD WATER LINES DOWN IN WALL TO INTERIOR WALL HYDRANT. REFER TO SPECIFICATION.
18. PIPE NEW 1" HOT & COLD WATER LINES TO EXISTING JAN. ROOM. OPEN UP EXISTING WALL & PIPE DOWN & CONNECT TO EXISTING FAUCET.
19. PIPE 1" VALVED COLD WATER LINE TO WATER FILTER LOCATED IN CUPBOARD SPACE BELOW SINK. PIPE FROM FILTER UP TO FAUCET LOCATED BESIDE SINK. REFER TO SCHEMATIC DETAIL 6 THIS SHEET.
20. SECTION 15400 TO PROVIDE RECESSED ACCESS BOX BESIDE PRISONER WASHROOM & LOCATE WATER CLOSET FLUSH VALVE PUSH BUTTON ACTUATOR WITH-IN BOX.
21. 2" FLOOR DRAIN F.D-1.
22. ACID WASTE VENT LINE UP FROM BELOW & PIPE UP THRU WIRING CLOSET AT FOURTH FLOOR. OFFSET AT LEVEL FOUR HIGH LEVEL & PIPE UP IN JANITORS ROOM AT FIFTH FLOOR. EXACT LOCATION TO BE DETERMINED ON SITE.



SCHEMATIC DETAIL 1
NTS



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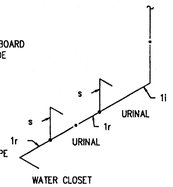

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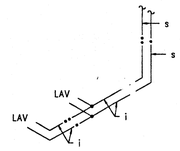

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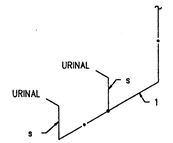

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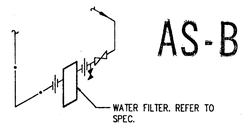

SCHEMATIC DETAIL 6
NTS

96-171-03

DAPLEX PLUMBING & HEATING (1992) LTD.

AS-BUILT

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NO.	REVISION/ISSUE	DATE

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THE CITY OF WINNIPEG
PROPERTY AND DEVELOPMENT SERVICES
WINNIPEG POLICE SERVICE

CONSTRUCTION MONTH

Originally sealed by:
SMS Engineering

CS&P Carruthers Shaw and Partners Limited Architects
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Toronto, Ontario M4P 2E5
416 482-5002 Fax 482-5040

DRAWN BY: RMP
CHECKED BY: HJW
DATE: AUGUST 24, 1998

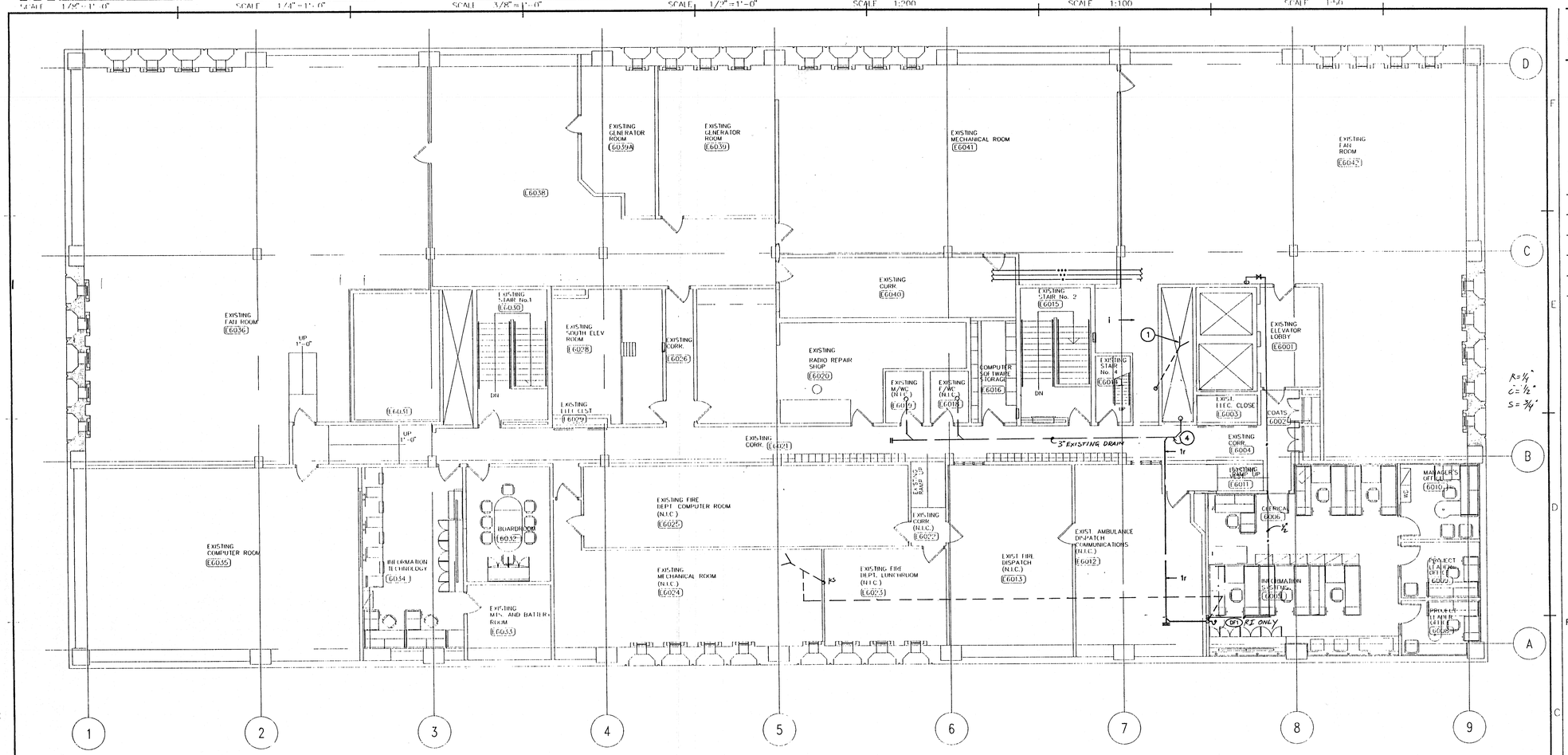
PROJECT TITLE:
Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building
151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:
THIRD FLOOR PLAN PLUMBING

SCALE: AS NOTED

PROJECT NO.	DWG. NO.
98023	M1.5 OF 6

P.D.No. 98-038



SIXTH FLOOR PLAN

SCALE: 1/8"=1'-0"

DRAWING NOTES (#)

1. ACID WASTE VENT LINE UP FROM THIRD FLOOR & PIPE UP THRU ROOF. REFER TO DRAWING M1.5 FOR CONT.
2. CONNECT NEW 1" COLD WATER LINE TO EXISTING 2" COLD WATER MAIN AT APPROX. THIS LOCATION. EXACT LOCATION TO BE DETERMINED ON SITE.
3. CONNECT NEW VENT LINE TO EXISTING VENT STACK.
4. CONNECT NEW 1½" SANITARY DRAIN LINE TO EXISTING 3" SOIL AT APPROX. THIS LOCATION. DRAIN LINE TO BE LOCATED IN FIFTH FLOOR CEILING SPACE.

GENERAL NOTES:

1. SECTION 15400 SHALL BE RESPONSIBLE FOR THE DISCONNECTING OF EXISTING FIXTURES, & EQUIPMENT. CAP-OFF EXISTING WATER, DRAIN & VENT LINES AT MAINS & REMOVE ALL PIPING NOT REQUIRED. REFER TO ARCHITECTURAL DEMOLITION DRAWINGS.

DAPLEX PLUMBING & HEATING (1992) LTD.

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96-171-03

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151 Princess St.
Sixth Floor Plan - Plumbing
Drawing Title
AS-BUILTS
Public Safety Building Renovations
Project

96023 Project No.
M1.6 Sheet No.
2000 Const. Year

File name: C:\PROFILES\ Last saved: 98-12-14 @ 08:58

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0 1 5 10ft. SCALE 1/4"=1'-0"
0 1 5 8ft. SCALE 3/8"=1'-0"
0 1 2 5ft. SCALE 1/2"=1'-0"
0 5 10 15 SCALE 1:200
0 1 2 5 8 SCALE 1:100
0 .5 1 2 3 4 SCALE 1:50

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DRAWN BY: RMP
CHECKED BY: HJW
DATE: 24 AUGUST 1998

PROJECT TITLE:

Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building

151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:

SIXTH FLOOR PLAN PLUMBING

SCALE: AS NOTED

PROJECT NO.	DWG. NO.
98023	M1.6 OF 6

P.D.No. 98-038

SCALE 1/8"=1'-0" | SCALE 1/4"=1'-0" | SCALE 3/8"=1'-0" | SCALE 1/2"=1'-0" | SCALE 1:200 | SCALE 1:100 | SCALE 1:50

DRAWING NOTES

1 EXISTING WALL TO BE TORN DOWN AND RE-BUILT BY THE G.C. FOR THE EXISTING GENERATOR REMOVAL AND INSTALLATION OF THE NEW ONE.

2 EXISTING LISTER GENERATOR TO BE REMOVED BY THE G.C. DIV. 15 TO DISCONNECT AND REMOVE SECTIONS OF PIPING FOR THE EXISTING GENERATOR REMOVAL. FUEL OIL PIPING TO BE SALVAGED FOR USE WITH NEW GENERATOR. SUPPLY/RETURN PIPING TO THE EXISTING REMOTE RADIATOR TO BE COMPLETELY REMOVED. THE EXISTING AIR FILTER, EXHAUST PIPE WITH MUFFLER AND REMOTE RADIATOR IN THE CAGE ABOVE TO BE REMOVED BY DIV. 15.

3 G.C. TO PROVIDE MIN. 2" HIGH SPILL CONTAINMENT CURB.

4 REMOVE EXISTING REMOTE RADIATOR LOCATED IN THE MECHANICAL CAGE ABOVE, REPLACE WITH A NEW ONE (SUPPLIED BY DIV. 16) DIV. 15 TO INSTALL THE NEW REMOTE RADIATOR AND TO PROVIDE COOLANT PIPING TO THE NEW GENERATOR. DUCT THE NEW RADIATOR TO THE EXISTING 7'X6' WALL LOUVRE.

5 NEW SUPPLY/RETURN COOLANT LINES (BY DIV. 15) UP TO REMOTE RADIATOR.

6 THREE WAY CONTROL VALVE, SUPPLIED WITH THE GENERATOR BY DIV. 16, INSTALLED AND WIRED TO GENERATOR CONTROLS BY DIV. 15.

7 EXISTING 12X12 EXHAUST PIPE C/W MUFFLER TO BE REMOVED.

8 SILENCER SUPPLIED DIV. 16, INSTALLED BY DIV. 15, SUPPORT SILENCER TO ALLOW THERMAL GROWTH AWAY FROM THE ENGINE.

9 8# EXHAUST PIPE BY DIV. 15. ROUTE THE PIPE TO RE-USE EXISTING WALL OPENINGS REMAINING AFTER THE OLD EXHAUST. DISCHARGE INTO THE EXISTING AREA WAY. G.C. TO PATCH UP THE WALL OPENINGS TO SUIT THE NEW EXHAUST PIPE.

10 NEW DIESEL GENERATOR BY DIV. 16.

11 G.C. TO EXTEND THE EXISTING CAGE TO THE WEST TO ACCOMODATE THE NEW RELIEF DUCT.

12 ON TEMPERATURE RISE F-P-1 TO START AND MA DAMPERS AND RELIEF AIR DAMPERS SHALL MODULATE IN UNISON TO MAINTAIN 60 F SAT.

13 RE-LOCATE EXISTING 250 GALLON FUEL TANK, PRESENTLY WALL-HUNG AT HIGH LEVEL, TO ABOUT 6" AFF. MODIFY EXISTING FUEL PIPING AS REQUIRED, INCLUDING RELOCATION OF FUEL PUMP. DIV. 16 TO MOVE EXISTING CONDUITS AND JUNCTION BOXES. G.C. TO MOVE EXISTING TOOL CABINETS TO SUIT TANK RELOCATION.

14 8# FUEL OIL SUPPLY AND RETURN TO RUN IN 4" WIDE X 2" DEEP TRENCH WITH CHECKER-PLATE COVER. SEAL TRENCH WITH OIL RESISTANT MASTIC.

15 CONNECT MODIFIED TANK VENT, FUEL OIL SUPPLY AND RETURN LINES TO EXISTING.

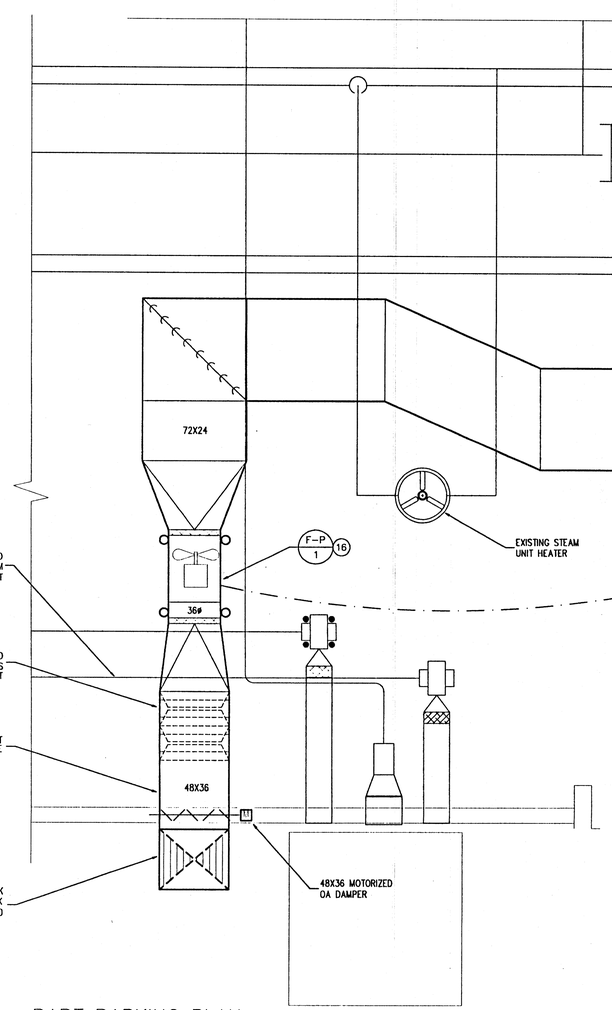
16 GENERATOR ROOM COOLING FAN SUSPENDED FROM STRUCTURE AT HIGH LEVEL, C/W SPRING HANGERS.

17 EXISTING FUEL PUMP TO BE RELOCATED TO ACCOMODATE THE RELOCATED OIL TANK.

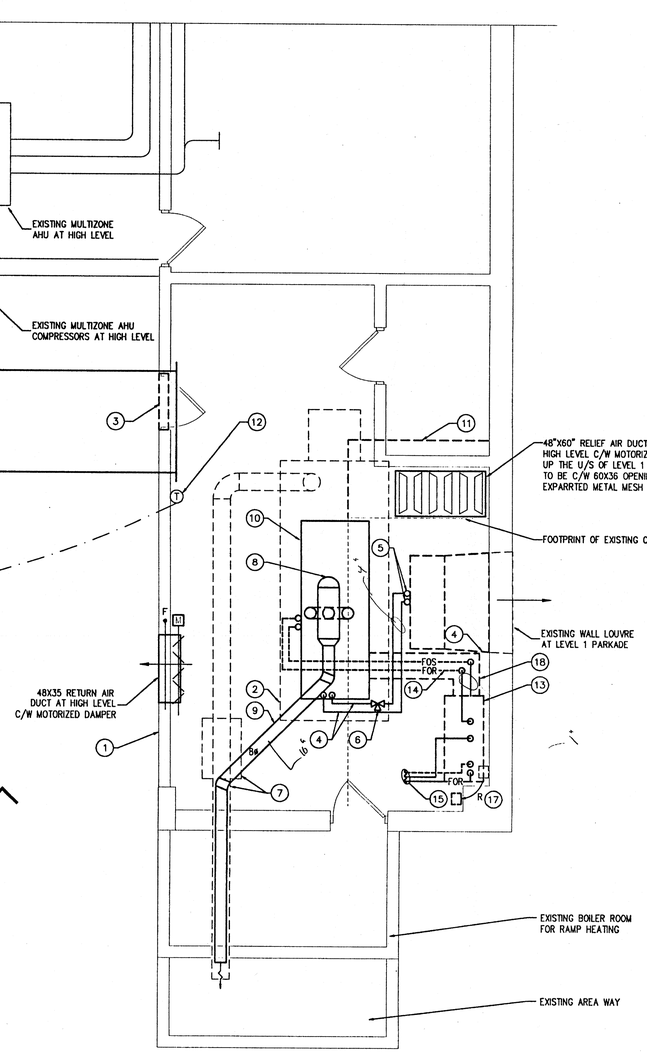
18 4" WIDE BY 2" DEEP FLOOR TRENCH FOR OIL PIPING BY G.C.

LEGEND:

- EXISTING TO BE REMOVED (EXCEPT AS NOTED)
- EXISTING TO REMAIN
- NEW WORK
- FIRE DAMPER
- MANUAL BALANCE DAMPER
- RELOCATE EXISTING
- EXISTING LIGHT TROFFER TO REMAIN
- TRANSFER AIR DUCT
- SUPPLY AIR DIFFUSER/REGISTER
- RETURN/EXHAUST AIR GRILLE
- EXISTING THERMOSTAT TO BE REMOVED
- EXISTING THERMOSTAT TO BE RELOCATED
- EXISTING THERMOSTAT TO REMAIN
- NEW OR RELOCATED THERMOSTAT
- ROOM NUMBER
- RS — REFRIGERANT SUCTION
- RL — REFRIGERANT LIQUID
- LPS — LOW PRESSURE STEAM
- LPC — LOW PRESSURE CONDENSATE
- SHUT-OFF VALVE
- CONTROL VALVE
- STRAINER
- VACUUM BREAKER
- STEAM TRAP
- ACOUSTIC INSULATION
- FLEXIBLE DUCT CONNECTION
- EQUIPMENT DESIGNATION OR PLUMBING RISER
- GRILLE OR DIFFUSER DESIGNATION: TYP. / NECK / FLOW / 2X — GRILLE/DIFFUSER TYPE; NECK SIZE; QUANTITY OR NUMBER OF; FLOW RATE (CFM)
- EXISTING DUAL DUCT BOX TO REMAIN
- NEW DUAL DUCT BOX
- NEW VAV BOX



PART PARKING PLAN
SCALE: 1/4"=1'-0"



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DRAWINGS SHOULD NOT BE SCALED.

NO.	REVISION/ISSUE	DATE

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THE CITY OF WINNIPEG
PROPERTY AND DEVELOPMENT SERVICES
WINNIPEG POLICE SERVICE

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DRAWN BY: EL/LG
CHECKED BY: PG
DATE: 24 AUGUST 1998

PROJECT TITLE:
Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building
151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:
PART PARKING PLAN HVAC

SCALE: AS NOTED

PROJECT NO.	DWG. NO.
98023	M2.1

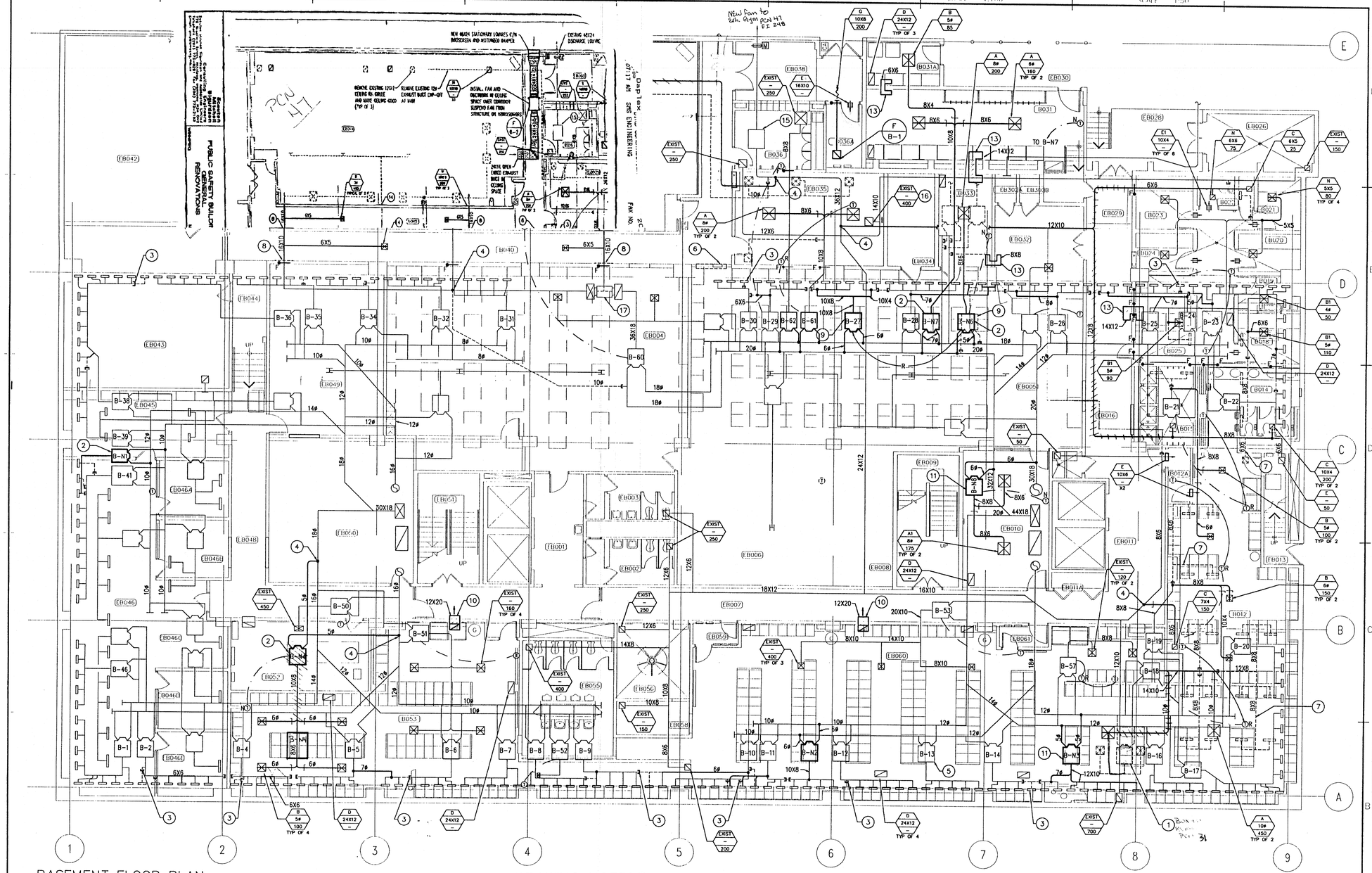
P.D.No. 98-038

151 Princess St.
Part Parking Plan -HVAC
AS-BUILTS
Drawing Title
Public Safety Building Renovations
Project

96023 Project No.
M2.1 Sheet No.
2000 Project Year

File name: G:\617\HP.DWG Last edited: 98/06/19 @ 11:00

SCALE 1/8" = 1'-0" | SCALE 1/4" = 1'-0" | SCALE 1/8" = 1'-0" | SCALE 1/2" = 1'-0" | SCALE 1:200 | SCALE 1:100 | SCALE 1:50



BASEMENT FLOOR PLAN
SCALE: 1/8"=1'-0"

DRAWING NOTES(##)

1. EXISTING DUAL DUCT BOX TO BE REMOVED. REMOVE ALL ASSOCIATED DUCTWORK AND CAP HIGH PRESSURE MAIN TAKE-OFFS
2. PROVIDE NEW DUAL DUCT BOX
3. CAP OFF FLOOR GRILLE TAKE-OFF (TYPICAL)
4. TIE-IN TO EXISTING DUCT BRANCH
5. EXISTING DUAL DUCT BOX TO REMAIN (TYPICAL)
6. REMOVE EXISTING RETURN AIR GRILLE. PATCH WALL TO MEET FIRE RATING
7. REMOVE EXISTING DUCTWORK AND GRILLE. CAP AT MAIN (TYPICAL)
8. REMOVE EXISTING SIDEWALL GRILLE, EXTEND THE EXISTING DUCT BRANCH AS REQUIRED. PROVIDE NEW SIDEWALL SUPPLY GRILLE IN THE GYM
9. RELOCATE EXISTING DUAL DUCT BOX. REMOVE ALL ASSOCIATED DUCTWORK AND CAP HIGH PRESSURE MAIN TAKE-OFFS AT PRESENT LOCATION. PROVIDE NEW DUCTWORK AND HIGH PRESSURE MAIN TAKE-OFFS AT THE NEW LOCATION
10. ACOUSTIC LINED TRANSFER AIR DUCT IN CEILING SPACE, ONE UP-TURN 90° ELBOW, SIZE AS INDICATED
11. REPLACE EXISTING DUAL DUCT BOX WITH A NEW ONE IN THE SAME LOCATION.
13. PROVIDE ACOUSTICALLY LINED AIR TRANSFER DUCT IN CEILING SPACE, MINIMUM TWO 90° ELBOWS, SIZE AS INDICATED
14. REMOVE EXISTING DUCT UP TO THE NEW GYMNASIUM WALL. PROVIDE NEW SIDEWALL SUPPLY AIR GRILLE
15. EXISTING BASEMENT EXHAUST FAN F-12 TO REMAIN
16. RELOCATE EXISTING CEILING EXHAUST PRIME TO SUIT NEW ACOUSTIC TILE CEILING
17. SECTION 15800 TO VERIFY FORCE-FLOW OPERATION AND REPORT TO THE ENGINEER

AS-BUILT

xxx

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151 Princess St.
Basement Plan - HVAC
AS-BUILTS
Drawing Title
Public Safety Building
Renovations
Project

96023 Project No.
M2.2 Sheet No.
2000 Const. Year

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NO.	REVISION/ISSUE	DATE

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THE CITY OF WINNIPEG
PROPERTY AND DEVELOPMENT SERVICES
WINNIPEG POLICE SERVICE

CONSTRUCTION NORTH

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DRAWN BY: EL/LG
CHECKED BY: PG
DATE: 24 AUGUST 1998

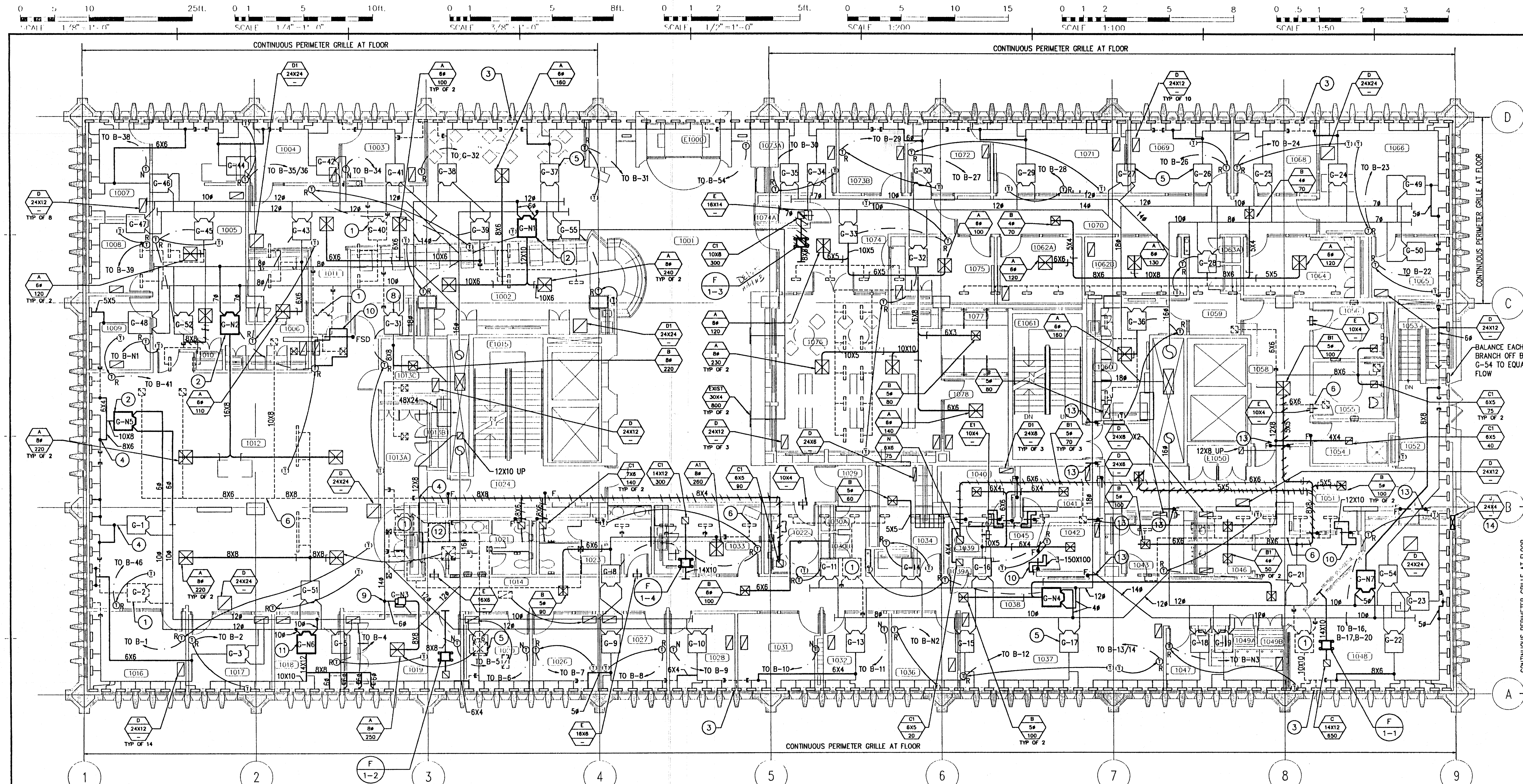
PROJECT TITLE:
Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building
151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:
BASEMENT FLOOR PLAN HVAC

SCALE: AS NOTED

PROJECT NO.	DWG. NO.
96023	M2.2

P.D.No. 98-038



MAIN FLOOR PLAN
SCALE: 1/8"=1'-0"

DRAWING NOTES (##)

1. EXISTING DUAL DUCT BOX TO BE REMOVED. REMOVE ALL ASSOCIATED DUCTWORK AND CAP HIGH PRESSURE MAIN TAKE-OFFS.
2. PROVIDE NEW DUAL DUCT BOX
3. CAP OFF FLOOR GRILLE TAKE-OFF (TYPICAL)
4. TIE INTO EXISTING DUCT BRANCH (TYPICAL)
5. EXISTING DUAL DUCT BOX TO REMAIN (TYPICAL)
6. REMOVE EXISTING DUCTWORK AND GRILLE. CAP AT MAIN (TYPICAL)
8. DISCONNECT EXISTING BOX FROM HOT DECK. CAP-OFF THE HOT DECK INLET AT THE BOX AND THE HOT DECK HIGH PRESSURE TAKE-OFF AT MAIN
9. COOLING ONLY VAV BOX. SET TO 0 CFM MIN. POS., SHALL START TO OPEN ONLY WHEN DUAL DUCT BOX B-5 IS FULLY OPEN TO COLD DECK, I.E. SET B-4 TO FULL COOLING AT 12 PSI, AND G-N3 TO START TO OPEN AT 14 PSI
10. RETURN AIR DUCT 2X90 DEGREE TURNS, ACOUSTICALLY LINED
11. REPLACE EXISTING DUAL DUCT BOX WITH NEW IN TE SAME LOCATION
12. REMOVE VAV BOX AND RELATED DUCTWORK WHICH WAS PROVIDED FOR "TEMPORARY STAGING" PROJECT. CAP-OFF AT MAIN. RELOCATE AND REUSE DIFFUSERS AS SHOWN
13. PROVIDE FIRE DAMPER ON EXISTING DUCT.
14. SECTION 15800 TO PROVIDE SILL GRILLE AS PER ARCHITECTURAL DETAILS 2-A5-13 AND G-A5.5 CONTRACTOR SHALL CONFIRM EXACT GRILLE SIZE WITH THE ARCHITECT BEFORE ORDERING.

AS-BUILT

xxx

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NO.	REVISION/ISSUE	DATE

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THE CITY OF WINNIPEG
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WINNIPEG POLICE SERVICE

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DRAWN BY: EL
CHECKED BY: PG
DATE: 24 AUGUST 1998

PROJECT TITLE:
Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building
151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:
MAIN FLOOR PLAN HVAC

SCALE: AS NOTED
PROJECT NO. 96023
DWG. NO. M2.3

P.D.No. 98–038

151 Princess St.
Main Floor Plan -HVAC
AS-BUILTS
Public Safety Building Renovations
96023 M2.3 2000

151 Princess St.
Second Floor Plan HVAC
AS-BUILTS
Drawing Title
Public Safety Building
Renovations
Project

96023
Project No.

M2.4
Sheet No.

2000
Const. Year

SCANNED

0 5 10 25ft.
SCALE 1/8"=1'-0"

0 1 5 10ft.
SCALE 1/4"=1'-0"

0 1 5 8ft.
SCALE 1/2"=1'-0"

0 1 2 5ft.
SCALE 1/2"=1'-0"

0 5 10 15
SCALE 1:200

0 1 2 4
SCALE 1:50

0 1 2 3 4
SCALE 1:50

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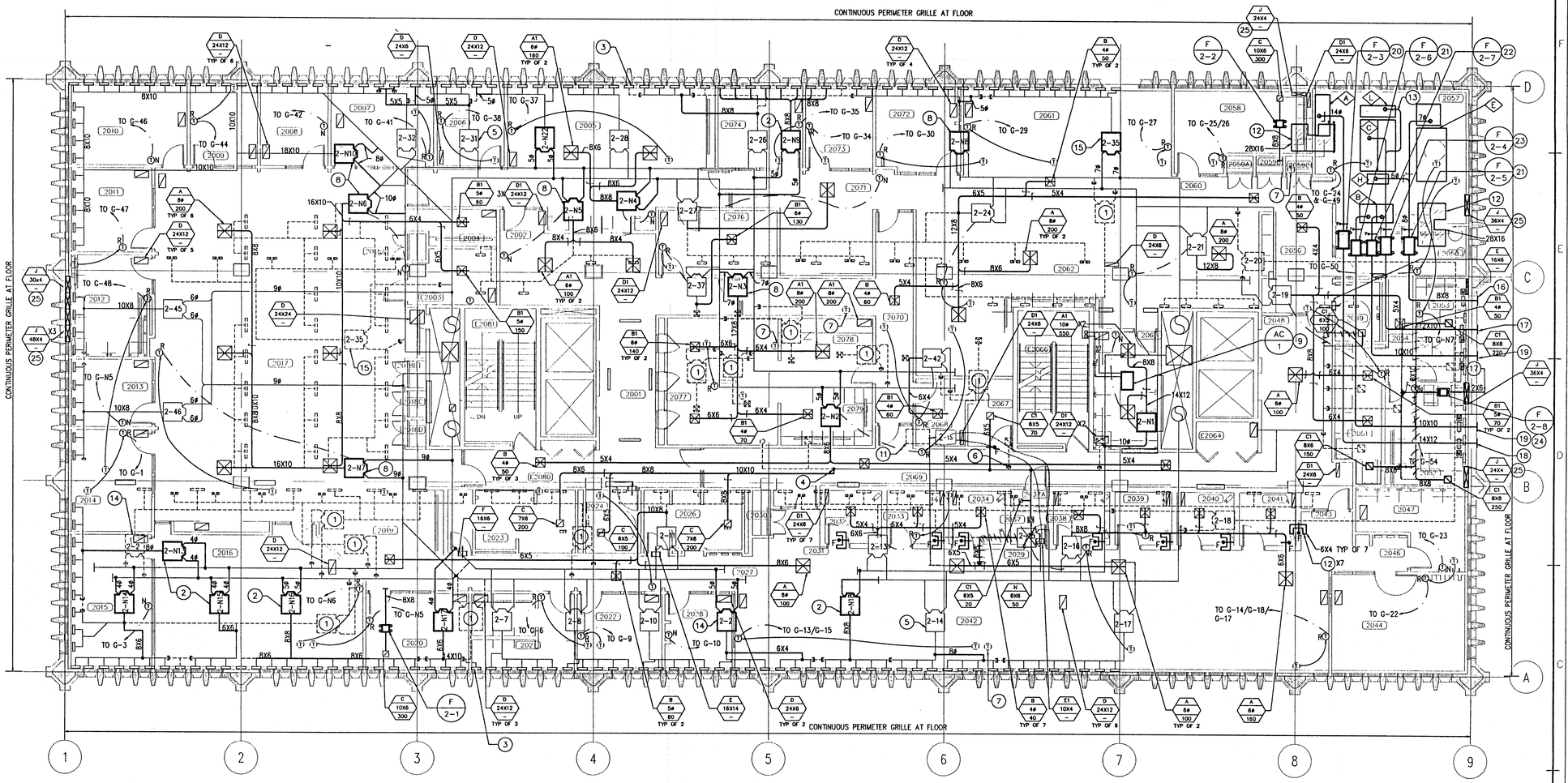

SECOND FLOOR PLAN
SCALE: 1/8"=1'-0"

DRAWING NOTES(##)

1. EXISTING DUAL DUCT BOX TO BE REMOVED. REMOVE ALL ASSOCIATED DUCTWORK AND CAP HIGH PRESSURE MAIN TAKE-OFFS
2. PROVIDE NEW DUAL DUCT BOX
3. CAP OFF FLOOR GRILLE TAKE-OFF (TYPICAL)
4. TIE-IN TO EXISTING DUCT BRANCH (TYPICAL)
5. EXISTING DUAL DUCT BOX TO REMAIN (TYPICAL)
6. REMOVE EXISTING DUCTWORK AND GRILLE. CAP AT MAIN (TYPICAL)
7. REMOVE EXISTING THERMOSTAT
8. REPLACE EXISTING DUAL DUCT BOX WITH A NEW ONE AT SAME LOCATION PROVIDE NEW HIGH PRESSURE FLEX CONNECTIONS.
9. NEW CEILING MOUNTED SELF-CONTAINED A/C UNIT AC-1. PROVIDE REFRIGERATION LINES UP TO THE ROOF MOUNTED CONDENSING UNIT. USE EXISTING SHAFT IN STAIRWELL TO RUN THE LINES UP TO THE ROOF
11. REMOVE AND RETURN TO OWNER THE EXISTING LIEBERT "CHALLENGER 3" WATER COOLED A/C UNIT. REMOVE ALL RELATED DUCTWORK, WATER AND DRAIN LINES
12. ACOUSTICALLY LINED DUCT IN CEILING SPACE, MINIMUM TWO 90° ELBOWS, SIZE AS SHOWN ON DRAWNG
13. PROVIDE s# S.S. PIPE FROM THE CA VAC OUTLET CHAMBER (L) EXHAUST DUCT
14. REPLACE BOX 2-12 WITH BOX 2-2
15. REPLACE BOX 2-23 WITH BOX 2-35
16. 12"X18" WALL LOUVRE
17. 20"X30" WALL LOUVRE
18. 20"X30" WALL LOUVRE
19. 16"X18" WALL LOUVRE
20. INTERLOCK THE FAN WITH DUCT MOTORIZED DAMPER. THE FAN SHALL OPERATE CONTINUOUSLY TO MAINTAIN NEGATIVE PRESSURE IN THE ROOM
21. INTERLOCK THE FAN WITH DUCT MOTORIZED DAMPER. THE FAN SHALL OPERATE CONTINUOUSLY TO MAINTAIN NEGATIVE PRESSURE IN THE ROOM
22. INTERLOCK THE FAN WITH DUCT MOTORIZED DAMPER
23. INTERLOCK THE FAN WITH DUCT MOTORIZED DAMPER
24. DARKROOM EXHAUST FAN F-2-8 TO OPERATE CONTINUOUSLY. INTERLOCK WITH MOTORIZED DUCT DAMPER. MOUNT SPEED CONTROLLER BY THE FAN IN CEILING SPACE FOR BALANCING
25. SECTION 15800 TO PROVIDE SILL GRILLE AS PER ARCHITECTURAL DETAILS 2-A5.13 AND G-A5.5 CONTRACTOR SHALL CONFIRM EXACT GRILLE SIZE WITH THE ARCHITECT BEFORE ORDERING

ROOM 2057 (CRIME LAB) EQUIPMENT SCHEDULE

- (A) FUME HOOD – 1170 CFM EXHAUST – S.S. DUCT
- (B) EXHIBIT DRYING CABINETS – 400 CFM EXHAUST PER SIDE – S.S. DUCT
- (C) WET BENCH – 1000 CFM EXHAUST – S.S. DUCT
- (E) CA CHAMBER – 150 CFM EXHAUST – S.S. DUCT
- (H) CHEMICAL STORAGE CABINET – 100 CFM EXHAUST – S.S. DUCT
- (L) CA VAC CHAMBER – PIPE VACUUM PUMP OUTLET TO WET BENCH EXHAUST DUCT – S.S. PIPE

GENERAL NOTES

A. CRIME LAB 2057 IS A CLASS 1 AREA AS DEFINED IN CANADIAN ELECTRICAL CODE. LOCATE ALL ELECTRIC MOTORS RELATED TO MECHANICAL EQUIPMENT, AND ALL RELATIVE WIRING, SWITCHES AND ELECTRICAL DEVICES WHICH ARE NOT LISTED FOR CLASS 1 AREAS OUTSIDE THIS ROOM.

B. LOCATE FAN ON/OFF SWITCH, PROPERLY LABELLED, IN ROOM 2050. EXACT LOCATION TO BE COORDINATED WITH THE OWNER.

C. ON/OFF SWITCHES FOR THE FANS F-2-3 (FUME HOOD) AND F-2-5 (CA CHAMBER AND CHEMICAL STORAGE CABINET) SHALL BE LABELLED WITH A WARNING SIGN NOT TO SWITCH THE FAN OFF.

AS-BUILT

xxx

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DRAWN BY: EL/LG

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DATE: 24 AUGUST 1998

PROJECT TITLE:

Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building

151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:

SECOND FLOOR PLAN HVAC

SCALE: AS NOTED

PROJECT NO.	DWG. NO.
96023	M2.4

P.D.No. 98-038

0 5 10 25ft. SCALE 1/8"=1'-0" | 0 1 5 10ft. SCALE 1/4"=1'-0" | 0 1 5 8ft. SCALE 3/8"=1'-0" | 0 1 2 5ft. SCALE 1/2"=1'-0" | 0 5 10 15 SCALE 1:200 | 0 1 2 5 8 SCALE 1:100 | 0 .5 1 2 3 4 SCALE 1:50

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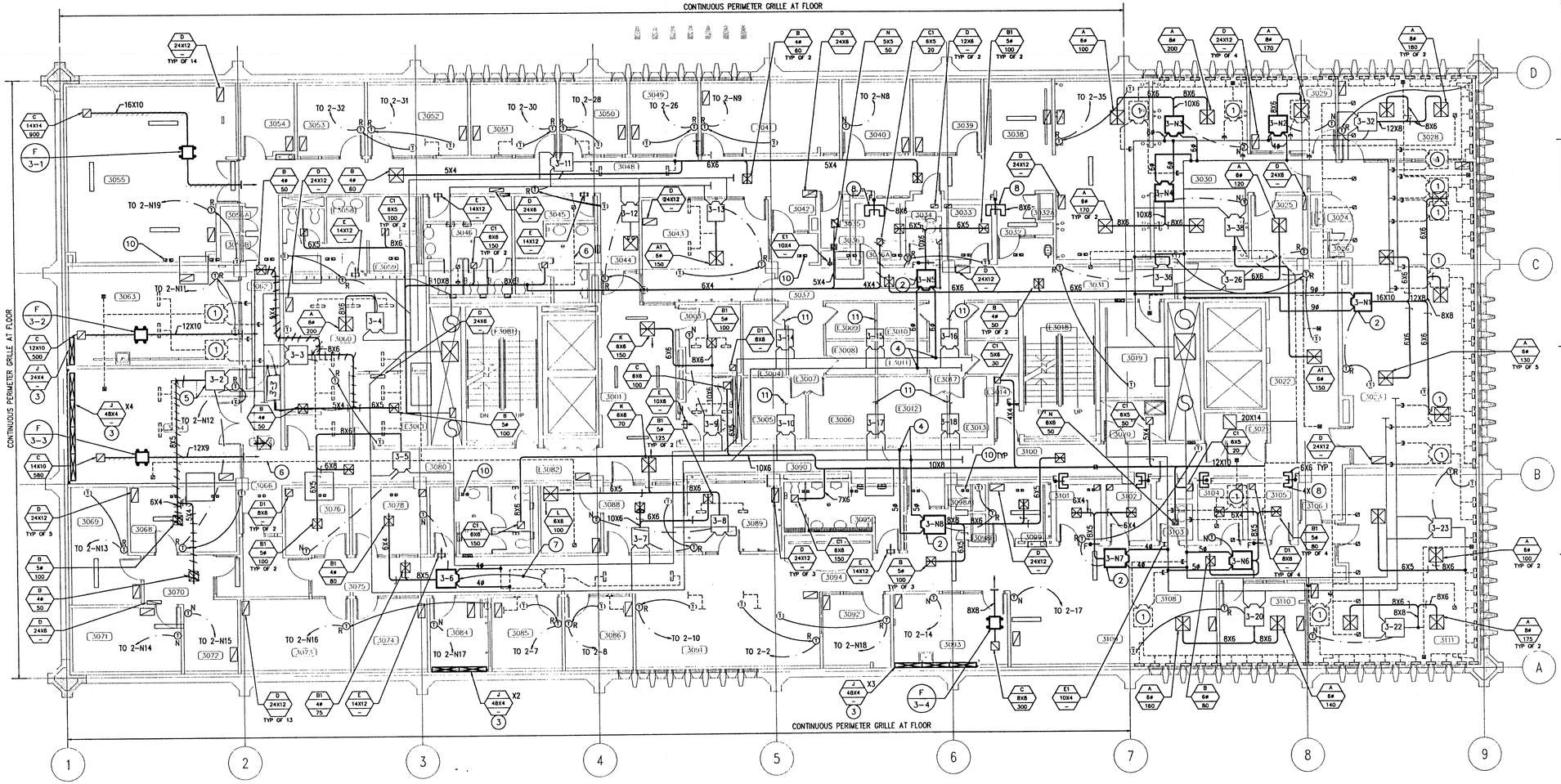

THIRD FLOOR PLAN
SCALE: 1/8"=1'-0"

DRAWING NOTES (#)

1. EXISTING DUAL DUCT BOX TO BE REMOVED. REMOVE ALL ASSOCIATED DUCTWORK AND CAP HIGH PRESSURE MAIN TAKE-OFFS (TYPICAL)
2. PROVIDE NEW DUAL DUCT BOX (TYPICAL)
3. SECTION 15800 TO PROVIDE SILL GRILLE AS PER ARCHITECTURAL DETAILS 2-A5-13 AND 9-A5.5 CONTRACTOR SHALL CONFIRM EXACT GRILLE SIZE WITH THE ARCHITECT BEFORE ORDERING.
4. TIE-IN TO EXISTING DUCT BRANCH (TYPICAL)
5. EXISTING DUAL DUCT BOX TO REMAIN (TYPICAL)
6. REMOVE EXISTING DUCTWORK AND GRILLE. CAP AT MAIN (TYPICAL)
7. RELOCATE EXISTING DUAL DUCT BOX
8. PROVIDE AIR TRANSFER DUCT IN CEILING SPACE, ACOUSTICALLY LINED, MIN. TWO 90° ELBOWS
10. 16X6 FLOOR PENETRATIONS BETWEEN 2ND AND 3RD FLOOR REMAINING AFTER REMOVAL OF EXISTING DUCTWORK TO BE PATCHED BY G.C. (TYPICAL)
11. EXISTING DUCTWORK TO REMAIN AS IS

AS-BUILT

xxx

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Consulting Engineers
Scouten Mitchell Sigurdson and Associates Limited
770 Bradford Street, Winnipeg, Manitoba R3H 0N3
Telephone (204) 775-0291 Fax (204) 772-2153

KEY TO DETAIL LOCATION

No. ____ DETAIL NUMBER
No. ____ DRAWING NUMBER

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DRAWINGS SHOULD NOT BE SCALED.

NO.	REVISION/ISSUE	DATE

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Fax: (204) 942-9626

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THE CITY OF WINNIPEG
PROPERTY AND DEVELOPMENT SERVICES
WINNIPEG POLICE SERVICE

CONSTRUCTION NORTH

Originally sealed by:
SMS Engineering

Carruthers Shaw and Partners Limited Architects
2145 Yonge Street
Toronto, Ontario M4P 2L5
416 482-5002 Fax 482-5040

DRAWN BY: EL/LG
CHECKED BY: PG
DATE: 24 AUGUST 1998

PROJECT TITLE:

Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building

151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:

THIRD FLOOR PLAN HVAC

SCALE: AS NOTED

PROJECT NO.	DWG. NO.
96023	M2.5

P.D.No. 98-038

151 Princess St.
96023 Project No.
Third Floor Plan -HVAC
M2.5 Sheet No.
AS-BUILTS Drawing Title
2000 Const. Year
Public Safety Building Renovations Project

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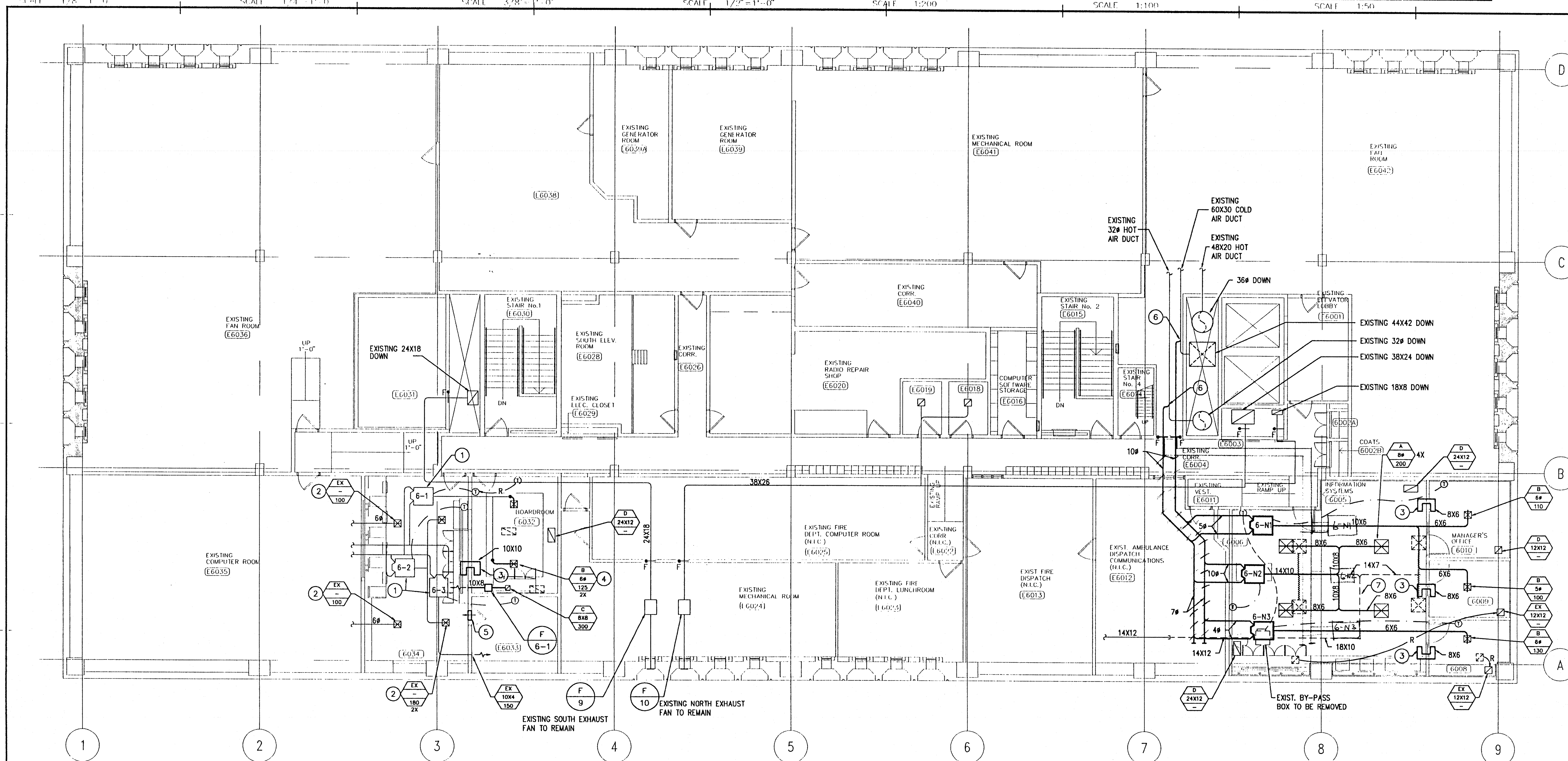

SIXTH FLOOR PLAN
SCALE: 1/8"=1'-0"

DRAWING NOTES

1. EXISTING DUAL DUCT BOX TO REMAIN. (TYP.)
2. EXISTING DIFFUSER TO BE RE-BALANCED. (TYP.)
3. AIR TRANSFER DUCT IN CEILING SPACE. TWO 90° ELBOWS, ACOUSTICALLY LINED.
4. REPLACE EXISTING CEILING DIFFUSER WITH NEW ONE.
5. EXISTING 16X4 AIR TRANSFER OPENING IN CEILING SPACE.
6. CONNECT TO EXISTING DUCT.
7. REMOVE EXISTING DUCT & DIFFUSERS, CAPPED-OFF AT MAIN.

AS-BUILT

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THE CITY OF WINNIPEG
PROPERTY AND DEVELOPMENT SERVICES
WINNIPEG POLICE SERVICE

CONSTRUCTION NORTH

Originally sealed by:
SMS Engineering

Carruthers Shaw and Partners Limited Architects

DRAWN BY: JT/LG
CHECKED BY: PG
DATE: 24 AUGUST 1998

PROJECT TITLE:
Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building
151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:
SIXTH FLOOR PLAN HVAC

SCALE: AS NOTED
PROJECT NO. 96023 | DWG. NO. M2.6
P.D.No. 98-038

Scouten Mitchell Sigurdson
Consulting Engineers
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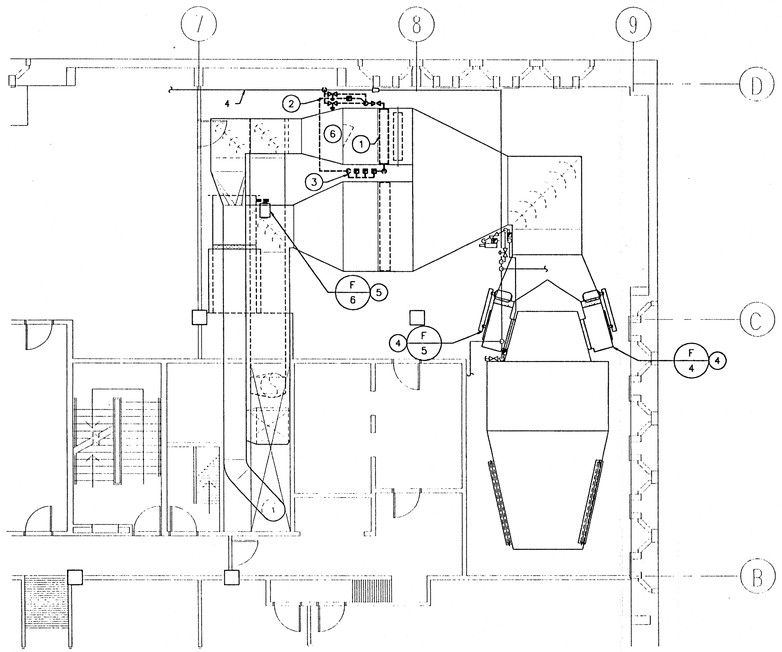
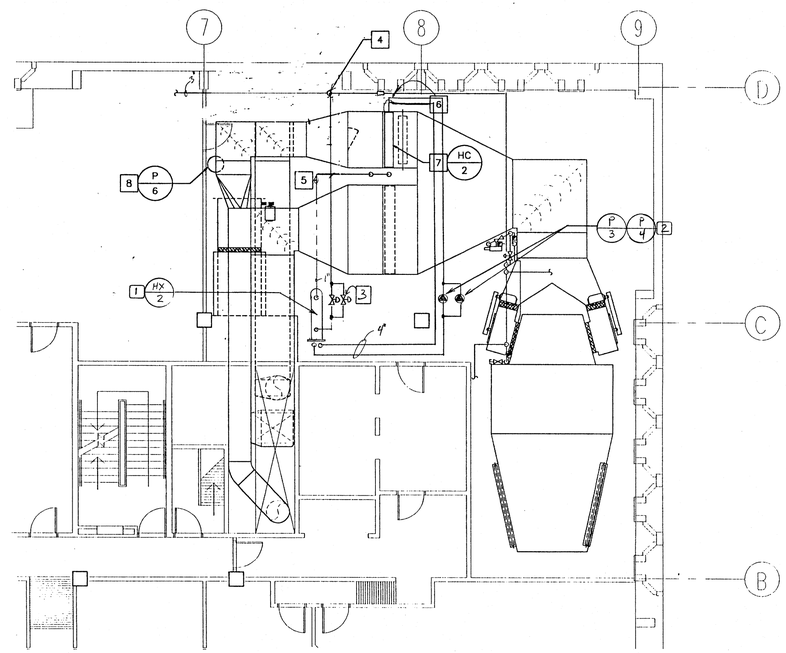
96023 Project No.
M2.6 Sheet No.
2000 Const. Year
151 Princess St.
Sixth Floor Plan -HVAC
AS-BUILTS
Public Safety Building Renovations

0 5 10 25ft. SCALE 1/8"=1'-0" | 0 1 5 10ft. SCALE 1/4"=1'-0" | 0 1 5 8ft. SCALE 3/8"=1'-0" | 0 1 2 5ft. SCALE 1/2"=1'-0" | 0 5 10 15 SCALE 1:200 | 0 1 2 5 8 SCALE 1:100 | 0 .5 1 2 3 4 SCALE 1:50



2 / M-1 NORTH MECHANICAL ROOM – DEMOLITION PLAN
SCALE: 1/4" = 1'-0"



4 / M-1 NORTH MECHANICAL ROOM – NEW COILS
SCALE: 1/4" = 1'-0"

DEMOLITION DRAWING NOTES (##)

1. REMOVE EXISTING STEAM COIL BANK FROM DUAL DUCT HOT DECK. TURN OVER TO OWNER. COIL BANK CONTAINS THREE 74" X 32" STEAM COILS VERTICALLY STACKED.
2. REMOVE EXISTING 1/3 – 2/3 CONTROL VALVES AND ASSOCIATED STEAM TRAPS. REMOVE ALL STEAM AND CONDENSATE PIPING FROM 4" STEAM MAIN TO COIL CONNECTIONS.
3. REMOVE ALL EXISTING STEAM TRAPS AND CONDENSATE PIPING FROM COIL OUTLET TO CONDENSATE DROP THROUGH FLOOR.
4. EXISTING SUPPLY FAN TO REMAIN.
5. EXISTING RETURN FAN TO REMAIN.
6. EXISTING COIL BANK ACCESS DOOR IN HOT DECK PLENUM.

DRAWING NOTES: (##)

1. NEW HEAT EXCHANGER ON FABRICATED STEEL STAND.
2. NEW VERTICAL IN-LINE PUMPS LOCATED AT FLOOR LEVEL.
3. NEW 1/3 – 2/3 STEAM CONTROL VALVES.
4. TIE IN NEW 4" LPS TO EXISTING 3" CONNECTION.
5. NEW 1" CONDENSATE RETURN LINE FROM HEAT EXCHANGER TO RUN ACROSS FLOOR AND DROP THROUGH FLOOR AT EXISTING DROP LOCATION.
6. GHS AND GHR PIPING TO COIL CONNECTIONS. REFER TO DETAIL 2/M-2.
7. INSTALL NEW GLYCOL HEATING COIL BANK IN HOT DECK PLENUM. PROVIDE GALVANIZED METAL INFILL PANELS TO MINIMIZE AIR BY-PASS. MAKE GOOD EXISTING 2" INTERNAL RIGID INSULATION IN PLENUM.
8. NEW GLYCOL FILL TANK AND PUMP.

DAPLEX PLUMBING & HEATING (1992) LTD.

AS-BUILT

xxx

Scouten Mitchell Sigurdson
Consulting Engineers
Scouten Mitchell Sigurdson and Associates Limited
770 Bradford Street, Winnipeg, Manitoba R3H 0N3
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THE CITY OF WINNIPEG
PROPERTY AND DEVELOPMENT SERVICES
WINNIPEG POLICE SERVICE

CONSTRUCTION NORTH

Originally sealed by:
SMS Engineering

Carruthers Shaw and Partners Limited Architects
2345 Yonge Street
Toronto, Ontario M4P 2E5
416 482-5002 Fax 482-5040

DRAWN BY: SKR/LG
CHECKED BY: HJW
DATE: 24 AUGUST 1998

PROJECT TITLE:
Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building
151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:
6TH FLOOR PART PLAN – NORTH MECH. ROOM

SCALE: AS NOTED

PROJECT NO.	DWG. NO.
98024	M2.7

P.D.No. 98-038

151 Princess St. 96023 Project No.
Sixth Floor Part Plan –North Mechanical Room M2.7 Sheet No.
AS-BUILTS 2000 Const. Year
Drawing Title
Public Safety Building Renovations
Project

9 8 7 6 5 4 3 2 1

151 Princess St.
Sixth Floor Part Plan – South Mechanical Room
AS-BUILTS
Public Safety Building Renovations
96023 Project No.
M2.8 Sheet No.
2000 Const. Year

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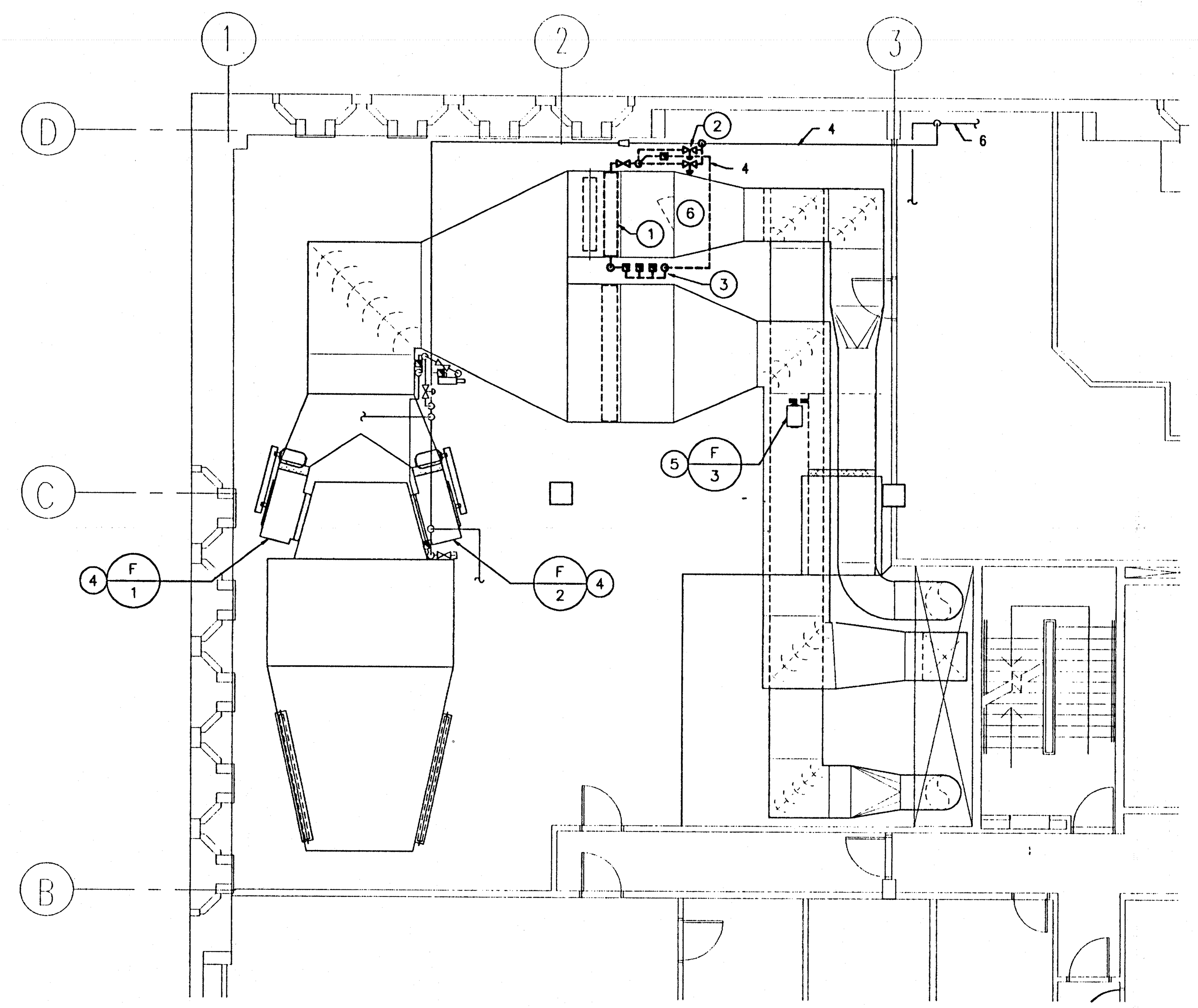
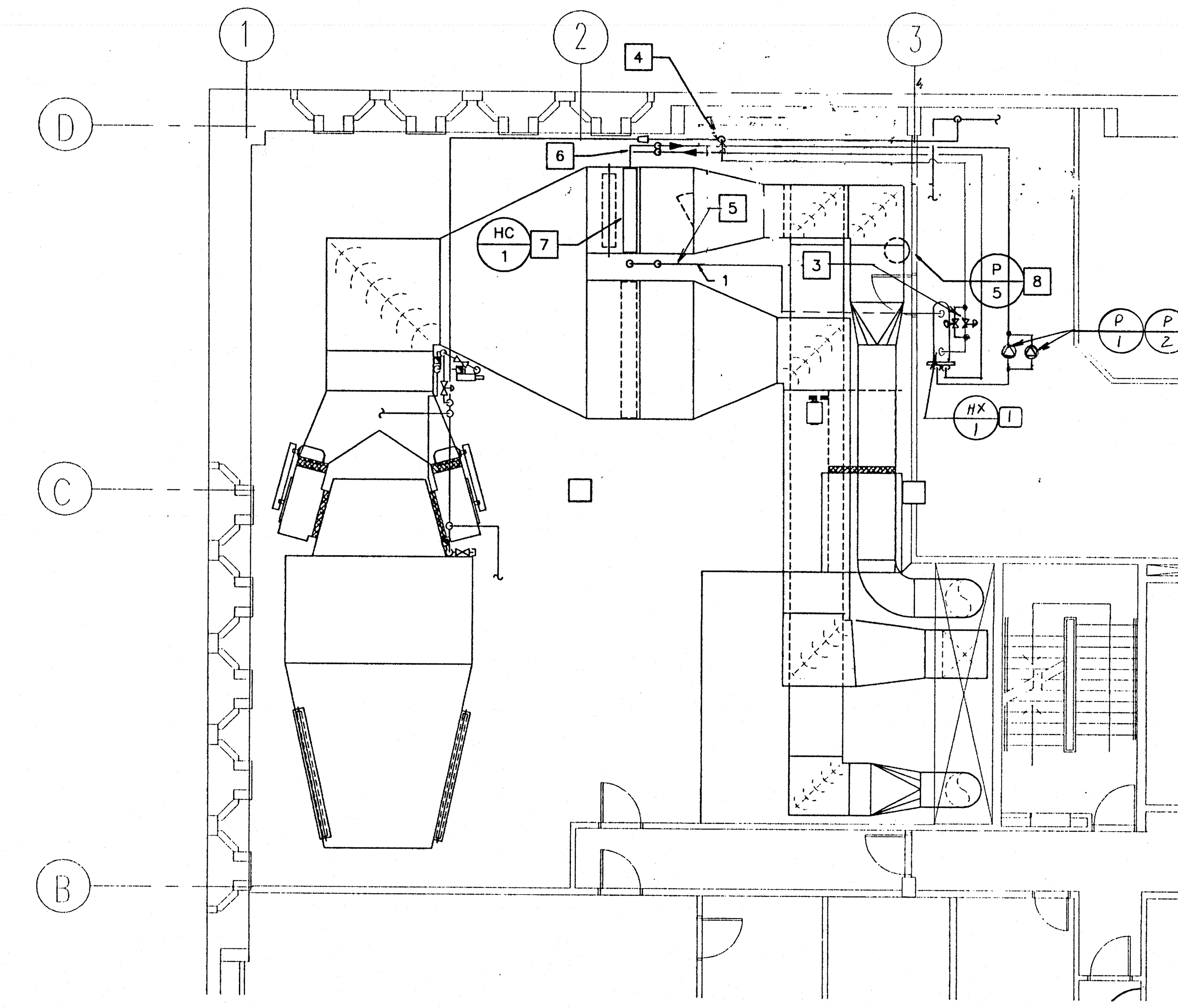


1 / M-1 SOUTH MECHANICAL ROOM – DEMOLITION PLAN
SCALE: 1/4" = 1'-0"



3 / M-1 SOUTH MECHANICAL ROOM – NEW COILS
SCALE: 1/4" = 1'-0"

DEMOLITION DRAWING NOTES (##)

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DRAWING NOTES: [##]

1. NEW HEAT EXCHANGER ON FABRICATED STEEL STAND.
2. NEW VERTICAL IN-LINE PUMPS LOCATED AT FLOOR LEVEL.
3. NEW 1/3 – 2/3 STEAM CONTROL VALVES.
4. TIE IN NEW 3" LPS TO EXISTING 3" CONNECTION.
5. NEW 1" CONDENSATE RETURN LINE FROM HEAT EXCHANGER TO RUN ACROSS FLOOR AND DROP THROUGH FLOOR AT EXISTING DROP LOCATION.
6. GHS AND GHR PIPING TO COIL CONNECTIONS. REFER TO DETAIL 2/M-2.
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8. NEW GLYCOL FILL TANK AND PUMP.

AS-BUILT
DAPLEX PLUMBING & HEATING (1992) LTD.

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THE CITY OF WINNIPEG
PROPERTY AND DEVELOPMENT SERVICES
WINNIPEG POLICE SERVICE

Originally sealed by:
SMS Engineering

Carruthers Shaw and Partners Limited Architects

DRAWN BY: SKR/LG
CHECKED BY: HJW
DATE: 24 AUGUST 1998

PROJECT TITLE:
Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building
151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:
6TH FLOOR PART PLAN – SOUTH MECH. ROOM

SCALE: AS NOTED
PROJECT NO.: 98024
DWG. NO.: M2.8

P.D.No. 98-038

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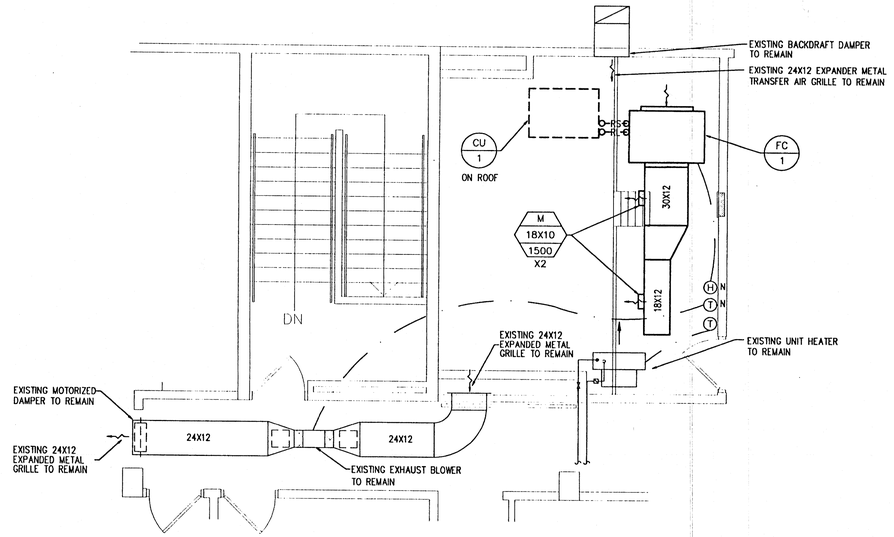
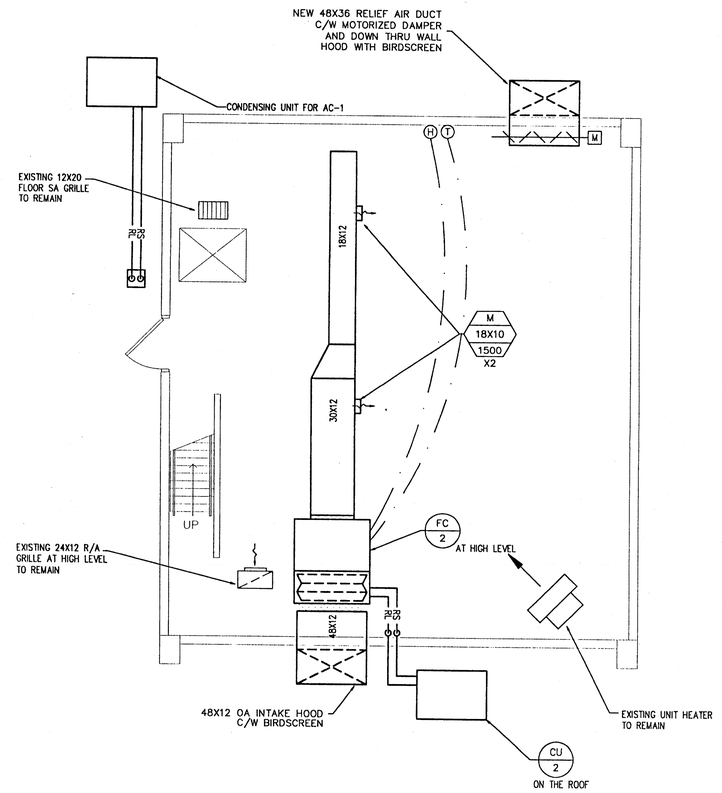
SCALE 1/8"=1'-0" | SCALE 1/4"=1'-0" | SCALE 3/8"=1'-0" | SCALE 1/2"=1'-0" | SCALE 1:200 | SCALE 1:100 | SCALE 1:50



SOUTH ELEVATOR MACHINE ROOM
SCALE 1" = 1'-0"



NORTH ELEVATOR MACHINE ROOM
SCALE 1" = 1'-0"

GENERAL NOTES

A PROVIDE 1" INDIRECT DRAIN FOR THE FC-1 AND FC-2 DRAIN PANS.

B ENSURE PROPER SETTINGS AT HEATING AND COOLING THERMOSTATS TO AVOID SIMULTANIOUS OPERATION OF HEATING AND COOLING.

C SUSPEND FC- 1 & 2 AT HIGH LEVEL.

D LOCATE CU- 1 & 2 ON THE ROOF.

DAPLEX PLUMBING & HEATING (1992) LTD.

AS-BUILT

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151 Princess St.
Sixth Floor Part Plan -Machine Room Ventilation
AS-BUILTS
Drawing Title
Public Safety Building Renovations
Project
96023 Project No.
M2.9 Sheet No.
2000 Const. Year

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Toronto, Ontario M4P 2E5
416 482-5002 Fax 482-5040

DRAWN BY: LG
CHECKED BY: PG
DATE: 24 AUGUST 1998

PROJECT TITLE:
Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building
151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:
ELEVATOR MACHINE ROOM VENTILATION

SCALE: AS NOTED

PROJECT NO.	DWG. NO.
98023	M2.9

P.D.No. 98-038

Project # 1990-005

THE CITY OF WINNIPEG

CIVIC PROPERTIES DEPARTMENT

TENDER FOR

STEAM CONVERSION
PUBLIC SAFETY BUILDING AND CIVIC CENTRE

TENDER NO. P.D. 90-40

PREPARED BY: ACTION CONSULTING ENGINEERS INC.

APPROVED BY:

CITY OF WINNIPEG

CIVIC PROPERTIES DEPARTMENT

ADDENDUM # 1

SPECIFICATION P.D. 90-40

Please note the following changes, corrections, additions, deletions, information and/or instructions in connection with the Tender Package. This addendum shall be incorporated in the Tender Package and shall form part of the Contract Documents.

---

1. PLEASE SEE ATTACHED SHEETS (2).

2. BI:5. Time and Date Set for Final Receipt of Bids:

   Revised Date WEDNESDAY, APRIL 4, 1990

Please acknowledge receipt of this addendum in Clause ~~16~~ 15 of the Tender Submission.

FAILURE TO ACKNOWLEDGE ADDENDA IN THE TENDER SUBMISSION MAY RENDER THE BID INFORMAL.

90/3/27
Date

H. Haak
Acting Director
Civic Properties Department

(DS000402)

ACTION
CONSULTING
ENGINEERS INC.

Addendum #1

G1156P-6(k)

March 27, 1990

ADDENDUM ME-01

Project: **STEAM CONVERSIONS**
PUBLIC SAFETY BUILDING & CIVIC CENTRE

To: ALL BIDDERS

Distribution:
Client (x)
G.C. ( )
M.C. ( )
E.C. ( )
Other ( )

GENERAL

G1 This addendum is issued to provide for certain revisions noted herein.

G2 All such revisions will become part of the Contract and the effects shall be included in the Tender Price.

G3 All work shall be performed in accordance with Contract Documents.

G4 Schedule of Prices:

1. Add a cash allowance of $2,000.00 for central monitoring hook-up in the base bid.
2. Delete #4 Structural Steel from page 2 of 2, leaving it on page 1 of 1.

G5 Asbestos Removal:

1. The existing insulation contains asbestos.
2. Remove insulation in strict accordance with the authority having jurisdiction, using a qualified asbestos removal contractor.
3. Before the work begins, submit procedures for removal and disposal and obtain approval of Manitoba Department of Environment and the Workplace Safety & Health Division of the Department of Labour. If requested, submit proof to the Consultant.

G6 BI:13 Bid Security:

1. Add to 13.02 "A written undertaking is not required for Bid Security submitted in the form of a certified cheque or bill of exchange in accordance with BI:13.01(3).

G7 Schedule 510 Main:

1. New steam header and condensate connection to existing, revised gas connection must be in place prior to loss of central steam in June, 1990, so that the existing boiler can be fired continuously.

G8 Demolition:

1. Leave the existing steam piping installed c/w valves and PRV stations intact.
2. Also leave the central steam pipe connection between Public Safety Building and City Hall.

3. Remove air handler from the power garage and turn over the motor to the Owner.

MECHANICAL

M1 **Refer to Section 15016:**

1. The following is an approved **Alternate Manufacturer**: Specialty Chemicals.

M2 **Boilers:**

1. Note that the micro processor based controls are required for each of the two boiler rooms.

2. Provide a Department of Labour approved full set of automatic controls for guarded status for both boiler rooms.

M3 **Rooftop Units:**

1. Add 2 - 100 watt marine lights and switch in each service corridor.

2. Service corridor shall be weatherproof, no thermal breaks, 2 cam action handles for the access door, height to match unit and width to be 4 feet.

3. Note that the units are direct forced.

STEAM CONVERSIONS - PUBLIC SAFETY BUILDING & CIVIC CENTRE

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STEAM CONVERSIONS - PUBLIC SAFETY BUILDING & CIVIC CENTRE

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03300	Cast-In-Place Concrete	4
04200	Masonry	3
04220	Concrete Unit Masonry	1
05120	Structural Steel	2
05410	Steel Studs	2
05500	Metal Fabrications	2
05510	Metal Stairs	2
06100	Rough Carpentry	3
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STEAM CONVERSIONS - PUBLIC SAFETY BUILDING & CIVIC CENTRE

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STEAM CONVERSIONS

G-1156
MAR.1/90

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S-1	PARKADE ROOF PLAN
S-2	PARTIAL 4TH FLOOR PLAN AT PARKADE ELEVATOR CORE
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STEAM CONVERSIONS

G-1156
MAR.1/90

DWG NUMBER	TITLE
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M-2	PSB SCHEMATIC MECHANICAL
M-3	PSB SCHEMATIC MECHANICAL
M-4	PUBLIC SAFETY BLDG. ROOM B-30 MECHANICAL
M-5	PUBLIC SAFETY BLDG. NORTH SIDE-MECHANICAL
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M-7	CARPARK BOILER ROOM MECHANICAL
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M-9	NATURAL GAS PUBLIC SAFETY BLDG.- MECHANICAL
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E-3	ADMINISTRATION BLDG. SUB-BASEMENT-ELECTRICAL
E-4	ADMINISTRATION BLDG. - 7TH FLOOR BOILER ROOM-ELECTRICAL

PART A

TENDER SUBMISSION

PLEASE NOTE

ALL FORMS MAKING UP THE TENDER SUBMISSION MUST BE COMPLETED, SIGNED WHERE INDICATED AND RETURNED TO CONSTITUTE A FORMAL BID.

IF THIS PROCEDURE IS NOT FOLLOWED, THE BID WILL BE CONSIDERED INFORMAL.

PART B

BIDDING INSTRUCTIONS

CITY OF WINNIPEG

BIDDING INSTRUCTIONS

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BI:2. Project Title

BI:3. Project Description/Scope

BI:4. Deposit for Tender Package

BI:5. Time and Date Set for Final Receipt of Bids

BI:6. General Enquiries

BI:7. Tender Submission

BI:8. Prices: Lump Sum

BI:9. Qualification

BI:10. Subcontracting

BI:11. Not Used

BI:12. Schedule - Completion Date

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BI:19. Tender Submission

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BI:24. Award of Contract

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CITY OF WINNIPEG

BIDDING INSTRUCTIONS

BI:1. Tender Number: P.D. 90-40

BI:2. Project Title: STEAM CONVERSIONS - PUBLIC SAFETY BUILDING AND CIVIC CENTRE

BI:3. Project Description/Scope:

Replace existing Central steam services with on-site natural gas fired low pressure steam boilers.

BI:4. Deposit for Tender Package:

Bidders desiring to take out a copy of the Tender Package which includes the combined documents consisting of the Bidding Instructions; the General Conditions; the Supplemental Conditions; the Drawings; the Specifications; the Tender Submission and all Addenda issued on account of any or all of the foregoing further detailing, explaining or altering same must deposit with the City the sum of

Twenty-five dollars

This deposit will be refunded upon return of the Tender Package excluding the Tender Submission, complete and in good condition, no later than Fourteen (14) Calendar Days after the Time and Date Set for the Final Receipt of Bids.

BI:5. Time and Date Set for Final Receipt of Bids:

Time and Date Set for Final Receipt of Bids: 12:00 noon Winnipeg Time

March 30, 1990

at Purchasing Department, Main Floor Administration

Building, 510 Main Street, Winnipeg, Manitoba, R3B 1B9

Except where extended by Addendum, Bids received later than the time stated above will not be accepted and will be returned unopened.

BIDDING INSTRUCTIONS

BI:6. General Enquiries

General enquiries may be directed to:

Action Consulting Engineers Inc.
4 Donald Street South
Winnipeg, Manitoba, R3L 2T7
Telephone: 284-8551

BI:7. Tender Submission:

7.01 The Tender Submission shall consist of the following:

(1) Form of Tender

(2) Form A - Schedule of Prices

(3) Form B - Qualification

(4) Form C - Sub-contractors

(5) Form E - Schedule of Work

(6) Form F - Bid Bond

(7) Bid Security

(8) Written undertaking specified in BI:13.02 to provide the Performance Security specified in the BI:14.

7.02 The Tender Submission shall be fully completed and returned by the Bidder with all required entries made clearly and completely in ink to constitute a formal Bid.

BI:8. Prices - Lump Sum:

8.01 The Work shall be paid for on a lump sum price basis as identified on Form A: Lump Sum - Schedule of Prices.

8.02 Prices tendered shall be gross prices including all applicable duty, freight, cartage, Federal and Provincial Taxes and charges governmental or otherwise paid and including profit and all compensation which shall be due to the Contractor for supplying labour, materials, plant and supervision not only for the classifications expressly specified but for those which have been omitted and all details necessarily connected with the completion of the Work and all risks and contingencies connected therewith.

BIDDING INSTRUCTIONS

BI:9. Qualification:

9.01 No contract shall be awarded to any Bidder who, in the judgement of the Board of Commissioners, is not a responsible Bidder or does not have all the necessary experience, capital, organization, and equipment to perform the Work in strict accordance with the terms and provisions of the Contract. Each Bidder shall be prepared to submit, on request of the City, the following information:

1. Proof that he is incorporated or otherwise authorized to do business in Manitoba;

2. Proof that he is financially capable of carrying out the terms of the Contract;

3. Proof that he has successfully carried out work, similar in scope and value, or is fully capable of performing the Work required to be done in accordance with the terms of the Contract;

4. Such other pertinent data as may be required by the Contract Administrator.

9.02 Bidders shall provide, on the request of the Contract Administrator, full access to any of the Bidder's facilities to evaluate the Bidder's ability to perform the Work.

9.03 The Bidder shall complete Form B - Qualification giving a list of previously completed work, similar in scope and value, in sufficient detail to demonstrate his qualification to undertake this Work.

BI:10. Subcontracting:

10.01 Bidders who propose to sublet any portion of the Work shall complete Form C1 - Sub-contractors and Form C2 - Sub-contractors (Materials), giving a complete list of the Sub-contractors who he proposes to engage with a description of the Work to be sublet.

10.02 No more than one Sub-contractor may be named for a class of Work unless all Sub-contractors named are proposed to do a portion of that class of the Work. The Bidder shall append to Form C1 - Sub -contractors and Form C2 - Sub-contractors (Materials) a statement clearly detailing such apportioning.

BIDDING INSTRUCTIONS

10.03 Where no Sub-contractors are identified, it will be interpreted that the Bidder proposes to execute that class of the Work with Bidder's own forces.

BI:12. Schedule - Completion Date

12.0 The Bidder shall complete Form E: Completion Date - Schedule of Work indicating below each "percentage of work completed" the date upon which he anticipates reaching the percentage indicated for each activity listed.

BI:13. Bid Security:

13.01 Each Tender Submission shall be accompanied by Bid Security in the form of:

(1) a Bid Bond of a surety company entitles to conduct business in the Province of Manitoba, in such form as shall be determined by the Solicitor in the amount of at least ten percent (10%) of the Total Bid Price; or

(2) an irrevocable Letter of Guarantee, drawn on a bank, credit union, caisse populaire, or trust company entitled to conduct business in the Province of Manitoba in such form as shall be determined by the Solicitor and drawn on a Winnipeg Branch of such institution in the amount of at least five percent (5%) of the Total Bid Price; or

(3) a certified cheque or bill of exchange drawn on a bank, credit union, caisse populaire, or trust company entitled to conduct business in the Province of Manitoba, in such form as shall be determined by the Solicitor and drawn on a Winnipeg Branch of such institution in the amount stipulated for the Performance Security in BI:14.

BIDDING INSTRUCTIONS

13.02 Each Bid Security in accordance with BI:13.01 (1) or (2) shall be accompanied by a written undertaking to provide Performance Security, in the form of:

(1) an Agreement to Bond - Form G, if the Performance Security is proposed to be a Performance Bond; or

(2) a letter from a financial institution entitled to conduct business in the Province of Manitoba indicating its willingness provide an irrevocable Letter of Guarantee if the Performance Security is proposed to be an irrevocable Letter of Guarantee.

INSERT Ref. to BI 01

13.03 The Bid Security of the successful Bidder and the next two lowest evaluated responsive Bidders will be released by the City when a Contract for the Work has been duly executed by the successful Bidder and the Performance Security furnished as provided herein. The Bid Securities of all other Bidders will be returned when a Contract is awarded.

13.04 The Bid Security of all Bidders will be released by the City as soon as practicable following notification by the Commissioner to the Bidders that no award of Contract will be made pursuant to the Invitation to Tender issued by the City.

13.05 The City will not pay any interest on certified cheques furnished as Bid Securities.

BI:14. Performance Security:

14.01 The successful Bidder shall provide Performance Security in the form of:

(1) a Performance Bond in the form attached to these Bidding Instructions (Form H - Performance Bond) in the amount of fifty percent (50%) of the Contract Price; or

(2) an irrevocable Letter of Guarantee drawn on a bank, credit union, caisse populaire or trust company entitled to conduct business in the Province of Manitoba, in such form as shall be determined by the Solicitor and drawn on a Winnipeg branch of such institution in the amount of fifty percent (50%) of the Contract Price; or

BIDDING INSTRUCTIONS

(3) a certified cheque or bill of exchange drawn on the bank, credit union, caisse populaire or trust company entitled to conduct business in the Province of Manitoba, in such form as shall be determined by the Solicitor and drawn on a Winnipeg branch of such institution in the amount of fifty percent (50%) of the Contract Price.

14.02 The successful Bidder shall provide the required Performance Security following notification of the award of the Contract by way of Letter of Intent and prior to the commencement of any Work but in no event later than the date specified in the General Conditions for the return of the executed Contract Documents. Where a certified cheque or bill of exchange has been provided as Bid Security, it will be retained as the Performance Security and no further submission is required.

14.03 The City will not pay any interest on certified cheques furnished as a Performance Security.

BI:15 Insurance:

15.01 The Contractor shall be required to provide the Insurance Coverage specified in the Supplemental Conditions prior to the commencement of any Work but in no event later than the date specified in the General Conditions for the return of the executed Contract Documents.

B:16. Signatures:

16.01 The Tender Submission shall be signed in accordance with the following requirements:

(1) If the Bid is submitted by a sole proprietor carrying on business in his own name, his name shall be printed immediately above his signature; or

(2) if the Bid is submitted by a person carrying on a business under a name other than his own, his business name shall be printed immediately above his signature; or

(3) if the Bid is submitted by a partnership, the full name of the firm or business shall be printed immediately above the signature of the partner or partners who have authority to sign for the partnership; or

BIDDING INSTRUCTIONS

(4) if the Bid is submitted by a corporation, the full name of the corporation shall be printed immediately above the signature of its duly authorized officers and the corporate seal affixed; and

(5) the signature of persons bidding must be in their respective handwriting.

16.02 Bids submitted by agents proposing to represent principals must be accompanied by a Resolution of the principals or by an irrevocable Letter of Authority and Direction from the principals in a form authorized to sign and submit the Tender Submission on behalf of the principals, which Contract, when so executed, will bind the principals and have the same effect as if it were duly signed by the principals.

16.03 In the case of a joint Bid being submitted by two or more persons, the word "Bidder" therein and the pronouns referring to the Bidder shall be understood to have a plural meaning, and the undertakings, covenants and obligations of such joint Bidders in the Tender Submission and in the Contract, when awarded, shall be both joint and several.

BI:17. Discrepancies:

17.01 Bidders who find discrepancies or omissions in the Tender Package or are unsure of the meaning or intent thereof, shall notify the Contract Administrator.

17.02 The Contract Administrator will, if deemed necessary, issue Addenda to all Bidders.

17.03 Addenda will be issued at least seventy-two (72) hours prior to the Time and Date Set for Final Receipt of Bids in BI:5. Bidders are advised to direct all questions or comments to the Contract Administrator at least one hundred and twenty (120) hours prior to the Time and Date Set for Final Receipt of Bids in BI:5 to allow time for the preparation and distribution of necessary Addenda.

17.04 Notwithstanding the generality of the foregoing, the Contract Administrator may extend the Time and Date for the Final Receipt of Bids at any time for cause.

17.05 Oral interpretations made to any Bidder shall not effect a modification of any provision of the Contract Documents.

BI:18. Substitutes:

18.01 The Contract is based on the materials, equipment, methods and products specified in the Contract Documents.

BIDDING INSTRUCTIONS

18.02 Where the phrases "or equal" or "or alternate" occur in the Contract Documents, Bidders must not assume that a substitute will be allowed unless application has been made to and prior written approval has been granted by the Contract Administrator.

18.03 All requests involving a substitute shall include sufficient information and details to enable the Contract Administrator to determine the acceptability of the material, equipment, method, or product as either an equal or alternate. The request shall identify any and all changes required in the applicable Work, and all changes to any other Work,. which would become necessary to accommodate the requested substitute, as well as any anticipated cost or time savings that may be associated with the substitute. Further, the request shall certify that the substitute will adequately perform the functions called for by the general design, be similar and of equal substance to that specified, is suited to the same use and capable of performing the same function as that specified and can be incorporated into the Work, strictly in accordance with the Schedule of Work and Completion Date(s) specified in the Tender Submission.

18.04 Request for approval of a substitute must be received in writing by the Contract Administrator not less than seven (7) Calendar Days prior to the Time and Date Set for Final Receipt of Bids in BI:5.

18.05 Approval for a substitute may be granted as an equal or as an alternate and an Addendum will be issued to all Bidders advising of same.

18.06 If a substitute is approved as an equal, Bidders may use the substitute in place of the specified item.

18.07 If a substitute is approved as an alternate, Bidders must base their Total Bid Price upon the specified item but may indicate an alternative price based upon the substitute.

18.08 No later claim by the Contractor for an addition to the Total Bid Price because of any other changes in the Work necessitated by the use of an approved and accepted alternative will be considered.

BI:19. Tender Submission:

19.01 The Tender Submission, as identified in Clause BI:7., shall be submitted enclosed and sealed in the envelope provided. The envelope must be clearly marked with the Tender Number and the Bidder's name and address.

BIDDING INSTRUCTIONS

19.02 Samples or other submissions required to accompany the Render Submission may be packaged separately, but shall be clearly marked with the Tender Number, the Bidder's name and address, and an indication that the contents are supplemental to his Tender Submission.

19.03 Tender Submissions shall be submitted to the address specified in Clause BI5.

19.04 Except where extended by Addendum, Tender Submissions received after the Time and Date Set for Final Receipt of Bids in BI:5 will not be accepted and will be returned unopened.

BI:20. Opening of Tender Submissions:

20.01 Tender Submissions will be opened publicly, after the Time and Date Set for Final Receipt of Bids in BI:5 has elapsed, in the office of the Purchasing Department, Administration Building, Civic Centre, 510 Main Street, Winnipeg, Manitoba, R3B 1B9, or in such other office as may be designated by the Purchasing Department. Bidders or their representatives may attend.

BI:21. Irrevocable Bid:

21.01 Bids submitted by the Bidder shall be irrevocable for the time period specified in Clause 5 of the Form of Tender.

21.02 The acceptance by the City of any Bid shall not release the Bids of the next two lowest evaluated responsive Bidders and these Bidders shall be bound by their Bids on such Work until a Contract for the Work has been duly executed and the Performance Security furnished as herein provided, but any Bid shall be deemed to have lapsed unless accepted within the time period specified in Clause 5 of the Form of Tender.

BI:22. Withdrawal of Bids:

22.01 Bidders may withdraw their Bid without penalty at any time prior to the Time and Date Set for Final Receipt of Bids in BI:5.

22.02 Bidders who withdraw their Bid after the Time and Date Set for Final Receipt of Bids in BI:5 but before award of the Contract shall forfeit their Bid Securities unless the Board of Commissioners allows otherwise.

BIDDING INSTRUCTIONS

BI:23. Rejection of Bids:

23.01 The City may reject a Bid, as informal if the Tender Submission is incomplete, obscure or conditional, or contains additions, deletions, alterations or other irregularities.

23.02 The City may reject Bids that are submitted by Bidders who, in the judgement of the Board of Commissioners, are not responsible or are not qualified to conduct and complete the Work.

23.03 The City may reject all or any part of any Bid and/or waive technical requirements if, in the judgement of the Board of Commissioners, the interests of the City so require.

BI:24. Award of Contract:

24.01 The City will award the Contract, or announce that no award will be made, within the time period specified in Clause 5 of the Form of Tender. Bidders will be bound by their Bid for this period.

24.02 Where evaluation criteria are specified in the Supplemental Conditions, an award of Contract will be based on evaluated Bids.

24.03 Where the Contract is proposed in separate sections, or with alternatives, the City reserves the right to award any section separately, or to choose any alternative which is in its best interests.

BI:25. Execution of Contract:

25.01 The successful Bidder shall execute an indenture with the City in the form and in the manner required by the Solicitor.

25.02 The form and nature of this indenture may be ascertained previous to submitting a Bid on the Work by applying to the Solicitor.

CITY OF WINNIPEG

PERFORMANCE BOND

Know all men by these present that we,

(hereinafter called the "Principal), and
(hereinafter called the "Surety"),
are held and firmly bound unto **THE CITY OF WINNIPEG** (hereinafter called the "Obligee"), in the sum of

dollars

($) of lawful money of Canada to be paid to the Obligee, or its successors and assigns (or ourselves, our and each of our executors, administrators and assigns) jointly and severally firmly by these presents.

SIGNED, SEALED AND DELIVERED this day of A.D. 19

WHEREAS the Principal,

, bound by a Contract in writing, under seal, bearing date the day of , A.D. 19 , has contracted with the Obligee to:

Steam Conversions - Public Safety Building and Civic Centre

NOW THEREFORE the condition of the above obligation is such that if the Principal,

, or its successors or assigns (or his executors, administrators or assigns) shall carry out and perform said Contract and every part thereof in the manner and within the times in said Contract set forth and in accordance with the terms and conditions in said Contract specified, and shall perform the Work in a good, proper, workmanlike manner, and make all the payments whether to the Obligee or to others as therein provided, and in every other respect comply with the conditions and perform the covenants in the aforesaid Contract contained, and shall indemnify and save harmless the Obligee against and from all loss, costs, damages, claims, and demands of every description as in said Contract set forth, and from all penalties, assessments, clains, actions for loss, damages or compensation whether under "The Workers Compensation Act", or any

other Act or otherwise arising out of or in any way connected with the performance or non-performance of the said Contract or any part thereof, and save the Obligee harmless therefrom, up to and including one (1) year from the date of the Certificate ot Total Performance of the Work, THEN THIS OBLIGATION TO BE VOID, but otherwise to remain in full force and effect. Provided always, however, that the total of the obligation of this Performance Bond shall be limited to the sum of

dollars

($).

AND IT IS HEREBY DECLARED AND AGREED that the Surety shall be liable as Principal, and that nothing of any kind or matter whatsoever that will not discharge the Principal shall operate as a discharge or release of liability of the Surety, any law or usage relating to the liability of Sureties to the contrary notwithstanding.

IN WITNESS WHEREOF the parties have hereunto caused their respective corporate seals to be affixed, attested by the signature of their proper officers in that behalf.

SIGNED, SEALED AND DELIVERED in the presence of:

(Name of Principal)

Per: _____

Per: _____

(Name of Surety)

By: _____
Attorney-in-Fact

PART C

GENERAL CONDITIONS

THE CITY OF WINNIPEG

GENERAL CONDITIONS FOR CONSTRUCTION CONTRACTS

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THE CITY OF WINNIPEG

GENERAL CONDITIONS FOR CONSTRUCTION CONTRACTS

ARTICLE I — INTERPRETATION

GC.1.01 Definitions:

Where used in these General Conditions and in the other documents forming part of the Contract:

(1) **"Bid" or "Tender"** means the offer as proposed by the Bidder submitted on the Tender Submission. The terms "Bid" or "Tender" are used interchangeably herein.

(2) **"Bidder"** means any person submitting a Bid for the Work.

(3) **"Board of Commissioners"** means the Board of Commissioners as that term is defined under The City of Winnipeg Act and any By-Law relative to the organization of the City.

(4) **"Calendar Day"** means the period from one midnight to the following midnight.

(5) **"City"** means The City of Winnipeg as incorporated under The City of Winnipeg Act, Chapter 105, Statutes of Manitoba 1971, and any subsequent amendments thereto.

(6) **"Commissioner"** means that member of the Board of Commissioners or his designate having jurisdiction over the Department of the City responsible for the administration of the Contract.

(7) **"Contract"** or **"Contract Documents"** means the combined documents consisting of the Agreement; Addenda; the Bidding Instructions; these General Conditions; the Supplemental Conditions; the Drawings; the Specifications; the Tender Submission; Shop Drawings; Performance Security and all other exhibits mentioned in the Contract Documents as forming part thereof.

(8) **"Contract Administrator"** means a person duly authorized by the Commissioner in writing to represent the City in the Work pertaining to this Contract.

(9) **"Contract Time"** means the time stipulated in the Contract Documents for Substantial Performance of the Work.

(10) **"Contractor"** means the person undertaking the execution of the Work under the terms of the Contract.

(11) **"Council"** means the Council of The City of Winnipeg.

(12) **"Drawings"** or **"Plans"** means drawings or plans which show the character and scope of the Work to be performed and which have been prepared or approved by the Contract Administrator and are referred to in the Contract Documents. The terms "Drawings" or "Plans" are used interchangeably herein.

(13) **"Extra Work"** means the furnishing of labour, services, materials, Plant, equipment and/or the performance of any Work not directly or by implication called for by the Contract.

(14) **"Other Contractor"** means any person employed by or having a contract directly or indirectly with the City otherwise than through the Contractor.

(15) **"Person"** means an individual, firm, partnership, association or corporation, or any combination thereof, and includes heirs, administrators, executors or legal representatives of a person.

(16) **"Plant"** means all material and/or equipment and/or things brought to or constructed upon the Site by the Contractor for the performance of the Work, but does not include materials, equipment or other things which are to form part of the permanent Work.

(17) **"Shop Drawings"** means all drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are prepared by the Contractor, and Sub-contractor, manufacturer, supplier or distributor and which illustrates the equipment, material or some portion of Work.

(18) **"Site"** means the lands and other places on, under, in or through which the Work is to be executed and any other lands or places authorized by the Commissioner for the purposes of the Contract.

(19) **"Solicitor"** means the City Solicitor of The City of Winnipeg or the person from time to time duly authorized by the City Solicitor to act in such capacity in his stead.

(20) **"Specification"** means the written description of the physical or functional characteristics of the supplies, services and construction, or any part thereof, including without limitation any requirement for testing or inspection.

(21) **"Street"** means any public highway, lane, square, subway, bridge, wharf, thoroughfare or way or any part thereof as same as defined in The City of Winnipeg Act, Chapter 105, Statutes of Manitoba 1971 and any subsequent amendment thereto.

(22) **"Sub-contractor"** means a Person contracting with the Contractor or another Sub-contractor of the Contractor for the execution of a part or parts of the Work or for the furnishing of material.

(23) **"Substantial Performance"** means Substantial Performance as defined in The Builders' Liens Act of Manitoba, S.M. 1980-81, or any subsequent amendment thereto, and as certified by the Contract Administrator.

(24) **"Surety"** means the Person who executes the Bond guaranteeing the fulfillment of the Contract, all as required by the Contract Documents, to be furnished by the Contractor.

(25) **"Tender Submission"** means the portion of the Tender Package that must be returned to constitute a formal Bid.

(26) **"Tender Package"** means the Bidding Instructions; these General Conditions; the Supplemental Conditions; the Drawings; the Specifications; the Tender Submission; Performance Security and all Addenda.

(27) **"Total Performance"** of the Work means when the entire Work, except those items arising from the provisions of Article X-WARRANTY, have been performed to the requirements of the Contract Documents and is so certified in writing by the Contract Administrator.

(28) **"Work"** means the carrying out and the doing of all things, whether of a temporary or permanent nature, that are to be done by the Contractor, pursuant to the terms and conditions of the Contract and in particular, but without limiting the generality of the foregoing, includes the furnishing of all labour, services, materials, Plant and/or equipment necessary or incidental to the performance of the Contract, including all Extra Work or Changes in the Work which may be ordered as herein provided.

(29) **"Working Day"** means any Calendar Day, other than a Saturday, Sunday or a Statutory or Civic Holiday, on which, in the opinion of the Contract Administrator, atmospheric and/or Site conditions are such that the Contractor is able to work at least seven (7) hours during the period between 7:00 a.m. Winnipeg time or the time the Contractor's operations normally commence, whichever is the earlier, and 7:00 p.m. Winnipeg time.

GC.1.02 Interpretation:

(1) This Contract shall inure to the benefit of and be binding on the respective executors, administrators, successors and assigns of the City and the Contractor.

(2) Where the "Contractor" as defined herein consists of more than one person or corporation, their liability to perform the covenants herein contained to be performed by the Contractor shall be joint and several.

(3) Wherever the singular or masculine are used, the same shall be construed as meaning the plural or the feminine or the neuter as the context may reasonably require.

(4) This Contract has been entered into and shall be governed by and construed and enforced in accordance with the laws of the Province of Manitoba.

GC.1.03 Headings for Convenience Only:

Headings, titles and marginal notes in the Contract are inserted for convenience only and are not explanatory of the Articles or Clauses with which they appear.

GC.1.04 Inconsistencies:

In the event of conflicts between Contract Documents, the following shall apply:

(a) figured dimensions shown on a Drawing shall govern over scaled or implied dimensions on the same Drawing;

(b) Drawings of larger scale shall govern over those of smaller scale of the same date;

(c) Specifications shall govern over Drawings of the same date;

(d) the General Conditions shall govern over Specifications;

(e) the Supplemental Conditions shall govern over the General Conditions;

(f) the executed Agreement between the City and Contractor shall govern over all documents; and

(g) notwithstanding the foregoing, documents of a later date shall always govern over documents of the same category of an earlier date.

ARTICLE II — DECLARATIONS BY CONTRACTOR

GC.2.01 Investigating the Site:

The Contractor declares that in bidding for the Work and in entering into the Contract, he has investigated the Site, the character of the Work to be done and all local conditions including the location of any utility which can be determined from the records or other information available at the offices of any public authority or person, including a municipal corporation and any board or commission thereof, having jurisdiction or control over the utility, that might affect his Bid or his acceptance of the Work, or that, not having so investigated, and except as hereinafter provided he is willing to assume and does assume, all risk of conditions now existing or arising in the course of the Work which might or could make the Work, or any items thereof more expensive in character, or more onerous to fulfill, than was contemplated or known when the Bid was completed or the Contract signed. The Contractor also declares that in bidding for the Work and in entering into the Contract he did not and does not rely upon information furnished by the City or any of its servants or agents respecting the character or nature of the surface and subsurface conditions at the Site, or the location, character, quality or quantity of the materials to be removed, or to be employed in the construction of the Work, or the character of the Plant needed to perform the Work or the general and local conditions and shall verify all matters concerning access to the Site, power supplies, location of existing services, utilities, materials necessary for the completion of the Work and all other matters which could in any way affect the performance of the Work under the Contract other than information furnished in writing for or in connection with the Bid or the Contract by the Contract Administrator.

GC.2.02 Change in Site Conditions

Notwithstanding the generality of the foregoing, the Contractor shall refer any substantial difference in the character or nature of the surface or subsurface conditions at the Site, or the location, character, quality or quantity of the materials to be removed than the conditions set out in the Plans, Specifications or other information furnished in writing for or in connection with the Bid or the Contract by the Contract Administrator for use by the Contractor in preparing his Bid, for resolution in the manner prescribed in GC.4.06.

GC.2.03 Good Faith:

The Contractor declares that he has submitted his Bid and entered into this Contract with the City in good faith and that to the best of his knowledge no member of Council, the Board of Commissioners, or any officer or employee of the City has any pecuniary interest, direct or indirect, in the said Contract, and further that the said Contractor shall forfeit all claims under this Contract for Work done beyond the actual proven expenses of the Contractor if any member of Council, the Board of Commissioners, or any officer or employee of the City is at any time interested therein or if any interest therein is given or agreed to be given to him and as well shall refund to the City any monies paid to the Contractor by the City under this Contract beyond the actual expenses of the Contractor. The Contractor declares that he has not participated in any collusive scheme or combine in connection with his Bid or Contract.

ARTICLE III — AWARD AND EXECUTION OF THE CONTRACT

GC.3.01 Execution of Contract:

The successful Bidder shall, upon notification of award of the Contract by the City:

(1) execute and return the Contract Documents in the manner stipulated by the Solicitor within Seven (7) Calendar Days of receipt of the Contract Documents together with written notice signed by the Solicitor to the Contractor in the manner provided in GC.7.06 hereof;

(2) provide the Performance Security specified in the Bidding Instructions to the Solicitor prior to the commencement of Work but in no event later than the time specified in GC.3.01(1) above for the return of the executed Contract Documents;

(3) provide evidence of the Insurance Coverage specified in the Supplemental Conditions in a form satisfactory to the Solicitor prior to the commencement of Work but in no event later than the time specified in GC.3.01(1) above for the return of the executed Contract Documents.

GC.3.02 Failure to Sign Contract:

In the event that the Bidder does not meet all the requirements of GC.3.01 hereof, the Board of Commissioners shall consider that the Bidder has abandoned the Contract, whereupon the acceptance of the Bid by the City shall be null and void and the City shall be entitled to retain the Bid Security accompanying the Bid as liquidated damages.

GC.3.03 Commencement of Work:

The Contractor shall not procure material or commence Work until he is in receipt of a Letter of Intent from the Commissioner authorizing the commencement of Work and has provided the Solicitor with the required Performance Security and Insurance Coverage.

GC.3.04 Bar to Payment:

No payments will be made by the City to the Contractor until the Contractor has met all the requirements of GC.3.01 hereof.

ARTICLE IV — SCOPE OF WORK

GC.4.01 Work to be Done According to Contract:

The Contractor shall execute, complete and maintain the Work in strict accordance with the Contract Documents.

GC.4.02 Contractor to Furnish Labour, Plant and Materials:

(1) The Contractor shall provide and pay for competent, suitably qualified personnel to execute the Work. He shall at all times maintain good discipline and order at the Site.

(2) The Contractor shall provide and pay for all Plant, materials, equipment, labour, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water and sanitary facilities and all other facilities and incidentals necessary for the execution, testing, operation, completion and maintenance of the Work.

(3) Unless otherwise specified in the Specifications, all materials and equipment to be incorporated in the Work shall be new, fit for the purpose intended and shall meet or exceed the kind, quality and quantity of same specified in the Contract Documents. If required, the Contractor shall provide at his own expense evidence satisfactory to the Contract Administrator that the foregoing requirements have been met.

GC.4.03 Documents Supplement Each Other:

(1) The Contract Documents are complementary and what is called for by any one shall be binding as if called for by all.

(2) If the Contract Documents or any part thereof appear indefinite, not clear or contradictory, the Contractor shall refer such feature or features to the Contract Administrator for interpretation or clarification.

(3) The Contract Administrator shall have the right at any time to correct errors or omissions in the Contract Documents or to issue additional Drawings and Specifications at any time further detailing, explaining or modifying the Work. Such Drawings and Specifications shall either supplement or supersede those signed at the time the Contract is executed.

(4) The Contractor shall be responsible for conveying the interpretation or clarification of the Contract Documents, as given by the Contract Administrator, to Sub-contractors.

(5) The Contractor shall be responsible for any Work not explicitly set out in the Contract Documents but which may be reasonably implied for the proper completion of the Work.

GC.4.04 Shop Drawings:

(1) The Contractor shall arrange for the preparation of Shop Drawings required by the Contract Documents or as may reasonably be required by the Contract Administrator.

(2) The Contractor shall review all Shop Drawings prior to submitting same to the Contract Administrator. By this review, the Contractor represents that he has determined and verified all field measurements, field construction criteria, materials, catalogue numbers and similar data and that he has checked and coordinated each Shop Drawing with the requirements for the Work and of the Contract. The Contractor's review of each Shop Drawing shall be certified by stamp, date and signature in the manner stipulated by the Contract Administrator.

(3) The Contractor shall promptly submit to the Contract Administrator the required number of copies of the Shop Drawings and in an orderly sequence to prevent delay in the Work or in the Work of Other Contractors. Shop Drawings shall be submitted in the form of a reproducible transparency or prints as the Contract Administrator may direct. At the time of submission the Contractor shall notify the Contract Administrator of any deviations in the Shop Drawings from the requirements of the Contract.

(4) The Contract Administrator shall review the Shop Drawings promptly or in accordance with a schedule agreed upon in writing. The Contract Administrator, upon completion of the review, shall communicate either his acceptance or rejection of same to the Contractor. The Contract Administrator's review and acceptance shall be for conformity to the design concept of the

Work and for compliance with the Contract Documents. The acceptance of a component or a sub-assembly shall not constitute acceptance of the assembly of which it is a part. The review shall not relieve the Contractor of responsibility for errors and omissions in the Shop Drawings or of responsibility for meeting all requirements of the Contract unless a deviation on the Shop Drawings has been approved by the Contract Administrator in writing. No Work called for by Shop Drawings shall be undertaken by the Contractor until the Contract Administrator's review is completed and the acceptance of same has been communicated to the Contractor.

(5) The Contractor shall promptly make any changes in the Shop Drawings which the Contract Administrator may require and which are consistent with the Contract Documents and shall promptly resubmit same to the Contract Administrator for review and acceptance unless otherwise directed by the Contract Administrator. When resubmitting the Shop Drawings, the Contractor shall notify the Contract Administrator in writing of any revisions other than those requested by the Contract Administrator.

GC.4.05 Changes in the Work: City

(1) The City shall have the right, at any time before or after the execution of the Contract or after the commencement of the Work or during the prosecution of the Work, to alter, deduct from, add to or omit (referred to collectively herein as a "Change in Work") any part of the Work, or to change the lines or grades or the location of any part of the Work, all without in any way affecting or vitiating the Contract, and the Contractor shall carry out all such alterations or additions upon receipt of written notice from the Contract Administrator.

(2) The Contract Administrator shall make a determination at the time of issuing the written notice referred to in GC.4.05 (1) above and shall set out his determination in the said notice as to whether:

(a) the Change in Work so ordered falls within the scope of the Work required to be performed under the Contract with no adjustment to the Contract Time and/or Contract Price, or

(b) the Change in Work so ordered amounts to Extra Work with a corresponding adjustment to the Contract Time and/or Contract Price, or

(c) the Change in Work so ordered amounts to a diminution in the scope of the Work required to be performed under the Contract with a corresponding adjustment to the Contract Time and/or Contract Price.

(3) In the event that the Contractor disputes a determination made by the Contract Administrator, the Contractor shall act in accordance with the Contract Administrator's determination provided however that the Contractor shall have the right to appeal the determination of the Contract Administrator to the Commissioner as provided in GC.4.05(4) below.

(4) If the Contractor disagrees with the determination of the Contract Administrator he must within Seven (7) Calendar Days after receiving Notice of the Contract Administrator's determination, notify the Commissioner in writing of his contention with respect thereto and request a determination thereon from the Commissioner.

(5) If the Contractor fails to so appeal to the Commissioner for a determination within Seven (7) Calendar Days after receiving Notice of the Contract Administrator's determination, the Contractor shall be deemed to have waived any said claim. Oral appeals or oral protests shall not amount to substantial compliance with the provisions of this Clause.

(6) If the Contractor disagrees with the determination of the Commissioner he must within Seven (7) Calendar Days after receiving Notice of the Commissioner's determination, notify the Board of Commissioners in writing of his contention with respect thereto and request that the dispute be referred to Arbitration in accordance with GC.11.01.

(7) In the case of the Contractor's neglect or failure to observe fully and faithfully the above conditions, he shall forfeit all right to payment therefor which he otherwise might have had, and shall not make any claim in respect thereof, and if made, the City may reject the same as invalid and he shall not have any right of recovery in respect thereof, at law or otherwise.

(8) It is intended in all matters referred to above that both the Contract Administrator and the Contractor shall act promptly.

GC.4.06 Changes in the Work: Contractor

(1) If the Contractor is of the opinion that it is necessary at any time before or after the execution of the Contract or after the commencement of the Work or during the prosecution of the Work, to alter, deduct from, add to or omit any part of the Work to accomplish the result intended by this Contract, he shall provide written notice of this requirement and details of same to the Contract Administrator for a determination as set out in GC.4.05(2) above prior to undertaking the proposed change in Work.

(2) GC.4.05(3) through (8) shall apply mutatis mutandis herein.

GC.4.07 Valuation and Certification of Extra Work:

(1) The value of Extra Work shall be determined by one or more of the following methods:

(a) by estimate in a lump sum;

(b) by the unit prices set out in the Contract or subsequently agreed upon;

(c) by the actual cost of the Work to the Contractor plus a fixed fee;

(d) by the actual cost of the Work to the Contractor plus 15% on any portion of the Work undertaken by the Contractor's own forces and 10% on any portion of the Work undertaken by a Sub-contractor.

(2) Where the value of Extra Work is proposed or required to be determined by either method (a) or (b) of GC.4.07 (1), the Contractor shall present his proposed change in the Contract Time and/or Contract Price to the Contract Administrator supported by appropriate documentation in a form acceptable to the Contract Administrator prior to the commencement of the proposed Extra Work. The Contract Administrator shall evaluate and verify the acceptability of such claim and, if approved by the Commissioner, a change order shall be issued to the Contractor by the Contract Administrator amending the Contract Time and/or Contract Price.

(3) Where the value of Extra Work is determined by either method (c) or (d) of GC.4.07 (1) the actual cost permitted to be claimed by the Contractor shall be restricted to the actual cost of labour including an allowance for direct supervision, payroll burden including Unemployment Insurance, Canada Pension, Payroll Tax, Workers Compensation assessments and

Vacation Pay assessments, material, rental of plant and fuel expended on such Work or part thereof and any other payments made by the Contractor with the prior written approval of the Contract Administrator that are necessary for the performance of the Extra Work.

(4) In the case of Extra Work to be paid for under methods (b), (c) and (d) of GC.4.07 (1), the form of presentation of costs and methods of measurement shall be stipulated in writing by the Contract Administrator prior to the Contractor undertaking the Extra Work. The Contractor shall keep accurate records of quantities and costs and present an account of the costs of the Extra Work, together with all vouchers supporting such costs where applicable.

(5) Notwithstanding the generality of the foregoing, the Contractor shall keep a detailed daily record for each part of the Extra Work showing the names and times of the workmen engaged thereon and number of hours each day when Plant and equipment are employed thereon. This daily record shall be submitted to the Contract Administrator each day for the review and approval of the Contract Administrator.

(6) If the method of valuation, measurement, change in Contract Time and/or Contract Price cannot be promptly agreed upon prior to the commencement of the Extra Work and the Contract Administrator requires the Extra Work to proceed, then the Contract Administrator in the first instance will determine the method of valuation, measurement and the change in Contract Time and/or Contract Price. The Contract Administrator shall issue a written authorization for the Extra Work setting out the method of valuation, measurement, and any approved change in the Contract Time and/or Contract Price.

(7) In the case of a dispute in the method of valuation, measurement, change in Contract Time and/or Contract Price for the Extra Work authorized in writing by the Contract Administrator and pending determination thereof in accordance with GC.4.07(8) or GC.4.07(10) hereof, the Contract Administrator shall certify the value of the Extra Work performed in accordance with the Contract Administrator's own valuation and measurement of the Extra Work and shall also certify any change in Contract Time and/or Contract Price. The Contractor shall keep accurate records of quantities and cost of such Extra Work.

(8) If the Contractor disagrees with the Contract Administrator's method of valuation, measurement, change in Contract Time and/or Contract Price, he must within Seven (7) Calendar Days after receiving Notice of the Contract Administrator's determination, notify the Commissioner in writing of his contention with respect thereto and request a determination thereon from the Commissioner.

(9) If the Contractor fails to so appeal to the Commissioner for a determination within Seven (7) Calendar Days after receiving Notice of the Contract Administrator's determination, the Contractor shall be deemed to have waived any said claim. Oral appeals or oral protests shall not amount to substantial compliance with the provisions of this Clause.

(10) If the Contractor disagrees with the determination of the Commissioner he must within Seven (7) Calendar Days after receiving Notice of the Commissioner's determination, notify the Board of Commissioners in writing of his contention with respect thereto and request that the dispute be referred to Arbitration in accordance with GC.11.01.

(11) In the case of the Contractor's neglect or failure to observe fully and faithfully the above conditions, he shall forfeit all right to any claim for additional payment therefor over and above that approved by the Contract Administrator which he otherwise might have had, and shall not make any claim in respect thereof, and if made, the City may reject the same as invalid and he shall not have any right of recovery in respect thereof, at law or otherwise.

(12) It is intended in all matters referred to above that both the Contract Administrator and Contractor shall act promptly.

GC.4.08 Diminution of Work

(1) Should the amount of the Work originally intended to be done under the Contract be diminished, no claim shall be made for damages on the ground of loss of anticipated profit on Work so diminished or on any other ground provided however that the value of the diminution shall not exceed Twenty (20%) Percent of the Contract Price.
In the case of a Unit Price Contract where a change is made involving diminution of the Work, only the Work actually done shall be paid for and such payment shall be based on the Prices in the Tender Submission.
In the case of a Lump Sum Contract where a change is made involving diminution of Work and the parties cannot agree on the reduction in Contract Price which should properly be made as a result thereof the matter in dispute shall be decided by the Contract Administrator. If the Contractor disagrees with the Contract Administrator's determination, he must within Seven (7) Calendar Days after receiving Notice of the Contract Administrator's determination notify the Commissioner in writing of his contention with respect thereto and request a determination thereon from the Commissioner.

(2) If the Contractor fails to so appeal to the Commissioner for a determination within Seven (7) Calendar Days after receiving Notice of the Contract Administrator's determination, the Contractor shall be deemed to have waived any said claim. Oral appeals or oral protests shall not amount to substantial compliance with the provisions of this Clause.

(3) If the Contractor disagrees with the determination of the Commissioner he must within Seven (7) Calendar Days after receiving Notice of the Commissioner's determination, notify the Board of Commissioners in writing of his contention with respect thereto and request that the dispute be referred to Arbitration in accordance with GC.11.01.

(4) Where a change results in a diminution of Work after commencement of Work or any part thereof resulting in extra cost to the Contractor, for which he would not be entitled to payment on a unit price basis, or in loss of Work already completed but not paid for, or loss to the Contractor in respect of material or equipment purchased by him for the Work but not used thereon as required by the City, compensation shall be made to the Contractor by the City in the sum or sums to be fixed by the Contract Administrator. If the Contractor disagrees with the Contract Administrator's decision, he must within Seven (7) Calendar Days after receiving Notice of the Contract Administrator's determination notify the Commissioner in writing of his contention with respect thereto and request a determination thereon from the Commissioner.

(5) If the Contractor fails to so appeal to the Commissioner for a determination within Seven (7) Calendar Days after receiving Notice of the Contract Administrator's determination, the Contractor shall be deemed to have waived any said claim. Oral appeals or oral protests shall not amount to substantial compliance with the provisions of this Clause.

(6) If the Contractor disagrees with the determination of the Commissioner he must within Seven (7) Calendar Days after receiving Notice of the Commissioner's determination, notify the Board of Commissioners in writing of his contention with respect thereto and request that the dispute be referred to Arbitration in accordance with GC.11.01.

(7) In the case of the Contractor's neglect or failure to observe fully and faithfully the above conditions, he shall forfeit all right to any claim for additional payment therefor over and above that approved by the Contract Administrator which he otherwise might have had, and shall not make any claim in respect thereof, and if made, the City may reject the same as invalid and he shall not have any right of recovery in respect thereof, at law or otherwise.

(8) It is intended in all matters referred to above that both the Contract Administrator and Contractor shall act promptly.

GC.4.09 Cleanup and Final Cleaning of the Work:

(1) The Contractor shall maintain the Site and the Work in a tidy condition and free from the accumulation of waste products and debris, other than that caused by the City or Other Contractors. Upon attaining Substantial Performance of the Work, the Contractor shall remove any products, tools, construction machinery and equipment not required for the performance of the remaining Work. He shall also remove waste products and debris other than that caused by the City or Other Contractors and leave the Site and the Work clean and suitable for occupancy by the City unless otherwise specified.

(2) Total Performance of the Work shall not be attained until the Contractor has cleaned up the Site and has removed all Plant and surplus products, tools, construction materials and equipment. The Contractor shall also have removed waste products and debris, other than that left by the City or Other Contractors.

ARTICLE V — CONTROL OF WORK

GC.5.01 Authority of Contract Administrator:

(1) The Contract Administrator shall be the City's representative throughout the duration of the Contract and shall have authority to act on behalf of the City to the extent expressly provided in the Contract Documents.

(2) The Contract Administrator shall be responsible for the interpretation or clarification of the Contract Documents or any part thereof which appear indefinite, not clear or contradictory to the Contractor.

(3) The Contract Administrator shall have full authority to examine, inspect, approve or reject the Plant, materials, methods of procedure and workmanship without in any way relieving the Contractor from his responsibilities under GC.5.02. The Contract Administrator shall be the sole judge of determining whether the kind, quantity and quality of the Plant, materials, methods of procedure and workmanship meet or exceed the requirements of the Contract Documents.

(4) The Contract Administrator shall have the authority to object to any person employed or retained by the Contractor in the execution of the Work who is in the opinion of the Contract Administrator incompetent, negligent or guilty of misconduct. The Contractor shall forthwith remove the person so objected to. The Contract Administrator may recommend to the Commissioner that the Commissioner refuse to issue any Progress Estimate and/or Certificate to the Contractor while such person remains engaged upon the Work.

(5) The Contract Administrator may order the Contractor to stop work or to take such remedial measures as the Contract Administrator considers necessary, if, at any time, the Contract Administrator is of the opinion that a danger to life or to property exists. The Contractor shall comply with such orders immediately. Neither the giving or carrying out of such orders shall thereby entitle the Contractor to any extra payment, nor shall the Contractor be relieved of his responsibilities under GC.5.02.

(6) The Contract Administrator shall have the authority to order the Contractor to stop the Work whenever such stoppage may be necessary, in the Contract Administrator's reasonable opinion, to ensure the proper execution of the Work in accordance with the requirements of the Contract Documents. The Contractor shall comply with such orders immediately. Neither the giving or carrying out of such orders shall thereby entitle the Contractor to any extra payment, nor relieve the Contractor of his responsibilities under GC.5.02.

(7) In the event that the Contractor disputes a determination made by the Contract Administrator on any of the foregoing matters, the Contractor shall act in accordance with the Contract Administrator's decision. If the Contractor disagrees with the Contract Administrator's decision, he must within Seven (7) Calendar Days after receiving Notice of the Contract Administrator's decision notify the Commissioner in writing of his contention with respect thereto and request a determination thereon from the Commissioner.

(8) If the Contractor fails to so appeal to the Commissioner for a decision within Seven (7) Calendar Days after receiving Notice of the Contract Administrator's decision, the Contractor shall be deemed to have waived any said claim. Oral appeals or oral protests shall not amount to substantial compliance with the provisions of this Clause.

(9) If the Contractor disagrees with the determination of the Commissioner he must within Seven (7) Calendar Days after receiving Notice of the Commissioner's determination, notify the Board of Commissioners in writing of his contention with respect thereto and request that the dispute be referred to Arbitration in accordance with GC.11.01.

(10) It is intended in all matters referred to above that both the Contract Administrator and Contractor shall act promptly.

GC.5.02 Responsibilities of Contractor:

(1) The Contractor shall be responsible for ensuring that all Work is carried out in accordance with and within the time limits set out in the Schedule of Work which is required to be provided by the Contractor and approved by the Contract Administrator under GC.8.01 and any approved amendments thereto.
Further, the Contractor shall be responsible for obtaining the prior written consent of the Contract Administrator for any changes in the approved Schedule of Work or any approved amendments thereto in a timely fashion.

(2) The Contractor shall have complete control over the methods of prosecuting the Work except as otherwise provided in the Contract Documents and shall direct and supervise the Work so as to ensure conformance with the Contract Documents. The Contractor shall be solely responsible for construction means, methods, techniques, sequences and procedures and for coordinating the various parts of the Work under the Contract so as to ensure its proper completion in accordance with the approved Schedule of Work.

(3) The Contractor shall obey, perform and comply with the Contract Administrator's orders or instructions with respect to the Work or concerning the conduct thereof, promptly, efficiently and to the satisfaction of the Contract Administrator.

(4) The Contractor shall carry out such rules and regulations as may from time to time be issued by the Contract Administrator for the securing and maintaining of good order on the Site and he will assist Other Contractors, their employees and agents, and those of the City, to do the same.

(5) The Contractor shall employ and keep on the Work during its progress a competent Supervisor and any necessary assistants all satisfactory to the Contract Administrator both on the commencement and at all times during the prosecution of the Work. The Contractor shall inform the Contract Administrator in writing of the name of such Supervisor prior to the commencement of the Work. If at any time the Contract Administrator requires such Supervisor to be replaced then the Contractor shall arrange for him to vacate his position and be removed from the Site within Forty-eight (48) hours after receiving notice in writing from the Contract Administrator to replace the Supervisor with another Supervisor. Any person so removed shall not be re-employed on the Work by the Contractor or by a Sub-contractor. The Supervisor shall not be replaced except with the prior written consent of the Contract Administrator unless the Supervisor proves to be unsatisfactory to the Contractor and ceases to be in his employ. The Supervisor shall represent the Contractor in his absence and directions on matters given to him shall be held to be given to the Contractor.

(6) The Contractor agrees that the list of names of Sub-contractors included in his Tender Submission is the list of Sub-contractors proposed to be used to carry out those parts of the Work noted thereon, and he shall not employ any to whom the City may reasonably object. The Contractor shall not make any change to the Sub-contractor list unless prior written approval is received from the Contract Administrator.
The Contractor, with respect to Work to be performed under subcontract, shall:

(a) enter into contracts or written agreements with his Sub-contractors to require them to perform their work in complete conformance with and subject to the terms and conditions of the Contract Documents, and,

(b) be as fully responsible to the City for acts and omissions of his Sub-contractors and of persons directly or indirectly employed by them as for acts and omissions of persons directly employed by him.

The Contractor shall incorporate the terms and conditions of the Contract Documents into all subcontract agreements he enters into with his Sub-contractors.

(7) The Contractor shall keep one set of the Contract Documents and approved Shop Drawings at the Site. These Contract Documents and Shop Drawings shall be available at all reasonable times for the inspection and use of the Contract Administrator.

(8) The Contractor must arrange and carry on his Work so as not to conflict with the Work being carried on or to be carried on for the City by Other Contractors or by the City's employees. Should he find it difficult to work in harmony with such parties he shall notify the Contract Administrator who will deal with the matter as he in his judgement may deem best, and the Contractor shall abide by the decision and directions of the Contract Administrator.

(9) The Contractor shall be solely responsible for construction safety at the Site and for compliance with all laws, rules, regulations and practices required by the applicable construction and safety legislation.

(10) The Contractor shall be solely responsible for securing the Site, any existing facility thereon and for the proper care and protection of the Work already performed.

(11) The Contractor shall, at his own expense, do whatever is necessary to ensure that:

(a) no person, property, right, easement or privilege is injured, damaged or infringed by reason of the Contractor's activities in performing the Contract;

(b) pedestrian and other traffic on any public or private road or waterway is not unduly impeded, interrupted or endangered by the performance or existence of the Work or Plant;

(c) fire hazards in or about the Work or its Site are eliminated;

(d) the health and safety of all persons employed in the performance of the Work or otherwise is not endangered by the method or means of its performance;

(e) adequate medical services are available to all persons employed on the Work or its Site at all times during the performance of the Work;

(f) adequate sanitation measures are taken and facilities provided with respect to the Work and its Site;

(g) all survey posts, monuments or bars are protected and are not removed, defaced, altered or destroyed; and

(h) all stakes, buoys and marks placed on the Work or its Site by or under the authority of the Contract Administrator are protected and are not removed, defaced, altered or destroyed.

GC.5.03 Inspection:

(1) All Plant to be provided, work to be performed, materials to be supplied, and equipment or machinery to be installed or erected under this Contract shall be subject to inspection by the Contract Administrator. The Contractor shall afford to the Contract Administrator every facility, whether at the Site of the Work, or at the premises of the Contractor or any Sub-contractor, for the observation of the methods and progress of the Work, and to give the Contract Administrator free of cost to the City any and all assistance which he may require in the performance of his duties; also to furnish the Contract Administrator, free of cost, with sufficient office facilities for keeping Drawings and for correspondence as specified in the Supplemental Conditions.

(2) The Contractor shall before beginning or resuming operations upon any portion of the Work, formally notify the Contract Administrator in writing so as to enable the Contract Administrator to arrange for proper inspection. In the event that the Contractor does not so notify the Contract Administrator in order that the Contract Administrator can arrange for proper inspection, the Contractor shall, if and when required by the Contract Administrator, forthwith take down or expose and rebuild that portion of the Work, at the Contractor's own cost and expense, in order that the Contract Administrator can inspect the Work.

(3) The Contractor shall not proceed to prosecute any portion of the Work, against the orders of the Contract Administrator. In the case of any portion of the Work prosecuted contrary to the orders of the Contract Administrator the cost of such taking down or exposure, and re-building, if any, shall fall upon the Contractor.

(4) The Contractor shall, if and when required by the Contract Administrator, forthwith take down or expose any portion of the Work where the Contract Administrator is of the opinion that the Work is not in accordance with the Contract Documents. The cost of such taking down or exposure, and re-building, if any, shall fall upon the City if the taking down or exposure indicates that the part exposed is properly constructed and of satisfactory materials, but if otherwise the cost shall be borne by the Contractor.

(5) In case the Contract Administrator observes improper workmanship or the use of defective materials in the course of construction or manufacture, he will call the same to the attention of the Contractor or the Supervisor in charge of the Work, but should such Supervisor be inaccessible at the time, the Contract Administrator shall order the workmen to stop such improper Work until a Supervisor or the Contractor remedies the defects.

(6) Orders given by the Contract Administrator in accordance with the above powers shall be obeyed by the Contractor without delay.

(7) The inspection herein provided for shall in no way relieve the Contractor of full responsibility for the quality, character, proper operation and performance of the completed Work.

GC.5.04 Defective Work:

The City shall have the right to any one or all of the following options in addition to those provided elsewhere in these Contract Documents and to its ordinary remedies at law if, in the opinion of the Contract Administrator, there is any defect in the Work or in any part thereof attributable to the Contractor or if same fails to meet the requirements of the Contract:

(1) The Contract Administrator shall direct the Contractor to remedy the defect or to repair, reconstruct, or replace the faulty Work or Work which fails to meet the requirements of the Contract and the Contractor shall without delay and at the Contractor's own expense carry out the orders of the Contract Administrator in that respect, all according to the terms and requirements of the Contract. In addition, the Contractor shall be required to reimburse the City and the City shall be entitled to deduct its cost of any additional inspections necessitated thereby from the Contract Price.

(2) If the Contractor fails or neglects to act as set out in GC.5.04(1), the City may correct or replace the defective or faulty Work or Work which fails to meet the requirements of the Contract either by the City's own forces or by an Other Contractor or Contractors. The cost of correcting or replacing same shall be paid to the City immediately by the Contractor upon receipt of written Notice from the Commissioner setting out the amount to be so paid. In the event that the Contractor fails to make payment to the City as required hereby the City shall deduct the amount of such payment from any payment required to be made to the Contractor under this Contract. If, in the opinion of the Commissioner, the Contractor has received all payments due to him under the Contract, the Surety shall make such payment immediately upon receipt of written Notice from the Commissioner setting out the amount to be so paid.

(3) If, in the opinion of the Contract Administrator, it is not expedient to correct defective or faulty Work or Work not done in accordance with the Contract, the City may deduct from the Contract Price the difference in value between the Work as done and that called for by the Contract, the amount of which shall be determined by the Commissioner.

(4) Pending action under GC.5.04 (1) and (2) above, the City shall have the right to use the Work or any portion thereof, without in any way affecting its right of rejection of any such faulty or defective work or relieving the Contractor of responsibility to complete the Work.

GC.5.05 Right of Entry:

(1) The Contractor shall not be entitled to exclusive possession of the Site.

(2) The City shall have the right, for itself, its agents, representatives and Other Contractors, to occupy any portion of the Site or the Work, at any time and for so long a time as the Contract Administrator may by Notice in writing to the Contractor require, provided such entry, occupation and use does not prevent or otherwise interfere with the Contractor's performance of the Work.

(3) Such entry, occupation and use shall not be considered to be an acceptance of the Work by the City nor shall it relieve the Contractor of responsibility to complete the Work.

ARTICLE VI — CONTROL OF PLANT AND MATERIAL

GC.6.01 Risk and Responsibility:

(1) The Plant, material and equipment brought to the Site and/or the Work by the Contractor or provided to the Contractor by the City shall remain at the risk and the responsibility of the Contractor from the commencement of the Work (and all matters incidental thereto) and until the Total Performance thereof has been certified by the Contract Administrator unless otherwise specified in the Supplemental Conditions.

(2) The Contractor shall be liable to the City for any loss of or damage to Plant, material or equipment that is supplied or placed in the care, custody and control of the Contractor by the City for use in connection with the Contract, whether or not that loss or damage is attributable to causes beyond the Contractor's control, from the commencement of the Work (and all matters incidental thereto) and until the Total Performance thereof has been certified by the Contract Administrator.

GC.6.02 Contractor to Keep Records:

The Contractor shall keep such records of all Plant, material and equipment supplied or placed in the care, custody and control of the Contractor by the City as the Contract Administrator may from time to time require and shall satisfy the Contract Administrator, when requested, that such material and Plant are at the place and in the condition required by the City.

GC.6.03 Material to Remain on Site:

(1) The Contractor shall not remove any Plant, material or equipment that he has brought to the Site and/or the Work and which is required to complete the Work without the prior written consent of the Contract Administrator until the Total Performance of the Work has been certified by the Contract Administrator.

(2) Plant, material or equipment that is the property of the City shall not be taken away from the Site and/or the Work, disposed of or used except for the purposes of the Work without the prior written consent of the Contract Administrator.

GC.6.04 Defective Material:

(1) The Contractor shall, at his own expense, and in the manner and within the time period specified in the written Notice from the Contract Administrator:

(a) remove from the Site and/or the Work any materials brought onto the Site, whether incorporated in the Work or not, which the Contract Administrator has determined to be inferior, unfit for the purpose intended or does not comply with the requirements of the Contract Documents; and

(b) promptly replace such inferior or unfit material with material which is fit for the purpose intended and which does meet the requirements of the Contract Documents.

(2) If the Contractor fails to remove or replace the said materials in the manner and within the time period specified in the said Notice, the Commissioner may take all steps necessary to have the said materials removed or replaced by the City's own forces or by an Other Contractor or Contractors. The cost of correcting or replacing the said materials shall be paid to the City by the Contractor immediately upon receipt of written Notice from the Commissioner setting out the amount to be so paid. In the event that the Contractor fails to make payment to the City as required hereby the City shall deduct the amount of such payment from any payment required to be made by the City to the Contractor under this Contract. If in the opinion of the Commissioner the Contractor has received all payments due to him under the Contract and the Contractor refuses or fails to make payment immediately upon receipt of the Commissioner's written Notice as required hereby, the Surety shall make such payment immediately upon receipt of written Notice from the Commissioner setting out the amount to be so paid.

ARTICLE VII — LEGAL RELATIONS

GC.7.01 Laws, Notices, Permits and Fees:

(1) The Contractor shall, at his own expense, procure permits, licences and certificates required by law, any ordinances, rules, regulations, codes and orders of the authorities having jurisdiction for the execution of the Work, but this shall not include the obtaining of permanent easements or rights of servitude. The Contractor shall give the required Notices and comply with the laws, ordinances, rules, regulations, codes and orders of the authorities having jurisdiction which are or become in force during the performance of the Work and which relate to the Work, to the preservation of the public health, and to construction safety. Where there are two or more laws, ordinances, rules, regulations or codes applicable to the Work, the most restrictive shall apply.

(2) The Contractor shall not be responsible for verifying that the Contract Documents are in compliance with the applicable laws, ordinances, rules, regulations, codes and orders relating to the Work. If the Contract Documents are at variance therewith, or if changes which require modifications to the Contract Documents are made to any of the laws, ordinances, rules, regulations and codes by the authorities having jurisdiction subsequent to the date of Bid closing, any resulting change in the cost shall constitute a corresponding change in the Contract Price. The Contractor shall notify the Contract Administrator in writing requesting direction immediately if any such variance or change is observed by the Contractor.

(3) If the Contractor fails to notify the Contract Administrator in writing to obtain direction and performs any Work knowing it to be contrary to any laws, ordinances, rules, regulations, codes and orders of any authority having jurisdiction, the Contractor shall be responsible for and shall correct any violations thereof and shall bear all costs, expenses and damages attributable to his failure to comply with the provisions of such laws, ordinances, rules, regulations, codes and orders.

GC.7.02 Patents and Royalties:

(1) If the Contract requires or the Contractor desires the use of any design, device, material or process covered by letters patent or copyright, trade mark or trade name, the Contractor shall provide for such use by suitable legal agreement with the patentee or owner and a copy of the said agreement shall be filed with the City upon request.

(2) The Contractor shall indemnify and save harmless the City from any and all claims for infringement by reason of the use of any such patent, design, device, material or process, or any trade mark or trade name or copyright in connection with the Work agreed to be performed under the Contract, and shall indemnify the City in respect of any costs, expenses and damages which it may be obliged to pay, including solicitor's fees and other legal expenses incidental to litigation by reason of a claim for any such infringement at any time during the prosecution or after the Total Performance of the Work.

(3) If the City or the Contractor is served with a claim or Notice of an infringement or alleged infringement of any patent, design, device, material or process, or any trade mark, trade name or copyright, the party so served shall immediately inform the other party with Notice in the manner provided herein.

(4) If the City or the Contractor is prevented by injunction from using any patent, design, device, material or process, or any trade mark, trade name or copyright, the Contractor shall, at his own cost, substitute an equally suitable product, part or method of carrying out the Work, all subject to the prior written approval of the Contract Administrator.

GC.7.03 Contractor's Risk:

(1) The Work shall remain at the risk and the responsibility of the Contractor from the commencement of the Work (and all matters incidental thereto) and until the Substantial Performance thereof has been certified by the Contract Administrator.

(2) The Work not completed as of the date of Substantial Performance shall remain at the risk and responsibility of the Contractor until the Total Performance of the Work has been certified by the Contract Administrator.

(3) The Contractor shall, at his own cost, be required to maintain the Work, make good all damage thereto and imperfections therein and to deliver the completed Work to the City in accordance with the provisions of the Contract.

GC.7.04 Indemnity

(1) The Contractor covenants to save harmless and effectually indemnify the City against all actions and proceedings, costs, damages, expenses, claims and demands whatsoever committed by the Contractor, his Sub-contractor, employees or agents and by whomsoever brought by reason of the performance of the said Work, and more particularly from:

(a) accidental injury (including death) to any person whether retained by or in the employ of the Contractor or not, arising directly or indirectly by reason of the performance of the Work, or by reason of any trespass on or damage to property;

(b) damage to any property owned in whole or in part by the City or which the City by duty or custom is obliged, directly or indirectly, in any way or to any degree, to construct, repair or maintain;

(c) trespass or damage to private property or properties owned by persons other than the City;

(d) failure to pay and obtain a discharge of a Notice of Claim for Lien served upon the City in accordance with the requirements of The Builders' Liens Act; non-payment of a Workers Compensation assessment, Unemployment Insurance, Federal or Provincial Tax, and for encroachments owing to errors in the Contractor's Survey;

(e) inaccuracies in any information provided to the City by the Contractor.

(2) The City has the right, acting reasonably and upon Notice to the Contractor, to settle any such action, proceeding, claim or demand and charge the Contractor with the amount so paid or to be paid in effecting a settlement or which may be adjudged due to the City by the Commissioner.

(3) The Contractor shall pay to the City the value of all legal fees and disbursements required to defend the City against any such claim, action, proceeding, claim or demand arising out of the Contract notwithstanding that the defense of the said action, proceeding, claim or demand was undertaken on behalf of the City by a salaried employee of the City.

(4) The Contractor shall pay to the City all costs taxed against the Contractor in any litigation between the Contractor and the City arising out of this Contract.

(5) If the Contractor fails to make any payment required to be made to the City hereunder, the City shall be entitled to deduct the amount of such payment from any payment required to be made by the City to the Contractor under this Contract or take whatever other remedies against the Contractor that the City may have at law.

GC.7.05 Rights and Remedies:

(1) The duties and obligations imposed upon the Contractor by the Contract Documents and the rights and remedies available to the City hereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed upon the Contractor or available to the City at law.

(2) No acceptance of Work or payment of money and no failure on the part of the City to enforce compliance by the Contractor with any term of this Contract and no other act or omission whatever on the part of the City, and no act or omission of the Commissioner or Commissioners or of any officer or employee of the City, shall be taken as a waiver of any of the provisions of this Contract, it being understood that any provision hereof may only be waived by express waiver in writing authorized by the proper officers of the City. No express waiver of any provision shall impliedly waive any other provision.

GC.7.06 Notices:

(1) Except as provided in GC.5.02(5) hereof, all notices, consents, approvals, statements, authorizations, documents or other communications required or permitted to be given under this Contract shall be in writing and shall be delivered personally or mailed by registered mail, postage prepaid, to the City at the address set out in the Supplemental Conditions; and to the Contractor at the address set out in the Form of Tender; or at such other address or addresses as the party to whom such notice, consent, approval, statement, authorization, document or other communication is to be given may designate by Notice in writing so given to the other party hereto as provided herein.

(2) Any notice, consent, approval, statement, authorization, document or other communication given as provided herein shall:

a) in the case of personal delivery, be deemed to have been received on the day of delivery, if a business day, or if not a business day, on the business day next following the day of delivery; and

b) in the case of delivery by registered mail, be deemed to have been received on the second business day on which mail is delivered by Canada Post following the date of mailing. In the event of a postal dispute or threat of a postal dispute, all notices required to be given hereunder shall be personally delivered.

GC.7.07 Independent Contractor:

The City and the Contractor acknowledge and agree that the Contractor is an independent contractor and neither the Contractor, nor any officer, servant or agent of the Contractor, shall be deemed to be an employee, agent, representative or servant of the City.

ARTICLE VIII — PROSECUTION AND PROGRESS

GC.8.01 Schedule:

(1) The Contractor shall, immediately after the award of the Contract, prepare and submit for the Contract Administrator's approval, a Schedule of activities for the Work confirming the commencement date, the completion date which date shall be no later than the date specified in the Tender Submission required to complete the various phases or parts of the Work, in relation to both the Contract Time stated in the Contract Document and the Schedule of Work submitted by the Contractor in his Tender Submission unless otherwise specified in the Supplemental Conditions. The Contractor shall provide any additional details required by the Contract Administrator. After approval has been given, the Schedule shall not be changed by the Contractor without the prior written consent of the Contract Administrator.

(2) The City reserves the right to withhold payment from the Contractor if:

(a) such Schedule has not been submitted or has not received the approval of the Contract Administrator prior to or with the first application for payment; or

(b) a revised Schedule has not been submitted or has not received the approval of the Contract Administrator prior to the first application for payment or any subsequent application for payment in the event of a change in the aforementioned Schedule; or

(c) a revised Schedule has not been submitted or has not received the approval of the Contract Administrator after an extension of time has been granted.

(3) The Contractor shall comply with the approved Schedule and shall bear all costs to meet the Schedule. If the progress of the Work falls behind the most recent Schedule or is delayed for any reason other than one for which extra time is provided for in GC.8.06 - Delay in Completing Contract, the Contractor shall immediately adopt such measures including but not limited to engaging such additional labour and equipment, and work such additional hours as the Contract Administrator may order, to bring the Work back on schedule, at the Contractor's expense.

(4) If at any time the Contractor has been granted additional time under the provisions of GC.8.06 — Delay in Completing Contract or GC.4.05 — Changes in the Work: City, he shall forthwith submit a revised Schedule for the Contract Administrator's approval.

(5) More detailed requirements for these Schedules may be described in the Supplemental Conditions.

GC.8.02 Contract Administrator May Order Better and More Plant and Labour:

(1) If at any time the Contractor's methods or Plant or the quality or quantity of labour employed or materials furnished be such, in the opinion of the Contract Administrator, that there is likelihood that the Work will not be constructed satisfactorily, or if progress will not be maintained to the extent guaranteed in the latest approved Schedule, then in every such case, the Contract Administrator may in writing order the Contractor so to alter and improve his methods, to increase or improve his Plant, to employ additional or more qualified workmen, or otherwise to conform with the Contract as the Contract Administrator may deem fit and the Contractor shall within Forty-Eight (48) hours comply or take steps to comply with the requirements of the Contract Administrator in these respects, without in any way relieving the Contractor from his responsibilities under GC.5.02.

(2) If in the opinion of the Contract Administrator, the Contractor has not complied sufficiently with the immediately preceding sub-clause, the Contract Administrator may arrange, after the expiration of the Forty-Eight (48) hour period referred to in GC.8.02(1), for better and more Plant through other sources and the Contractor shall reimburse the City for the cost thereof immediately upon receipt of written Notice from the Commissioner setting out the amount to be so paid. In the event that the Contractor fails to make payment to the City as required hereby the City shall deduct the amount of such payment from any payment required to be made by the City to the Contractor under this Contract. If in the opinion of the Commissioner the Contractor has received all payments due to him under the Contract and the Contractor refuses or fails to make payment immediately upon receipt of the Commissioner's written Notice as required hereby, the Surety shall make such payment immediately upon receipt of written Notice from the Commissioner setting out the amount to be so paid.

GC.8.03 The City's Right to Suspend Work:

(1) The Commissioner has the right and may, by an order in writing, at any time stop or suspend all or any part of the Work, or direct any portion to be commenced or completed in priority to any other part or portion, or may cancel the order to proceed with the Work, or with any part thereof, and the Contractor shall not thereby be entitled to any claim for loss of profit, or anticipated profit, or for damages or for any additional payment except as allowed under GC.8.03(3) by reason of such order.

(2) Whenever in the opinion of the Commissioner for any reason it is deemed advisable to suspend the Work, or any part thereof, the Contractor shall, on notice from the Commissioner, forthwith place the Work and secure the Site and any existing facilities thereon in a proper and satisfactory condition for the safe accommodation of the public, and for the effectual protection of the Site and any existing facilities and the Work against damage from the weather, vandalism or other causes, and shall so maintain it.

(3) In the event of such right being exercised to cause any delay to the Contractor, then an extension of time to be fixed by the Commissioner, shall be allowed for the completion of the Contract, and the City shall pay to the Contractor all reasonable expenses arising from such suspension of the Work, unless such suspension be due to default on the part of the Contractor. The Contractor shall furnish the Commissioner with proper vouchers for all items upon which a claim is made under this Clause, and the Commissioner's decision as to such expenses shall be final and binding upon both the City and the Contractor.

(4) No such suspension shall vitiate this Contract or any part thereof, and at any time after such Work has been suspended, such Work may again be resumed in whole or in part at the option of the Commissioner, and upon the Contractor receiving written Notice from the Commissioner that such Work or any part thereof is to be resumed he shall at once resume Work and diligently carry on the same.

GC.8.04 Forfeiture of Contract:

(1) The Commissioner shall have the full right and power to take the whole of the Work, or any part or parts thereof, out of the hands of the Contractor, without process or action at law, upon giving the Contractor written Notice, a copy of which Notice shall be given to the Surety, or the Winnipeg agent of the latter, in the event that the Contractor:

(a) abandons the Work; or

(b) is adjudged bankrupt or insolvent; or

(c) makes a general assignment for the benefit of his creditors; or

(d) should have a receiver or liquidator appointed in respect of his assets; or

(e) is in the judgement of the Commissioner not executing or has not executed the Work, or any part thereof, in a sound and workmanlike manner and to his satisfaction and in all respects in strict conformity with the Contract; or

(f) in the judgement of the Commissioner, is not progressing with the Work or any part thereof continuously and in such a manner as to ensure the proper completion of the Work or any part thereof, within the time stipulated; or

(g) refuses or neglects forthwith, when so ordered, to conduct the Work so as to ensure its completion, in the opinion of the Commissioner, within the time stipulated; or

(h) has not completed the Work within the time required; or

(i) refuses or neglects to take down, rebuild, repair, alter or amend any defective or unsatisfactory Work, or to remove any condemned material or workmanship, or to comply with any reasonable order in connection therewith which he may receive from the Commissioner; or

(j) fails to make prompt payment of wages to his Sub-contractor or accounts for the purchase or rental of material or Plant; or

(k) fails to promptly secure a discharge of a lien or trust claim, served upon the City, pursuant to The Builders' Liens Act, within Thirty (30) Calendar Days after receipt of written Notice of the claim from the Solicitor; or

(l) persistently disregards any laws, by-laws and statutory regulations; or

(m) commits any other material breach of this Contract which in the opinion of the Commissioner indicates an unwillingness or inability upon the part of the Contractor to carry out the terms thereof.

(2) Upon such Notice being given to the Contractor, he shall immediately discontinue the Work or any part or parts thereof specified in the said Notice.

(3) The Surety may, at its option, assume this Contract in respect of the whole of the Work, or the portion thereof specified in the Notice on which the Commissioner has ordered the Contractor to discontinue the Work, as the case may be, and proceed to perform same, and may with the written consent of the Commissioner sublet the Work or portion of the Work so taken over; provided however that the Surety shall exercise its option, if at all, within Fourteen (14) Calendar Days after written notice to discontinue the Work has been served upon the Contractor and a copy of same upon the Surety or the Winnipeg agent of the latter.

(4) The Surety in such event shall take the Contractor's place in all respects, shall be bound by all terms and conditions of the Contract Documents and shall be paid by the City in accordance with the terms of the Contract for all Work performed by it.

(5) In case the Surety does not within Fourteen (14) Calendar Days exercise its right and option to assume the Contract as aforesaid or in the event that there is no Surety, then the City shall have the power to complete by contract or otherwise as it may determine, the Work hereinbefore referred to or such portion of it as the City may deem necessary, and the Contractor agrees that the City shall have the right to take possession of and use any of the materials, Plant, supplies and property of every kind provided by the Contractor for the purpose of the Work and to procure other Plant and materials for the completion of the same. The City shall not be required to obtain the lowest price for the Work taken over from the Contractor.

(6) In case the cost to the City, as certified by the Commissioner, of completing the Work or portion thereof as aforesaid, be less than the amount to which the Contractor would have been entitled under the Contract for so doing, the Contractor shall have no claims in respect thereof against the City, but if such certified cost of the Work performed by the City is more than the amount to which the Contractor would have been entitled under the Contract for the same Work, then the City shall have a claim against the Contractor for all additional costs of the Work which have been incurred by the City in addition to the amount of any liquidated damages that the City is entitled to hereunder from the date fixed for the Total Performance of the Work in the Contract Documents and the Contractor shall pay the amount of such additional cost of the Work together with liquidated damages as provided for herein to the City upon Notice from the Commissioner setting out the amount so due. When any particular part of the Work is being carried on by the City, by contract or otherwise, under the provisions of this Clause, the Contractor shall continue the remainder of the Work in conformity with the terms and conditions of this Contract, and in such manner as in no way to hinder or interfere with the persons, Other Contractor, Contractors, or workmen employed by the City.

GC.8.05 Effect of Taking the Work out of the Contractor's Control:

(1) The taking of the Work or any part thereof out of the Contractor's control pursuant to GC.8.04 shall not relieve or discharge the Contractor from any obligation under the Contract or imposed upon him by law except the obligation to complete the performance of that part of the Work that was taken out of the Contractor's control.

(2) If the Work or any part thereof is taken out of the Contractor's control pursuant to GC.8.04, all Plant and material and the interest of the Contractor in all licences, powers and privileges acquired, used or provided by the Contractor under the Contract shall be assigned by the Contractor to the City without compensation to the Contractor.

(3) When the Contract Administrator certifies that any Plant, material, or any interest of the Contractor referred to in GC.8.05 (1) above is no longer required for the purposes of the Work, or that it is not in the best interest of the City to retain that Plant, material, or interest, it shall revert to the Contractor.

GC.8.06 Delay in Completing Contract:

(1) Time shall be deemed to be of the essence for this Contract.

(2) The Contractor shall be required to complete the Work in accordance with the Contract Documents and to the satisfaction of the Contract Administrator by the day fixed for the Total Performance of the Work in the Contract Documents.

(3) Unless otherwise specified in the Supplemental Conditions, should the Contractor fail to complete the Work in accordance with the Contract Documents and to the satisfaction of the Contract Administrator by the day fixed for the Substantial Performance of the Work in the Contract Documents, the Contractor, subject to GC.8.05 hereof, shall pay the City the sum stipulated in the Supplemental Conditions as liquidated damages for each and every Working Day following that day fixed for the Substantial Performance of the Work in the Contract Documents and ending on the day immediately preceding the day that Substantial Performance of the Work has been achieved and is so certified by the Contract Administrator.

(4) Should the Contractor be delayed in the completion of the Work by reason of strikes, lock-outs (including lock-outs decreed by a recognized contractor's association for its members of which the Contractor is a member), an act of God, or any other cause which the Contractor satisfies the Commissioner to be totally beyond his control or any cause within the Contractor's control which the Commissioner has determined justified the delay, then the time for completion shall be extended for a period of time equal to the time lost due to such delays.

(5) No extension for delay shall be approved unless a written Notice of the claim is received by the Contract Administrator from the Contractor within Seven (7) Calendar Days of the date on which the cause of delay arose.

(6) Any Notice or claim for extension must state the cause of delay and the length of extension requested.

(7) In the case of a continuing cause of delay only one claim for an extension shall be necessary.

ARTICLE IX — MEASUREMENT AND PAYMENT

GC.9.01 Contract Prices:

The Contract Price to be paid by the City to the Contractor shall be the sums certified by the Commissioner in the interim and final Progress Estimates; such sums to be ascertained and determined by the Contract Administrator as follows:

(a) For Unit Price Contracts, upon the basis of the unit prices for the various classes of the Work included in the Schedule of Prices. These unit prices are gross prices including duty, freight, cartage, Provincial and Federal Taxes and all charges governmental or otherwise paid and including profit and all compensation which shall be due to the Contractor for supplying labour, materials, Plant and supervision, not only for the classifications expressly specified but for those which have been omitted such as the construction of drains, construction and removal of falsework, backfilling excavations, drilling test holes, clearing the Site and all details necessarily connected with the completion of the Work and all risks and contingencies connected therewith. The total amount to be paid to the Contractor for the Work described in the Contract will be the amount arrived at by measuring the net amount of each class of the Work listed in the Schedule of Prices, and pricing the same, in accordance with the unit prices therein.

(b) For Lump Sum Contracts, upon the basis of the lump sum price included in the Schedule of Prices. The lump sum price shall be a gross price including duty, freight, cartage, Provincial and Federal taxes and all charges governmental or otherwise paid and including profit and all compensation which shall be due to the Contractor for supplying labour, materials, Plant and supervision, not only for the classifications expressly specified but for those which have been omitted such as the construction of drains, construction and removal of falsework, backfilling excavations, drilling test holes, clearing the Site and all details necessarily connected with the completion of the Work and all risks and contingencies connected therewith.

GC.9.02 Increased or Decreased Costs:

(1) The Contract Price shall not be increased or decreased by reason of any increase or decrease in the cost of the Work to the Contractor which arises as a result of an increase or decrease in the cost of labour, Plant, material or otherwise unless expressly provided for herein.

(2) Notwithstanding GC.9.02(1) and subject to GC.9.02(4), the Contract Price shall be adjusted in the manner provided in Article IV — Scope of Work, if any change in a tax imposed under the Excise Act, the Excise Tax Act, the Customs Act, the Customs Tariff or The Retail Sales Tax Act;

a) occurs after the Time and Date Set for Final Receipt of Bids;

b) applies to material; and

c) affects the cost to the Contractor of that material.

(3) If a change referred to in GC.9.02(2) above occurs, the Contract Price shall be increased or decreased by an amount equal to the amount that is established, by an examination of the relevant records of the Contractor, to be the increase or decrease in the cost incurred that is directly attributable to that change.

(4) For the purpose of GC.9.02(2) above, where a tax is changed after the Time and Date Set for Final Receipt of Bids but public notice of the change has been given by either the Federal or Provincial Minister of Finance before that date, the change shall be deemed to have occurred before the Time and Date Set for Final Receipt of Bids and the Contractor shall not be entitled to an increase in the Contract Price.

GC.9.03 Measurement and Payment (Construction):

(1) By the Fourteenth (14th) Calendar Day after the end of any month, or as soon thereafter as possible, the Contract Administrator shall, subject to receiving all necessary information from the Contractor, make and deliver to the Commissioner a monthly or Final Progress Estimate certified by the Contract Administrator and signed by the Contractor setting out the quantity and value of the Work performed during the preceding month. The signature of the Commissioner thereon will make such Progress Estimate valid for payment.

(2) By the Seventh (7th) Calendar Day after the end of any month following the month during which authorized Extra Work shall have been completed and before the Contract Administrator completes the Progress Estimate for that month, the Contractor shall furnish to the Contract Administrator a statement signed by the Contractor which shall set forth accurately all of the authorized Extra Work completed during that month and the amount claimed therefor in accordance with the valuation method set out in GC.4.07. Subject to GC.9.03(4), every such statement certified by the Contract Administrator shall be final and binding upon the Contractor.

(3) With regard to the Work specified in the Contract, a monthly Progress Estimate is not to be taken as an accurate setting forth of the state of the Work. With regard to any claim for payment for Extra Work, it is the intention that any such claim, whether consisting of labour performed or of material delivered or of both, shall be entirely included in the Progress Estimate for the month following the month during which such Work was performed.

(4) Should the Contractor have reason to claim that an error has been made in the monthly or Final Progress Estimate or more particularly in the measurement and payment for Extra Work by the Contract Administrator, the Contractor shall notify the Commissioner in writing of his contention with respect thereto within Seven (7) Calendar Days of receiving the Progress Estimate, and request a determination thereon from the Commissioner. The Contractor shall be paid the amount certified by the Contract Administrator until a determination has been made by the Commissioner hereunder or in accordance with GC.9.06 hereof.

(5) If the Contractor fails to so appeal to the Commissioner for a determination within Seven (7) Calendar Days of receiving the Progress Estimate, the Contractor shall be deemed to have waived any said claim. Oral appeals or oral protests shall not amount to substantial compliance with any of the provisions of this Article.

(6) If the Contractor disagrees with the determination of the Commissioner he must within Seven (7) Calendar Days after receiving Notice of the Commissioner's determination, notify the Board of Commissioners in writing of his contention with respect thereto and request that the dispute be referred to Arbitration in accordance with GC.11.01.

(7) In the case of the Contractor's neglect or failure to observe fully and faithfully the above conditions, he shall forfeit all right to any claim for additional payment therefor over and above that approved by the Contract Administrator which the Contractor otherwise might have had, and shall not make any claim in respect thereof, and if made, the City may reject the same as invalid and he shall not have any right of recovery in respect thereof, at law or otherwise.

(8) It is intended in all matters referred to above that both the Contract Administrator and Contractor shall act promptly.

(9) In accordance with the rules of procedure adopted by Council from time to time, any payment made by the City to the Contractor on account of a Progress Estimate shall be less any deduction required to be made by "The Builders' Liens Act", and such other deductions as are authorized by the Contract.

(10) All the foregoing information shall be furnished by the Contractor on behalf of himself and all Sub-contractors before payment shall be made by the City. The City may make payment to such persons as shall be entitled thereto for any or all amounts for which the Contractor or any Sub-contractor is shown to be indebted or liable to pay in respect of labour, services, or materials furnished on the Work. Payment of such amounts shall discharge the City's liability to the Contractor to the same extent as payment directly to him.

(11) Payment of monthly Progress Estimates or the Final Progress Estimate by the City to the Contractor shall not be transferable or assignable in any way as a debt or liability of the City to the Contractor.

GC.9.04 Measurement and Payment: (Product, Supply and Installation)

(1) Notwithstanding the provisions of GC.9.03 for contracts which include the supply and installation of a product including but not limited to equipment, pumps, pipes, cable, structural components etc., payment for such product shall be governed by the payment schedule set out in the Supplemental Conditions. Such payments shall only be made upon title to the product being transferred to the City. Such payments shall not be transferable or assignable in any way as a debt or liability of the City to the Contractor.

(2) Any Extra Work to be performed in connection with the supply and installation of any product requires the prior written approval of the Contract Administrator in accordance with Article IV hereof. Such Extra Work will be valued in accordance with the provision of GC.4.07.

GC.9.05 Payment Withheld

(1) The Commissioner may withhold or retain the whole or part of any Progress Estimate to the extent necessary to protect the City from loss on account of one (1) or more of the following in the event that the Contractor:

(a) abandons the Work; or

(b) is adjudged bankrupt or insolvent; or

(c) makes a general assignment for the benefit of his creditors; or

(d) should a receiver or liquidator be appointed in respect of his assets; or

(e) is in the judgement of the Commissioner not executing or has not been executing the Work, or any part thereof, in a sound and workmanlike manner and to his satisfaction and in all respects in strict conformity with the Contract; or

(f) in the judgement of the Commissioner, is not progressing continuously with the Work or any part thereof and in such a manner as to ensure the proper completion of the Work or any part thereof, within the time stipulated; or

(g) refuses or neglects forthwith, when so ordered, to conduct the Work so as to ensure its completion, in the opinion of the Commissioner, within the time stipulated; or

(h) has not completed the Work within the time required; or

(i) refuses or neglects to take down, rebuild, repair, alter or amend any defective or unsatisfactory Work, or to remove any condemned material or workmanship, or to comply with any reasonable order in connection therewith which he may receive from the Commissioner; or

(j) fails to make prompt payment to his Sub-contractors, his employees or on account of the purchase or rental of material or Plant; or

(k) fails to promptly secure a discharge of a lien or trust claim served upon the City pursuant to The Builders' Liens Act; or

(l) persistently disregards any laws, by-laws and statutory regulations; or

(m) fails to sign either a monthly Progress Estimate or the Final Progress Estimate as required under GC.9.03(1); or

(n) fails to employ or keep a competent Supervisor and necessary assistant on the Work or to replace the Supervisor as required by GC.5.01(4); or

(o) fails to comply with the provisions of GC.8.01(2); or

(p) commits any other material breach of this Contract which in the opinion of the Commissioner indicates an unwillingness or inability upon the part of the Contractor to carry out the terms thereof.

(2) Where the Contract Administrator deems it necessary to correct any portion of the Work, the Commissioner may deduct the difference in value between the Work done and that called for by the Contract from the Contract Price, said amount to be determined by the Contract Administrator.

GC.9.06 Waiver of Claims:

Subject to GC.9.03(4), acceptance by the Contractor of payment of the Final Progress Estimate shall constitute a waiver and release by him of all claims against the City whether for payment for Work done, damages or otherwise arising out of the Contract.

GC.9.07 Final Payment:

(1) Payment of the Final Progress Estimate shall be subject to all conditions hereinbefore set forth with regard to the payment of monthly Progress Estimates and upon compliance with the following additional conditions:

(a) completion of inspection and issue of a Certificate of Total Performance of the Work by the Contact Administrator;

(b) production of a certificate from the Workers Compensation Board stating that full payment has been made to the Board with respect to all assessments owing;

(c) completion of a Statutory Declaration on the standard form prescribed by the Board of Commissioners.

(2) Payment on account of the Final Progress Estimate, including the holdback made by the City in compliance with The Builders' Liens Act, shall be paid to the Contractor when the time for filing liens or trust claims has elapsed, unless the City is in receipt of a lien or trust claim.

(3) Payment of the Final Progress Estimate shall not be made by the City until all claims against the Contractor or any Sub-contractor for wages, the purchase of material or rental of Plant, work or services performed for the Contractor or for damages, or howsoever otherwise arising out of or in connection with the Work shall have been paid, vacated or discharged.

(4) Neither the issue of a Certificate of Total Performance or payment of the Final Progress Estimate shall relieve the Contractor from his responsibility either under Article X hereof or as a result of any breach of this Contract by the Contractor including but not limited to faulty or defective Work appearing after Total Performance, failure of the Work to comply with the Contract Documents or the requirement to comply with the terms of any special guarantees set out in the Supplemental Conditions, nor shall it conclude or prejudice any of the powers of the Contract Administrator or the Commissioner hereunder.

GC.9.08 Cost Records:

(1) The Contractor, at his sole cost and expense, shall provide the Commissioner, when a valuation is required pursuant to GC.4.07, GC.4.08 or GC.9.02, with every facility for the compilation of cost records, and when required, as aforesaid, shall supply all data necessary for such purpose from payrolls, time books, invoices, and all other sources from which the Commissioner may find it necessary to obtain information.

(2) The Contractor, at his sole cost and expense, shall, when a valuation is required pursuant to GC.4.07 or GC.4.08, furnish the Commissioner with correct statements of number, name, rate and time for each of the persons, and identifying description, rate and time for each of the trucks and other equipment, employed or used by him, including expenses for maintenance and operation.

(3) The Contractor, at his sole cost and expense, shall provide to the Commissioner, when a valuation is required pursuant to GC.4.07, GC.4.08 or GC.9.02, all such information and evidence, including all necessary mathematical calculations of holdback and interest, as shall be reasonably necessary to ensure full and accurate compliance by the City with the requirements of The Builders' Liens Act with regard to the disbursement of holdback monies, and more particularly with Section 25 of the said Act, and shall save harmless and keep indemnified the City against all claims and demands which may be made against it for losses, damages, or expenses of any kind whatsoever resulting from inaccuracies in the said information or in payments made pursuant thereto inclusive of the value of all legal services and disbursements required to defend such a claim without having regard to the fact that legal services have been performed by a salaried employee of the City.

ARTICLE X – WARRANTY

GC.10.01 Warranty:

(1) The Contractor, unless specifically stated otherwise in the Contract Documents, shall, at his sole cost and expense, maintain the Work against any and all defects or deficiencies or otherwise which may arise for a period of one (1) year from the date of the Certificate of Total Performance.

(2) Upon receipt of written Notice from the Commissioner, the Contractor shall, at his sole cost and expense, remedy any defect or deficiency or otherwise identified by the Commissioner within the one (1) year period as aforementioned, in the manner and within the time periods specified in the said Notice. A copy of the said Notice shall be given to the Surety or its Winnipeg Agent.

(3) The Contractor shall also, at his sole cost and expense, remedy any and all damage that may arise or result from the defect, deficiency or otherwise referred to in the said Notice or as a result of the correction of same.

(4) If the Contractor fails for any reason whatsoever to remedy the defects or deficiencies or otherwise in the manner and within the time periods specified in the said Notice, the Commissioner may take all steps necessary to have the defects, deficiencies or otherwise remedied either by the City's own forces or by another contractor or contractors. The cost of such remedial work shall be paid to the City by the Contractor within Seven (7) Calendar Days of receipt of written Notice from the Commissioner to the Contractor setting out the amount to be paid. In the event that the Contractor fails to make payment to the City as required hereunder, the Surety shall make such payment to the City within Seven (7) Calendar Days of receipt of written Notice from the Commissioner setting out the amount to be paid.

(5) Notwithstanding the generality of the foregoing,

(a) in any case where repairs must be made immediately, by reason of an emergency existing or otherwise, the City shall have the right to undertake such repairs and charge the cost of making such repairs to the Contractor, except that the Commissioner shall immediately notify the Contractor and shall withdraw its forces as soon as the Contractor's forces assume performance of the repair.

(b) all costs resulting from the need to undertake remedial work during the warranty period as aforesaid, whether by the Contractor, his Sub-contractor or by the City, as provided herein, shall be borne by the Contractor. In addition, the Contractor shall be liable to the City for all expenses, losses or damages incurred by the City as a result of such defects, deficiencies or otherwise referred to herein or as a result of the Contractor's failure to meet the warranty requirements specified herein, including, but without limiting the generality hereof, all costs of engineering, inspecting and testing.

(6) Notwithstanding the provisions of this Article, if any statute in force in the Province of Manitoba or in the jurisdiction where the material was manufactured or if a manufacturer's warranty extends beyond the warranty period specified in these Contract Documents, then the provisions of such statute or manufacturer's warranty shall apply.

(7) In the event that the Contractor can prove, following completion and payment for the remedial work, that the defect, deficiency or otherwise was attributable to a design defect, deficiency or otherwise or resulted from third party damage not attributable to the Contractor or his Sub-contractors, the City shall promptly reimburse the Contractor for the cost of undertaking such remedial work. If the Contractor fails for any reason whatsoever to remedy the defect, deficiency or otherwise in the manner and within the time limit specified in GC.10.01(2), the Contractor shall not be entitled to repayment of the monies that he is required to pay to the City under GC.10.01(4) if the Contractor is later able to establish that the defect, deficiency or otherwise was due to a design defect, deficiency or otherwise or resulted from third party damage not attributable to the Contractor or his Sub-contractors.

(8) Where, because of adverse weather or other conditions reasonably beyond the control of the Contractor, a component of the Work cannot be completed but that component does not prevent the balance of the Work from being put to its intended use, the Commissioner may permit the warranty period to commence prior to the Total Performance of the Contract in the manner set out in the Supplemental Conditions.

GC.10.02 Acceptance of the Work:

(1) The Contract Administrator shall issue a Certificate of Acceptance of the Work following the expiration of the warranty period upon:

(a) the satisfactory performance of the Work during the warranty period;

(b) the Contractor remedying all defects, deficiencies or otherwise identified by the Commissioner during the warranty period in the manner prescribed herein and to the satisfaction of the Commissioner;

(c) the successful conclusion of tests required by the City immediately preceding the conclusion of the warranty period.

(2) No certificate other than the Certificate of Acceptance shall:

(a) be deemed to constitute acceptance of the Work or any part or parts thereof; or

(b) be taken as an acceptance of:

i) the due performance of any or all of the Contract; or

ii) the accuracy of any claim or demand by the Contractor; or

iii) additional or varied work having been ordered by the City.

(3) The Certificate of Acceptance shall not however relieve the Contractor from his responsibilities as a result of any breach of this Contract by the Contractor, including but not limited to faulty or defective Work appearing after the Certificate of Acceptance has been issued, failure of the Work to comply with the Contract Documents or the requirement to comply with the terms of any special guarantees set out in the Supplemental Conditions.

ARTICLE XI — DISPUTES

GC.11.01 Arbitration:

(1) If, at any time during the period that this Contract is in force or after the dissolution or determination thereof, any dispute, difference or question shall arise between the City and the Contractor touching on this Contract or the accounts or transaction thereof, or the construction, meaning or effect of these presents or otherwise in relation to the premises, then every such dispute, difference or question may, with the consent of both the Board of Commissioners and the Contractor, be referred to three arbitrators, one to be appointed by each party to the reference, and the other to be appointed by the first named two arbitrators in writing before they enter upon the business of the reference. Either party may notify the other party in writing of its desire to submit the difference, dispute or question to arbitration; and the Notice by the first party shall contain the name of the arbitrator appointed by the party giving Notice. The party receiving the Notice shall, within 10 days, notify the party giving the Notice whether or not the receiving party agrees to submit the matter to arbitration. If the party receiving the original Notice agrees to arbitration, then that party shall include, in his acceptance, the name of the arbitrator appointed by him. If the party receiving the Notice refuses or neglects to appoint an arbitrator within Ten (10) days after the other party shall have appointed an arbitrator, then the arbitrator first appointed shall, at the request of the party appointing him, proceed to hear and determine the matters in difference as if he were an arbitrator appointed by both parties for that purpose, and the award or determination which shall be made by the said arbitrator or arbitrators, or the majority of them if there are three arbitrators, shall be final and binding upon the parties hereto, their successors and assigns.

(2) The arbitrator appointed by the two arbitrators selected by the City, and by the Contractor, shall establish the procedures under which the arbitration shall proceed, including but not limited to the calling and number of witnesses, submissions in writing or by hearings, whether either party may be interviewed separately by the panel; and other relevant matters; all within the requirements of The Arbitration Act of Manitoba; and shall render a decision, and announce awards within the time limits of the Act.

(3) The City and the Contractor agree that the Arbitration shall not proceed until Substantial Performance of the Work.

(4) The City shall bear all costs and expenses associated with the appointment of its arbitrator. The Contractor shall bear all costs and expenses associated with the appointment of its arbitrator. The City and the Contractor shall bear all other costs and expenses associated with the Arbitration equally.

PART D

SUPPLEMENTAL CONDITIONS

CITY OF WINNIPEG

SUPPLEMENTAL CONDITIONS INDEX

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CITY OF WINNIPEG

SUPPLEMENTAL CONDITIONS

SC:1. General Conditions

In addition to the General Conditions, these Supplemental Conditions are applicable to the Work of this Contract.

SC:2. Insurance

Further to BI:15 of the Bidding Instructions the Contractor shall provide the following Insurance Coverage:

(1) Third Party Liability Insurance

Without limiting the generality of GC.7.04 of the General Conditions, the Contractor shall, during the term of the Contract, maintain and pay for a third party liability policy, in the amount of at least one million Dollars ($1,000,000,00) all inclusive, with the City of Winnipeg being named an additional named insured, with a cross-liability clause, such liability policy to also contain a 24 month completed operations endorsement effective for a 24 month period from the date of acceptance of the works by the City, and provide a Certified true copy, or a Certificate of Insurance, of the policy to the City, prior to commencement of the Works, satisfactory to the Solicitor. Deductibles must be acceptable to the City and are to be borne by the Contractor.

(2) Automobile Liability Insurance

The Contractor shall maintain and pay for, during the currency of this Contract, liability insurance for owned and non-owned automobiles in an amount of not less than $250,000.00. A Certified true copy of the policy, or a Certificate of Insurance shall be provided to the City, prior to commencement of the Works satisfactory to the Solicitor.

(3) Property Insurance

The contractor shall, during the term of the Contract, provide and maintain an All Risk Builders Risk Course of Construction Policy in the amount 100 percent of the total contract price. This policy is to name the City of Winnipeg as a named insured. A Certified true copy of the policy, or a Certificate of Insurance, shall be provided to the City, prior to commencement of the Work, satisfactory to the Solicitor.

SC:3 Workers Compensation

The Contractor shall be registered with the Workers Compensation Board of Manitoba and shall purchase and maintain in good standing Workers Compensation coverage.

The Contractor shall, within seven (7) Calendar Days of a request by the Contract Administrator, provide proof of coverage.

SC:4 Bid Evaluation Criteria

Further to BI:24.02 of the Bidding Instructions, award of this Contract shall be based on the following evaluation criteria:

The City reserves the right to apply any combination of "base bid"' alternatives, and separately priced items to determine "contract price".

SC:5 Completion of Work

Further to BI:12 of the Bidding Instructions, the Contractor shall complete, to the satisfaction of the City, and have ready for operation, all the work of this Contract by August 03, 1990.

SC:6 Liquidated Damages

Further to GC:8.06(3) of the General Conditions, the sum fixed for Liquidated Damages for this Contract is $200.00 per calendar day.

SC:7 Notices

Further to GC.7.06 of the General Conditions, all notices, consents, approvals, statements, authorizations, documents or other communications to the City shall be sent to the following addresses:

Civic Properties Department
180 King Street
Winnipeg, Manitoba R3B 3G8

SC:8 Contract Administrator

The Contract Administrator for the Work is Civic Properties, representing D. Duncan, P.Eng.

SC:9 Schedules

9.01 Further to GC.8.01 of the General Conditions, the Contractor shall submit to the Contract Administrator a Schedule of activities for the Work containing the following additional information.

A detailed work schedule in the form of a Gantt Chart showing the start and completion date of each item listed on the Lump Sum Schedule of Price form, or as required by the Contract Administrator to be submitted to the Contract Administrator within 14 calendar days from receipt of the letter of intent for the work.

9.02 Priority scheduling for the Administration buidling boiler room is as follows:
June 1, 1990, the existing boiler will be fired for the duration. All system connections, including, but not limited to steam header, natural gas, feed water, electrical & combustion air must be in place. Note that boiler room insulation is asbestos and removal must meet Provincial requirements.

9.03 The stand-by generator shall be relocated with the absolute minimum of down tine, scheduled to suit the Owner.

SC:10 Warranty

10.01 Further to GC.10.01(1) of the General Conditions, the Contractor shall, at his sole cost and expense, maintain the Work against any and all defects or deficiencies or otherwise which may arise for a period of one year from the date of the Certificate of Total Performance.

SC:11 Office Facilities

Further to GC.5.03(1) of the General Conditions, the Contractor shall supply office facilities meeting the following requirements:
Telephone

SC:12 Responsibility for plant, material & Equipment

Further to GC.6.01(1) of the General Conditions, the Contractor shall be at risk for and responsible for the plant, material, & equipment until Substantial Performance of the Work.

SC:13 Taxes and Governmental Charges

Further to Article IX of the General Conditions, it is the intention of the City to claim refunds as applicable for all taxes and charges governmental. The City shall be entitled to receive all refunds of any such tax and/or charges governmental paid by the Contractor. The Contractor shall provide and shall require its Sub-Contractors to provide all necessary documentation and signature to the City in order to permit the City to complete its application for the refund.

SC:14 Substantial Performance

Further to GC.1.01(23), the requirements of Clause 9 of the General Provision have to be satisfied as part of the Substantial Performance requirements.

SC:15 Total Performance

Further to GC.1.01(24), the requirements of Clause 10 of the General Provisions have to be satisfied as part of the Total Performance requirements.

PART E

SPECIFICATIONS

1. SCOPE

1.1 ARCHITECT OR ENGINEER

1. Wherever the word Architect or Engineer is used in the construction specifications, it shall be replaced with Contract Administrator as defined in GC.1.01(8) of the General Conditions, or his agent.

2. COORDINATION AND COOPERATION

2.1 OTHER TRADES

1. Specifications shall be read by all trades to acquaint them with the nature of the work required. Failure to do so will not relieve them of any responsibilities for cooperation in coordinating the work and preventing delay and for the supply and installation of materials required for this work.

2.2 CUTTING AND PATCHING

1. Each trade shall do all necessary cutting and patching required for their work. Existing adjacent surfaces shall be accurately matched. Cutting through any structural member shall only be done with the prior approval of the Contract Administrator.

2. Perform all cutting and patching required to make the several parts of the work cone together quickly.

3. MATERIALS

3.1 C.S.A.

1. All materials, where applicable, shall be CSA approved.

4. SUBMITTALS

4.1 SHOP DRAWINGS

1. The Contractor shall submit for approval, at least five (5) sets of detailed shop drawings for all work as requested by the Contract Administrator at the initial site meeting and as required thereafter.

5. QUALITY CONTROL

5.1 INSPECTING AND TESTING MATERIAL

1. The City reserves the right to inspect and test all materials at its own expense and to reject any materials which are not in accordance with the with the requirements of the specifications. The Contractor shall furnish, at the Contractor's expense, such specimens and samples of materials as may be required for testing.

2. The Contractor shall allow the City to test any equipment, and shall provide power, fuel or material required for these standard performance tests on the equipment.

6. CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

6.1 SITE PROTECTION

1. The Contractor shall provide adequate protection to prevent any damage to existing structures, furnishings, finishes, etc., during construction. Temporary ramps, barricades, hoardings as required shall be provided to the approval of the Contract Administrator.

2. The Contractor shall exercise care in the operations relative to the site. Any unnecessary destruction of the site will not be permitted. The Contractor shall exercise care in the movement of equipment and materials especially during wet weather. The Contractor shall be held responsible for the repair of damages to the site, boulevards, roads, other pavements, etc., in the surrounding area of the immediate site.

6.2 LAYOUT OF WORK

1. Without limiting the generality of Clause 4.03 of the General Conditions the Contractor shall verify all dimensions on the drawings and report any discrepancies to the Contract Administrator before starting the work.

6.3 EXISTING SERVICES AND UTILITIES

1. Further to GC>2.01 of the General Conditions, it shall be the responsibility of the Contractor to verify the location of all existing utilities, pipes and other objects and, if encountered, to adequately protect them during the construction period, and if disturbed or damaged by the Contractor, to have them replaced or reset in their original position after construction has been completed at the Contractor's cost.

7. SURVEYS & MEASUREMENTS

7.1. UTILITIES

1. Whenever the Work requires that a public street or lane be cut for underground works, the Contractor shall before entering on the Work Site, make application to each utility, or other authorities, and shall give to the Superintendent of Traffic Services, Traffic Operations Section of the Streets and Traffic Branch in the Streets and Transportation Department of the City of Winnipeg, not less than 48 hours written notice of the date on which work is to commence. A copy of the application and of all notices are to be given to the Contract Administrator.

2. The Contractor shall be responsible for all costs of the work to be done in the cut, the work to restore all underground structures to their "as found condition", and to restore the surface area to its original condition, or better.

3. The Contractor shall supply, erect and maintain all applicable traffic control devices in accordance with the provisions of the latest edition of the "Manual of Temporary Traffic Control in Work Areas on City Streets" issued by the City of Winnipeg. The manual is available from the Streets and Transportation Department of the City of Winnipeg.

8. PROJECT INFORMATION SIGNS

8.1 SIGNS

1. No project information signs shall be allowed without the written approval of the Contract Administrator. Any project information signs approved during construction are to be removed by the Contractor upon completion of the project.

9. SUBSTANTIAL PERFORMANCE

9.1 INSTRUCTION MANUALS

1. The Contractor shall provide the Contract Administrator with four copies of all manuals showing:
   a) Service Instruction - including a list of spare parts and replacement parts and the names and addresses of all suppliers.
   b) Maintenance Instructions
   c) Installation Instructions
   d) Operating Instructions
   e) Electric Schematics

2. Detailed electrical and electronic circuit diagrams (wiring and schematic) showing all wiring connections; all electrical component values; all component parts manufacturers; and servicing procedure for all electrical and electronic equipment utilized to approval of the

City. Purchase of the equipment is contingent on the provision of the above information.

9.2 OCCUPANCY PERMIT

1. The Contractor shall obtain the Occupancy Permit required under the Building By-Law, along with the mechanical and electrical Certificate of Inspection from the City of Winnipeg Environmental Building Inspection Department.

9.3 APPLICATION FOR SUBSTANTIAL PERFORMANCE

1. Upon completion of the work or upon reaching substantial performance the Contractor shall complete the attached form C.P.10 Contractors Application for Substantial Performance.

9.4 INSTRUCTION

1. The Contractor shall instruct the facility operating staff in the use of all the facility systems to the satisfaction, and in the presence, of the Contract Administrator.

10. TOTAL PERFORMANCE

10.1 AS-BUILT DRAWINGS

1. At Total Performance, the Contractor shall provide the Contract Administrator with two sets of record drawings as "As-Built" Drawings and specifications bearing notations of all changes and variations from the originals.

2. The accuracy of these drawings shall be the responsibility of the Contractor, who shall bear all expenses of corrections thereto. Final payment shall not be made until this requirement has been fulfilled.

11. GENERAL DRAWINGS

11.1 DRAWINGS

1. The drawings referred to in these specifications form part of the contract documents, and are as follows:

12. PARKING

1. Parking is available in the carpark at the usual rates on a first come basis. Available longer term passes may be less expensive.

13. USE OF THE SITE

1. The new boiler room and the existing boiler room may be used for site offices and limited storage. Maintain convenient access to existing equipment at all times.

2. Level E4 of the carpark may also be used, but care must be taken not to overload the structure which has a low live load capability.

3. The buildings must be kept operational throughout the construction period. Note that the Public Safety Building is a 24 hour, 7 days per week operation.

4. Continually review the use of the site and schedule with the Project Administrator.

5. Interruption of services must be recognized and scheduled to suit the Owner's use of the facilities. Central steam is scheduled to terminate June 1, 1990. Summer steam is to be maintained with the two existing boilers, as usual, for domestic water and hot deck coils. Exercise particular care, and coordinate very thoroughly, all stand-by power system interruptions.

14. SITE VISIT

1. **Carefully review the entire site since no additional compensation will be provided for conditions which could have been identified by such examination.**

Form CP-10/78-12
THE CITY OF WINNIPEG
CONTRACTOR'S APPLICATION FOR SUBSTANTIAL PERFORMANCE

For the purpose of acceptance for substantial performance and payment in full (except holdbacks) the under signed Contractor herewith applies to the Director of Civic Properties or the designated consultant to proceed with a substantial performance inspection on the construction of the project known as _____ _____.

The undersigned makes the following statements and attaches the following documents and certificates:

1. Statutory Declarations of Contractor
2. Letter from Workers' Compensation Board
3. Master keys for building were delivered to the Engineer in a sealed envelope on _____.
4. As-built Drawings
5. Instruction Manuals
6. Mechanical System Balancing Report
7. Electrical Utility Inspection Certificate
8. Mechanical Engineer's Acceptance of Work
9. Electrical Engineer's Acceptance of Work
10. Mechanical Instructions to City were given on _____ to _____.
11. Electrical Instructions to City were given on _____ to _____.
12. Guarantees above and beyond the one year guarantee period as specified are listed on separate sheet and _____ sheets of guarantees are attached.
13. Boiler and/or heating plant and pressure vessel certificates (Dept of Labour)
14. Elevator Operation Permit
15. Emergency Power Start-up Confirmation
16. Health Department Approval (Kitchen, Swimming Pool, Septic Field - where applicable)
17. City Permit from the Department of Environmental Planning for Occupancy of Building.
18. We certify that the following readings were carried out in the presence of _____.

Water Meter	Date _____	Reading _____
Gas Metre	Date _____	Reading _____
Oil Tank Content	Date _____	Reading _____
Electrical Meters	Date _____	Reading _____

19. The list of work orders submitted by your office was checked and we agree that, no/the following, items are outstanding
20. Due to seasonal conditions we were not able to complete _____ items which are listed and evaluated on the attached sheet. We estimate the value of work remaining to be $ _____ which is broken down on the attached sheet. This work shall be completed before _____.
21. When building is accepted we intend to cancel fire insurance as follows _____.
22. We certify that performance bond and liability insurance will remain in force until the end of the one year guarantee period.
23. The building was occupied by the user on _____.

_____ _____
Date Signature

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PART 1 - GENERAL

1.1 RELATED WORK

1.2 PROTECTION

.1 Protect existing items designated to remain and materials designated for salvage. In event of damage, immediately replace such items or make repairs to approval of Architect and at no additional cost to Architect.

PART 2 - PRODUCTS Not applicable

PART 3 - EXECUTION

3.1 PREPARATION

.1 Inspect site and verify with Architect items designated for removal and items to be preserved.

.2 Locate and protect utility lines. Preserve in operating condition active utilities traversing site.

.3 Notify utility companies before starting demolition.

3.2 REMOVAL

.1 Remove items indicated.

.2 Do not disturb adjacent items designated to remain in place.

.3 In removal of pavements, curbs and gutters:

.1 Square up adjacent surfaces to remain in place by saw cutting or other approved method.

.2 Protect adjacent joints and loan transfer devices.

.3 Protect underlying granular materials.

3.3 SALVAGE

.1 Carefully dismantle items containing materials directed or indicated for salvage. Stockpile salvaged materials at locations directed or indicated.

3.4 DISPOSAL OF MATERIAL

.1 Dispose of materials not designated for salvage or re-use in work, off-site.

3.5 RESTORATION

.1 Upon completion of work, remove debris, trim surfaces and leave work site clean.

.2 Reinstate areas and existing works outside areas of demolition.

**********END**********

PART 1 - GENERAL

1.1 RELATED WORK
.1 Concrete reinforcement: Section 03200
.2 Cast-in-place concrete: Section 03300

1.2 REFERENCE STANDARDS
.1 Do concrete formwork in accordance with CAN3-A23.1-M77, except where indicated otherwise.

1.3 SHOP DRAWINGS
.1 Submit shop drawings in accordance with Section 01340.
.2 Clearly indicate method and schedule of construction, materials, arrangement of joints, ties, shores, liners, and locations of temporary embedded parts.

PART 2 - PRODUCTS

2.1 MATERIALS
.1 Formwork lumber: plywood and wood formwork materials to CAN3-A23.1-M77.
.2 Form release agent: chemically active release agents containing compounds that react with free lime present in concrete to provide water insoluble soaps, preventing set of film concrete in contact with form.
.3 Form ties: removable or snap-off metal ties, fixed or adjustable length, free of devices leaving holes larger than 25mm dia in concrete surface.
.4 Fillets for chamfired corners: 25 mm x 25 mm x maximum possible lengths.
.5 Polyethylene shall be 4 mil (0.10 mm) thickness.

PART 3 - EXECUTION

3.1 ERECTION
.1 Verify lines and levels before proceeding with formwork and ensure dimensions agree with drawings.
.2 Construct formwork to maintain suggested maximum tolerances of concrete work as listed in Part 1 of ACI Manual of Concrete Practice, Chapter 24, Recommended Practice of Concrete Formwork (ACI 347-68), paragraph 2.4 and as follows:
.1 Deviation from horizontal and vertical lines: 1 mm in 500 mm.
.2 Deviation of building dimensions indicated on drawings and position of columns, walls, and partitions: 6 mm.
.3 Deviation in cross sectional dimensions of columns or beams, or in thickness of slabs and walls: plus or minus 6 mm.
.3 Camber slabs and beams 2 mm per m of span unless shown otherwise. Maintain beam depth and slab thickness from cambered surface.

.4 Obtain Architect's permission before framing openings in structural members, which are not indicated on drawings.
.5 Remove forms from foundation supporting walls and beams after concrete has been allowed to cure a minimum of 14 days.
.6 Align form joints and make watertight. Keep form joints to minimum.
.7 Use 25 mm chamfer strips on external corners of beams (where exposed).
.8 Apply form release agent on formwork in accordance with manufacturer's recommendations. Apply prior to placing reinforcing steel, anchoring devices and embedded parts. Do not apply form release agent where concrete surfaces are to receive special finishes or applied coverings, which are affected by agent. Soak inside surfaces of untreated forms with clean water. Keep surfaces wet prior to placing concrete.

3.2 INSERTS/EMBEDDED PARTS/OPENINGS
.1 Provide formed openings where required for pipes, conduits, sleeves, and other work to be embedded in and passing through concrete members.
.2 Accurately locate and set in place items which are to be cast directly into concrete.
.3 Co-ordinate work of other Sections and co-operate with trade involved in forming and/or setting openings, slots, recesses, chases, sleeves, bolts, anchors, and other inserts. Do not perform work unless specifically indicated on drawings or approved prior to installation.
.4 Install all concrete accessories in accordance with drawings and manufacturer's recommendations, straight, level and plumb. Ensure items are not disturbed during concrete placement.

3.3 FIELD QUALITY CONTROL
.1 Inspect and check completed formwork, shoring and bracing to ensure that work is in accordance with formwork design, and that supports, fastenings, wedges and ties and parts are secure.
.2 Inform Engineer when formwork is complete and has been cleaned, to allow for inspection. Obtain approval prior to placing concrete.

3.4 CLEANING
.1 Clean forms as erection proceeds,to remove foreign matter. Remove cuttings, shavings, and debris from within forms. Flush completely with water to remove remaining foreign matter.
.2 During cold weather, remove ice and snow from within forms. Do not use de-icing salts. Do not use water to clean out completed forms, unless formwork and concrete construction proceed within a heated enclosure. Use compressed air or other means to remove foreign matter.

3.5 FORM REMOVAL
.1 Notify Architect prior to removing formwork.

.2 Do not remove forms and bracing until concrete has gained sufficient strength to carry its own weight, construction loads, and design loads which are liable to be imposed upon it. Verify strength of concrete by compressive test results.

.3 Remove formwork progressively and in accordance with Code requirements and so that no shock loads or unbalanced loads are imposed on structure.

.4 Loosen forms carefully. Do not wedge pry bars, hammers, or tools against concrete surfaces.

.5 Store removed forms, for exposed architectural concrete, in a manner that surfaces to be in contact with fresh concrete will not be damaged. Marked or scored forms will be rejected.

**********END**********

PART 1 - GENERAL

1.1 RELATED WORK
- .1 Formwork and falsework: Section 03100
- .2 Cast-in-place concrete: Section 03300

1.2 REFERENCE STANDARDS
- .1 Do reinforcing work in accordance with CAN3-A23.1-M77.

1.3 SHOP DRAWINGS
- .1 Submit shop drawings in accordance with Section 01340.
- .2 Clearly indicate bar sizes, spacing, location and quantities of reinforcement, mesh, chairs, spacers and hangers with identifying code marks to permit correct placement without reference to structural drawings; to Reinforcing Steel Manual of Standard Practice.
- .3 Detail placement of reinforcing where special conditions occur.
- .4 Design and detail lap lengths and bar development lengths to CSA CAN3-A23.3-M77, unless otherwise indicated.
- .5 Each drawing submitted shall bear signature and stamp of qualified professional engineer registered in Canada.

1.4 SUBSTITUTES
- .1 Substitution of different size bars permitted only upon written approval of Engineer.

PART 2 - PRODUCTS

2.1 MATERIALS
- .1 Reinforcing bars: billet steel, grade 300 & 400 deformed bars to CSA G30.12-M1977 as indicated on the drawings.
- .2 Welded Steel wire fabric: to CSA G30.51972(R1979). Provide in flat sheets only.
- .3 Chairs, bolsters, bar supports, spacers: to CAN3-A23.1-M77 and adequate for strength and support of reinforcing construction conditions.
- .4 Mechanical splices subject to the approval of the Engineer.

2.2 FABRICATION
- .1 Fabricate reinforcing to CAN 3-A23.1-M77.
- .2 Fabrication tolerances for reinforcing steel to "Reinforcing Steel Manual of Standard Practice" metric supplement 1977 by Reinforcing Steel Institute of Ontario.
- .3 Obtain Engineer's approval for locations of reinforcement splices other than shown on steel placing of drawings.
- .4 Ship bundles of bar reinforcement, clearly identified in accordance with bar list.

PART 3 - EXECUTION

3.1 PLACING REINFORCEMENT

.1 Place reinforcing steel to CAN-A23.11-M77 and as indicated on reviewed shop drawings.

.2 Locate mechanical splices as detailed on shop drawings.

.3 Obtain Engineer's approval of reinforcing steel and position before placing concrete.

.4 Clean reinforcing before placing concrete.

**********END**********

PART 1 - GENERAL

1.1 RELATED WORK SPECIFIED ELSEWHERE

1.2 REFERENCE STANDARDS

.1 Do cast-in-place concrete work in accordance with CAN3-A23.1-M77, except where specified otherwise.

PART 2 - PRODUCTS

2.1 MATERIALS

.1 Cement: to CAN3-A5-M77.
.2 Water, fine aggregates, low density coarse aggregates: to CAN3-A23.1-M77.
.3 Air entraining admixture: to CAN3-A266.1-M78.
.4 Chemical admixtures: to CAN3-A266.2-M78.
.5 Pozzolanic mineral admixtures: to CAN3-A266.3-M78.
.6 Non-shrink grout: premixed compound consisting of metallic aggregate, cement, water reducing and plasticizing agents, of pouring consistency, capable of developing compressive strength of 50 MPa at 28 days.
.7 Surface hardener to be "colorumdum" or approved equal.

2.2 CONCRETE MIXES

.1 Proportion normal density concrete to CAN3-A23.1-M77, Clause 14 to meet the requirements outlined on the drawings.
.2 Provide certification that plant, equipment, and all materials to be used in concrete comply with the requirements of CAN3-A23.1-M77.
.3 Provide certification that mix proportions selected will produce concrete of specified quality and yield and that strength will comply with CAN3-A23.1-M77, Clause 17.5.
.4 Obtain Engineer's approval before using chemical admixtures other than those specified.
.5 Use of calcium chloride is not permitted.
.6 Comply with CAN3-A231-M77 Table 8 for use of air entrainment.

PART 3 - EXECUTION

3.1 WORKMANSHIP

.1 Obtain Engineer's approval before placing concrete. Provide 24 hours notice prior to placing of concrete.
.2 Place concrete in accordance with CAN3-A23.1-M77.
.3 Ensure reinforcement and inserts are not disturbed during concrete placement.
.4 Obtain Engineer's approval of proposed method for protection of concrete during placing and curing in adverse weather, prior to placing of concrete.

.5 Maintain accurate records of poured concrete items to indicate date, location of pour, quality, air temperature and test samples taken.

3.2 INSERTS

.1 Set sleeves, ties, anchor bolts, pipe hangers and other inserts, openings and sleeves, in concrete floors and walls, as required by other trades. Sleeves, openings, etc., greater than 100 mm x 100 mm not indicated on structural drawings must be approved by Engineer.

.2 No sleeves, ducts, pipes or other openings shall pass through joists, beams, or columns, except where expressly detailed on structural drawings or approved by Engineer.

.3 Do not eliminate or displace reinforcement to accommodate hardware. If inserts cannot be located as specified, obtain approval of all modifications from Engineer before placing of concrete.

.4 Check locations and sizes of sleeves, openings, etc., shown on structural drawings with mechanical and electrical drawings.

.5 Set inserts according to design drawing as required by Non-Destructive Method for Testing Concrete.

3.3 GROUTING DRY PACKING

.1 Grout between steel beams and hollowcore with non-shrinking grout to manufacturer's instructions.

3.4 FINISHING

.1 Steel trowel in accordance with CAN3-A23.1-M77 Class A.

.2 Follow with second steel trowelling to produce smooth burnished surface.

.3 Do not sprinkle dry cement or dry cement and sand mixture over concrete surfaces.

3.5 TOPPINGS/LEVELING GROUT

.1 Apply concrete topping and/or levelling grout over concrete base slab to CAN3-A23.1-M77. Concrete topping to be 25 MPa minimum compressive strength, leveling grout to be 20 MPa minimum compressive strength. Concrete shall be sampled and tested by an approved testing agency.

.2 The concrete base slab shall be cleaned of dirt, dust, grease, oil, efflorescence or other foreign matter. New precast concrete slabs and/or new cast-in-place concrete slabs must be thoroughly cleaned by wire-brooming, scaping, compressed air and vacuuming. Existing slabs must be cleaned and conditioned by a blast cleaning unit (Blastrac or equal) and vacuumed as required.

.3 Topping mix shall be reinforced with glass fibre mesh unless specifically noted otherwise.

.4 All topping shall be laid with as stiff a mix as usable. Water cement ratio shall not exceed 0.45, use superplasticizer to increase workability. Special care shall be taken at hollowcore joints to ensure adequate bond and proper curing of topping/skim coat to eliminate cracking at hollowcore joints.

.5 The topping area shall be placed in separate sequences with at least 24 hours between adjacent areas. The individual areas shall be as near square as possible and shall not exceed 2000 square feet in any segment.

.6 Depending upon temperature, drying conditions and requirements of the bonding agent to be used, precast slabs must be thoroughly soaked with water for 24 to 48 hours before topping is placed.

.7 Since drying shrinkage must be kept to a minimum, a curing membrane shall be laid down as soon as possible after finishing trowelling. In addition the floor area shall be protected from heat and drying by covering with non-staining tarps. All curing compounds shall be compatible with the finish flooring adhesive and shall be installed in accordance with the manufacturers recommendations.

.8 No bumps or hollows will be allowed. Final topping shall be uniform to within 1/8" as measured with a 10 foot straight edge. Any ridges between segments shall be ground smooth with hollows filled with an approved levelling compound.

.9 If any trades are to work over the finished surface with benches or equipment and materials, all such areas shall be covered with plywood or other suitable material to prevent damage or pitted cavities from the dropping of sharp objects. No oil deposits or other foreign materials shall be allowed to come in contact with the finished concrete surface particularly unpainted metal subject to rust.

.10 Apply levelling grout to top of precast floors to provide a suitable base surface for each of the finish flooring products indicated, to acceptance of flooring trades and Consultant, 20 MPa minimum compressive strength. The proposed bonding agent, mix design and application procedures shall be approved by the Engineer prior to commencement of work.

3.6 BONDING AGENTS

.1 Apply an approved bonding agent (Duraweld-C or equal) to base slab prior to placing topping as indicated on drawings.

.2 Apply epoxy based bonding agent (Epoxtite Binder or approved equal) as indicated on drawings.

3.7 DEFECTIVE CONCRETE

.1 Remove defective concrete, blemishes and embedded debris and repair as directed by Engineer.

3.8 INSPECTION AND TESTING

.1 Inspection and testing of concrete and concrete materials will be carried out by testing laboratory designated by Owner.

.2 Submit samples of fine and coarse aggregate with proposed mix design to laboratory in accordance with CAN3-A23.2-M77.

.3 Inspection and testing of concrete and materials shall be done by a testing agency approved by the Owner and paid for by cash allowance (Section 00435). Tests shall be in accordance with C.S.A. Specification CAN3-A23.2-M77. Samples shall be taken and handled only by the inspection firm. At least three (3) cylinder tests shall be taken from each concrete pour or for every 75 m3 of concrete poured, whichever is less. One cylinder shall be tested at seven days and the remaining two at twenty-eight days.

.4 Take one additional test cylinder during cold weather concreting. Cure cylinder on job site under same conditions as concrete it represents.

.5 Make at least one slump test for each set of test cylinders taken.

3.9 COLD WEATHER CONCRETING

.1 The following items are minimum requirements for protecting concrete during and after placement in freezing weather. Except as noted below, concrete curing and protection to be in accordance with CSA standard CAN3-A23.1-M77, Section 21.
Before any concrete is placed, all ice, snow and frost shall be completely removed from all formwork and other surfaces against which concrete will be placed, and temperature of such surfaces shall be raised above 10 C for 24 hours minimum prior to concreting. Where concrete work is to come in contact with the earth, the surfaces of the earth shall be completely free of frost when the concrete is placed thereon.

.2 Concrete Aggregates and water shall be heated to not over 80 C. Concrete shall not be less than 20 C nor more than 30 C in temperature when deposited. Concrete when placed during freezing weather (or if freezing is anticipated during curing period) shall be fully enclosed and the temperature of same maintained at not less than 20 C for 5 days and not less than 5 C for an additional 5 days. The Contractor is obligated to provide adequate heating to attain the specified concrete strengths required prior to stripping or to provide a concrete mix which will meet the specified stripping strengths under reduced curing temperatures.

.3 All protecting covering shall be kept clear of the concrete and form surfaces to permit full circulation of air and shall be maintained intact for at least 24 hours after the artificial heat is discontinued.

.4 Heating enclosures shall be strong and windproof, but well ventilated, and heating units so located as to prevent local overheating, drying of the concrete, or damage from combustion gases. Only Herman Nelson heat exchange, fuel oil type heaters will be acceptable for slabs and flat areas. Units must be vented outside the building. No direct fired units will be acceptable.

**********END**********

PART 1 - GENERAL

1.1 RELATED WORK
.1 Cast-in-place concrete: Section 03300

1.2 REFERENCE STANDARD
.1 Do masonry work to CAN3-S304-M78 except where specified otherwise.

1.3 PRODUCT DELIVERY, STORAGE & HANDLING
.1 Supplement Clause 3.15.1 of CAN3-S304-M78 as follows:
.1 Ensure that materials are delivered to job site in dry condition.
.2 Store under waterproof cover on pallets or plank platforms held off ground by means of plank or timber skids.

1.4 COLD WEATHER REQUIREMENTS
.1 When air temperature is below 5 C take following precautions in preparing and using mortar:
.1 Heat sand slowly and evenly but do not scorch. Do not use scorched sand, having a reddish cast, in mortar.
.2 Heat water to 70 C maximum.
.3 After combining heated ingredients maintain temperature of mortar between 5 C and 50 C until used.
.4 Protect mortar from rain and snow.
.2 When air temperature is below -4 C protect and heat masonry to maintain air temperature above 0 C on both sides of walls during operations and for period of 24 hours after.
.3 When air temperature is above -4 C, erect windbreaks to prevent differential freezing of walls.
.4 Maintain dry beds for masonry and use dry masonry units only. Do not wet masonry units in winter.

1.5 HOT WEATHER REQUIREMENTS
.1 Protect freshly laid masonry from drying too rapidly, by means of waterproof, non-staining coverings.

1.6 PROTECTION
.1 Until complete and protected by flashings or other permanent construction, keep masonry dry using waterproof, non-staining coverings that extend over walls and down sides sufficient to protect walls from wind driven rain.
.2 Protect masonry and other work from marking and other damage. Protect completed work from mortar droppings. Use non-staining coverings.
.3 Provide temporary bracing of masonry work during and after erection until permanent lateral support is in place.

1.7 WORKMANSHIP
.1 Build masonry plumb, level, and true to line, with vertical joints in proper alignment.
.2 Layout coursing and bond to achieve correct coursing heights, and continuity of bond above and below openings, with minimum of cutting.

1.8 EXPOSED MASONRY
.1 Remove chipped, cracked, and otherwise damaged units in exposed masonry and replace with undamaged units.

1.9 JOINTING
.1 Where concave joints are specified, allow joints to set just enough to remove excess water, then tool with round jointer to provide smooth, compressed, uniformly concave joints.

1.10 BUILDING-IN
.1 Build in items required to be built into masonry.
.2 Prevent displacement of built-in items during construction. Check for plumbness, alignment, and correctness of position, as work progresses.

1.11 SUPPORT OF LOADS
.1 Except where drawing requirements are more stringent, comply with Clause 5.1.4 of CAN3-S304-M78.

PART 2 - PRODUCTS

2.1 MORTAR MATERIALS
.1 Use same brands of materials and source of aggregate for entire project to ensure uniformity of colouration and other mix characteristics.

2.2 MORTAR TYPES
.1 Mortar for interior masonry:
.1 Non-loadbearing: Type N based on Proportion specifications of CSA A179M-1976.
.2 Mortar for pointing: Type N based on Proportion specifications of CSA A179M-1976.

2.3 MASONRY REINFORCING & TYING MATERIALS
.1 Metal ties and wire reinforcement: to Clause 3.3.3 of CAN3-S304-M78.
.2 Bar type reinforcement: to Clause 4.5.2 of CAN3-S304.M78.
.3 Bolts and anchors: to Clause 3.6.2 and 4.5.4 of CAN3-S304-M78.
.4 Corrosion protection: to Clauses 3.3.3.1 and 3.6.2.6 of CAN3-S304-M78, for metal ties and horizontal reinforcing in exterior walls.

2.4 CONCRETE UNIT MASONRY MATERIALS
.1 Standard concrete masonry units to CSA A165.1-M1977. Locations as shown on drawings.
.1 Classification: H/7.5/A/M hollow, normal weight. H/7.5/C/M Hollow, light weight.
.2 Size: modular.

PART 3 - EXECUTION

3.1 MEASUREMENT AND MIXING OF MORTAR

.1 Supplement clause 5 of CSA A179M-1976 as follows:

.1 Mix grout to semi-fluid consistency.

.2 Incorporate colour into mixes in accordance with manufacturer's instructions.

.3 Use clean mixer for coloured mortar.

.4 Prehydrate pointing mortar by mixing ingredients dry, then mix again adding just enough water to produce damp unworkable mix that will retain its form when pressed into ball. Allow to stand for not less than 1 hour no more than 2 hours then re-mix with sufficient water to produce mortar of proper consistency for pointing.

3.2 REINFORCING

.1 In each wythe of following masonry elements install at vertical intervals 406 mm maximum, horizontal reinforcement comprising two 4.8 mm rods, each rod 25 mm from each face, and lapped 150 mm at each splice:

.1 Wythes of all masonry in running bond.

3.3 LATERAL SUPPORT AND ANCHORAGE

.1 Comply with Clauses 3.6.3.7 and 5.2 of CAN3-S304-M78.

3.4 BOLTS AND ANCHORS

.1 Embed bolts and anchors solidly in mortar or grout to develop maximum resistance to design forces.

3.5 LAYING CONCRETE MASONRY UNITS

.1 Bond: running stretcher.

.2 Coursing height: 200 mm for one block and one joint.

.3 Jointing: concave where exposed or where paint or other finish coating is specified.

3.6 CLEANING

.1 Allow mortar droppings on concrete masonry to partially dry then remove by means of trowel, followed by rubbing lightly with small piece of block and finally by brushing.

3.7 INSPECTION & TESTING

.1 Mortar.

.2 Concrete Fill.

**********END**********

PART 1 - GENERAL

1.1 RELATED WORK SPECIFIED ELSEWHERE
.1 Masonry: Section 04200

PART 2 - PRODUCTS

2.1 MATERIALS
.1 Standard concrete masonry units Type A: to CSA A165.1-M1977.
.1 Classification: H/7.5/A/M.
.2 Size: modular.
.2 Standard concrete mansonry Type C: to CSA A165.1-M1977.
.1 Classification: H/7.5/C/M (lightweight).
.2 Size: as Type A.

PART 3 - EXECUTION

3.1 LAYING CONCRETE MASONRY UNITS
.1 Bond: running stretcher.
.2 Coursing height: 200 mm for one block and one joint except as indicated.
.3 Jointing: concave where exposed or where paint or other finish coating is specified.

3.2 CLEANING
.1 Allow mortar droppings on unglazed concrete masonry to partially dry then remove by means of trowel, followed by rubbing lightly with small piece of block and finally by brushing.

**********END**********

PART 1 - GENERAL

1.1 RELATED WORK SPECIFIED ELSEWHERE

.1	Grouting between beams and hollowcore:	Section 03300
.2	Installation of anchors in concrete and masonry:	Section 03300 and 04200
.3	Miscellaneous metals:	Section 05500
.4	Finish painting:	Section 09900

1.2 REFERENCE STANDARDS

.1 Do structural steel work to CAN3-S16.1-M78 except where specified otherwise.

.2 Do welding to CSA W59-1977 except where specified otherwise.

1.3 DESIGN OF DETAILS AND CONNECTIONS

.1 Design details and connections to requirements of CAN 3-S16.1-M78 to resist forces, moments and shears indicated on the drawings.

1.4 SHOP DRAWING

.1 Submit shop drawings in accordance with Section 01340.

.2 Clearly indicate shop and erection details including cuts, copes, connections, holes, threaded fasteners and welds. Indicate welds by AWS welding symbols.

PART 2 - PRODUCTS

2.1 MATERIALS

.1 Structural steel: To CSA G40.21-M1978 Type 300W, and G40.20M.

.2 Bolts, nuts, and washers: to ASTM A325-76C.

.3 Welding materials: to CSA W59-1977.

.4 Shop paint primer: to CGSB 1-GP-40M.

2.2 FABRICATION

.1 Fabricate structural steel as indicated to CAN 3-S16.1-M78 and in accordance with shop drawings.

.2 Provide wall anchors for wall bearing beams unless otherwise indicated.

.3 Provide punched holes from 12mm to 25mm in diameter for attachment of other work. Refer to drawings for details and locations.

.4 Reinforce openings to maintain required design strength.

2.3 SHOP PAINTING

.1 Clean, prepare surfaces and shop prime structural steel to CAN3-S16.1-M78.

PART 3 - EXECUTION

3.1 ERECTION

.1 Erect structural steel as indicated to CAN 3-S16.1-M78 and in accordance with shop drawings.

.2 Obtain written permission of Engineer prior to field cutting or altering of structural members.

.3 Touch up shop primer to bolts, welds and burned or scratched surfaces at completion of erection.

**********END**********

PART 1 - GENERAL

1.1 MATERIALS

.1 All exterior wall studs shall be 20 gauge studs, track and components made from cold-formed steel conforming to the requirements of ASTM A446-GRADE D. The steel shall have a minimum yield of 33,000 psi (230 MPa).

.2 All studs, track and components shall be galvanized. Coating shall be no less than G60(Z180).

1.2 FABRICATION

.1 Fabricated components and panels shall be square and braced against racking. Lifting of preassembled components and panels shall be performed in a manner to prevent local distortion in any member.

.2 All framing components shall be cut squarely for attachment to perpendicular members, or as required for an angular fit against abutting members. Members shall be held positively in place until properly fastened.

.3 Axial load bearing studs shall be fit securely into top and bottom tracks, with the end of the stud positioned against the inside track web.

.4 Attachement of similar and dissimilar components shall be done by welding, screws, bolts or other approved methods. Wire tying of structural steel framing shall not be permitted.

PART 2 - PRODUCTS

2.1 DELIVERY AND STORAGE OF MATERIALS

.1 All materials shall be delivered in their original unopened packages, handled to avoid damage, stored off the ground in a protected area, covered with tarpaulins or plastic, vented to avoid condensation and entrapped moisture, until ready for installation. Damaged or deteriorated materials shall be removed from the premises.

PART 3 - EXECUTION

3.1 ERECTION

.1 Tracks shall be securely anchored to the supporting structure in a manner which will transfer imposed loads.

.2 Specifications and gauge of the track shall be the same or heavier than the studs being installed.

.3 Complete, uniform and level bearing support shall be provided for the bottom track at each bearing stud location. If not provided, install full size shims below the bottom track at stud locations as needed, or set bottom track in high-strength grout.

.4 At intersecting or abutting track joints, abutting pieces of track shall be securely anchored to a common structural element, or they shall be spliced together.
.5 Splices in axial loaded studs shall not be permitted.
.6 Bridging for walls, if required, shall be installed according to manufacturer's recommendations and to accepted commercial practices.

**********END**********

PART 1 - GENERAL

1.1 RELATED WORK
- .1 Installation of anchors in concrete and masonry: Section 03300 and 04200
- .2 Finish painting: Section 09900

1.2 REFERENCE STANDARDS
- .1 Do welding work to CSA W59-1977, unless specified otherwise.

1.3 SHOP DRAWINGS
- .1 Submit shop drawings in accordance with Section 01340.
- .2 Clearly indicate materials, core thicknesses, finishes, connections, joints, method of anchorage, number of anchors, supports, reinforcement, details and accessories.

PART 2 - PRODUCTS

2.1 MATERIALS
- .1 Steel sections and plates: to CSA G40.21-M1978, type 300W for steel sections, type 260W for steel plate.
- .2 Steel pipe: to CSA B63-1966(R1971) standard weight galvanized and primed finish.
- .3 Welding materials: to CSA W59-1977.
- .4 Bolts and anchor bolts: to ASTM A307-76b.
- .5 Galvanizing: hot dipped galvanizing with minimum zinc coating.
- .6 Shop coat primer: to CGSB 1-GP-40d.
- .7 Galvanized primer: zinc rich, ready mix to CGSB 1-GP-181M.

2.2 FABRICATION
- .1 Build work square, true, straight and accurate to required size, with joints closely fitted and properly secured.
- .2 Fabricate items from steel unless otherwise noted.
- .3 Use self-tapping shake-proof countersunk flat headed screws on items required to be assembled by screws or as indicated.
- .4 Where possible, work to be fitted and shop assembled, ready for erection.
- .5 Exposed welds to be continuous for length of each joint. File or grind exposed welds smooth and flush.

2.3 SHOP PAINTING
- .1 Apply one shop coat of primer to metal items, with exception of stainless steel, aluminum and those to be galvanized or encased in concrete.
- .2 Use primer unadulterated, as prepared by manufacturer. Paint on dry surfaces, free from rust, scale and grease. Do not paint when temperature is lower than 7 C.
- .3 Clean surfaces to be field welded; do not paint.

PART 3 - EXECUTION

3.1 ERECTION

.1 Erect metal work square, plumb, straight, and true, accurately fitted, with tight joints and intersections.

.2 Provide suitable and acceptable means of anchorage, such as dowels, anchor clips, bar anchors, expansion bolts and shields, toggles.

.3 Make field connections with high tensile bolts, or weld to CSA S16-1969 and CSA S16S1-1975.

.4 Hand items to be cast into concrete or built into masonry over to appropriate trades together with setting templates.

.5 Touch-up rivets, field welds, bolts and burnt or scratched surfaces after completion of erection.

.6 Touch-up galvanized surfaces with zinc primer where burned by field welding.

3.2 ITEMS

.1 Include fabrications and supply of all metal fabrications including the following items: Railings, metal ladders, bollards and barrier rails, all as detailed on drawings.

3.3 MISCELLANEOUS STEEL BRACKETS, ANCHOR BOLTS, SUPPORTS AND ANGLES

.1 Supply for installation by respective trades, steel brackets, supports, anchor bolts, and angles as indicated. Drill for countersunk screws and anchor bolts.

**********END**********

PART 1 - GENERAL

1.1 RELATED WORK
.1 Installation of anchors in concrete and masonry: Section 03300 and 04050

1.2 REFERENCE STANDARDS
.1 Do welding work in accordance with CSA W59-1977 unless specified otherwise.

1.3 DESIGN CRITERIA
.1 Design metal stair, handrails and connections to NBC vertical and horizontal live load requirements.
.2 Detail and fabricate stairs to NAAMM Metal Stairs Manual 1974.

1.4 SHOP DRAWINGS
.1 Submit shop drawings in accordance with Section 01340.
.2 Clearly indicate construction details, sizes of steel sections and thickness of steel sheet.
.3 Each shop drawing submitted shall bear the stamp of a qualified professional engineer registered in Manitoba.

PART 2 - PRODUCTS

2.1 MATERIALS
.1 Steel sections: To CSA G40.21-M1978, Type 300W.
.2 Steel plate: To CSA G40.21-M1978, Type 260W.
.3 Steel pipe: To CSA B63-1966 R1971, Type E, Grade A, standard weight, schedule 40, seamless black.
.4 Welding materials: To CSA W59-1977.
.5 High strength bolts: To ASTM A325-78a.
.6 Shop coat primer: To CGSB 1-GP-40M.

2.2 FABRICATION
.1 Weld connections where possible, otherwise bolt connections. Countersink exposed fastenings, cut off bolts flush with nuts. Make exposed connections of same material, colour and finish as base material on which they occur.
.2 Accurately form connections with exposed faces flush; mitres and joints tight. Make risers of equal height.
.3 Grind or file exposed welds and steel sections smooth.
.4 Shop fabricate stairs in sections as large and complete as practicable.

2.3 PIPERAIL BALUSTRADES

.1 Construct balusters from 42 O.D. steel tubes as indicated on drawings.
.2 Fabricate wall handrails and brackets as indicated.
.3 Cap and weld exposed ends of balusters and handrails.
.4 Terminate at abutting wall with end flange.

2.4 SHOP PAINTING

.1 Clean surfaces in accordance with Steel Structures Painting Council SSPC-SP2-63.
.2 Apply one coat of shop primer.
.3 Apply two coats of primer in different colours to parts inaccessible after final assembly.
.4 Use primer as prepared by manufacturer without thinning or adding admixtures. Paint on dry surfaces, free from rust, scale, grease. Do not paint when temperature is below 7 degress C.
.5 Do not paint surfaces to be field welded.

PART 3 - EXECUTION

3.1 INSTALLATION OF STAIRS

.1 Install plumb and true in exact locations, using welded connections wherever possible to provide rigid structure. Provide anchor bolts, bolts and plates for connecting stairs to structure.
.2 Touch up with shop primer to bolts, welds, and burned or scratched surfaces upon completion of erection.

**********END**********

PART 1 - GENERAL

1.1 RELATED WORK SPECIFIED ELSEWHERE
- .1 Sealants and Caulking: Section 07900

1.2 SOURCE QUALITY
- .1 Identify lumber by grade stamp of an agency certified by the Canadian Lumber Standard Administration Board.

PART 2 - PRODUCTS

2.1 LUMBER MATERIALS
- .1 Except as indicated or specified otherwise lumber shall be softwood, S4S, moisture content (MC) not greater than 19 pct at time of installation, in accordance with the following standards:
  - .1 CSA 0141-1979.
  - .2 NLGA Standard Grading Rules for Canadian Lumber, effective 1978-07-01.
  - .3 Manitoba Building Code (MBC) 81-9.23.
- .2 Machine stress-rated lumber is acceptable for all purposes.
- .3 Glued end-jointed (finger-joined) lumber is not acceptable.
- .4 Framing and board lumber: in accordance with Table 9.3.2.A of MBC 1981 except as indicated or specified otherwise.
  Stud wall framing: SPF species, NLGA
  Standard stud No. 2 grade S4S 15 pct. M.C.
- .5 Board lumber, furring, blocking, nailing strips, grounds, rough bucks, cants, curbs, nailers:
  - .1 Use S4S material
  - .2 Board sizes: SPF species. NLGA #2 construction grade.
  - .3 Dimensions sizes: SPF species, NLGA #2 construction grade.
- .6 Spanning members openings: in accordance with Table 9.23.12A except as indicated or specified otherwise:
  - .1 Use S4S material
  - .2 Dimensions sizes: DF species, NGLA #2 grade S4S 19% M.C.

2.2 INSULATIONS
- .1 Mineral fibre: to CSA A101-M1983 unfaced, friction fit, rolls.
- .2 Rigid: to CGSB 51-GD-20M.

2.3 VAPOUR BARRIER
- .1 Polyethylene film to CAN-51.330M80, 6 mil. tape or sealant for sealing as recommended by manufacturer. Gummed Papers Ltd. Single Insulfoil reflective insulation vapour barrier for Sauna walls.

2.4 FASTENINGS AND HARDWARE
- .1 In accordance with Part 9 of MBC 1981 as supplemented by following requirements except where specific type is indicated.
- .2 Nails, spikes and staples to MBC 1978 9.23.3 except:
  - .1 Use common nails and spiral spikes except where indicated otherwise.

.3 Bolts, nut, washer, screw and pin type fasteners with hot-dip galvanized finish to CSA G164-1965 (R1972) for exterior work, interior highly humid areas and for pressure-preservative treated lumber, elsewhere with primer paint finish where installed on sight-exposed surfaces.

.4 Use surface fastenings of following types, except where specific type is indicated:

.1 To hollow masonry , plaster and panel surfaces use toggle bolts.

.2 To solid masonry and concrete use expansion shields with lag screws, jute fibre or lead plugs with wood screws.

.3 To structural steel use bolts through power driven self-drilling screws, or welded stud-bolts, or explosive actuated stud-bolts.

2.5 WOOD PRESERVATIVES

.1 Surface applied wood preservative:

.1 Wood preservative: copper napthenate or pentachlorophenol base, water repellant wood preservative clean.

.2 Pressure treated material to be in accordance with C.S.A. 080.15.

2.6 SEALANTS & CAULKING

.1 Sealants and caulking to Section 07900.

2.7 BUILDING PAPERS

.1 Exterior wall sheathing paper: to CAN2-51.32-M77 single ply type, coated.

PART 3 - EXECUTION

3.1 WOOD FRAME CONSTRUCTION

.1 Comply with requirements of MBC 1981 Section 9.23 except where noted otherwise.

3.2 ERECTION OF FRAMING MEMBERS

.1 Install members true to line, levels and elevations. Space uniformly.

.2 Construct continuous members from pieces of longest practical length.

.3 Install spanning members with "crown-edge" up.

3.3 FURRING & BLOCKING

.1 Install furring and blocking as required to space-out and support surface applied cabinets, cladding, other work as indicated.

.2 Aligh and plumb faces of furring and blocking to tolerance of 1:600.

3.4 ROUGH BUCKS, NAILERS

.1 Install wood bucks and nailers as indicated including:

.1 Wood bucks and linings around frames for doors and windows.

.2 Except where indicated otherwise use material at least 13 mm thick secured with 9.5 mm bolts located within 300 mm from ends of members and uniformly spaced at 1200 mm between.

.2 Countersink bolts where necessary to provide clearance for other work.

3.5 ROOF FASCIAS, CANTS, NAILERS AND CURBS

.1 Install wood cants, fascia backing, nailers, curbs and other wood supports for roofing and sheet metal work, and roof mounted equipment as indicated.

.2 Secure with galvanized 9.5 mm bolts where indicated, galvanized nails elsewhere. Locate fastenings within 300 mm from ends and uniformly spaced between. Space bolts at 1200 mm and nails at 600 mm centres except where indicated otherwise.

.3 Staple vapour retardant sheet strip to underside of nailers before installation. Apply strip continuous free of wrinkles and tears, with at least 200 mm exposed for overlap on roof deck.

3.6 BATT INSULATION INSTALLATION

.1 Install insulation to maintain continuity of thermal protection to building elements and spaces.

.2 Install insulation to maintain sound attenuation of separation in building elements and spaces.

.3 Fit insulation closely around electrical boxes, pipes, ducts, frames and other objects in or passing through insulation.

.4 Do not compress insulation excessively to fit into spaces.

3.7 VAPOUR BARRIER

.1 Install polyethlene on warm side of insulation, staple to framing members. Lap joints 150 mm and tape seal. Ensure joints are over framing members.

.2 Ensure continuity of vapor barrier to perimeter and at penetrations.

3.8 SURFACE-APPLIED WOOD PRESERVATIVES

.1 Treat surfaces of material with wood preservative, before installation. Wherever possible apply preservative after materials have been cut and fit to size.

.2 Apply preservative by dipping, or by brush or spray to completely saturate and maintain wet film on surface for minimum 3 minute soak on lumber and one minute soak on plywood.

.3 Re-treat surfaces exposed by cutting, trimming or boring with liberal brush application of preservative before installation.

.4 Treat all material as follows:

.1 Wood cants, fascia backing, curbs, nailers, blocking.

3.9 CAULKING

.1 Apply caulking and sealants to Section 07900.

**********END**********

PART 1 - GENERAL

1.1 RELATED WORK

PART 2 - PRODUCTS

2.1 MATERIALS
.1 Bituthene or approved equal.

PART 3 - EXECUTION

3.1 INSTALLATION
.1 Install to areas as indicated on the drawings.

**********END**********

PART 1 - GENERAL

1.1 RELATED WORK
.1 Rigid Insulation: Section 07212
Mineral Fibre Insulation: Section 07213
Built-up Bituminous Roofing: Section 07510

PART 2 - PRODUCTS

2.1 MATERIALS
.1 Polyethylene film: to CAN2-51.33-M80, Type 1, 0.10 mm thick.

2.2 ACCESSORIES
.1 Joint sealing tape: air resistant pressure sensitive adhesive tape, type recommended by vapour barrier manufacturer, 50 mm wide for lap joints and perimeter seals, 25 mm wide elsewhere.
.2 Sealant: to CGSB 19-GP-21M.
.3 Adhesive: compatible with steel studs and vapour barrier.

PART 3 - EXECUTION

3.1 INSTALLATION
.1 Install sheet vapour barrier on warm side of exterior wall and ceiling assemblies prior to installation of metal liner to form continuous barrier.
.2 Use sheets of largest practical size to minimize joints.
.3 Inspect sheets for continuity. Repair punctures and tears with sealing tape before work is concealed.

3.2 EXTERIOR SURFACE OPENINGS
.1 Cut sheet vapour barrier to form openings and ensure material is lapped and sealed to frame.

3.3 PERIMETER SEALS
.1 Seal perimeter of sheet vapour barrier as follows:
.1 Apply continuous bead of sealant to substrate at perimeter of sheets.
.2 Lap sheet over sealant and press into sealant bead.
.3 Install staples through lapped sheets at sealant bead into wood substrate.
.4 Ensure that no gaps exist in sealant bead. Smooth out folds and ripples occurring in sheet over sealant.

3.4 LAP JOINT SEALS
.1 Seal lap joints of sheet vapour barrier as follows:
.1 Attach first sheet to substrate.
.2 Apply continuous bead of sealant over solid backing at joint.
.3 Lap adjoining sheet minimum 150 mm and press into sealant bead.
.4 Ensure that no gaps exist in sealant bead. Smooth out folds and ripples occurring in sheet over sealant.

**********END**********

PART 1 - GENERAL

1.1 RELATED WORK SPECIFIED ELSEWHERE

.1 Roof insulation: Section 07510

.2 Insulation for mechanical work: Division 15

PART 2 - PRODUCTS

2.1 INSULATION

.1 Expanded polystyrene: to CGSB 51-GP-20M, Dow Styrofoam SM, RSI indicated.

2.2 ACCESSORIES

.1 Insulation clips: impale type, perforated 50 x 50 mm cold rolled carbon steel 0.8 mm thick, adhesive back, spindle of 2.5 mm diameter annealed steel, length to suit insulation, 25 mm diameter washers of self locking type.

.2 Protection Board: Fibreboard, to CSA A247-M1978, type 2, standard, 12 mm thick, uncoated.

PART 3 - EXECUTION

3.1 WORKMANSHIP

.1 Install insulation after building substrata materials are dry.

.2 Install insulation to maintain continuity of thermal protection to building elements and spaces.

.3 Cut and trim insulation neatly to fit spaces. Butt joints tightly, offset vertical joints. Use only insulation boards free from chipped or broken edges. Use largest possible dimensions to reduce number of joints.

.4 Offset both vertical and horizontal joints in multiple layer applications.

.5 Do not enclose insulation until it has been inspected and approved by the Architect.

**********END**********

PART 1 - GENERAL

1.1 RELATED WORK
.1 Rigid Insulation: Section 07212

PART 2 - PRODUCTS

2.1 INSULATION
.1 Mineral fibre: to CSA A101-M1983, Type 1A.

PART 3 - EXECUTION

3.1 INSULATION INSTALLATION
.1 Install insulation to maintain continuity of thermal protection to building elements and spaces.
.2 Fit insulation closely around pipes, ducts, frames and other objects in or passing through insulation.
.3 Do not compress insulation to fit into spaces.

**********END**********

PART 1 - GENERAL

1.1 RELATED WORK

.1 Steel Studs: Section 05410
Rigid Insulation: Section 06100
Sheet Metal Flashing and Trim: Section 07600
Sealants: Section 07900

1.2 SHOP DRAWINGS

.1 Submit shop drawings for review prior to construction.

.2 Shop drawings shall show clearly the location of various cladding units, section designations, finishes, quantities and any other information required for erection purposes.

1.3 DESIGN

.1 Design all preformed wall panels to conform to the National Building Code of Canada.

PART 2 - PRODUCTS

2.1 MATERIALS

.1 Prefinished v-rib metal liner wall panels shall have a minimum base steel thickness of 0.91 mm.

.2 Z-bars and/or subgirts shall be fabricated from zinc coating of ZF075 and a minimum base steel nominal thickness of 1.22 mm (0.048 inches).

.3 Trim shall be fabricated from the same material, thickness, and finish as the respective interior sheets to the extent indicated on the drawings.

.4 Fasteners shall be supplied in accordance with the manufacturer's recommendations to meet the load requirements outlined, and to maintain a weather-resistant installation.

.5 Caulking TS763 for all exposed joints.

PART 3 - EXECUTION

3.1 MATERIAL HANDLING

.1 Exercise care in packaging, shipping, storing, handling and placing the panels to prevent damage likely to impair the adequacy or appearance ofthe material in the finished structure.

.2 Damaged material shall be replaced or corrected to the approval of the Engineer and any costs incurred shall be borne by the parties responsible for the damage.

3.2 ERECTION

.1 Erection of the panels shall be performed by erection forces competent in this work. Upon request, submit proof of such competence to the satisfaction of the Engineer.

.2 A ribbon of sealant shall be laid on the face of the supports at the top and bottom of the panel and around perimeter of doors, sash, etc. The liner sheet shall be pressed tightly against the sealant and fastened to form an adequate seal between the liner and the steel supports.

.3 Z-bars and/or subgirts, and liner sheet shall be fastened to the stee studs as per manufacturer's standards.

.4 Touch up with matching paint any minor paint abrasions at screw fasteners and lap joints to the satisfaction of the Engineer.

.5 At the completion of the work of this division, remove any excess materials, debris and equipment pertaining to the work of this division from the site.

.6 This contractor shall remove undue grime and dirt from panels by dry wiping the panels as the material is erected.

**********END**********

PART 1 - GENERAL

1.1 RELATED WORK SPECIFIED ELSEWHERE
.1 Wood cant strips, blocking, curbs, nailing strips: Section 06100
.2 Metal flashing and trim: Section 07610
.3 Duct pipe penetration: Division 15

1.2 REFERENCE STANDARDS
.1 Do roofing work to applicable standard in C.R.C.A. Roofing Specifications manual, except where specified elsewhere.

1.3 WARRANTY
.1 Contractor hereby warrants built-up roofing in accordance with GC 24, but for two years.

PART 2 - PRODUCTS

2.1 MATERIALS - FLAT ROOF
.1 Felts and sheets:
.1 Saturated roofing felts: No. 5 asphalt saturated, plain and perforated, to CSA A123.3-M1979.
.2 Dry sheathing: to CGSB 9-GP-2A.
.3 Protection board: asphalt impregnated wood fiberboard 1/2" thick.
.2 Bitumens:
.1 Bitumen: Type 1 asphalt to CSA A123.4-M1979.
.2 Roofing cement: asphalt to CGSB 37-GP-5M.
.3 Sealing compound: to CGSB 37-GP-29M.
.3 Roof insulation:
.1 Polystyrene: to CGSB-41-GP-14A and CGSB-51-GP-20M Type 4, shiplapped edges, 24" x 48" sheets, thermal resistance 5.00 per inch (R-10).
.4 Roofing Gravel: 3/16" to 3/4" size well graded, sound, hard washed stone, no sharp edges.
.5 Vapor retardant: two plies perforated roofing felt.
.6 Bituminous flashing: four plies perforated roofing felt.
.7 Cant strips: asphalt impregnated wood fiberboard 3" x 3" x 1/2", laminated, cut to 45 degrees.
.8 Roofing nails: type and size as required to suit application.

PART 3 - EXECUTION

3.1 WORKMANSHIP
.1 Apply roofing over clean and dry surfaces to Canadian Roofing Contractor's Association recommendations and requirements.
.2 Locate kettles so smoke will not discolor building.
.3 Protect surrounding surfaces against damage from roofing work.
.4 Before application of roofing membrane, check if deck is properly sloped to drains, valleys, eaves and joints in wood deck are solid and nailed.

.5 Ensure items projecting through roof are solidly set and cant strips, reglets and nailing strips are in place.

3.3 APPLICATION - FLAT ROOF

.1 Apply vapor retardant to CRCA Specification SO-VR-1, 2 ply.

.2 Vapor retardant application:

.1 Glaze top surface of vapor retardant if placing of insulation does not follow immediately.

.3 Apply roof insulations and protection board with insulation adhesive to manufacturer's recommendations.

.4 Apply roofing membranes and gravel to CRCA Specification SO1-1, four ply application.

.5 Apply membrane flashings to CRCA applicable F.L. series specifications.

.6 Mop in and seal flashings and flanges of items projecting through membrane.

.7 Install roof area dividers where indicated and as detailed.

3.4 FIELD QUALITY CONTROL

.1 Inspection and testing of roof application will be carried out by testing laboratory designated by Architect.

.2 Costs of inspection and tests will be paid under cash allowance by owner.

3.5 PROTECTION OF FINISHED PRODUCT

.1 Where work must continue over finished roofing membrane, protect surface with minimum 1/2" thick plywood sheets.

**********END**********

PART 1 - GENERAL

1.1 RELATED WORK SPECIFIED ELSEWHERE

.1	Wood cant strips, blocking, curbs and nailing strips:	Section 06100
.2	Built-up bituminous roofing:	Section 07510
.3	Painting:	Section 09900

PART 2 - PRODUCTS

2.1 MATERIALS

.1 Galvanized steel sheet: commercial quality to ASTM A526-71 (1975) with G90 designation zinc coating to ASTM A525-78. Generally 0.5 mm (26 gauge) minimum.

.2 Prepainted steel: zinc coated steel to ASTM A446 (latest revision) grade A, zinc coating designation Z-275 with prepainted 5000 series baked enamel paint finish. Color as selected.

2.2 ACCESSORIES

.1 Plastic cement: to CGSB 37-GP-5M.

.2 Underlay for metal flashing: No. 15 perforated asphalt felt to CSA A123.6-1953 (R1970).

.3 Sealants: multi-component, polyepoxide urethane to CGSB Specification 19-GP-24M.

.4 Cleats: of same material, and temper as sheet metal, minimum 2" wide. Thickness same as sheet metal being secured.

.5 Fasteners: of same material as sheet metal, to CSA B111-1974, flat heat roofing nails of length and thickness suitable for metal flashing application.

.6 Washers: of same material as sheet metal, 1 mm thick with rubber packings.

.7 Solder: to ASTM 832-76, 50% tin and 50% lead.

.8 Flux: rosin, cut hydrochloric acid, or commercial preparation on suitable for materials to be soldered.

2.3 FABRICATION

.1 Fabricate metal flashings and other sheet metal work to applicable CRCA "FL" series specification.

.2 Form pieces in 8 foot maximum lengths. Make allowances for expansion at joints.

.3 Hem exposed edges on underside 13 mm. Miter and seal corners with sealant.

.4 Form sections square, true and accurate to size, free from distortion and other defects detrimental to appearance or performance.

.5 Apply isolation coating to metal surfaces to be embedded in concrete or mortar.

2.4 METAL fLASHINGS

.1 Form prefinished flashings, copings and fascias to profiles indicated.

2.5 CAP FLASHING
.1 Form prefinished parapet cap flashing to profile indicated.

PART 3 - EXECUTION

3.1 INSTALLATION
.1 Install sheet metal work to CRCA specifications.
.2 Use concealed fastenings except where approved, before installation.
.3 Provide underlay under sheet metal. Secure in place and lap joints 100 mm.
.4 Counterflash bituminous flashings at intersections of roof with vertical surfaces and curbs. Flash joints using S-lock forming tight fit over hook strips, except where otherwise shown.
.5 Lock end joints and caulk with sealant.
.6 Install plastic pans, where shown around items projecting through roof membrane to CRCA Specification FL-119. Fill pans with plastic cement.

**********END**********

PART 1 - GENERAL

1.1 RELATED WORK

.1	Building in and grouting frames in steel stud framing, plasterboard:	Section 09250 and 06100
.2	Caulking of joints between frames and other building components:	Section 07900
.3	Finish Hardware:	Section 08710
.4	Painting:	Section 09900

1.2 SHOP DRAWINGS

.1 Submit shop drawings.

.2 Clearly indicate each type of door and frame, material, steel core thicknesses, mortises, reinforcements, location of exposed fasteners, anchors, openings, arrangement of hardware, finishes.

1.3 REGULATORY AGENCIES

.1 Do work to requirements of following standards:

.1 Manitoba Building Code.

.2 "List of Equipment and Materials", Volume II, Building Construction by U.L.C.

.3 "Standard Method for Fire Tests of Door Assemblies" by U.L.C.

.4 "Standards Specification for Fire Door Frames" meeting the performance required by CAN4-S104-M by U.L.C.

.5 "Fire Doors and Windows" by National Fire Protection Association, Boston, U.S.A.

1.4 FABRICATION STANDARDS

.1 Fabricate doors and frames to Canadian Manufacturing Specification for Steel Doors and Frames, except where specified otherwise.

PART 2 - PRODUCTS

2.1 STEEL

.1 Zinc wipe coated galvanized steel ASTM #A527 (class designation A01 Imperial ZF001 Metric) or commercial quality cold rolled steel ASTM #A568.

2.2 COMPONENT PARTS

.1 Thickness of component parts as follows unless otherwise specified.

.2 Door frames: 1.6 mm for welded frames, 1.2 mm for knocked down frames, .9 mm for knocked down interior suite frames.

.3 Doors:

.1 Face sheets: 1.2 mm.

.2 Top and bottom channels: 1.2 mm.

.4 Accessories doors and frames:

.1 Lock and strike reinforcements: 1.6 mm.

.2 Hinge reinforcement bottom and mid points: 3.4 mm.

.3 Hinge reinforcement: top-angle 50 mm high x 20 mm leg x 24 mm, 2 mm.
.4 Flush bolt reinforcements: 1.6 mm.
.5 Reinforcements for surface applied hardware: 2.7 mm.
.6 Glass mouldings (non-fire rated doors): either "Snap on Type" or formed steel (screw fixed) or "Snap-on" type 0.90 mm.
.7 Glass mouldings (fire rated doors): formed steel 0.90 mm.
.8 Mortar guard boxes: 0.80 mm.
.9 Jamb floor anchors: 1.6 mm.
.10 Anchors: "T" strap type, 1.6 mm, "L" type, 1.2 mm, wire type 4.00 mm dia., stirrup-strap type, 50 mm x 250 mm, 1.6 mm. Stud type, 1.2 mm.
.11 Glazed opening reinforcing: 0.90 mm.
.12 Jamb spreaders: 1.2 mm.

2.3 DOOR CONSTRUCTION
.1 Exterior doors: apply waterproof filler at top channel. Provide insulated core to R.S.I. of 1.76.

2.4 LABELLED FIRE DOORS
.1 Provide labelled doors and frames for openings requiring fire protection ratings as scheduled and generally in the following locations: corridors, stairwells, fire walls and fire separations, and to storage and mechanical rooms.

2.5 FRAMES
.1 Mitered or mechanically jointed and continuously welded on the inside of the profile. Welded joints to be ground to a smooth uniform finish. Provide knocked down frames with corner clips located in jamb sections.
.2 Glazed openings: glazing bead, formed channel, minimum 16 mm high, accurately fitted at corners and fastened to frames sections with countersunk oval head sheet metal screws at 0.457 mm maximum. 50 mm from each end.
.3 But joints of mullions and transoms: accurately cope, securely weld and grind smooth.
.4 Blank, reinforce, drill and tap for mortised butts and strike. Protect cutouts in masonry and concrete with mortar and guard boxes. Reinforce for surface mounted hardware. Prepare each door fro rubber bumpers, three for single door openings, two for double door openings.
.5 Top hinge reinforcement: weld in top hinge reinforcement with 20 mm leg to hinge reinforcement, 24 mm to frame.
.6 Insulation: provide mineral fibre insulation all frame cavities including head and jambs.

2.6 FRAME ANCHORS

.1 Frames for installation in stud partitions shall be provided with steel anchors of suitable design. For installation inside each jamb as follows:

.1 Frames up to 2300 mm height - 4 anchors.

.2 Frames 2300 mm to 2450 mm - 5 anchors.

.3 Frames over 2450 mm - 5 anchors, plus one (1) additional for each 600 mm or fraction thereof over 2450 mm.

2.7 SHOP PRIMING

.1 Door and frames: chemically treat for good paint adhesion and all visible surfaces with a corrosion resistant steel primer all doors and frames made from C.R.S. Factory apply touch-up at those areas where coating has been removed due to grinding all doors and frames made from zinc wipe coated galvanized steel.

PART 3 - EXECUTION

3.1 INSTALLATION

.1 Install hollow metal frames and glazed screens plumb and square, with a maximum diagonal distortion of 1.6 mm. Ensure frames are securely and rigidly anchored to adjacent construction.

.2 Co-ordinate the installation of glass and glazing.

.3 During installation, touch up all scratched or damaged surfaces.

.4 Installer to ensure exterior frames fully insulated before installing. Remedy as required.

3.2 REQUIRED INSTALLATION

.1 The installation of all hollow metal doors and their required hardware to hollow metal frames shall be the responsibility of the supplier only and shall be included as part of the supply for this section.

**********END**********

PART 1 - GENERAL

1.1 RELATED SECTIONS
- .1 Hardware: Section 08710

1.2 SHOP DRAWINGS
- .1 Submit shop drawings in accordance with Section 01300.
- .2 Indicate materials and large scale details for head, jamb, and sill, profiles of components, elevations of unit, anchorage details, description of related components.

1.3 DESCRIPTION
- .1 The entry system shall be comprised of the doors and the frame assembly. The doors shall have hinges, bottom weather-strip and shall be fully prepared for lock hardware. The frame assembly shall include jambs, weather-strip, threshold and corner seals.

PART 2 - PRODUCTS

2.1 MATERIALS
- .1 Wood members: to CSA 0132.1M-1977, with electrostatic coating and paint finish.
- .2 Sheet steel: commercial grade (cold rolled) to ASTM A36-72, Class 1, or commercial grade to ASTM A526.71 (1975) with W25 (wiped) zinc finish.
- .3 Insulation: foamed-in-place polyurethane 0.95 to 1.18kg density.
- .4 Extruded aluminum threshold: manufacturers standard profile 12mm high maximum, clear anodized, and incorporating thermal break.
- .5 Sealants: in accordance with Section 07900, paragraph 2.1.4.1, colour selected by Consultant.

2.2 FABRICATION
- .1 Manufacture entry door system using materials and meeting performance tests as specified in CGSB 82-GP-5 and in accordance with the National Building Code.
- .2 Door system shall have passed the: ASTM E331 Water Resistance Test and ASTM E283 Air Infiltration Test.
- .3 Door panel faces: 0.60mm minimal thickness, sheet steel galvanized and prime coat for paint finish.
- .4 Exterior door: 35mm, insulated steel.
- .5 Lock preparation: refer to Section 08710.
- .6 Frame: metal clad wood, brown colour.
- .7 Brace frames to maintain squareness and rigidity during shipment and installation.

PART 3 - EXECUTION

3.1 INSTALLATION

.1 Set entry units in prepared openings plumb, square and level, free from warp, twist or superimposed loads.

.2 Secure work adequately and accurately to structure in required position, in manner not restricting normal movement of door.

3.2 SEALS AND CAULKING

.1 Seal joints between frame member and framed opening with sealant to provide weathertight seal at outside and air/vapour seal at inside.

.2 Apply sealant in accordance with Section 07900. Conceal sealant within components except where exposed use is permitted by Consultant.

**********END**********

PART 1 - GENERAL

1.1 RELATED WORK
- .1 Supply and installation of hardware for:
  - .1 Steel Doors: Section 08250

1.2 REFERENCE STANDARDS
- .1 Standard hardware location dimensions in accordance with Canadian Metric Guide for Steel Doors and Frames (Modular Construction) prepared by Canadian Steel Door and Frame Manufactures' Association.

1.3 REQUIREMENTS OF REGULATORY AGENCIES
- .1 Use ULC listed and labelled hardware for doors in fire separations and exit doors.

1.4 HARDWARE LIST
- .1 Submit hardware schedule in accordance with Section 01300.
- .2 Indicate hardware proposed, including make, model, material, function, finish and other pertinent information (lockset supplied by Owner).

1.5 MAINTENANCE DATA
- .1 Provide maintenance data, parts list, and manufacturer's instructions for each type door closers, door holders and fire exit hardware.
- .2 Brief maintenance staff regarding proper care, cleaning, and general maintenance.

1.6 MAINTENANCE MATERIALS
- .1 Supply two sets of wrenches for door closers locksets and fire exit hardware.

1.7 DELIVERY AND STORAGE
- .1 Store finishing hardware in locked, clean and dry area.
- .2 Package each item of hardware including fastenings, separately or in like groups of hardware, label each package as to item definition and location.
- .3 Maintain inventory list with hardware schedule.

PART 2 - PRODUCTS

2.1 Hardware Items
- .1 Hinges: FBB179, 4 1/2" x 4", C15, NRP
- .2 Flushbolts: HA1250, 12"
- .3 Lockset: supplied by Owner.
- .4 Lockguard Deadbolt: supplied by Owner.

2.2 FASTENINGS
- .1 Supply screws, bolts, expansion shields and other fastening devices required for satisfactory installation.
- .2 Exposed fastening devices to match finish of hardware.

.3 Where pull is scheduled on one side of door and push plate on other side, supply fastening devices, and install so pull can be secured through door from reverse side. Install push plate cover fasteners.

PART 3 - EXECUTION

3.1 INSTALLATION INSTRUCTIONS

.1 Furnish metal door and frame manufacturers complete instructions and templates for preparation of their work to receive hardware.

.2 Furnish manufacturer's instructions for proper installation of each hardware component.

.3 Install hardware at following heights from finished floor to center line of item:

Door pull:	1140mm
Push plate:	1140mm
Door bar:	1070mm
Door knob:	1015mm
Dead lock:	1525mm
Panic bolt:	1015mm

3.2 BUTTS

.1 Hang doors on 1-1/2 pair butts for doors up to 900mm wide and 2200mm high. For doors over 900mm wide and 2200mm high then 2 pair butts.

3.3 LOCKS AND LATCHSETS

.1 Install to suit owner's material.

.2 Use sleeves in hollow metal doors.

**********END**********

PART 1 - GENERAL

1.1 GENERAL DESCRIPTION
- .1 This work includes the following:
  - .1 Framing, stucco wire, pre-finished control joints, reveals, stops, etc.

1.2 RELATED WORK SPECIFIED ELSEWHERE

.1	Exterior wall framing:	Section 04200 and 09250
.3	Insulation and vapour barrier:	Section 07212 and 07190

1.3 SAMPLES
- .1 Provide on-site sample, minimum 900 x 900 mm.
- .2 Architect will inspect sample, give approval or instruct as to changes if finish is not as intended.
- .3 Do not commence work until Architect has approved sample.

PART 2 - PRODUCTS

2.1 MATERIALS
- .1 Stucco wire: standard type 2 x 2 x 16/16 gauge galvanized.
- .2 Plaster stops: standard manufacture, galvanized, square nosed 0.6 mm sheet metal perforated flanges.
- .3 Pre-finished Steel Control Joints/Reveals, Pre-finished sheet stud, 0.6 mm thick, colours selected, to shapes and dimensions as detailed on drawings.
- .4 Metal lath: diamond mesh, not less than 7.48 kg/.84 m2, galvanized fabricated from expanded sheet steel, clearly identified as to weight.
- .5 Tie wire: galvanized, soft-annealed wire, 1.2 mm.
- .6 Cornerite: standard manufacture, galvanized expanded 0.4 mm (minimum), sheet with 75 mm legs.
- .7 Striplath: standard manufacture, galvanized expanded 0.4 mm (minimum), diamond mesh sheet steel, 100 mm wide.
- .8 Sand: clean, coarse, sharp, well screened conforming with CSA Specification A-82.57-1977.
- .9 Lime: hydrated finishing lime conforming with current CSA Specification A-82.44-1950 (Type N).
- .10 Cement: to CAN3-A5-M77, Symbol 10.
- .11 Water: clean, fresh, potable, free from deleterious matter.
- .12 Stucco base coat: neat base, water/weather resistant cement plaster requiring only the addition of sand aggregate and water. Colour as determined by sample panel.
- .13 Stucco base coat admixture: latex based, specifically formulated for exposed aggregate bonding mixture.

.14 Silicone Water repellant coating: to CGSB 58-GP-1M.

2.2 MIXING
.1 Proportioning and mixing of materials shall be in strict conformance with material manufacturer's instructions.
.2 As recommended by material manufacturer, mix exposed aggregate bed coat using approved latex admixture in quantity to produce a base coat which will securely hold stone aggregate specified.

PART 3 - EXECUTION

3.1 METAL LATH
.1 Apply metal lath with long dimension across supports; stretch taut; locate end joints over framing members; stagger end joints in alternate courses; on vertical surface lap lower sheet over upper sheet.
.2 Lap ends no less that 25 mm. Where end laps are made between supports, secure adequately with tie wire. Lap sides 37 mm.
.3 Wire tie metal lath 150 mm o.c. to framing members. Staple or nail stucco wire to strapping at maximum 300 mm o.c along strapping.
.4 Reinforce corners with purpose made reinforcement angles.

3.2 STUCCO WIRE
.1 Install stucco wire with long dimension horizontal, lapping all joints at least 1 mesh but not less than 25 mm lapping all upper courses over lower courses, and lapping all ends.
.2 At exterior corners, wrap stucco wire around corner and reinforce with external corner reinforcement.
.3 At interior corners, fold wire through corner and reinforce with interior corner reinforcement.

3.3 PRE-FINISHED METAL CONTROL JOINTS/REVEALS
.1 Build in pre-finished vertical and horizontal stucco reveals at spacing indicated. Secure control joint in place, straight and true, in continuous lengths for each joint.

3.4 ACCESSORIES
.1 Erect accessories straight, plumb, level, rigid and in the proper plane. Use full length pieces to minimize joints. Fit lengths together without gaps, accurately align and rigidly secure each side of joints. Mitre and fit corners accurately, without rough edges.
.2 Provide corner beads at external angles. Secure into position at maximum 225 mm.
.3 Provide casing beads wherever stucco terminates and abuts other surfaces and where specifically call for on drawings.

3.5 STUCCO

.1 Apply scratch coat in sufficient thickness to completely imbed metal lath/stucco wire, with sufficient pressure to form good bond. Scratch in horizontal direction to provide mechanical key for next coat and allow to set. Maintain continuously moist for 48 hours, using fog spray, permit to dry thoroughly.

.2 Apply brown/bed coat, mixed with specified additive, in thickness to provide good setting bed for stone aggregate. Offset joints in brown coat at least 150 mm from scratch coat joints.

.3 Cut base coats away from grounds, frames, and projections through stucco, to allow shrinkage without restriction.

.4 Apply stucco finish coat minimum 3.2 mm thick with a 'brush dash' application, smooth texture finish coat to Architect's approval.

.5 Tolerances: true and even, level to within 3 mm in 1500 mm; finished surface free of tool marks and other blemishes.

3.6 SILICONE CLEAR WATER REPELLANT COATING

.1 1st coat: 5% clear silicone solution.
2nd coat: 5% clear silicone solution.

3.7 CLEAN UP

.1 Upon completion of this work, thoroughly clean and remove surplus plaster materials.

.2 Inspect adjacent surfaces and remove all traces of spilled, splashed plaster.

3.8 CONTROL JOINT/REVEAL ADJUSTMENT

.1 Roof spandrels and parapet heights as shown on the drawings have been based upon a roof insulation thickness with RSI of .87 per 25 mm. Where a roof insulation of lesser RSI value per 25 mm is used, the insulation will be of greater overall thickness and in this case roof spandrels and parapet heights shall be increased to maintain the minimum dimension at the parapet as shown on the drawings. The horizontal control joints in the stucco spandrels will also be adjusted to maintain the continuity of design relationship.

**********END**********

PART 1 - GENERAL

1.1 RELATED WORK
.1 Metal Stud System: Section 05410

1.2 REFERENCE STANDARDS
.1 Do work in accordance with CSA A82.31-M1980 except where specified otherwise.

PART 2 - PRODUCTS

2.1 GYPSUM BOARD
.1 Plain: to CSA A82.27-M1977 standard and Type X indicated thickness, maximum practical length.

2.2 METAL FURRING AND SUSPENSION SYSTEMS
.1 Metal furring runners, hangers, tie wires, inserts, anchors: to CSA A82.30-M1980, galvanized.
.2 Drywall furring channels: 0.5 mm core thickness galvanized steel channels for screw attachment of gypsum board.
.3 Resilient clips, drywall furring: 0.5 mm base steel thickness, galvanized, for resilient attachment of gypsum board.

2.3 FASTENINGS AND ADHESIVES
.1 Nails, screws and staples: to CSA A82.31-M1980.
.2 Laminating compound: to CSA A82.31-M1980, asbestos-free.

2.4 ACCESSORIES
.1 Casing beads, corner beads fill type: 0.5 mm base thickness commercial grade sheet steel with Z275 zinc finish to ASTM A525M-80, perforated flanges; one piece length per location.
.2 Insulating strip: rubberized, moisture resistant, 3 mm thick closed cell neoprene strip, 12 mm wide, with self sticking permanent adhesive on one face, lengths as required.
.3 Joint compound: to CSA A82.31-M1980, asbestos-free.

2.5 FINISH
.1 Texture finish: asbestos-free standard white texture coating and primer-sealer, recommended by gypsum board manufacturer.

PART 3 - EXECUTION

3.1 SUSPENDED AND FURRED CEILINGS
.1 Erect hangers and runner channels for suspended gypsum board ceilings in accordance with CSA A82.31-M1980 except where specified otherwise.
.2 Install work level to tolerance of 1:1200.
.3 Frame with furring channels, perimeter of opening.

3.2 WALL FURRING

.1 Furr duct shafts, beams, columns, pipes and exposed services where indicated.

3.3 GYPSUM BOARD APPLICATION

.1 Do not apply gypsum board until bucks, anchors, blocking, electrical and mechanical work are approved.

.2 Apply single layer gypsum board to metal furring or framing using screw fasteners. Maximum spacing of screws 300 mm o/c.

.3 Apply Type X gypsum board where indicated, to obtain required fire rated assemblies.

3.4 ACCESSORIES

.1 Erect accessories straight, plumb or level, rigid and at proper plane. Use full length pieces where practical. Make joints tight, accurately aligned and rigidly secured. Mitre and fit corners accurately, free from rough edges. Secure at 150 mm or use contact adhesive for full length.

.2 Install casing beads around perimeter of suspended ceilings.

.3 Install casing beads where gypsum board butts against surfaces having no trim concealing junction and where indicated.

3.5 ACCESS DOORS

.1 Install access doors to electrical and mechanical fixtures specified in respective Sections.

.2 Rigidly secure frames to furring or framing systems.

3.6 TAPING AND FILLING

.1 Finish face panel joints and internal angles with joint system consisting of joint compound, joint tape and taping compound installed according to manufacturer's directions and feathered out onto panel faces.

.2 Finish corner beads and trim as required with two coats of joint compound and one coat of taping compound, feathered out onto panel faces.

.3 Fill screw head depressions with joint and taping compounds to bring flush with adjacent surface of gypsum board so as to be invisible after painting is completed.

.4 Sand lightly to remove burred edges and other imperfections. Avoid sanding adjacent surface of board.

.5 Completed installation to be smooth, level or plumb, free from waves and other defects and ready for painting.

**********END**********

PART 1 - GENERAL

1.1 RELATED WORK

.1	Shop priming structural steel:	Section 05120
.2	Shop painting miscellaneous metals:	Section 05500
.3	Shop painting metal stairs:	Section 05510
.4	Shop priming of ferrous doors and door frames:	Section 08100

1.2 ENVIRONMENTAL REQUIREMENTS

.1 Do not apply finish in areas where dust is being generated.

PART 2 - PRODUCTS

2.1 MATERIALS

.1 Paint materials: to CGSB Standards listed in Finishing Formulae.

.2 Paint materials for each coating formulae to be products of a single manufacturer.

PART 3 - EXECUTION

3.1 PREPARATION OF SURFACES

.1 Prepare wood surfaces to CGSB 85-GP-1M.

.1 Use CGSB 1-GP-126M-Amdt-Jul-78 vinyl sealer over knots resinous areas.

.2 Apply wood paste filler to nail holes and cracks.

.3 Tint filler to match stains for stained woodwork.

.2 Touch up shop paint primer on steel with CGSB 1-GP-40M to CGSB 85-GP-14M.

.3 Prepare galvanized steel and zinc coated surfaces to CGSB 85-GP-16M.

.4 Prepare masonry, surfaces to CGSB 85-GP-31M.

3.2 APPLICATION

.1 Sand and dust between each coat to remove defects visible from distance up to 1.5m.

.2 Finish bottoms, edges, tops and cutouts of doors after fitting as specified for door surfaces.

3.3 MECHANICAL AND ELECTRICAL EQUIPMENT

.1 Paint exposed conduits, pipes, hangers and other mechanical and electrical equipment occurring in finished areas as well as inside cupboards and cabinet work. Colour and texture to match adjacent surfaces, except where required for identification. Colors to be to owner's standard.

.2 Paint piping, conduits, ductwork and other unfinished equipment in boiler room, mechanical rooms, and electrical rooms. In other unfinished areas leave equipment, piping conduits, hangers etc, in original finish and touch up scratches and marks.

.3 Keep sprinkler heads free of paint.

.4 Paint inside of ductwork where visible with primer and one coat of matt black paint.

.5 Paint both sides and edges of plywood backboards for equipment before installation. Leave equipment in original finish except for touch-up as required, and paint conduits, mounting accessories and other unfinished items.

3.4 Interior FINISHES

.1 Formula 1: for concrete block and poured concrete walls apply: one coat block filler CGSB 1-GP-188M, one coat primer-sealer CGSB 1-GP-119M-Amdt-Sep-80, two coats semi-gloss enamel CGSB 1-GP-57M.

.2 Formula 15: for primed ferrous metal surfaces apply: one coat enamel undercoat CGSB 1-GP-38M two coats eggshell semi-gloss enamel CGSB 1-GP-57M.

3.5 EXTERIOR FINISHES

.1 Formula 36: for ferrous metal surfaces apply: one coat spot priming CGSB 1-GP-40M one coat lead primer CGSB 1-GP-140M two coats exterior enamel CGSB 1-GP-59M.

.2 Formula 37: for galvanized and zinc coated metal apply: one coat vinyl wash primer CGSB 1-GP-121 M one coat steel primer CGSB 1-GP-40M two coats exterior enamel CGSB 1-GP-59M.

.3 Formula 38: for cement surfaces apply: two coats exterior masonry coating: CGSB 1-GP-162M.

**********END**********

1. GENERAL

1.1 GENERAL

1. Supply all products and execute all work as specified herein and in accordance with the Contract Documents.

2. Monthly progress claims to be presented by trade. Provide additional back-up as requested.

3. Contact Engineer to agree on an amount prior to submission.

4. Submit trade prices at least 14 days prior to submission of first mechanical progress claim.

1.2 DRAWINGS AND SPECIFICATIONS

1. The Drawings and Specifications are complimentary, and what is required by any one shall be as binding as if required by both.

2. The intent of the Drawings and Specifications is to include all labour, products and services necessary for complete work, tested and ready for operation. Provide all minor items and work not shown or specified, but which are necessary to complete the Work.

3. If discrepancies or omissions in the Drawings or Specifications are found, or if intent or meaning is not clear, advise the Consultant for clarification before submitting tender. Model numbers and descriptions may differ. Allow for the more expensive alternative, or obtain a clarification from the Consultant. When clarification of discrepancies in writing has not been obtained, the product or arrangement of better quality, greater quantity and higher cost shall be provided without additional compensation.

5. Responsibility to determine which Division or Section provides various products and work rests with the Contractor. Additional compensation will not be considered due to differences in interpretation of specifications.

1.3 METRIC SYSTEM

1. Units on the drawings & in the specifications are Imperial and/or SI metric units. Those shown without units are millimeters, in accordance with standard metric practice.

2. Clarification of the metric terms, exact conversion factors, and abbreviations can be obtained from the Canadian Metric Practice Guide prepared by the Canadian Standards Association, publication CAN3-Z234.1-76.

3. If the units are not clear, tender on the more expensive, or obtain a clarification from the Consultant.

4. Equipment submissions shall be in English only, or English and metric units, unless otherwise specified.

1.4 PERMITS, FEES AND CERTIFICATES

1. Give all necessary notices, obtain all permits and pay for all governmental fees, taxes and other costs in connection with the work, file all necessary drawings, prepare all documents and obtain all necessary approvals of all regulatory bodies having jurisdiction.

2. Obtain all required Certificates of Inspection for the work and deliver same to the Consultant before request for acceptance and final payment for the work. Correct installed work as directed by the local Authorized Inspector of the Regulatory body without extra compensation.

1.5 STANDARDS OF WORKMANSHIP

1. Execute all work in a competent manner, to provide functioning systems and an acceptable appearance when completed.

2. Arrange and install products to fit properly into designated building spaces. Conceal all mechanical work except finishing items, unless approved by the Consultant.

1.6 TESTS

1. Carry out all tests hereinafter noted and as required by the regulatory agencies and furnish all labour and equipment required for such tests without extra compensation.

2. The Consultant reserves the right to have tested, any piece of equipment, device or material or system installed, for such reasonable length of time, & at such time as the Consultant may request, before the final completion and acceptance of the work, to verify performance requirements. Do not construe such tests as evidence of acceptance of any part of the Contract; no claim for damage is acceptable for any injury or breakage of any part of the above due to the aforementioned tests, whether caused by weakness or inaccuracy of parts or by defective materials or workmanship of any kind whatsoever. Remove all damaged or unsatisfactory materials, components & installations & replace & retest to the satisfaction of the Consultant without extra compensation.

3. Before activating systems, recheck equipment, check all connections, set all controls for proper start-up, obtain necessary clearances from the electrical division, etc.

4. Submit to the Consultant, legible report for all tests conducted, within one week of the test.

1.7 EXAMINATION

1. Examine drawings and specifications relating to work of all trades and become fully informed as to extent and character of work required and its relation to all other work.

2. Before submitting bid, visit the site and examine all existing building equipment and space conditions on which the work is in any way dependent for the best workmanship and operation according to the intent of Specifications and Drawings. Report to the Consultant any conditions which might prevent installing the equipment in the manner intended.

3. NO ADDITIONAL COMPENSATION WILL BE GIVEN FOR EXTRA WORK DUE TO EXISTING CONDITIONS WHICH SUCH EXAMINATION SHOULD HAVE DISCLOSED.

1.8 OPERATING AND MAINTENANCE INSTRUCTIONS TO THE OWNER

1. Keep on the work a competent mechanic familiar with the operation of the system and for the instruction of such members of the Owner's staff as may be designated with regard to the proper operating procedure of all equipment and apparatus forming a part of the system.

2. If any equipment or materials prove faulty or deficiencies exist, correct and repeat the instruction.

1.9 WARRANTY

1. Warrant that all work installed will be free from any and all defects in workmanship and/or materials and that all apparatus will develop capacities and characteristics specified, and that if any such defects in workmanship, materials or performance appear during a period of one year, or as otherwise noted, from date of Substantial Performance, they will, without extra compensation, be remedied within a reasonable length of time, are as specified in notice from the Owner. In default thereof, the Owner may have such work done and charge the cost to the Contractor. Refer also to the General Conditions for additional clauses. A like warranty applies to any repaired or replaced product or workmanship effective as of the date of repair or replacement and remain in effect for one year thereafter.

2. Correct all damage resulting from defects and corrections to defects.

3. Submit legible report to the Consultant following all site trips including: reported problem, "as found" conditions, work done, condition "as left", and further action required. Submit as soon as possible, always within one week.

4. The warranty period shall not be shortened, nor the terms altered, due to the use of the Owner's equipment during construction, eg. pumps, boiler, etc.

5. The Owner will give written notice of observed defects.

1.10 ABBREVIATIONS

1. Abbreviations used refer to those listed in the ASHRAE Handbooks, the Canadian Electrical Code, latest editions, and the following:

"	Inches
'	Feet
AGA	American Gas Association
ASA	American Standards Association
ASHRAE	American Society of Heating, Refrigeration and Air Conditioning Engineers, Inc.
AWG	American Wire Gauge
CGA	Canadian Gas Association
CP	Chrome-plated
c/w	Complete with
CW	Cold Water
CSA	Canadian Standards Association
DB	Dry Bulb
ESP	External Static Pressure
ga	Gauge
h	Hour
kPa	kilopascals
l	Liter
m	Meter
mm	Millimeter
M/A	Mixed Air
O/S	Outside Air
NFPA	National Fire Protection Association
R/A	Return Air
s	Second
S/A	Supply Air
U/S	Underside
TDH	Total Dynamic Head
U.S.	United States (Usually with other abbreviations)
WB	Wet Bulb
HW	Hot Water
WOG	Water, Oil, Gas
WSP	Working Steam Pressure
UL(C)	Underwriters Laboratories (Canada)
WG	Water Gauge

2. See also "Metric System".

1.11 TEMPORARY USE OF EQUIPMENT

1. Make written application for approval to the Consultant for use of the Owner's equipment for any reason prior to the date of Substantial Performance.

2. Approval will only be granted with full maintenance and minor overhaul at substantial completion.

1.12 COUPLING FOR EQUIPMENT DRIVEN DIRECT

1. Coupling between equipment and motor shall be either Dodge "Paraflex" or Woods. Couplings shall be sized such that it will endure an infinite number of starts when equipment is fully loaded. All couplings shall be covered with a removable safety guard.

1.13 FINAL INSPECTION

1. Notify the Engineer in writing that the work has been inspected by the site superintendent and has been found complete in all respects, and is ready for final inspection.

2. If the final inspection is required prior to 100% completion, ensure that all incomplete work has been listed in the Request for Final Inspection. Provide similar certification and incomplete lists for all subsequent inspections requested.

3. **WHEN REQUESTED, PAY ALL ENGINEERING COSTS FOR ADDITIONAL SITE VISITS WHERE NO LIST IS PROVIDED, OR LIST IS NOT CORRECT.**

1.14 ELECTRICAL WORK

1. Refer also to controls Sections 15900 - 15950 specifically.

2. The Mechanical Division is responsible for the supply, physical installation, and operation of all electric motors, temperature and humidity controls systems, combustion controls systems, and other electrical devices and systems specified under its portion of the work. Bear full responsibility for factory installed wiring and equipment on packaged equipment, be responsible where detailed in equipment requirements for controlling devices such as, but not restricted to, pump and liquid level controls, multi-speed motor controllers, boiler controls, etc., which are necessarily integrally mounted on packaged equipment.

3. Submit detailed composite wiring diagrams for all control systems as specified and as required for the mechanical work for review by the Engineer. Distribute copies of reviewed drawings to the Electrical Division for their reference.

4. Provide all wiring in approved covered colour coded type in rigid conduit to suit temperature and moisture conditions of area through which wire is to run. All wiring is in accordance with the relevant Electrical Codes, and in no case smaller than #12 AWG. Comply fully with the electrical specifications for all electrical work.

1.15 ELECTRICAL CHARACTERISTICS

1. Check with Division 16 as to the correct electrical characteristics for all mechanical items.

2. If correct characteristics are not available from the specified equipment manufacturer, contact the Consultant prior to the close of tenders.

3. At time of ordering mechanical equipment, confirm electrical characteristics with Division 16 again, and ensure that they have been confirmed by the power authority.

4. **NO ADDITIONAL COMPENSATION WILL BE PAID FOR PROBLEMS ARISING FROM INCORRECT ELECTRICAL CHARACTERISTICS.**

1.16 SPECIFIED EQUIPMENT AVAILABILITY

1. If specified equipment is not available (due to delays in delivery) at scheduled installation time, an acceptable alternate shall be installed AT THE CONTRACTOR'S EXPENSE and replaced with the specified equipment when the specified equipment becomes available with no additional compensation.

1.17 COUNTER FLASHINGS

1. Provide water tight, non corroding, counter flashings for all penetrations of the building envelope, painted to match adjacent materials after proper preparation and painting. Refer to drawings, including building drawings, for additional information. Installation to allow for movement and accommodate high temperatures where necessary. For short pipes, the flashing may overlap the end, in lieu of attachment to the pipe. Minimum 12" height above the roof, c/w a water break above maximum water level on the roof, to negate wind effects. All galvanized material to be a maximum of 24 gauge. In exposed locations, flashings must be aesthetically acceptable to the Consultant. Co-ordinate

2. For copper pipe use 24 oz. sheet copper, soldered to flu pipe end c/w solder joints.

3. For galvanized ducts use galvanized sheet metal soldered to the duct and c/w soldered joints.

4. For cast iron and steel pipes at normal temperature, use manufactured stretch fit heavy neoprene flashings c/w galvanized protective layer. For hot pipes clamp galvanized to the pipe with a temperature rated gasket and stainless steel wormgear clamp.

5. For aluminum and stainless steel, use the same materials for the flashing.

6. For manufactured hoods, fans and rooftop unit mounting, apply a low density neoprene gasket all around and fasten securely.

7. Provide manufactured curbs where specified. Deliver to site early to suit roof application.

1.18 FACSIMILE TRANSFER MACHINE

1. The Owner, Architect and Engineers have fax machines and it is recommended that the contractors be so equipped to facilitate instantaneous communications among our geographical locations.

2. The mechanical contractor shall transmit a courtesy copy of all shop drawings direct to the consultant by fax in order to reduce the review time required following receipt of the official drawings through regular channels. Similarly, a courtesy copy of the shop drawing comments may be sent to the mechanical contractor.

2. PRODUCTS

2.1 QUALITY OF MATERIALS

1. Furnish new materials, apparatus or products required for the work, of first class quality, delivered, erected, connected up and finished in every detail.

2. The use of any or all materials is subject to the approval of the Engineer.

3. Unless otherwise specified, all products shall be CSA approved.

4. All fire protection materials, apparatus or products shall be ULC approved.

5. If materials, apparatus or products are not CSA or ULC approved, obtain approval of the provincial regulatory authority. Pay all applicable charges levied and make all modifications required for approval.

6. Confirm colours with the Architect before ordering.

2.2 SAFETY FEATURES

1. Provide safety features on all equipment to ensure safe operation and maintenance including belt, coupling, and other guards, screened fan intakes and discharges where inadequate ductwork for protection, safety interlocks and labels.

2.3 MOTORS

1. Comply with all Canadian Electrical Code requirements, and in particular CSA C22.2 No. 100-1985, Motors and Converters, c/w CSA label, unless otherwise specified.

2. Refer to Division 16000 and provide motor characteristics within + 5% of power source, or get written approval from the Consultant.

3. In general, motors are CEMA design B (for standard torque applications), 1,800 RPM, open drip proof, 40°C temperature rise above 40°C ambient,

1.15 service factor. Motors are squirrel cage induction unless specifically noted otherwise. Special motors are specified with the equipment driven.

4. Co-operate with Division 16000 during start-up and provide all necessary assistance in commissioning.

5. Provide adequate capacity on each motor to operate the associated driven device under all conditions of load and service without over loading and be of at least the horsepower specified.

6. Motors less than 1/2 HP shall be 120 volts, single phase, unless otherwise specified. Motors shall be equipped with integral thermal overload protection.

7. Acceptable motor manufacturers may be listed under the Mechanical Approval List in Section 15016.

2.4 HANGERS & SUPPORTS

1. Furnish all hangers, supporting steel, etc., for the mounting and hanging of all mechanical equipment supplied unless otherwise specified.

2. Size supports, hangers, etc., suitable for supporting the weight of the equipment without subjecting the building structure or the supports to undue stress.

3. Supporting steel shall be new materials only, free of rust, installed in a workmanlike and neat manner, left primed and ready to receive paint.

4. Provide adequate vibration isolation of a type recommended by the vibration isolator manufacturer for all motorized equipment.

2.5 INSERTS

1. Furnish all inserts including sleeves and fastenings, as required to support conduit, piping, ducts and equipment supplied under this Division.

2. Inserts required to be cast in concrete are poured-in-place concrete type inserts Grinnell 285 to 181 kg and 281 to 545 kg. Place so they are not disturbed during construction or interfere with the structure.

3. Supply all templates, special frame inserts, etc. required to accommodate equipment supplied under this Division and turn over to the Contractor for installation. It is the responsibility of this Division to ensure the correct placement and mounting of these items.

4. Be responsible for and place all inserts in precast concrete members as applicable and as required to provide the necessary points to the piping and equipment being supplied. Supply inserts to the precast concrete manufacturer together with measured dimensional Drawings as to exact locations. Cutting of precast members is not permitted without the

express permission of the Architect and in accordance with the specifications specifically covering this portion of the work.

5. Furnish Hilti H.K.D. steel anchors for poured-in-place concrete if the concrete is cured. For heavier loads bolt through the floor. Ramset pins and other explosion type pins shall only be used with the approval of the Consultant.

2.6 FIRE SEPARATION REPAIR

1. Dow Corning UL Fire Stop sealant for single openings and UL Fire Stop Foam for complex openings.

2.7 ACCESSIBILITY

1. Be responsible for supplying and installing all access panels in the ceiling, wall, partitions, etc., where openings are necessary for the proper servicing or removal of equipment covered by these Drawings and Specifications. Construct panels of metal and of the type required by the construction of the ceilings, walls, partitions, etc., in which they are located. Determine the location subject to the approval of the Consultants. Access panels are the hinged type with screw driver cam lock, unless otherwise specified.

2. All access door openings larger than 0.09 square meters (1 square foot) which are accessible to the general public (not located in continuously locked areas) shall be secured with a lock master keyed to the building system.

3. EXECUTION

3.1 GENERAL

1. All Drawings are diagrammatic and indicate the general arrangement of systems and work included in the Contract. (Do not scale the Drawings). Consult the Architectural Drawings and details for exact locations of fixtures and equipment; where some are not definitely located, obtain this information from the Consultant.

2. Follow Drawings as closely as possible in laying out work and check Drawings of all other trades to verify spaces in which work will be installed. Maintain maximum headroom and space conditions at all points. When headroom or space conditions appear inadequate, notify the Consultant before proceeding with the installation.

3. Make reasonable modifications in the layout as needed without extra compensation to prevent conflicts with work of other trades or for proper execution of the work. This shall include, but not necessarily be confined to, offsets in piping or ducts, transformation in ductwork and relocation of ducts of piping up to 10 feet either way on each item as required to suit on-site job conditions.

4. Where variances occur between the Drawings and Specifications or within either document itself, include in the contract, the item or arrangement of better quality, greater quantity, and higher cost. The final decision on the item and manner in which work is installed rests with the Consultant.

5. The mechanical contractor, with all trades involved shall provide marked-up drawings, when requested, of all mechanical spaces indicating all dimensions for all installations prior to the work being done. Report any discrepancies to the Consultant. Any conflicts arising that may have been resolved by laying the work out in this manner will be resolved by the mechanical contractor at his expense.

6. **Provide 48 hours minimum notice to Consultant of all work before it is concealed. Expose concealed work for inspection, upon request, when proper notice not provided and pay all costs therefore, including making good other trades' work.**

3.2 SURVEYS & MEASUREMENTS

1. Base all measurements, both horizontal and vertical from established bench marks. All work shall agree with these established lines and levels. Verify all measurements shown on the Drawings at the site, and check the correctness of same as related to the work.

2. Notify the Consultant if any discrepancy is discovered between the actual measurements & those indicated which prevent following good practice or the intent of the Drawings & Specifications. Do not proceed with the work until receiving instructions from the Consultant.

3.3 CO-ORDINATION

1. Give full co-operation to those doing work under other Divisions of the specifications & furnish in writing with copies to the Consultant any information necessary to permit the work of all Divisions to be installed satisfactorily & with least possible interference or delay.

2. If work is installed before co-ordinating with other trades or so as to interfere with work of other trades, make necessary changes in the work to correct the conditions without extra compensation.

3.4 ACCESSIBILITY

1. Locate all equipment which must be serviced, operated or maintained in fully accessible positions, with minimum interference and maximum usable space. If required for better accessibility, furnish access doors for this purpose. Make deviations from Drawings to allow for good accessibility, obtaining prior approval for changes of magnitude.

3.5 SCAFFOLDING, RIGGING, HOISTING

1. Unless otherwise specified, furnish all scaffolding, rigging, hoisting and services necessary for erection and delivery into the premises of any equipment apparatus furnished. Remove same from the premises when no longer required.

2. Take precautions not to overload the structure in any manner nor provide inadequate scaffolding and rigging so as to endanger the safety of personnel on the site whether under this Division's employ or otherwise.

3.6 CUTTING AND PATCHING

1. Cutting is performed neatly by this trade. No hammering or other methods are permitted without approval of the Consultant and other trades affected. Utilize a rebar detector and stud finder to ensure cutting does not damage other elements.

2. Patching is to be done by the appropriate trade. Arrange and pay for all patching not specifically specified elsewhere in these specifications, including fire rated patching at fire separations.

3. Fill voids around pipes and ducts with fiberglass batt insulation and sheet metal closure strips. For fire separations, install Dow Corning Fire Stop material in accordance with manufacturer's details as required to meet the UL classification and to match separation rating. Ventilate adequately during curing. Provide adequate structural support in larger spaces. Install slightly above floors to provide positive drainage away from pipe or duct.

4. Provide a structural shop drawing stamped by a Professional Engineer showing all reinforcements required for openings through the structure. Allow for all costs of the reinforcement.

3.7 SUPPORTS

1. Provide all necessary and recommended supports for all equipment furnished under this Division. Co-ordinate and facilitate all necessary and recommended foundations, pads, bases and piers provided under other Divisions for equipment furnished or installed under this Division.

3.8 WATERPROOFING

1. Obtain approval for the installation method employed where any work pierces waterproofing concrete and waterproofing. Furnish all necessary grout rings sleeves, caulking, curbs, counter flashing and flashing required to make openings through roofs, walls, floors, etc., absolutely watertight. This applies to, but is not restricted to, roof exhausters, relief vents, penthouses, ducts, grilles, pipes, etc. Work involving the roofing is done in conjunction with the roofing Division. Work passing through roofing is to be done in accordance with applicable C.R.C.A. "FL" Series details.

3.9 PROTECTION

1. Protect the work and material of all other sections from damage and make good all damage thus caused, to the satisfaction of the Consultant.

3.10 CLEANING

1. Any dirt, rubbish, or grease on walls, floors or fixtures for which this Division is responsible must be removed and the premises left in first class condition in every respect.

2. Clean all mechanical piping and equipment and leave in a condition to receive paint.

3.11 PAINTING TOUCH-UP

1. Make good all damage to factory finish prior to acceptance and in general this means a complete repaint over the factory finish. Unmatched painting is not acceptable.

2. All paint shall be first quality enamel or as approved by the Consultants, applied in strict accordance with the manufacturer's recommendations and the Consultant's instructions.

3. Be responsible for advising the Painting Division as to the colors and identification of the piping, etc.

3.12 EQUIPMENT IDENTIFICATION FOR PREVENTATIVE MAINTENANCE

1. All equipment which requires preventative or scheduled maintenance shall have an identification plate screwed or riveted to the equipment. For hot equipment, identification plate shall be an engraved brass or bronze plate with engraved characters filled with black paint. For equipment

which is not hot, identification shall be laminated phenolic plastic with black face and white letters engraved.

3.13 IDENTIFICATION OF VALVES

1. All valves, excluding fixture stop (isolating) valve and drain valves which are not piped to a drain shall be tagged and identified. Use brass tags with stamped numbers to suit Owner, and brass drains. Provide list with function and room location in each O & M Manual.

3.14 EQUIPMENT START UP

1. Mechanical contractor shall ensure that all electrical/mechanical components match and that it is safe to start up mechanical equipment.

2. All support such as electrical contractor, controls contractor, etc., shall be arranged by the mechanical and all trades directly involved in mechanical equipment being started shall be present for start up.

3.15 MANUFACTURERS' RECOMMENDATIONS

1. Install, adjust, test, start-up, and maintain all mechanical equipment in strict accordance with the manufacturer's recommendations. If in conflict with the drawings and specifications, contact the Engineer for clarification.

2. Ensure that the manufacturer recommends the product for its intended use. If in doubt, contact the Engineer.

1. GENERAL

1.1 CONTRACT BREAKDOWN

1. Within three weeks of contract award, submit a mechanical breakdown direct to Consultant. No progress payments will be made before the breakdown has been received and accepted.
2. Contract breakdown format shall be the same as progress claims, a sample is included herein.

1.2 PROGRESS CLAIMS

1. Before each claim is sent to the General Contractor, submit a breakdown direct to the Consultant.

2. Telephone the Consultant and revise figures as agreed, prior to General Contractor submission.

3. Progress claim format shall be as shown on the sample included in this Section.

1.3 PROPOSED CHANGE NOTICES

1. Quote each item separately with breakdown as shown herein.

2. Provide a completely detailed breakdown with quantities and unit prices when requested by the Engineer.

3. Proposed Change Notice breakdown format shall be as shown on the sample included in this Section.

PROGRESS CLAIM BREAKDOWN ***Complete as applicable**

ITEM*		CONTRACT AMOUNT	APPROVED PREVIOUS	THIS REQUEST	TOTAL TO DATE	PER-CENT
GENERAL CONDITIONS	MATERIAL					
	LABOUR					
	OTHER					
	TOTAL					
PLUMBING	MATERIAL					
	LABOUR					
	OTHER					
	TOTAL					
INSULATION	MATERIAL					
	LABOUR					
	OTHER					
	TOTAL					
SHEET METAL	MATERIAL					
	LABOUR					
	OTHER					
	TOTAL					
FIRE PROTECTION	MATERIAL					
	LABOUR					
	OTHER					
	TOTAL					
SITE SERVICES	MATERIAL					
	LABOUR					
	OTHER					
	TOTAL					
CONTROLS	MATERIAL					
	LABOUR					
	OTHER					
	TOTAL					
REFRIG-ERATION	MATERIAL					
	LABOUR					
	OTHER					
	TOTAL					
HEATING & COOLING	MATERIAL					
	LABOUR					
	OTHER					
	TOTAL					
OTHER	MATERIAL					
	LABOUR					
	OTHER					
	TOTAL					
TOTALS						

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PROPOSED CHANGE NOTICE - MECHANICAL COST BREAKDOWN

(List sub-trade prices separately and include their breakdowns.)

PCN No.

ITEM NO.	BRIEF DESCRIPTION	MATERIALS $	LABOUR $	OTHER $	SUBS M.U.	TOTAL $

1.4 SHOP DRAWINGS

1. "Shop Drawings" mean drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided to illustrate details of a portion of the Work.

2. Provide shop drawings when requested by the Consultant or when marked with an asterisk in the Mechanical Equipment Approval List. *Shop Drawings shall be submitted for review no later than 30 days after the contract has been awarded. **The first Mechanical Progress Claim may be withheld until such time as the Shop Drawings are submitted for review.** Authorize fabrication & shipment only upon receipt of reviewed shop drawings.

3. Submit a completed shop drawing submission form with each set of shop drawings. See Section 15013. Examine all shop drawings prior to submission to the Consultant to ensure that all necessary requirements have been determined and verified and that each shop drawing has been checked and co-ordinated with the requirements of the Work and the Contract Documents. Submit with clearly inked identification to describe specific items on which a review is being requested. Data of a general nature will not be accepted. Submit a copy of the pertinent specifications and schedule with the shop drawing.

4. Also submit a completed shop drawing. Shop Drawings are to clearly indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of work. Where articles or equipment attach or connect to other articles or equipment, clearly indicate that all such attachments and connections have been properly co-ordinated, regardless of the trade under which the adjacent articles or equipment will be supplied and installed. In particular, provide copies of all mechanical shop drawings directly to the Electrical trade.

   Shop drawings are to indicate their relationship to design drawings and specifications. Notify the Consultant in writing of any deviations in shop drawings from the requirements of the Contract Documents.

   Indicate price of item and accessories, and whether list, trade, etc.

5. Unless otherwise requested, submit for review, a minimum of three copies and one sepia of large drawings and 6 copies of brochures and charts showing construction, size, arrangement, operating clearance, performance characteristics and capacity of materials and equipment. Following award of the Contract, confirm format and numbers of copies required.

6. Prior to delivery submit samples, if requested by the Consultant, exactly representative of the materials to be delivered to the site.

7. The Consultant reviews only as to general conformity with the design concept. The Consultant does not warrant or represent that the

information contained on the shop drawings is either accurate or complete. Sole responsibility for correct design details and dimensions shall remain with the party submitting the drawing.

8. Shop drawings will be returned to the Contractor with one of the following notations: When stamped "REVIEWED", distribute additional copies as required for execution of the Work. When stamped "REVIEWED AS NOTED", ensure that all copies for use are modified and distributed, same as specified for "REVIEWED". When stamped "REVISE & RE-SUBMIT", make the necessary revisions, consistent with the Contract, and submit again for review. Only shop drawings bearing "REVIEWED" and "REVIEWED AS NOTED" shall be used on the Work unless otherwise authorized by the Consultant.

9. Keep one complete set of Reviewed shop drawings at the job site during construction.

1.6 OPERATING AND MAINTENANCE MANUALS

1. By instruction and/or demonstration, give the Owner all information required for the proper operation and maintenance of the mechanical systems. Any damage to equipment which occurs due to improper operating procedure shall be held to be the responsibility of this Division where such improper operating procedure resulted from improper or incomplete instructions issued by the Contractor.

2. **Before the third progress claim**, bring one copy of the competed manual to the Consultant's office for review. Note changes required, & submit correct copy as soon as possible. Not less than two weeks prior to application for a Certificate of Substantial Performance of the Work, submit to the Consultant, six copies of approved Operation and Maintenance Manuals.

3. Maintenance manuals shall also conform to any requirements listed in Division 0.

4. Furnish typewritten, indexed, hardbound copies of detailed operating and maintenance instructions for all apparatus installed. Include the following information for each piece of mechanical equipment:
-starting/stopping procedures, sequences & frequency
-setpoint check lists, adjustments and regulation
-seasonal start-up/shutdown and changeover procedures, sequences and recommended times
-equipment and system inspection procedures (equipment lists, points to be inspected, frequency of inspection methods and procedures)
-service and repair routines (frequency of scheduled service procedures, repair procedures, documentation procedures).
-copies of approved shop drawings for each piece of mechanical equipment and as-built control shop drawings (reduce size as required)

-co-ordinated valve list with system descriptions
-air/water flow diagrams
-air/water balancing reports
-service instructions, assembly drawings, replacement and spare parts lists and all other standard descriptive data for all equipment
-list of suitable service contractors
-list of all Consultants, Contractors and Suppliers with addresses, telephone numbers and contact person's name

5. **Early in the project, review one copy with the Consultant** and revise as directed. The Owner will not accept responsibility for the mechanical systems and may not grant Substantial Completion until he has received final Operating and Maintenance Manuals.

1.7 OWNER'S INSTRUCTION

1. By instruction and/or demonstration, give the Owner all information required for the proper operation and maintenance of the mechanical systems. Any damage to equipment which occurs due to improper operating procedure shall be held to be the responsibility of this Division where such improper operating procedure resulted from improper or incomplete instructions issued by the Contractor.

1. GENERAL

1. The intent of this section is to reduce inconsistencies throughout the shop drawing review process.

2. Complete the form included in this section prior to the submission of all shop drawings. A completed copy of this form shall accompany each shop drawing submitted. All information shall be specific.

3. For equal or alternate equipment not originally specified, the contractor and supplier shall prepare installation details indicating all modifications required to accommodate equal or alternate equipment. Any modifications shall be coordinated with all other trades prior to shop drawing submission.

4. Enter all applicable flows, pressure drops, entering/leaving temperatures and capacities (for cooling provide sensible as well as total capacities, condensing temperatures, suction temperatures, etc.)

5. Enter all control and electrical power requirements, include amps for electrical.

6. The contractor is responsible to confirm all information prior to submittal of form. Shop drawings may not be processed unless accompanied by this completed form.

7. All dimensions, weights, capacities, etc., shall be shown in Imperial units.

G1156P (PD90-40) SHOP DRAWING SUBMISSION FORM 15013

To: Action Consulting Engineers Inc.

Project: _____ Unit Designation: _____

SPECIFIED EQUIPMENT
Model _____
Overall Dimensions:
_____ long x _____ wide x ___ high
Operating Weight _____ lbs.
Capacities _____
_____
_____
_____
Complete Power Requirements:
_____
_____
_____
Confirmed with electrical subcontractor
by _____ date _____

EQUIPMENT BEING SUPPLIED
Model _____
Overall Dimensions:
_____ long x _____ wide x ___ high
Operating Weight _____ lbs.
Capacities _____
_____
_____
_____
Complete Power Requirements:
_____
_____
_____
Confirmed with electrical subcontractor
by _____ date _____

Delivery to site will be _____ weeks from receipt of reviewed shop drawings.
Contractor's to add review stamps below:

1.1 GENERAL

1. Refer carefully to other parts of the specifications
Conform to the requirements and recommendations of all local municipal, provincial and federal by-laws and ordinances.

3. Do not reduce the quality of work specified and/or shown on the drawings because of the Regulatory requirements.

1.2 APPLICABLE CODES AND STANDARDS

1. In general and as applicable, the physical and chemical properties, the characteristics and the performance of items in this Division shall be as noted in the following:

    1. Canadian Standards Association
    2. American National Standards Institute
    3. Manitoba Building Code
    4. Winnipeg Building By-Law 1544
    5. Winnipeg Water Works By-Law 504/73 and Sewer By-Law 505/73.
    6. Manitoba Fire Code
    7. Worker's Compensation Board Requirements
    8. American Society for Testing and Materials
    9. Canadian Government Specifications Board
    10. National Fire Protection Association

1.3 LATEST EDITIONS

1 The latest edition of all codes and standards, of the date of tender submission, shall apply; except for specific editions referenced by overriding codes.

1.4 AUTHORITIES HAVING JURISDICTION

1. Comply with all requirements of Authorities with competent jurisdiction, including authorized inspectors, without additional compensation.

1.5 PERMITS

1. Include in the Tender Price and obtain all permits, approvals, and the like, required to complete the work ready for occupancy.

2. Assist the Owner in obtaining both temporary and permanent occupancy permits.

1. GENERAL

1.1 MECHANICAL EQUIPMENT APPROVAL

1. The Drawings and Specifications are based upon manufacturers whose products are specified for installation in the work. Additional manufacturers have been approved and are included in the list under "Mechanical Equipment Approval List".

2. Any other manufacturers requesting "approved equal" must request approval from the Engineer by letter stating specifically the items on which he wishes to quote and enclosing all necessary engineering data. Submit three copies of all requests and a self addressed stamped envelope. Include the appropriate specification and/or drawing references. Requests should be made at least 14 days prior to closing of tenders, and an addendum may then be issued by the Consultant prior to closing of tenders listing any further Acceptable Manufacturers. Late requests may not be approved.

3. Submit within seven days of contract award, a copy of the list hereinafter specified with a circle around the acceptable manufacturer whose price was carried in the tender. If no manufacturers are circled or submitted, it will be assumed that the price carried in the tender was that of the specified manufacturer.

4. All heating, ventilating and air conditioning and plumbing equipment shall be supplied from a manufacturer that has had an established local (Provincial) representative for a minimum of two (2) years, unless otherwise specified.

2. PRODUCTS

2.1 ACCEPTABLE MECHANICAL EQUIPMENT MANUFACTURERS

1. The following is a list of manufacturers whose products are approved for installation in the work, providing the product chosen meets with the design characteristics required as particularly noted in these specifications or the design features of the item where a particular trade name and model is given and installation as described. Conform to space limitations on products which are approved as equal in design characteristics. If the model or size selection is doubtful, contact the Engineer to ensure acceptability.

2. Where the Contractor proposes to use an item of equipment other than that detailed on the Drawings which requires any redesign of the structure, partitions, foundations, piping, wiring or of any other part of the mechanical, electrical or architectural layout, all such redesign and all new Drawings and details required shall, with the approval of the Engineer, be prepared by the Contractor at his own expense.

3. Where such deviations are approved requiring a different quantity or arrangement of ductwork, piping, wiring, conduit and equipment from that indicated on the Drawings, this Division is responsible to furnish and install all such ductwork piping, structural supports, insulation, controllers, motors, starters, electrical wiring and conduit, and any other additional equipment required by the system, without additional compensation.

4. Submit shop drawings for those items marked with an asterisk, if not the specified product; for all items marked with two asterisks; and as requested by the Consultant.

2.2. PLUMBING AND DRAINAGE APPROVAL LIST

Equipment	Acceptable Manufacturers
Piping Hangers and Saddles	Grinnell, Crane, Myatt
Strainers	Sarco, Armstrong
Access Doors	Milcor
Cleanouts	Ancon, Zurn, Rototec Smith
Floor Drains	Ancon, Zurn, Rototec Smtih
Valves:(Gate/check/globe/plug)*	Jenkins, Crane
Solenoid Valves	Asco
Air Chambers	Zurn, Amtrol
Expansion Joints	Flexonics
Flexible Connections	Flexonics
Insulating Couplings	Vallett
Vacuum Breakers*	Crane, Watts
Pressure Gauges & Thermometers	Winters, Hydropoise, Taylor, Weiss
Backflow Preventer*	Watts

2.3. HEATING, VENTILATION & AIR CONDITIONING APPROVAL LIST

Equipment	Acceptable Manufacturers
Rooftop Units**	Engineered Air, ICG Keeprite, Climatemaster
Vibration Isolation*	Vibron, Vibro-Acoustics
Grilles, Registers, Diffusers*	Titus, Tuttle & Bailey, Price
Air Filters	AAF, Farr
Weather Louvres*	Airolite, Price
Relief Hoods*	Greenheck, Penn
Ceiling Exhaust Fans*	Greenheck, Penn
Cabinet Fans*	Greenheck
Water/Steam Unit Heaters*	Trane, MarkHot, Climate Master
Feedwater & Condensate Pumps**	Dunham-Bush, Aurora, Monarch
Glycol	Union Carbide
Chemical Treatment	Dearborn, Mogul
Air Vents	Maid-O-Mist, Dole
Pressure Gauges	Hydropoise, Winters

Thermometers Taylor, Weiss
Valves: Check/Gate/Globe**Crane, Jenkins
Flanges, Gaskets Crane, Grinnell
Water Tube Boilers**Superior Combustion, Unilux

2.5. OTHER APPROVED LIST

Equipment	Acceptable Manufacturers
Mechanical Insulation	Fiberglas, Knauf
Controls**	Johnson

1. GENERAL

1.1 GENERAL

1. Refer particularly to Section 15999 for Insulation Schedule.

2. Perform work by journeymen insulators skilled in this trade.

3. Ensure that the manufacturer recommends the product for the intended use. Installation shall be in accordance with the manufacturer's recommendations.

4. Apply insulation in a workmanlike manner so that the finished product is uniform in diameter, smooth in finish, pleasing to the eye with all longitudinal seams placed out of sight. Apply insulation to piping and equipment only after all tests have been successfully made.

5. Be responsible for ensuring that sufficient space is provided to allow proper installation of insulation (in conjunction with all other trades).

6. Wherever possible, apply coverings to piping and equipment containing liquids or vapours of operating temperature above ambient, with the equipment at operating conditions. Consult the Engineer prior to applying insulation to pipe, ductwork or equipment where extreme thermal movement is anticipated. Make good any separation of joints or cracking of the insulation due to thermal movement or poor workmanship.

7. As applicable, use the "Thermal Insulator's Association of Canada Standards Manual" as the basis of determining material specification if not contained herein. Use materials with a flame spread rating of not more than 25 and a smoke developed rating of not more than 50 unless otherwise approved when determined in accordance with ASTM E-84, ULC C723, ULI 723, or NFPA 255.

8. No materials containing asbestos shall be used.

9. Insulate all hot surfaces where required for safety, example steam pipes from humidifiers.

2. PRODUCTS

2.1 PIPING

1. Type PA: Insulation shall be Manson Insulation Alley K preformed fibreglass pipe insulation having a factory applied dual temperature three-ply jacket composed of white embossed kraft, 0.175 (0.007") aluminum foil and reinforced with fibreglass yarn. The insulation shall have a thermal conductivity of 33W/m2°C per mm thickness (0.23 BTUH per

inch per square foot per degree F) at 24°C (75°F) mean temperature, a density of 48 kg/m3 (3 lbs. per cubic foot), and a moisture absorption of less than 0.2% by volume.

2. Type PB: Insulation shall be Armstrong Armaflex II insulation with a thermal conductivity of 39 W/m2°C per mm thickness (0.27 BTUH per inch per square foot per degree F at 24°C (75°F) mean temperature.

3. Type PC: Insulation shall be Manson Insulation Inc. Calmax preformed pipe insulation, having a density of 208 kg/m3 (13 pounds per cubic foot), a transverse strength of 550 kPa (80 psi) and a thermal conductivity of 44 W/m2°C per mm thickness (0.3) BTUH per inch per square foot per degree F at 93°C (200°F) mean temperature. The insulation shall be chemically stable and shall conform to ASTM Standard C345-54T.

2.2 DUCTWORK

1. Type DA: External insulation shall be Manson Insulation Inc. "A-K Bound" rigid vapour seal fibreglass duct insulation c/w an FSK jacket. The insulation shall have a thermal conductivity of 36 W/m2°C per mm thickness (0.25 BTUH per inch per square foot per degree F at 24°C (75°F) mean temperature, a density of 48 kg/m3 (3 lbs. per cubic foot and a moisture absorption of less than 0.2% by volume. The FSK jacket must be securely attached to provide a ULC rated assembly.

2. Type DB: External insulation shall be Manson Insulation Inc. "Alley Wrap" fibreglass flexible blanket complete with FSK jacket, a thermal conductivity of 40 W/m2°C per mm thickness (0.28 BTUH per inch per square foot per degree F at 24°C (75°F) mean temperature, a density of 0.8 lbs. per cubic foot and a moisture absorption of less than 0.2% by volume. The FSK jacket must be securely attached to provide a ULC rated assembly.

2.3 EQUIPMENT

1. Type EA: Insulation shall be Manson Insulation Inc. "Calmax" preformed block insulation, having a density of 208 kg/m3 (13 pounds per cubic foot, a transverse strength of 550 kPa (80 psi) and a thermal conductivity of 44 W/m2 per °C per mm thickness (0.30) btuh per inch per square foot per degree F at 93°C (200°F) mean temperature. The insulation shall be chemically stable and shall conform to ASTM Standard C345-54T.

2.4 COVERING

1. Type 1: Thermocanvas sheathing material with ULC label. The material shall be in accordance with ULC-S102 with flame spread rating of 10 and smoke developed rating of 0. Lagging adhesive shall be Bakelite - Bakelite 120-18 with flame spread rating of 15 and smoke developed rating of 10.

2. Type 2: Smooth aluminum jacketing material of 0.41mm (0.016") thickness. Stainless steel screwdriver clamps.

3. Type 3: Corrugated aluminum jacketing material of 0.41mm (0.016") thickness. Stainless steel screwdriver clamps.

3. EXECUTION

3.1 GENERAL

1. Carry insulation through floors and walls on services above 121°C (250°F) or below room temperature.

2. Adequate ventilation shall be required for insulation processes which release irritating fumes. In particular, Type PA insulation requires ventilation upon initial heating.

3.2 PIPING

1. Where insulation over 50mm (2") is required, it shall be applied with two or more layers with staggered joints.

2. Use Bakelite 120-18 to vapour proof insulated valves, flanges and fittings on cold lines.

3. Type PA: Pipe covering shall be applied over clean, dry pipe with all joints firmly butted together. Longitudinal laps shall be sealed with a vapour proof adhesive. Butt joints shall be wrapped with Duro-Dyne vapour barrier self-adhesive tape at least 50 (2") wide. Over this shall be applied a smooth coating of insulating cement. All flanges, pipe hubs, etc., shall be insulated with oversize preformed pipe covering in such a manner, that the insulation may be removed for flange repairs without the use of special tools. Insulate all valves 75 (3") and over up to the bonnets. Provide an insulated sheet metal enclosure shaped to suit the pipe over the valves. Vapour barrier shall be properly sealed around all flanged insulation.

4. Type PB: Seal all joints continuously with Armstrong No. 520 adhesive. In accordance with Armstrong recommended practice, insulate all fittings with mitered oversize insulation which overlaps the pipe insulation. Glue all joints with 520 adhesive.

5. Type PC: All insulation shall be applied over clean, dry pipe with joints tightly butted together. All fittings and valves shall be insulated with insulating cement, to a thickness equal to the adjoining insulation. All flanges shall be insulated with preformed hydrous calcium silicate pipe insulation in such a manner that the insulation will be removable for flange repairs without the use of special tools. Insulate all valves 75 (3") & over up to the bonnets. Provide an insulated sheet metal enclosure shaped to suit the pipe over the valves. High temperature systems must have continuous insulation through wall, roofs, etc.

3.3 DUCTWORK

1. Type DA: Where more than 25 (1") thick insulation is specified, install in two or more layers with staggered joints. Impale the duct insulation over suitable mechanical fasteners, such as welded pins, on 300 to 450 (12 to 18 inch) centres. A minimum of two rows of fasteners per side shall be used. Secure insulation with suitable speed washer on slip. Seal all joints, cracks, or breaks to assure a continuous vapour barrier. Apply two brush coats of a vapour barrier mastic. Between coats, embed a layer of glass fabric to reinforce the mastic.

2. Type DB: Insulation shall be adhered to the surface with a flame resistant, quick-tacking adhesive spot-daubed on 150 (6") centres or in 100 (4") wide strips of 300 (12") intervals. All edges of the insulation shall be butted and sealed with Duro-Dyne pressure sensitive vapour barrier tape.

3. In conditioned spaces, external duct insulation may be reduced by the lining thickness.

3.4 EQUIPMENT

1. Type EA: Insulation blocks shall be applied with edges tightly butted, joints staggered, and secured with 1.206mm (No. 18 gauge) annealed steel wire for small areas and 1.829 (No. 15 gauge) galvanized annealed steel wire or 12 x 0.38 (1/2" x .015") galvanized steel bands on 300 (12") maximum centres for large areas. Where required, welded studs, clips or angles shall be provided as anchors for wires and bands. Fill in around fittings with insulating cement to the thickness of the insulation. Over the insulation, 25 (1") hexagonal wire mesh shall be tightly stretched in place and secured by wiring to anchors with edges tied together. Finish shall be "Super Power house Cement", produced by Keene Corp., applied 12 (1/2") thick in two coats. First coat shall be left rough and allowed to dry before applying second coat which shall be mixed 4 to 1 by weight with Portland Cement, and troweled to a smooth hard finish.

2. Provide small removable sections for access to flanges, bolts, drain plugs, etc.

3. Recover all insulation with Type 1 covering, securely pasted on with an approved Bakerlite lagging adhesive.

4. For cold equipment, use Bakelite 120-18 to provide a vapour barrier for the insulation.

3.5 PAINTED SURFACES

1. Where exposed insulation is to be painted, provide 100% Bakelite 120-18 lagging coverage to permit proper paint finish.

3.6 COVERINGS

1. Recover all insulation where exposed in occupied rooms, and in mechanical rooms, including crawlspace, with Type 1 covering, securely pasted on with an approved UL lagging adhesive. Finish for painting as previously specified.

2. Add Type 3 corrugated aluminum covering to all insulated pipes where climbing over the pipe is likely to occur (eg. near access openings).

3. Recover outdoor insulation with 0.41mm (0.016") aluminum and overlap the sections by 50 (2") minimum. Elbows shall be covered with Glassfab cloth and finished with an aluminum pigmented mastic. The entire installation shall be weatherproof.

3.7 HEAT TRACED PIPE

1. Provide insulation oversized to accommodate the heat tracing without any gaps.

2. Confirm compatibility of insulation with the heat tracing before ordering.

3. Insulation and tracing to extend in through the outside wall.

1. GENERAL

1.1 GENERAL

1. Supply all products and execute all work as specified herein and in accordance with the Contract Documents.

1.2 CLEARANCE TO COMBUSTIBLES

1. 90 to 120°C: (200 to 250°F:) 12 (1/2") clearance minimum.

2. Over 120°C:: (250°F) 25 (1") clearance minimum.

1.3 RELATED WORK

1. All drawings and specification documents apply to this section of the work. The following is a list of related specification sections which should be reviewed with particular care:

Mechanical Insulation	Section 15180
Fluid Balancing	Section 15399
Plumbing	Section 15400
Plumbing Fixtures	Section 15450
Heating and Cooling	Section 15700 - 15799
Air Distribution	Section 15800 - 15899
Controls	Section 15900 - 15950

1.4 FLUID BALANCING

1. Refer to Section 15399.

2. The Mechanical sub-contractor shall retain the independent balancing contractor.

3. Prepare all systems ready for balancing.

4. Provide the required design data and add additional balancing values found necessary to balance the systems. Provide tradesmen familiar with the systems to assist the balancing contractor in the operation and balancing of the systems.

1.5 CONTROLS

1. Install all pipe mounted control devices, such as control valves and wells.

2. PRODUCTS

2.1 PIPING

1. Refer to the particular piping sections for piping, jointing and fittings requirements.

2.2 PIPE HANGERS

1. Use adjustable ring type hangers for pipes up to 50 (2") diameter - Grinnell Fig. 269. Use adjustable wrought clevis type hangers for pipes 65 (2-1/2") to 75 (3") - Grinnell Fig. 260. Use adjustable swivel roller type for pipes 100 (4") and over except for DWV lines - Grinnell Fig. 174. Use copper-plated hangers for copper piping - Grinnell Fig. CT-269 for pipes up to 50 (2") and Grinnell Fig. CT-65 for pipes 65 (2-1/2") and over.

2. For cast iron MJ joints, support pipe on both sides, except where approved by the Consultant for short lengths and multiple fittings. Provide anchors and sway braces to Consultant's approval.

3. Use the following schedule of hanger rods:

    1. 10 (3/8") rod for pipes up to 50 (2") diameter.
    2. 12 (1/2") rod for 65 (2-1/2") and 75 (3") diameter.
    3. 16 (5/8") rod for 100 (4") diameter.
    4. 20 (3/4") rod for 150 (6") diameter.
    5. 22 (7/8") rod for 200 (8") to 300 (12") diameter.

4. Provide all auxiliary supporting steel and accessories for hanger installation to facilitate connection to the structure.

5. Apply 2 coats of shop primer paint on all unplated hanger hardware and supporting steel and leave in a condition to receive paint.

6. Use adjustable pipe rolls with pipe or washer spacers on exposed threaded stands for all piping supported from below.

2.3 STRAINERS

1. Provide Y-type strainers where, indicated on the drawings and where specified herein, in piping system, full size of the connected piping ahead of each pump, control valve, meter, etc. Install bucket or basket strainers only where indicated on the drawings.

2. All strainers shall have the same end connections and working pressure as the attached piping is specified.

3. Use monel screens with a reinforced edge. Perforations shall be 0.8 (1/32") for steam, 1.6 (1/16") for condensate, 3.2 (1/8") for chilled and hot water and 3.2 (1/8") ahead of pumps.

4. Fit 20 (3/4") blow-off lines with globe valves, pipe directly to drain on all strainers over 50 (2").

5. Strainers shall be Sarco Type IT for up to 50 (2") and Type IF-125 over 50 (2"). Use type AF-250 for over 50 (2") when steam pressure is greater than 860 kPa (125 psig).

2.4 VALVES

1. Refer to the specific pipe specification sections for valve types.

2. All valves of one type, eg. gate valves, must be of one manufacturer. Ensure that working pressure, size and manufacturer's name are cast or stamped into the body of each valve.

3. Use O.S. & Y. design on all valves 100 (4") and larger unless specifically noted otherwise.

4. Provide valves with hand wheels accessible for operation.

2.5 AIR VENTS

1. Provide air vents complete with air chambers and isolating valves to properly vent all systems and equipment as indicated and as specified herein. Arrange vents to vent all high points in the system. Connect all vents to the nearest accessible drain with 6 (1/4") or 4 (3/16") (depending on the size of the vent) copper tubing. Carry the vent drain lines to the nearest accessible drain and label as to the vent they serve.

2. Use manual key-operated vents on radiation and convectors.

3. Use automatic air vents with stamped, cast or forged steel bodies and tops, stainless steel floats, single level action and chrome steel valves on all other venting applications. Vents shall be Maid-O-Mist No. 71.

4. Vents shall be suitable for 1030 kPa (150 psig) operation.

2.6 PRESSURE GAUGES

1. Glycerin filled.

2. Dial size - 65 (2-1/2") diameter mounted up to 2.13m (7'-0") and 100 (4") mounted higher than 2.13m (7'-0").

3. Gauges - bourden tube type constructed with phosphor bronze tube silver soldered to socket and tip.

4. Accuracy - 1.5% of the scale range.

2.7 THERMOMETERS

1. Liquid filled with stem length to suit the pipe. Size 225 - (9") mounted up to 2130mm (7'- 0") and 300mm (12") mounted higher than 2130mm (7'- 0"). Case - Die cast aluminum with glass front. Scale - Non-reflective surface with black numerals. Accuracy - 1% of scale range. Provide separable wells for all thermometers. Brass or stainless steel where required. Materials and range to suit the particular application. Thermometers shall be Weiss Vari-angle. Range shall be selected to suit the application. Highlight in shop drawings. For example: Use - 20° to 50°C (0° to 120°F) for chilled water and domestic cold water. 0 to 120°C (30° to 240°F) for heating water and domestic hot water.

3. EXECUTION

3.1 PIPING

1. Install piping approximately as shown, with all lines being carried parallel to building walls and as close to the structure as possible.

2. Conceal all piping except where otherwise approved. Exposed piping must be carefully installed to be pleasing to the eye and meet the Architect's requirements. In cabinets, locate tight to back wall and clear of drawers and other features for minimum impact on usefulness.

3. Align and support all piping properly; under no circumstance may any piping load be transferred to the equipment. Make all equipment connections so as to allow disassembly of the piping for equipment removal and maintenance,

4. Use only long radius welding fittings in expansion loops, not screwed fittings. Do not use running nipples. Do not use threaded protectors as couplings.

5. Use the following for branch mains off a main:

    1. Mains 100 (4") and over - branches under 38 (1½"), use factory manufactured welding fittings to accommodate the take-off either welded or threaded; branches 50 (2") to 75 (3"), use welding saddles; branches 100 (4") and over, use standard tee. Do not use welding saddles for branches greater than ½ of main.
    2. Mains 75 (3") branches under 25 (1"), use factory manufactured welding fittings to accommodate the take-off either welded or threaded; branches over 25 (1"), use standard tees.
    3. Mains 65 (2-1/2") and under, use standard tees for all branch take-offs.

6. Use only eccentric reducing fittings. Install all reducers in water lines with the piping in line at the top. Install all reducers in steam lines with the piping in line at the bottom.

7. Do not use direct welded or screwed connections to valves, equipment or other apparatus. Make all connections with a suitable union for screwed piping and a Victaulic coupling for welded piping, except for steam and hot water services, use flange connections.

8. American National Taper pipe thread must be used for all thread connections. Remove burrs and chips and ream or file the pipe ends out to size of bore.

9. Leave not more than 2 threads exposed on threaded joints when made up.

10. Unless specifically noted otherwise on the drawings, support all piping with hangers spaced as follows:

    2140 (7') for piping - 32 (1-1/4") diameter and smaller
    2540 (10') for pipe - 38 (1-1/2") diameter to 65 (2-1/2") diameter
    3050 (12') for pipe - 76 (3") diameter and larger.

11. Cast iron pipe shall be supported at each hub. Install hanger rods vertical without bends or offsets such that finished piping is aligned correctly both with respect to line and grade. Where groups of pipes are run together, a fabricated hanger may be used with separate rolls for each pipe. Design shall be approved by the Engineer.

12. Secure all hanger rods directly to the building structure by means of inserts or clamps. Do not support from other pipes and ducts. Give all hangers and rods, etc., two heavy coats of primer paint before concealing.

13. Support vertical piping at its base by hangers placed as near as possible to the horizontal pipe to which it is connected. Provide pipe supports at each floor using iron brackets and pipe clamps. Use 10 (3/8") MS plates as pads or anchored into vertical concrete for connections of brackets on floor levels.

14. Use pipe saddles in conjunction with all pipe supports on insulated piping 65 (2-1/2") diameter and larger. Pack insulation between the saddle and piping. On piping where a vapour barrier is required (cold water, chilled water), wrap the vapour barrier around the pipe and entire saddle. Where a roller is required, provide a shield between the saddle and roller to prevent damage to the vapour barrier.

15. Use insulation shields in conjunction with hangers on all insulated piping up to 50 (2") diameter.

16. Arrange valving to permit the isolation of each piece of equipment to facilitate servicing.

17. Ensure suitable access to all valves.

18. Mount balancing valves, gate valves and drains in the supply and return piping of each main branch of the water distribution system.

19. Make joints for sanitary and drainage cast iron pipe with neoprene gaskets and stainless steel mechanical joint clamps.

20. Copper Pipe: Make joints with solder as specified using non-corrosive flux. Clean pipe and fittings with steel wool over the whole tack surface before applying flux. Cut pipe square with a wheel type pipe cutter, remove all burrs and slivers.

3.2 EXPANSION OF PIPING

1. Install all piping systems with due regard and provision for expansion avoiding strain or damage to the building and equipment. Where pipe runs past building expansion joints, provide expansion compensation.

2. Only major expansion configurations and fittings have been detailed on the drawings. Provide all required additional compensators, loops and swing connections as specified herein, and in accordance with good trade practice.

3. Use swing connections with a minimum of 3 elbows (ie. four fittings including the tee) where required. These swing connections are not always shown on the piping drawings for reasons of clarity; they must however, be installed. Where close tolerances do not permit the installation of a complete swing connection, consult the Engineer prior to the closing of tender.

4. Install expansion loops cold spring 50 percent of the calculated expansion. Use compensator type expansion joints with suitable pressure ratings for radiation piping where required. Install compensators with double guides on inlet and outlet with distances in accordance with manufacturer's instructions. Where not indicated, calculate compensator expansion equal to 38 (1½") per 30.6m (100') of run between the anchors.

3.3 SCHEDULE FOR EXPANSION LOOPS:

1. Maximum Distance between Anchors

Heating Hot Water Domestic Hot Water	Steam and Condensate
Copper - 30000 (100'-0")	Copper - 15000 (50'-0")
Steel - 45000 (150'-0")	Steel - 23000 (75'-0")

2. Loop Size Required

Pipe Size	Loop Size
20 (3/4")	1.22m (4'-0")
25 (1")	1.27m (4'-2")
32 (1-1/4")	1.32m (4'-4")
36 (1-1/2")	1.37m (4'-6")
50 (2")	1.42m (4'-8")

65 (2½")	1.53m (5'-0")
75 (3")	1.68m (5'-6")
100 (4")	1.98m (6'-6")

3. If the length between anchors is 1/2 the maximum listed above, then the loop can be reduced to 2/3 that listed.

4. Loops shall be located midway between guides.

3.4 PIPE GUIDES

1. Provide alignment guides where shown on the drawings and where required for proper operation of the system.

3.5 PIPE ANCHORS

1. Provide substantial pipe anchors where shown on the drawings. Anchors shall be suitably attached to the structure and the pipe to prevent movement.

3.6 SLEEVES AND ESCUTCHEONS

1. Provide sleeves for all piping passing through partitions, floors, walls, etc.

3.7 PIPING INSPECTION AND TESTS

1. Provide all materials, labour, plant and equipment necessary for tests.

2. Notify the Engineer and/or the governing authority of all tests at least 48 hours in advance and conduct all tests to their satisfaction. Repeat tests if required until the system is shown to be leak tight and in proper working condition.

3. Conduct tests before piping is concealed or insulated. Test underground piping prior to backfill is applicable.

4. Test all piping, with the exception of atmospheric vents and sanitary piping, hydraulically to 1½ times the operation pressure but not less than 125 psig (860 kPa). Remove and protect all components such as control valves which are not designed for the test pressure. Prove piping without pressure drop for a period of 24 hours with a hydraulic test.

5. Test all sanitary piping in accordance with the applicable Plumbing code.

3.8 THERMOMETERS

1. Install where easily read from the floor.

2. Provide both sides of all fluid heaters & coolers, as a minimum.

3. Provide high conductivity 'grease' in wells to ensure accurate reading. Exact locations to ensure reading average fluid temperature.

4. Check calibration before installation.

3.9 PRESSURE GAUGES

1. Install where easily read from the floor, c/w a shut-off valve. Locate where average pressure can be sensed.

2. Install at main water entrance and at water heater inlets, as a minimum.

1. GENERAL

1. This section applies to all cold and hot domestic water piping.
2. Specifically refer to the general requirements in 15300.
3. The entire system must meet all code requirements.

2. PRODUCTS

1. Above ground piping:

1.	Application:	All sizes
2.	Pipe:	Type "L" Hard temper Copper to ASTM B42-84
3.	Fittings:	Wrought copper Solder ends 95-5 up to 50mm (2") Silfoss 50mm (2") and over ANSI B16-22-1980
4.	Valves: (Rising stem, unless specifically approved)	
	Stop Valves	Jenkins Fig. 810
	Throttling Valves	Jenkins Fig. 106B
	Check Valves	Jenkins 4092

2. Below Grade Piping:

Pipe:	Type K soft temper
Joints:	No buried joints
Fittings:	Flared
Valves:	Do not bury

3. EXECUTION

1. Refer to Section 15300 for installation requirements.

1. GENERAL

1. This section applies to all drain, waste and vent piping, including storm water piping.

2. Specifically refer to the general requirements in Section 15300.

3. The entire system must meet all code requirements.

2. PRODUCTS

1. Above ground piping:

Application:	All sizes	Alternative
Pipe:	Cast iron	DWV copper
Fittings:	Cast iron	Cast brass
Joints:	Mechanical	Solder

2. Underfloor waste piping may be A.B.S. as approved by local authorities. All above floor waste piping shall be as specified.

3. Aluminum waste pipe is acceptable as per local code for rainwater leaders only.

3. EXECUTION

1. Refer to Section 15300 for general requirements.

2. Buried Pipe:

    1. Provide 6" sand bedding below pipe and 6" of sand over pipe for initial backfill.
    2. Balance of fill and amount of compaction to be the same as specified for the slab above for sizes under 150mm (6"Ø).
    3. Minimum grade to be 1/4" per foot.

3. Where limited space is available, use DWV copper in lieu of cast iron.

1. GENERAL

1. Specifically refer to general requirements in Section 15300, and steam specification in Section 15728.

2. Low pressure steam is below 15 psig.

2. PRODUCTS

		2" (50mm) & Smaller	2½" (65mm) & Larger
1.	Application:		
2.	Pipe:	black steel grade B ERW, ASTM A-53, Schedule 40	same
3.	Fittings:	malleable iron ASTM A-47, Grade 3251D	steel welded ANSI B16.9
4.	Valves: (Boiler Disch) Gate (stop)		
	(Other) Gate (stop)	Jenkins 810 (Crane 440) 125 psig, Bronze, rising stem, screwed Jenkins 530A(Crane 14½ HP	Jenkins 454 (Crane 465½) Flanged, 125 psig, iron OS & Y, IBBM Jenkins 142 (Crane 359)
	(throttling)	Bronze, 300 psig, PWG SS & seat, screwed	Flanged, 125 psig, iron, IBBM, composition disc

3. EXECUTION

3.1 PIPING

1. Install piping approximately as shown, with all lines being carried parallel to building walls and as close to the structure as possible.

2. Conceal all piping except where otherwise approved. Exposed piping must be carefully installed to be pleasing to the eye and meet the Consultant's requirements.

3. Align and support all piping properly; under no circumstance may any piping load be transferred to the equipment. Make all equipment connections so as to allow dis-assembly of the piping for equipment removal and maintenance.

4. Use only long radius welding fittings in expansion loops, not screwed fittings. Do not use running nipples.

5. Use the following for branch mains off a main:

    1. Mains 100 (4") and over - branches under 38 (1½"), use factory manufactured welding fittings to accommodate the take-off either welded or threaded; branches 50 (2") to 75 (3"), use welding saddles; branches 100 (4") and over, use standard tee. Do not use welding saddles for branches greater than ½ of main.
    2. Mains 75 (3") branches under 25 (1"), use factory manufactured welding fittings to accommodate the take-off either welded or threaded; branches over 25 (1"), use standard tees.
    3. Mains 65 (2½") and under, use standard tees for all branch take-offs.

6. Use only eccentric reducing fittings. Install all reducers in steam lines with the piping in line at the bottom.

7. Slope all piping a minimum of 1% in the direction of steam flow.

8. Provide isolating valves at all equipment, and by-pass valves (3) around control valves 2" diamter.

3.2 WELDING

1. Make pipe to pipe welded joints with open, secure butt welds, reinforced by metal in excess of the net throat dimensions by at least 1.5 (1/16") built up to give a gradual increase in thickness from edge to centre. Clean all rust, paint, oil, grease or foreign matter from all welding faces and adjoining pipe surfaces for a depth of at least 12 (½") from the edge of welding groove. Maintain a surface clearance of 1.5 (1/16"). Carefully align piping using proper clearances and tacking before welding. Leave welded surfaces clean.

2. Welding must be performed by welders with proper certificates. All welding must be done in accordance with the regulations of the Boiler Inspection Branch. All field welding must be in accordance with the procedures of CSA-W55.2-1957 and CSA-W117.2-1974 and the current edition of ASME Code for Power Piping. Do not caulk or pean welds. Perform all welding above 4.4°C (40°F) if necessary preheat to at least 21°C (70°F).

G1156P PIPING - LOW PRESSURE CONDENSATE & PUMPED CONDENSATE 15307
(PD90-40)

1. GENERAL

1. Specifically refer to general requirements in Section 15300, and steam specification in Section 15728.

2. Maximum pressure is 125 psig and maximum temperature is 250°F.

2. PRODUCTS

		2" (50mm) & Smaller	2½" (65mm) & Larger
1.	Application:		
2.	Pipe:	black steel grade B ERW, ASTM A-53, Schedule 80	same same
3.	Fittings:	steel welded, 300 psig ANSI B16.9	
4.	Valves:		
	Gate (stop)	Jenkins 810 (Crane 440)	Jenkins 454 (Crane 465½)
	Globe (throttling)	Jenkins 2058 (Crane)	Jenkins 142 (Crane 351)
	Check (directional)	Jenkins 4092 (Crane 36)	Jenkins 587 (Crane 373)
	Ball Valve (diverting) (for sight glass)	Kitz	

3. EXECUTION

3.1 PIPING

1. Install piping approximately as shown, with all lines being carried parallel to building walls and as close to the structure as possible.

2. Conceal all piping except where otherwise approved. Exposed piping must be carefully installed to be pleasing to the eye and meet the Consultant's requirements.

3. Align and support all piping properly; under no circumstance may any piping load be transferred to the equipment. Make all equipment connections so as to allow dis-assembly of the piping for equipment removal and maintenance.

4. Use only long radius welding fittings in expansion loops, not screwed fittings. Do not use running nipples.

5. Use the following for branch mains off a main:

1. Mains 100 (4") and over - branches under 38 (1½"), use factory manufactured welding fittings to accommodate the take-off welded or threaded; branches 50 (2") to 75 (3"), use welding saddles; branches 100 (4") and over, use standard tee. Do not use welding saddles for branches greater than ½ of main.
2. Mains 75 (3") branches under 25 (1"), use factory manufactured welding fittings to accommodate the take-off either welded or threaded; branches over 25 (1"), use standard tees.
3. Mains 65 (2½") and under, use standard tees for all branch take-offs.

6. Use only eccentric reducing fittings. Install all reducers in condensate lines with the piping in line at the top.

7. Slope all pumped lines a minimum of 1% in the direction of steam flow. Slope all gravity lines down a minimum of 1% in direction of flow.

8. Weld all joints, except at appurtenances.

9. Provide isolating valves at all equipment, and 3 valve by-passes around control valves.

3.2 WELDING

1. Make pipe to pipe welded joints with open, secure butt welds, reinforced by metal in excess of the net throat dimensions by at least 1.5 (1/16") built up to give a gradual increase in thickness from edge to centre. Clean all rust, paint, oil, grease or foreign matter from all welding faces and adjoining pipe surfaces for a depth of at least 12 (½") from the edge of welding groove. Maintain a surface clearance of 1.5 (1/16"). Carefully align piping using proper clearances and tacking before welding. Leave welded surfaces clean.

2. Welding must be performed by welders with proper certificates. All welding must be done in accordance with the regulations of the Boiler Inspection Branch. All field welding must be in accordance with the procedures of CSA-W55.2-1957 and CSA-W117.2-1974 and the current edition of ASME Code for Power Piping. Do not caulk or pean welds. Perform all welding above 4.4°C (40°F) if necessary preheat to at least 21°C (70°F).

1. GENERAL

1. Specifically refer to general requirements in Section 15300.

2. The entire system must meet all code requirements, CGA-149.1 latest edition, & all requirements of the authorities having jurisdiction, which includes the local gas company.

3. All natural gas piping shall be installed by gas fitter licensed in the Province.

2. PRODUCTS

1. Above ground:

1.	Application	50mm (2") & smaller	Over 50mm (2")
2.	Pipe	black steel grade B ERW, ASTM A-53 Standard wall	same
3.	Fittings	steel, welding ANSI B16.9	same
4.	Valves	Mueller Fig. #11175 125# steel, threaded ends c/w wrench	Rockwell Nordstrom Fig. 143, 175# flat face flange c/w wrench

3. EXECUTION

1. On roofs:
   -support on 100mm x 100mm (4"x 4") pressure treated cedar sleepers, mopped into roofing
   -paint yellow bands over metal primer, immediately following installation
   -provide pitch pockets & flashing at all roof penetrations

2. Install expansion loops where required for thermal expansion & at control joints, to accommodate movement.

3. All inside piping shall be welded and painted yellow.

4. Run vents where approved by the Consultant.

1. GENERAL

1. Particulary refer to Section 15300 for general piping requirements.

2. PRODUCTS

1. Material: black steel, ASTM AS3 GR.B ERW
   schedule 80 wall thickness
   Joints: welded
   Fittings: steel ANSI B16.9
   Valves: none

3. EXECUTION

1. Follow the engine manufacturer's recommendations for exhaust piping to ensure adequate compensation for thermal & mechanical movement and vibration. Provide spring hangers where required.

2. Provide clearance for continuous insulation through walls & roofs, etc., to prevent fires.

3. Pipe shall end horizontally with 45 degree end, unless weather protection is provided by an automatic cap.

4. Slope pipe to eliminate all pockets where condensation could collect.

1. GENERAL

1.1 SCOPE

1. Provide cleaning and treatment for all fluid systems. Refer to the drawings and other specifications.

1.2 SPECIALIST

1. The contractor shall engage the services of a water treatment specialist to conduct a water treatment analysis and to supervise the installation of equipment and initial start-up of treatment procedures.

1.3 TRAINING

1. The water treatment specialist shall establish treatment ranges and provide training in the use of log sheets and test equipment. Training to be no less than one day or more as required to ensure correct application.

1.4 FOLLOW-UP

1. The water treatment specialist shall make regular callbacks to check on procedures being followed and report each call in writing to the consulting engineer, the mechanical contractor and the Owner, during the first year of operation, a minimum of 3 calls, more if required.

1.5 OPERATING MANUAL

1. In addition to the supervision of the installation of all chemical feed equipment and initial start-up of the treatment program, shall provide a comprehensive operating manual covering all aspects of the treatment program and its maintenance. Provide 1 copy for each Mechanical O & M Manual provided to the Owner.

1.6 LABELS

1. For each system label, on or near the feeder, the required information including: MSDS information sheets, system, required concentration, approximate system volume, required chemical and recommended test frequency. Confirm wording, location, size, etc., before manufacturing.

2. Refer to general requirements for basic valve and equipment labels.

3. All labels shall be mechanically fastened lamacoid.

1.7 CO-OPERATION

1. The contractor shall provide all labour, materials and corrections to facilitate the water treatment.

2. Confirm backflow prevention measures are adequate for the entire installation.

1.8 TEMPORARY HEAT

1. Systems shall not be used for temporary heat unless they have first been cleaned and de-greased under the supervision of the water treatment specialist and a report submitted on the procedures followed, unless special permission is given by the consulting engineer to do so.

2. If weather conditions do not permit the draining and flushing of the system because temporary heat is not available, the contractor shall provide enough additional corrosion inhibitor to protect the system until weather conditions are such that the system can be flushed, drained, refilled and treated with the required amount of corrosion inhibitor.

2. PRODUCTS

2.1 GENERAL

1. All products shall be specifically designed for their use.

2.2 CHEMICALS

1. A minimum of one year's supply of all maintenance chemicals shall be turned over to the Owner. Include signed material list in the manuals.

2.3 TEST EQUIPMENT

1. Provide test equipment and 1 years' supply of materials to permit at least weekly checking of all maintenance chemicals. Provide a wall mounted cabinet for the materials and equipment and locate to suit Owner.

3. EXECUTION

3.1 GENERAL

1. Treatment shall be prompt, to protect all installed systems and equipment.

2. Indicate labour requirements to the Mechanical trade, well in advance.

3. If weather conditions prohibit draining a system, provide extra treatment until the remaining work can be done.

3.2 SUPERVISION

1. Ensure proper cleaning and treatment results. Replace damaged equipment and materials.

2. Liaise with other trades to provide all required flushing connections, sample locations, and correct treatment equipment installation.

3. Participate in layout to ensure convenient access for on-going treatment.

3.3 EXISTING SYSTEMS

1. For existing systems or piping, also use a sludge conditioner to keep solids in suspension.

1. GENERAL

1. Clean and certify in writing to the Engineer that the various piping systems have been cleaned of all pipe dope, thread cutting oils, welding slag, dirt, etc., prior to any operation or operating tests. Carry out the following procedures upon completion of all leak tests of the piping.

2. Fill each system with a neutral pH non-phosphate Dearborn #11 cleaner. The required dosage is 100 lbs. per 1000 Imp. gal. (1:100 by weight) of water in the system.

3. Raise the solution temperature to 110°F. (45°C) and circulate for 24 to 72 hours or more. Clean strainers periodically.

4. Drain off all low parts of the system periodically to purge these of accumulated suspended matter during the circulating period. Replace as required with new solution. Continue until water is clean.

5. After the cleaning period drain down the entire system. Refill with fresh water and circulate for 2 hours. Drain and clean all strainers.

1. GENERAL

1. Refer particularly to 15390 Water Treatment - General.

2. The water treatment specialist shall supervise the installation and start-up of the chemical water treatment system.

3. All labour will be provided by the mechanical contractor who will also arrange for qualified personnel to operate the equipment during Commissioning.

4. The mechanical contractor shall make arrangements with the water treatment specialist to be on site for the chemical treatment commission system Commissioning and shall provide at least two weeks' notice to the water treatment specialist so that arrangements can be made to be on site.

2. PRODUCTS

2.1 GENERAL

1. A Dearborn 3 valve pot feeder is to be provided on each boiler feedwater line by the mechanical contractor.

2.2 PUBLIC SAFETY BUILDING

1. Provide a packaged chemical feed system consisting of:
   a) 205 L Dearborn polyethylene chemical solution tank c/w steel stand, pump mounting shelf, agitator bracket & hinged lid
   b) A Milton Roy R110 chemical pump c/w foot valve & suction line. Pump motor to be .19kW, 110/1/60.
   c) A Neptune agitator c/w 102mm four blade stainless steel propeller, 914mm long x 13mm diameter stainless steel shaft, motor coupling & .19kW totally enclosed, 110/1/60 motor
   d) A Dearborn sample cooler for each boiler

2. The following chemicals shall be provided: 136 kilograms of Dearborn 66, 117 kilograms of Dearborn 166, 109 kilograms of Dearborn Alkameen 56

3. Provide pretreatment consisting of a Filtersoft model 202-30 c/w time clock, EM-111-30 3/4" 5 cycle control valve for fully automatic regeneration, brine tank.

2.3 CIVIC CENTRE

1. Provide a code 2810 test kit.

2. Provide 120 kilograms of Dearborn 3071 boiler water treatment.

3. EXECUTION

3.1 GENERAL

1. The water treatment specialist to supervise the start-up of the chemical feed systems and provide operating personnel with both written and verbal instruction on equipment operation, treatment, testing procedures, and report the Commissioning in writing to the Consultant, Contractor and Owner.

3.2 PUBLIC SAFETY BUILDING

1. Provide sample points on each of the boilers blowdown lines c/w sample coolers.

2. Provide sample points on the condensate return, soft water to the feedwater tank, feedwater to the boilers.

3. Mechanical contractor will mount the agitator and chemical pump as directed by a water treatment specialist.

4. The mechanical contractor will run the soft water line to the feedwater tank.

3.3 CIVIC CENTRE

1. Provide a chemical addition funnel consisting of 3/4" nipple, valve, nipple & 3/4"x 2" reducing coupling on the existing feedwater tank.

2. Provide sample points on the condensate and feedwater lines, and sample point with cooler on the boiler blowdown line.

1. GENERAL

1. Refer particularly to 15390 Water Treatment - General.

2. The water treatment specialist shall supervise the boil out of each steam boiler.

3. All labour to be provided by the mechanical contractor who will also arrange for qualified personnel to operate the equipment during the boil out.

4. The mechanical contractor shall make arrangements with the water treatment specialist to be on site for the boil out and shall provide at least two (2) weeks notice to the water treatment specialist so that arrangements can be made to be on site.

2. PRODUCTS

2.1 PUBLIC SAFETY BUILDING

1. Chemicals: Dearsol 19, Dearborn 691 & VOS-68; for boilout. Provide 25 L of Dearsol 19, 4 L of Dearborn 691 & 1 L of Dearborn VOS-68 per 1000 L in the boiler.

3. EXECUTION

1. The chemical shall be introduced according to instructions provided on the site by the water treatment specialist and shall be heated by firing the boilers to bring the pressure/temperature up to normal.

2. Throughout the boil out period, steam shall be vented periodically in order to re-fire the boiler and maintain circulation.

3. On completion of the boil out, the boiler shall be cooled, drained and opened for inspection. Should the heat transfer furnaces not be thoroughly cleaned of grease, oil and debris, the entire procedure shall be repeated and the boiler then left with treated water.

4. On completion of the boiler boil out, the water treatment specialist shall provide a report to the mechanical contractor and the consulting engineer, indicating exact procedures followed, and pH readings taken during the procedure, and final results.

5. Boiler is to be filled to operating level with zero soft water.

1. GENERAL

1.1 GENERAL

1. Execute all work and furnish all products as specified herein in accordance with the Contract Documents. Construct a plumbing system in strict accordance with the requirements of the latest edition of the Provincial Plumbing Code and all of its amendments, the Civic By-law and their amendments, and the authority having jurisdiction. No additional compensation will be paid for work required to comply with these requirements.

1.2 RELATED WORK

1. All drawings and specification documents apply to this section of the work. The following is a list of related specification sections which should be reviewed with particular care.

2. Section 15010 - 15050 Mechanical General Requirements
   Section 15180 - Insulation
   Section 15300 - 15399 Piping.
   Section 15450 - Plumbing Fixtures.

1.3 EXISTING PIPING AND EQUIPMENT ON DRAWINGS

1. Locations of existing piping and equipment as shown are based on the best information available, but no guarantee is given that all existing piping and equipment are shown or that the given locations are exact.

1.4 VALVES AND MOTORS

1. Refer to 15010 and 15300 for valve and motor specifications.

2. PRODUCTS

2.1 PIPING

1. Refer to the appropriate piping sections for all plumbing piping systems.

2.2 ACCESS DOORS

1. Access doors are specified in Section 15010, Mechanical General Requirements.

2. Door dimensions shall be 300 x 300 (12" x 12") where equipment is close to the door, 300 x 450 (12" x 18") where equipment is more than 450 (18") from the door. Access doors for cleanouts immediately behind the wall shall be 150 x 150 (6" x 6").

3. Where conditions require other sizes, shapes, or types; review with the Consultant and provide suitable alternative which will provide adequate access.

4. Where doors exceed 300 x 450, provide a continuous concealed piano hinge on the longest side.

2.3 CLEANOUTS

1. Cleanouts to be full size for pipe up to 100 (4") and not less than 100 (4") on larger pipe.

2. Cleanout plugs to be bronze with raised hexagonal head and tapered threads, Zurn A-1470, or Ancon with integral cover.

3. Cleanouts in finished floors to have removable covers, the cover to match surrounding finish, eg. Zurn ZN-1508 for tile floors, Zurn ZN-1504 for carpet areas, etc.

4. Cleanouts in unfinished concrete floors to be Zurn ZN-1410-2 with clamping collars on units located in waterproofed floors.

5. Wall cleanouts below lavs and in vanities to be exposed chrome pipe caps. Others to be concealed in the wall c/w access door.

2.4 FLOOR DRAINS

1. Floor drain size and location are shown on the drawings. Provide correct type of floor drain and strainer in each location. Contact the Consultant where doubtful.

2. Provide trap primer connections where indicated.

3. All types may not be required for this project.

4. In finished areas, except as otherwise specified herein, ZN-415 with adjustable height strainer, seepage flange and clamping collar.

5. Strainer variations:
   R - Clamps watertight to sheet goods.
   F - Use where pipe(s) directed to the drain.
   B - Other locations.

6. In unfinished areas: ZN-415 with 7" diameter type N strainer with deep flange and square holes.

8. In areas of heavy loading: ZN-509 with tractor type deep flange, non-tilt strainer of 12" (300mm) diameter.

9. Where a shallow seal is required: ANCON AN-452 with 6" overall depth.

2.5 SAFES FOR FLOOR DRAINS

1. Floor drain safes to be 460 x 460 (18" x 18") lead sheets clamped watertight to the floor drain.

2.6 INSIDE HOSE BIBBS

1. HB-1: Emco #10241 sediment faucet, female inlet, 20 (3/4") diameter, c/w WAHS #8A vacuum breaker.

2.7 OUTSIDE HOSE BIBBS

1. Use the following for outside w/o box (non-freeze) ANCON #HY420. Ancon HY725 encased non-freeze wall hydrant, with approved self- draining vacuum breaker, galvanized steel casing, polished nickel bronze box and cover assembly, 20 (3/4") straight thread hose outlet connection and combination 20 (3/4") solder and 25 (1") male NPT inlet connection. Provide Owner with one key per hydrant.

2.8 BACKWATER VALVE

1. Zurn Z-1090-1 complete with bolted access cover, dura-coated cast iron body, pipe ends to suit.

2.9 PRESSURE GAUGES AND THERMOMETERS

1. Refer to the piping section for gauges and thermometers.

2.10 SAFETY AND RELIEF VALVES

1. Safety and relief valves shall be of the approved pop type valve with a capacity in excess of that required. Consolidated or Farris.

2.11 SHOCK ABSORBERS

1. Zurn Shoktrol Series Z-1700 shock absorbers complete with cylindrical domes, all welded bellows, all stainless steel construction, invert cylindrical cavity dome-blocks, and permanent dry compressed air charge.

2.12 WATER METER

1. Provide a 20 (3/4") Neptune Trident No. 8 meter for the hot water heating make-up water line.

3. EXECUTION

3.1 PIPING

1. Refer to the specific piping sections for execution requirements.

3.2 ACCESS DOORS

1. Provide access doors at all equipment, cleanouts, valves, etc. requiring access where not readily accessible for maintenance and inspection.

3.3 CLEANOUTS

1. Install cleanouts where easily utilized, and as required by the latest edition of the Provincial Plumbing Code, its amendments, and the authority having jurisdiction.

2. Consult with the Architect if in doubt to clean-out finish or cap type.

3. In finished areas, ensure a neat installation level within the surrounding floor or wall.

3.4 SAFES

1. Test shower and floor safes by flooding the floors when so directed by the Engineer.

2. Floor Drain Safes: Safes shall be installed in all floors except slab-on-grade construction. Ensure floor drains have the required clamping flange and provide a watertight installation.

1. GENERAL

1.1 CODES AND STANDARDS

1. Execute all work and furnish all products as specified herein in accordance with the Contract Documents and in strict accordance with the requirements of the latest editions of the Provincial Plumbing Codes and all of their amendments, the Civic Backflow Prevention By-law and its amendments, and the authority having jurisdiction. No additional compensation will be paid for work required to comply with these requirements.

1.2 RELATED WORK

1. All drawings and specification documents apply to this section of the work. The following is a list of related specification sections which should be reviewed with particular care.

2. Section 15010 - 15050 Mechanical General Requirements
   Section 15300 - Piping
   Section 15400 - Plumbing
   Section 15500 - Fire Protection

2. PRODUCTS

2.1 GENERAL

1. Furnish all products in strict accordance with 1.1.1. above.

2. Provide a line size strainer upstream of each reduced pressure backflow prevention device.

3. All water supply backflow prevention devices shall be line size.

4. Maximum pressure drop for a reduced pressure backflow prevention device shall not exceed 12 psi (80kPa).

2.2 HYDRO PNEUMATIC DIAPHRAGM EXPANSION TANKS

1. Provide diaphragm expansion tanks on the downstream side of all reduced pressure backflow prevention devices. Tanks shall be equal to Hamlet & Garneau Inc. Model FX-8, 2.1 gal (8 liter) capacity. Bladder shall be suitable for contaminants present.

2.3 BACKFLOW PREVENTION

1. Provide the recommended water supply anti-contamination device for the appropriate hazard described in The City of Winnipeg By-law 504/73, and it's amendments, whether shown on the drawings or not.

2. Maximum pressure drop for a reduced pressure backflow prevention device shall not exceed 80 kPa. (12 psi).

3. Provide a line size strainer upstream of each reduced pressure backflow prevention device.

4. All water supply contamination devices shall be line size and approved by the authority having jurisdiction.

3. EXECUTION

3.1 TESTS

1. Test and tag all backflow prevention devices in accordance with the authority having jurisdiction. Submit copies of test reports to the authorities having jurisdiction and to the consultant. Tests shall be performed by a certified Backflow Prevention Device testing person; all reports shall contain their certificate number. Include copies of test reports in the Operation and Maintenance Manuals.

3.2 REDUCED PRESSURE DEVICES

1. Run the relief port drain to an acceptable drain, which will be capable of accepting full relief flow with no spillage or splashing, or where overflow of the drain will not cause damage to the building.

2. Demonstrate RP relief drains to the consultant upon request.

1. GENERAL

1. This section applies specifically to all sections in the range 15701 - 15799.

2. Co-operate and co-ordinate with Electrical to ensure all power supply locations and characteristics are suitable.

3. Co-operate with the air balancing contractor by operating and adjusting equipment to suit.

4. Protect and keep all equipment clean until turned over to the Owner.

5. Temporary use of permanent equipment is prohibited without prior written authorization of the Owner.

6. The mechanical contractor shall accept all responsibility for all unit start-ups. Confirm proper connections for all services prior to unit start-up.

7. All work and installations shall conform to all applicable codes and shall have the approval of all authorities having jurisdiction.

1. GENERAL

1. Specifically refer to Section 15700 for general requirements.
2. Refer to electrical for power characteristics.
3. Confirm power characteristics with electrical trade and power authority before placing order.
4. Refer to 15900 for controls.

2. PRODUCTS

2.1 HEATING SECTION

1. Aluminized steel, CGA approved, safety controls employing electric pilot ignition using an automatic temperature sensitive switch to determine the pilot operation. At ambient temperatures above 30°F (-1°C), on demand from a controller the spark ignition system will be energized & the pilot valve will open. The system will attempt ignition for 90 seconds. Should the pilot not light in 90 seconds the system will lock out & will require manual reset at the furnace. If the pilot is proven within 90 seconds the main valve is allowed to open (Intermittent pilot). At temperatures below 30°F (-1°C) the system will operate with a continuous pilot. The spark ignition system is powered at all times & the manual pilot gas cock is open at all times. The main gas valve will not open unless the pilot flame is proven. The main gas valve opens on demand from a controller. The system has 100% lockout if the pilot is

1. GENERAL

1.1 RELATED WORK

1. Section 15700 - Heating and Cooling General.
2. Sections 15900 - 950 - Controls
3. Sections 15999 - Schedules
4. Division 16 - Electrical

2. PRODUCTS

2.1 SCHEDULE

1. Refer to the Schedule for specifics as to glycol, steam or hot water and horizontal or vertical air pattern.

2.2 GENERAL

1. Copper tubes with mechanically bonded aluminum fins, silver brazed to steel headers and tested to 200 psig, with air. Minimum tube wall thickness of 0.025".

2. Casings of 18 ga corrosion protected steel.

3. Guaranteed capacities, as scheduled.

2.3 HORIZONTAL UNITS

1. Prop fans balanced to eliminate vibration.

2. Open drip-proof motors, resiliently mounted, which will operate at less than nameplate amps.

3. Louvre fin diffusers with horizontal and vertical air flow adjustment.

2.4 VERTICAL UNITS

1. Prop fans, balanced to avoid vibration.

2. Open, drip-proof motors with ball bearings for vertical mounting, mounted away from the coil and hot air stream, loaded to less than nameplate amps.

3. Adjustable louvre cone diffusers to control air pattern, with minimum 12 blades.

1. GENERAL

1.1 GENERAL

1. All products shall be recommended for their use by the manufacturer.
2. All products shall be approved under the relevant steam and pressure plant regulations.

2. PRODUCTS

2.1 LOW PRESSURE STEAM TRAPS

1. TLV free float, cast iron body, stainless steel float and valve seat. Continuous discharge, in-line maintainable, bimetal air vent and rotating float for long life.
2. Pressure range of 1 to 15 psig. Maximum temperature of 428°F.

2.2 STRAINERS

1. Up to 2" - screwed, cast iron, SPIRAX/SARCO, rated at 250 psig and 406°F, c/w 20 mesh, stainless steel screen.
2. 2½" and larger - flanged, cast iron, SPIRAX/SARCO, rated at 125 psig and 250°F, c/w stainless steel screens: 20 mesh to 3", 0.045 perforations to 6" steam, .062 perforations for larger sizes; 0.125 perforations for condensate and feedwater over 3".

2.3 AIR ELIMINATIONS FOR STEAM

1. Cast iron ASTM A126 Class B with stainless steel and monal internals for pressure to 250 psig, SPIRAX/SARCO VS.

2.4 PRESSURE GAUGES & THERMOMETERS

1. Refer to 15300 Piping - General.

2.5 PRESSURE RELIEF

1. SPIRAX/SARCO, cast iron, rated for 15 psig.
2. Vertical discharge situations shall be equipped with a full size drip pan elbow.

2.6 CONDENSATE/FEEDWATER TANK LEVEL CONTROLS

1. **Condensate Tanks**

   Float control for each pump and separate high level alarm float c/w Square D switch.

2. **Feedwater tanks**

   Make-up water level control: Magnatrol c/w porcelain displacers, flange mounting, low level and high level alarms, all switch ratings to suit.

2.7 SIGHT GLASS

1. Provide c/w diverting ball valves top and bottom, refer to 15307.
2. Use multiple glasses to avoid heights over 24".

3. EXECUTION

3.1 STEAM TRAPS

1. Install at all equipment, drip legs, header and all low points in the system. Maximum spacing of 100 feet.
2. Always install with dirt pocket upstream strainer unions both sides, gate valves both sides, and with adequate maintenance clearances.
3. Install within 5° of horizontal in both directions.
4. Size at 3 times full load condensing rate. Use 3/4" SJ3 for drips. Pressure difference of 2 psi.

Model	Sizes	Total Capacity at 2 PSI Diff.
SJ3	3/4, 1	500#/hr
SJ5	3/4, 1, 1¼	1000#/hr

5. Replace all existing high pressure traps, low pressure to remain.

3.2 STRAINERS

1. Install upstream of all steam traps, control valves and feedwater and condensate pumps.
2. All flanged strainers to be equipped with a blow-off valve piped to a funnel drain.
3. All threaded strainers to have a union for removal.
4. Provide convenient servicing space.

3.3 AIR ELIMINATORS FOR STEAM

1. Install on steam headers.
2. Pipe air discharge to a safe location for steam discharge.
3. Provide a gate valve between header and eliminator.
4. Allow service clearance.

3.4 PRESSURE GAUGES & THERMOMETERS

1. Refer also to 15300.
2. Install pigtails for all steam pressure gauges.

3.5 RELIEF VALVES

1. Size to full capacity of equipment at less than the working pressure.
2. Horizontal discharger to be sloped away from valve.
3. Vertical discharger to be increased in size and elbowed 90° at the discharge. Provide a full size drain from drip pan elbow to nearest drain.
4. Support valve piping to withstand reactive and thermal forces during a discharge. Provide a flex connection where required.

3.6 LEVEL CONTROLS

1. **Condensate Tanks**

   Set alarm level to avoid nuisance alarms.
   Set pump levels to avoid rapid cycles, and overflow.

2. **Feedwater Tanks**

   Set make-up low enough to avoid overflow on system shut-down, but adequate reserves for system start-up.

   Set alarms as above. Provide a stilling well full tank depth, in addition to required flanged nozzle for mounting.

3.7 SIGHT GLASSES

1. Install on feedwater tanks to show middle 80% of tank depth.
2. Pipe bottom valve to drain to facilitate flushing.

2. PRODUCTS

2.1 HORIZONTAL END SUCTION CENTRIFUGAL PUMPS

1. Provide and install base mounted horizontal end suction centrifugal pumps where indicated on the drawings and as specified hereinafter.

2. Each pump shall be mounted on a rigid steel base plate and shall be direct connected by means of a suitable flexible coupling to its electric motor which shall be mounted on the same steel base.

3. Each pump shall be fitted with a cast iron casing suitable for a 250 psig working pressure and shall have an enclosed bronze or iron impeller secured to the alloy steel shaft by means of keys and a cap nut.

4. The shaft shall run in two heavy duty deep groove ball bearings, oil lubricated, and so designed that the liquid being pumped does not come into contact with any bearings.

5. The pump stuffing box assembly shall be provided with a packed gland/mechanical seal unit, integral coverplate.

6. All parts of the pump shall be positively located by means of registers and spigots and assembled with studs and nuts.

7. Refer to the pump schedule in Section 15999 for sizes and capacities.

3. EXECUTION

3.2 HORIZONTAL END SUCTION CENTRIFUGAL PUMPS

1. Level, shim, bolt and grout pump bases in accordance with the manufacturer's turer's recommendations.

2. Check pumps for correct alignment and rotation prior to start-up.

3. Support all piping to pumps so that no weight is carried by the pump casing. Install long radius elbows on each pump suction.

4. Confirm electrical characteristics on the electrical drawings and on site.

5. Carefully adjust packing glands to recommended leakage.

1. GENERAL

1.1 GENERAL

1. Boilers shall be CGA approved for natural gas.

2. Boilers shall meet all the requirements of the Authority having Jurisdiction.

2. PRODUCTS

2.1 GENERAL

1. Each unit shall be furnished as a packaged steam boiler, consisting of boiler, burner, forced draft fan, controls and accessories. Each unit shall be furnished with required wiring and piping and factory-assembled on a structural steel base as a self-contained unit.

2. Standard of acceptance: Unilux or Superior Combustion Industries.

3. Both design and construction shall be in accordance with A.S.M.E. Code requirements. Each package boiler shall be warranted against defects in workmanship and material for a period of eighteen (18) months from date of shipment, or twelve (12) months from date of start-up, whichever occurs first. All defective items shall be replaced with no charge for the one (1) year period.

4. In addition to other warranties specified, the boiler pressure vessel shall be warranted against thermal stress cracking for a period of ten (10) years from date of shipment, providing the boiler is operated and maintained in accordance with the conditions specified in the Owner's Manual. The warranty shall cover the boiler pressure vessel under all operating conditions. This warranty shall cover in full all leaks in headers and downcomers caused by any conditions other than corrosion.

2.2 BOILER DESIGN

1. Boiler shall be of the two-drum bent tube watertube type with a tangent waterwall tube furnace.

2. The fireside of the boiler shall have five longitudinal gas passes separated with waterwall tubes to ensure maximum linear gas travel.

3. Stainless steel cross baffles within the second and fourth passes shall be furnished to provide hot gas turbulence, furnace pressure and stack exit temperature control.

4. All tubes shall be exposed to radiant luminous heat in the boiler furnace which creates high water flow rates and substantially increases heat transfer in the convection zones outside the furnace.

5. All boiler tubes shall be easily removable and replaceable with standard tools without requiring expanding or welding at the attachment to the drums.

6. Boiler shall have one large downcomer at the front and one large downcomer at the rear outside the flue gas section to provide natural circulation.

7. Boiler shall have a vent connection at the highest point on the upper drum and one inspection opening in each drum end.

8. The furnace heat release shall not exceed 60,000 BTU/HR per cubic foot of furnace volume and 50,000 BTU/HR square feet of heating surface exposed directly to the radiant flame.

9. The boiler combustion chamber floor and ends shall be constructed with 1,900°F ceramic fiberboard insulation and 2,700°F high temperature castable refractory and shall be capable of running immediately upon cold start-up on high fire without sustaining any permanent damage.

10. The boiler inner casing shall be fabricated of 11-gauge steel and 2" thick 1,900°F insulation. The casing shall be constructed with bolts and gaskets to ensure that the products of combustion are contained within the boiler at 3" W.C. furnace pressure.

11. The boiler outer casing shall consist of 3/4" thick fiberglass insulation enclosed in 18-gauge steel panels. The outer steel casing shall be removable sections finished with hard baked enamel paint. There shall be a 2" air space between the inner and outer casings.

12. The boiler shall have access panels to the furnace with an observation port at the rear and to the flue gas passages at the front. A front flame observation port shall be provided at burner enclosure.

13. The entire inner casing and combustion chamber access door shall be easily removed and replaced for inspection and maintenance.

14. Tube removal and replacement shall be readily accomplished from sides of boiler.

15. Round flanged smoke outlet to be located at top of boiler with top outlet position.

16. Lifting lugs shall be provided to facilitate installation.

17. The boiler shall be equipped with an integral, factory installed steam separation system within the upper drum. The steam separation system within the upper drum. The steam separation system shall ensure that the moisture content of the saturated steam leaving the unit shall not

exceed one-half of one percent with drum water concentrations not in excess of 3,500 ppm.

18. Bottom blowdown connection shall be provided such that the blowdown effluent shall be drawn from the middle of the lower drum.

19. Provide tube removal and replacement tool(s).

2.3 BOILER TRIM

1. Safety valves, size and quantity, shall be in strict accordance with A.S.M.E. Code requirements.

2. Steam gauge, c/w syphon and cock, mounted on the boiler.

3. Water column shall be piped on boiler at factory, c/w red line gauge glass, tricocks and drain valve.

4. Feedwater pump control shall be piped and wired on boiler at the factory to automatically activate feedwater pump for makeup water, modulating the feed rate through a modulating valve. Provide time delay (adjustable 0 - 10 minutes) before pump off.

5. Primary low water cutoff shall be piped and wired on boiler at the factory to stop burner operation when water falls below its set level, c/w auxiliary contacts for remote monitoring.

6. Auxiliary low water cutoff of the probe type shall be mounted and wired on the boiler at the factory.

7. High water level, c/w auxiliary contacts for remote monitoring.

2.4 BURNER

1. Forced draft Weishaupt automatic type G__ M burner designed to burn natural gas with modulating control, sized to suit boiler.

2. Burner shall be cast aluminum monoblock construction hinged left or right for ease of access to gas mixing assembly, ignition electrodes and flame scanner.

3. Burner shall incorporate stainless steel flame retention combustion head.

4. Burner shall have permanent observation port to allow observation of main flame and pilot.

5. Fuel and air ratios shall be controlled by servomotor driven adjustable cam which controls both air louvres and built-in butterfly gas valve and shall control fuel/air ratios at peak combustion efficiency through the range of the burner. The burner shall maintain combustion efficiency through a turn-down ratio of 6:1.

6. The servomotor shall respond to signal from pressure controller to accurately maintain pressure at desired setpoint and shall incorporate micro switch settings for ignition, low and high fire, together with fully open and full closed positions.

7. After commissioning, alteration of low or high ignition positions shall only entail simple adjustment of micro switches.

8. Flame safeguard shall be Landis and Gyr Model LFL 1.335.

9. Burner shall carry C.G.A. approval and be fitted with gas train to C.G.A. standards.

2.5 CONTROLS

1. Each unit shall be equipped with necessary controls and safety devices to operate automatically. The combustion safety control shall be of the electronic type with positive, timed programming sequences and with safety lockout control in the event of a flame failure. Safety lockout shall require manual reset before automatic recycling can continue.

2. The burner control cabinet shall be mounted on the boiler and shall contain the necessary fuses, motor contactor or magnetic motor circuit transformer.

3. Power voltage shall suit power available, see Electrical. Control voltage shall be 115 volts, 1 phase, 60 Hertz.

4. Provide operating high limit, safety high limit, modulating high limit and lead lag control in common steam header.

2.6 COMPUTERIZED COMBUSTION CONTROL & DATA ACQUISITION SYSTEMS

1. The boiler-burner package shall include a micro-processor state-of-the art Combustion Control and Data Acquisition Systems

2. The concept employs a mother board and four expansion slots to accommodate three different interface boards: analog input, analog output and digital input/output switching to be combined in any way to meet system needs.

3. The master control panel is to have the following features:

    1. Z-80 central processing unit
    2. Two RS-232C ports for two-way communication with a remote P.C.,
    3. Twelve key data entry
    4. Twenty characters by two lines on LCD display
    5. Memory back-up cartridge
    6. Sixteen single ended analog inputs
    7. Four analog outputs
    8. Digital-to-analog conversion
    9. Dry contact relays and input/output solid state relays

10. Four loop control capability
11. Real time clock

4. Utilize standard boiler level controls pressure controls, etc., and supplement them with all necessary thermocouples and transducers installed where required to supply pertinent input data to achieve the following:

    1. Control steam pressure
    2. Control drum water level (modulating + feedwater pump ON/delayed OFF)
    3. Boiler lead lag operation
    4. Firing rate display
    5. Stack temperature display
    6. System operating status display
    7. Burner safety shut-down display
    8. Printer output & for alarms on a time basis for logs

5. Temperature and pressure data sensors shall be supplied by the boiler supplier and installed by the mechanical contractor.

6. All control wiring between the sensors, control, burners and central micro-processor panel to be the responsibility of the boiler supplier. Power supply to the panel by the electrical contractor.

7. Include set-up and instructions to the owners upon completion of installation. **Note that all electronic design and software details must be provided**, see front end specifications. A Confidentiality Agreement is available.

8. Show specific guarded status requirements on shop drawings, but note as "future".

3. EXECUTION

3.1 GENERAL

1. The administration building boiler shall be moved into place through roof access door, or by elevator; and assembled on site.

2. Alternatives for package boiler installation will be considered. List as separate price in the Schedule of Prior, including all additional costs for all restoration to first class condition.

3. Obtain Department of Labour approval before and after installation, including, but not limited to clearances, gas piping, venting, combustion air, safety controls and water make-up.

3.2 BOILERS

1. Pipe and wiring shall not interfere with boiler access, and shall permit convenient servicing, including tube and burner replacement.

3.3 CONTROLS

1. Ensure safety controls are located and installed correctly.

2. Mount the master control panel on the boiler room wall near the front of the boiler and wire to the boilers in conduit with shielded cable, as required, all as recommended by the manufacturer and supplier. Final lengths may be in liquid tight flex.

3. Provide a temporary printer to demonstrate monitoring output capability for alarms and logging.

3.4 PIPING

1. Provide main and auxiliary low water cut-offs on each boiler.

2. Pipe drains to a floor drain or sump.

3. Provide A.S.M.E. relief valves and pipe outside to a safe discharge location.

4. Blowdown piping to include quick opening and gate valves, discharging to a sump c/w ½" cold water supply for cooling.

5. Valves above 6'- 0" above floor to be equipped with chain operators.

6. Piping arrangement to keep stress off boilers, including thermal expansion.

3.5 COMMISSIONING

1. Each packaged boiler shall be adjusted to operate at a minimum efficiency of 82% at all firing rates, from 25% to 100%.

2. The flue gas exit temperatures shall not fall below the dew point of the flue gases to prevent condensation corrosion within the boiler.

3. Start-up and service of each packaged boiler shall be provided by trained technicians and the manufacturer's local authorized representative.

4. Provision shall be made for the start-up of each boiler system, as well as instructions to the owner's personnel concerning operation and maintenance, see also Section 15010.

5. Efficiency tests shall be performed as part of the start-up and a written report submitted to the engineer in triplicate. Ensure specified efficiencies are achieved prior to reporting.

6. Set feedwater pump controls, including time delay OFF.

7. Obtain and mount Department of Labour certificate.

1. GENERAL

1.1 GENERAL

1. Provide products and execute all work as specified herein and in accordance with the Contract Documents.

2. The general intent is to furnish products in accordance with the recommendations of the current ASHRAE handbooks, SMACNA Standards, & common accepted trade practice unless otherwise noted herein.

3. This section applies specifically to all related Sections 15800 - 15899.

1.2 RELATED WORK

1. All drawings and specification documents apply to this section of the work. The following is a list of related specification sections which should be reviewed with particular care.

Sections	15010 - 15099	Mechanical General Sections
	15300 - 15399	Piping Sections
	15700 - 15799	Heating and Cooling Sections
	15900 - 15950	Control Sections

1.3 CO-ORDINATION

1. Co-ordinate all work with all other applicable trades, especially lighting, motor locations and characteristics with Division 16000.

2. **Arrange a meeting early in the job, with the Air Balancer and review balancing requirements, especially volume controls required. The minutes must reach Consultant before the second progress claim from the General Contractor.**

1.4 FAN INLET CONDITIONS

1. Inlet conditions are critical to fan performance. Check what will be installed to ensure proper conditions. Add straightening vanes or turning vanes where required. Generally provide a minimum of 3 wheel diameters of straight duct immediately upstream of the fans.

2. Ensure that flex connections are installed outside the normal duct so that there is NO protrusion into the duct.

1. GENERAL

1.1 GENERAL

1. Provide products and execute all work as specified herein and in accordance with the Contract Documents.

2. The general intent is to furnish ductwork and accessories in accordance with the recommendations of the current ASHRAE handbooks and SMACNA standards unless otherwise noted.

3. This section applies specifically to all related Sections 15800 - 15899.

1.2 RELATED WORK

1. All drawings and specification documents apply to this section of the work. The following is a list of related specification sections which should be reviewed with particular care:

   Sections 15010 - 15099 Mechanical General Sections
   15300 - 15399 Piping Sections
   15700 - 15799 Heating and Cooling Sections
   15900 - 15950 Controls

2. PRODUCTS

2.1 GENERAL

1. Refer to Sections 15802 to 15899 and Section 15999 for products in this series.

3. EXECUTION

3.1 DUCTWORK

1. Route approximately as diagrammatically shown. Report all deviations to the Consultant for approval before proceeding. Carefully co-ordinate installation of exposed ductwork with other services. Layout exposed ducts to the approval of the Consultant before installation. Install all ductwork concealed, unless otherwise approved.

2. Insofar as possible, construct the ducts in accordance with the dimensions shown on the drawings. Where necessitated by building construction, alter the dimensions maintaining the same equivalent size. Size ducts from ASHRAE table of equivalent rectangular and round ducts.

3. Brace all ducts properly, so as not to interfere with the free flow of air, make air-tight and free from buckling and sagging. All flat

surfaces to be cross broken or reinforced with a Weltyway/Lockformer computerized roller groover with grooves 300 (12") on center and the raised portion towards the outside of the duct.

4. For radius elbows, use a centerline radius not less than 1½ times the width of the duct in the plane of rotation of the radius for all bends, tees and elbows unless dimensioned otherwise. Where this radius is not possible, fit formed airfoil blade duct-turns of approved design in low velocity ductwork.

5. Construct transitions with maximum expansion angles of 30° for supply air ducts and maximum 45° for return and exhaust air ducts.

6. Make straight collars between the supply ducts and diffusers, not less than 300 (12") in length and provide individual adjustable blade type distribution grids at the connection. Provide suitable cushion heads at the end of ducts.

7. First class workmanship with regards to fabrication, installation, supports, etc., is required. Submit actual samples and/or detailed drawings of the different types of fittings, joints, supports, seams, etc., for the different systems, when requested.

8. Support vertical rectangular ducts where they pass through the floors using angles, riveted and/or bolted to the duct, bearing on the structure with rubber pads. Use galvanized clamps drawn tight to support round ductwork at floors, bearing on the structure with rubber pads. On exposed ductwork, provide galvanized angle collars to conceal the above construction both above and below the floor.

9. Leave a smooth interior surface on all seams and joints. Break the corners and groove the longitudinal seams using Pittsburgh lock, button lock slide or double seam corners. Bolt all bracing with backing plates. **Do not use aluminum pop rivets.**

10. Ducts shall be soldered watertight at exhausts, intakes, humidifiers, etc., where water may collect. Depressions shall be provided to hold the water until it evaporates or is removed by a drain.

11. Adjust ducts to suit standard control damper sizes.

12. For ducts under negative pressure, use minimum four gauges heavier and additional bracing to prevent sagging and collapse. Alternative is spiral duct.

13. Where linear diffusers are directly attached to round ductwork, make sure that the rigidity of the ductwork is not destroyed. Fittings are of the conical welded slip joint type shown on the drawings. No crimping of the fittings is allowed. If shop made fittings are used, submit samples to the Consultant for approval before being supplied and installed. Lap all joints in the direction of air flow wherever possible and make them smooth on the underside. Stagger lockseam joints at least 90°. Seal all joints with solder or approved fire resistant sealing compound suitable

for the pressure rating. Tape joints after sealing with approved fire resistant tape.

3.2 CLEANING OUT OF DUCT SYSTEMS

1. When the installation is complete, clean the interior of all ductwork.

2. Clean ducts 762x300 (30"x 12") and larger by hand vacuuming. Clean ducts smaller than 762x300 (30"x 12") with a power vacuum through duct openings, etc.

3.3 CONTROL DAMPER INSTALLATION

1. Distribute dampers to their respective locations.

2. Install in accordance with supplier's drawing to ensure proper operation and performance. Adjust as required to provide operating torques within manufacturer's specifications.

3.4 DUCT SMOKE DETECTORS

1. Install detectors, ensuring all the manufacturer's requirements are met. Keep away (upstream preferred) from humidifiers.

2. Provide access(es) for sample tube cleaning.

1. GENERAL

1.1 GENERAL

1. All general clauses of 15800 and 15801 apply to this section.

2. PRODUCTS

2.1 MEDIUM PRESSURE DUCTWORK

1. Ductwork and fittings shall be made of ASTM designation A525-83 commercial grade galvanized sheet metal. Galvanizing quality must allow the sheets to be bent flat upon themselves with no fracture to the coating or base material.

2. Provide round ductwork in 3600 (12 foot) lengths to minimize joints.

3. All ductwork, fittings, etc., shall conform to SMACNA and ASHRAE (latest editions) standards for medium pressure, medium velocity ductwork.

3. EXECUTION

3.1 DUCTWORK

1. Refer to Section 15801 Ductwork General and Section 15810 Ductwork Accessories for ductwork execution.

1. GENERAL

1.1 GENERAL

1. All general clauses of 15800 and 15801 apply to this section.

2. PRODUCTS

2.1 GENERAL

1. Turning vanes shall be double thickness.

2. All internal ductwork partitions and baffles shall be double thickness. Single thickness partitions between ducts will not be accepted.

2.2 ACCESS DOORS

1. Ductwork Access Door Description

    1. Heavy metal frames with rubber sealing gasket.
    2. Double panel type with internal insulation on insulated ductwork.
    3. Door dimensions minimum 300 x 460 (12"x 18") unless specifically noted otherwise.
    4. Door hardware as follows:

Door Size	Hinges	Latches
Up to 450 (18") on hinge (long) side	(2) - Ventlock #150	(2) - Ventlock #90
Up to 610 (24") on hinge (long) side	(2) - Ventlock #260	(2) - Ventlock #260
Up to 900 (36") on hinge (long) side	(2) - Ventlock #370	(2) - Ventlock #310
Up to 1500 (60") on hinge (long) side	(3) - Ventlock #370	(3) - Ventlock #310

2. Ductwork Access Door Locations

    1. Either side of all equipment and restrictions in air handling systems (ie: coils, axial fans, fire dampers, control dampers,etc.)
    2. The base of every riser.
    3. In duct runs as required to allow access to every 15000 (50') section.

3. Access Doors in Architectural Work - Descriptions

    1. 2.7 (12 US gauge) steel.
    2. Prime coat finish.
    3. Concealed hinges.

4. Screw driver cam lock.
5. Door dimensions 300 x 460 (12"x 18") unless specifically noted otherwise.

4. Location of Doors in Architectural Work

1. To give complete access to ductwork doors described above.

2.3 VOLUME DAMPERS

1. Volume Damper Description for Ducts Under 200 (8")

1. Single blade butterfly design, with centerline fastened to 9.5 (3/8") square bar and c/w 9.5 (3/8") quadrant control.
2. Hardware to be as follows riveted to the duct and damper.

Duct Type	Dial Regulator
Uninsulated	Ventlock #635 c/w square end & spring end bearings
25 (1") insulated	Ventlock #637 c/w square end & spring end bearings
40 (1½") insulated	Ventlock #638 c/w square end & spring end bearings

Mark all damper rods with end slots to indicate damper position.

2. Volume Dampers Description for Ducts Over 200 (8")

1. Opposed multi-blade design, unless otherwise noted, c/w mechanism with friction lock wide pitched screw, removable crank adjustment, and mechanically interlocked blades to enable 90% shut-off.
2. Use multi-sectional and multi-regulated dampers with 1200 (48") maximum blade length on dampers over 0.5m+2 (5 sq ft) in area.
3. Hardware to be as follows riveted to the duct and damper:

Duct Type	Dial Regulator
Uninsulated	Ventlock #635
25 (1") insulated	Ventlock #637
40 (1½") insulated	Ventlock #638
50 (2") insulated	Ventlock #639

2.4 FIRE DAMPERS

1. Construct fire dampers in accordance with NFPA Standard No. 90A and/or the requirements of authorities having jurisdiction. Ensure that fire dampers are listed with a nationally recognized testing laboratory, and labelled accordingly.

2. Fire dampers shall be of interlocking blade design. Use fire dampers with blades attached in the air stream for velocities 8m/s (1000 fpm) (m/s) and lower where aspect ratio is 2:1 or less. Use low resistance type fire dampers with blades out of the air stream for velocities above 8 m/s (1000 fpm) and aspect ratios greater than 2:1.

3. Generally, use fusible links at 70°C (160°F) on exhaust and recirculation ducts, 105°C (220°F) on supply ducts and kitchen exhaust ducts. Revise, with Consultant's approval, as required to meet the needs of special locations.

2.5 INSTRUMENT TEST HOLES

1. Test holes are Ventlock No. 699 Instrument Test Holes c/w straight rubber gaskets for flat ducts and curved rubber gaskets for circular ducts.

2.6 GRILLES, REGISTERS AND DIFFUSERS

1. Refer to drawings and schedule for type and size of air outlets.

2. Provide correct frame type to suit the ceiling, wall, or floor finish.

3. Provide equalizing grids in all ceiling diffuser necks. Colors to be selected by Architect from standard factory colors.

4. Door grilles supplied by this Division and installed by Division 8.

2.7 BAFFLES FOR MIXED AIR PLENUMS

1. Use hinged baffles with chains. Materials shall be corrosion resistant. Provide baffle reinforcements to prevent vibration and buckling.

2.8 FLEXIBLE CONNECTIONS

1. Flexible connections shall be airtight, watertight, and flame proof in accordance with NFPA Standard No. 90A. The flexible material shall be in folds, not greater than 150 (6") in length, and shall be c/w 75 (3") wide galvanized metal flanges for ductwork connection.

2. Ducts and flexible connections to fan outlets shall be wider than the fan wheel diameter to avoid turbulence and air pulsation.

3. Material shall be Duro-Dyne 0.56 (0.022") Durolon with Grip Loc connections.

2.9 FLEXIBLE DUCT

1. Insulated Thermaflex III, Type M-KA for up to 0.5 kPa (2" w.c.).

2. Clamps to be Trident stainless steel, worm gear.

2.10 DUCT SEALER

1. Duro-Dyne sealer type S-2 premium grade high pressure duct sealer.

2.11 AIR EXTRACTORS

1. Air extractors shall be fully adjustable gang operated curved blade extractors to control both air direction and volume.

2. Air extractors shall be operated by an arm linkage adjusted by a remote key operated adjustment. Refer to manufacturer's recommendations.

2.12 GUARDS

1. Fit all exposed drive assemblies with belt and coupling guards. Ensure access fan tachometer readings. Provide screens with 1" mesh and no rattles, at all fans with inadequate ductwork safety. Fan casings do not constitute guards.

2.13 DUCT THERMOMETERS

1. For small ducts less than 24" maximum dimension, Weiss Vari-angle model 7VD12, with sharper stem for ducts less than 12", and model 12VD12 with 12" case for locations more than 7' above the floor.

2. For larger ducts, Johnson Controls T-2100 with 8 foot averaging element, T-275-101 element holder, T-800-1603 single hub duct flange. For outside air, the Weiss may be used, in order to get the correct range.

3. Select range so middle 50% covers normal temperature range expected.

2.14 BACKDRAFT DAMPERS

1. Resilient blade seals to provide good seal and quiet operation.

2.15 DUCT PRESSURE GAUGES

1. Magnahelic, pressure or differential pressure, with approximately 5" dial, 90° plus sweep hand, ± 5% accuracy. Select range to provide all normal redesign in mid 50 percent of full scale.

2.16 BACKDRAFT DAMPERS

3. EXECUTION

3.1 GENERAL

1. Install all ductwork accessories as per manufacturer's recommendations.

2. Ensure adequate access for service, adjustment, replacement of all accessories.

3.2 TURNING VANES

1. Install turning vanes in all square elbows of duct systems and where a change in direction of the air is subject to restrictions.

3.3 AIR EXTRACTORS

1. Install at each duct connection to main trunk ducts for supply air systems as well as where indicated on the drawings. Also install where excessive noise or inadequate air flow.

2. Ensure order is placed early.

3.4 GUARDS

1. Ensure that all guards are sufficiently sturdy to provide the required safety and to be free of rattles.

3.5 ACCESS DOORS

1. Furnish access doors as required for inspection, maintenance,cleaning.

3.6 VOLUME DAMPERS

1. Provide volume dampers in the specified locations and where required to facilitate air system balance. Provide volume dampers in all duct branches. Provide access doors where necessary. Locate dampers as far as practical from diffusers and grilles, upstream of lined ducts.

2. Where excessive noise develops, provide two dampers, mesh screen, blank-offs, etc., as required to reduce noise to acceptable level.

3. Install quadrant handles parallel to damper blade.

3.7 BAFFLES FOR MIXED AIR PLENUMS

1. Where poor mixing will occur, use hinged baffles with adjustable chains.

3.8 DUCT SEALER

1. Apply to all duct joints to eliminate air leakage. Install in strict accordance with the manufacturer's recommendations. Pay particular attention to the storage and ventilation requirements. Use tape to reinforce larger gaps and over 0.5 kPa duct pressures.

2. Fans must be off when sealer is applied, and until set.

3.9 FLEXIBLE DUCT

1. Maximum length to be 3'- 0"

2. Maximum turn allowed, 30°.

3. Use only after approval by the Consultant to accommodate misalignment of branch ducts and diffusers.

3.10 DUCT THERMOMETERS

1. String averaging elements carefully to provide good duct coverage. Seal duct to eliminate air leakage. Locate away from mixing locations. Adjust case to facilitate reading from the floor. Use remote mounted where required, including all above 7'- 0".

2. Provide one in the outside air, mixed air and discharge air of each coil/heating section for each air system.

3. Choose ranges to provide readings in middle 50%.

3.11 BACKDRAFT DAMPERS

1. Install square & confirm operational.

2. Ensure good damper seal upon backdraft.

3.11 DUCT PRESSURE GAUGES

1. Locate where there is a minimum of turbulence.

2. Choose ranges to provide readings in middle 50%.

3. Provide one at each filter location (inlet/outlet) and on the discharge of each fan over 1000cfm.

1. GENERAL

1.1 GENERAL

1. All general clauses of 15800 apply to this section.

2. PRODUCTS

1.1 LOUVRES

1. Louvres shall be constructed from extruded aluminum and shall be c/w aluminum birdscreen on the inside.

2. Frame shall suit wall construction.

3. Refer to Louvre Schedule Section 15999.

4. Louvres shall be phosphatized & coated with epoxy primer baked on, to CGSB-93-GP-3A. Final finish shall be two coats of high grade enamel baked at 120°C for one half hour. Color as selected by Architect.

3. EXECUTION

1. Check all drawings & accommodate co-ordination requirements of other trades. Refer to architectural and adjust work to suit.

2. Install plumb & level, pack space around louvres with insulation & caulk to provide air tight seal.

3. In metal panels, provide matching metal strips to fill spaces behind louvre flange, and ensure no pockets are formed at the top.

4. Finish to suit Architect and Owner.

1. GENERAL

1. Approval: Fans to be AMCA certified for air volume and sound, as well as CSA listed.

2. Refer to electrical for power characteristics.

2. PRODUCTS

1. Quiet cabinet fans with resilient mounted centrifugal wheel, built-in disconnect, backdraft damper, direct drive, acoustically insulated housing, reversible discharge, inlet and outlet duct collars, and where scheduled, a variable speed switch.

2. When used for ceiling mounted exhaust fan, provide integral steel or aluminum exhaust grille.

3. Refer to Section 15999 for Fan Schedule.

3. EXECUTION

1. Mount fan securely to eliminate vibration noise. Provide air tight duct connections which leave the backdraft damper operational. Replace noisy wheels and motors. Confirm proper direction of rotation.

2. Mount accessories where directed. Promptly turn over variable speed switches to Division 16000 for wiring. Adjust minimum speed above stall speed, and if remote switching is also utilized, ensure fan will start at the minimum speed setting.

3. **Provide a balancing damper near the fan inlet, when no variable speed control is scheduled.**

G1156P (PD90-40) POSITIVE PRESSURE CHIMNEY 15851

1. GENERAL

1. For double wall forced draft applications, horizontal & vertical, with temperature below 1000°F.

2. All general clauses of 15800 apply to this section.

3. All vent connectors and chimneys shall be UL and CGA approved and acceptable to the authority having jurisdiction.

2. PRODUCTS

1. Pressure vents and chimneys operating below 1000°F shall be Ampco Ameri-Vent double wall c/w 304 stainless steel inner liner, aluminized steel outer jacket, SPA or SRSA roof penetration assembly, SCR stack closure ring, VSTC stack termination cap, SWGA wall guide assembly, SWSA wall support assembly, S90T with DP base tee with drain plug, SFSAR/SHSAR horizontal section support, EJ36 expansion joints, SS1R stepped increases, VFAR flange adaptor kit, VIP inspection plug & S45 EB 45° allow as required.

2. Sizes shown on the drawing are for assistance only, sizes must meet the code requirements fully, based on actual nameplate data and installation geometry.

3. EXECUTION

1. Install according to code requirements and the manufacturer's recommendations. Submit arrangement shop drawing.

2. Maintain clearances to combustibles. Maximize head room. Ensure the roof openings are water tight.

3. Support chimney and vent connectors very securely, especially at the roof. Provide stainless steel guy wires when over 6' above roof, using appropriate "Thaylor" Roofing Specialties fittings. Provide stainless steel anchors attached to roof structure as approved by the Consultant.

4. Allow for thermal expansion and contraction, using expansion joints where required. Seal all other joints with VS2000 sealant.

5. Vertical only chimneys to have stack base drain section at the bottom, piped to a drain with carpender stainless steel.

6. Provide SSDS section for flue gas monitor.

1. GENERAL

1. All general clauses for 15800 apply to this section.

2. Notify the Engineer in advance before physically commencing the balancing, upon request, discuss methods with the Engineer first, and provide a copy of the full test data for the Engineer's review prior to preparation of the final copies.

2. PRODUCTS

1. The air balance agency shall supply all materials required to perform the work described herein.

3. EXECUTION

3.1 AIR BALANCING

1. Air balancing to be done by an independent testing company to balance the air system to within 10% of the quantities shown on the drawings for each component, and to within 5% of design requirements for the overall system. Small systems below 500 cfm to be balanced within 20% or 20 cfm. All balancing to meet AABC minimum requirements. Check all change orders & clarifications to ensure current information is utilized.

2. Submit a test report for all air moving equipment listing the measured data versus design data.

   FOR FANS AND MOTORS:

   a. Fan rpm
   b. Motor rpm
   c. Motor voltage to all phases
   d. Motor current to all phases
   e. Static pressure across fan
   f. L/s (cfm) through each fan
   g. Air temperature at fan suction and discharge
   h. Verify fan rotation

   FOR DIFFUSERS AND GRILLES:

   a. L/s (cfm) at each outlet - specified and measured, on single line diagram

3. Investigate all problems and resolve with the contractor's help, to ensure all values are within range. Obtain direction from the Engineer when necessary.

4. Upon completion of the balancing and approval of the field test data, submit to the Engineer, 6 final copies of the detailed and tabulated balancing reports in bound covers for approval. Check with Owner to determine English or metric units.

5. Allow for a final adjustment, as directed by the Engineer. Revise the reports accordingly.

6. Make good all damage done to ducts & insulation for balancing purposes.

3.2 FIRE DAMPERS

1. Prior to the date of substantial completion, test each fire damper by releasing it twice so as to check whether the damper is binding and is operating in accordance with requirements of the authority having jurisdiction. Have all problems resolved and then re-test, until satisfactory. Permanently mark all dampers with an identification number which shall also appear on the "as-built" drawings. Submit a test report to the Engineer, listing the following data:

    a. Identification of each fire damper corresponding with the "as-built" drawings.
    b. Test results of each damper, including access problems.
    c. Repair procedures, if any, to each damper if not properly working.
    d. State the date of the check(s).
    e. Name of Company and checker(s). Include a complete copy of the written report in each Maintenance/Operating Manual.

3.3 SYSTEMS

1. All new equipment.

2. Police garage make-up and exhaust. (confirm interlock)

3. Laboratory/workshop.

4. Rifle range make-up and exhaust. (confirm interlock)

1. GENERAL

1.1 GENERAL

1. Execute all work and furnish all products as specified herein in accordance with the Contract Documents. The other Control Sections, the Electrical Division and the Mechanical Equipment Sections should be read with particular care.

2. If controls are not complete when required, provide temporary controls which are adequate for safety and comfort.

3. Provide complete, properly operating control systems for all mechanical equipment.

4. Refer to Sections 15700/15800 for automatic dampers provided with other mechanical equipment.

5. Primary electric wiring to motors, disconnect switches, control panels, electric heating coils & motor starters will be provided under Div. 16.

6. Refer to other mechanical equipment sections for materials provided therein, especially 15783 Low Pressure Steam Boilers and the Schedules in Section 15999.

2. PRODUCTS

2.1 CONTROL DAMPERS

1. Use parallel blade low leakage dampers.

2. Damper frames and blades:
   -Construct frames from at least 2.35mm galvanized steel c/w mounting holes.
   -Roll form damper blades from at least 1.60mm galvanized steel:
   -Use blades less than 200mm in width
   -Provide dampers in 50mm increments from 200mm to 1200mm in length. For requirements of 1200mm, use standard modules with interconnecting hardware.
   -Use nylon or oilite with 12mm zinc plated steel shafts for blade bearings.
   -Use corrosion resistant finish on all blade linkage hardware.
   -Provide ready access to all blade linkage hardware for maintenance after installation.
   -Provide neoprene reinforced inflatable blade edge seals & spring loaded stainless steel side seals.

-Use dampers & seals suitable for temperature range of -40° to +93°.

3. Leakage shall not exceed 1% with an approach velocity of 7.6 m/s when the damper is closed against 1000 Pa.

2.2 FREEZESTATS

1. Where freezestats are called for in the specifications, they shall be c/w 1/4" capillary, sensitive to 12" and shall have manual reset. Provide one (1) freezestat for approximately every 64 square feet of coil area.

2.3 THERMOSTAT GUARDS

1. Locking steel guards shall be provided on thermostats in entrance ways, corridors, washrooms, warehouse & other unsupervised areas. Guards shall have no external adjustments.

2.4 DAMPER OPERATORS

1. Provide spring return for "fail safe" in normally open or normally closed position.

2. Size operators to control dampers against maximum pressure or dynamic closing pressure, whichever is greater.

2.5 DIFFERENTIAL PRESSURE SWITCH

1. Differential pressure switch shall be used to sense air flow in the duct.

2. The differential pressure applied to the two sides of a spring loaded diaphragm activates the SPDT switch.

3. Set point shall be field adjustable within the range of 0.05" to 5" W.C.

4. Sensitivity equal to 0.04" W.C.

2.6 PRESSURE/ELECTRIC SWITCH

1. The SPDT snap-acting switch activates from a change in operating pressure.

2. Externally visible calibrated scale indicates the pressure at which the switch operates.

3. Set point shall be field adjustable.

4. Differential pressure equals 0.25 psi.

2.7 AIR SUPPLY

1. Use existing air supply, providing a gate valve & oil filter at each connection.

3. EXECUTION

3.1 PNEUMATIC PIPING

1. All exposed compressed air piping shall be hard drawn copper tubing. Copper tubing shall be supported at 1m maximum. At motorized dampers, motorized valves and sensors on air systems and at pumps, provide 12 in. length of polyethylene FR tubing to allow for vibration of equipment and movement of motor assembly. Do not use polyethylene in areas where ambient temperature is below + 50°F.

2. Polyethylene tubing may be substituted for copper in the following applications:

    1. In exposed areas single tube may be used in lengths of 3 ft. or less. For lengths in excess of 3 ft. or in manufactured bundles, lines to be run in enclosed trough or conduit.
    2. In concealed areas including ceiling spaces, crawlspaces, individual or bundled tubing to be fixed to building structure as noted below.
    3. In inaccessible concealed areas, tubing and manufactured bundles to be run in trough or conduit. Fitting connection shall not be made in these areas.

3. Follow horizontal or vertical building lines to provide neat installation. All control tubing shall be adequately supported by proper tubing clips or hangers. At low points in the piping, where condensation may collect, provide a drip leg or manual plug cock for convenient drainage.

4. Size and install all air supply mains throughout the building to guarantee adequate control air supply to all instruments. When it is found necessary to install control liens on outside walls, separate lines from outside walls by insulating wall board at anchor points.

3.2 WIRING

1. Provide wiring in conduit with final connections of liquid tight flex, all in accordance with Electrical. Use shielded wire where signal interference may occur.

3.3 INSTALLATION

1. Locate thermostat 5 feet above the floor.

2. Upon completion of the installation, the entire control system shall be adjusted, as required, to place the system in complete operating

condition to the Engineer's approval. Co-operate fully with the commissioning of all mechanical systems.

3.4 CONTROL SEQUENCES

1. The following sequences outline the system requirements. Also refer to mechanical equipment specifications and schedules.

2. Provide all controls required for complete working systems, including all features specified.

3. Ensure all controls are compatible, including those provided by others. Show the detailed interfaces on the control shop drawings (ie packaged equipment wiring diagrams).

4. All setpoints shown are suggested initial values only, to be adjusted as required during commissioning.

5. **Boilers & Feedwater Pumps & Valves:**
Refer to 15783 for boiler controls by boiler manufacturer.

6. **Feedwater Tank Make-up Water:** Wire level control (see Tank Schedule, 15999) to a two position pneumatic valve. Adjust closing speed to avoid water hammer. Set levels to avoid overflow and a dry tank. Adjust condensate tank level controls & pumps which feed the tank. Provide a local high/low water level alarm with light and auxiliary controls for (future) remote monitoring.

7. **Unit Heater:** Cycle two position steam valve from a space thermostat and turn fan on with an aquastat.

8. **Administration Stand-by Generator:** Disconnect, extend and re-connect existing controls to suit new location in the boiler room.

9. **Boiler Room Vent Fan:** Cooling thermostat to modulate mixing dampers and turn fan on and off at 10% and 90% of damper travel.

10. **Police Garage Make-up:** Interlock new rooftop unit with existing exhaust and carbon monoxide (CO) control. Unit operates continuously on low speed until CO turns on high speed, with existing exhaust increase. Interlock each speed and burner with each exhaust condition to satisfy the Department of Labour.

11. **Rifle Range Make-up:** Interlock unit with exhaust to satisfy the Department of Labour. Also interlock with existing unit so that whole system turns off after adjustable 30 second time delay if any one of the three (exhaust, existing unit, new unit) is not running. Provide indicator lights at existing unit and new boiler room to show which unit caused the system shutdown: exhaust, existing unit or new rooftop.

ELECTRICAL SPECIFICATIONS G1156P (PD90-40)

1. GENERAL

1. The electrical system shall comply with the requirements of the latest edition of the Canadian Electrical Code & with all provincial & municipal laws, rules & ordinances, & to the authority having jurisdiction & Owner.

2. Work shall include all labour, material & equipment required for installing, & testing the complete electrical system.

3. Submit 5 copies of shop drawings to Engineer for review, within 2 days of award of contract.

4. Prepare & submit to the proper authorities all required drawings & obtain all necessary permits & pay all fees connected herewith.

5. All work completed shall be executed in a first class & workmanlike manner.

6. All work shall be logically arranged for simplicity of installation, accessibility & electrical efficiency.

7. Be responsible for arranging, & pay all required fees, for inspections of work by authorities having jurisdiction over same.

8. Maintain the integrity of the fire ratings where openings are required in fire separations for the passage of pipes, cables, etc.

9. Guarantee satisfactory operation of all work & apparatus installed. Replace, at no expense to the Owner, all items which fail or prove defective within a period of one year after date of substantial performance, providing such a failure is not due to improper usage by Owner. Make good all damage to building incurred as a result of failure or repair of electrical work. No certificate given, payment made, or partial or entire use of equipment by Owner, shall be construed as acceptance of defective work or acceptance of improper materials. This general guarantee shall not act as a waiver for any specified guarantee of greater length of time.

10. Locations of all light fixtures, convenience receptacles, switches, telephone, or similar outlets, etc., are subject to modification by Owner, who reserves the right to move these up to 1800mm from the position shown, without change to the contract price, provided notice is given before the related work has commenced.

11. Provide 2mm nominal laminated phenolic plastic (with black face & white centre) on all equipment. Name plates to indicate designation, function & voltage characteristics of panel.

12. Perform all cutting & patching required.

13. Allow for the drafting of original drawings to show as constructed information. Submit 2 copies of the maintenance manuals to the Owner, in 3-ring binders. Include a copy of the panel directories, all inspection & testing certificates, shop drawings, name/address/phone # of each supplier, contractor & engineer, table of contents & copy of project as-built drawing in an envelope at the back of the binder.

14. It is not the intention of this specification to reiterate the applicable codes. It is expected that the contractor will be responsible for providing all access panels, grounding, wiring methods, etc.

15. The contractor is to examine the conditions of the site & be responsible for relocating or removing & replacing all equipment necessary for the electrical work required for this project.

16. Notify the Engineer of any errors or omissions prior to submission of tender, otherwise no additional compensation will be given.

17. Schedule the work with the Owner to suit operating hours. Allow for scheduling of shutdowns to after building operating hours.

18. Prior to scheduling final inspection, the contractor is to ensure that all work is completed, & in particular, that as-built drawings are completed & all faceplates installed & verification tests have been done & certificates that indicate work installed conforms to requirements of the authorities having jurisdiction.

2. WIRING METHODS

1. All wiring, apparatus & electrical equipment shall be securely attached to the building structure to acceptable industry standards.

2. All wiring shall be copper. Minimum #12 AWG RW-90.

3. Install a separate EMT conduit for each electrical system run. BX is permitted only as a drop to luminaires, limited to a maximum length of 2 m. Run a green insulated ground in each EMT.

4. Indicate the circuit number & panel number with Brady self adhesive numbers, for each wire at each termination & junction.

5. Run conduit parallel to building lines, maximum 4 - 90 degree bends.

3. WIRING DEVICES

1. Convenience outlets for general shall be Duplex "U" ground type, rated 15 amp, 125 volt, specification grade 5262, ivory P & S, Slater, Bryant, Hubbell, Arrowhart. Mount outlets at 300mm AFF & 150mm AF counters. Isolated ground receptacles to be orange & configuration to suit the load.

2. All coverplates, for switches, receptacles, telephone & communications to be stainless steel.

3. Wall switches shall be specification grade silent type. Manufacture to same as receptacles. Rating to be 15 amp, 120 volt. Mount 1370 above the floor.

4. Rivet white with black lettering phenolic lamacoids to each receptacle & switch faceplate indicating the panel & circuit numbers.

5. Install approved vapour boxes for each junction box mounted on a vapour barrier surface. Assure that all the wire penetrations are caulked.

6. Allow for the installation of two indoor duplex receptacles at a location to be specified by the Owner.

4. LIGHTING

1. Fluorescent lamps to be cool white unless otherwise shown.

2. Incandescent lamps to be 130 volts 5000 hour rated life.

5. PANELBOARDS

1. Breakers utilized to switch lights & equipment on & off are to be switch rated. All breakers to be 1" minimum I.C. rating to suit existing panels.

6. CONNECTION TO MECHANICAL EQUIPMENT

1. Confirm exact location, voltage & amperage of all mechanical equipment with mechanical contractor prior to rough-in.

2. Provide a complete EMT conduit system & wiring to all motors & controls.

3. **Do not operate motors & controls until approval is obtained from the trade providing the equipment.**

4. Provide lamacoid nameplates for all motors, starters & controls.

5. Review with Division 15000 for electrical power connections to mechanical equipment.

PUBLIC SAFETY BUILDING & CIVIC CENTRE

02 Insulation Schedule
03 Pump & Tank Schedule (1 of 2)
04 Pump & Tank Schedule (2 of 2)
05 Boiler Schedule
06 Louvre Schedule
07 Unit Heater Schedule
08 Rooftop Unit Schedule
09 Cooling Fan Schedule

INSULATION SCHEDULE

(REFERENCE 15180)

APPLICATION	Type	Thickness	Covering
PIPING:			
LPS	PA	2"	ASJ
LPC & PC & FW & BD	PA	1"	ASJ
WITHIN 6' OF ⌀S ROOF/WALL PENETRATION	PA	1"	ASJ
DCW	PA	1"	ASJ
GENERATOR EXHAUST (INCL. MUFFLER)	PC	2"	TYPE 1
OUTSIDE PIPING — (2 STAGGERED LAYERS)	PA	3"	TYPE 3
DUCTWORK:			
OUTSIDE AIR / COMBUSTION AIR	DA	3"	TYPE 1
WITHIN 6' OF ⌀S WALL & ROOF PENETRATIONS	DA	1"	TYPE 1
EQUIPMENT:			
FEEDWATER TANK	EA	2"	TYPE 1
PUMPS		NONE	

ASJ = ALL SERVICE JACKET

PUMP & TANK SCHEDULE. (1)

NO	TANK CAP. USGALS	LOCATION ROOM NO	MFR & TYPE	MODEL	SIZE IN x OUT	Usgals FLOW	SUCTION LIFT	TOTAL HEAD DESIGN FEET	TOTAL HEAD SHUT-OFF FEET	PUMP EFF (%)	MOTOR DATA HP	MOTOR DATA RPM	IMPELLER SIZE		REMARKS
P-1	—	POLICE GARAGE	DEARBORN R110		1/4" x 1/4"	.05	—					1750	—		CHEMICAL FEED PUMP USED W. T-5
P-22	—	POLICE GARAGE	DUNHAM BUSH	6075-AWPCH		35	—	190'			7½	3450		ELECTRIC ALTERNATOR, AIR-GAP	MAGNETIC STARTER, 3-WAY VALVE
P-23	—	POLICE GARAGE	DUNHAM BUSH	6075-AWPCH		35	—	190'			7½	3450			
P-24	—	POLICE GARAGE	DUNHAM BUSH	6075-AWPCH		35	—	190'			7½	3450			
T-1	450	POLICE GARAGE	DUNHAM BUSH	6075-AWPCH			—							MAKEUP H_2O VALVE, FLOAT SWITCH	LOW WATER CUT-OFF, CONTROL PANEL 3-POS SS*
P-11	—	B-18	VC 330 DUPLEX			4.5	—	69'						EXIST.	
P-12	—	B-18	VC 330 DUPLEX			4.5	—	69'						EXIST.	
T-3	110	B-18	VC 330 DUPLEX											EXIST.	—
P-15	—	POLICE GARAGE	VC 2530 DUPLEX											EXIST.	
P-16	—	POLICE GARAGE	VC 2530 DUPLEX											EXIST.	
T-2	211	POLICE GARAGE	VC 2530 DUPLEX			37.5	—	69'						EXIST.	
P-5	—	B30	LEITCH TYPE 12	CBD		20	—	208'			10	3520		EXIST.	
P-6	—	B30	LEITCH TYPE 12	CBD		20	—	208'			10	3520		EXIST.	
T-4	419	B-30												EXIST.	

* 3 POSITION SELECTOR SWITCH

PUMP & TANK SCHEDULE (2)

NO	TANK CAP. (USGAL)	LOCATION ROOM NO	MFR & TYPE	MODEL	SIZE IN x OUT	FLOW USGPM	SUCTION LIFT	TOTAL HEAD DESIGN	TOTAL HEAD SHUT-OFF	PUMP EFF (%)	MOTOR DATA HP	MOTOR DATA RPM	IMPELLER SIZE	SERVES	REMARKS
P-18	–	SUBBASE OF ADMIN.	CANADA	2SA	3x4	80	–	197	205	36%	15	1760	13 1/2"	FEEDWATER	STANDBY
P-19	–	SUBBASE OF ADMIN.	CANADA	2SA	3x4	80	–	197	205	36%	15	1760	13 1/2"	FEEDWATER	EXISTING
P-15	–	SUBBASE OF ADMIN.	CANADA	2SA	3x4	80	–	197	205	36%	15	1760	13 1/2"	FEEDWATER	EXISTING
T5	45	POLICE GARAGE	DEARBORN	CODE 61-1925	–	–	–	–	–	–	–	–	–		CHEMICAL FEED TANK

Page 4.0
REV.

BOILER SCHEDULE

DESIGNATION	MFR & MODEL	TYPE	MAX. PRESSURE (PSIG)	FUEL	DRAFT	INPUT (MBH)	GROSS OUTPUT (MBH)	CONNECTIONS (IN) IN	CONNECTIONS (IN) OUT	APPROX. DIMENSIONS LxWxH (IN)	APPROX. OPERATING WEIGHT (lb)	FEATURES
PSB B-1	SUPERIOR 150	STM	15	5PSIG NAT. G.	3 HP FORCED	6276	5175	2"	8"	160X59X97	10,300	
PSB B-2	SUPERIOR 150	STM	15	5PSIG NAT. G.	3 HP FORCED	6276	5175	2"	8"	160X59X97	10,300	
ADMIN B-3	SUPERIOR 175	STM	15	5 PSIG NAT. G	3 HP FORCED	7333	6038	2"	8"	173X72X97	13,000	
ADMIN B-1	VOLCANO	STM	15	5PSIG NAT. G.	3 HP FORCED	—	5021	—	—	—	—	EXISTING

NOTE: EXISTING PSB BOILER (6TH FLOOR) TO REMAIN OPERATIONAL FOR SUMMER USE.

*Type: CI = Cast Iron HW = Hot Water STM = Steam CT = Copper Tube STL = Steel

*Features: VD = Vent Damper SI = Spark Ignition

LOUVRE SCHEDULE

NO.	MFR	MODEL	DIR. OF * FLOW	CFM	PRESS. DROPS	SIZE	SERVES	BIRD SCREEN	H_2O PEN. **	REMARKS
L-1	AIROLITE	K638	I	1200	.08"	40"x 32"	COMBUSTION AIR DUCT	✓	.02	
L-2	AIROLITE	K638	I	1200	.08"	40"x24"	BOILER ROOM COOLING (CF-1)	✓	.02	
L-3	AIROLITE	K638	I	9000	.08"	56"x48"	VENTILATION AIR WORKSHOP & LAB	✓	.02	

* I = INTAKE E = EXHAUST R = RELIEF

** OZ/SQFT FREE AREA

PAGE 6.
REV. 0

UNIT HEATER SCHEDULE

DESIGNATION	UH-1				
LOCATION	CARPARK BOILER RM				
MODEL/MANUFACTURER	TRANE 90 H				
HEATING CAPACITY & TYPE	200 MBH STEAM				
AIR QUANTITY CFM	2600				
REMARKS	1075 RPM 1/6 HP				

DESIGNATION					
LOCATION					
MODEL/MANUFACTURER					
HEATING CAPACITY & TYPE					
AIR QUANTITY					
REMARKS					

ROOFTOP UNIT SCHEDULE

Designation	RT-1	RT-2
Manufacturer/Model	ICG - BMA 280	ICG - BMA 300
Type of Unit	DIRECT GAS-FIRED	DIRECT GAS-FIRED
Total Heating Cap/Type	1900 / NAT. GAS	3320/1663/NAT. G
Total Cooling Cap/Type	—	—
Total Air Capacity CFM	16000	28,000 / 14,000
External/Total Static Pressure	.2" ESP	3" ESP
Fan Motor	7 1/2 HP	30 HP
Blower RPM	950	610
Filter Type	2" REPLACEABLE MEDIA	2" REPLACEABLE MEDIA
REMARKS:	DISCHARGE AIR CONTROL MOD. GAS VALVE, INLET HOOD, BIRDSCREEN, INSULATED, HEATED SERVICE COORIDOOR	DISCHARGE AIR CONTROL, MOD. GAS VALVE, INLET HOOD, BIRD-SCREEN, INSULATED, HEATED SERVICE COOR.

FAN SCHEDULE

NO	EQUIP REF	LOCATION ROOM NO	FAN TYPE	MODEL SIZE	CFM	S.P. IN W.C.	RPM	MOTOR HP	ACCESSORIES		REMARKS
CF-1		CARPARK BOILER ROOM	INLINE	GREENHECK CSP70	1290	.5	1130	1/2	VI, BDD, DS, MSS		
CF-2		ADMINISTRATION BUILDING 7TH FLOOR	INLINE	GREENHECK CSP70	1290	.5	1130	1/2	VI, BDD DS, MSS		

ACCESSORIES:

BG BELT GUARD
AS ADJUSTABLE SHEAVES
SC SOLID STATE SPEED CONTROL
IG INLET GRILLE

MSS - MANUAL STARTING SWITCH
NSW NON-SPARKING WHEEL
DS DISCONNECT SWITCH
SH SPRING HANGERS
VP VIBRATION PADS

E EPOXY COATING
FC FACTORY CURB
BS BIRD SCREEN
MC MOUNTING COILAR
VI VIBRATION ISOLATORS

WC - wall cap

PART F

DRAWINGS

PD 90-40

STEAM CONVERSIONS

G-1156
MAR.1/90

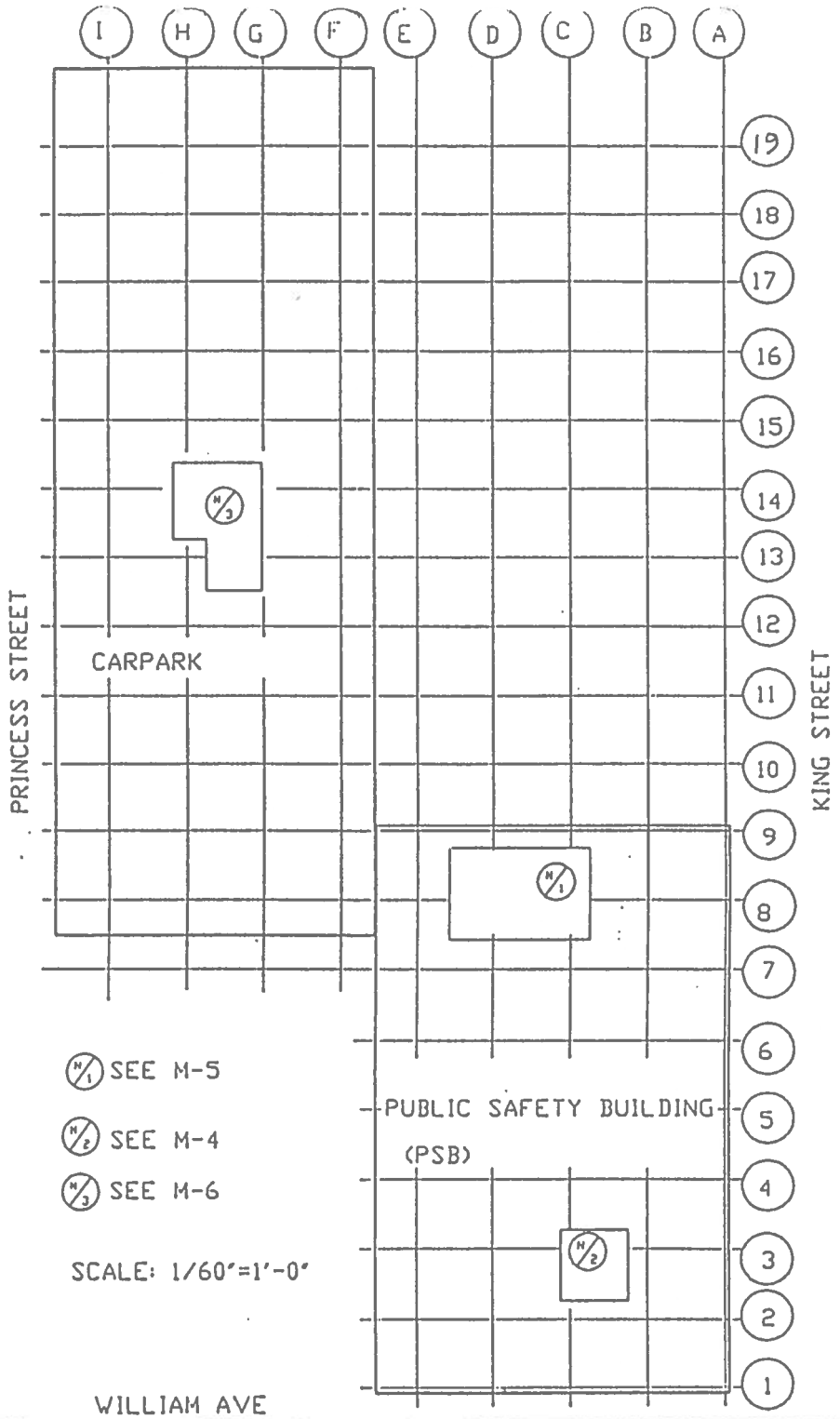
DWG NUMBER	TITLE
C-1	KEY PLAN PBS & CARPARK
C-2	KEY PLAN ADMINISTRATION BLDG.
S-1	PARKADE ROOF PLAN
S-2	PARTIAL 4TH FLOOR PLAN AT PARKADE ELEVATOR CORE
S-3	TYPICAL FLOOR PLAN AT CORE RENOVATION NOTES
S-4	PENTHOUSE ROOF PLAN
S-5	PLAN AT ROOF HATCH SECTIONS, DOOR SCHEDULE
S-6	WALL SECTION
S-7	WALL SECTION
S-8	SECTION AT ROOF ACCESS
S-9	SOUTH ELEVATION EAST ELEVATION
S-10	NORTH ELEVATION
S-11	WEST ELEVATION
S-12	PARTIAL PLAN - REVISED PARKING
S-13	TRAFFIC BARRIER DETAILS
S-14	SECTIONS

PD 90-40

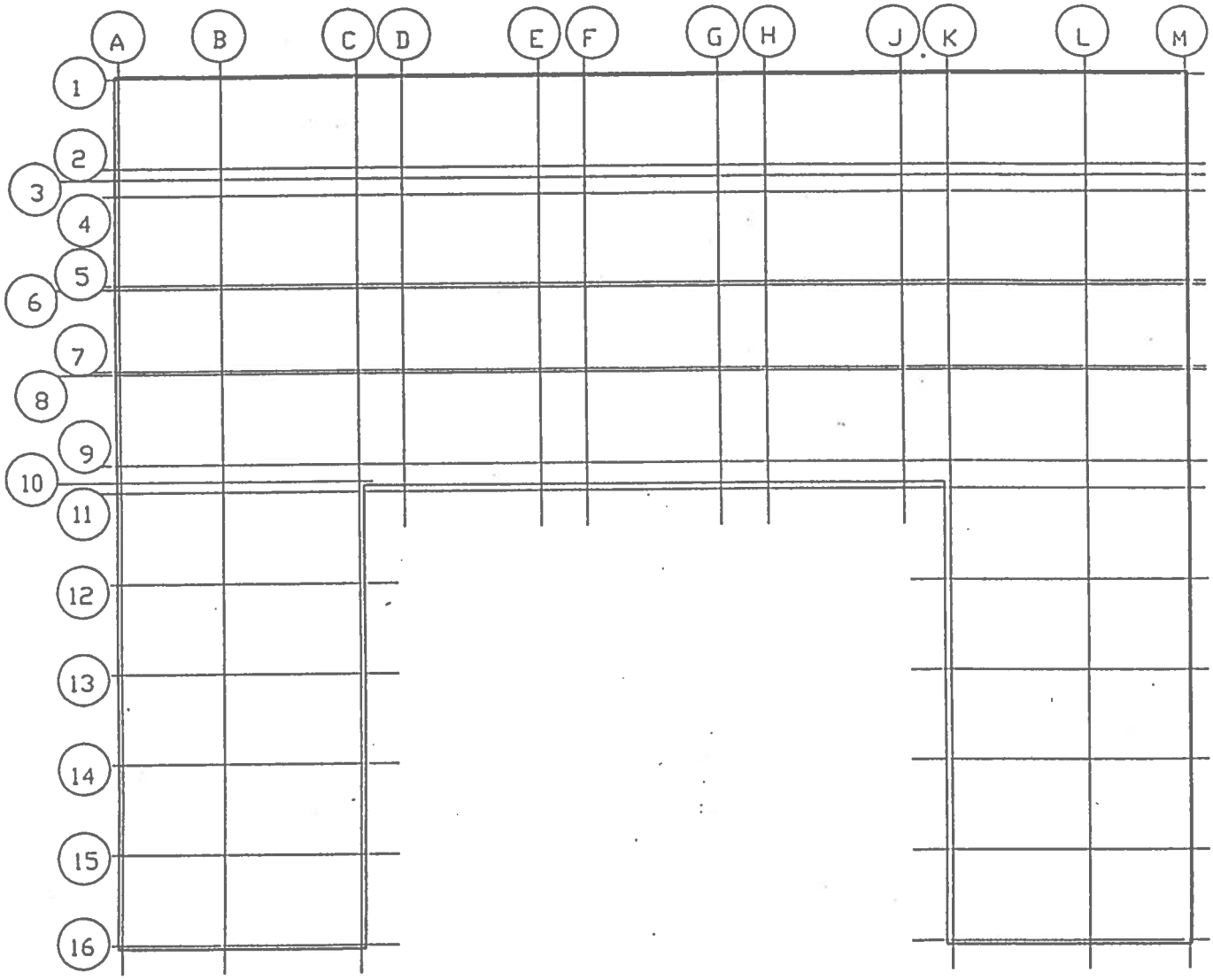
STEAM CONVERSIONS

G-1156
MAR.1/90

DWG NUMBER	TITLE
M-1	LEGEND
M-2	PSB SCHEMATIC MECHANICAL
M-3	PSB SCHEMATIC MECHANICAL
M-4	PUBLIC SAFETY BLDG. ROOM B-30 MECHANICAL
M-5	PUBLIC SAFETY BLDG. NORTH SIDE-MECHANICAL
M-6	PSB POLICE GARAGE MECHANICAL
M-7	CARPARK BOILER ROOM MECHANICAL
M-8	CARPARK BOILER ROOM ROOF MECHANICAL
M-9	NATURAL GAS PUBLIC SAFETY BLDG.- MECHANICAL
M-10	DETAILS MECHANICAL
M-11	ADMINISTRATION BLDG. SCHEMATIC MECHANICAL
M-12	ADMINISTRATION BLDG. BOILER RM.- 7TH FLOOR MECHANICAL
M-13	SUB-BASEMENT ADMINISTRATION BLDG.-MECHANICAL
M-14	ADMINISTRATION TO COUNCIL BLDG. MECHANICAL
E-1	PSB POLICE GARAGE ELECTRICAL
E-2	CARPARK BOILER ROOM-ELECTRICAL
E-3	ADMINISTRATION BLDG. SUB-BASEMENT-ELECTRICAL
E-4	ADMINISTRATION BLDG. - 7TH FLOOR BOILER ROOM-ELECTRICAL

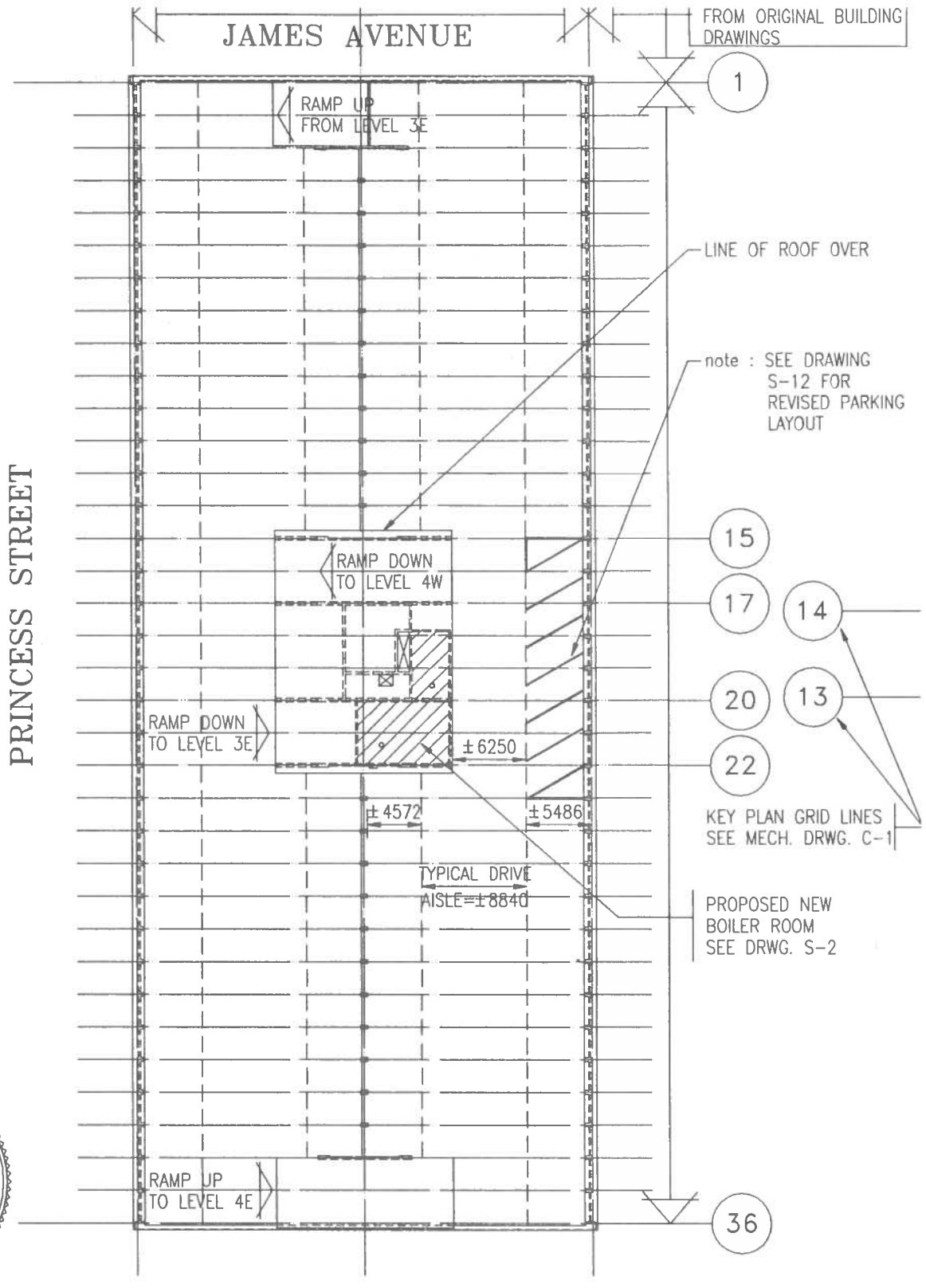


ACTION CONSULTING ENGINEERS INC.	THE CITY OF WINNIPEG CIVIC PROPERTIES DEPT. 4 - 180 King St. R3B 3G8	
PROJECT: STEAM CONVERSIONS PSB & CIVIC CENTRE	TITLE: KEY PLAN PSB & CARPARK	C-1 REV.0
DATE: FEB.5/90 DRAWN BY: SEC CHECKED BY: DBK APPROVED: USER APPROVAL:		



SCALE: 1/40"=1'-0"

ACTION CONSULTING ENGINEERS INC.	THE CITY OF WINNIPEG CIVIC PROPERTIES DEPT. 4 - 180 King St. R3B 3G8	
PROJECT: STEAM CONVERSIONS PSB & CIVIC CENTRE	TITLE: KEY PLAN ADMINISTRATION BLDG.	C-2 REV.0
DATE: FEB.5/90 DRAWN BY: SEC CHECKED BY: DBH APPROVED: USER APPROVAL:		



PROVINCE OF MANITOBA
90/02/23
T. J. COLLYER
REGISTERED ENGINEER

C W ENGINEERING LTD
CONSULTING STRUCTURAL
SECOND FLOOR, 37 EDMONTON ST., WINNIPEG, MANITOBA R3C 1P8 942-2221

THE CITY OF WINNIPEG
CIVIC PROPERTIES DEPT.
4 – 180 King St. R3B 3G8

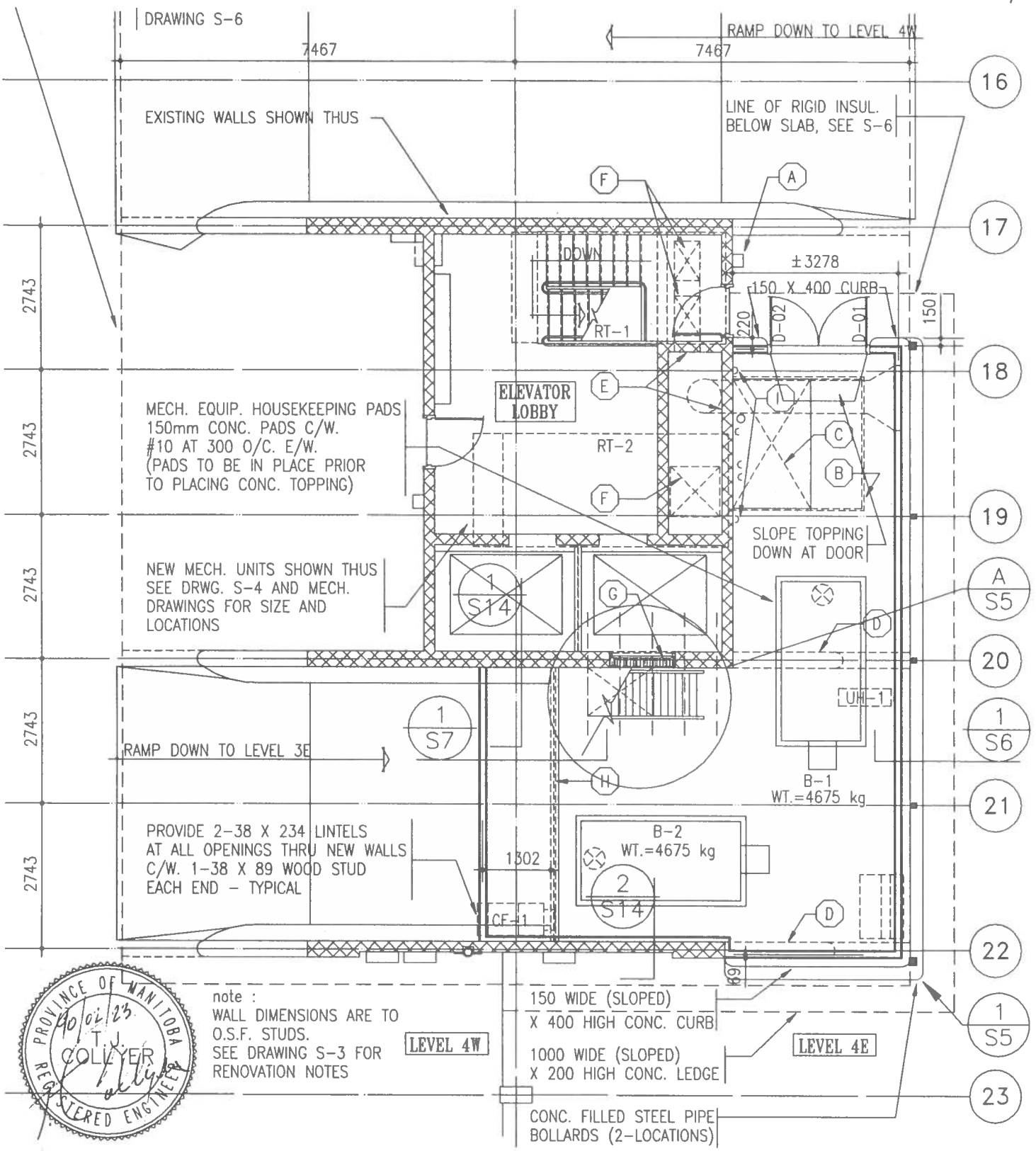
north

PROJECT
STEAM CONVERSIONS
PSB & CIVIC CENTRE

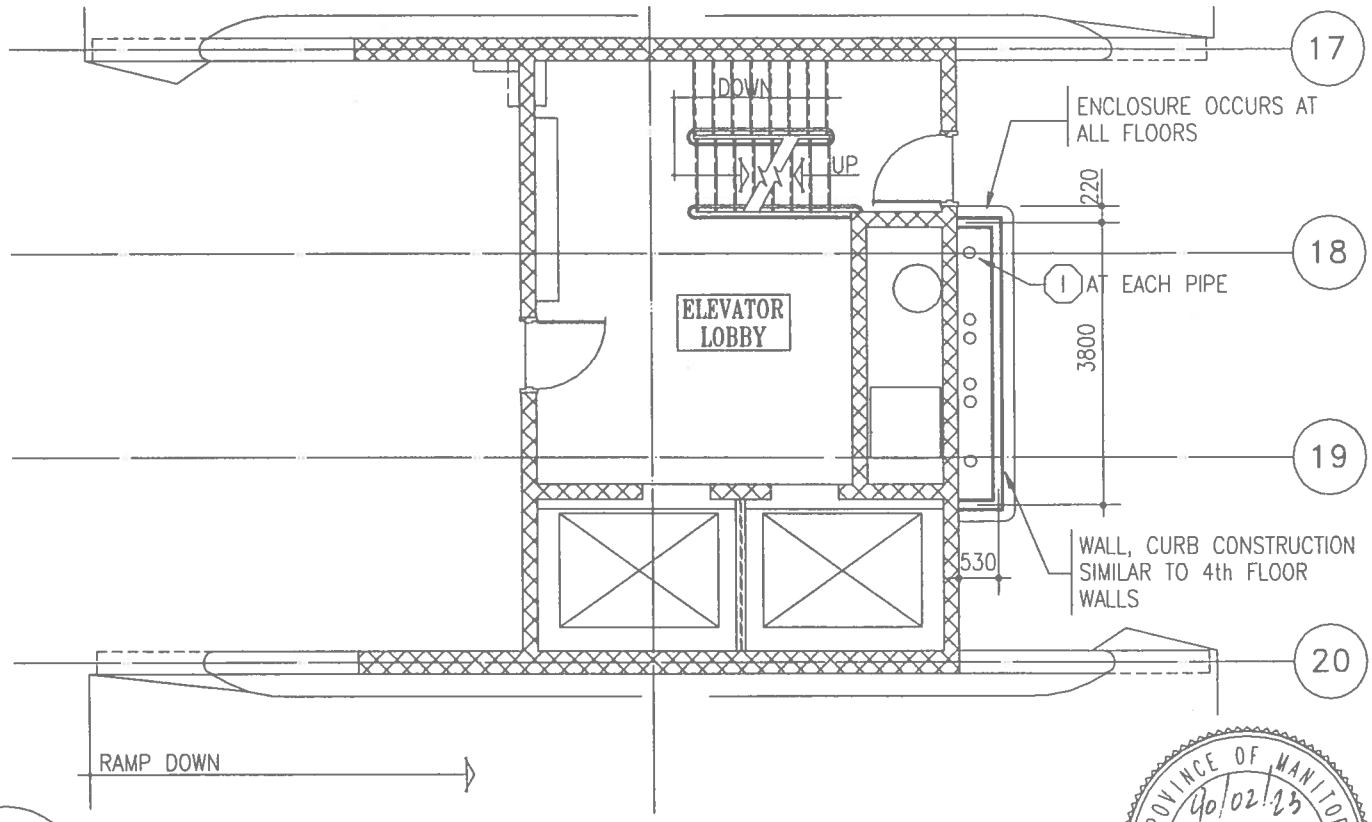
TITLE
PARKADE ROOF PLAN
SCALE 1 : 500

S-1

DATE: FEB.15/90 DRAWN BY: GF CHECKED BY: TJC APPROVED: USER APPROVAL:



C W ENGINEERING LTD CONSULTING STRUCTURAL SECOND FLOOR, 37 EDMONTON ST., WINNIPEG, MANITOBA R3C 1P8 942-2221	THE CITY OF WINNIPEG CIVIC PROPERTIES DEPT. 4 - 180 King St. R3B 3G8	north
PROJECT STEAM CONVERSIONS PSB & CIVIC CENTRE	TITLE PARTIAL 4th FLOOR PLAN AT PARKADE ELEVATOR CORE SCALE 1 : 100	S-2
DATE: FEB.15/90 DRAWN BY: GF CHECKED BY: TJC APPROVED: USER APPROVAL:		



A / S3 PARTIAL TYPICAL FLOOR PLAN AT ELEVATOR CORE

1 : 100

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90/02/23
T.J. COLLYER
REGISTERED ENGINEER

RENOVATION NOTES

A RELOCATE EXISTING FIRE EXTINGUISHER CABINET

B REMOVE EXIST. CHAIN LINK ENCLOSURE (ROOF LEVEL)
DEMOLISH EXIST. SNOW MELTING ENCLOSURE (LEVEL BELOW ROOF)
REMOVE MECH. EQUIPMENT AND PIPING, SEE MECH.
LEAVE CONCRETE STRUCTURE IN PLACE

C FILL-IN EXISTING FLOOR OPENING
150 CONCRETE SLAB
#10 AT 300 O/C. BOT. E/W.
#10 DOWELS TO EXISTING CONCRETE SLAB AT 300 O/C. ,DRILL AND GROUT MINIMUM 150 INTO EXISTING CONCRETE

D REMOVE EXISTING CONCRETE CURB

E NEW OPENING THRU EXISTING WALL
CONFIRM SIZE AND LOCATION WITH MECH. DRAWINGS
SAWCUT TOP, BOTTOM AND SIDES EACH SIDE WALL PRIOR TO REMOVING CONCRETE

F NEW OPENING THRU EXISTING ROOF
CONFIRM SIZE AND LOCATION WITH MECH. DRAWINGS
SAWCUT TOP AND BOTTOM OF P/C. SLABS EACH END SLAB
PRIOR TO REMOVIING HOLLOWCORE
SHORE SLABS PRIOR TO CUTTING
EXISTING SLABS TO REMAIN TO BE SUPPORTED AS DETAILED ON S-5

G REMOVE EXISTING LOUVRE etc., SEE MECH. DRAWINGS
INFILL OPENING WITH 200mm CONC. BLOCK, 13mm PRESS. TRTD. PLYWOOD BACKING TO SHAFT SIDE
PROVIDE 10 ø DOWELS AT EACH COURSE, TO EXIST. CONC WALLS (SIDES)
DOWELS TO BE DRILLED AND GROUTED MINIMUM 150 INTO EXISTING

H REMOVE EXISTING HANDRAIL, CURB AS DETAILED

I PROVIDE NEW HOLES FOR MECHANICAL PIPING
LOCATE REINF. STEEL IN SLAB PRIOR TO CORING HOLES (BY CONC. TESTING CONSULTANT) AND MARK ON TOP & UNDERSIDE OF SLAB
FINAL LOCATION OF HOLES TO BE APPROVED BY C W ENGINEERING BEFORE HOLES ARE CORED
OPENINGS TO BE CORED TO SIZE REQUIRED FOR INDIVIDUAL PIPES

C W ENGINEERING LTD
CONSULTING STRUCTURAL
SECOND FLOOR, 37 EDMONTON ST., WINNIPEG, MANITOBA R3C 1P8 942-2221

THE CITY OF WINNIPEG
CIVIC PROPERTIES DEPT.
4 - 180 King St. R3B 3G8

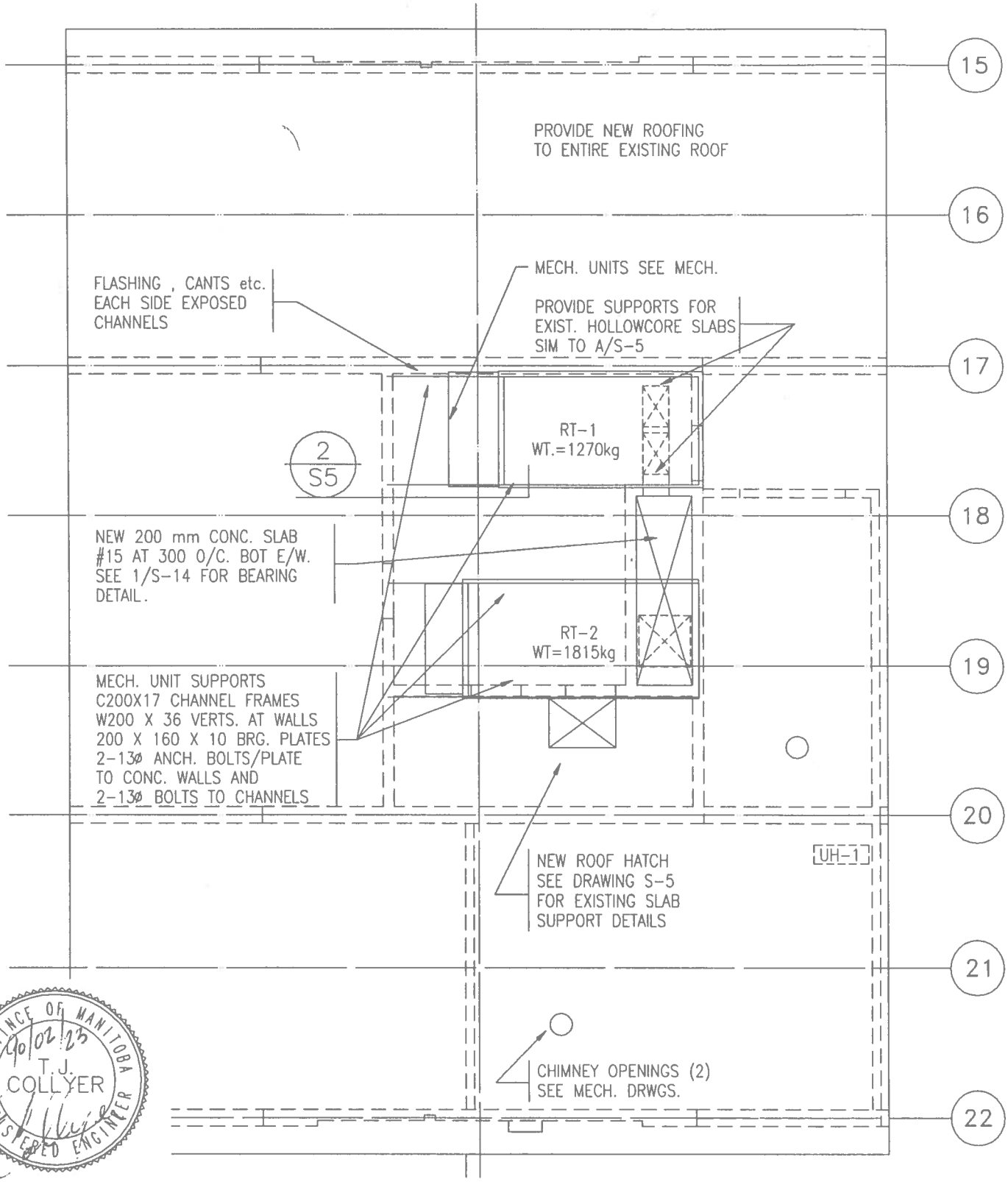
north

PROJECT
STEAM CONVERSIONS
PSB & CIVIC CENTRE

TITLE
TYPICAL FLOOR PLAN AT CORE
RENOVATION NOTES

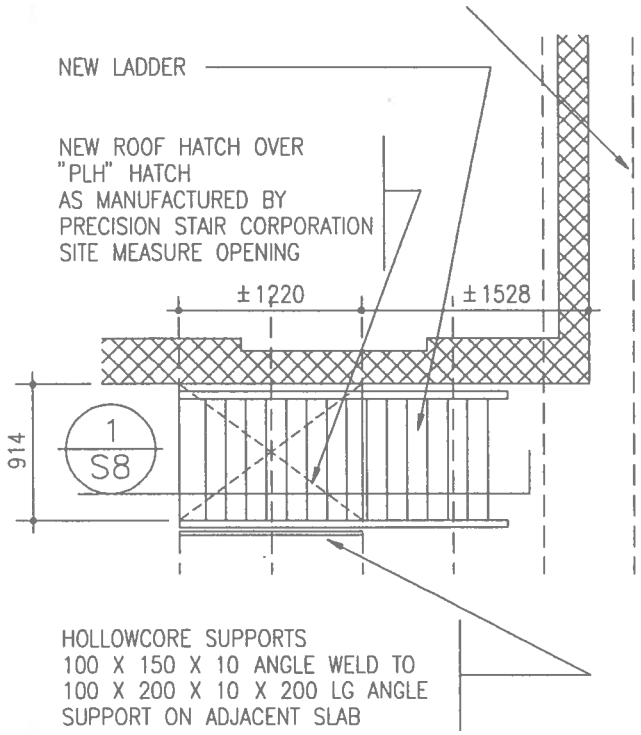
S-3

DATE: FEB.15/90 DRAWN BY: GF CHECKED BY: TJC APPROVED: USER APPROVAL:



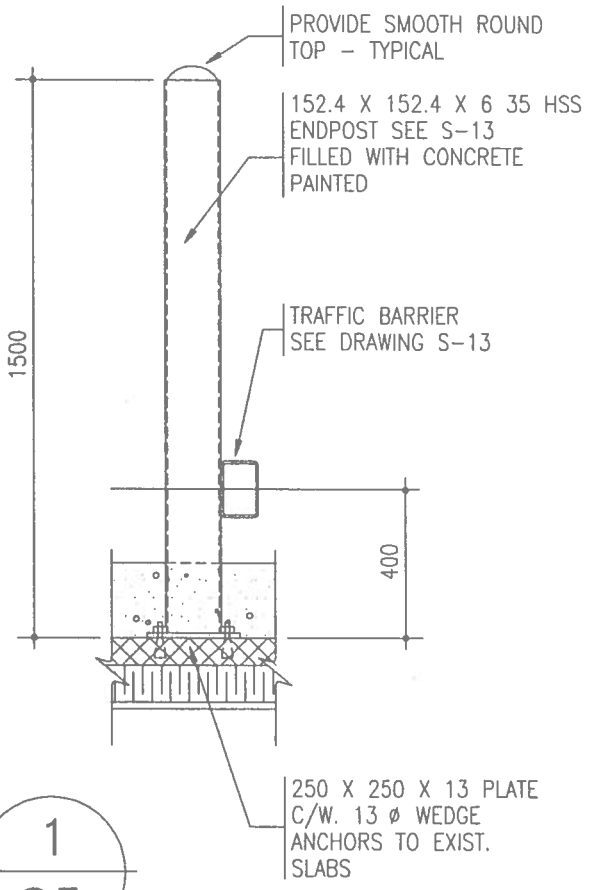
PROVINCE OF MANITOBA
90/02/23
T.J.
COLLYER
REGISTERED ENGINEER

C W ENGINEERING LTD CONSULTING STRUCTURAL SECOND FLOOR, 37 EDMONTON ST., WINNIPEG, MANITOBA R3C 1P8 942-2221	THE CITY OF WINNIPEG CIVIC PROPERTIES DEPT. 4 – 180 King St. R3B 3G8	north
PROJECT STEAM CONVERSIONS PSB & CIVIC CENTRE	TITLE PENTHOUSE ROOF PLAN SCALE 1 : 100	S–4
DATE: FEB.15/90 DRAWN BY: GF CHECKED BY: TJC APPROVED: USER APPROVAL:		

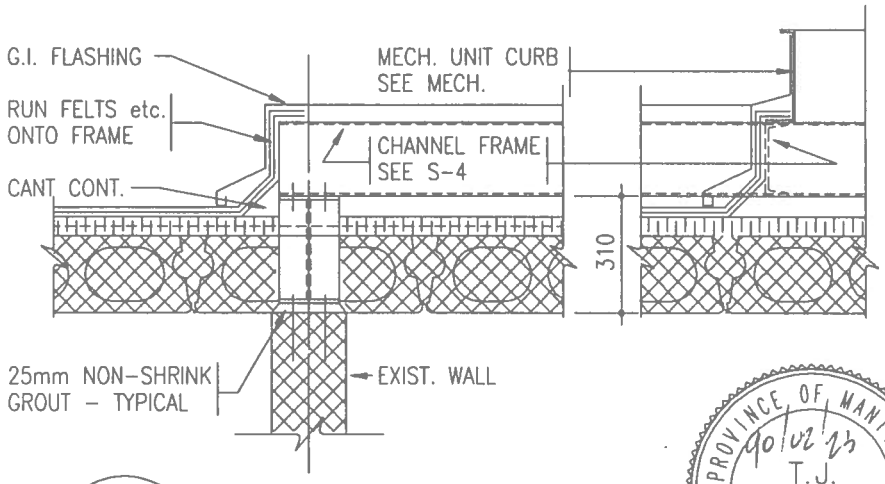


A/S5 PLAN AT ROOF HATCH

1 : 50



1/S5 1 : 20



2/S5 1 : 20

DOOR SCHEDULE

D01	914 X 2134 X 45 INSULATED HOLLOW METAL DOOR KEYED DEADBOLT PULL HANDLE LOCKGAURD WEATHERSTRIPPING PRESSED STEEL METAL FRAME PAINT DOOR AND FRAME
D02	914 X 2134 X 45 INSULATED HOLLOW METAL DOOR FLUSHBOLTS TO HEAD AND SILL WEATHERSTRIPPING PRESSED STEEL METAL FRAME PAINT DOOR AND FRAME

PROVINCE OF MANITOBA
90/02/23
T. J. COLLYER
REGISTERED ENGINEER

C W ENGINEERING LTD
CONSULTING STRUCTURAL ENGINEERS
SECOND FLOOR, 37 EDMONTON ST., WINNIPEG, MANITOBA R3C 1P8 942-2221

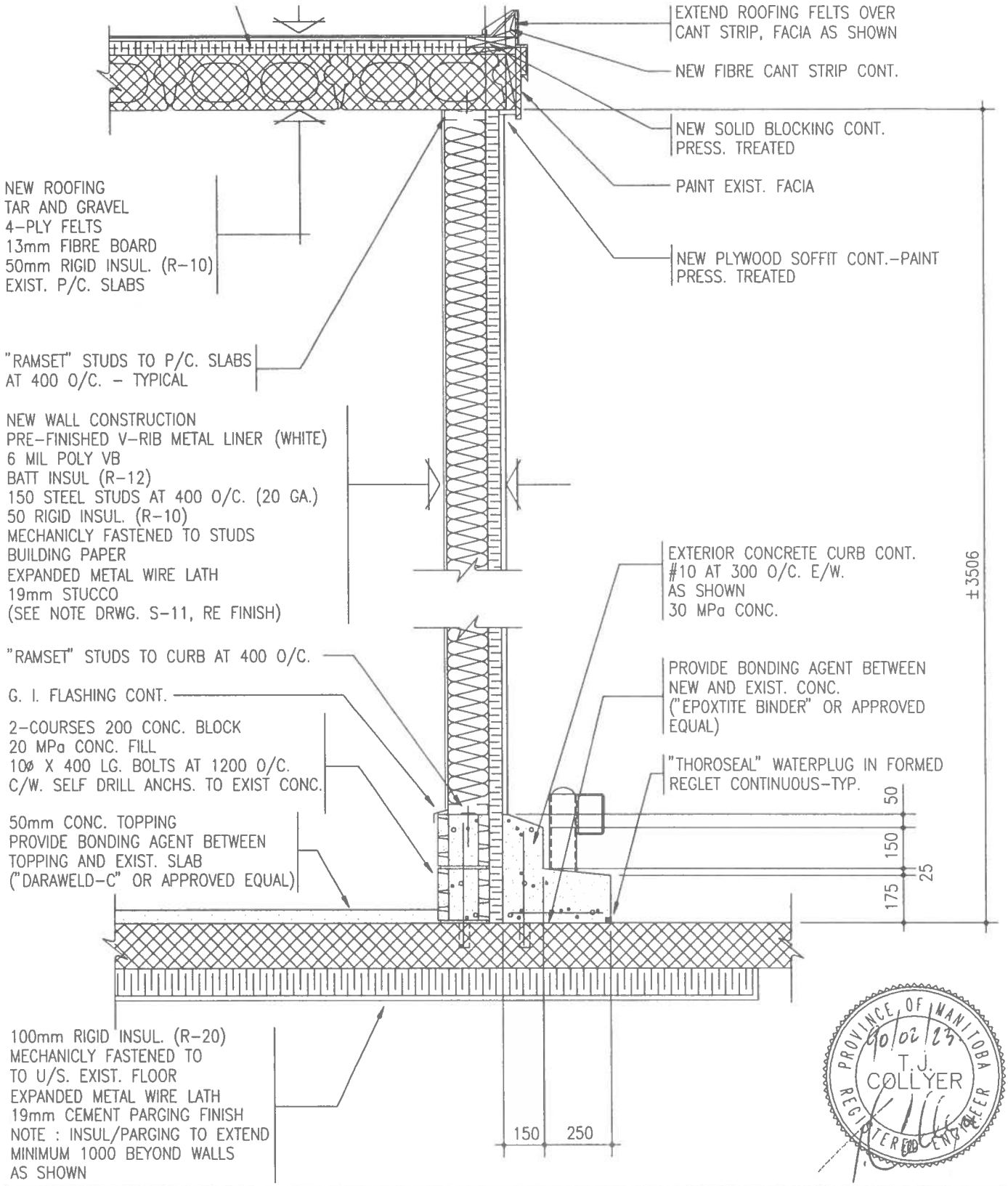
THE CITY OF WINNIPEG
CIVIC PROPERTIES DEPT.
4 – 180 King St. R3B 3G8

PROJECT
STEAM CONVERSIONS
PSB & CIVIC CENTRE

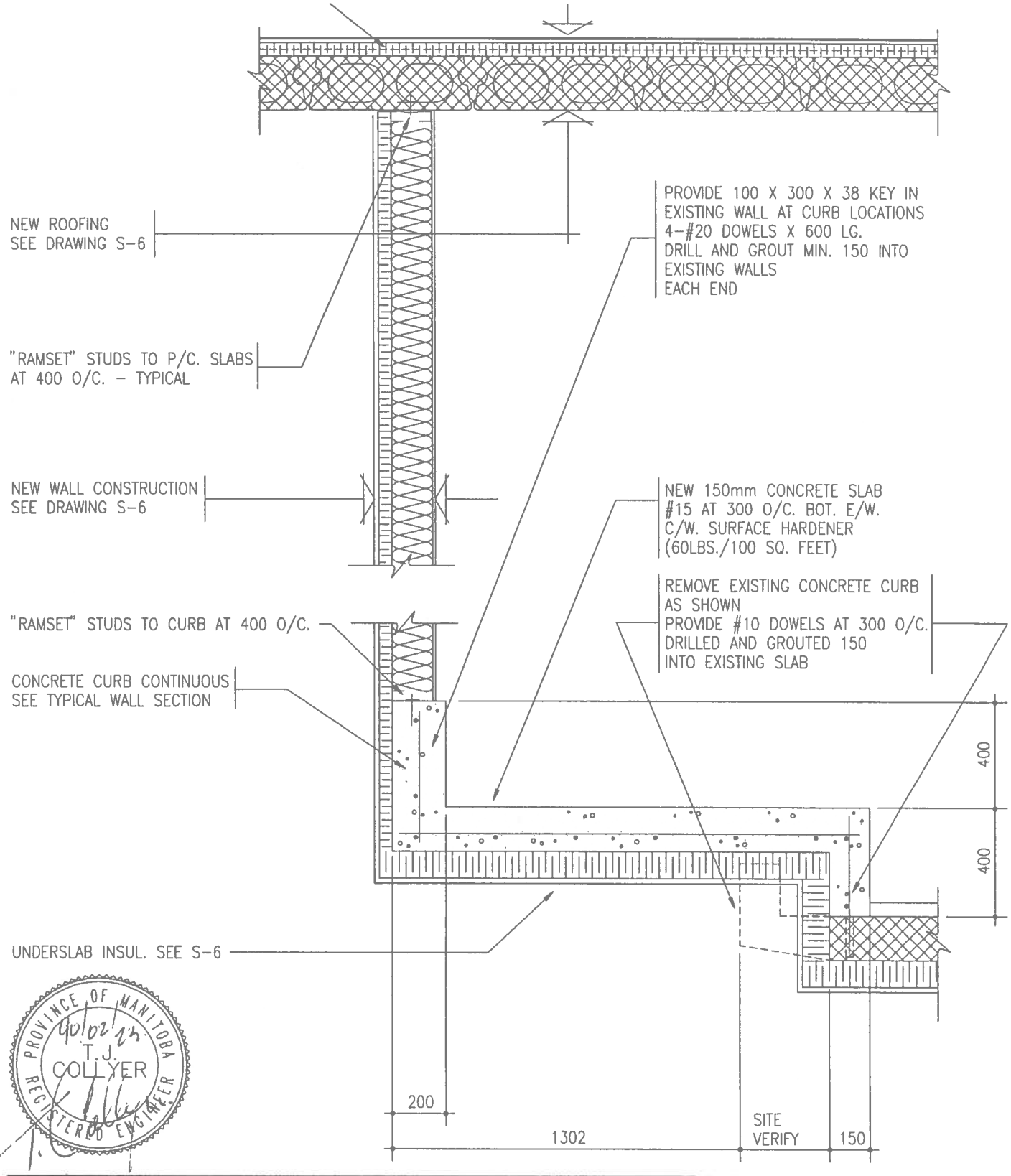
TITLE
PLAN AT ROOF HATCH
SECTIONS , DOOR SCHEDULE

S-5

DATE: FEB.15/90 DRAWN BY: GF CHECKED BY: TJC APPROVED: USER APPROVAL:

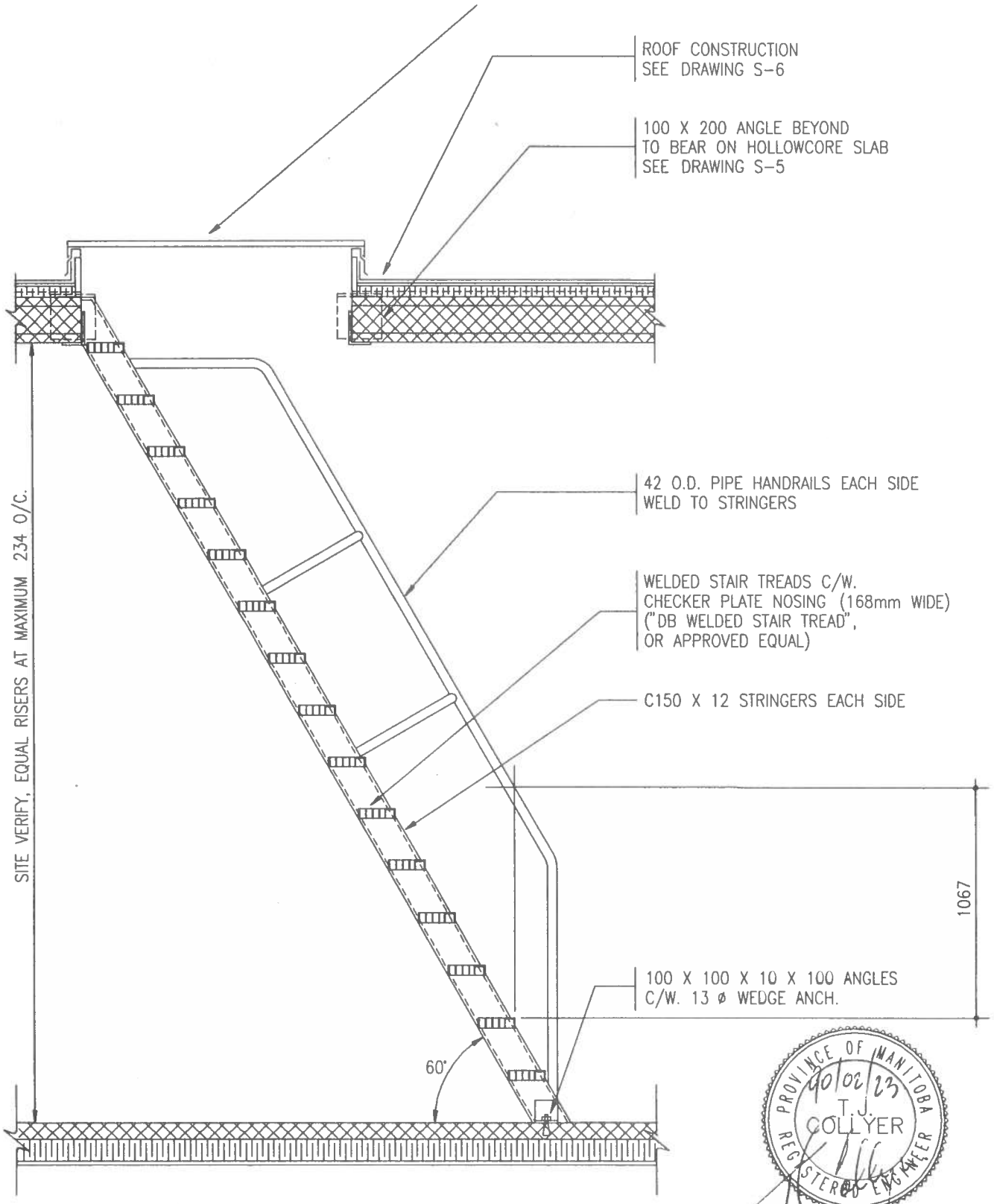


C W ENGINEERING LTD CONSULTING STRUCTURAL ENGINEERS SECOND FLOOR, 37 EDMONTON ST., WINNIPEG, MANITOBA R3C 1P8 942–2221	THE CITY OF WINNIPEG CIVIC PROPERTIES DEPT. 4 – 180 King St. R3B 3G8	
PROJECT STEAM CONVERSIONS PSB & CIVIC CENTRE	TITLE WALL SECTION SCALE 1 : 20	S–6
DATE: FEB.15/90 DRAWN BY: GF CHECKED BY: TJC APPROVED: USER APPROVAL:		



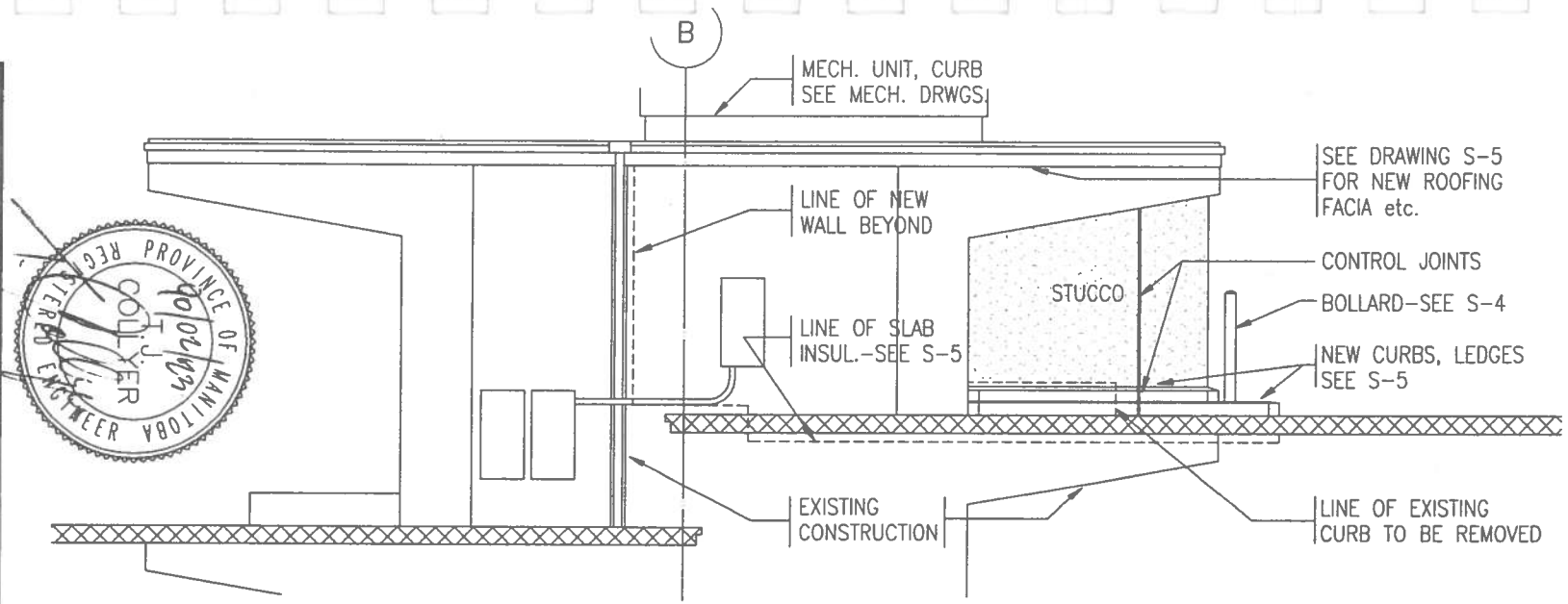
PROVINCE OF MANITOBA
90/02/23
T.J.
COLLYER
REGISTERED ENGINEER

C W ENGINEERING LTD CONSULTING STRUCTURAL ENGINEERS SECOND FLOOR, 37 EDMONTON ST., WINNIPEG, MANITOBA R3C 1P8 942-2221	THE CITY OF WINNIPEG CIVIC PROPERTIES DEPT. 4 - 180 King St. R3B 3G8	
PROJECT STEAM CONVERSIONS PSB & CIVIC CENTRE	TITLE WALL SECTION SCALE 1 : 20	S-7
DATE: FEB.15/90 DRAWN BY: GF CHECKED BY: TJC APPROVED: USER APPROVAL:		



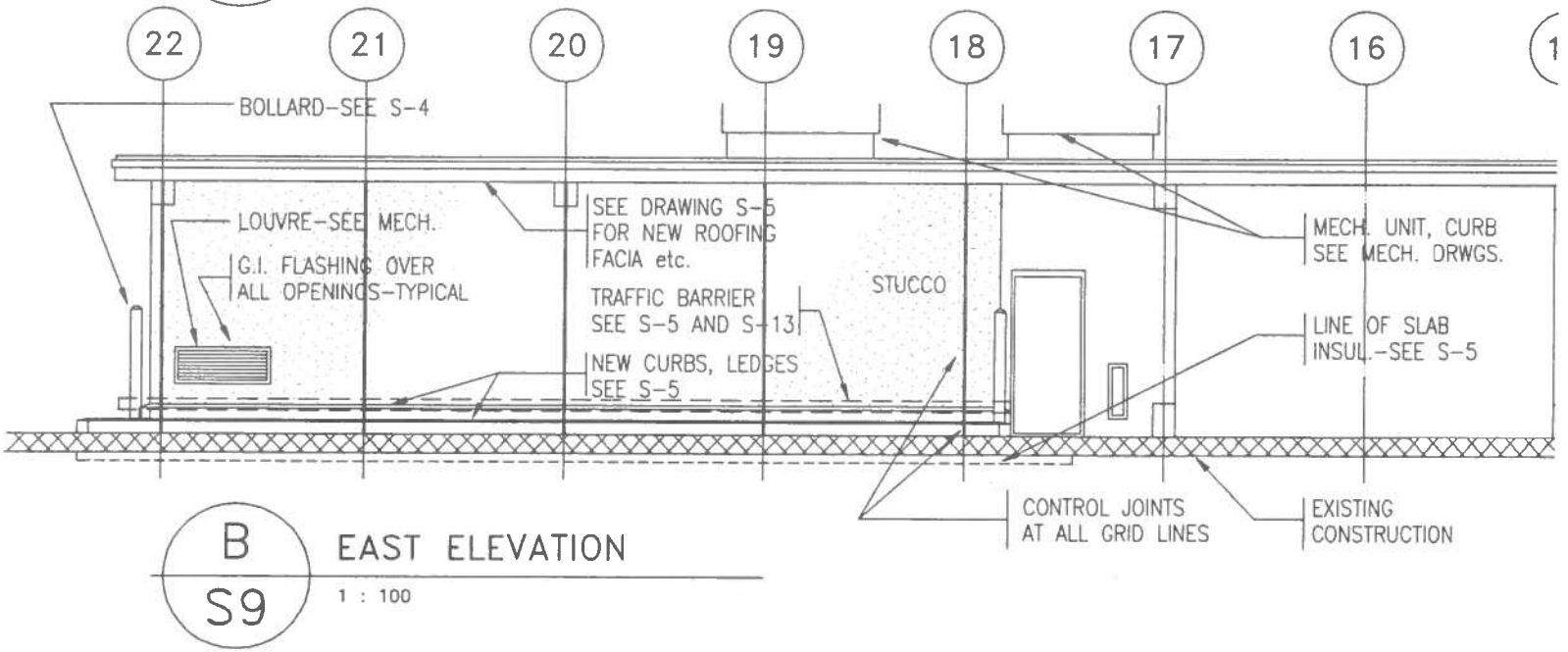
PROVINCE OF MANITOBA
90/02/23
T.J. COLLYER
REGISTERED ENGINEER

C W ENGINEERING LTD CONSULTING STRUCTURAL ENGINEERS SECOND FLOOR, 37 EDMONTON ST., WINNIPEG, MANITOBA R3C 1P8 942-2221	THE CITY OF WINNIPEG CIVIC PROPERTIES DEPT. 4 - 180 King St. R3B 3G8	
PROJECT STEAM CONVERSIONS PSB & CIVIC CENTRE	TITLE SECTION AT ROOF ACCESS SCALE 1 : 25	S-8
DATE: FEB.15/90 DRAWN BY: GF CHECKED BY: TJC APPROVED: USER APPROVAL:		



A / S9 SOUTH ELEVATION

1 : 100



B / S9 EAST ELEVATION

1 : 100

C W ENGINEERING LTD
CONSULTING STRUCTURAL ENGINEERS
SECOND FLOOR, 37 EDMONTON ST., WINNIPEG, MANITOBA R3C 1P8
942-2221

PROJECT

STEAM CONVERSIONS
PSB & CIVIC CENTRE

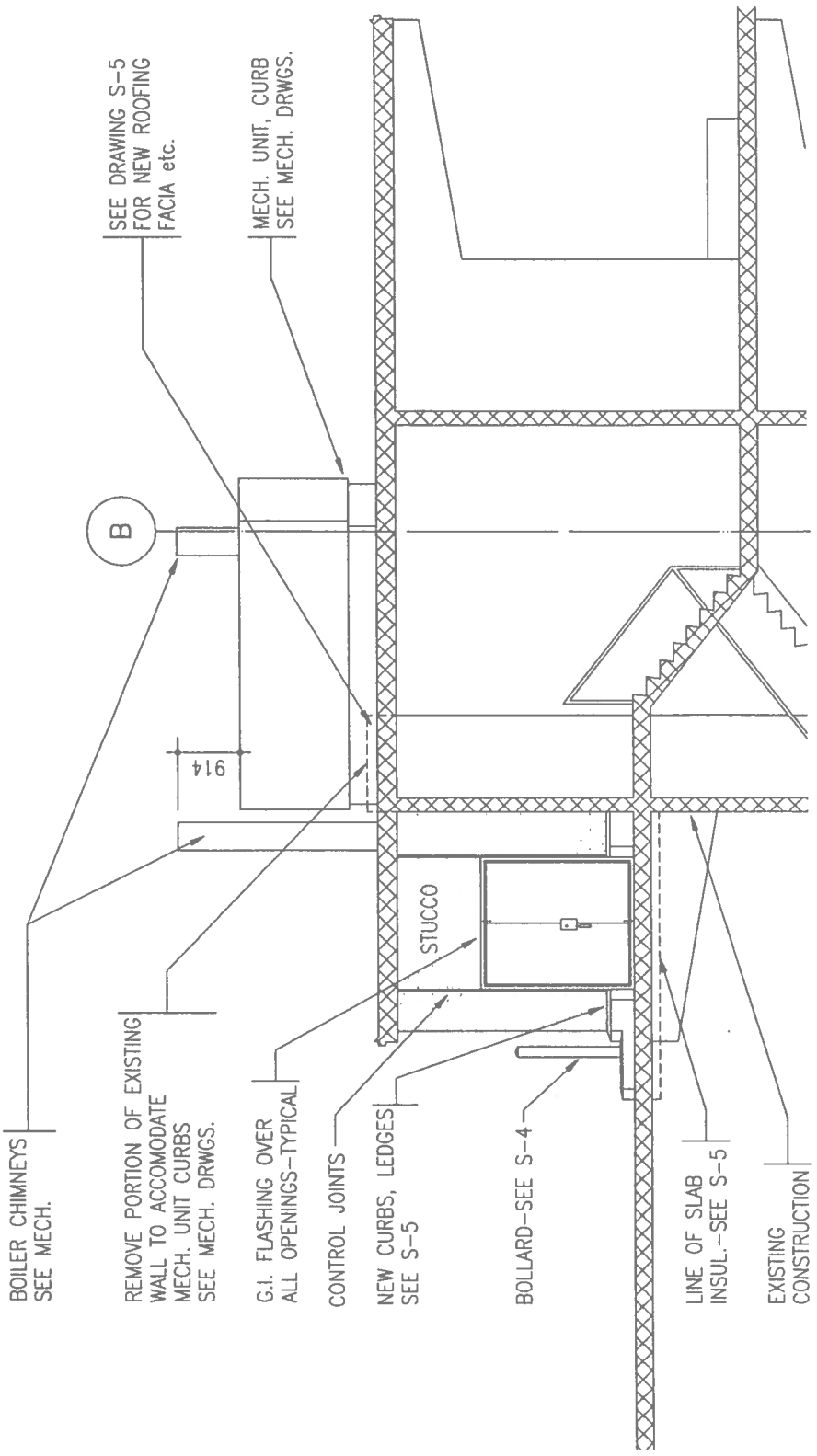
THE CITY OF WINNIPEG
CIVIC PROPERTIES DEPT.
4 - 180 King St. R3B 3G8

TITLE

SOUTH ELEVATION
EAST ELEVATION

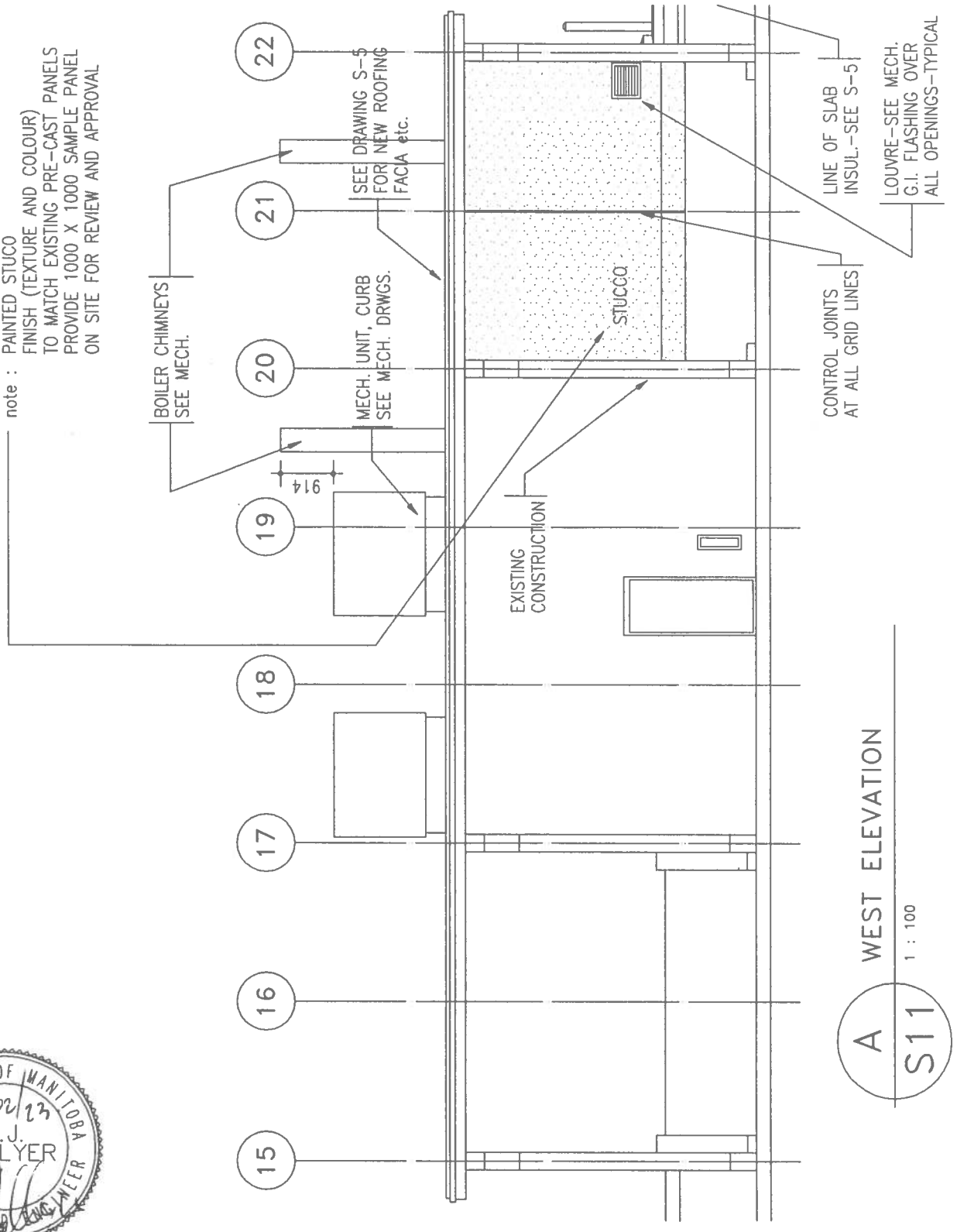
DATE: FEB.15/90 DRAWN BY: GF CHECKED BY: TJC APPROVED: USER APPROVAL:

S-9



PROVINCE OF MANITOBA
REGISTERED ENGINEER
90/02/13
T.J.
COLLYER

C W ENGINEERING LTD CONSULTING STRUCTURAL ENGINEERS SECOND FLOOR, 37 EDMONTON ST., WINNIPEG, MANITOBA R3C 1P8 942-2221	THE CITY OF WINNIPEG CIVIC PROPERTIES DEPT. 4 - 180 King St. R3B 3G8	
PROJECT STEAM CONVERSIONS PSB & CIVIC CENTRE	TITLE NORTH ELEVATION	S-10
DATE: FEB.15/90 DRAWN BY: GF	CHECKED BY: TJC APPROVED:	USER APPROVAL:



PROVINCE OF MANITOBA
REGISTERED ENGINEER
90/02/23
T.J.
COLLYER

C W ENGINEERING LTD
CONSULTING STRUCTURAL ENGINEERS
SECOND FLOOR, 37 EDMONTON ST., WINNIPEG, MANITOBA
R3C 1P8 942-2221

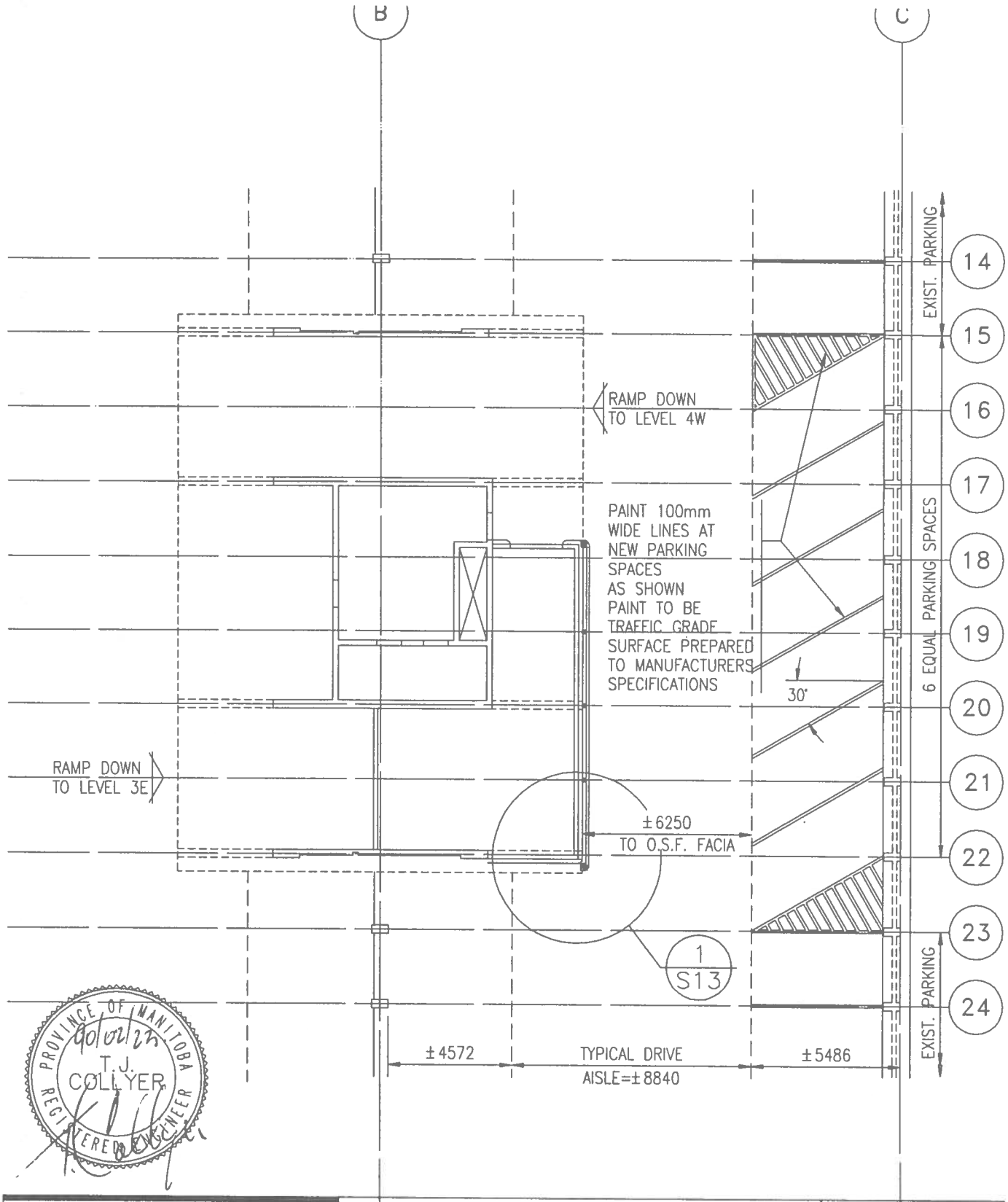
THE CITY OF WINNIPEG
CIVIC PROPERTIES DEPT.
4 - 180 King St. R3B 3G8

PROJECT
STEAM CONVERSIONS
PSB & CIVIC CENTRE

TITLE
WEST ELEVATION

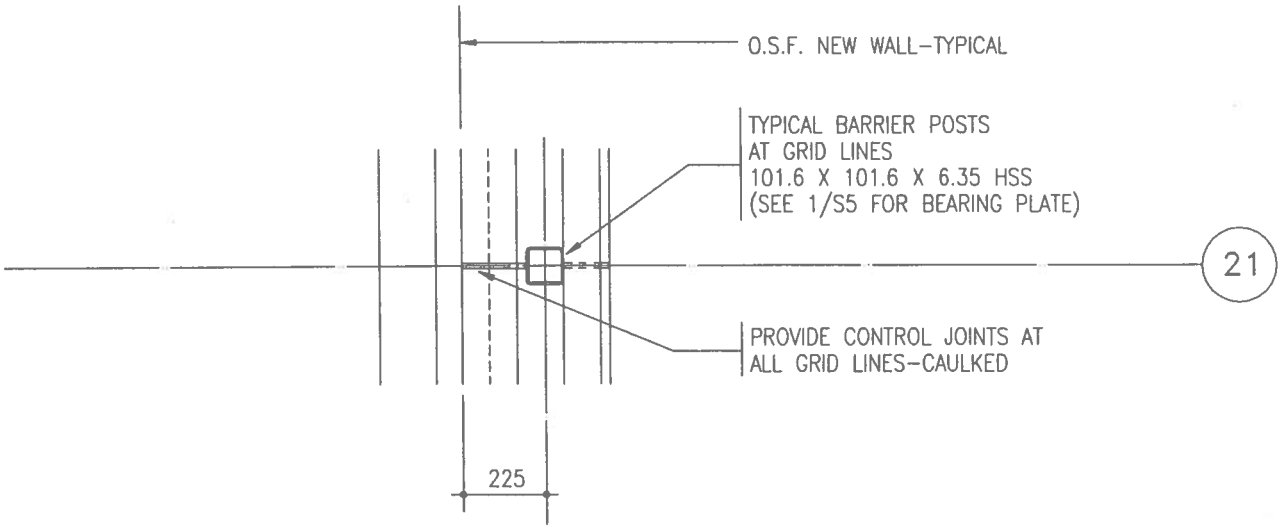
S-11

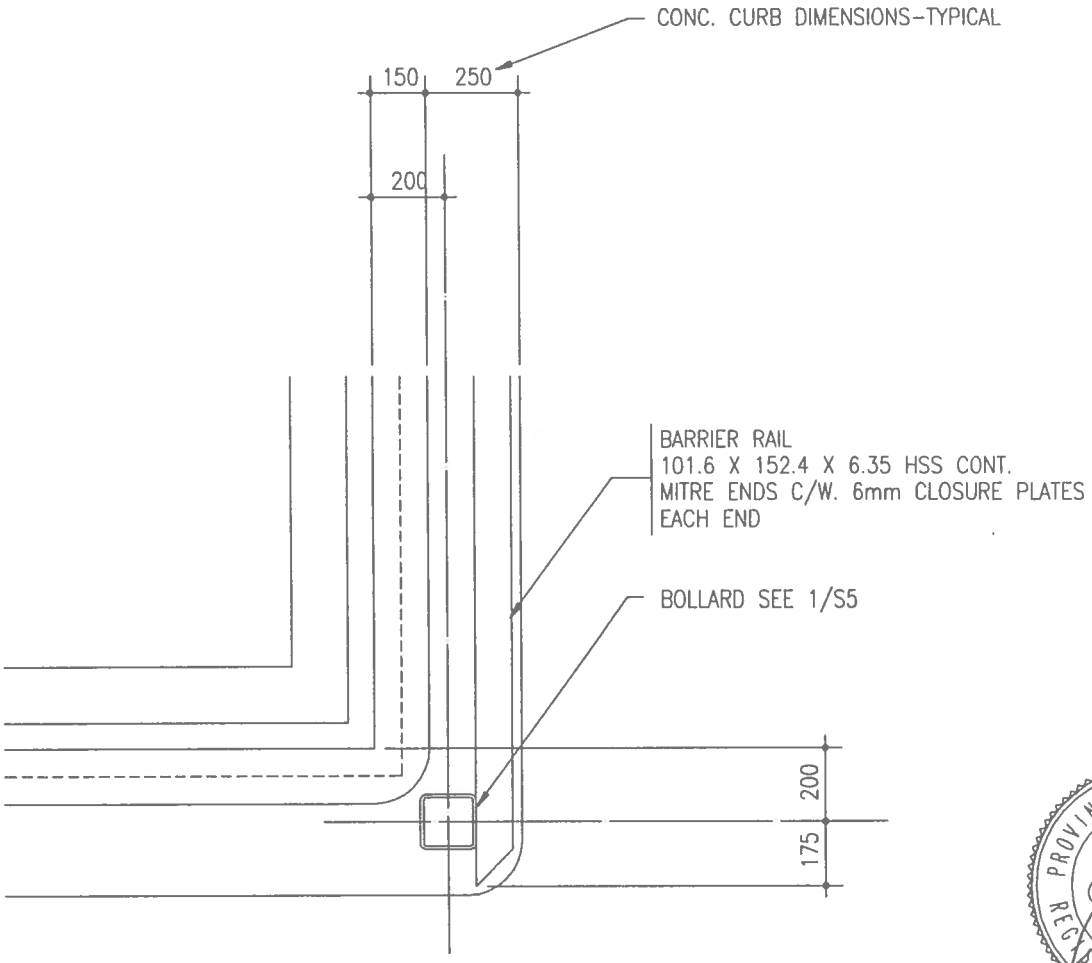
DATE: FEB.15/90 DRAWN BY: GF CHECKED BY: TJC APPROVED: USER APPROVAL:

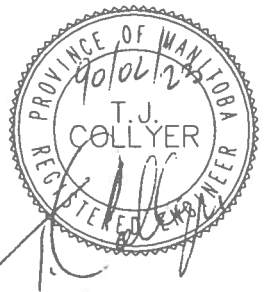


PROVINCE OF MANITOBA
T.J. COLLYER
REGISTERED ENGINEER

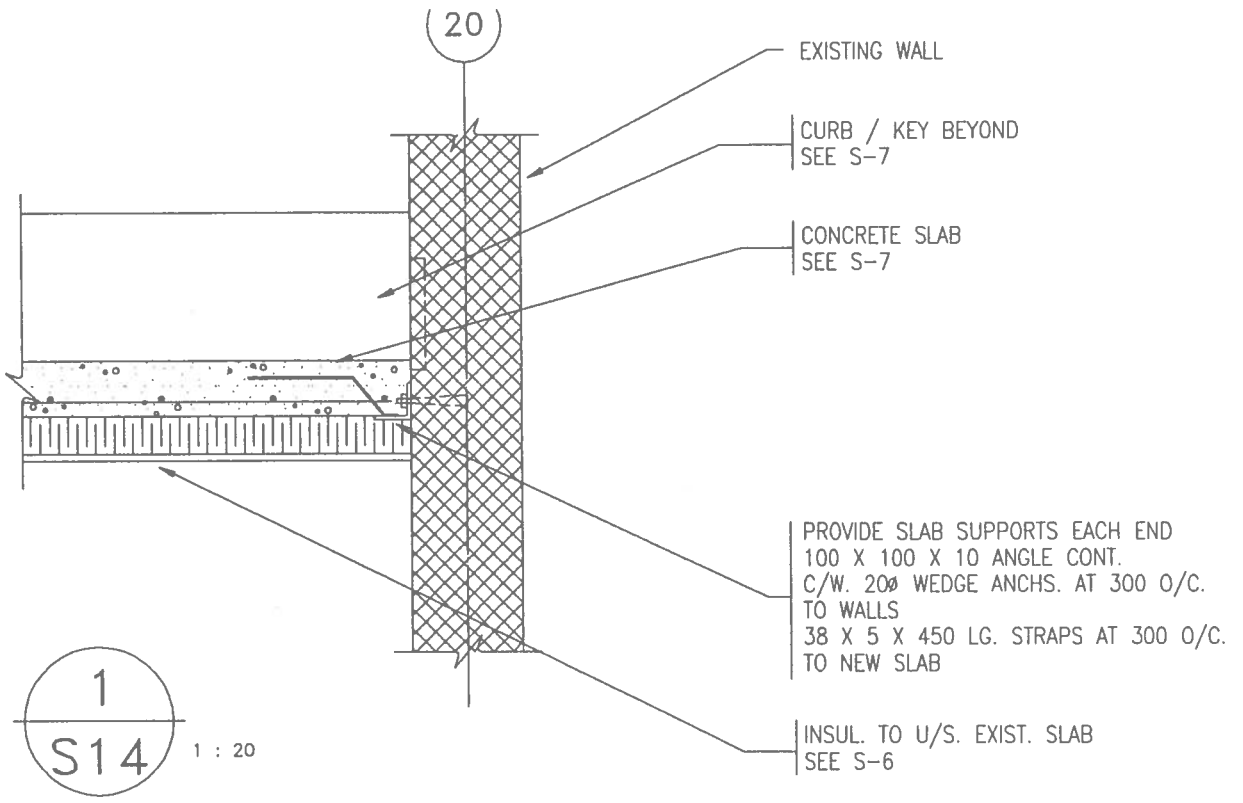
C W ENGINEERING LTD CONSULTING STRUCTURAL SECOND FLOOR, 37 EDMONTON ST., WINNIPEG, MANITOBA R3C 1P8 942-2221	THE CITY OF WINNIPEG CIVIC PROPERTIES DEPT. 4 - 180 King St. R3B 3G8	north
PROJECT STEAM CONVERSIONS PSB & CIVIC CENTRE	TITLE PARTIAL PLAN - REVISED PARKING SCALE 1 : 200	S-12
DATE: FEB.15/90 DRAWN BY: GF	CHECKED BY: TJC APPROVED:	USER APPROVAL:



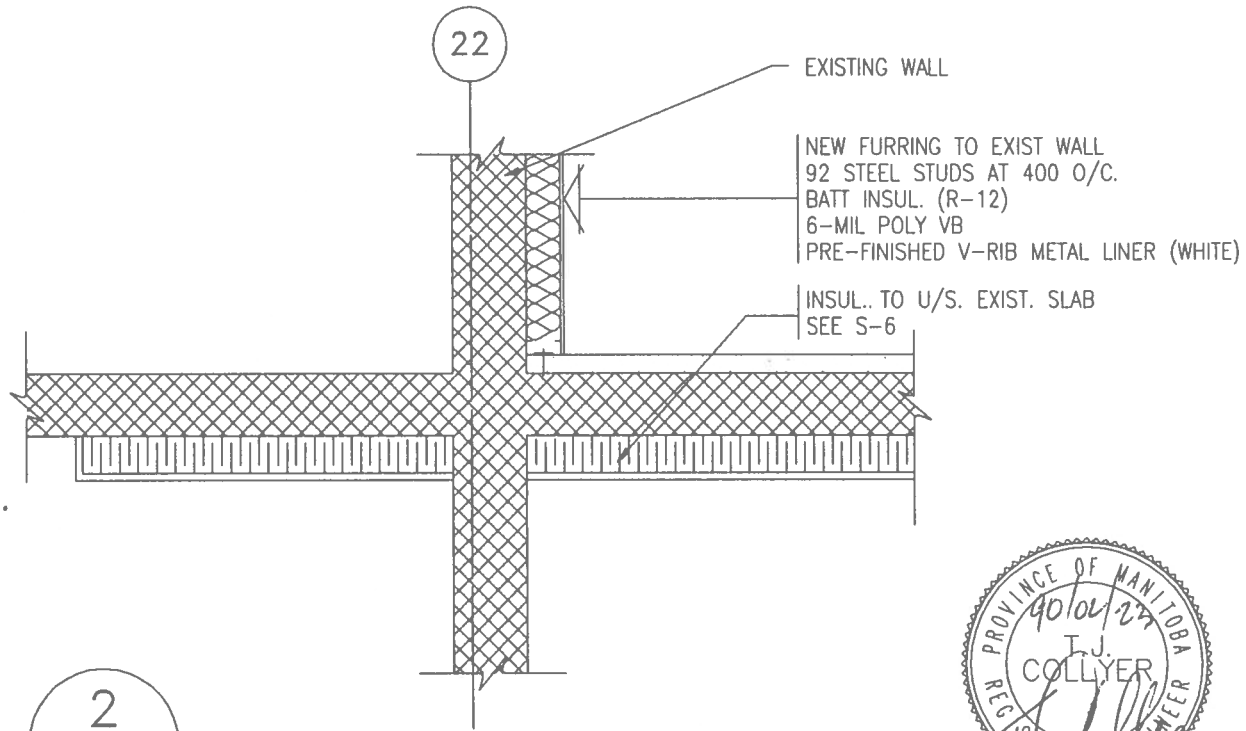




C W ENGINEERING LTD CONSULTING STRUCTURAL SECOND FLOOR, 37 EDMONTON ST., WINNIPEG, MANITOBA R3C 1P8 942-2221	THE CITY OF WINNIPEG CIVIC PROPERTIES DEPT. 4 – 180 King St. R3B 3G8	
PROJECT STEAM CONVERSIONS PSB & CIVIC CENTRE	TITLE TRAFFIC BARRIER DETAILS SCALE 1 : 10	S–13
DATE: FEB.15/90 DRAWN BY: GF CHECKED BY: TJC APPROVED: USER APPROVAL:		



1 / S14 1 : 20



2 / S14 1 : 20

PROVINCE OF MANITOBA
90/02/27
T.J. COLLYER
REGISTERED ENGINEER

C W ENGINEERING LTD CONSULTING STRUCTURAL SECOND FLOOR, 37 EDMONTON ST., WINNIPEG, MANITOBA R3C 1P8 942-2221	THE CITY OF WINNIPEG CIVIC PROPERTIES DEPT. 4 - 180 King St. R3B 3G8	/
PROJECT STEAM CONVERSIONS PSB & CIVIC CENTRE	TITLE SECTIONS	S-14
DATE: FEB.15/90 DRAWN BY: GF	CHECKED BY: TJC APPROVED:	USER APPROVAL:

MECHANICAL
LEGEND:

DCW	- DOMESTIC COLD WATER
LPS	- LOW PRESSURE STEAM
LPC	- LOW PRESSURE CONDENSATE
PC	- PUMPED CONDENSATE
G	- NATURAL GAS
FW	- FEEDWATER
PRD	- PRESSURE RELIEF DISCHARGE
FLOW	- FLOW STATION (10' STRAIGHT PIPE - STEAM) (5' STRAIGHT PIPE - GAS)
	- PRESSURE RELIEF VALVE
	- CONNECTION BETWEEN NEW & EXISTING
FHC	- FIREHOSE CABINET
	- STOP VALVE
	- THROTTLING VALVE
	- CHECK VALVE
	- APPROVED BACKFLOW PREVENTOR
	- QUICK OPEN BLOWDOWN VALVE
HB	- HOSE BIB
	- CONDENSATE TANK
	- STEAM TRAP
P	- PRESSURE GAUGE
T	- THERMOMETER
O/S	- OUTSIDE

PROVINCE OF MANITOBA
D.B. McKIBBIN
March 1/90
REGISTERED PROFESSIONAL ENGINEER

ACTION CONSULTING ENGINEERS INC.	THE CITY OF WINNIPEG CIVIC PROPERTIES DEPT. 4 - 180 King St. R3B 3G8	
PROJECT STEAM CONVERSIONS PSB & CIVIC CENTRE	TITLE LEGEND	M-1 REV.0
DATE: FEB.26/90 DRAWN BY: MJ	CHECKED BY: DBM APPROVED:	USER APPROVAL:

NOTES: (SEE ALSO M-3)

(N/1) ISOLATE PRV. AND OPEN BY-PASS.

(N/2) REPLACE HPS TRAP WITH LOW PRESSURE TRAP. (TYP)

(N/3) 24" DUCT TO RUN TO E-4.

(N/4) REMOVE EXIST. DHW PREHEAT AND ASSOCIATED PIPING.

(N/6) BLANK OFF CENTRAL STEAM LINE CONNECT TO NEW LPS.

(N/7) BLANK OFF CENTRAL STEAM LINE.

(N/8) REMOVE PIPING & PRV

(N/9) AIR SYSTEMS

(N/10) INTERLOCKED WITH EXHAUST

(N/11) EQUALIZING LINE

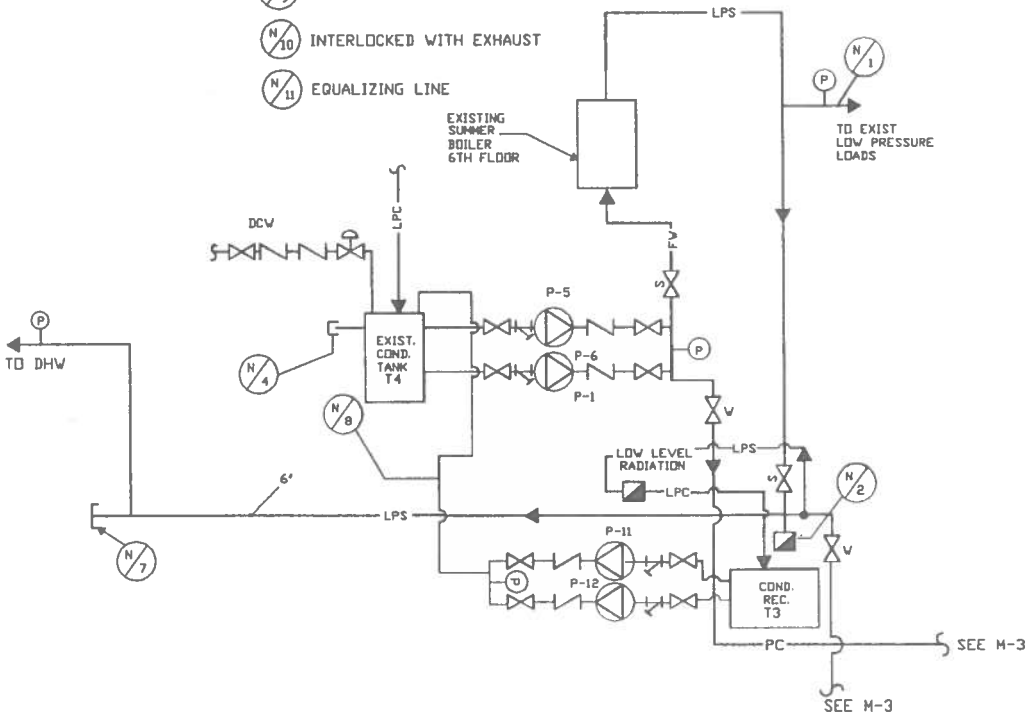
(N/12) CONNECT NEW 2" DCW LINE TO EXISTING DCW LINE ON E3.

(N/13) AIRTIGHT, UNINSULATED SHEET METAL

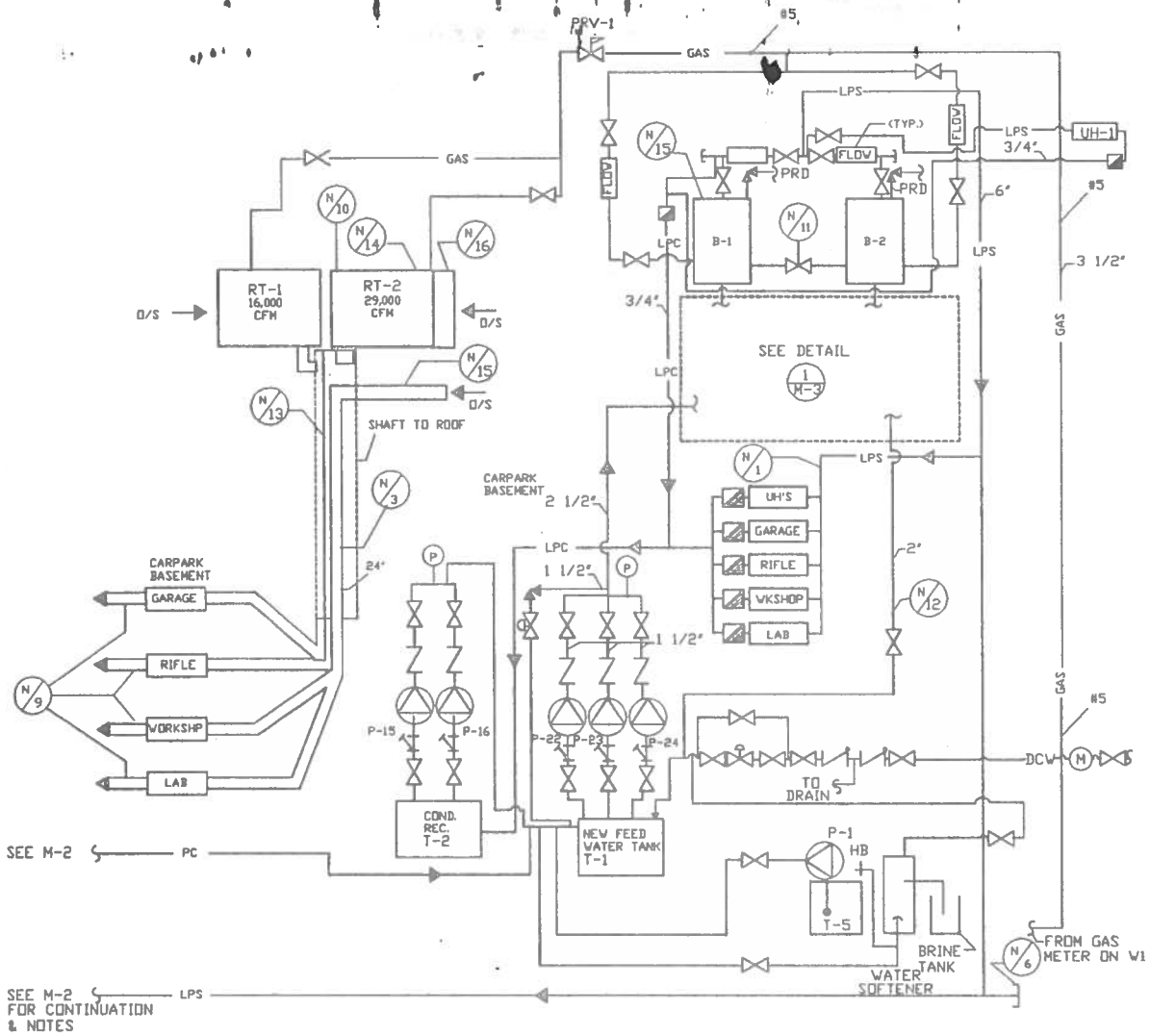
(N/14) ROOFTOP UNITS LOCATED ON CARPARK BOILER ROOM ROOF

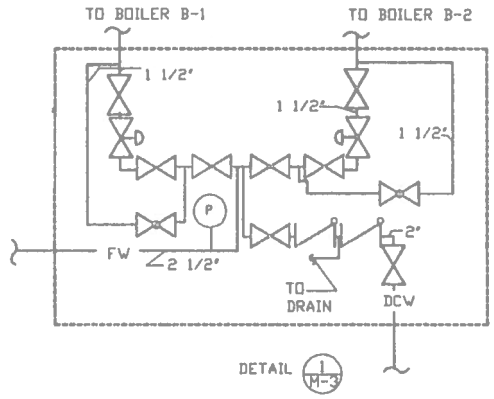
(N/15) GLYCOL HEAT EXCHANGER GLYCOL LOOP TO EXHAUST FAN IN GARAGE (SEPARATE PRICE #1)

(N/16) ON LEVEL E-4 OF CARPARK ROOF.

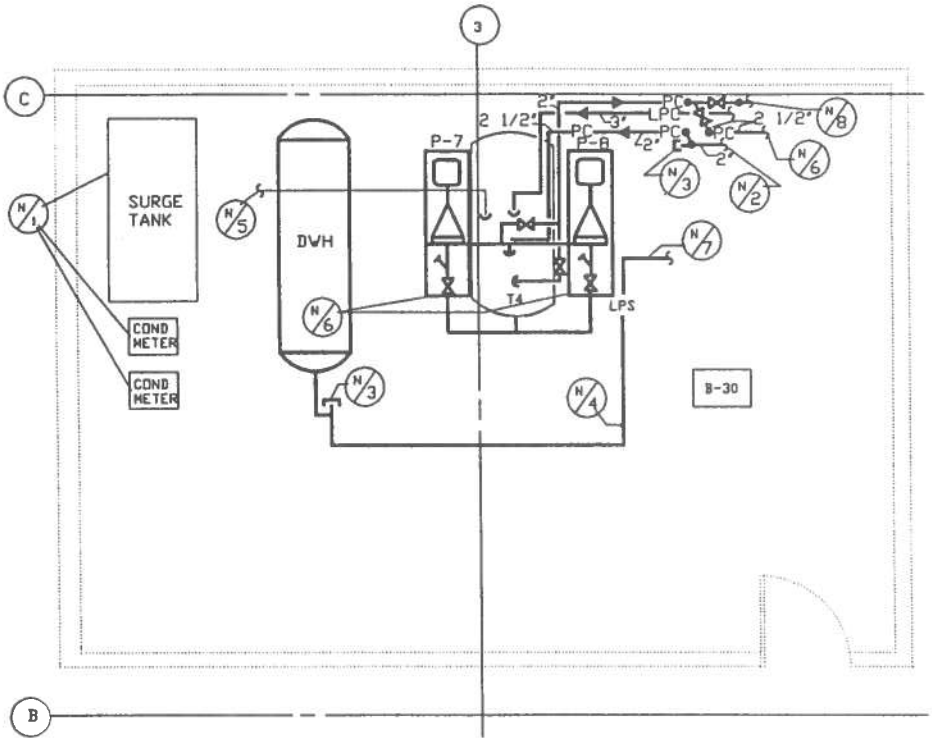


ACTION CONSULTING ENGINEERS INC.	THE CITY OF WINNIPEG CIVIC PROPERTIES DEPT. 4 - 180 King St. R3B 3G8	
PROJECT: STEAM CONVERSIONS PSB & CIVIC CENTRE	TITLE: PSB SCHEMATIC MECHANICAL	M-2 REV.0
DATE: FEB.26/90 DRAWN BY: MJ	CHECKED BY: DBM APPROVED:	USER APPROVAL:





ACTION CONSULTING ENGINEERS INC.	THE CITY OF WINNIPEG CIVIC PROPERTIES DEPT. 4 - 180 King St. R3B 3G8	
PROJECT: STEAM CONVERSIONS PSB & CIVIC CENTRE	TITLE: PSB SCHEMATIC MECHANICAL	M-3 REV.0
DATE: FEB.26/90 DRAWN BY: MJ	CHECKED BY: DBM APPROVED:	USER APPROVAL:



NOTES:

N/1 REMOVE EXIST. SURGE TANK & CONDENSATE METERS.

N/2 PUMPED CONDENSATE FROM B-18

N/3 CAP OFF EXIST.

N/4 REMOVE PRV

N/5 REMOVE EXIST. HW PREHEAT LINE.

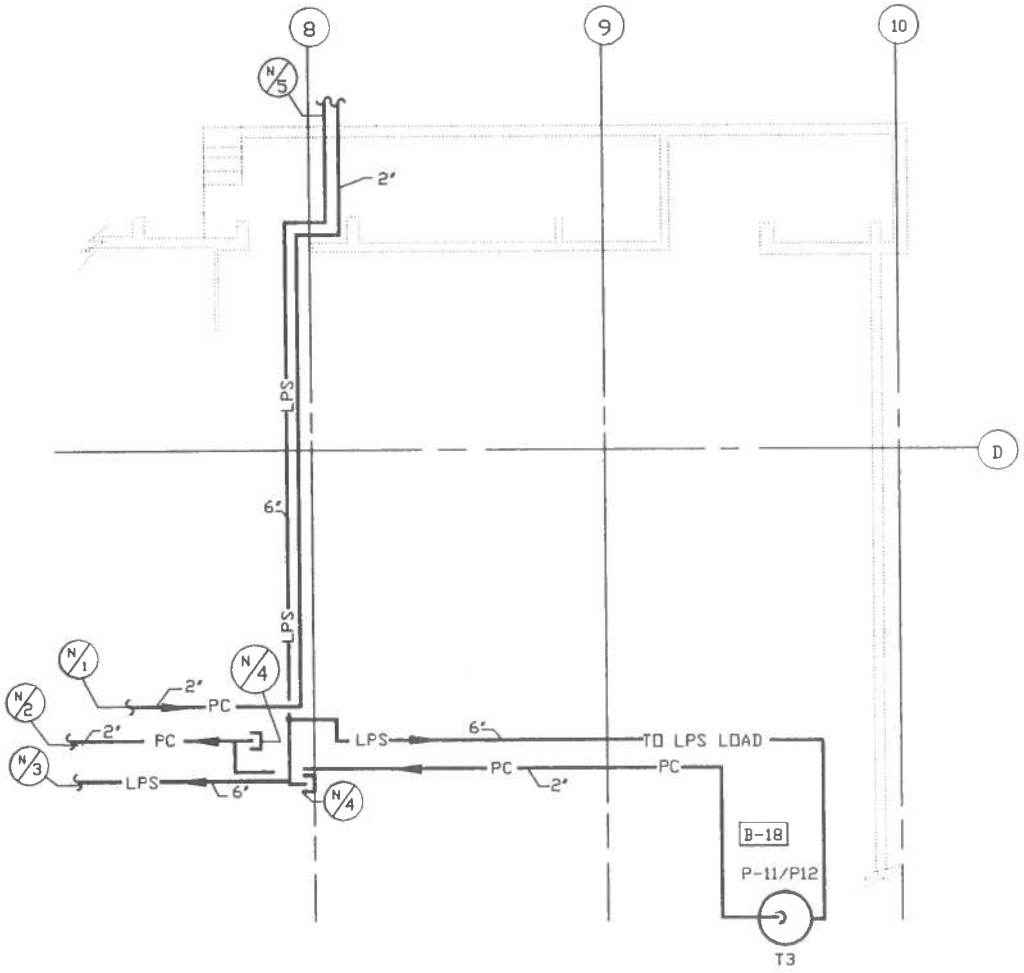
N/6 TO CARPARK

N/7 FROM SUMMER BOILER.

N/8 TO SUMMER BOILER

PROVINCE OF MANITOBA
D.B. McKIBBIN
1/90
REGISTERED PROFESSIONAL ENGINEER

ACTION CONSULTING ENGINEERS INC.	THE CITY OF WINNIPEG CIVIC PROPERTIES DEPT. 4 - 180 King St. R3B 3G8	
PROJECT STEAM CONVERSIONS PSB & CIVIC CENTRE	TITLE PUBLIC SAFETY BLDG. RM. B-30 MECHANICAL	M-4 REV.0
DATE: FEB.5/90 DRAWN BY: SEC CHECKED BY: DBM APPROVED: USER APPROVAL:		



NOTES:

(N/1) TO FEEDWATER TANK IN CARPARK

(N/2) PUMPED CONDENSATE FROM B-18

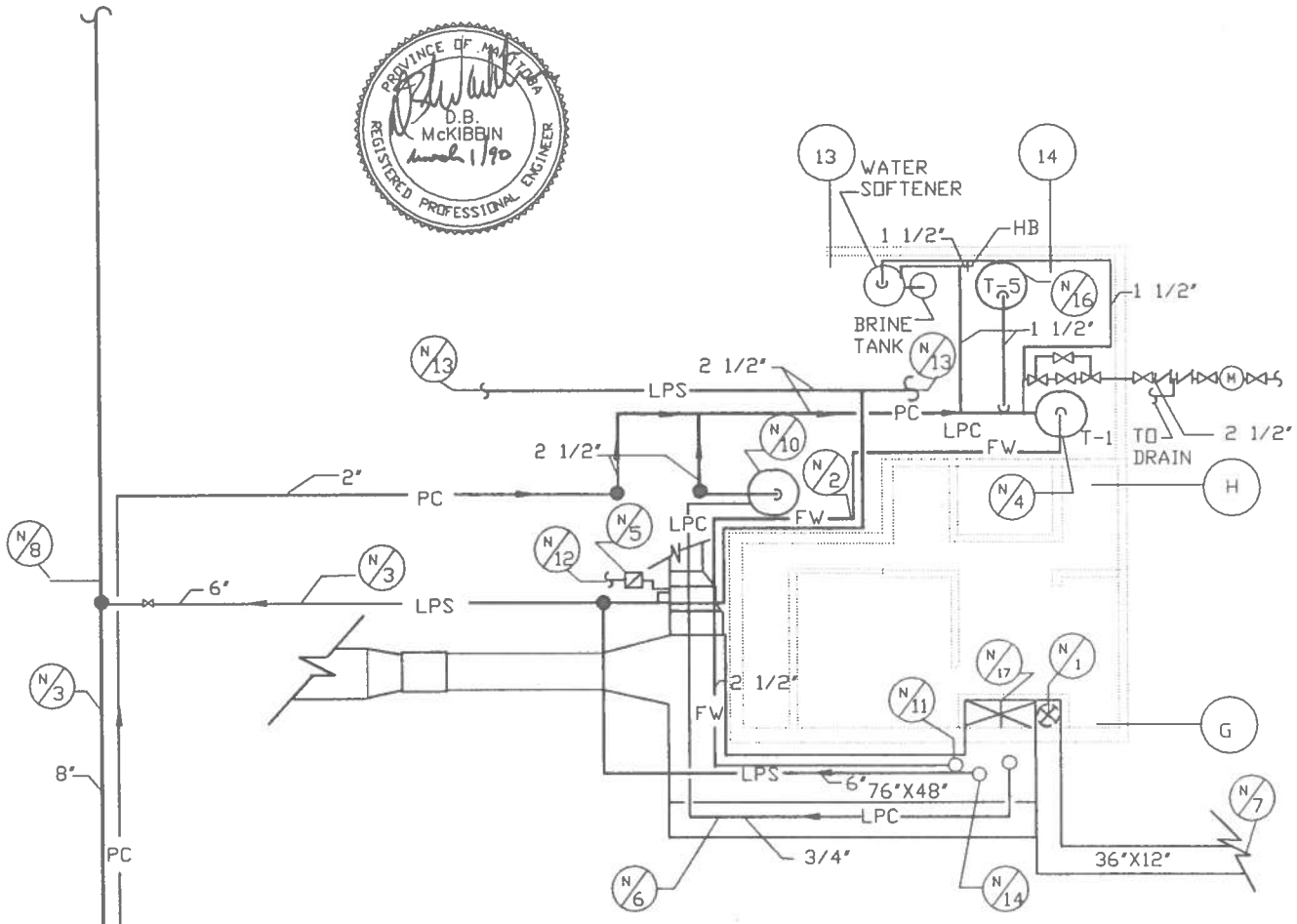
(N/3) LPS TO B-30

(N/4) CAP OFF

(N/5) LPS FROM CARPARK

PROVINCE OF MANITOBA
D.B. McKIBBIN
1/90
REGISTERED PROFESSIONAL ENGINEER

ACTION CONSULTING ENGINEERS INC.	THE CITY OF WINNIPEG CIVIC PROPERTIES DEPT. 4 - 180 King St. R3B 3G8	
PROJECT STEAM CONVERSIONS PSB & CIVIC CENTRE	TITLE PUBLIC SAFETY BLDG. NORTH SIDE-MECHANICAL	M-5 REV.0
DATE: FEB.5/90 DRAWN BY: SEC CHECKED BY: DBM APPROVED: USER APPROVAL:		



NOTES:

N/1 24' SPIRAL DUCT TO ROOF SUPPORTED AT BOTTOM.

N/2 REMOVE EXIST. PRV STATION.

N/3 REVERSE SLOPE OF STEAM LINE.

N/4 P-22, P-23, P-24, TANK T-1.

N/5 RIFLE RANGE HEATING COIL, REPLACE TRAP.

N/6 LOW PRESSURE CONDENSATE FROM BOILERS ON CARPARK ROOF

N/7 TO LAB AND WORKSHOP.

N/8 BLANK OF EXISTING STEAM LINE

NOTES CONT'D:

N/9 DELETED.

N/10 CONDENSATE RECEIVER AND PUMPS P-15 AND P-16. (EXIST.)

N/11 RUN FEEDWATER TO BOILERS ON CARPARK ROOF.

N/12 CONDENSATE TO EXISTING COND.RECEIVER

N/13 TO EXIST. LPS LOADS.

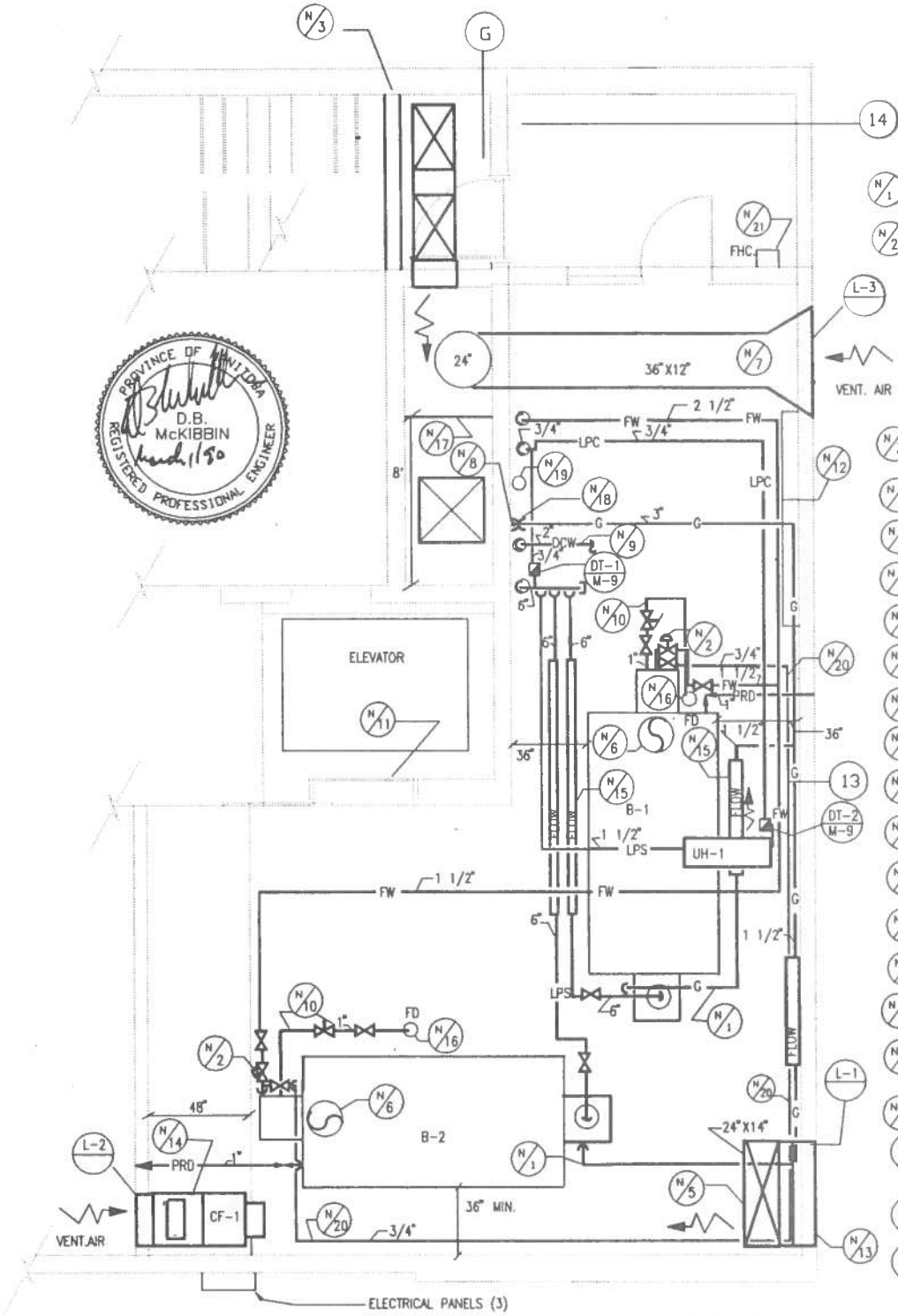
N/14 LPS FROM BOILERS ON CARPARK ROOF.

N/15 DELETED

N/16 CHEMICAL FEED PUMP, P-1 & TANK T-5

N/17 SHEET METAL SEPARATION TO SEPARATE RIFLE RANGE & GARAGE

ACTION CONSULTING ENGINEERS INC.	THE CITY OF WINNIPEG CIVIC PROPERTIES DEPT. 4 - 180 King St. R3B 3G8	
PROJECT: STEAM CONVERSIONS PSB & CIVIC CENTRE	TITLE: PSB POLICE GARAGE MECHANICAL	M-6 REV.0
DATE: FEB.26/90 DRAWN BY: MJ	CHECKED BY: DBM APPROVED:	USER APPROVAL:



(N/1) GAS TRAIN

(N/2) MODULATING FEEDWATER VALVES SEE DETAIL (1/M-3) FOR BY-PASS

(N/3) ADD FIRE-RATED ENCLOSURE AROUND DUCT FROM RT-1.

(N/4) PRESSURE RELIEF PIPING

(N/5) COMBUSTION AIR

(N/6) 16" CHIMNEY THRU ROOF

(N/7) TO LAB & WORKSHOPS

(N/8) 4" 5# GAS LINE TO PRV ON ROOF

(N/9) DCW FROM E3 RUN 3/4" TO BLOWDOWN DRAIN & 2" TO EMERGENCY MAKE-UP. SEE DETAIL (1/M-3)

(N/10) BLOWDOWN TO SANITARY SEWER

(N/11) BLOCK OFF LOUVRE. SEE STRUCTURAL

(N/12) CONTROLS & ELECTRICAL.

(N/13) SEE STRUCTURAL FOR WALL DETAIL

(N/14) COOLING FAN AT HIGH LEVEL

(N/15) RUN FLOWMETERS AT HIGH LEVEL

(N/16) 3" FUNNEL DRAIN, RUN 3" PIPE TO NEW 4" SANITARY LINE. LINE TO BE HEAT TRACED UP TO THE PIPE SHAFT.

(N/17) SEPARATION TO RUN LENGTH OF SHAFT TO ISOLATE RIFLE RANGE MAKE-UP FROM GARAGE MAKE-UP (AIRTIGHT, UNINSULATED SHEET METAL)

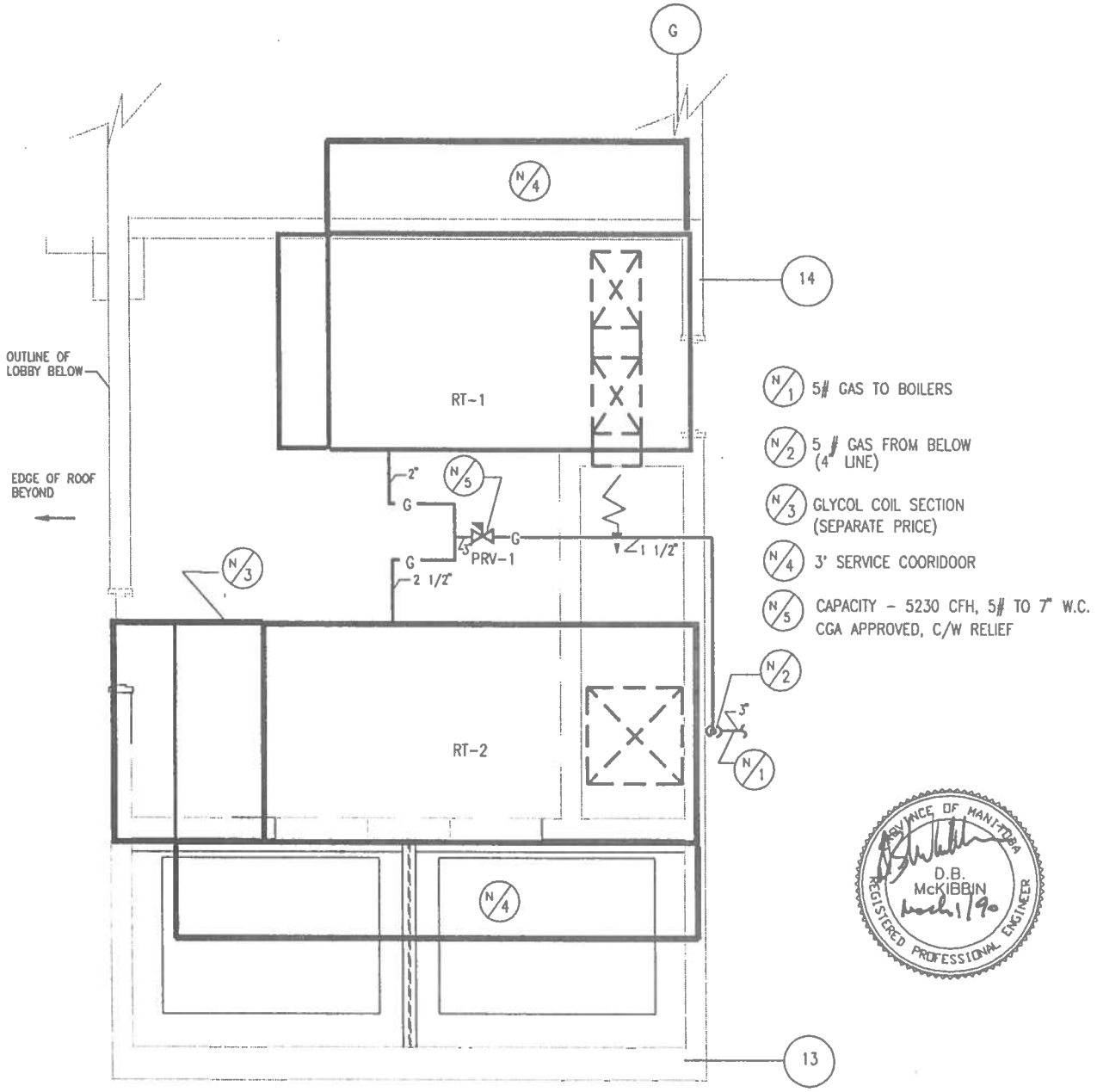
(N/18) 5 LB GAS LINE TO BOILERS.

(N/19) CONNECT FUNNEL DRAINS TO NEW 4" SEWER LINE. 4" LINE TO RUN TO SEWAGE PIT IN POLICE GARAGE BASEMENT.

(N/20) RUN EQUALIZING LINE JUST BELOW LOW WATER CUTOFF & TIGHT TO WALL.

(N/21) RELOCATED FHC

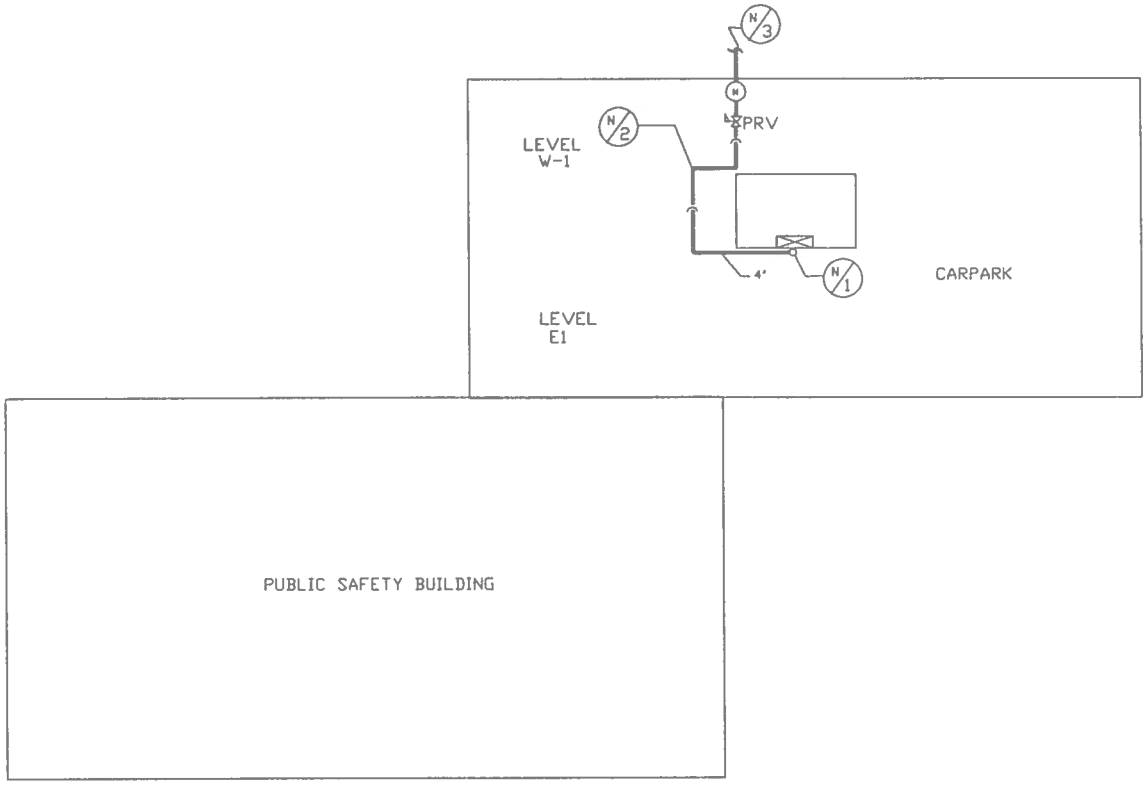
ACTION CONSULTING ENGINEERS INC.	THE CITY OF WINNIPEG CIVIC PROPERTIES DEPT. 4 - 180 King St. R3B 3G8	
PROJECT: STEAM CONVERSIONS PSB & CIVIC CENTRE	TITLE: CARPARK BOILER ROOM MECHANICAL	M-7 REV.0
DATE: FEB.26/90 DRAWN BY: SEC	CHECKED BY: DBM APPROVED:	USER APPROVAL:



PROVINCE OF MANITOBA
D.B. McKIBBIN
March 1/90
REGISTERED PROFESSIONAL ENGINEER

NTS

ACTION CONSULTING ENGINEERS INC.	THE CITY OF WINNIPEG CIVIC PROPERTIES DEPT. 4 - 180 King St. R3B 3G8	
PROJECT STEAM CONVERSIONS PSB & CIVIC CENTRE	TITLE CARPARK BOILER ROOM ROOF MECHANICAL	M-8 REV.0
DATE: FEB.26/90 DRAWN BY: MJ	CHECKED BY: DBM APPROVED:	USER APPROVAL:

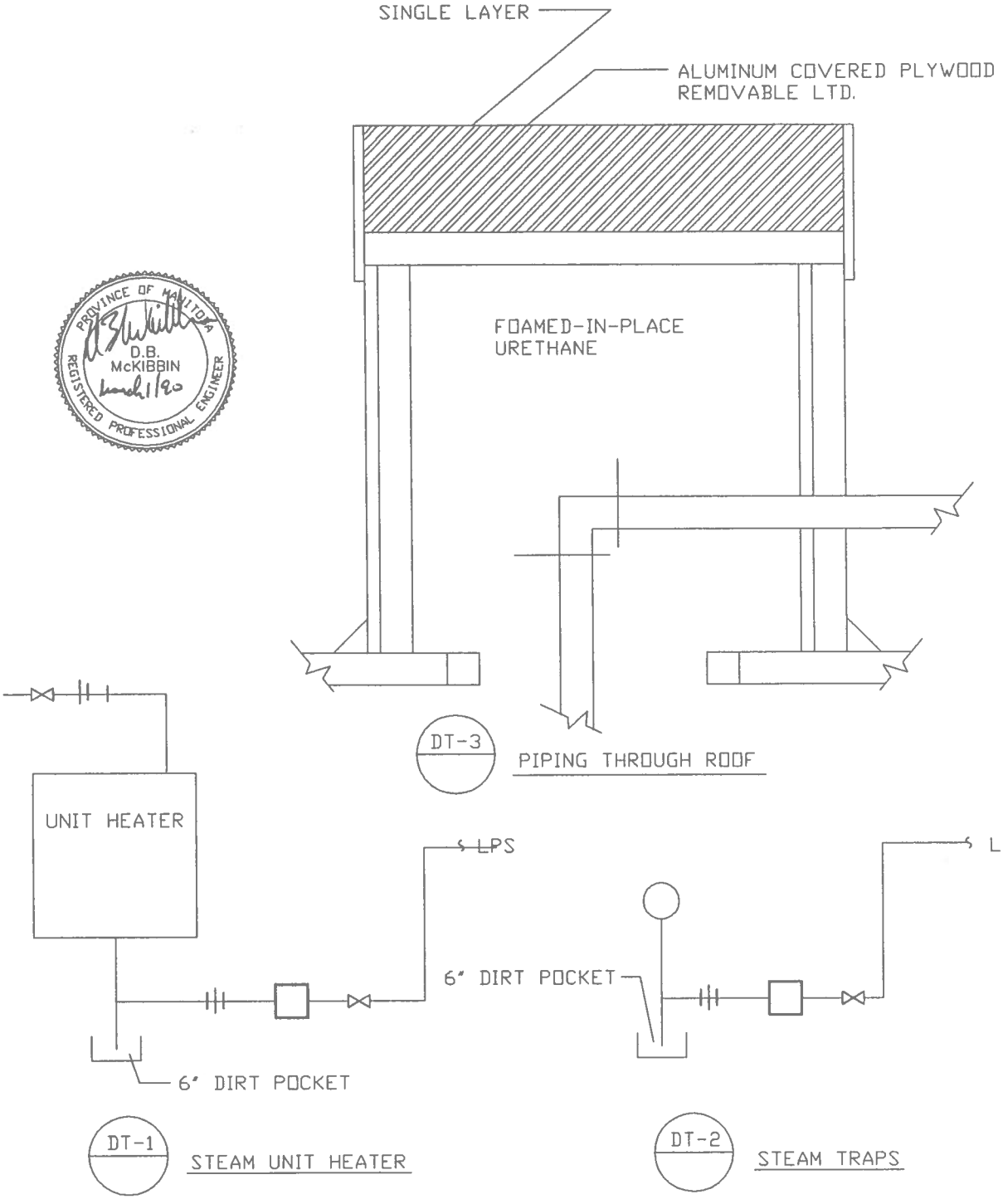


N/1 5# GAS LINE TO CARPARK BOILER ROOM

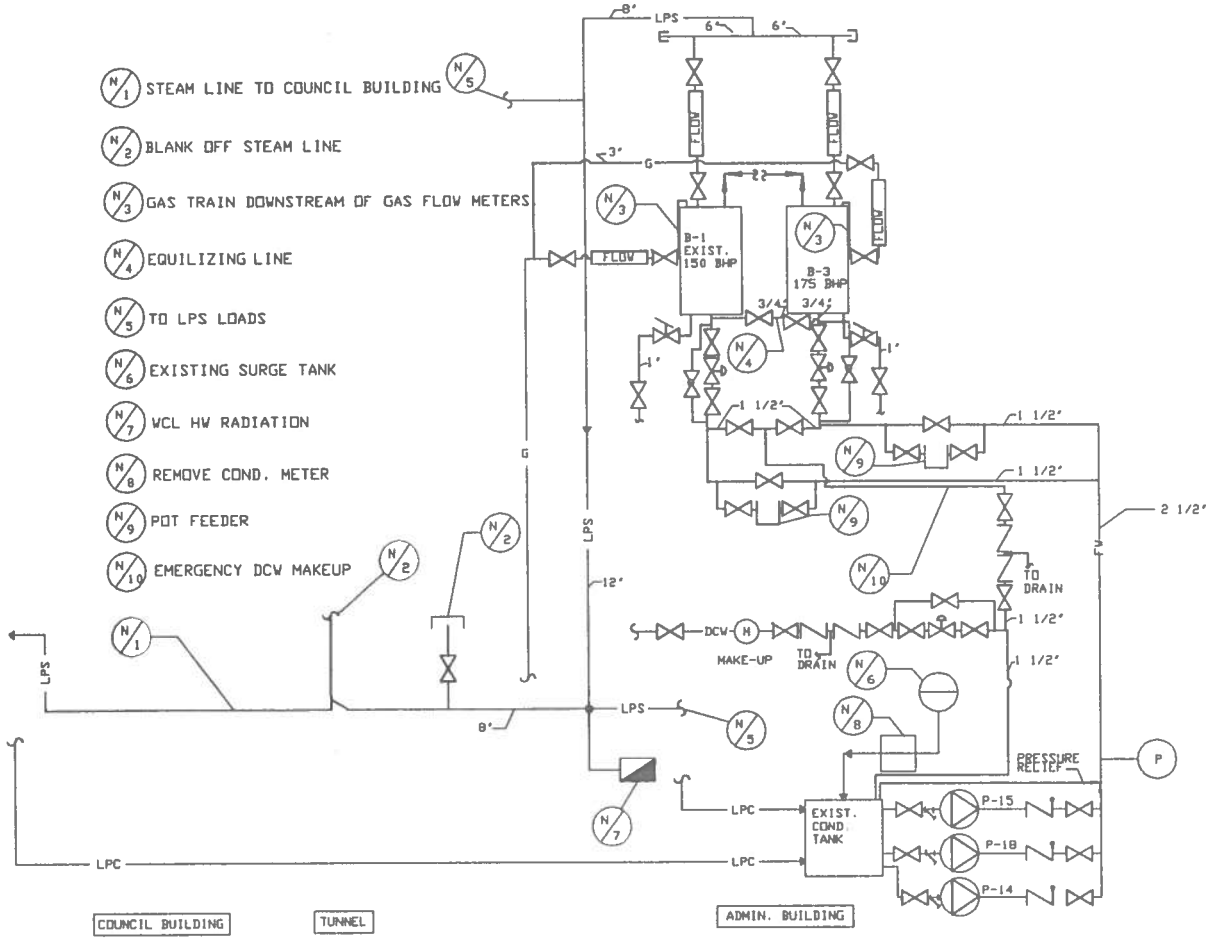
N/2 RUN ALONG UNDERSIDE OF DECK

N/3 GAS LINE FROM PRINCESS STREET TO MAIN FLOOR OF CARPARK.

ACTION CONSULTING ENGINEERS INC.	THE CITY OF WINNIPEG CIVIC PROPERTIES DEPT. 4 - 180 King St. R3B 3G8	
PROJECT: STEAM CONVERSIONS PSB & CIVIC CENTRE	TITLE: NATURAL GAS PUBLIC SAFETY BLDG. - MECHANICAL	M-9 REV.0
DATE: FEB.8/90 DRAWN BY: SEC CHECKED BY: DBM APPROVED: USER APPROVAL:		

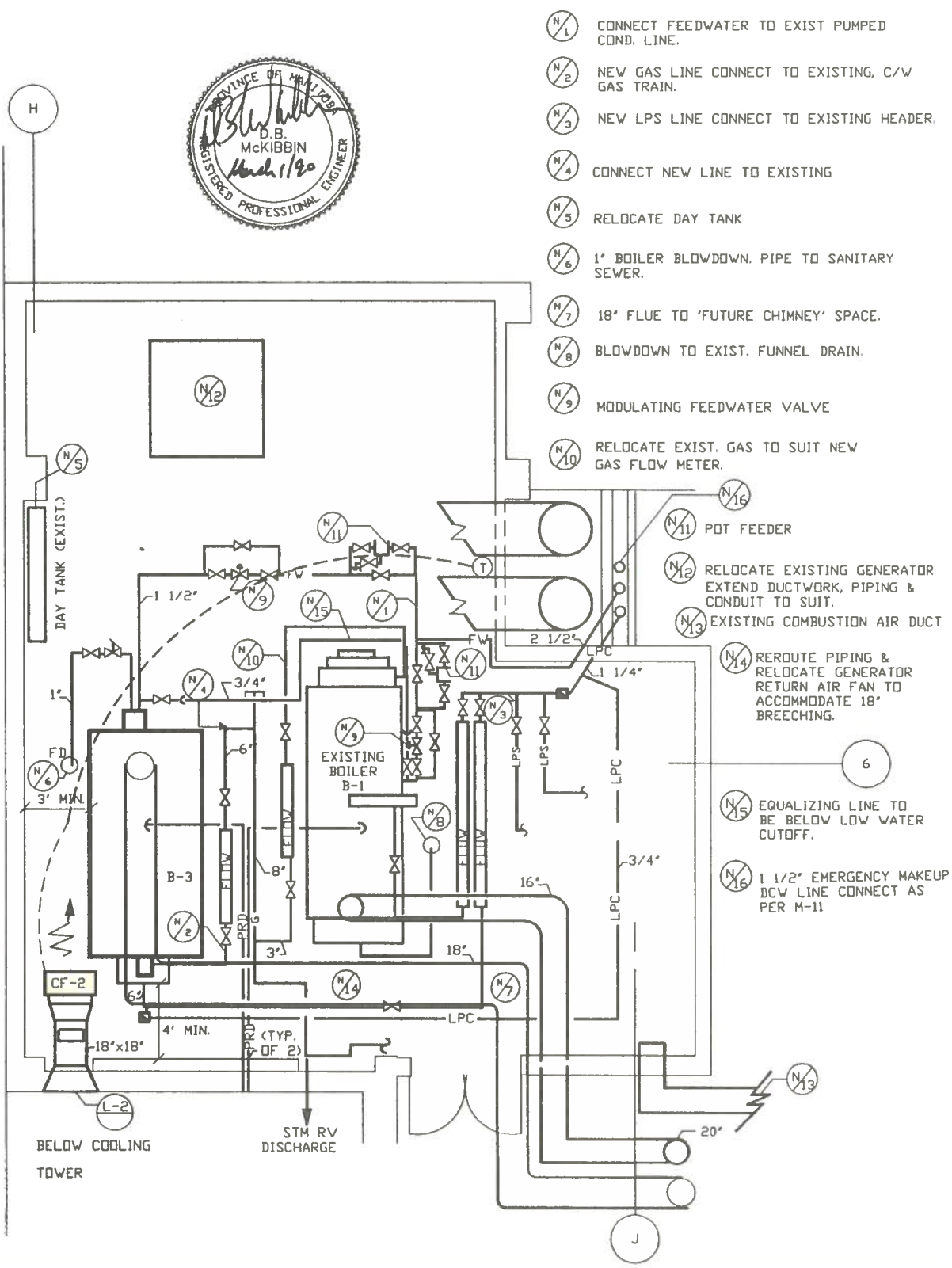


ACTION CONSULTING ENGINEERS INC.	THE CITY OF WINNIPEG CIVIC PROPERTIES DEPT. 4 - 180 King St. R3B 3G8	
PROJECT STEAM CONVERSIONS PSB & CIVIC CENTRE	TITLE DETAILS MECHANICAL	M-10 REV.0
DATE: FEB.26/90 DRAWN BY: MJ	CHECKED BY: DBM APPROVED:	USER APPROVAL:

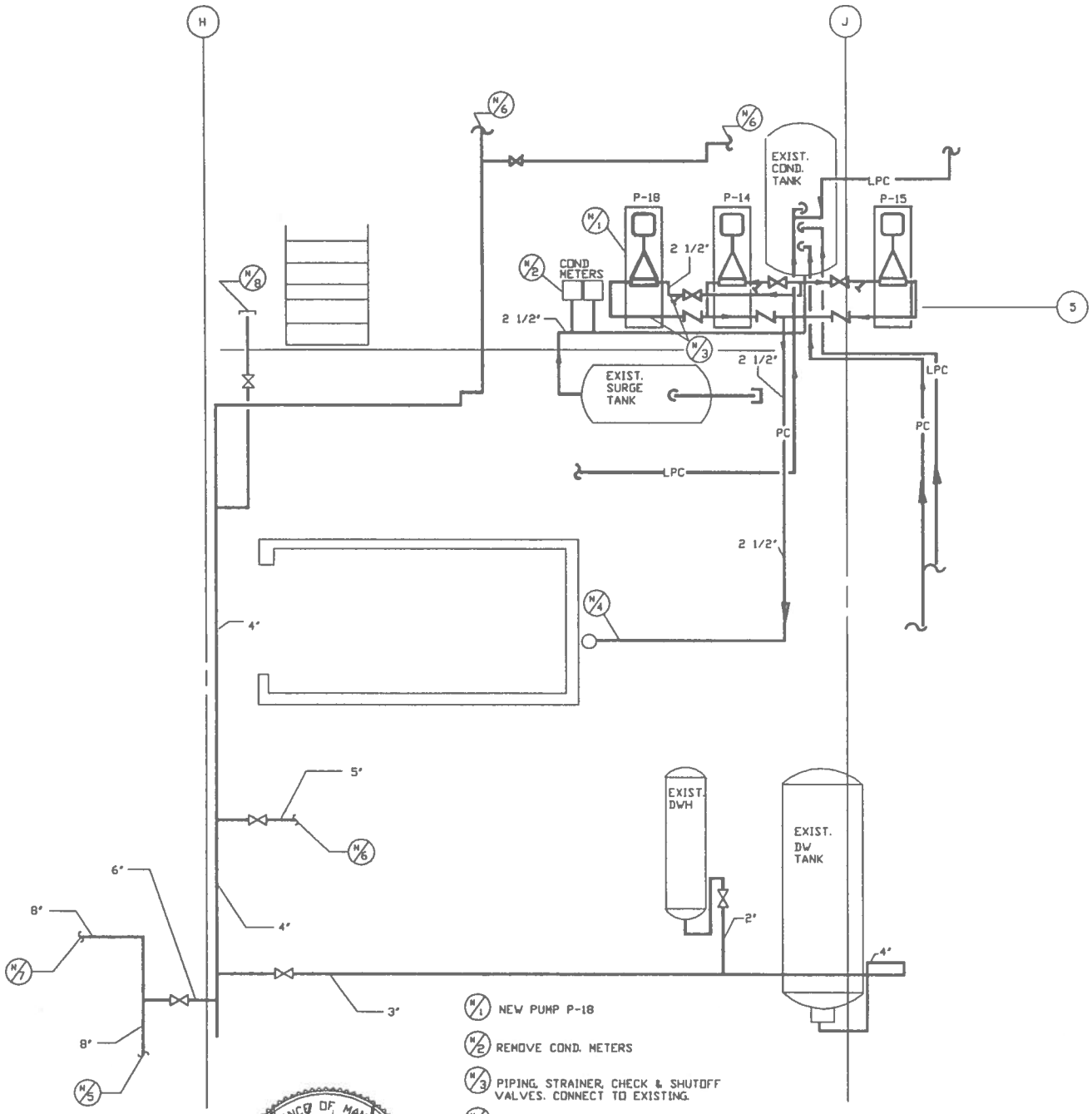


N/11 FUTURE ELECTRIC BOILER CONNECTION

ACTION CONSULTING ENGINEERS INC.	THE CITY OF WINNIPEG CIVIC PROPERTIES DEPT. 4 - 180 King St. R3B 3G8	
PROJECT: STEAM CONVERSIONS PSB & CIVIC CENTRE	TITLE: ADMINISTRATION BLDG. SCHEMATIC MECHANICAL	M-11 REV.0
DATE: FEB.26/90 DRAWN BY: MJ CHECKED BY: DBM APPROVED: USER APPROVAL:		



ACTION CONSULTING ENGINEERS INC.	THE CITY OF WINNIPEG CIVIC PROPERTIES DEPT. 4 - 180 King St. R3B 3G8	
PROJECT: STEAM CONVERSIONS PSB & CIVIC CENTRE	TITLE: ADMINISTRATION BLDG. BOILER RM- 7TH FLOOR MECHANICAL	M-12 REV.0
DATE: FEB.26/90 DRAWN BY: MJ	CHECKED BY: DBM APPROVED:	USER APPROVAL:



N/1 NEW PUMP P-18

N/2 REMOVE COND. METERS

N/3 PIPING, STRAINER, CHECK & SHUTOFF VALVES. CONNECT TO EXISTING.

N/4 PUMPED CONDENSATE LINE TO BOILERS ON 7TH FLOOR.

N/6 TO EXISTING LPS LOADS

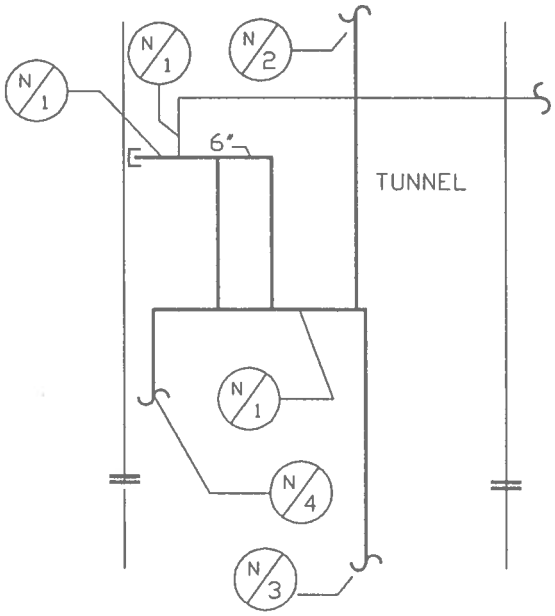
N/7 LPS FROM 7TH FLOOR BOILER ROOM

N/8 STUB & VALVE FOR FUTURE ELECTRIC BOILER

PROVINCE OF MANITOBA
D.B. McKIBBIN
REGISTERED PROFESSIONAL ENGINEER

ACTION CONSULTING ENGINEERS INC.	THE CITY OF WINNIPEG CIVIC PROPERTIES DEPT. 4 - 180 King St. R3B 3G8	
PROJECT STEAM CONVERSIONS PSB & CIVIC CENTRE	TITLE SUB-BASEMENT ADMINISTRATION BLDG.-MECHANICAL	M13 REV.0

DATE: FEB.26/90 DRAWN BY: MJ CHECKED BY: DBM APPROVED: USER APPROVAL:



N/1 BLANK OFF CENTRAL STEAM LINE

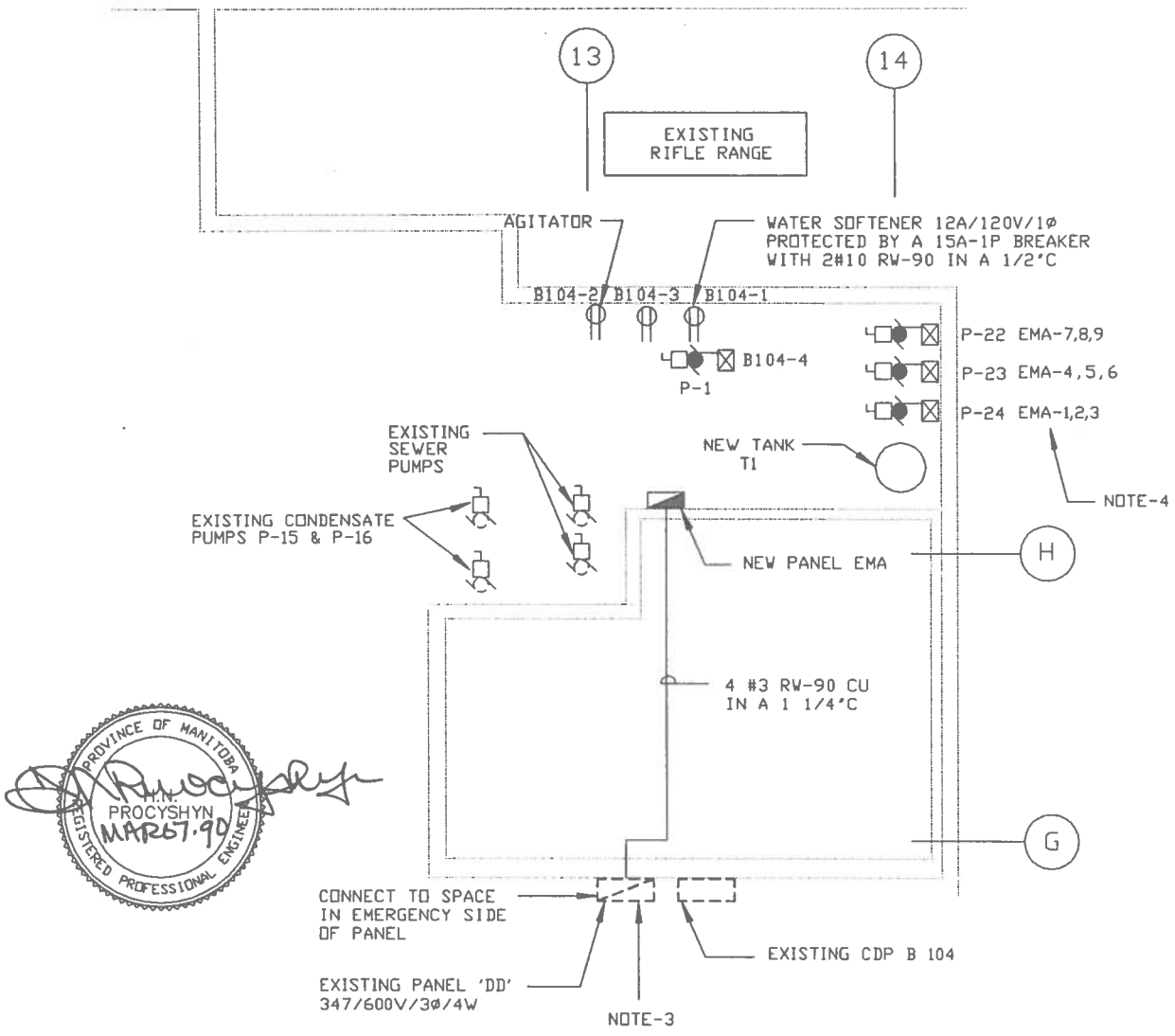
N/2 TO ADMINISTRATION BUILDING

N/3 TO COUNCIL BUILDING

N/4 SAFETY VALVE DISCHARGE

PROVINCE OF MANITOBA
D.B. McKIBBIN
March 1/90
REGISTERED PROFESSIONAL ENGINEER

ACTION CONSULTING ENGINEERS INC.	THE CITY OF WINNIPEG CIVIC PROPERTIES DEPT. 4 - 180 King St. R3B 3G8	
PROJECT: STEAM CONVERSIONS PSB & CIVIC CENTRE	TITLE: ADMINISTRATION TO COUNCIL BLDG. MECHANICAL	M-14 REV.0
DATE: FEB.26/90 DRAWN BY: SEC CHECKED BY: DBM APPROVED: USER APPROVAL:		



PROVINCE OF MANITOBA
H.N. PROCYSHYN
MAR 27.90
REGISTERED PROFESSIONAL ENGINEER

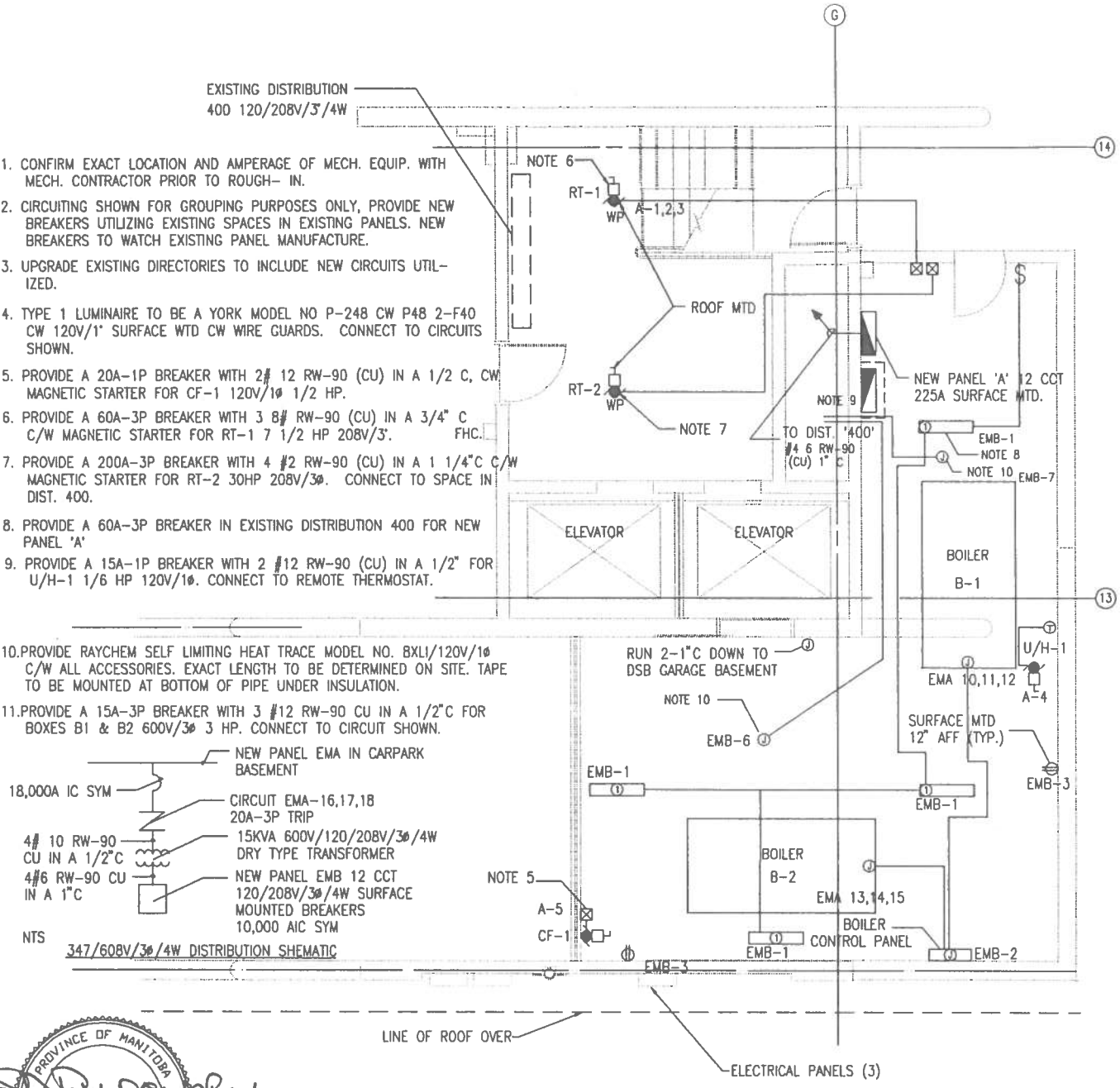
NOTES:

1. CONFIRM EXACT LOCATION & AMPERAGE OF MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
2. CIRCUITING SHOWN FOR GROUPING PURPOSES ONLY. PROVIDE NEW BREAKERS UTILIZING EXISTING SPACE IN EXISTING PANELS. NEW BREAKERS TO MATCH EXISTING PANEL MANUFACTURE.
3. UPGRADE EXISTING DIRECTORIES TO INCLUDE NEW CIRCUITS UTILIZED.
4. PROVIDE 20A-3P BREAKER WITH 3#12 RW-90 (CU) IN A 1/2"C C/W MAGNETIC STARTERS FOR EACH OF PUMPS P-22, P-23 & P-24, 7 1/2 HP 600V/3ø . MAG STARTERS TO BE C/W MANUAL RESTART PUSH BUTTON FOR POWER FAILURE.
5. PROVIDE A 15-1P BREAKER WITH 3#12 RW-90 (CU) IN A 1/2"C C/W MAGNETIC STARTER FOR CHEMICAL FEED PUMP P-1.
6. PANEL BOARD 'EMA' TO BE 30 CCT 225A MAINS 347/600V/3ø/4W SURFACE MOUNTED C/W LOCKED DOOR & LAMACOID NAMEPLATE. CONNECT PANEL EMA TO EXISTING PANEL DD' WITH A 100A-3P BREAKER 4#3 RW.90 (CU) IN A 1 1/4"C

NTS

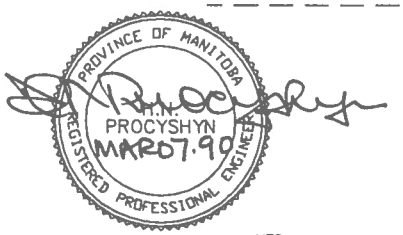
ACTION CONSULTING ENGINEERS INC.	THE CITY OF WINNIPEG CIVIC PROPERTIES DEPT. 4 - 180 King St. R3B 3G8	
PROJECT STEAM CONVERSIONS PSB & CIVIC CENTRE	TITLE PSB POLICE GARAGE ELECTRICAL	E-1 REV.0
DATE: FEB.26/90 DRAWN BY: QHP CHECKED BY: GAJ APPROVED: HNP USER APPROVAL:		

1. CONFIRM EXACT LOCATION AND AMPERAGE OF MECH. EQUIP. WITH MECH. CONTRACTOR PRIOR TO ROUGH- IN.
2. CIRCUITING SHOWN FOR GROUPING PURPOSES ONLY, PROVIDE NEW BREAKERS UTILIZING EXISTING SPACES IN EXISTING PANELS. NEW BREAKERS TO WATCH EXISTING PANEL MANUFACTURE.
3. UPGRADE EXISTING DIRECTORIES TO INCLUDE NEW CIRCUITS UTILIZED.
4. TYPE 1 LUMINAIRE TO BE A YORK MODEL NO P-248 CW P48 2-F40 CW 120V/1" SURFACE WTD CW WIRE GUARDS. CONNECT TO CIRCUITS SHOWN.
5. PROVIDE A 20A-1P BREAKER WITH 2# 12 RW-90 (CU) IN A 1/2 C, CW MAGNETIC STARTER FOR CF-1 120V/1ø 1/2 HP.
6. PROVIDE A 60A-3P BREAKER WITH 3 8# RW-90 (CU) IN A 3/4" C C/W MAGNETIC STARTER FOR RT-1 7 1/2 HP 208V/3'. FHC.
7. PROVIDE A 200A-3P BREAKER WITH 4 #2 RW-90 (CU) IN A 1 1/4"C C/W MAGNETIC STARTER FOR RT-2 30HP 208V/3ø. CONNECT TO SPACE IN DIST. 400.
8. PROVIDE A 60A-3P BREAKER IN EXISTING DISTRIBUTION 400 FOR NEW PANEL 'A'
9. PROVIDE A 15A-1P BREAKER WITH 2 #12 RW-90 (CU) IN A 1/2" FOR U/H-1 1/6 HP 120V/1ø. CONNECT TO REMOTE THERMOSTAT.
10. PROVIDE RAYCHEM SELF LIMITING HEAT TRACE MODEL NO. BXLI/120V/1ø C/W ALL ACCESSORIES. EXACT LENGTH TO BE DETERMINED ON SITE. TAPE TO BE MOUNTED AT BOTTOM OF PIPE UNDER INSULATION.
11. PROVIDE A 15A-3P BREAKER WITH 3 #12 RW-90 CU IN A 1/2"C FOR BOXES B1 & B2 600V/3ø 3 HP. CONNECT TO CIRCUIT SHOWN.



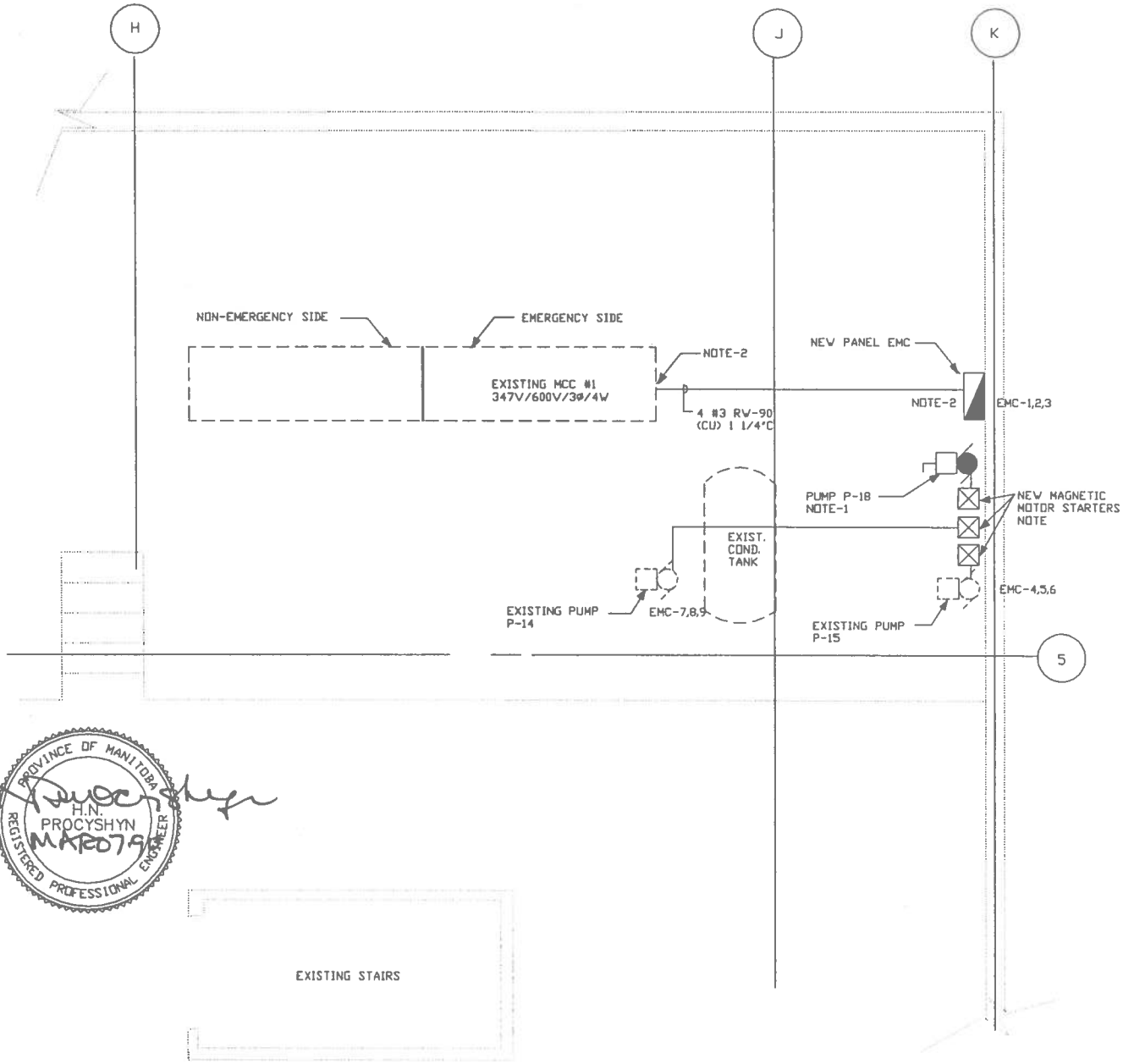
NTS

347/608V/3ø/4W DISTRIBUTION SHEMATIC



NTS

ACTION CONSULTING ENGINEERS INC.	THE CITY OF WINNIPEG CIVIC PROPERTIES DEPT. 4 - 180 King St. R3B 3G8	
PROJECT: STEAM CONVERSIONS PSB & CIVIC CENTRE	TITLE: CARPARK BOILER ROOM - ELECTRICAL	E-2 REV.0
DATE: FEB.26/90 DRAWN BY: QHP CHECKED BY: GAJ APPROVED: HNP USER APPROVAL:		



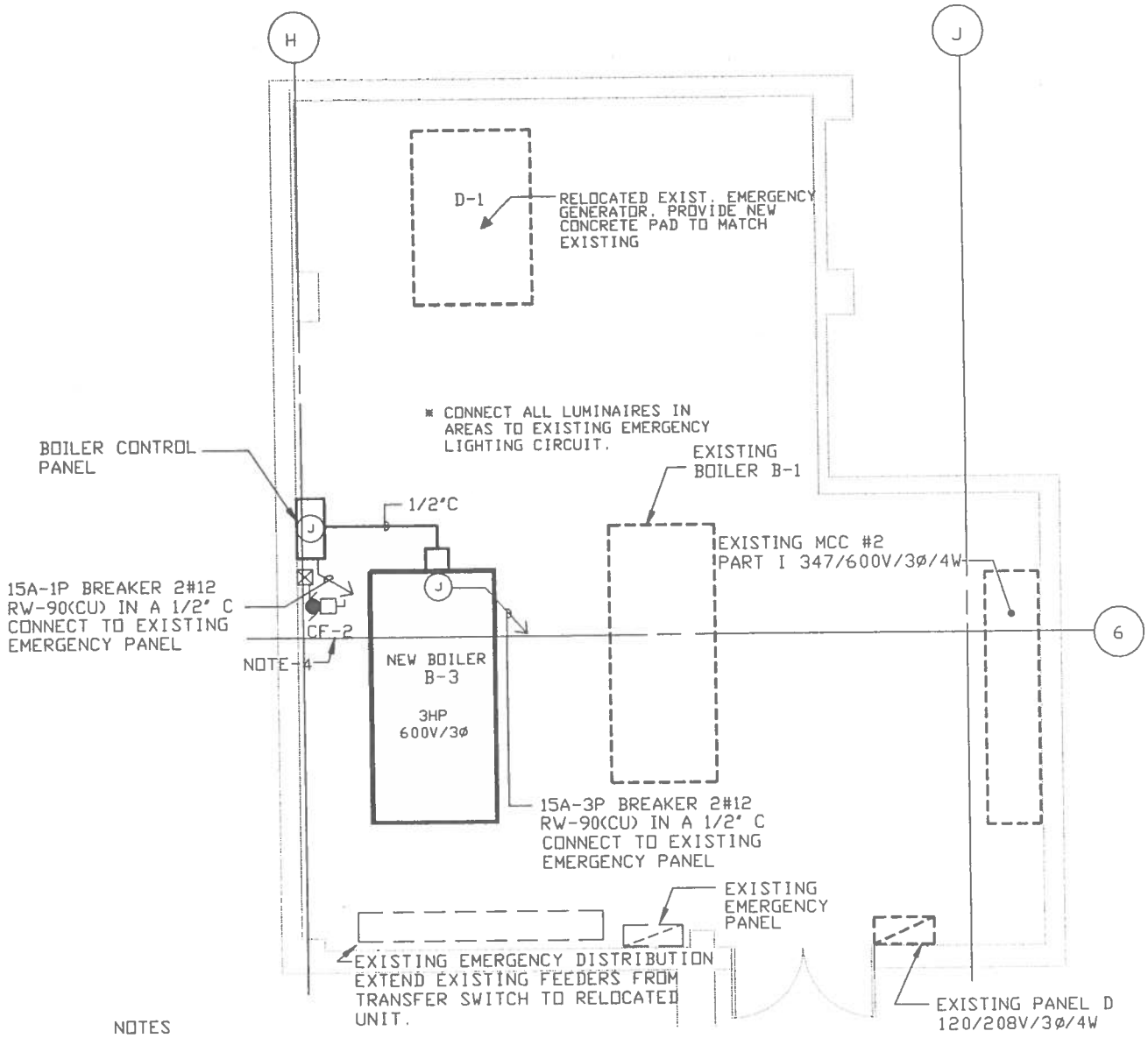
PROVINCE OF MANITOBA
H.N.
PROCYSHYN
MAR 07 90
REGISTERED PROFESSIONAL ENGINEER

NOTES:

1. PROVIDE A 40A-3P BREAKER WITH 3#10 RW-90 (CU) IN A 1/2" C FOR CONDENSATE PUMP P-18 15HP 600V/3Ø CONNECT TO AVAILABLE SPACE IN EXISTING MCC #1.
2. PROVIDE A 70A-3P BREAKER FOR NEW PANEL EMC 12 CCT 347/600V/3Ø/4W SURFACE MOUNTED 225A MAINS. CONNECT TO EM SIDE OF EXISTING MCC#1
3. DELETE EXISTING BREAKERS & STARTERS FOR PUMPS P-14 & P-15 MCC#1. PROVIDE NEW 40A-3P BREAKERS WITH 3 #10 RW-90 CU IN A 1/2"C WITH SEPERATE MAGNETIC STARTERS WITH MANUAL RESTART PUSH BUTTON FOR POWER FAILURE.
4. CONFIRM EXACT LOCATION & AMPERAGE OF MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.

NTS

ACTION CONSULTING ENGINEERS INC.	THE CITY OF WINNIPEG CIVIC PROPERTIES DEPT. 4 - 180 King St. R3B 3G8	
PROJECT STEAM CONVERSIONS PSB & CIVIC CENTRE	TITLE ADMINISTRATION BLDG. SUBBASEMENT - ELECTRICAL	E-3 REV.0
DATE: FEB.26/90 DRAWN BY: QHP CHECKED BY: GAJ APPROVED: HNP USER APPROVAL:		



NOTES

1. CONFIRM EXACT LOCATION & AMPERAGE OF MECH. EQUIPMENT WITH MECH. CONTRACTOR PRIOR TO ROUGH-IN.
2. CIRCUITING SHOWN FOR GROUPING PURPOSES ONLY CONNECT TO AVAILABLE SPACES IN EXISTING PANELS. NEW BREAKERS TO MATCH EXISTING PANEL MANUFACTURE.
3. UPGRADE EXISTING DIRECTORIES TO INCLUDE NEW CIRCUITS UTILIZED.
4. PROVIDE A 20A-1P BREAKER WITH 2#12 RW-90 CU IN A 1/2"C FOR CF-2 1/2 HP 120V/1Ø C/W MAGNETIC STARTER. CONNECT TO CIRCUIT D-1.

PROVINCE OF MANITOBA
H.N. PROCYSHYN
MA1207.90
REGISTERED PROFESSIONAL ENGINEER

SCALE
1/8"=1'-0"

ACTION CONSULTING ENGINEERS INC.	THE CITY OF WINNIPEG CIVIC PROPERTIES DEPT. 4 - 180 King St. R3B 3G8	
PROJECT STEAM CONVERSIONS PSB & CIVIC CENTRE	TITLE ADMINISTRATION BLDG. - 7TH FLOOR BOILER ROOM - ELECTRICAL	E-4 REV.0
DATE: FEB.26/90 DRAWN BY: QHP	CHECKED BY: GAJ APPROVED: HNP	USER APPROVAL:

Address 151 PRINCESS STREET Project No. 2003-244 Description PARTIAL ELECT. SCHEMATIC Sheet no. E-1R1 Date JAN. 1998 File Name 2003244E1R1.DWG

2003-244 Project No.
151 Princess St.
Single Line Elect. Distribution Schematic
Public Safety Building
Drawing Title
Wpg. Police Services
Project
E-1R1 Sheet No.
1998 Const. Year

BASEMENT ELECTRICAL ROOM

EXISTING 600V/3ø/3W MAIN DISTRIBUTION SWITCHGEAR (NON ESSENTIAL)

225A. 3P. PARCS FEED

300A. 3P. FACCS FEED

OUTSIDE OF JOHN DEERE M/G ROOM

NO E 600V FEED FROM MAIN DISTRIBUTION
NC D 600V HOUSE POWER TO TRANSFER SWITCH
NC C LOAD
NC B EMERGENCY POWER TO TRANSFER SWITCH
NO A 600V EMERGENCY POWER TO LOAD

AUTO TRANSFER SWITCH

150 KW. 187.5 KVA., .8 pf
347/600V/3ø/4W
EMERGENCY DIESEL GENERATOR

200 A.

CHILLER ROOM MCC 1 ROOM

125 A. 3P

NONESSENTIAL MCC 1 6 TH FLOOR

SOUTH FAN ROOM

225 A. 3P MAIN BREAKER

347/600V/3ø/4W/400A. COMPUTER SUB-DISTRIBUTION 'CSD600-6A'

70 A. 3P A/C SPLITTER
600V/3ø/3W A/C SPLITTER
EXIST. A/C UNIT
EXIST. A/C UNIT
EXIST. FAN F-1

30 A. 3P
15 KVA
PANEL TR - 6A

100 A. 3P
600V/3ø/3W DRY TYPE TRANSFORMER TR-6C
75 KVA K20
120/208V/3ø/4W

50 A. 3P UPS RECTIFIER FEED A.F.I.S.
20 A. 3P
225 A. 3P
225 A. 3P
100 A. 3P
100 A. 3P A/C
100 A. 3P

KOEHLER M/G ROOM

125 A. 600 V NONESSENTIAL SPLITTER (IN CAD GENERATOR RM.)

200 A. MANUAL SWITCH
6 JOHN DEERE DISCONNECT
3 200 A. 3P NONESSENTIAL DISCONNECT
AUTO TRANSFER SWITCH
5
4
200 A. SP MANUAL TRANSFER SWITCH
7

125 A. 600V SPLITTER

1 15 A. 2P DAMPER CONTROL DISCONNECT
600 V
120V
TO DAMPER CONTROL

2 125 A.
125 A. 3P KOEHLER M/G DISCONNECT
KOEHLER NATURAL GAS GENERATOR

120/208V/3ø/4W 400 A. SPLITTER

LIQUIDTITE FLEXIBLE CONNECTION

PARCS COMP. RM

UPS FOR A.F.I.S.
40 KVA., UPGRADABLE TO 50 KVA., BREAKERS SIZED FOR 40 KVA & FEEDERS SIZED FOR 50 KVA

TO P.A.R.C.S. AUTO-TRANSFER SWITCH TO INHIBIT BATTERY CHARGING WHILE ON EMERGENCY POWER

UPS/STATIC BYPASS
200 A. 3P MAINT. BYPASS

MAINT. BYPASS C/W 2-200 A. 3P NON-AUTO BREAKERS MAKE BEFORE MAKE

120V/208V/3ø/4W/250A. COMPUTER SUB-DISTRIBUTION 'CSD208-6A'

150 A. SHUNT TRIP DISCONNECT
PANEL UPS - A
PARCS COMPUTER ROOM

70 A.
60 A.
PANEL G
TRANSMITTER ROOM
PANEL GA
TRANSMITTER ROOM

100 A.
4 TH FLOOR POLICE DISPATCH

200 A. SHUNT TRIP DISCONNECT
A.F.I.S. DIST. 6 TH FLOOR PARCS CPU ROOM

A.F.I.S PANELBOARD 120/208V 3ø/4W 225A.
60 A.
A.F.I.S. DIST. 6 TH FLOOR PARCS CPU ROOM

2 ND FLOOR A.F.I.S. AREA
PANEL P

MTS/MACHINE ROOM

MTS/MACHINE ROOM CDP 100 600V/3ø

3ø, 3W, 125 A. MAINS
70 A. 3P
70 A. SPARE
15 A.
30 A. A/C CAD LIEBERT
100 A. A/C # 1
40 A. A/C # 2 DISPATCH
15 A. LIEBERT CONDENSER
20 A. BASEBOARD HEATERS
15 A. BASEBOARD HEATERS POLICE DISPATCH
40 A.
600 V.
120/208V
PANEL GB
TRANSMITTER ROOM

50 A. 3P
45 KVA
600 : 120/208V,3ø

60 A. 3P
50 KVA
600 : 480V, 3ø
AUTO TRANSFORMER

FACCS COMPUTER ROOM

OFF
MAINT. BYPASS MAKE BEFORE BREAK

FACCS 40 KVA UPS
FACCS UPS

100 A. N.C. PANEL CPA
100 A. N.C. PANEL CP
100 A. N.C. UPS B CAD
100 A. N.C. U 200
4 TH FLOOR POLICE DISPATCH DISTRIBUTION
100 A. N.C. UPS 5
5 TH FLOOR SERVER ROOM

1). "CSD208-6A" RECONNECTED TO A.F.I.S. DIST. 6th FLOOR REMOVED "EAST WALL SOUTH FAN RM", "UPS PARCS COMP RM, & MAINT. BYPASS".

NO.	REVISION/DESCRIPTION	BY	DATE
		MBD	11/03

SEALS

DRAWN BY B.K. | CHECKED BY | APPROVED
DATE Jan. 1998 | USER APPROVAL

PROJECT

THE CITY OF WINNIPEG
CIVIC BUILDINGS DEPARTMENT
400-180 KING ST. R3B 3G8

PUBLIC SAFETY BUILDING
151 PRINCESS STREET

SHEET TITLE

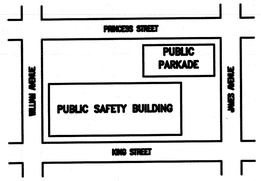
SINGLE LINE ELECTRICAL DISTRIBUTION SCHEMATIC

SCALE	PROJECT NO	SHEET NO
N.T.S.	2003-244	E-1R1

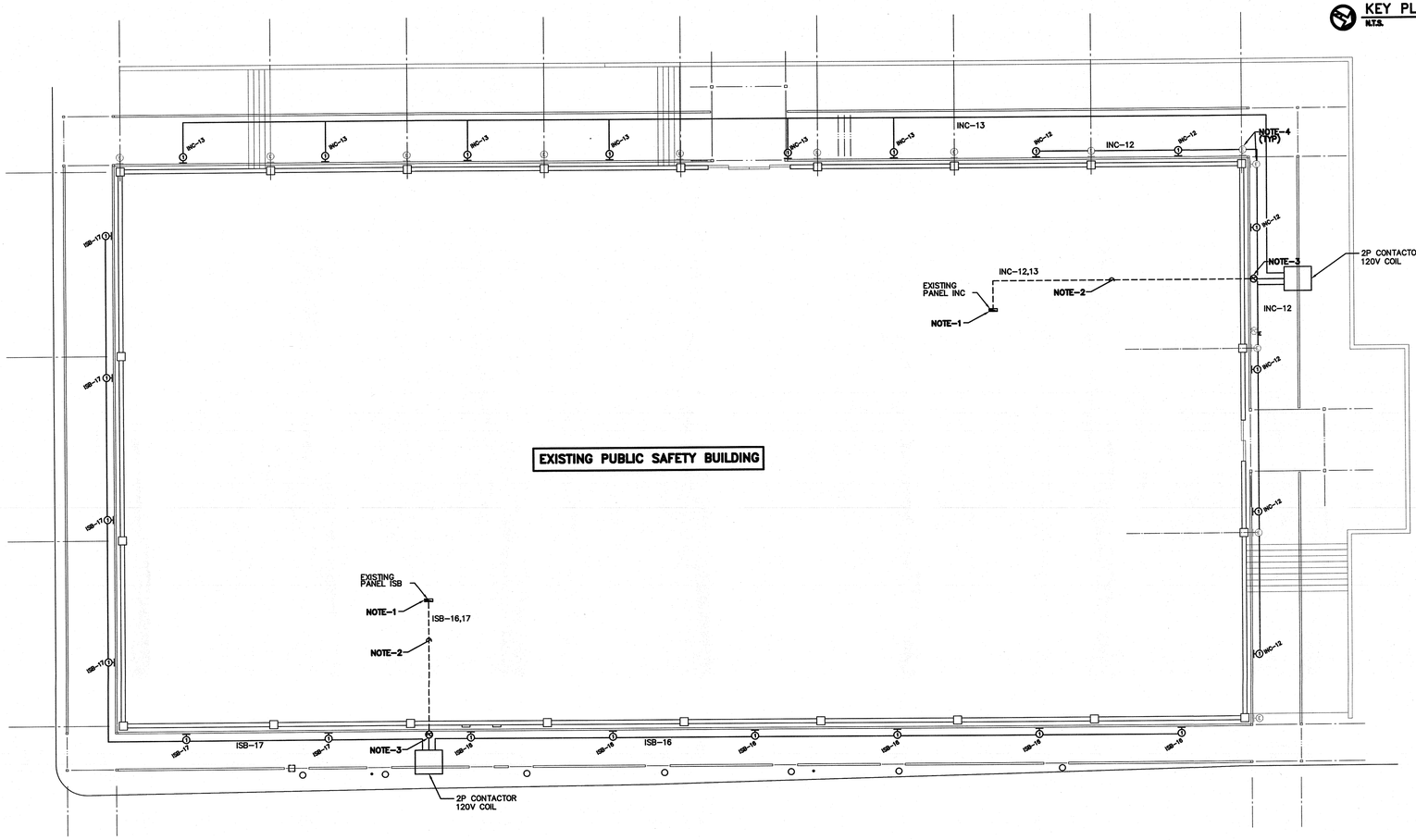
151 Princess Street
Electrical Layout
Drawing Title
Public Safety Building
Temporary Protective Sidewalk Hoarding 2007
Project
2005-127
Project No.
AS-BUILT
E-1
Sheet No.
Const. Year

ADDRESS: 151 PRINCESS STREET
PROJECT No: 4464-03
DESCRIPTION: ELECTRICAL LAYOUT
DATE: 2007.02.08
FILE NAME: PUBLIC SAFETY BUILDING

NOTES :



KEY PLAN
N.T.S.



NOTES:

1. PROVIDE NEW 15 AMP/2-1P CIRCUIT BREAKER TO POWER NEW EXTERIOR LUMINAIRES.
2. PROVIDE 10/2 TECK AS REQUIRED TO ELIMINATE EXCESSIVE VOLTAGE DROP.
3. MOUNT NEW PHOTOCELL ABOVE HOARDING.
4. MOUNT NEW LUMINAIRES AGAINST INSIDE OF HOARDING WALL SO NOT TO SHINE INTO BUILDING, COORDINATE EXACT MOUNTING ON SITE TO ALLOW FOR EXISTING CONDITIONS.

LUMINAIRE SCHEDULE:

TYPE	MANUFACTURER	CATALOGUE NO.	VOLTS	LAMPS	REMARKS
1	LITHONIA	TWA70S120TWAWG	120	1-70W HPS	HPS COMMERCIAL MINI WALL PACK C/W INTERNAL CUT OFF AND WIREGUARD. STANDARD DARK BRONZE CORROSION RESISTANT POLYESTER POWDER COAT.

RECORD DOCUMENT
FEB. 8/07

THIS DRAWING HAS BEEN UPDATED WITH CHANGES DOCUMENTED BY CHANGE ORDERS AND ASBUILT INFORMATION PROVIDED BY THE CONTRACTOR. THE INFORMATION ON THIS DRAWING MAY NOT REFLECT ACTUAL SITE CONDITIONS. THE USER OF THIS DRAWING IS ADVISED TO RELY ONLY ON INFORMATION THAT HAS BEEN CONFIRMED ON SITE.

MCW / AGE
Consulting Professional Engineers
210-1821 Wellington Avenue
Winnipeg, Manitoba R3H 0G4
Phone - (204) 779-7900 Fax - (204) 779-1119
E-Mail: mcw_wpg@mcw-ers.com

4464-03

NO.	REVISION/DESCRIPTION	BY	DATE

SEALS

DRAWN BY JCW/PAS | CHECKED BY | APPROVED
DATE 2007.02.08 | USER APPROVAL

Winnipeg
CITY OF WINNIPEG
PLANNING, PROPERTY & DEVELOPMENT DEPARTMENT
CIVIC ACCOMMODATIONS DIVISION
300 - 65 GARRY ST. R3C 4K4

PROJECT
PUBLIC SAFETY BUILDING
TEMPORARY PEDESTRIAN WALKWAY ENCLOSURE
151 PRINCESS STREET

SHEET TITLE
ELECTRICAL LAYOUT
A/T: BONNIE KONZELMAN
FR: CURRENT ELECTRIC

SCALE	PROJECT NO.	SHEET NO.
3/32"=1'0"	4464-03	E-1

DRAWING SHEET SIZE: A1 (841mm x 594mm) PLOT 1:1

2005-127

PART 1 ELECTRICAL GENERAL CONDITIONS

1.1 GENERAL

1. The specification covering the General Conditions of the Contract, General Specifications, Instructions to Bidders and all associated sections form an integral part of this specification and shall be read in conjunction herewith.

1.2 SCOPE

1. Provide all materials, labour, plant and equipment required for a complete and working installation as herein specified and as shown on the drawings.
2. The electrical installation shall be in accordance with the current edition of the Canadian Electrical Code, Provincial and Municipal codes and regulations.
3. Obtain all permits, approvals and pay all related fees required for this installation.
4. All equipment supplied under this Contract shall be new and be C.S.A. approved.
5. Arrange for, and co-ordinate, rough-in and final inspections with Inspection Authority, Consultant and Building Engineer.

1.3 EXAMINATION

1. Examine the site, local conditions and all existing apparatus if any to be re-used and verify that the condition of this equipment is suitable for its intended use in the new construction.

1.4 SUPERVISION

1. Supervise the work at all times through a responsible and competent supervisor.

1.5 ACCURACY OF DATA

1. Drawings are schematic; exact locations, distances, levels and other dimensions shall be governed by the building as constructed.
2. Outlets or equipment shall be moved to any point within a 3.048m, 304cm (10') radius when relocation is requested by the Consultant before the work has been substantially completed, without additional cost.
3. Branch circuit wiring shall be installed with circuits arranged exactly as shown on the drawings. Conduit and cable runs may be modified to suit the installation.

1.6 APPROVAL OF MATERIAL

1. Request for approval of material as equals or alternates to that specified shall be submitted to the Consultant with a stamped self-addressed envelope and performance specifications three (3) working days prior to the tender submittal. Samples shall be provided on request.

1.7 SHOP DRAWINGS

1. Submit shop drawings of electrical equipment for review. Fabrication of equipment shall not commence until shop drawings of such equipment have been reviewed by the Consultant. Two sets shall be submitted with local Inspection Department approval where required.

1.8 RECORD DRAWINGS

1. Keep a record set of drawings on the site at all times recording any changes that may occur. Submit these drawings to the Consultant upon completion of the work. Record drawings shall include circuiting of new and existing equipment to remain. Transfer changes to electronic disc AutoCAD file. Submit disc and hard copy for final review and submission to Owners.
2. Submit a Certificate of Inspection from the local Inspection Authority upon completion of work and include with record drawings.
3. The Consultant reserves the right to recommend that a portion of the Contract funds be withheld pending submission of acceptable record drawings.

1.9 TEST

1. The electrical installation shall be completely tested demonstrating that the equipment and systems installed perform in the manner intended.

1.10 GUARANTEE

1. The satisfactory operation of all work shall be guaranteed for a period of 12 calendar months after final acceptance of the building.

1.11 REQUEST FOR CHANGE

1. All quotations in response to request for change shall be submitted complete with an itemized cost breakdown of all materials and labour required in the change.

1.12 GROUNDING

1. The entire installation shall be grounded in accordance with the Canadian Electrical Code.

1.13 WORKMANSHIP

1. Install equipment, conduit and cables in a workmanlike manner to present a neat appearance to the satisfaction of the Consultant. Install conduit and cable runs parallel and perpendicular in chases, behind furring or above ceilings. In areas where systems are to be exposed (electrical room only), install neatly and group to present a tidy appearance.
2. Install equipment and apparatus requiring maintenance, adjustment or eventual replacement with adequate clearances and accessibility for same.
3. Include, in the work, all requirements shown on the shop drawings or manufacturers' installation instructions.
4. Replace work unsatisfactory to the Consultant without extra cost.
5. All conduit shall be clipped to structural concrete by means of anchors or supported by Unistrut hangers as close to U/S as possible. Tye wraps and tie wire for wire and conduit support and fastening is not acceptable. Perforated strapping is also unacceptable.
6. All support material for all luminaires, outlet boxes, junction boxes, etc. in a non-combustible building shall be of non-combustible material. Wood is not acceptable.

1.14 WORK IN EXISTING BUILDING

1. The building shall remain open and in normal operation during the construction period of this Contract.
2. Where existing services such as electrical power, fire alarm system, television system, are required to be disrupted and/or shut-down, co-ordinate the shut-downs with the Owner and carry out the work at a time and in a manner acceptable to them. Carefully schedule all disruptions and/or shutdowns and ensure that the duration of same is kept to a minimum. Submit for approval, a written schedule of each disruption at least 72 hours in advance of performing work and obtain Owner's written consent prior to implementing.

3. Should any connections be required to maintain services during work in the existing building, supply and install all necessary material and equipment and provide all labour at no extra cost. Should any existing system be damaged, make full repairs without extra cost, and to the satisfaction of the Owner.
4. The drawings indicate major items of equipment to be deleted or relocated but may not indicate every item of equipment or conduit to be deleted or relocated. Be responsible for determining which existing equipment is to be deleted or relocated by examining the site and Construction Documents.
5. Where existing devices (receptacles, switches) mounted on a wall which will be covered with a new finish, provide an extension ring, coverplate, etc. as required to mount the device to the new wall.
6. Existing junction boxes shall remain accessible.
7. Refer to General Conditions for phasing and staging of work and adhere to that program. Comply with instructions regarding working hours necessary to maintain the building in operation.
8. It shall be the responsibility of the Electrical Contractor to ensure that any coring of holes through the deck will not penetrate existing conduits, cables or mechanical equipment in or under the floor slabs. He shall be responsible to take any and all action as deemed necessary by the Building Engineer to correct any such penetrations at his cost. No coring shall be undertaken unless permission is given by the Building Engineer.

PART 2 MATERIALS AND INSTALLATION

2.1 OUTLET BOXES

1. Outlet, junction and switch boxes shall be galvanized pressed steel of size and type to suit each individual application, and weatherproofed.

2.2 WIRING METHODS

1. Unless otherwise shown on the drawings, all wire shall be copper, minimum #12 AWG with 90 degrees Celsius x-link insulation. Wiring to be installed in conduit and weatherproof.
2. Wiring in concrete or masonry construction shall be installed in steel electrical metallic tubing (EMT). Provide a separate grounding conductor in EMT conduit runs embedded in concrete slabs. Conduits installed in areas exposed to moisture shall have watertight fittings.
3. All wiring in finished areas shall be concealed. Conduits shall be run at right angles to the building lines.

4. Conduit and wiring shall be grouped where possible and clipped in a neat and workmanlike manner.
5. Conduit runs shall be installed and inspected before AC-90 runs are installed to ensure conformance with Item 5 herein.

2.3 IDENTIFICATION OF EQUIPMENT

1. All equipment, including receptacles shall be identified with engraved lamacoid nameplates either screwed or rivetted in place, or DYNAMO 6000 identification strip.

2.5 LUMINAIRES

1. Supply and install all luminaires complete with lamps.
2. Install luminaires supplied by the Owner, as indicated.
3. Pulse start fixtures to be totally enclosed.
4. To ensure these products are supplied, and to facilitate the application process, shop drawings shall include the quantity, manufacturer, catalogue number.

2.6 PANELBOARDS

1. Circuit breakers shall be bolt on moulded case with thermal breakers rated at 10,000A symmetrical.
2. Revise the directory in existing panels to suit revised circuiting (typewritten). Place existing directory behind new directory for verification by Consultant.

2.7 CUTTING AND PATCHING

1. Arrange and pay for all cutting and patching as required for the electrical installation.

2.8 DISTRIBUTION

1. General arrangement and size of components shall be as shown on the drawings.

2.9 DEVICES

1. Photocell to be complete with 5 year warranty, swivel mounting, rated for HPS ballasts 1800 watts, equal to Intermatic K4251.

END OF SECTION

NOTES :

APEGM
Certificate of Authorization
MCW/AGE Consulting
Professional Engineers
No. 589 Expiry: April 30, 2007

PROVINCE OF MANITOBA
E.H. GARFINKEL
REGISTERED PROFESSIONAL ENGINEER

MCW / AGE
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4464-03

NO.	REVISION/DESCRIPTION	BY	DATE

SEALS

DRAWN BY	JCW	CHECKED BY	APPROVED
DATE	2006.07.19	USER APPROVAL	

CITY OF WINNIPEG
PLANNING, PROPERTY & DEVELOPMENT DEPARTMENT
CIVIC ACCOMMODATIONS DIVISION
300 – 65 GARRY ST. R3C 4K4

PROJECT
PUBLIC SAFETY BUILDING
TEMPORARY PEDESTRIAN WALKWAY ENCLOSURE
151 PRINCESS STREET

SHEET TITLE
ELECTRICAL SPECIFICATION

SCALE	PROJECT NO.	SHEET NO.
N.T.S.	4464-03	E-2

DRAWING SHEET SIZE: A1 (841mm x 594mm) PLOT 1:1

DESCRIPTION: ELECTRICAL LAYOUT
DATE: 2006.07.19
FILE NAME: PUBLIC SAFETY BUILDIN
ADDRESS: 151 PRINCESS STREET
PROJECT No: 4464-03

155 Princess Street 2005-127 Project No.
Temporary Pedestrian Walkway Enclosure E-2 Sheet No.
Drawing Title 2006 Const. Year
Electrical Layout
Project

NEW SYMBOLS

INCANDESCENT RECESSED STEP LIGHT FIXTURE 150 WATT, EXTENDED SERVICE LAMP, DIRECTIONAL, HI-STRESS IMPACT RESISTANT LENS DESIGNED TO DISTRIBUTE A MAXIMUM COMPONENT TOWARD THE HORIZONTAL SURFACES TO BE ILLUMINATED. 16 GAUGE STEEL SANDBLASTED HOUSING FINISHED WHITE INSIDE, ASPHALT FINISH OUTSIDE. FACE PLATE SHALL BE WEATHERPROOF HAVING ANODIZED BRONZE FINISH. STANDARD SCREW ATTACHMENTS. LUMITRONIC SPECIAL "MK" SERIES 150 WATT UNITS.

WIRE & CONNECT UNITS TO PANEL "LS" CIRCUIT AS SHOWN ON DRAWING WITH #10 A.W.G. TYPE T.W.N. CONDUCTORS INSTALLED IN RIGID STEEL CONDUIT BURIED 3'-6" BELOW FINISHED GRADE. REFER TO TYPICAL INSTALLATION DETAILS OF STEP LIGHT FIXTURES THIS SHEET FOR MOUNTING HEIGHTS, ETC.

NORTH

PARKADE BLDG.

TYPICAL INSTALLATION DETAILS OF STEP LIGHT FIXTURES
N.T.S.

SECTION
N.T.S.

ELEVATION
N.T.S.

FIXTURE SIZE (1'-0")

FIXTURE SIZE (1'-0")

PAVING LEVEL

LS1 LS2 LS3 LS4 LS5 LS6 LS7 LS8 LS9 LS10

3/4" x 3'-0" KEYED BRONZE TO ANCHOR W/FA. HYDRO W/S WITH POTENTIAL SERVICE

U/G SERVICE ENTRANCE SPEC. BY WINNIPEG HYDRO

NOTE
WIRE & CONNECT ALL DRAIN PIPE HEATING SYSTEM CONNECTION BOXES SHOWN ON THIS SHEET TO PANEL "H" LOCATED IN BASE, PUBLIC SAFETY BLDG.

#1 #2 #3 #4 #5

NOTE
EXACT LOCATIONS OF S.P. LIGHT FIXTURES SHOWN ON THIS SHEET SHALL BE AS DIRECTED BY THE ARCHITECT.

PUBLIC SAFETY BUILDING

U/G SERVICE DUCT ENTRANCE FOR CITY SIGNALS

U/G SERVICE DUCT ENTRANCE FOR M.T.S.

PROPOSED NEW CITY SIGNAL MANHOLE.

APPROX. ROUTE OF NEW U/G CITY SIGNAL DUCT LINE.

APPROX. ROUTE OF TUNNEL

EXISTING M.T.S. MANHOLE #9128

EXISTING M.T.S DUCT TO M.T.S. MANHOLE #9094

16'-0"

15'-0"

OFFICE TOWER

COUNCIL CHAMBER

SYMBOL SCHEDULE

SYMBOL	DESCRIPTION	SPECIFICATION REFERENCE
S10	TYPE "A" FLUORESCENT LIGHTING FIXTURE CONNECTED TO PANEL "S", CCT. N° 10, OPERATED BY WALL SWITCH AS SHOWN ON DRAWING.	LIGHTING FIXTURES
P19	TYPE "P" INCANDESCENT LIGHTING FIXTURE CONNECTED TO PANEL "P", CCT. N° 19, OPERATED BY WALL SWITCH AS SHOWN ON DRAWING.	
	WALL MOUNTED INCANDESCENT LIGHTING FIXTURE.	
FM	TYPE "M" FLUORESCENT LIGHTING FIXTURE CONNECTED TO PANEL "P", CCT. N° 14	
	DAY / NIGHT LIGHTING FIXTURE.	
E	WALL MOUNTED EXIT LIGHT FIXTURE. (TYPE "E")	
	EXIT LIGHT FIXTURE C/W DIRECTIONAL ARROW.	
	SINGLE POLE WALL SWITCH.	SWITCHES
3	THREE-WAY WALL SWITCH.	
4	FOUR-WAY WALL SWITCH.	
PL	WALL SWITCH C/W PILOT LIGHT.	
	WALL SWITCHES GANG MOUNTED.	
	DOUBLE POLE SINGLE THROW WALL SWITCH.	SPECIAL SWITCHES
D	DOUBLE POLE DOUBLE THROW WALL SWITCH - 2 POSITION.	
K	KEY OPERATED SINGLE POLE WALL SWITCH.	
K	KEY OPERATED DOUBLE POLE DOUBLE THROW WALL SWITCH - 2 POSITION.	
D	SINGLE POLE DOUBLE THROW WALL SWITCH - 2 POSITION.	
S	DUCT TYPE AUTOMATIC DETECTOR	SMOKE DETECTION SYSTEM
C21	WALL MOUNTED DUPLEX CONVENIENCE RECEPTACLE, CONNECTED TO PANEL "C" CCT N°21	CONVENIENCE OUTLETS
	WALL MOUNTED DUPLEX TWO CIRCUIT (SPLIT) CONVENIENCE RECEPTACLE.	
	WALL MOUNTED SINGLE CONVENIENCE RECEPTACLE - 600W. 1Ø.	
	DUPLEX CONVENIENCE RECEPTACLE - FLOOR PEDESTAL.	
	WELDER PLUG RECEPTACLE OUTLET.	WELDER OUTLETS
	TELEPHONE OUTLET - WALL MOUNTED.	TELEPHONE & INTER-TELEPHONE SYSTEM
	TELEPHONE OUTLET - FLOOR PEDESTAL.	
	INTER-TELEPHONE OUTLET - WALL MOUNTED	
	INTER-TELEPHONE OUTLET - FLOOR PEDESTAL.	
JACK	TELEPHONE OUTLET - WALL MOUNTED C/W JACK.	
F1	MANUAL FIRE ALARM STATION - WALL MOUNTED UP 5'-0" - ZONE 1.	FIRE ALARM SYSTEM
	FIRE ALARM GENERAL ALARM BELL - WALL MTD. 1'-0" BELOW FIN. CEILING.	
F29 A	AUTOMATIC FIRE ALARM STATION - TYPE "A", ZONE 29.	
	WALL MOUNTED FIRE ALARM REMOTE INDICATING LIGHT, FOR AUTOMATIC STATION.	
	I.C. OUTLET - WALL MOUNTED	EMPTY RACEWAY FOR SIGNAL SYSTEM
	I.C. OUTLET - FLOOR PEDESTAL	
A	WALL MOUNTED CLOCK - TYPE "A"	CLOCK SYSTEM
	MASTER CLOCK - WALL MOUNTED	
	UNDER FLOOR RACEWAY SYSTEM DUCT. (TYPE AS NOTED ON DRAWINGS)	UNDER-FLOOR RACEWAY SYSTEMS
	UNDER FLOOR RACEWAY SYSTEM JUNCTION BOX.	
F1	MOTOR N° F1	MOTOR SCHEDULE
M1 F1	MOTOR CONTROL TYPE "M1" FOR MOTOR F1.	MOTOR CONTROL DATA
	BUZZER AS NOTED ON DRAWINGS.	
E	EMERGENCY D.C. LIGHTING UNIT BATTERY BANK.	EMERGENCY D.C. LIGHTING UNITS
E1	EMERGENCY D.C. LIGHTING FIXTURE TYPE N°1.	
1-A	PUSHBUTTON CONNECTED TO ANNUNCIATOR PANEL "A", INDICATOR N°1.	JAIL ALARM SYSTEM
H1	ALARM HORN N°1.	
H1	DRAIN PIPE HEATING SYSTEM CONNECTION BOX, TYPE #1.	DRAIN PIPE HEATING
	PANELBOARD MOUNTED FLUSH OR SURFACE AS SHOWN ON DRAWINGS & FEEDING DESIGNATED ARROW.	
1	DISTRIBUTION ITEM N°1	ELECTRICAL DATA
N.I.C.	NOT IN CONTRACT.	
N.T.S.	NOT TO SCALE	
P1	PUSHBUTTON N°1.	HOSPITAL STAIRWAY SIGNAL SYSTEM.
SP1	SPECIAL OUTLET N°1.	

SYMBOL SCHEDULE CONTINUED

	WEATHERPROOF DUPLEX CONVENIENCE RECEPTACLE. SEE SPECS. "CONVENIENCE OUTLETS"
S21	LIGHT STANDARD OUTLET CONNECTED TO PANEL "S", CCT. N° 21 SEE SPEC'S ("PANEL "LS" LOCATED IN BASEMENT - PUBLIC SAFETY BLDG.)

GENERAL REVISIONS OCT. 29/65

⚠ OUTDOOR LIGHTING REVISED MAY 5/65 H.Z.

No.	PARTICULARS	DATE	BY
REVISIONS			

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL DESIGN BY: S.F.T. & P.O.

PRINTING DATE
1 DEC. 1964

DRAWN BY H.B.C.

SCALE: 1"=20'-0"

Drawings and specifications, as instruments of service are the property of the architects, the Copyright in the same being reserved to them. No reproduction may be made without the permission of the architects, and when made, must bear their names. All prints to be returned.

The contractor is to verify dimensions and data noted herein with conditions on the site and is held responsible for reporting any discrepancy to the architects for adjustment.

This drawing is not to be used for building purposes until countersigned by: V.S. Buchala

LIBLING MICHENER & ASSOCIATES ARCHITECTS
360 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 2-4681
GREEN BLANKSTEIN RUSSELL ASSOCIATES
Mechanical & Electrical Consultants Telephone SP 4-3566

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

TITLE SITE PLAN
ELECTRICAL

SHEET NO. 6020-E-1

NOTES

1.	EXACT LOCATIONS OF ALL UNDERFLOOR DUCTS SHOWN ON THIS SHEET SHALL BE AS APPROVED ON SHOP DRAWINGS AT LATER DATE.
2.	IMPORTANT NOTE ALL CONDUITS SHALL BE COMPLETELY EMBEDDED IN GROUND FLOOR SLAB (NO EXPOSED CONDUIT IN BASEMENT AREA) THROUGHOUT ENTIRE LENGTH OF CONDUIT RUNS.
3.	TERMINATE CONDUIT UP 4'-0" ABOVE FIN. BASEMENT FLOOR. LABEL CONDUIT "CITY HALL TELEPHONE RACEWAY".
4.	ELECTRICAL SUBCONTRACTOR SHALL SUPPLY & INSTALL ELECTRIC AUTOMATIC ALTERNATORS FOR MOTORS P7 & P8 AND FOR P13 & P14 ADJACENT TO THE CONTROL (TYPE "C") FOR THESE MOTORS. SEE SPEC'S. "MOTOR SCHEDULE".
5	SEE NOTE 3 ON SHEET E-3.

SYMBOLS - SEE SPECS

K	5L KEY TYPE TELEPHONE OUTLET, TRIANGLE CAT. #411F, FLOOR PEDESTAL, BRUSHED CHROME FINISH, COMPLETE WITH ONE INCH BUSHED OPENING AND 1¼ INCH CHASE NIPPLE.
	REGULAR & 2L KEY TELEPHONE OUTLET, TRIANGLE CAT. #400F, FLOOR PEDESTAL, BRUSHED CHROME FINISH, COMPLETE WITH 3/4 INCH BUSHED OPENING AND 1¼ INCH CHASE NIPPLE.
J	TELEPHONE OUTLET WITH PLUG-IN JACK, TRIANGLE CAT. #400F, FLOOR PEDESTAL, BRUSHED CHROME FINISH, COMPLETE WITH ½ INCH HOLE FOR INSTALLATION OF JACK BY M.T.S., AND 1¼ INCH CHASE NIPPLE.
	WALL OUTLET FOR TELEPHONE - REFER TO SPECIFICATION CLAUSES "COVER PLATES" AND "TELEPHONE & INTER-TELEPHONE SYSTEM".
J	WALL OUTLET FOR TELEPHONE - SAME AS ABOVE EXCEPTING THE PLATE WILL BE FITTED WITH A TELEPHONE JACK BY THE M.T.S.
	CONVENIENCE OUTLET, TRIANGLE CAT. #201F, FLOOR PEDESTAL, BRUSHED CHROME FINISH COMPLETE WITH 1¼ INCH CHASE NIPPLE AND FITTED WITH DUPLEX CONVENIENCE RECEPTACLE AS SPECIFIED IN CLAUSE "CONVENIENCE OUTLETS", SUB-CLAUSE (a) "WALL MOUNTED DUPLEX CONVENIENCE RECEPTACLES".
NOTE:	ACTUAL LOCATION OF FLOOR PEDESTAL OUTLETS SHALL BE POSITIONED ACCORDING TO THE DOT SHOWN ON THE DUCT.

REVISIONS

ROOMS B-6 & B-36 - ADDED TELEPHONE OUTLET.
ROOM B-7 - ADDED TEL. OUTLET. ADDED TEL. SYSTEM RELAY CABINET & RELATED TEL. CONDUITS.
ROOM B-11 - RELOCATED & EXTENDED TYPE "D" DUCT.
- RELOCATED WALL CLOCK.
- ADDED TEL. & COM. OUTLETS.
ROOM B-16 - ADDED & RELOCATED CONV. OUTLETS IN BOOTH.
ROOM B-17 - RELOCATED TEL., SIGNAL & COM. OUTLETS.
ROOM B-23 - ADDED TWO OUTLETS - VENDING MACHINES.
ROOM B-25 - RELOCATED TEL. CONDUITS TO ROOM B-7.
ROOM B-31 - ADDED WALL CLOCK.
- ADDED TEL. OUTLET.
ROOM B-32 - ADDED CONV. OUTLET.
- ADDED PLYWOOD RELAY PANEL FOR M.T.S.
- ADDED 3-1½"C TO TRAFFIC CONTROLLER.
ROOMS B-33, B-34 & B-38 - ADDED TEL. & CONV. OUTLET.
ROOM B-35 - ADDED CONV. OUTLET.
ROOM B-37 & B-39 - ADDED TEL. & CONV. OUTLETS.
- RELOCATED TYPE "D" DUCT.
ROOM B-51 - ADDED WALL CLOCK
- ADDED TEL. & CONV. OUTLET.
DATE: MAY 25'65

GENERAL REVISIONS OCT. 29/65

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL DESIGN BY E.F.T. & L.W.

PRINTING DATE
1 DEC. 1964

DRAWN BY H.B.C.

SCALE: 1/8"=1'-0"

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The contractor is to verify dimensions and data noted herein with conditions on the site and is held responsible for reporting any discrepancy to the architects for adjustment.

This drawing is not to be used for building purposes until countersigned by:

V. S. Buckler

LIBLING MICHENER & ASSOCIATES ARCHITECTS
868 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 2-4481
GREEN BLANKSTEIN RUSSELL ASSOCIATES
Mechanical & Electrical Consultants Telephone SP 4-3546

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

TITLE BASEMENT FLOOR PLAN
ELECTRICAL

SHEET NO. 6020-E-4

NOTES

1.	EXACT LOCATIONS OF ALL UNDERFLOOR DUCTS SHOWN ON THIS SHEET SHALL BE AS APPROVED ON SHOP DRAWINGS AT LATER DATE.
2.	IMPORTANT NOTE. ALL CONDUITS SHALL BE COMPLETELY EMBEDDED IN GROUND FLOOR SLAB (NO EXPOSED CONDUIT IN BASEMENT AREA) THROUGHOUT ENTIRE LENGTH OF CONDUIT RUNS.
3.	TERMINATE CONDUIT UP 4'-0" ABOVE FIN. BASEMENT FLOOR. LABEL CONDUIT "CITY HALL TELEPHONE RACEWAY".
4.	ELECTRICAL SUBCONTRACTOR SHALL SUPPLY & INSTALL ELECTRIC AUTOMATIC ALTERNATORS FOR MOTORS P7 & P8 AND FOR P13 & P14 ADJACENT TO THE CONTROL (TYPE "C") FOR THESE MOTORS. SEE SPEC'S. "MOTOR SCHEDULE".
5.	SEE NOTE 3 ON SHEET E-3.

SYMBOLS - SEE SPECS.

—◉ K	5L KEY TYPE TELEPHONE OUTLET, TRIANGLE CAT. #411F, FLOOR PEDESTAL, BRUSHED CHROME FINISH, COMPLETE WITH ONE INCH BUSHED OPENING AND 1¼ INCH CHASE NIPPLE.
—◉	REGULAR & 2L KEY TELEPHONE OUTLET, TRIANGLE CAT. #400F, FLOOR PEDESTAL, BRUSHED CHROME FINISH, COMPLETE WITH 3/4 INCH BUSHED OPENING AND 1¼ INCH CHASE NIPPLE.
—◉ J	TELEPHONE OUTLET WITH PLUG-IN JACK, TRIANGLE CAT. #400F, FLOOR PEDESTAL, BRUSHED CHROME FINISH, COMPLETE WITH ½ INCH HOLE FOR INSTALLATION OF JACK BY M.T.S., AND 1¼ INCH CHASE NIPPLE.
◀	WALL OUTLET FOR TELEPHONE - REFER TO SPECIFICATION CLAUSES "COVER PLATES" AND "TELEPHONE & INTER-TELEPHONE SYSTEM".
◀J	WALL OUTLET FOR TELEPHONE - SAME AS ABOVE EXCEPTING THE PLATE WILL BE FITTED WITH A TELEPHONE JACK BY THE M.T.S.
—⊙	CONVENIENCE OUTLET, TRIANGLE CAT. #201F, FLOOR PEDESTAL, BRUSHED CHROME FINISH COMPLETE WITH 1¼ INCH CHASE NIPPLE AND FITTED WITH DUPLEX CONVENIENCE RECEPTACLE AS SPECIFIED IN CLAUSE "CONVENIENCE OUTLETS", SUB-CLAUSE (a) "WALL MOUNTED DUPLEX CONVENIENCE RECEPTACLES".

NOTE: ACTUAL LOCATION OF FLOOR PEDESTAL OUTLETS SHALL BE POSITIONED ACCORDING TO THE DOT SHOWN ON THE DUCT.

SYMBOL SCHEDULE
I.C. AND PAGING SYSTEMS

Ⓢ	CEILING MTD. LOUDSPEAKER OUTLET. LOWELL MFG. MODEL ALS-A BAFFLE, C/W LOWELL XCP84 BACK-BOX OR EQUAL, (4" DEPTH) FLUSH MTD. IN FIN. CEILING, SURFACE MTD. IN AREAS WITHOUT FINISHED CEILINGS.
⊢Ⓢ	WALL MTD. LOUDSPEAKER OUTLET. LOWELL MFG. MODEL FHS-A WALL GRILLE C/W LOWELL P68X BACK-BOX, (4" DEPTH) FLUSH MOUNTED.
Ⓟ	CEILING MTD. PAGING SYSTEM LOUDSPEAKER OUTLET. SAME COMPONENTS AND MOUNTING METHOD AS DESCRIBED FOR SYMBOL Ⓢ
⊢Ⓦ	WALL MTD. INTER-COMMUNICATION STATION OUTLET. 10" X 7 3/4" FLUSH MOUNTED BOX. REFER TO DETAIL ON DRAWING UP 4-6"
—Ⓜ	FLOOR MTD. MICROPHONE OUTLET (COURTROOM PAGING SYSTEM) PEDESTAL FITTING CONNECTED TO "SIGNAL" CELL OF UNDERFLOOR DUCT, TRIANGLE No 400F PEDESTAL C/W ONE INCH BUSHED OPENING ON ONE SIDE. REFER TO CLAUSE KK-B.73 "QUANTITIES OF UNDERFLOOR RACEWAY SYSTEM SERVICE FITTINGS."
—◪	INTERCOMMUNICATION SYSTEM FLOOR MOUNTED OUTLET. PEDESTAL FITTING CONNECTED TO "SIGNAL" CELL OF UNDERFLOOR DUCT, TRIANGLE CAT. #400F PEDESTAL C/W ONE INCH BUSHED OPENING ON ONE SIDE. REFER TO CLAUSE KK-B.73 "QUANTITIES OF U/F RACEWAY SYSTEM SERVICE FITTINGS".

NOTES

A #14 PULL-IN WIRE SHALL BE INSTALLED IN ALL CONDUIT WORK. LOUDSPEAKERS, INTERCOMMUNICATION STATIONS, PAGING EQUIPMENT, AMPLIFIERS AND ALL CONDUCTOR AND CABLE WORK ASSOCIATED THEREWITH WILL BE SUPPLIED AND INSTALLED BY THE OWNERS.

ALL CONDUIT SHALL BE 1/2" I.D. UNLESS OTHERWISE NOTED ON THE DRAWINGS.

REVISIONS

ROOMS B-6 & B-36 - ADDED TELEPHONE OUTLET.
ROOM B-7 - ADDED TEL. OUTLET, ADDED TEL. SYSTEM RELAY CABINET & RELATED TEL. CONDUITS.
ROOM B-11 - RELOCATED & EXTENDED TYPE "D" DUCT. - RELOCATED WALL CLOCK. - ADDED TEL. & COM. OUTLETS.
ROOM B-16 - ADDED & RELOCATED CONV. OUTLETS IN BOOTH.
ROOM B-17 - RELOCATED TEL., SIGNAL & COM. OUTLETS.
ROOM B-29 - ADDED TWO OUTLETS - VENDING MACHINES.
ROOM B-25 - RELOCATED TEL. CONDUITS TO ROOM B-7.
ROOM B-31 - ADDED WALL CLOCK. - ADDED TEL. OUTLET.
ROOM B-32 - ADDED CONV. OUTLET. - ADDED PLYWOOD RELAY PANEL FOR M.T.S. - ADDED 3-1½"C TO TRAFFIC CONTROLLER.
ROOMS B-33, B-34 & B-38 - ADDED TEL. & CONV. OUTLET.
ROOM B-35 - ADDED CONV. OUTLET.
ROOM B-37 & B-39 - ADDED TEL. & CONV. OUTLETS. - RELOCATED TYPE "D" DUCT.
ROOM B-51 - ADDED WALL CLOCK - ADDED TEL. & CONV. OUTLET.
DATED - MAY 25 '65

GENERAL REVISIONS OCT. 29/65

I.C. & PAGING SYSTEMS NOV. 15/65

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL DESIGN BY E.F.T. & L.W.

PRINTING DATE [redacted]
1 DEC. 1964

DRAWN BY H.B.C.
SCALE: 1/8" = 1'-0"

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LIBLING MICHENER & ASSOCIATES ARCHITECTS
563 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 2-4491
GREEN BLANKSTEIN RUSSELL ASSOCIATES
Mechanical & Electrical Consultants Telephone SP 4-3546

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG, MANITOBA

I.C. & PAGING SYSTEMS

BASEMENT FLOOR PLAN
TITLE ELECTRICAL
SHEET NO. 6020-E-4

NEW SYMBOLS

INCANDESCENT RECESSED STEP LIGHT FIXTURE 150 WATT, EXTENDED SERVICE LAMP, DIRECTIONAL, HI-STRESS IMPACT RESISTANT LENS DESIGNED TO DISTRIBUTE A MAXIMUM COMPONENT TOWARD THE HORIZONTAL SURFACES TO BE ILLUMINATED. 16 GAUGE STEEL SANDBLASTED HOUSING FINISHED WHITE INSIDE, ASPHALT FINISH OUTSIDE. FACE PLATE SHALL BE WEATHERPROOF HAVING ANODIZED BRONZE FINISH. STANDARD SCREW ATTACHMENTS. LUMITRONIC SPECIAL "MK" SERIES 150 WATT UNITS.

WIRE & CONNECT UNITS TO PANEL "LS" CIRCUIT AS SHOWN ON DRAWING WITH #10 A.W.G. TYPE T.W.N. CONDUCTORS INSTALLED IN RIGID STEEL CONDUIT BURIED 3'-6" BELOW FINISHED GRADE. REFER TO TYPICAL INSTALLATION DETAILS OF STEP LIGHT FIXTURES THIS SHEET FOR MOUNTING HEIGHTS, ETC.

NORTH

PARKADE BLDG.

TYPICAL INSTALLATION DETAILS OF STEP LIGHT FIXTURES
N.T.S.

SECTION
N.T.S.

ELEVATION
N.T.S.

FIXTURE SIZE (1'-0")

FIXTURE SIZE (1'-0")

PAVING LEVEL

LS1 LS2 LS3 LS4 LS5 LS6 LS7 LS8 LS9 LS10

3/4" x 3'-0" KEYED BRONZE TO ANCHOR W/FA. HYDRO W/S WITH POTENTIAL SERVICE

U/G SERVICE ENTRANCE SPEC. BY WINNIPEG HYDRO

NOTE
WIRE & CONNECT ALL DRAIN PIPE HEATING SYSTEM CONNECTION BOXES SHOWN ON THIS SHEET TO PANEL "H" LOCATED IN BASE, PUBLIC SAFETY BLDG.

#1 #2 #3 #4 #5

NOTE
EXACT LOCATIONS OF S.P. LIGHT FIXTURES SHOWN ON THIS SHEET SHALL BE AS DIRECTED BY THE ARCHITECT.

PUBLIC SAFETY BUILDING

U/G SERVICE DUCT ENTRANCE FOR CITY SIGNALS

U/G SERVICE DUCT ENTRANCE FOR M.T.S.

PROPOSED NEW CITY SIGNAL MANHOLE.

APPROX. ROUTE OF NEW U/G CITY SIGNAL DUCT LINE.

APPROX. ROUTE OF TUNNEL

EXISTING M.T.S. MANHOLE #9128

EXISTING M.T.S DUCT TO M.T.S. MANHOLE #9094

16'-0"

15'-0"

OFFICE TOWER

COUNCIL CHAMBER

SYMBOL SCHEDULE

SYMBOL	DESCRIPTION	SPECIFICATION REFERENCE
S10	TYPE "A" FLUORESCENT LIGHTING FIXTURE CONNECTED TO PANEL "S", CCT. N° 10, OPERATED BY WALL SWITCH AS SHOWN ON DRAWING.	LIGHTING FIXTURES
P19	TYPE "P" INCANDESCENT LIGHTING FIXTURE CONNECTED TO PANEL "P", CCT. N° 19, OPERATED BY WALL SWITCH AS SHOWN ON DRAWING.	
	WALL MOUNTED INCANDESCENT LIGHTING FIXTURE.	
FM	TYPE "M" FLUORESCENT LIGHTING FIXTURE CONNECTED TO PANEL "P", CCT. N° 14	
	DAY / NIGHT LIGHTING FIXTURE.	
E	WALL MOUNTED EXIT LIGHT FIXTURE. (TYPE "E")	
	EXIT LIGHT FIXTURE C/W DIRECTIONAL ARROW.	
	SINGLE POLE WALL SWITCH.	SWITCHES
3	THREE-WAY WALL SWITCH.	
4	FOUR-WAY WALL SWITCH.	
PL	WALL SWITCH C/W PILOT LIGHT.	
	WALL SWITCHES GANG MOUNTED.	
	DOUBLE POLE SINGLE THROW WALL SWITCH.	SPECIAL SWITCHES
D	DOUBLE POLE DOUBLE THROW WALL SWITCH - 2 POSITION.	
K	KEY OPERATED SINGLE POLE WALL SWITCH.	
K	KEY OPERATED DOUBLE POLE DOUBLE THROW WALL SWITCH - 2 POSITION.	
D	SINGLE POLE DOUBLE THROW WALL SWITCH - 2 POSITION.	
S	DUCT TYPE AUTOMATIC DETECTOR	SMOKE DETECTION SYSTEM
C21	WALL MOUNTED DUPLEX CONVENIENCE RECEPTACLE, CONNECTED TO PANEL "C" CCT N°21	CONVENIENCE OUTLETS
	WALL MOUNTED DUPLEX TWO CIRCUIT (SPLIT) CONVENIENCE RECEPTACLE.	
	WALL MOUNTED SINGLE CONVENIENCE RECEPTACLE - 600W. 1Ø.	
	DUPLEX CONVENIENCE RECEPTACLE - FLOOR PEDESTAL.	
	WELDER PLUG RECEPTACLE OUTLET.	WELDER OUTLETS
	TELEPHONE OUTLET - WALL MOUNTED.	TELEPHONE & INTER-TELEPHONE SYSTEM
	TELEPHONE OUTLET - FLOOR PEDESTAL.	
	INTER-TELEPHONE OUTLET - WALL MOUNTED	
	INTER-TELEPHONE OUTLET - FLOOR PEDESTAL.	
JACK	TELEPHONE OUTLET - WALL MOUNTED C/W JACK.	
F1	MANUAL FIRE ALARM STATION - WALL MOUNTED UP 5'-0" - ZONE 1.	FIRE ALARM SYSTEM
	FIRE ALARM GENERAL ALARM BELL - WALL MTD. 1'-0" BELOW FIN. CEILING.	
F29 A	AUTOMATIC FIRE ALARM STATION - TYPE "A", ZONE 29.	
	WALL MOUNTED FIRE ALARM REMOTE INDICATING LIGHT, FOR AUTOMATIC STATION.	
	I.C. OUTLET - WALL MOUNTED	EMPTY RACEWAY FOR SIGNAL SYSTEM
	I.C. OUTLET - FLOOR PEDESTAL	
A	WALL MOUNTED CLOCK - TYPE "A"	CLOCK SYSTEM
	MASTER CLOCK - WALL MOUNTED	
	UNDER FLOOR RACEWAY SYSTEM DUCT. (TYPE AS NOTED ON DRAWINGS)	UNDER-FLOOR RACEWAY SYSTEMS
	UNDER FLOOR RACEWAY SYSTEM JUNCTION BOX.	
F1	MOTOR N° F1	MOTOR SCHEDULE
M1 F1	MOTOR CONTROL TYPE "M1" FOR MOTOR F1.	MOTOR CONTROL DATA
	BUZZER AS NOTED ON DRAWINGS.	
E	EMERGENCY D.C. LIGHTING UNIT BATTERY BANK.	EMERGENCY D.C. LIGHTING UNITS
E1	EMERGENCY D.C. LIGHTING FIXTURE TYPE N°1.	
1-A	PUSHBUTTON CONNECTED TO ANNUNCIATOR PANEL "A", INDICATOR N°1.	JAIL ALARM SYSTEM
H1	ALARM HORN N°1.	
H1	DRAIN PIPE HEATING SYSTEM CONNECTION BOX, TYPE #1.	DRAIN PIPE HEATING
	PANELBOARD MOUNTED FLUSH OR SURFACE AS SHOWN ON DRAWINGS & FEEDING DESIGNATED ARROW.	
1	DISTRIBUTION ITEM N°1	ELECTRICAL DATA
N.I.C.	NOT IN CONTRACT.	
N.T.S.	NOT TO SCALE	
P1	PUSHBUTTON N°1.	HOSPITAL STAIRWAY SIGNAL SYSTEM.
SP1	SPECIAL OUTLET N°1.	

SYMBOL SCHEDULE CONTINUED

	WEATHERPROOF DUPLEX CONVENIENCE RECEPTACLE. SEE SPECS. "CONVENIENCE OUTLETS"
S21	LIGHT STANDARD OUTLET CONNECTED TO PANEL "S", CCT. N° 21 SEE SPEC'S ("PANEL "LS" LOCATED IN BASEMENT - PUBLIC SAFETY BLDG.)

GENERAL REVISIONS OCT. 29/65

⚠ OUTDOOR LIGHTING REVISED MAY 5/65 H.Z.

No.	PARTICULARS	DATE	BY
REVISIONS			

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL DESIGN BY: S.F.T. & P.O.

PRINTING DATE
1 DEC. 1964

DRAWN BY H.B.C.

SCALE: 1"=20'-0"

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360 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 2-4681
GREEN BLANKSTEIN RUSSELL ASSOCIATES
Mechanical & Electrical Consultants Telephone SP 4-3566

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

TITLE SITE PLAN
ELECTRICAL

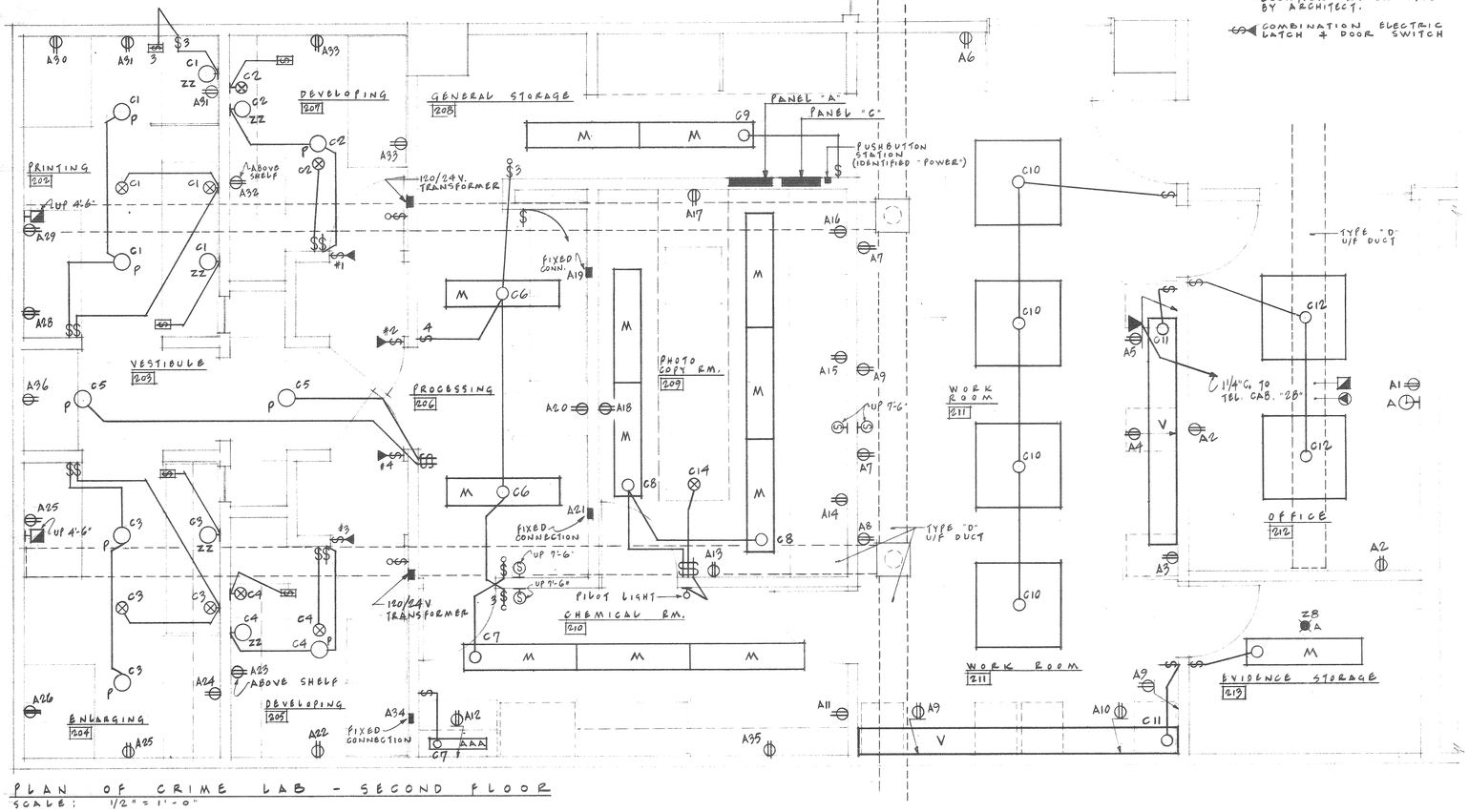
SHEET NO. 6020-E-1

191 Princess Street
ADDRESS
6020 E-21
PROJECT NO SHEET NO
Electrical-Crime Lab
DESCRIPTION
Floor Plans

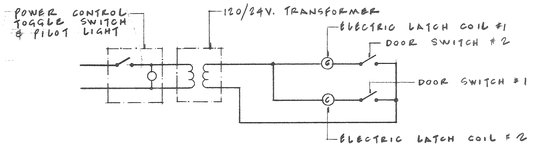
NEW SYMBOLS

FOOT SWITCH - EXACT LOCATION AS DIRECTED BY ARCHITECT.

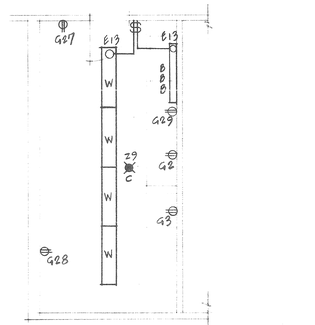
COMBINATION ELECTRIC LATCH & DOOR SWITCH



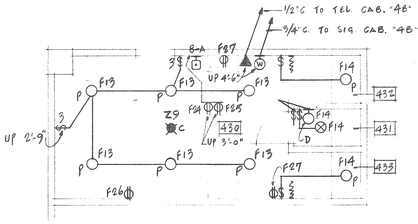
PLAN OF CRIME LAB - SECOND FLOOR
SCALE: 1/2" = 1'-0"



ELECTRIC DOOR-INTERLOCKING SCHEMATIC DIAGRAM
N.T.S.



PLAN - CRIME LAB STORAGE RM. 227
SCALE: 1/4" = 1'-0"



PLAN - PHOTOGRAPHY & FINGERPRINTING RM. 430
SCALE: 1/4" = 1'-0"

GENERAL NOTES

No.	PARTICULARS	DATE	BY
	REVISIONS		

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DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL L.P.W.

PRINTING DATE
9 DEC. 1965

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K.J. Buchler

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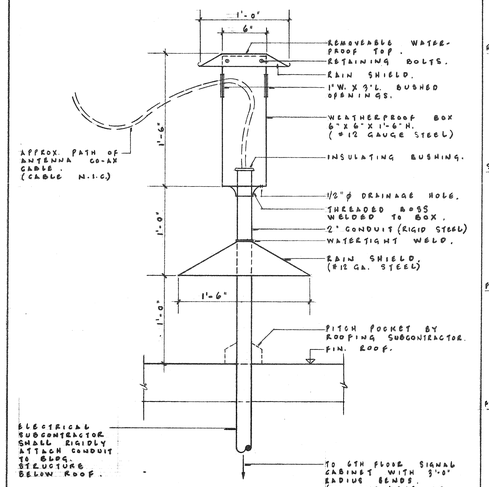
GREEN BLANKSTEIN RUSSELL ASSOCIATES
Mechanical & Electrical Consultants Telephone SP 4-3546

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

ELECTRICAL
TITLE CRIME LAB FLOOR PLANS
SHEET NO. 6020 — E-21

W.J.D. 1784

151 Princess Street
6020 E20
Telephone & Signal Systems
Riser Diagram Electrical

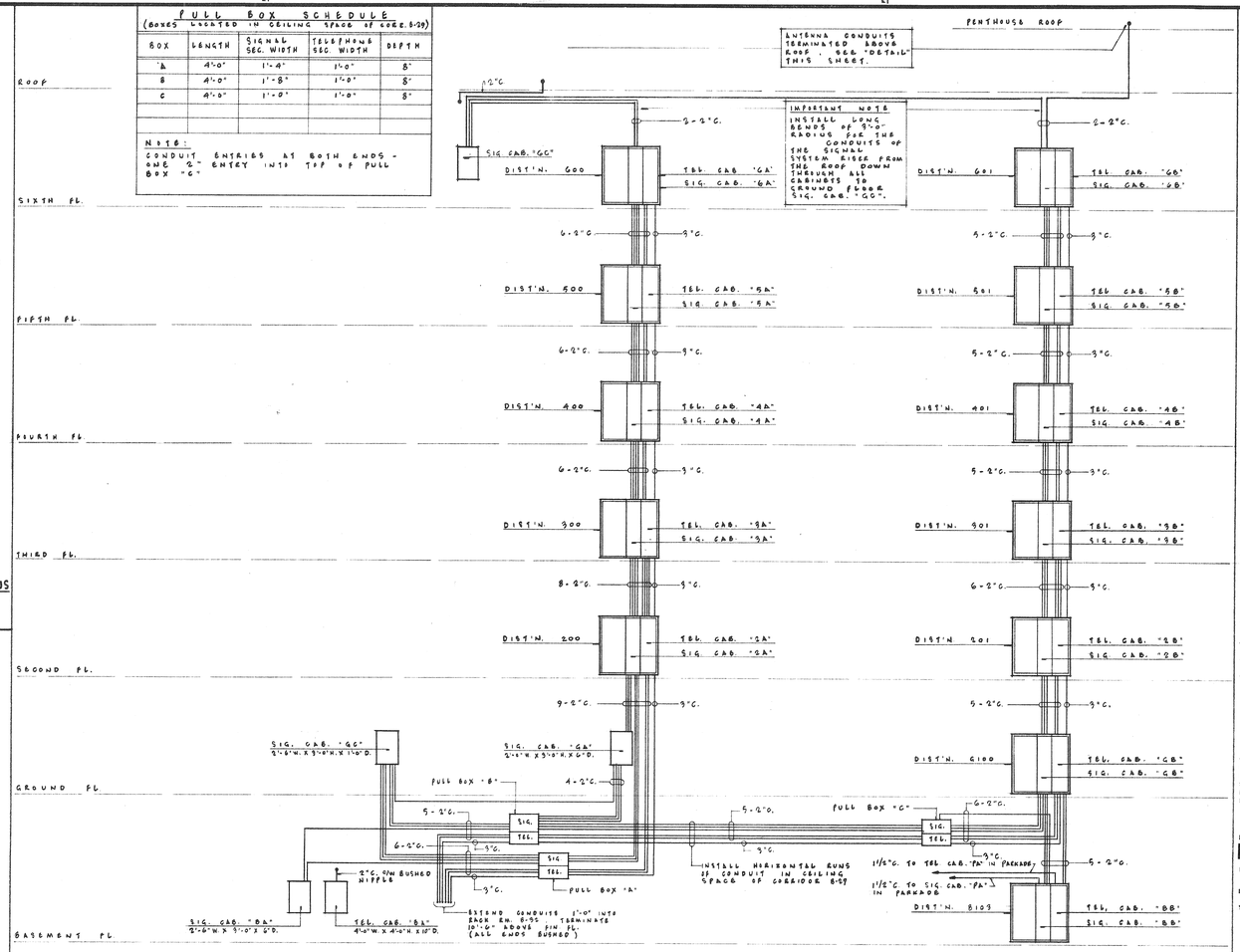


DETAIL OF ANTENNA CONDUIT TERMINATIONS ABOVE ROOF
N.T.S.

FULL BOX SCHEDULE
(BOXES LOCATED IN CEILING SPACE OF CORR. 8-09)

BOX	LENGTH	SIGNAL SEC. WIDTH	TELEPHONE SEC. WIDTH	DEPTH
A	4'-0"	1'-4"	1'-0"	8"
B	4'-0"	1'-8"	1'-0"	8"
C	4'-0"	1'-0"	1'-0"	8"

NOTE:
CONDUIT ENTRIES AT BOTH ENDS - ENTRY INTO TOP OF FULL BOX "C"



TELEPHONE & SIGNAL SYSTEMS RISER DIAGRAM
N.T.S.

GENERAL REVISIONS OCT. 29/65

No.	PARTICULARS	DATE	BY
	REVISIONS		

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL DESIGN BY E.F.T.

PRINTING DATE
1 DEC. 1964

DRAWN BY H.E.C.

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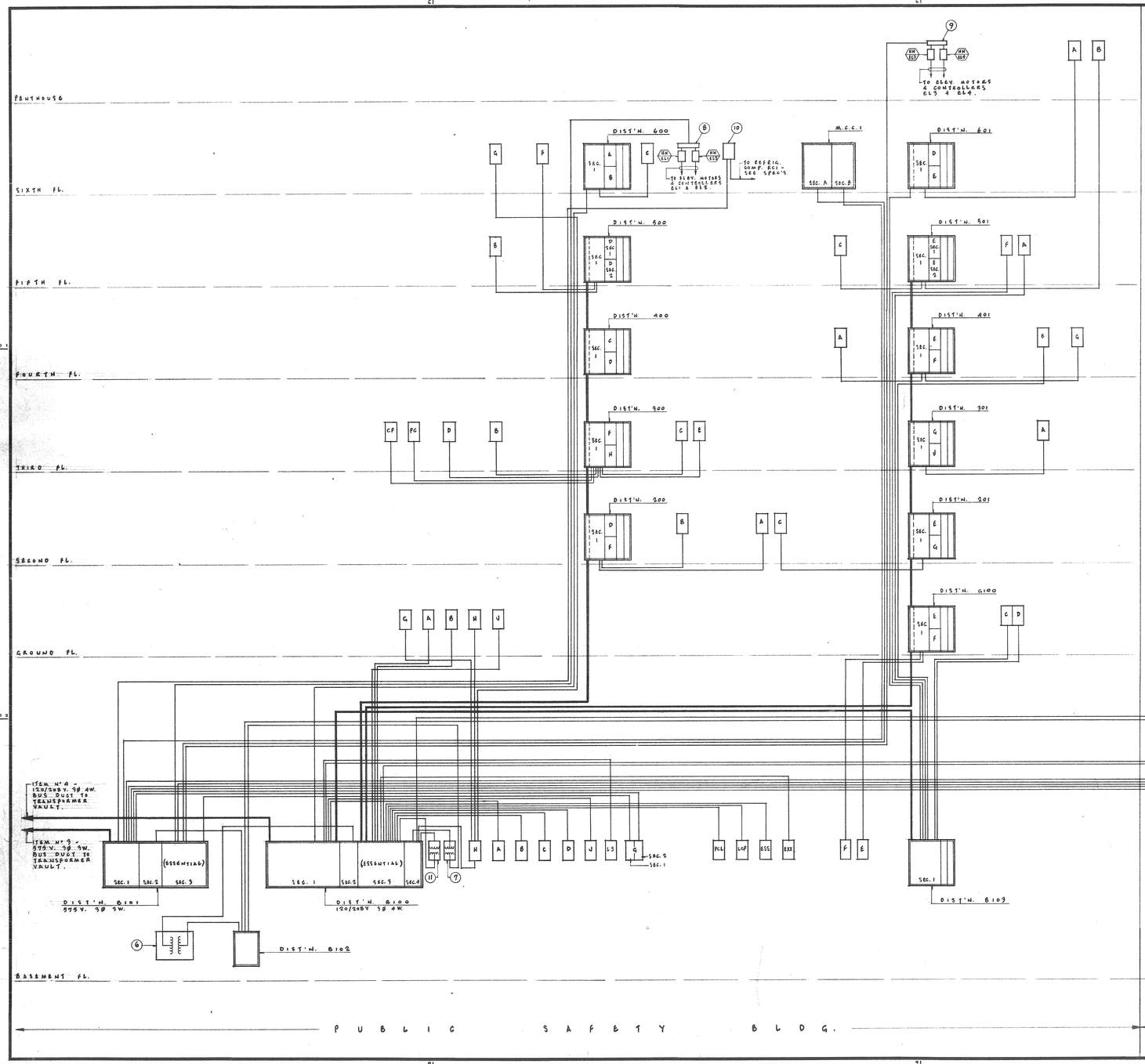
Mechanical & Electrical Consultants Telephone SP 4-3566

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

TITLE TELEPHONE & SIGNAL SYSTEMS RISER DIAGRAM ELECTRICAL

SHEET NO. 6020—E-20

151 Princess Street
address
project no. E19
sheet no.
Main Distribution System
description
Electrical



NOTES

1. REFER TO SPEC'N. CLAUSE "DISTRIBUTION SCHEDULE" FOR: DESCRIPTION OF ALL COMPONENTS WITHIN ALL DISTRIBUTIONS. SIZE AND TYPES OF ALL MAIN FEEDERS AND SUB-FEEDERS.
2. REFER TO SPEC'N. CLAUSE "ELECTRICAL DATA" FOR DESCRIPTION OF ALL APPARATUS IDENTIFIED BY AN ITEM NUMBER.
3. REFER TO SPEC'N. CLAUSE "MAIN DISTRIBUTION SYSTEM" FOR GENERAL CONSTRUCTION AND OTHER GENERAL INFORMATION.
4. REFER TO SPEC'N. CLAUSE "PANELBOARD SCHEDULE" FOR RATINGS & COMPONENTS WITHIN ALL PANELBOARDS.
5. REFER TO SPEC'N. CLAUSE "DIESEL-ELECTRIC GENERATOR" FOR DESCRIPTION OF DIESEL-ELECTRIC GENERATOR & CONTROL PANEL.
6. REFER TO SPEC'N. CLAUSE "PROPANE-ELECTRIC GENERATOR SYSTEM FOR DESCRIPTION OF PROPANE-ELECTRIC GENERATOR & CONTROL PANEL AND REQUIREMENTS FOR RE-LOCATION.

No.	PARTICULARS	DATE	BY

REVISIONS

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DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL DESIGN BY E.F.T.

PRINTING DATE
[redacted]
1 DEC. 1964

DRAWN BY H.E.C

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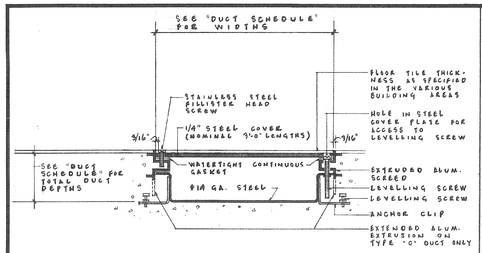
Mechanical & Electrical Consultants Telephone SP 4-3546

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

TITLE MAIN DISTRIBUTION SYSTEM ELECTRICAL
SHEET NO. 6020 — E-19

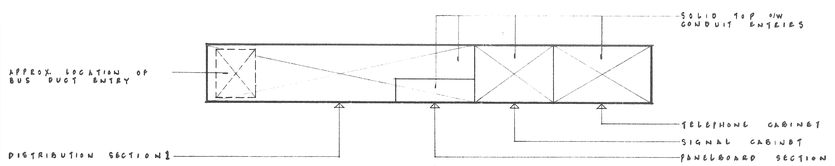
W.J.D. 175H



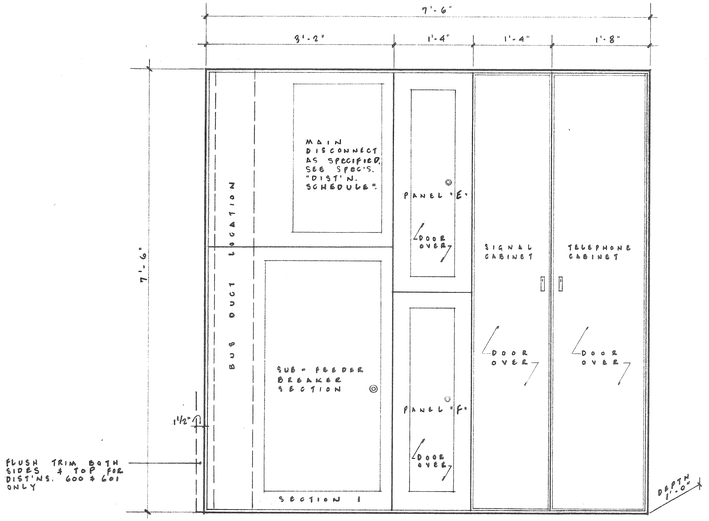
DETAIL OF DUCT TYPES A, B & C
N.T.S.

DUCT SCHEDULE

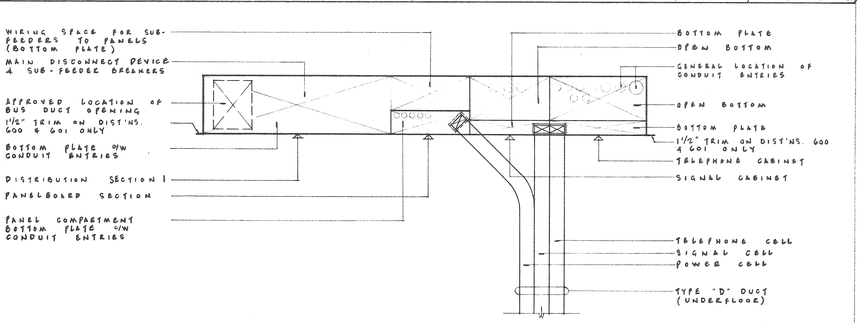
DUCT TYPE	DEPTH	WIDTH
"A"	2 1/2" (ADJUSTABLE FROM 2 5/8" TO 2 3/4")	12"
"B"	2 1/2" (ADJUSTABLE FROM 2 5/8" TO 2 3/4")	24" c/w CENTRE BARRIER
"C"	8" (ADJUSTABLE FROM 7 3/4" TO 8 1/4")	24"



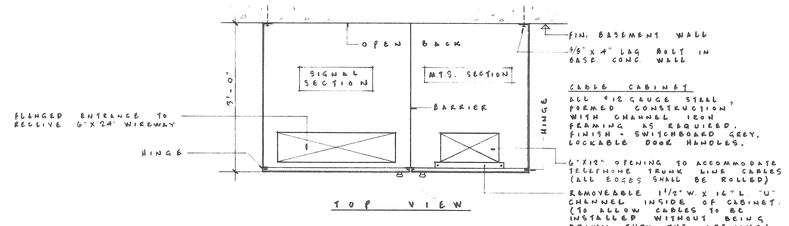
TYPICAL DISTRIBUTION
(TOP ARRANGEMENT) N.T.S.



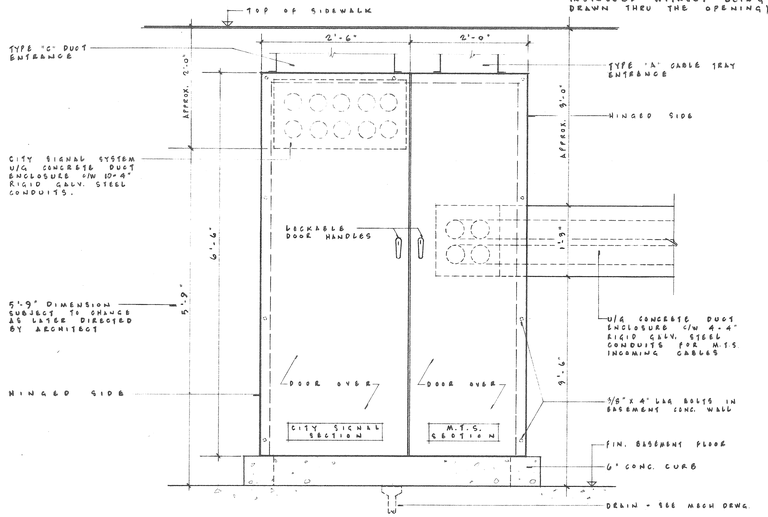
DISTRIBUTION G100 (N.T.S.)
(TYPICAL FOR DISTN'S. 200, 201, 300, 301, 400, 401, 500, 501, 600 & 601)
(TYPICAL FOR DISTN. B103, EXCEPT SEC. I SHALL OCCUPY SPACE SHOWN FOR MAIN DISC., SUB-FEED. BKR. & PANEL UNITS)



TYPICAL DISTRIBUTION
(BOTTOM ARRANGEMENT) N.T.S.
(FRONT ACCESS ONLY)

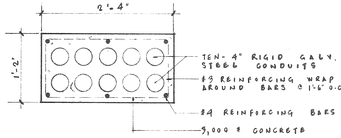


TOP VIEW

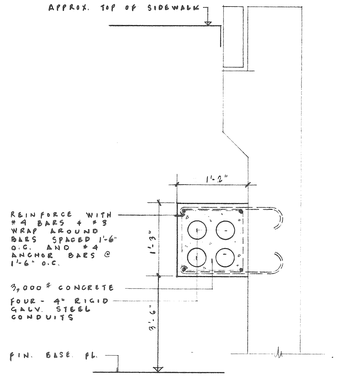


FRONT ELEVATION
N.T.S.

DETAILS OF CABLE CABINET
(LOCATED IN RACK ROOM - BASEMENT)



SECTION (E-19)
N.T.S.



SECTION (2 E-19)
N.T.S.

NO.	PARTICULARS	DATE	BY
REVISIONS			

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STRUCTURE
MECHANICAL
ELECTRICAL DESIGN BY E.F.T.

PRINTING DATE
1 DEC. 1964

DRAWN BY H.E.G.
SCALE: AS SHOWN

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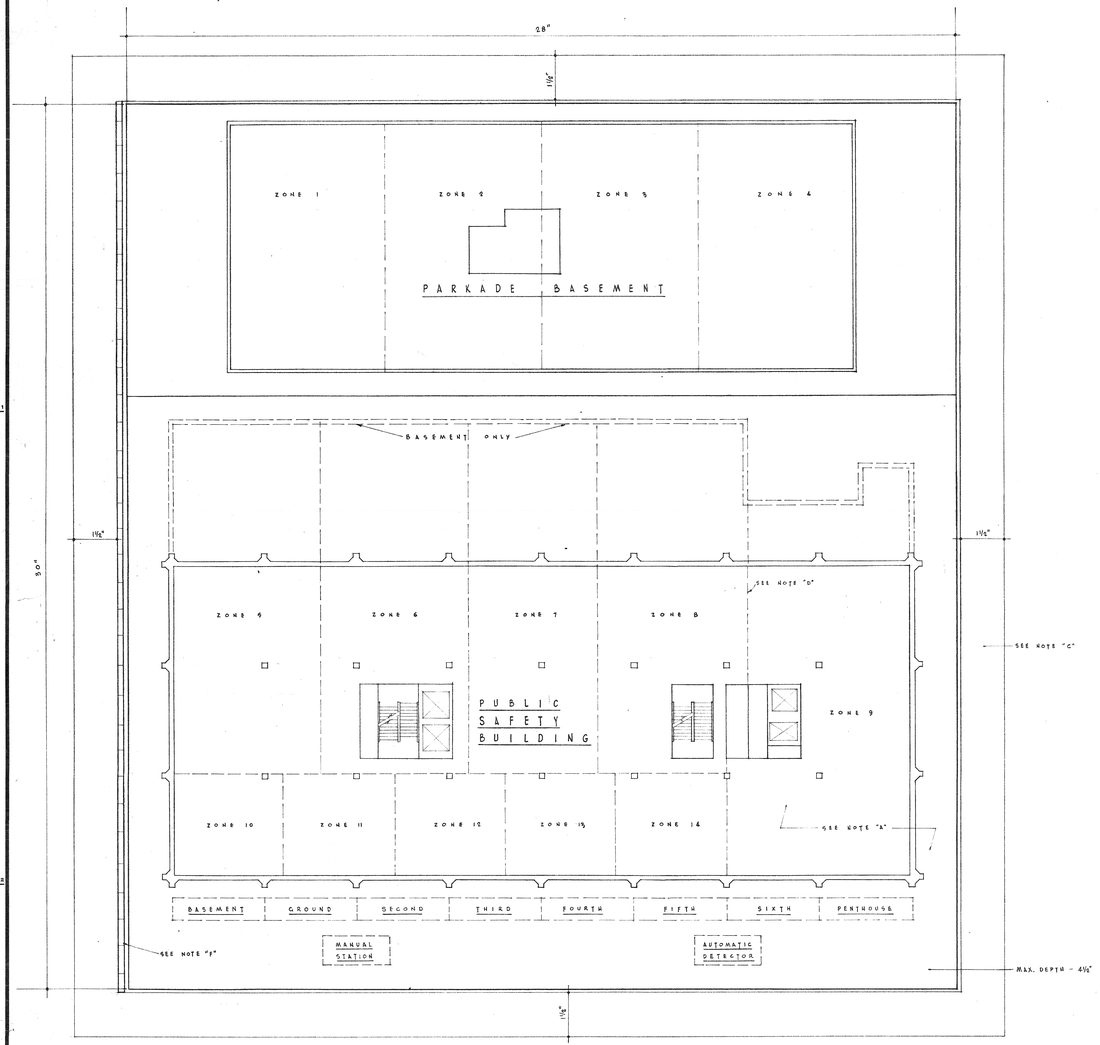
PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

TITLE ELECTRICAL DETAILS
SHEET NO. 6020 — E - 18

151 Princess Street
CONTRACT NO. 6020 E18
ELECTRICAL Details
DRAWING

151 Princess Street
Winnipeg 2
Job No. 6020
Sheet No. E-17
Penthouse Plans Details
Electrical



TYPICAL FIRE ALARM ANNUNCIATOR
(EXCEPT WHERE SPECIFICALLY INDICATED) N.T.S.

NOTES — FIRE ALARM ANNUNCIATORS

A. TRANSLUCENT SCREEN WITH BUILDING OUTLINES ETCHED ON REAR OF SCREEN. EACH ZONE SEPARATELY ILLUMINATED UNDER ALARM. SPECIFIC FLOOR DESIGNATIONS SHALL BE ETCHED AND EACH ILLUMINATED WITHIN THE DOTTED LINES ON ALARM.

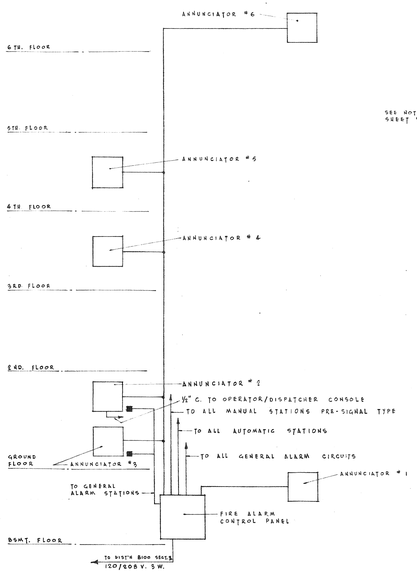
B. NUMERICAL ZONE INDICATIONS FOR WIRING PURPOSE ONLY - DO NOT ETCH ON SCREEN. ONLY WORDS UNDERLINED SHALL BE ETCHED ON REAR OF SCREEN.

C. TRIM FINISHES SHALL BE:
NO 1. ANNUNCIATOR STAINLESS STEEL FABRICATED NATURAL FINISH
NO 2. ANNUNCIATOR CODE STEEL FIRE RED
NO 3. ANNUNCIATOR CODE STEEL FIRE RED
NO 4. ANNUNCIATOR CODE STEEL FIRE RED
NO 5. ANNUNCIATOR CODE STEEL FIRE RED
NO 6. ANNUNCIATOR CODE STEEL FIRE RED

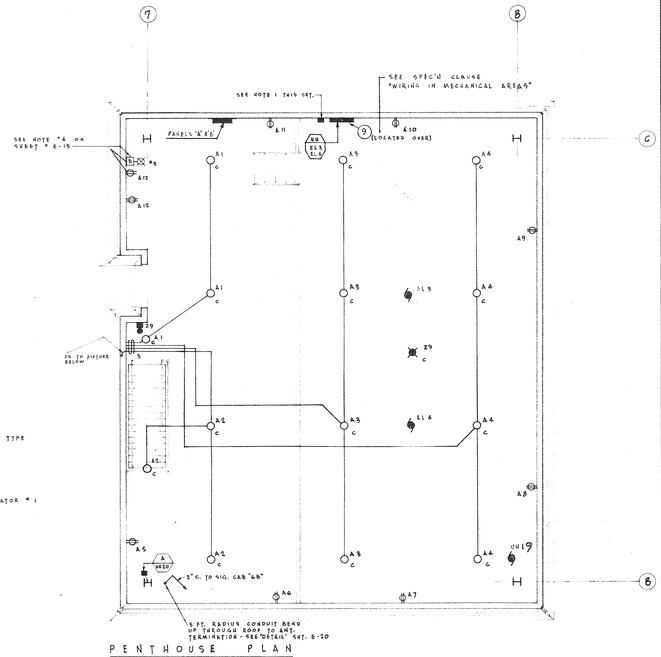
D. DOTTED ZONE DIVIDERS SHOW LOCATION OF INDIVIDUAL LIGHT BOXES - DO NOT ETCH THESE LINES ON SCREEN. OUTLINE OF BASEMENT EXTENSION AREA SHALL BE ETCHED IN DOTTED LINES ON SCREEN.

E. ANNUNCIATORS #2, 3 & 4 WITH TROUBLE INDICATION SHALL HAVE BUZZER, RED PILOT LIGHT AND SILENCING SWITCH MOUNTED ON A HINGED DOOR LOCATED ON AN EXTENSION OF THE TRIM AT THE BOTTOM.

F. TRANSLUCENT SCREEN SHALL BE SUPPORTED IN A METAL FRAME HINGED TO THE SIDE OF THE TRIM WITH PIANO TYPE HINGES.



FIRE ALARM SYSTEM RISER DIAGRAM
N. T. S.



PENTHOUSE PLAN
SCALE 1/4" = 1'-0"

NOTES

1. ELECTRICAL SUBCONTRACTOR SHALL SUPPLY AND INSTALL 30 AMP. 2P DISC. SWITCH FOR ELEVATOR CONTROL SUPPLY, WIRE UP TO ELEVATOR CONTROLLER TERMINALS - ACTUAL CONNECTION BY ELEVATOR SUBCONTRACTOR. CONNECT TO PANEL 'B'
2. LOCATE EMERGENCY D.C. LIGHTING UNIT & RECEPT. TO SUIT ELEVATOR.

GENERAL REVISIONS OCT 29/65

NO.	PARTICULARS	DATE	BY
REVISIONS			

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL DESIGN BY L.M. & G.S.

PRINTING DATE
[redacted]
1 DEC. 1964

DRAWN BY J.R.

SCALE: AS SHOWN

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Mechanical & Electrical Consultants Telephone SP 4-3546

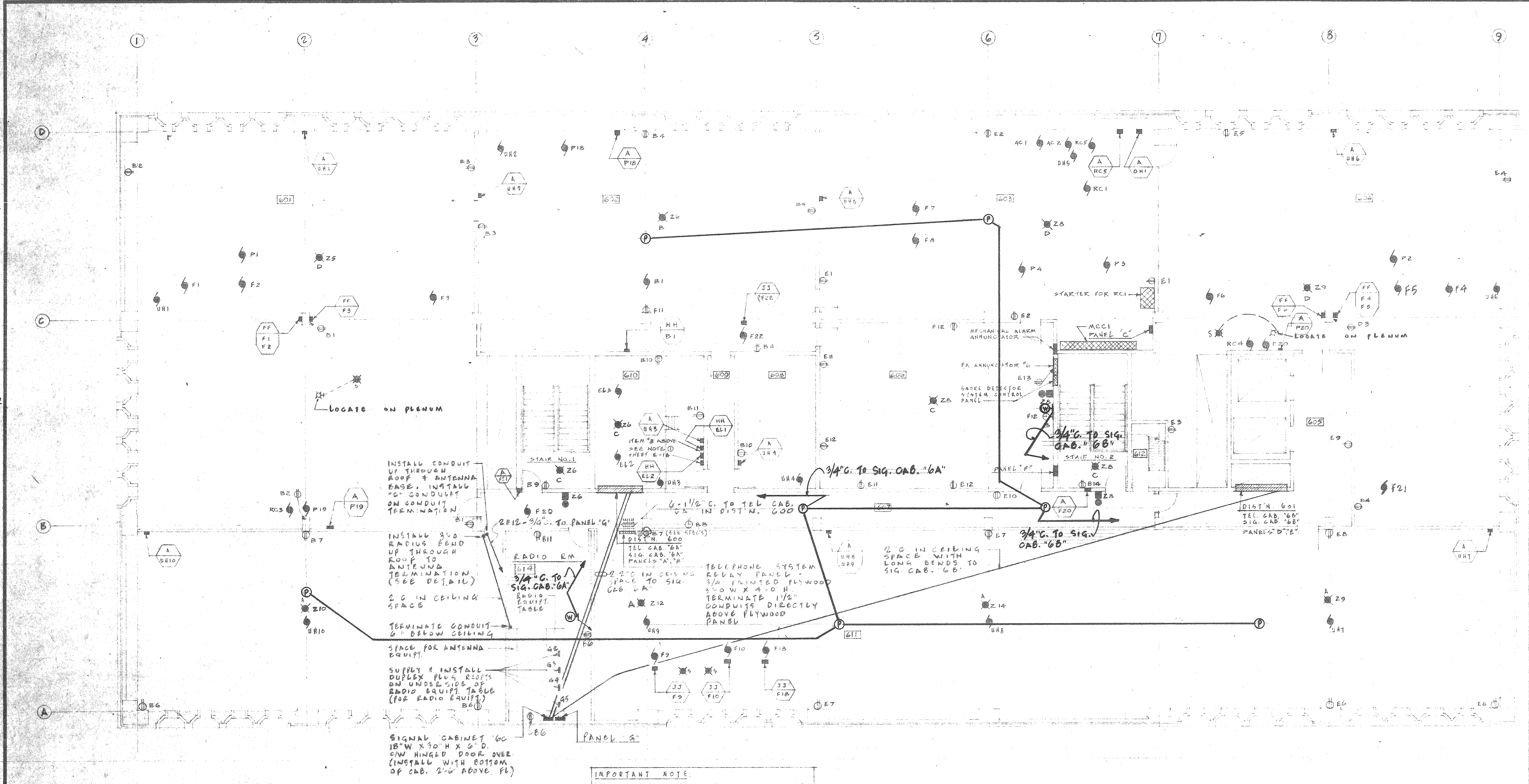
PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

TITLE PENTHOUSE PLAN & DETAILS
ELECTRICAL
SHEET NO. 6020 — E-17

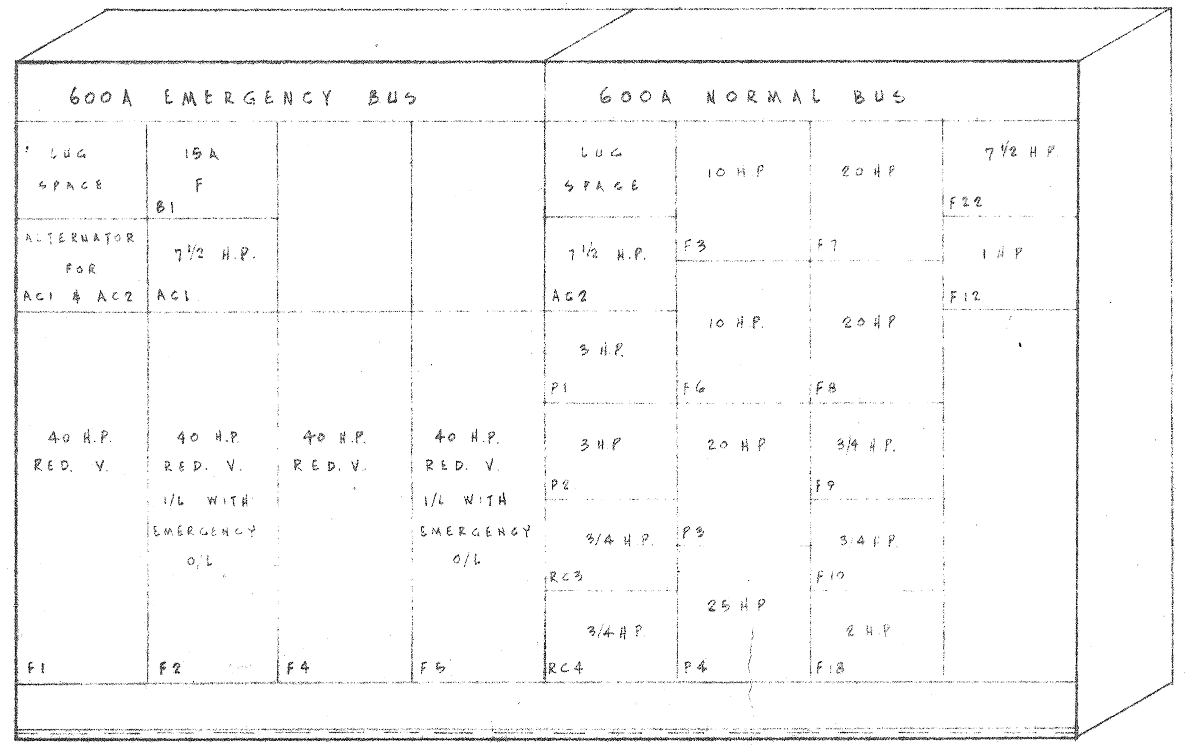
W.J.O. 1758M

FOLD 1
FOLD 2
FOLD 3
FOLD 4
FOLD 5

151 Princess Street
address
6020 project no. E16 sheet no.
Sixth Floor Plan Electrical
description



IMPORTANT NOTE:
ANTENNA TERMINATIONS & CONDUIT ROUTES FOR ANTENNAS ARE APPROX. ONLY. EXACT ROUTES & TERMINATIONS SHALL BE AS LATER DIRECTED BY THE ARCHITECT.



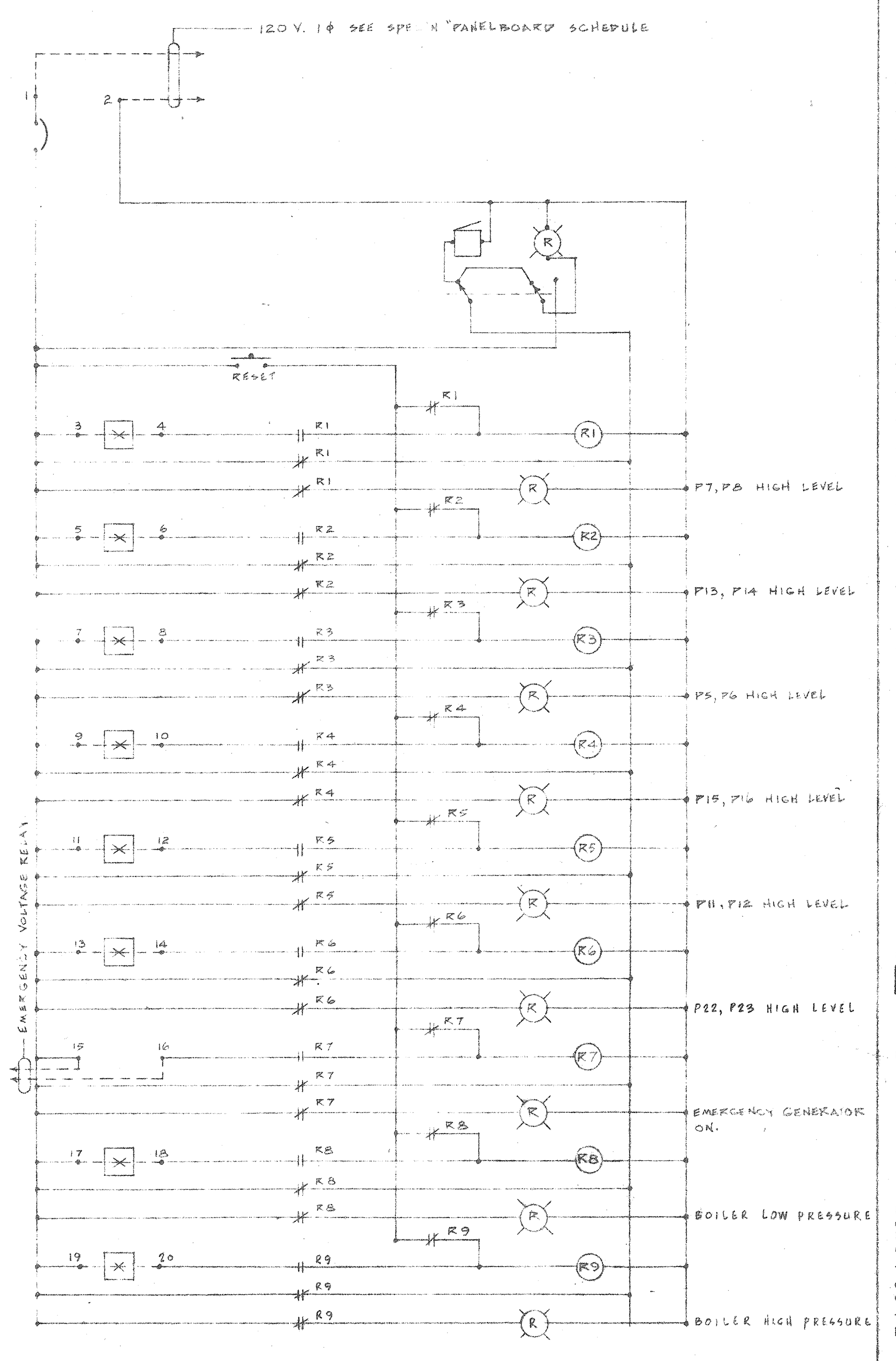
M. C. C. 1 (575 V. 3 φ 3W.)
N.T.S.

LEGEND

[X]	PILOT DEVICES SUPPLIED BY OTHERS WIRED AND CONNECTED BY ELECTRICAL SUB CONTRACTOR.
(R1)	RELAY R1 WITH 120 V. COIL, 1-N/O CONTACT AND 3-N/C CONTACTS.
(R)	RED PILOT LIGHT
R1	N/O. CONTACTS ON RELAY R1
R1	N/C CONTACTS ON RELAY R1
	BUZZER 115 V.

NOTES

1.	ELECTRICAL SUB-CONTRACTOR SHALL SUPPLY AND INSTALL 30 AMP. 2P. DISCONNECT SWITCH FOR ELEVATOR CONTROL SUPPLY, WIRE UP TO ELEVATOR CONTROLLER TERMINALS, ACTUAL CONNECTION BY ELEVATOR SUB-CONTRACTOR. CONNECT TO PANEL "F".
2.	SEE NOTE 3, SHEET E-3.



MECHANICAL ALARM SYSTEM ANNUNCIATOR
SCHEMATIC WIRING DIAGRAM, SEE SPECS. MECHANICAL ALARM SYSTEM.
N.T.S.

REVISIONS

ROOM 611 - ADDED TEL. CONDUITS AND ... PANEL.
DATE MAY ...

GENERAL REVISIONS ...

I.C. & PAGING SYSTEMS NOV 15/65

No.	PARTICULARS	DATE	BY

REVISIONS

CHECKED FOR:
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DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL DESIGN BY E.F.T. & G.S.

PRINTING DATE
[redacted]
1 DEC. 1964

DRAWN BY D.S.
SCALE: 1/8" = 1'-0"

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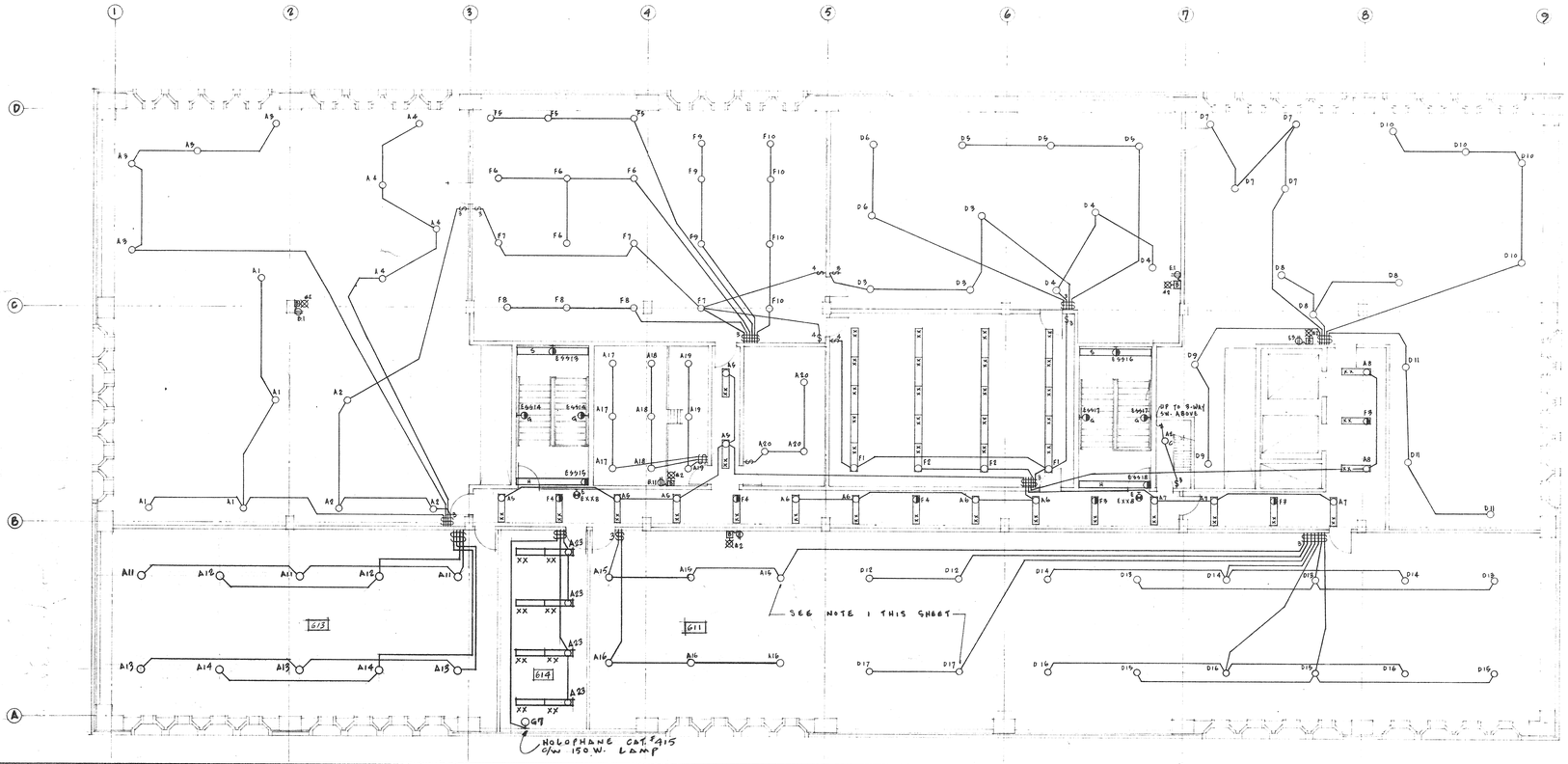
GREEN BLANKSTEIN RUSSELL ASSOCIATES
Mechanical & Electrical Consultants Telephone SP 4-3546

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

I.C. & PAGING SYSTEMS

TITLE SIXTH FLOOR PLAN ELECTRICAL
SHEET NO. 6020 — E 16

W.J.D. 175H



NOTES

1. ALL INCANDESCENT LIGHTING FIXTURES THIS SHEET SHALL BE TYPE 'C' UNLESS OTHERWISE DESIGNATED
2. SEE SPEC. CLAUSE 'WIRING IN MECHANICAL AREAS'
3. CIRCUITS A21 & A22, D18 & D19 SHALL BE CONNECTED TO PLENUM & CONTROL PANEL LIGHTING FIXTURES. REFER TO SPEC. CLAUSE 'PLENUM LIGHTING'
4. RECEPTACLES SHOWN ADJACENT TO EMERGENCY D.C. LIGHTING UNITS SHALL BE CONNECTED TO NEAREST INDEPENDENT RECEPTACLE CIRCUIT UNIT & RECEPTACLE SHALL BE INSTALLED TO SUIT MECHANICAL EQUIP. & PROVIDE SUITABLE LIGHT.
5. SEE NOTE 3 ↗ SHEET E-3

GENERAL REVISIONS OCT. 29/65

No.	PARTICULARS	DATE	BY
REVISIONS			

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL DESIGN BY L.M.

PRINTING DATE
[redacted]
1 DEC. 1964

DRAWN BY E.E.H.

SCALE: 1/8"=1'-0"

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LIBLING MICHENER & ASSOCIATES ARCHITECTS
568 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 2-4491
GREEN BLANKSTEIN RUSSELL ASSOCIATES
Mechanical & Electrical Consultants Telephone SP 4-3546

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

TITLE SIXTH FLOOR PLAN
ELECTRICAL

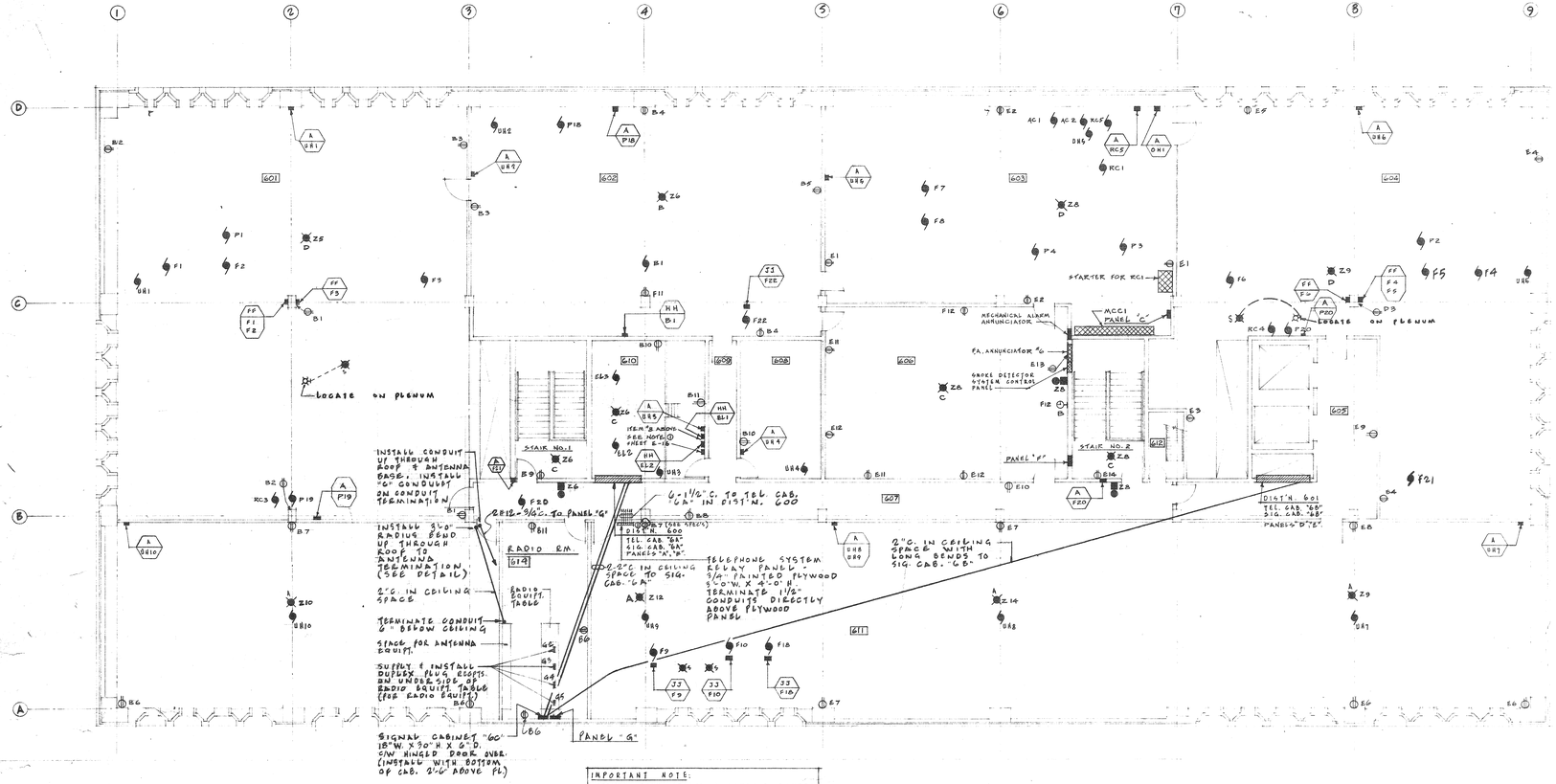
SHEET NO. 6020—E-15

151 Princess Street
SCALE 6020 E15
PROJECT NO. SHEET NO.
Sixth Floor Electrical
DRAWING

151 Princess Street
ADDRESS
6020 E14
PROJECT NO. DRAWING NO.
Sixth Floor Plan Electrical
DESCRIPTION

FOLD 1

FOLD 2



IMPORTANT NOTE:
ANTENNA TERMINATIONS & CONDUIT ROUTES FOR ANTENNAE ARE APPROX. ONLY. EXACT ROUTES & TERMINATIONS SHALL BE AS LATER DIRECTED BY THE ARCHITECT.

600A EMERGENCY BUS				600A NORMAL BUS			
LUG SPACE	15A F B1			LUG SPACE	10 H.P. F3	20 H.P. F7	7½ H.P. F22
ALTERNATOR FOR AC1 & AC2	7½ H.P. AC1			7½ H.P. AC2			1 H.P. F15
40 H.P. RED. V.	40 H.P. RED. V. I/L WITH EMERGENCY O/L	40 H.P. RED. V.	40 H.P. RED. V. I/L WITH EMERGENCY O/L	5 H.P. P1	10 H.P. F6	20 H.P. F8	
				5 H.P. P2	20 H.P. F9	3/4 H.P. F9	
				3/4 H.P. RC3		5/4 H.P. F10	
				3/4 H.P. RC4	25 H.P. F4	2 H.P. F18	
F1	F2	F4	F6				

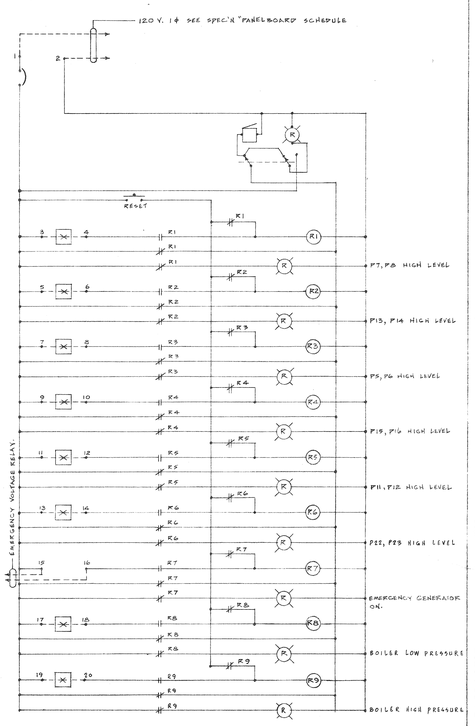
M. C. C. 1 (575 V. 3 ϕ 3W.)
N.T.S.

LEGEND

	PILOT DEVICES SUPPLIED BY OTHERS WIRED AND CONNECTED BY ELECTRICAL SUB-CONTRACTOR.
K1	RELAY K1 WITH 120 V. COIL, 1-½ CONTACT AND 3-N/C CONTACTS
K	KEEP PILOT LIGHT
K1	N/O. CONTACTS ON RELAY K1
K1	N/C CONTACTS ON RELAY K1
	BUZZER 115 V.

NOTES

1. ELECTRICAL SUB-CONTRACTOR SHALL SUPPLY AND INSTALL 30 AMP. 2P. DISCONNECT SWITCH FOR ELEVATOR CONTROL SUPPLY, WIRE UP TO ELEVATOR CONTROLLER TERMINALS, ACTUAL CONNECTION BY ELEVATOR SUB-CONTRACTOR. CONNECT TO PANEL "F".
2. SEE NOTE 9, SHEET E-5.



MECHANICAL ALARM SYSTEM ANNUNCIATOR SCHEMATIC WIRING DIAGRAM, SEE SPECS. MECHANICAL ALARM SYSTEM.
N.T.S.

REVISIONS

ROOM 611 - ADDED TEL. CONDUITS AND RELAY PANEL.
DATE MAY 26 '64

GENERAL REVISIONS OCT. 29/65

No.	PARTICULARS	DATE	BY
	REVISIONS		

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL DESIGN BY E.F.T. & D.S.

PRINTING DATE
[redacted]
1 DEC. 1964

DRAWN BY D.S.
SCALE: 1/8"=1'-0"

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This drawing is not to be used for building purposes until countersigned by: K.J. Buckler

LIBLING MICHENER & ASSOCIATES ARCHITECTS
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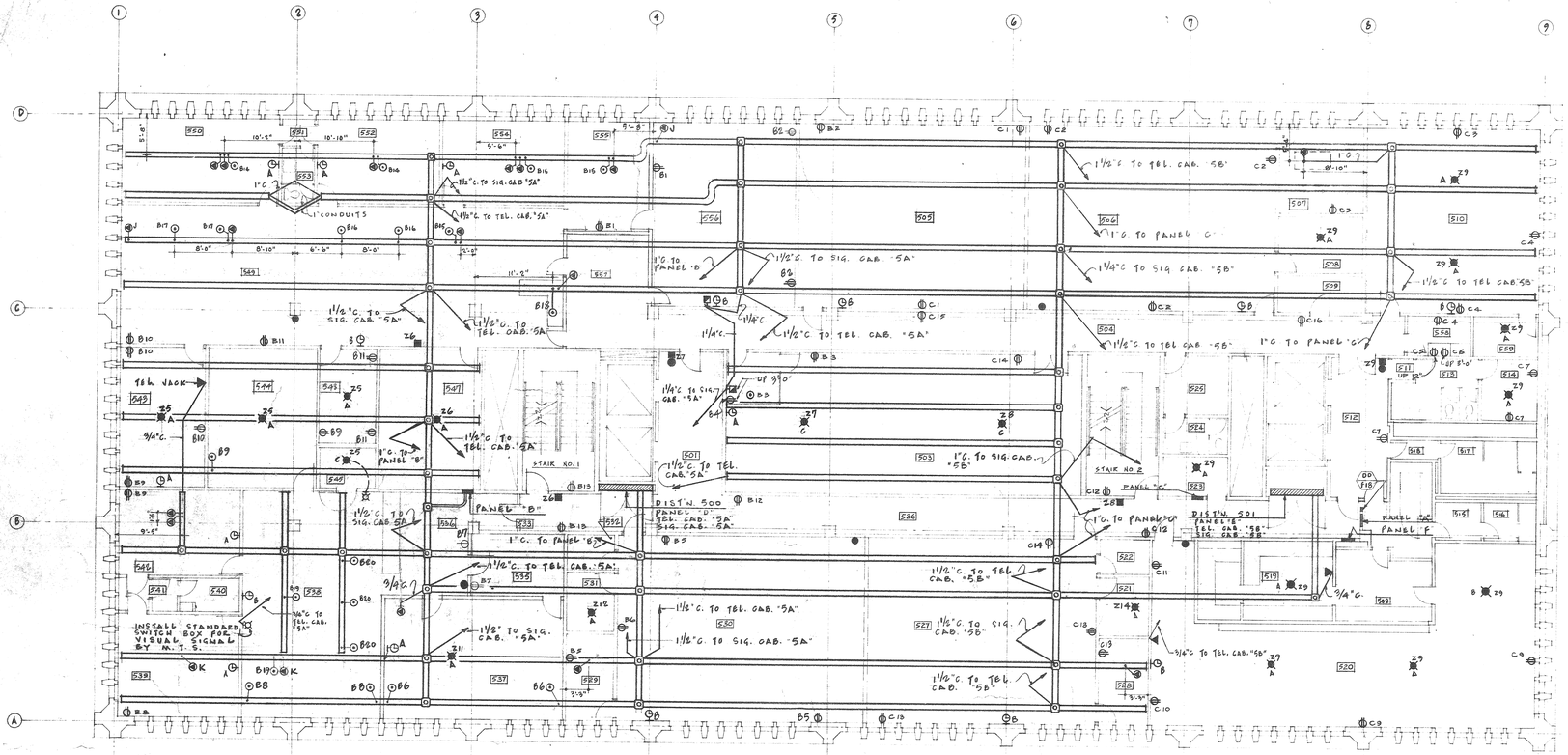
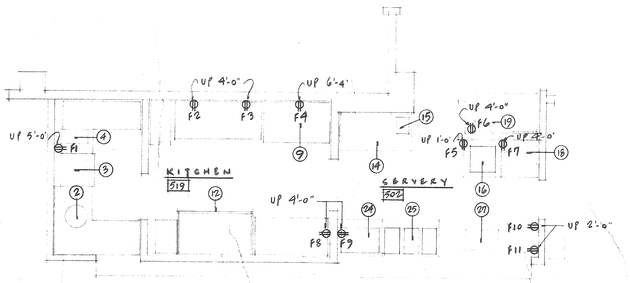
GREEN BLANKSTEIN RUSSELL ASSOCIATES
Mechanical & Electrical Consultants Telephone SP 4-3546

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

TITLE SIXTH FLOOR PLAN ELECTRICAL
SHEET NO. 6020—E 16

151 Princess Street
address
6020 E14
project no. sheet no.
Fifth Floor Plan Electrical
description





KITCHEN & SERVERY PLAN
SCALE 1/4" = 1'-0"

NOTES

1. EXACT LOCATIONS OF ALL UNDERFLOOR DUCTS SHOWN ON THIS SHEET SHALL BE AS APPROVED ON SHOP DRAWINGS AT LATER DATE.
2. ALL UNDERFLOOR DUCTS SHOWN ON THIS SHEET SHALL BE TYPE "D" UNLESS OTHERWISE SPECIFICALLY DESIGNATED.
3. SEE NOTE 3 SHEET E3

REVISIONS

ROOM 502, 520, 528, 529 - ADDED TEL. OUTLET.
ROOM 502 - RELOCATE AUTO. F.A. STATION.
ROOM 507 - DELETED SIGNAL SYSTEM OUTLET. - RELOCATED TEL. OUTLET.
ROOM 510 - DELETED SIGNAL SYSTEM OUTLET.
ROOM 514 - RELOCATED CONV. OUTLET.
ROOM 519 - RELOCATED PANEL "F" TO COR. 528. - RELOCATED AUTO. F.A. STATION.
ROOM 537 - REVISED TEL. OUTLET FROM A JACK TO PEDESTAL OUTLET.
ROOM 538 - ADDED ELEC., TEL. & VISUAL SIGNAL OUTLETS.
ROOM 539, 582 - RELOCATED WALL CLOCKS - ADDED TEL. OUTLETS.
ROOM 549 - ADDED TYPE "D" DUCTS. - ADDED TEL. & CONV. OUTLETS.
ROOM 550, 552, 554, 555 - ADDED TEL. AND CONV. OUTLETS.
ROOM 557 - ADDED TYPE "D" DUCT.

DATE MAY 25'65

REVISED U/F DUCT LAYOUT (AUG. 31/65)

GENERAL REVISIONS OCT. 29/65

No.	PARTICULARS	DATE	BY

REVISIONS

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL DESIGN BY E.F.T.

PRINTING DATE
[redacted]
1 DEC. 1964

DRAWN BY H.E.C.

SCALE: 1/8" = 1'-0"

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This drawing is not to be used for building purposes until countersigned by:

V. S. Buckler

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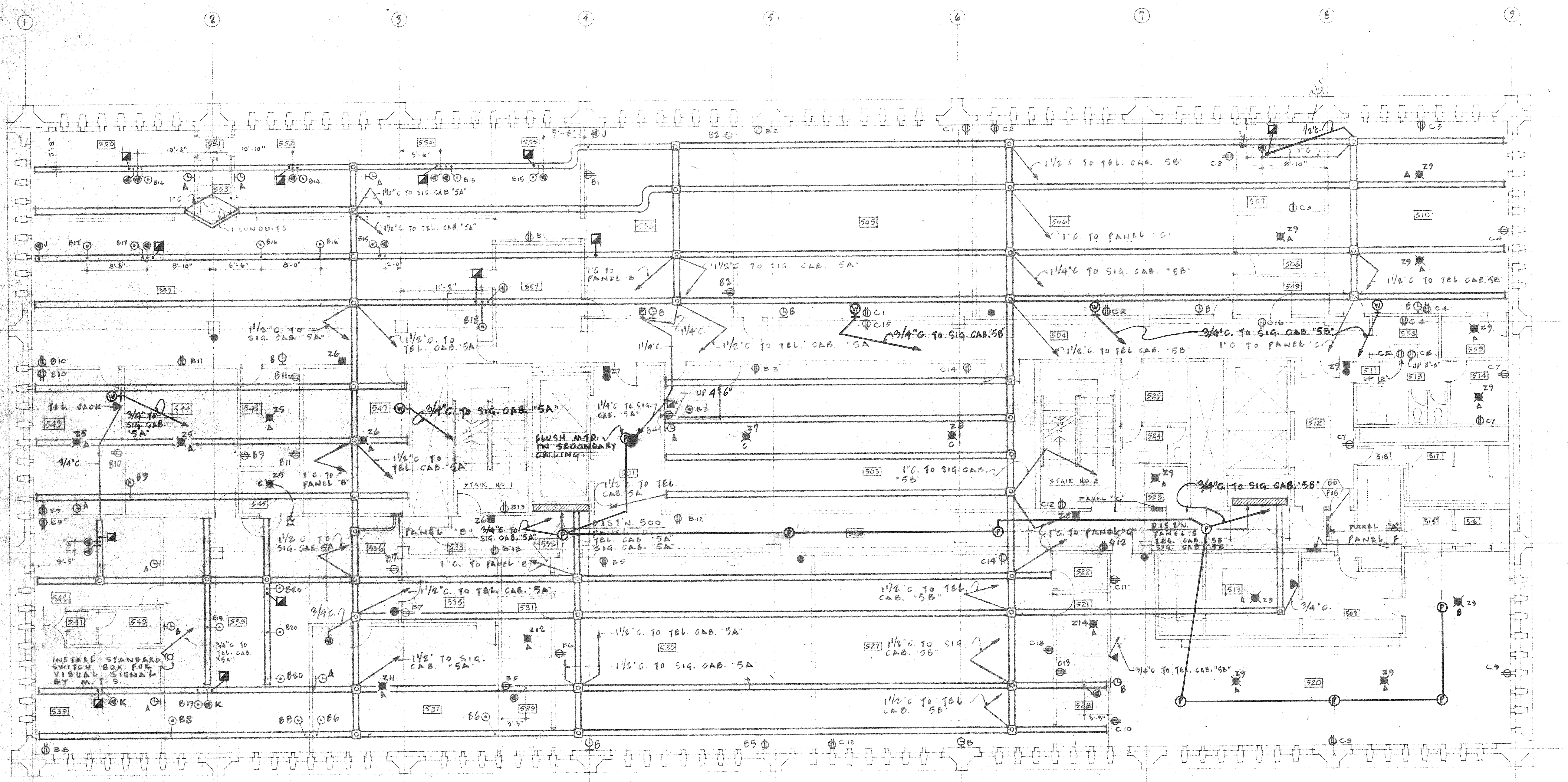
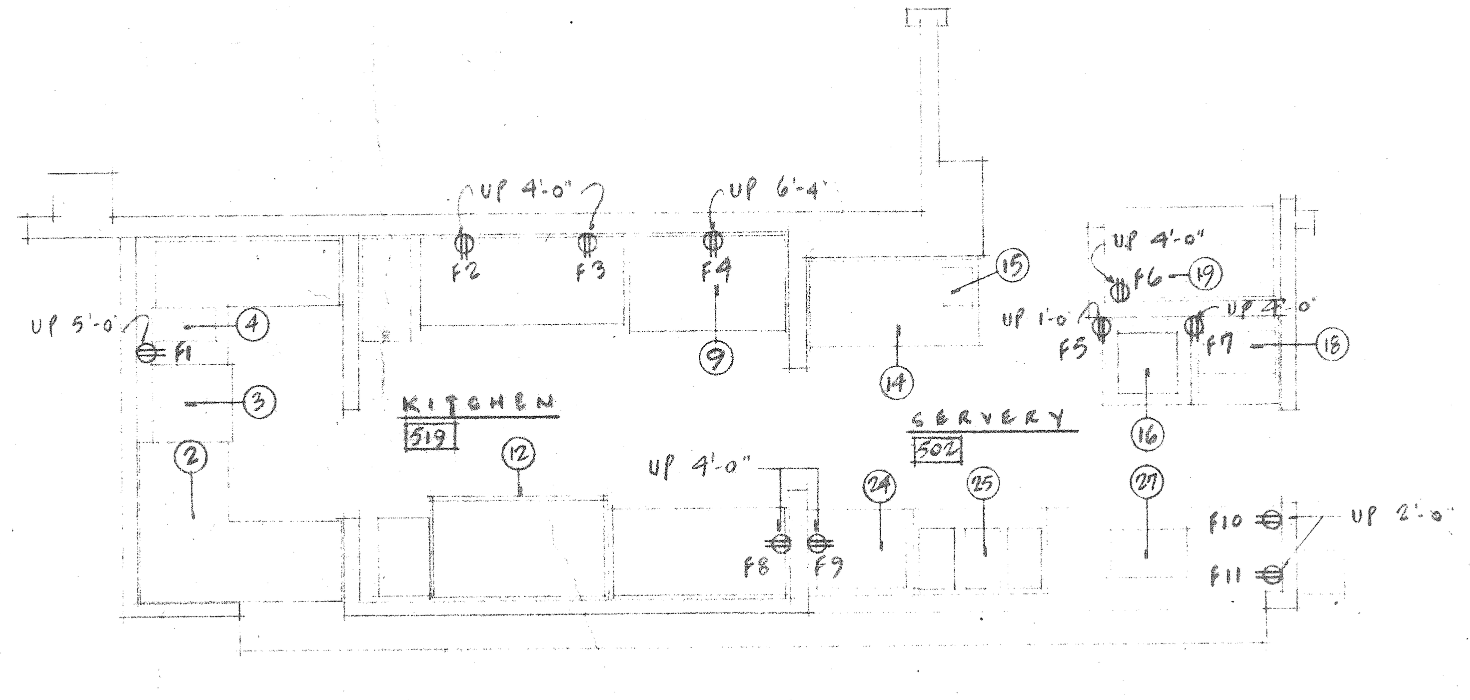
GREEN BLANKSTEIN RUSSELL ASSOCIATES
Mechanical & Electrical Consultants Telephone SP 4-3546

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

TITLE FIFTH FLOOR PLAN ELECTRICAL
SHEET NO. 6020 — E-14

151 Princess Street
address
6020
project no.
E14
sheet no.
Fifth Floor Plan Electrical
description





KITCHEN & SERVERY PLAN
SCALE 1/4" = 1'-0"

NOTES

1. EXACT LOCATIONS OF ALL UNDERFLOOR DUCTS, SHOWN ON THIS SHEET SHALL BE AS APPROVED ON SHOP DRAWINGS AT LATER DATE.
2. ALL UNDERFLOOR DUCTS SHOWN ON THIS SHEET SHALL BE TYPE 'D' UNLESS OTHERWISE SPECIFICALLY DESIGNATED.
3. SEE NOTE 3 SHEET E3

REVISIONS

ROOM 502, 520, 528, 529 - ADDED TEL. OUTLET.
ROOM 502 - RELOCATE AUTO. F.A. STATION.
ROOM 507 - DELETED SIGNAL SYSTEM OUTLET.
- RELOCATED TEL. OUTLET.
ROOM 510 - DELETED SIGNAL SYSTEM OUTLET.
ROOM 514 - RELOCATED CONV. OUTLET.
ROOM 519 - RELOCATED PANEL "F" TO COR. 526.
- RELOCATED AUTO. F.A. STATION.
ROOM 537 - REVISED TEL. OUTLET FROM A JACK TO PEDESTAL OUTLET.
ROOM 538 - ADDED ELEC., TEL. & VISUAL SIGNAL OUTLETS.
ROOM 539, 542 - RELOCATED WALL CLOCKS
- ADDED TEL. OUTLETS.
ROOM 549 - ADDED TYPE "D" DUCTS.
- ADDED TEL. & CONV. OUTLETS.
ROOM 550, 552, 554, 555 - ADDED TEL. AND CONV. OUTLETS.
ROOM 557 - ADDED TYPE "D" DUCT.

DATE MAY 25'65

REVISED U/F DUCT LAYOUT (AUG. 31/65)

GENERAL REVISIONS OCT. 29/65

I.C. & PAGING SYSTEMS NOV. 15/65

No.	PARTICULARS	DATE	BY

REVISIONS

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL DESIGN BY E.F.T.

PRINTING DATE
[redacted]
1 DEC. 1964

DRAWN BY H.E.C.

SCALE 1/8" = 1'-0"

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This drawing is not to be used for building purposes until countersigned by:
V. J. Buckler

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368 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 3-4491
GREEN BLANKSTEIN RUSSELL ASSOCIATES
Mechanical & Electrical Consultants Telephone SP 4-3546

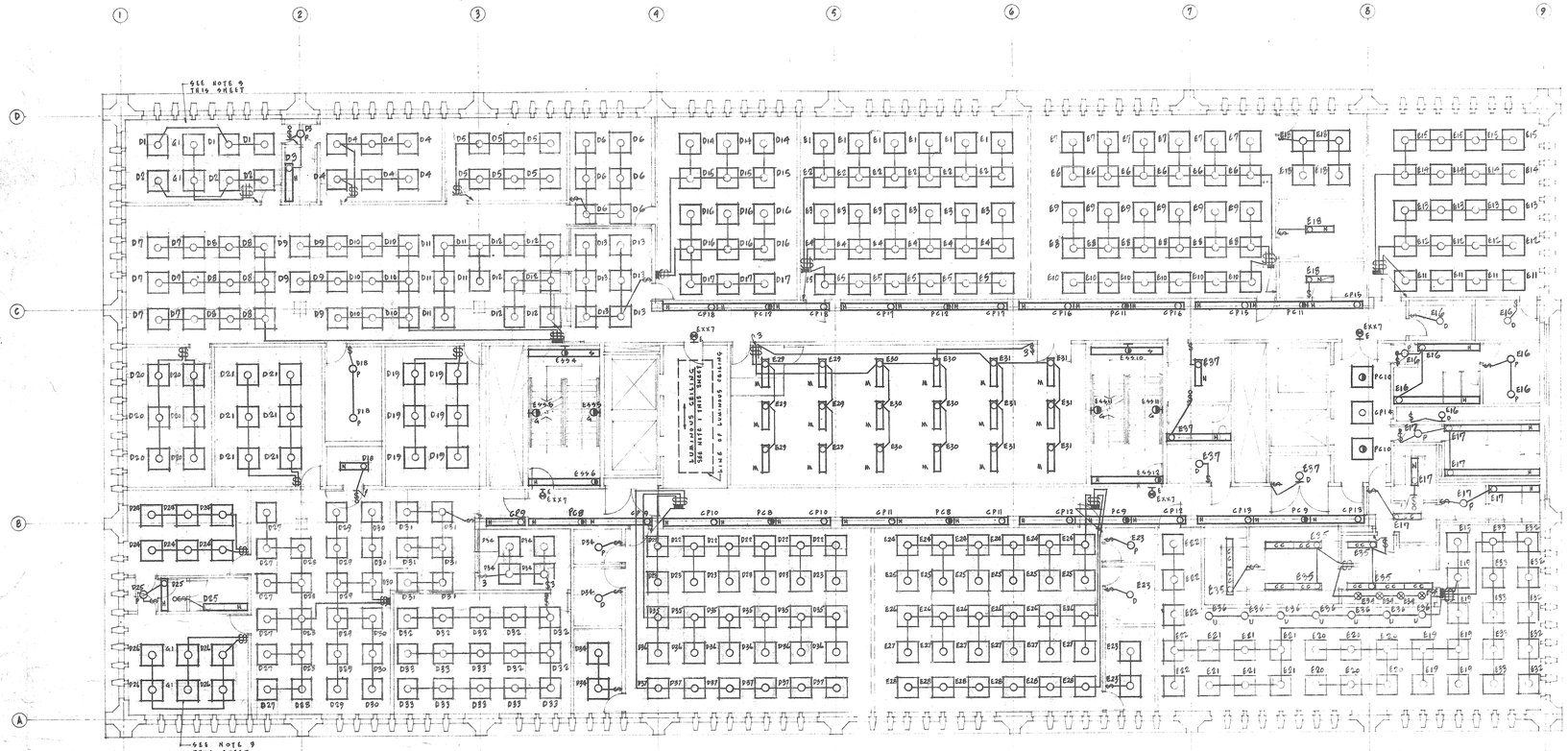
PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

I.C. & PAGING SYSTEMS

TITLE FIFTH FLOOR PLAN
ELECTRICAL
SHEET NO. 6020 — E-14

W.J.D. 175H

191 Princess Street
WINNIPEG
6020
BUILDING
E13
SHEET NO
Fifth Floor Plan Electrical
DESCRIPTION



NOTES

1. SUPPLY, INSTALL, WIRE & CONNECT FIVE ROWS OF TYPE 'F' FIXTURES. EACH ROW SHALL CONSIST OF FOUR - 4'-0" FIXTURES INSTALLED ON APPROX. 10" O.C. CONNECT 3 ROWS OF FIXTURES TO PANEL PC, CCT. 19. CIRCUIT SHALL BE ALTERNATED (CONNECTED TO EVERY SECOND ROW TO PROVIDE A 'HALF LIGHT' PATTERN.) CONNECT REMAINING TWO ROWS TO PANEL CP CCT. 8.
2. ALL FLUORESCENT LIGHTING FIXTURES SHOWN ON THE FIFTH FLOOR PLAN MEASURING 3'-0" SQUARE SHALL BE TYPE 'A'
3. UNLESS OTHERWISE NOTED ALL OUTLETS ON THIS FLOOR SHALL BE WIRED & CONNECTED TO THE DESIGNATED PANELBOARDS LOCATED ON THIS FLOOR.
4. ALL OUTLETS ON THIS FLOOR DESIGNATED AS 'EKK' AND 'EKK' SHALL BE WIRED & CONNECTED TO THE APPROPRIATE PANELS WHICH ARE LOCATED IN THE BASEMENT OF THIS BUILDING.
5. ALL OUTLETS ON THIS FLOOR DESIGNATED AS 'PC' AND 'CP' SHALL BE WIRED & CONNECTED TO THE APPROPRIATE PANELS WHICH ARE LOCATED ON THE THIRD FLOOR OF THIS BUILDING.
6. ALL OUTLETS ON THIS FLOOR (TOTAL 4 OUTLETS) DESIGNATED AS CONNECTED TO PANEL 'G' SHALL BE WIRED & CONNECTED TO PANEL 'G' ON THE NINTH FLOOR.
7. WIRE & CONNECT CCTS. 1 TO 19 OF PANEL 'D' ON THIS FLOOR TO PANEL 'D' (SECTION ONE) LOCATED IN UPPER PART OF DIST'N. 500. WIRE & CONNECT CCTS. 20 TO 37 OF PANEL 'D' THIS FLOOR TO PANEL 'D' (SECTION TWO) LOCATED IN LOWER PART OF DIST'N. 500.
8. WIRE & CONNECT CCTS. 1 TO 18 OF PANEL 'E' ON THIS FLOOR TO PANEL 'E' (SECTION ONE) LOCATED IN UPPER PART OF DIST'N. 501. WIRE & CONNECT CCTS. 19 TO 31 OF PANEL 'E' ON THIS FLOOR TO PANEL 'E' (SECTION TWO) LOCATED IN LOWER PART OF DIST'N. 501.
9. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN - SHEET A47 FOR EXACT LOCATIONS OF LIGHTING FIXTURES.

GENERAL REVISIONS OCT. 29/65

NO.	PARTICULARS	DATE	BY
REVISIONS			

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL DESIGN BY P.O.

PRINTING DATE
[redacted]
1 DEC. 1964

DRAWN BY H.E.C., B.L., B.E.H.

SCALE: 1/8"=1'-0"

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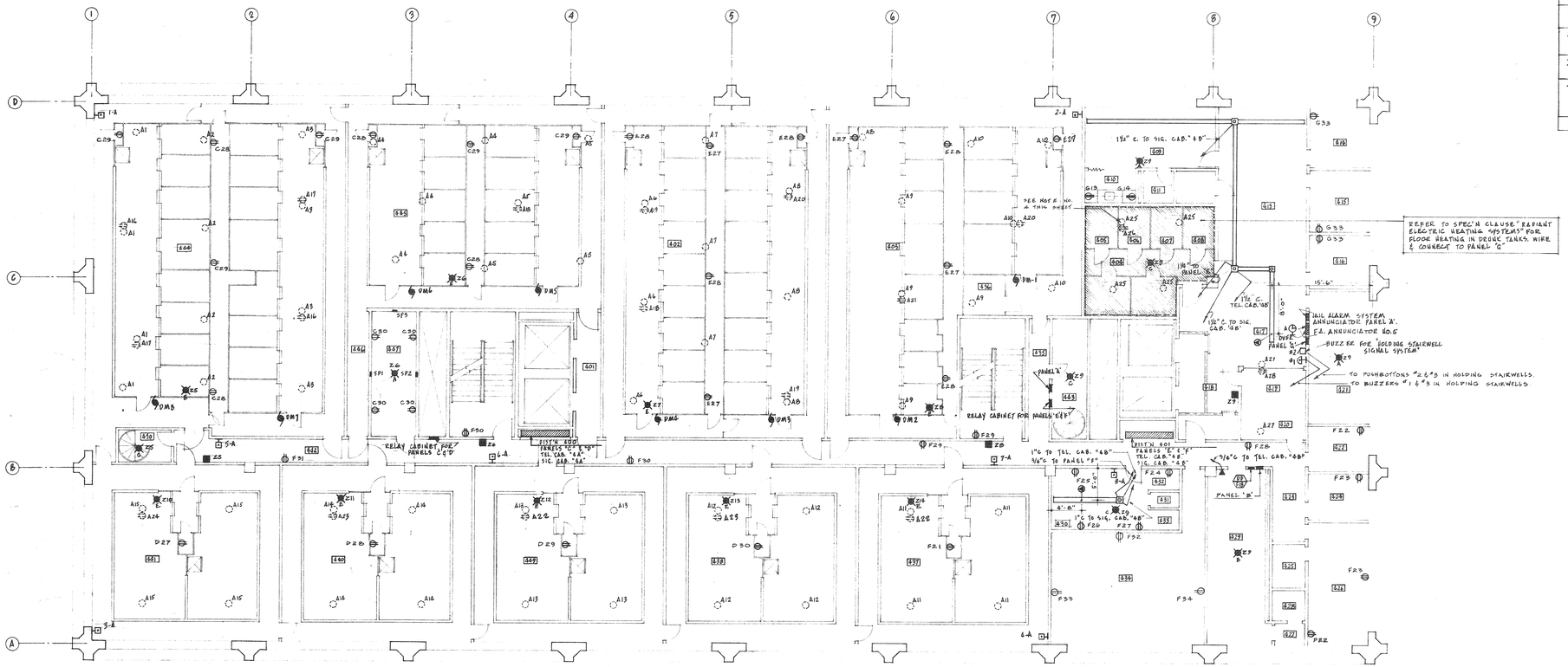
Mechanical & Electrical Consultants Telephone SP 4-3546

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

TITLE FIFTH FLOOR PLAN ELECTRICAL
SHEET NO. 6020—E-13

151 Princess Street
DRAWING NO. 6020 SHEET NO. E12
Fourth Floor Plan Electrical
CONTRACT



NOTES:

1. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATIONS OF FIRE ALARM AUTOMATIC STATION TYPE 'E'.
2. EXACT LOCATIONS OF ALL UNDERFLOOR DUCTS SHOWN ON THIS SHEET SHALL BE AS APPROVED ON SHOP DRAWINGS AT LATER DATE.
3. ALL UNDERFLOOR DUCTS SHOWN ON THIS SHEET SHALL BE TYPE "D" UNLESS OTHERWISE SPECIFICALLY DESIGNATED.
4. LIGHTING FIXTURES & RECEPTACLES ON THIS SHEET SHOWN THUS ○ OR ● ARE LOCATED IN FOURTH FLOOR CEILING SPACE. WIRE & CONNECT TO DESIGNATED PANEL ON FOURTH FLOOR. SEE SPEC'N. CLAUSE "WIRING IN MECHANICAL AREAS".
5. SEE NOTE 3 SHEET E3.

REVISIONS

ROOM 417, 429 - ADDED TEL. OUTLET
ROOM 490 - ADDED TYPE "D" DUCT.
- ADDED TEL. OUTLET.
DATE MAY 25'65

GENERAL REVISIONS OCT 29/65

No.	PARTICULARS	DATE	BY
	REVISIONS		

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL DESIGN BY L.W. I.P.S.

PRINTING DATE
[redacted]
1 DEC. 1964

DRAWN BY B.L.
SCALE: 1/8"=1'-0"

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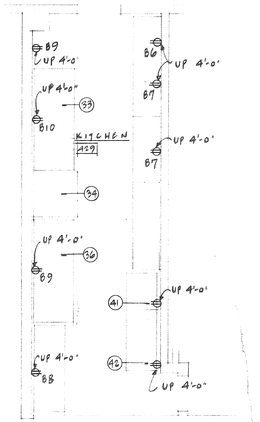
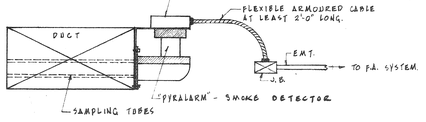
Mechanical & Electrical Consultants Telephone SP 4-3546

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

TITLE FOURTH FLOOR PLAN ELECTRICAL
SHEET NO. 6020 — E-12

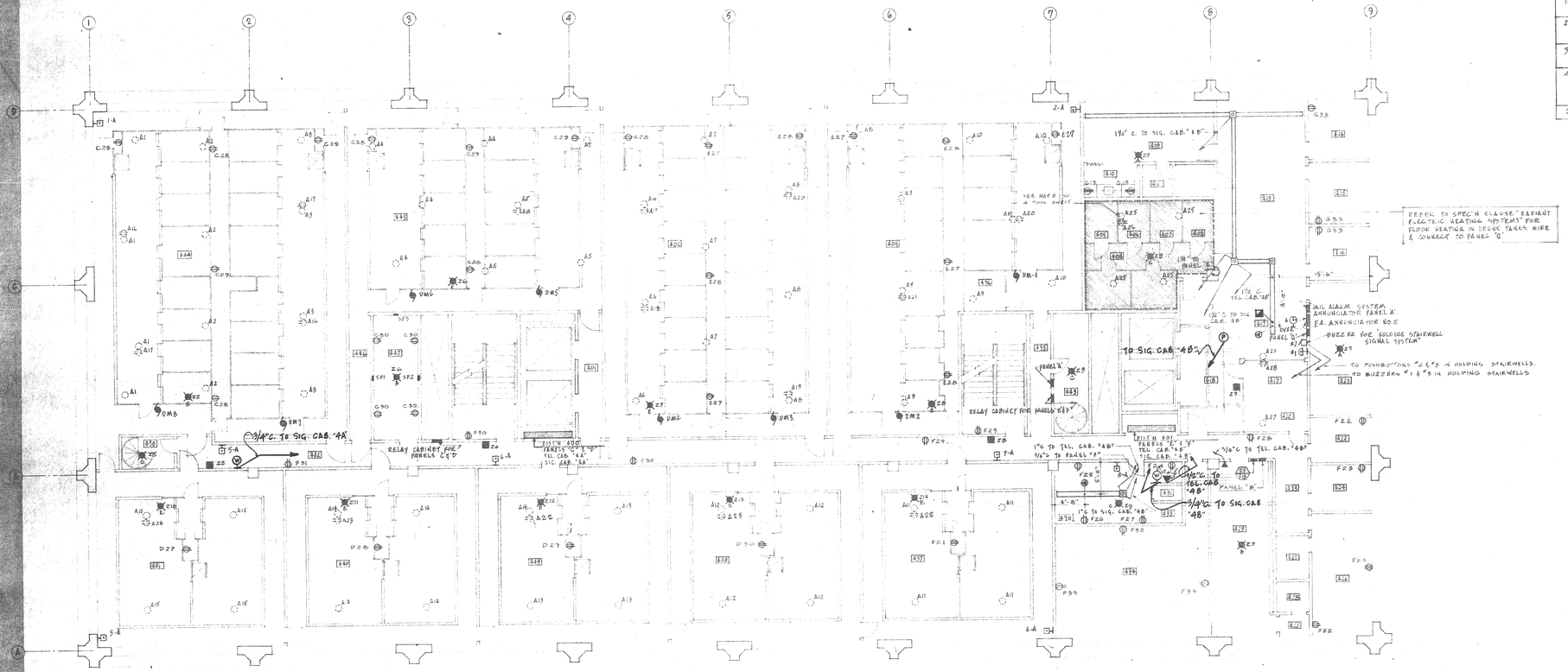


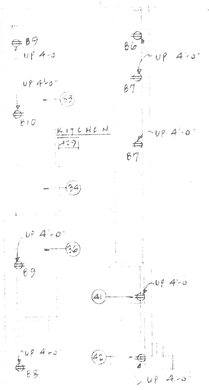
JAIL KITCHEN PLAN
SCALE: 1/4" = 1'-0"



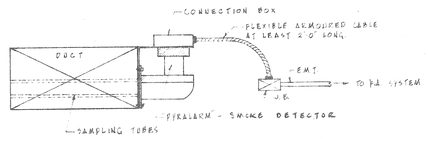
DETAIL OF CONNECTION - AUTOMATIC DETECTOR TYPE 'E'
TYPICAL FOR ALL TYPE 'E' AUTOMATIC DETECTORS
REFER TO SPEC. CLAUSE "FIRE ALARM SYSTEM"

151 Princess Street
address
6020 E12
project no. sheet no.
Fourth Floor Plan Electrical
description





JAIL KITCHEN PLAN
SCALE 1/4" = 1'-0"



DETAIL OF CONNECTION - AUTOMATIC DETECTOR TYPE 'E'
TYPICAL FOR ALL TYPE 'E' AUTOMATIC DETECTORS
REFER TO SPEC. CLAUSE "FIRE ALARM SYSTEM"

NOTES:

1. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATIONS OF FIRE ALARM AUTOMATIC STATION & TYPE 'E'.
2. EXACT LOCATIONS OF ALL UNDERFLOOR DUCTS SHOWN ON THIS SHEET SHALL BE AS APPROVED ON SHOP DRAWINGS AT LATER DATE.
3. ALL UNDERFLOOR DUCTS SHOWN ON THIS SHEET SHALL BE TYPE "D" UNLESS OTHERWISE SPECIFICALLY DESIGNATED.
4. LIGHTING FIXTURES & RECEPTACLES ON THIS SHEET SHOWN THUS ⊙ ⊕ ARE LOCATED IN FOURTH FLOOR CEILING SPACE. WIRE & CONNECT TO DESIGNATED PANEL ON FOURTH FLOOR. SEE SPECS. CLAUSE "WIRING IN MECHANICAL AREAS".
5. SEE NOTE 3 SHEET E3.

REVISIONS

ROOM 417, 429 - ADDED TEL. OUTLET
ROOM 430 - ADDED TYPE "D" DUCT.
- ADDED TEL. OUTLET.
DATE MAY 25 '65

GENERAL REVISIONS OCT 29/65

I.C. & PAGING SYSTEMS NOV 15/65

No.	PARTICULARS	DATE	BY
REVISIONS			

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL DESIGN BY L.W. & J.S.

PRINTING DATE
[redacted]
1 DEC 1964

DRAWN BY B.L.
SCALE: 1/8" = 1'-0"

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V. S. Buckler

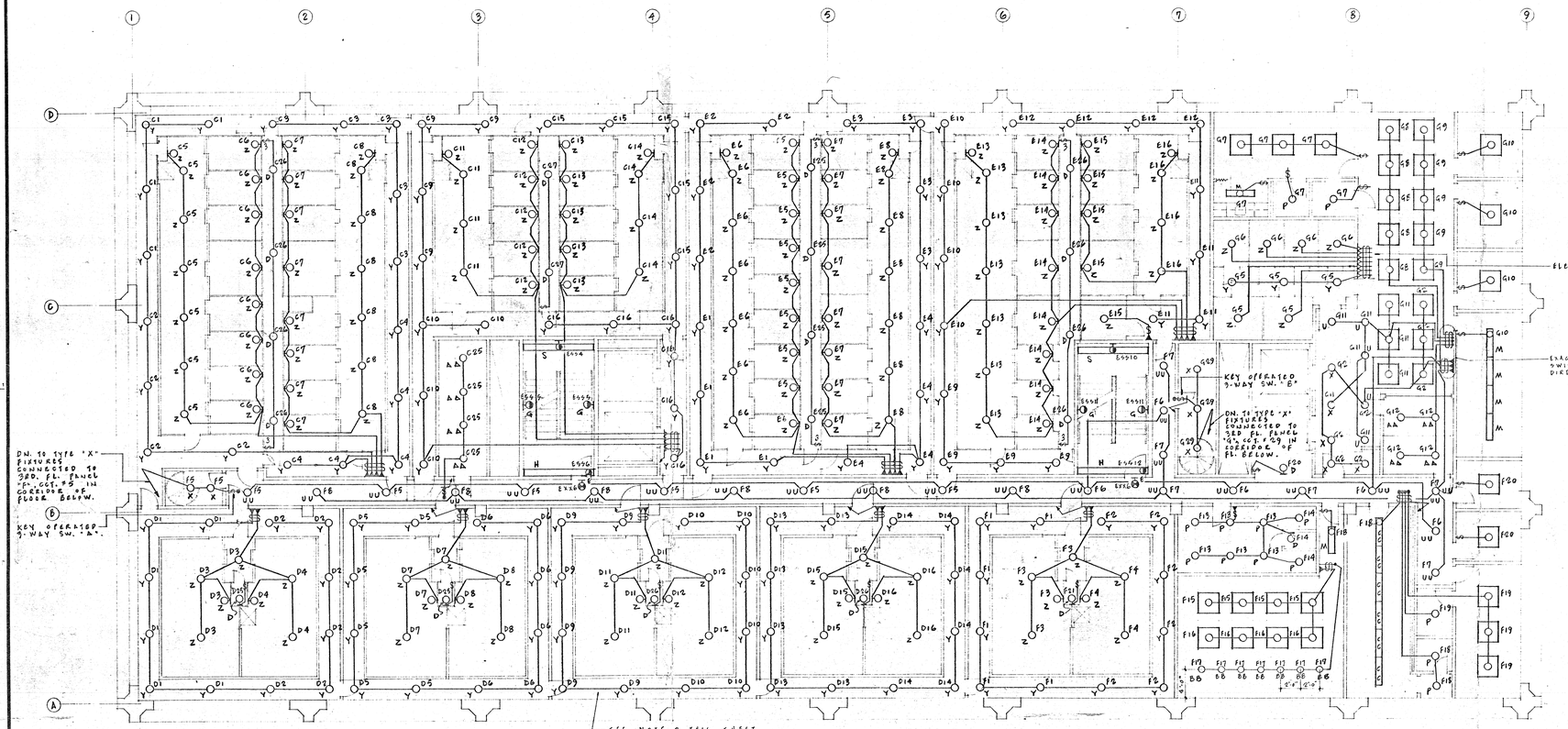
LIBLING MICHENER & ASSOCIATES ARCHITECTS
363 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 2-4491
GREEN BLANKSTEIN RUSSELL ASSOCIATES
Mechanical & Electrical Consultants Telephone SP 4-3546

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

I.C. PAGING SYSTEMS

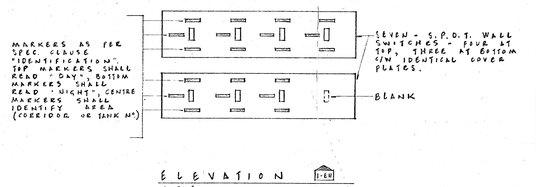
TITLE FOURTH FLOOR PLAN ELECTRICAL
SHEET NO. 6020 - E-12

W.J.D. 175H

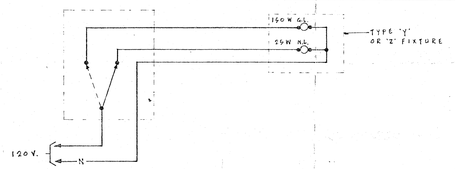


NOTES

1. ALL FLUORESCENT LIGHTING FIXTURES SHOWN ON THE FOURTH FLOOR PLAN MEASURING 3'-0" SQUARE SHALL BE TYPE 'A'.
2. REFER TO SHEET E-9 FOR TYPICAL CONNECTION DIAGRAM FOR TYPE 'Y' & 'UU' FIXTURES CONTROLLED BY KEY OPERATED D.P.D.T. WALL SWITCHES.
3. ALL OUTLETS ON THIS FLOOR DESIGNATED AS EXX AND EXXX SHALL BE WIRED & CONNECTED TO THE APPROPRIATE PANELS WHICH ARE LOCATED IN THE BASEMENT OF THIS BUILDING.
4. UNLESS OTHERWISE NOTED ALL OUTLETS ON THIS FLOOR SHALL BE WIRED & CONNECTED TO THE DESIGNATED PANELBOARDS LOCATED ON THIS FLOOR.



ELEVATION 1-E8
N.T.S.



TYPICAL CONNECTION DIAGRAMS FOR S.P.D.T. WALL SWITCHES SHOWN ON ELEVATION ABOVE (N.T.S.)

GENERAL REVISIONS OCT. 29/65

No.	PARTICULARS	DATE	BY
REVISIONS			

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL DESIGN BY P.O.

PRINTING DATE
1 DEC. 1964

DRAWN BY H.E.C.

SCALE : 1/8"= 1'-0"

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The contractor is to verify dimensions and data noted herein with conditions on the site and is held responsible for reporting any discrepancy to the architects for adjustment.

This drawing is not to be used for building purposes until countersigned by: P.S. Buckle

LIBLING MICHENER & ASSOCIATES ARCHITECTS
368 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 5-4491
GREEN BLANKSTEIN RUSSELL ASSOCIATES
Mechanical & Electrical Consultants Telephone SP 4-3546

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

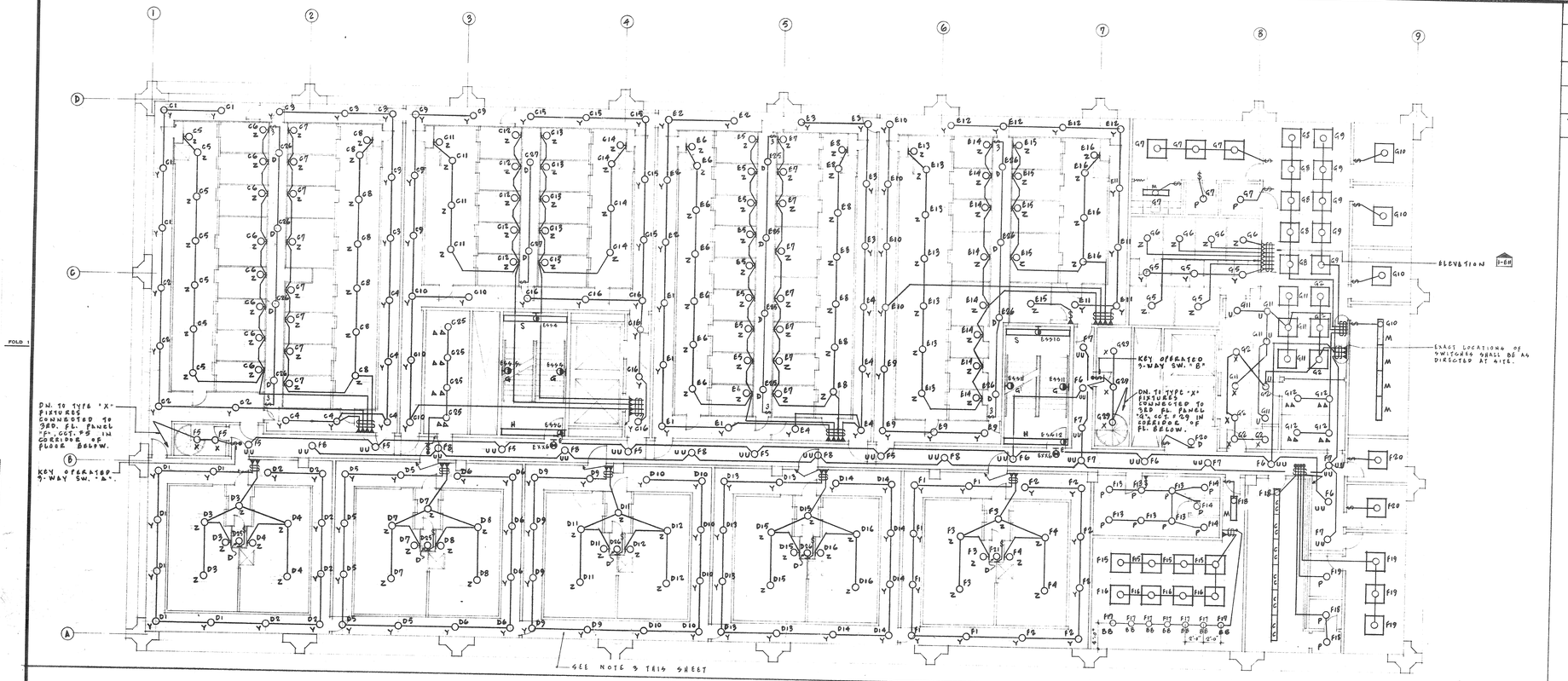
TITLE FOURTH FLOOR PLAN
ELECTRICAL

SHEET NO. 6020 — E-11

Original Construction E-11
Description
Electrical Fourth Floor

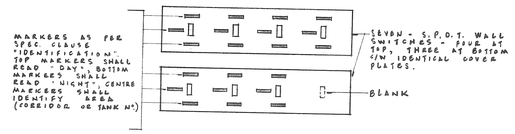
FOLD 1
FOLD 2
FOLD

151 Princess Street
address
6020 E10
project no. sheet no.
Fourth Floor Plan Electrical
description

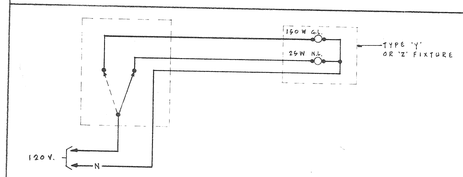


NOTES

1. ALL FLUORESCENT LIGHTING FIXTURES SHOWN ON THE FOURTH FLOOR PLAN MEASURING 3'-0" SQUARE SHALL BE TYPE "A".
2. REFER TO SHEET E-9 FOR TYPICAL CONNECTION DIAGRAM FOR TYPE "Y"-"Z" & "UU" FIXTURES CONTROLLED BY KEY OPERATED D.P.D.T. WALL SWITCHES.
3. ALL OUTLETS ON THIS FLOOR DESIGNATED AS EXX AND ESS SHALL BE WIRED & CONNECTED TO THE APPROPRIATE PANELS WHICH ARE LOCATED IN THE BASEMENT OF THIS BUILDING
4. UNLESS OTHERWISE NOTED ALL OUTLETS ON THIS FLOOR SHALL BE WIRED & CONNECTED TO THE DESIGNATED PANELBOARDS LOCATED ON THIS FLOOR.



ELEVATION 1-EH
N.T.S.



TYPICAL CONNECTION DIAGRAMS FOR S.P.D.T. WALL SWITCHES SHOWN ON ELEVATION ABOVE (N.T.S.)

GENERAL REVISIONS OCT. 29/65

No.	PARTICULARS	DATE	BY
REVISIONS			

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL DESIGN BY P.O.

PRINTING DATE
1 DEC. 1964

DRAWN BY H.E.C.

SCALE : 1/8" = 1'-0"

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The contractor is to verify dimensions and data noted herein with conditions on the site and is held responsible for reporting any discrepancy to the architects for adjustment.

This drawing is not to be used for building purposes until countersigned by:

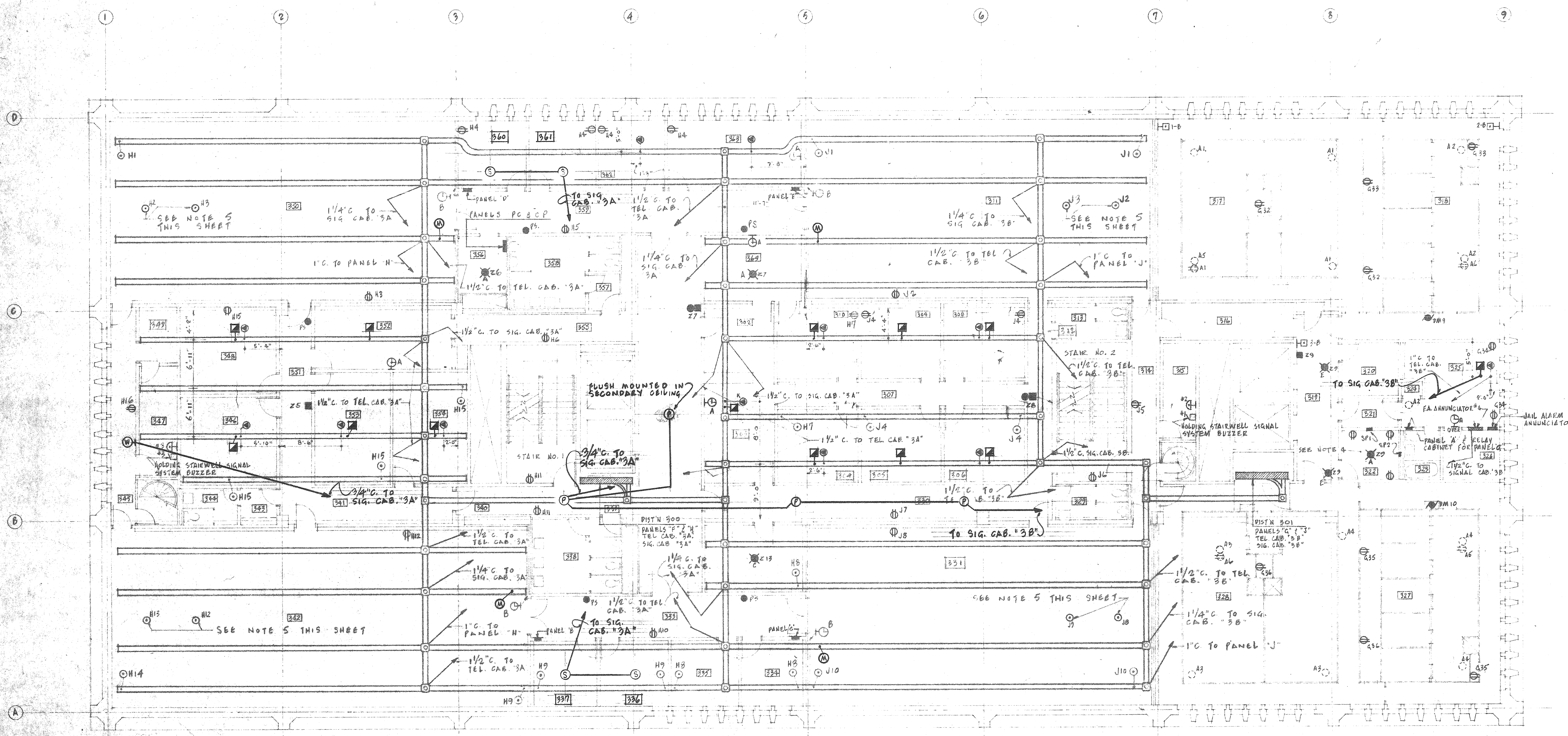
V.S. Buckle

LIBLING MICHENER & ASSOCIATES ARCHITECTS
268 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 2-4491
GREEN BLANKSTEIN RUSSELL ASSOCIATES
Mechanical & Electrical Consultants Telephone SP 4-3546

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

TITLE FOURTH FLOOR PLAN ELECTRICAL
SHEET NO. 6020-E-11

151 Princess Street (address)
6020 (project no.)
E10 (sheet no.)
Third Floor Plan Electrical (description)



NOTES

1.	EXACT LOCATIONS OF ALL UNDERFLOOR DUCTS SHOWN ON THIS SHEET SHALL BE AS APPROVED ON SHOP DRAWINGS AT LATER DATE.
2.	ALL UNDERFLOOR DUCTS SHOWN ON THIS SHEET SHALL BE TYPE "D" UNLESS OTHERWISE SPECIFICALLY DESIGNATED.
3.	LIGHTING FIXTURES & RECEPTACLES ON THIS SHEET SHOWN THUS ⊖ ARE LOCATED IN THIRD FLOOR CEILING SPACE. WIRE & CONNECT TO DESIGNATED PANELS ON THIRD FLOOR. SEE SPEC. CLAUSE "WIRING IN MECHANICAL AREAS."
4.	ALL OUTLETS IN ROOM 322 TO BE WIRED TO CIRCUIT BREAKERS IN PANEL 'B' (4TH FLOOR). SUPPLY & INSTALL #12 WIRE TO EACH DUPLEX CONVENIENCE RECEPTACLE & #6 WIRE TO EACH OF SP1 & SP2.
5.	EXACT LOCATION OF ALL FLOOR OUTLETS TO BE CONFIRMED ON SITE PRIOR TO INSTALLATION.
6.	SEE NOTE 3 SHEET E-3.

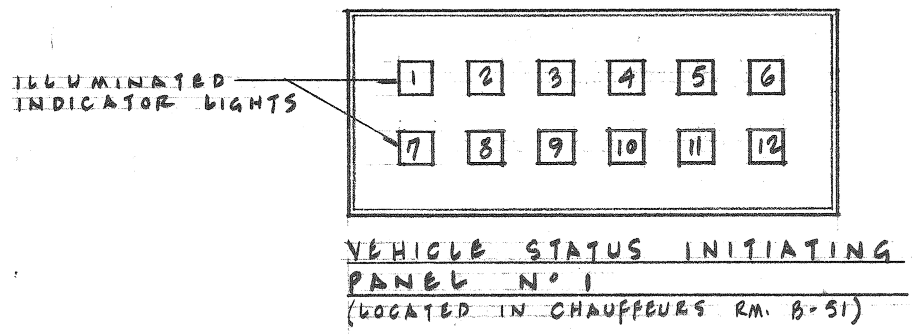
REVISIONS

ROOM 302, 309 - RELOCATED TYPE "D" DUCT.
ROOM 304, 306 - ADDED TEL. OUTLET
ROOM 308, 310 - ADDED TEL. OUTLET. - RELOCATED TYPE "D" DUCT.
ROOM 319 - RELOCATED FIRE ALARM STATION.
ROOM 325 - DELETED TEL. (WALL) OUTLET. - ADDED TEL. OUTLET.
ROOM 346, 348, 353, 354 - ADDED TEL. OUTLET.
ROOM 360, 361 - ADDED TYPE "D" DUCTS.
ROOM 362, 363 - ADDED TEL. OUTLET. - ADDED TYPE "D" DUCTS.
DATE MAY 25 '66

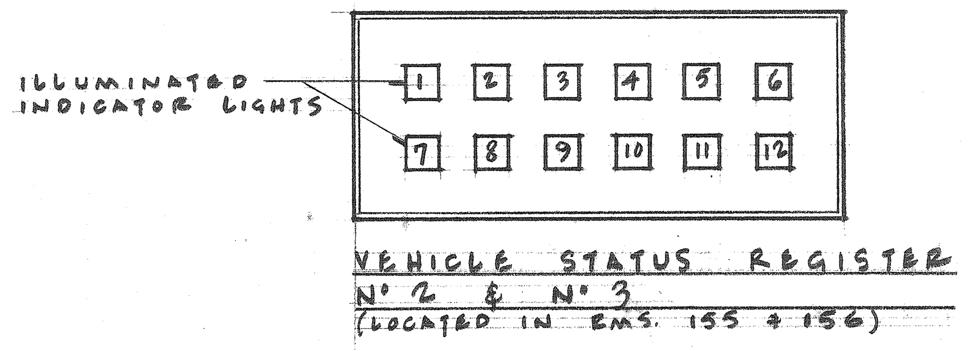
REVISED U/F DUCT LAYOUT (AUG 31/65)
GENERAL REVISIONS OCT. 29/65
I.C. & PAGING SYSTEMS NOV. 15/65

No.	PARTICULARS	DATE	BY

REVISIONS



VEHICLE STATUS INITIATING PANEL No 1
(LOCATED IN CHAUFFEURS RM. B-51)



VEHICLE STATUS REGISTER No 2 & No 3
(LOCATED IN RMS. 155 & 156)

NAMEPLATE SCHEDULE
1. CHAUFFEUR No 1
2. CHAUFFEUR No 2
3. CHAUFFEUR No 3
4. AMBULANCE
5. WAGON
6. CHIEF
7. DEPUTY CHIEF
8. TRUCK
9. SPARE (NOT IDENTIFIED)
10. SPARE (NOT IDENTIFIED)
11. SPARE (NOT IDENTIFIED)
12. SPARE (NOT IDENTIFIED)

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL DESIGN BY E.F.T & L.W.

PRINTING DATE
[redacted]
1 DEC. 1964

DRAWN BY B.L.
SCALE: 1/8" = 1'-0"

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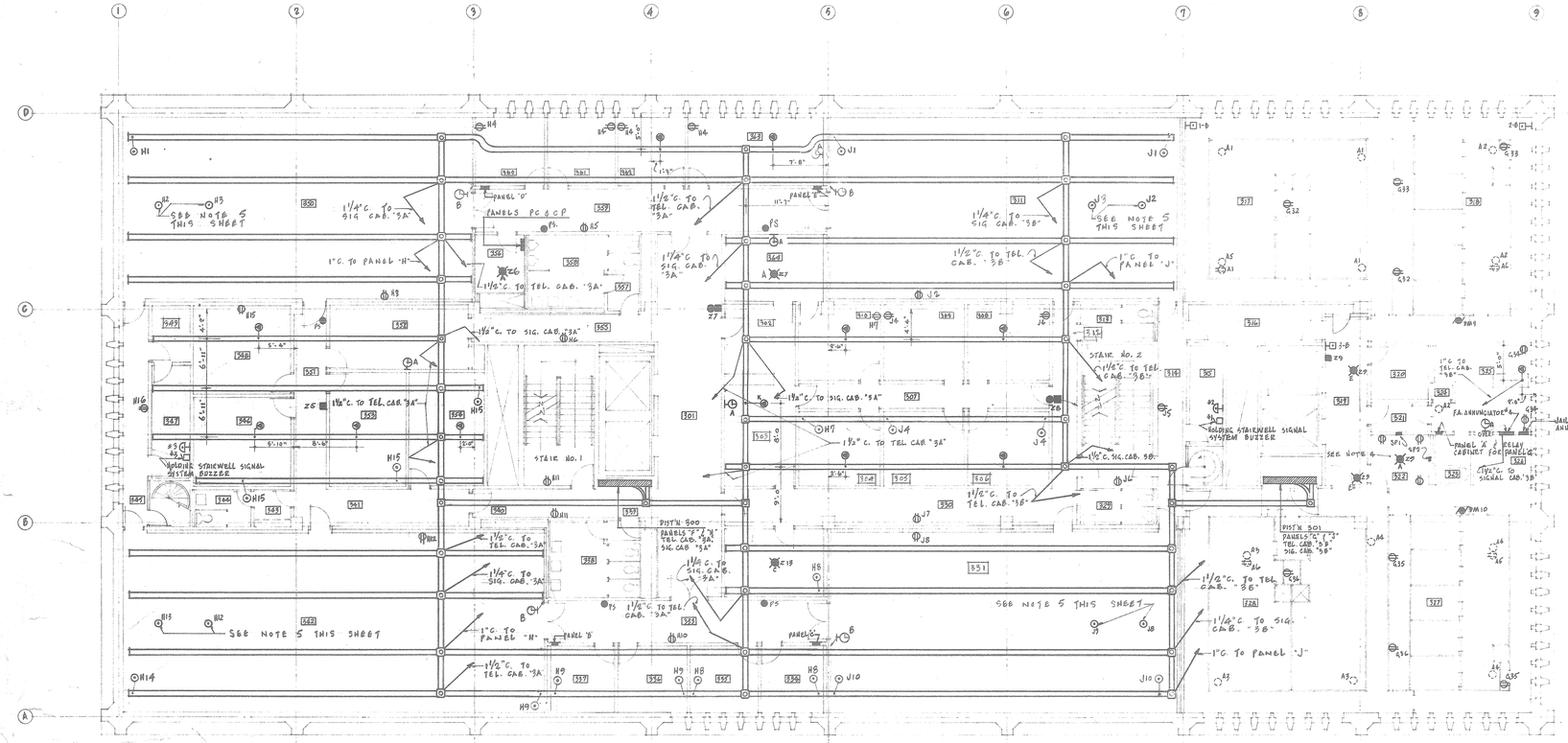
This drawing is not to be used for building purposes until countersigned by: V. S. Buckler

LIBLING MICHENER & ASSOCIATES ARCHITECTS
368 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 3-4491
GREEN BLANKSTEIN RUSSELL ASSOCIATES
Mechanical & Electrical Consultants Telephone SP 4-3546

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG, MANITOBA

I.C. & PAGING SYSTEMS

TITLE THIRD FLOOR PLAN ELECTRICAL
SHEET NO: 6020 — E-10



NOTES

1. EXACT LOCATIONS OF ALL UNDERFLOOR DUCTS SHOWN ON THIS SHEET SHALL BE AS APPROVED ON SHOP DRAWINGS AT LATER DATE
2. ALL UNDERFLOOR DUCTS SHOWN ON THIS SHEET SHALL BE TYPE - "D" UNLESS OTHERWISE SPECIFICALLY DESIGNATED.
3. LIGHTING FIXTURES & RECEPTACLES ON THIS SHEET SHOWN THUS ⊡ ARE LOCATED IN THIRD FLOOR CEILING SPACE. WIRE & CONNECT TO DESIGNATED PANELS ON TILED FLOOR. SEE SPEC. CLAUSE "WIRING IN MECHANICAL AREAS."
4. ALL OUTLETS IN ROOM 322 TO BE WIRED TO CIRCUIT BREAKERS IN PANEL 'B' (4TH FLOOR). SUPPLY & INSTALL #12 WIRE TO EACH DUPLEX CONVENIENCE RECEPTACLE & #6 WIRE TO EACH OF SPI & SP2.
5. EXACT LOCATION OF ALL FLOOR OUTLETS TO BE CONFIRMED ON SITE PRIOR TO INSTALLATION.
6. SEE NOTE 5 SHEET E-3.

REVISIONS

ROOM 309,309 - RELOCATED TYPE "D" DUCT.
ROOM 306,308 - ADDED TEL. OUTLET
ROOM 318,310 - ADDED TEL. OUTLET
- RELOCATED TYPE "D" DUCT.
ROOM 319 - RELOCATED FIRE ALARM STATION.
ROOM 355 - DELETED TEL. (WALL) OUTLET.
- ADDED TEL. OUTLET.
ROOM 346,348,363,364 - ADDED TEL. OUTLET.
ROOM 360,361 - ADDED TYPE "D" DUCTS.
ROOM 362,365 - ADDED TEL. OUTLETS
- ADDED TYPE "D" DUCTS.

DATE MAY 25'66

REVISED U/F DUCT LAYOUT (AUG 31/66)

GENERAL REVISIONS OCT. 19/66

NO.	PARTICULARS	DATE	BY
	REVISIONS		

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL DESIGN BY C.F.T & L.W.

PRINTING DATE
1 DEC. 1964

DRAWN BY B.B.
SCALE: 1/8"=1'-0"

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This drawing is not to be used for building purposes until countersigned by:
C.S. Buchko

LIBLING MICHENER & ASSOCIATES ARCHITECTS
265 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 3-6691
GREEN BLANKSTEIN RUSSELL ASSOCIATES
Mechanical & Electrical Consultants Telephone SP 4-3546

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

TITLE THIRD FLOOR PLAN ELECTRICAL
SHEET NO. 6020 — E-10

151 Princess Street
address
6020 E10
project no sheet no.
Third Floor Plan Electrical
description

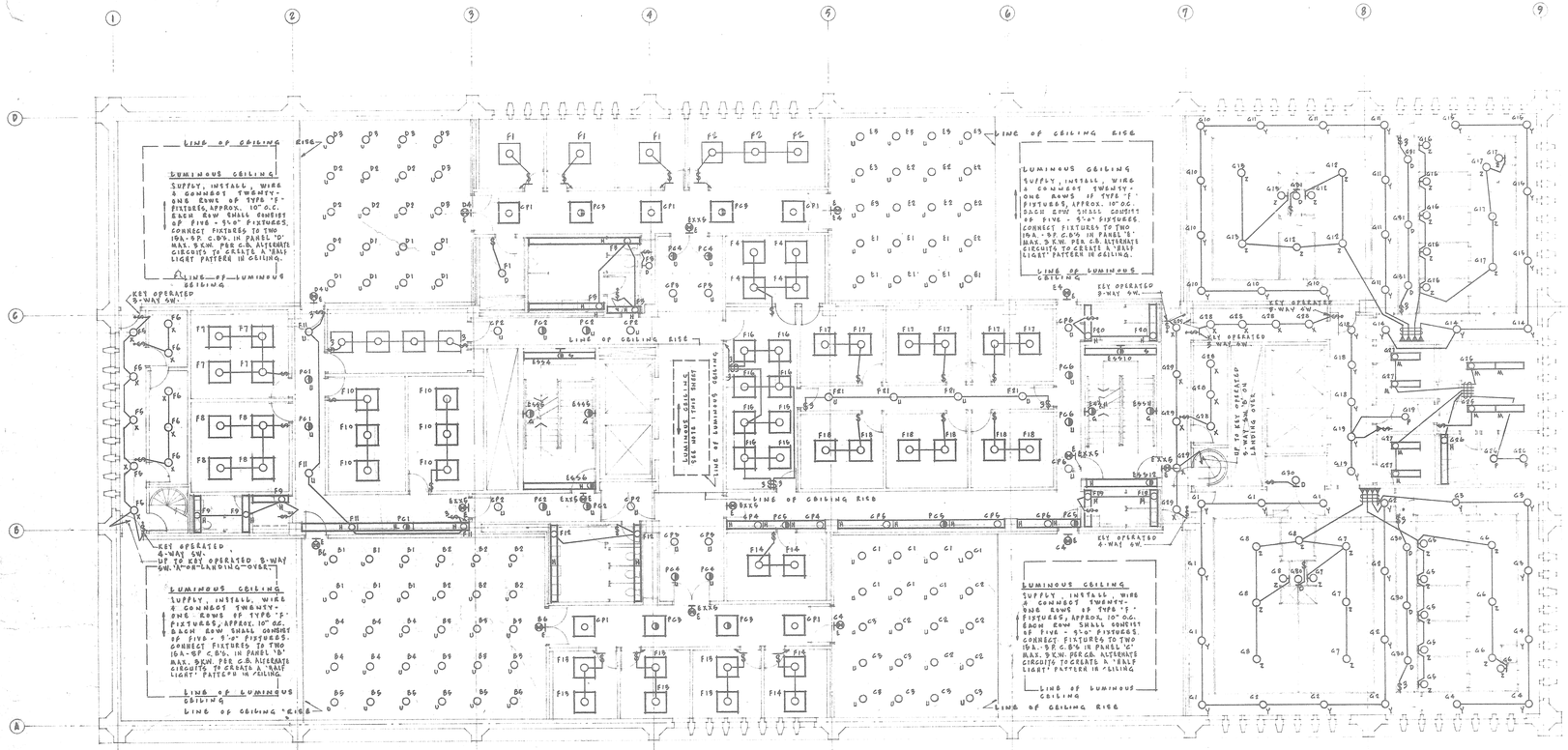
FOLD 1
FOLD 2

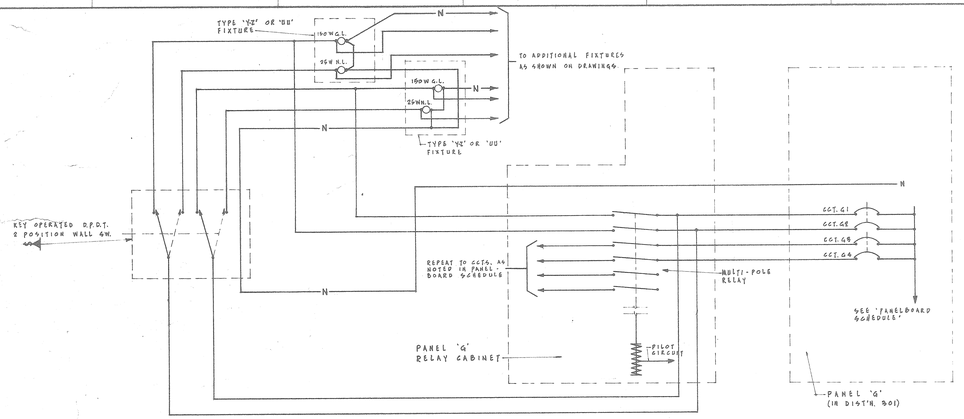
151 Princess Street
CONTRACT

6020
project no.

E9
SHEET NO.

Third Floor Plan Electrical
description





TYPICAL CONNECTION DIAGRAM FOR TYPE 'XX' OR 'UU' FIXTURES CONTROLLED BY KEY OPERATED DOUBLE POLE DOUBLE THROW TWO POSITION WALL SWITCHES (N.T.S.)

NOTES

1. SUPPLY, INSTALL WIRE & CONNECT FIVE ROWS OF TYPE 'F' FIXTURES APPROX. 10" O.C. EACH ROW SHALL CONSIST OF FOUR - 4'-0" FIXTURES. CONNECT 3 ROWS OF FIXTURES TO PANEL 'G' - CCT. 7, CIRCUIT SHALL BE ALTERNATED (CONNECT TO EVERY SECOND ROW TO PROVIDE A 'HALF LIGHT' PATTERN.) CONNECT REMAINING TWO ROWS TO PANEL 'G' - CCT. 7
2. ALL FLUORESCENT LIGHTING FIXTURES SHOWN ON THIS TYPICAL FLOOR PLAN MEASURING 5'-0" SQUARE SHALL BE TYPE 'A'
3. UNLESS OTHERWISE NOTED ALL OUTLETS ON THIS FLOOR SHALL BE WIRED & CONNECTED TO THE DESIGNATED PANEL-BOARDS LOCATED ON THIS FLOOR.
4. ALL OUTLETS ON THIS FLOOR DESIGNATED AS E8X AND E8Y SHALL BE WIRED & CONNECTED TO THE APPROPRIATE PANELS WHICH ARE LOCATED IN THE BASEMENT OF THIS BUILDING.
5. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN - SHEET A66 FOR EXACT LOCATIONS OF LIGHTING FIXTURES

GENERAL REVISIONS OCT. 29/65

No.	PARTICULARS	DATE	BY
REVISIONS			

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL DESIGN BY P.O.

PRINTING DATE
1 DEC. 1964

DRAWN BY H.E.G.

SCALE: 1/8" = 1'-0"

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This drawing is not to be used for building purposes until countersigned by: K. J. Buckle

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366 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 3-4491

GREEN BLANKSTEIN RUSSELL ASSOCIATES
Mechanical & Electrical Consultants Telephone SP 4-3566

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

TITLE THIRD FLOOR PLAN ELECTRICAL

SHEET NO. 6020 — E-9

W.J.D. 178H

151 Princess Street
sheet no. E8
project no. 8020
description Second Floor Panelectrical

NOTES

1. EXACT LOCATIONS OF ALL UNDERFLOOR DUCTS SHOWN ON THIS SHEET SHALL BE AS APPROVED ON SHOP DRAWINGS AT LATER DATE.
2. ALL UNDERFLOOR DUCTS SHOWN ON THIS SHEET SHALL BE TYPE "D" UNLESS OTHERWISE SPECIFICALLY DESIGNATED.
3. IMPORTANT NOTE
   ALL CONDUITS SHALL BE COMPLETELY EMBEDDED IN CONCRETE FLOOR SLAB (NO EXPOSED CONDUIT IN BASEMENT AREA) THROUGH TO BASE OF CROSS-CONNECTING RACK AND PANELS AS NOTED ON DRAWINGS.
4. SEE NOTE 3 ON SHEET E9

REVISIONS

ROOM 216, 221, 222, 246 - ADDED TEL. OUTLETS.
ROOM 215 - ADDED TYPE "D" DUCT, ADDED TEL. OUTLET. DELETED TEL. OUTLETS ABOVE WALL.
ROOM 216, 217, 218, 219, 220, 241 - ADDED TEL. OUTLETS, ADDED AND/OR RELOCATED CLOCKS.
ROOM 224 - ADDED AND RELOCATED TYPE "D" DUCTS.
- DELETED AND ADDED TEL. OUTLETS
- ADDED CONV. OUTLETS
- RELOCATED WALL CLOCK.
ROOM 237 - ADDED WALL CLOCK AND TEL. OUTLET & RELAY CAB. RELOCATED TEL. CONDUITS.
ROOM 239 - DIVERTED TEL. CONDUITS TO ROOM 237.
ROOM 228 - ADDED TYPE "D" DUCT AND TEL. OUTLETS.
ROOM 231 - DIVERTED TEL. CONDUITS TO ROOM 238
ROOM 233 - RELOCATED & ADDED TYPE "D" DUCT.
- ADDED TEL. & CONV. OUTLETS
- ADDED TEL. RELAY CABINET.
- RELOCATED TEL. CONDUITS.
ROOM 235 - ADDED TEL. CONDUIT & TYPE "D" DUCT. ADDED WALL CLOCK.

DATE MAY 26'66

REVISED W/P DUCT LAYOUT (AUG. 31/65)

GENERAL REVISIONS OCT. 29/65

I.C. & PAGING SYSTEMS NOV. 15/65

999 RECORDERS & PAGING SYS CONSOLE DEC. 20/66
& REGISTERS - CLARIFICATION N.C.

No.	PARTICULARS	DATE	BY
	REVISIONS		

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL DESIGN BY E.F.T. & L.W.

PRINTING DATE
1 DEC. 1966

DRAWN BY H.E.C.

SCALE: 1/8" = 1'-0"

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This drawing is not to be used for building purposes until countersigned by:

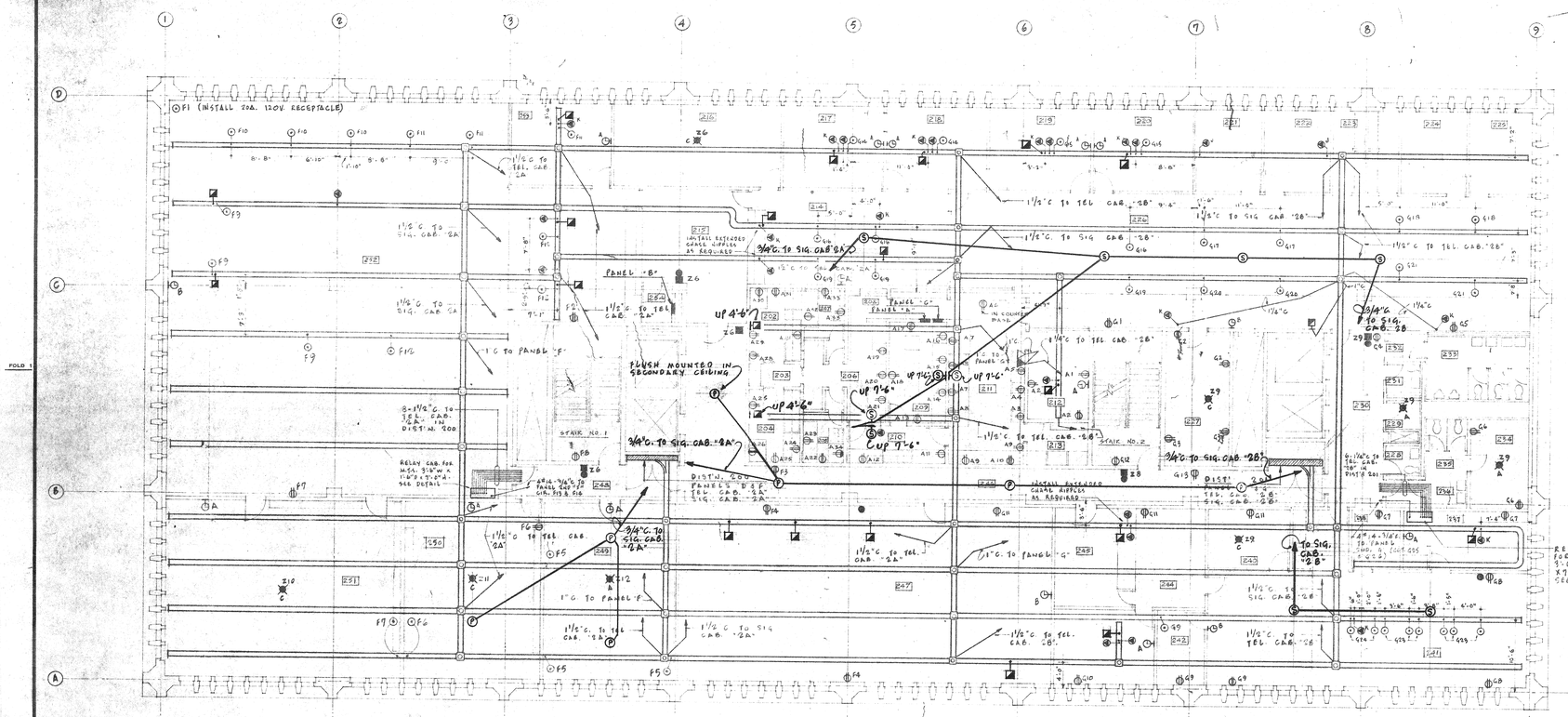
LIBLING MICHENER & ASSOCIATES ARCHITECTS
368 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 3-4451
GREEN BLANKSTEIN RUSSELL ASSOCIATES
Mechanical & Electrical Consultants Telephone SP 4-3566

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

I.C. & PAGING SYSTEMS

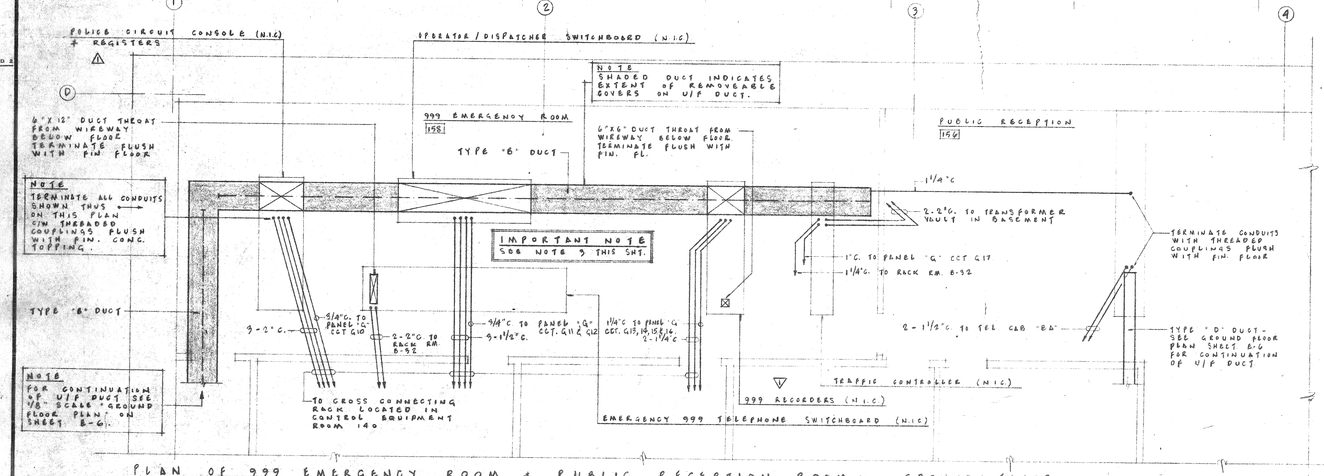
TITLE SECOND FLOOR PLAN
ELECTRICAL

SHEET NO. 8020 - E-8

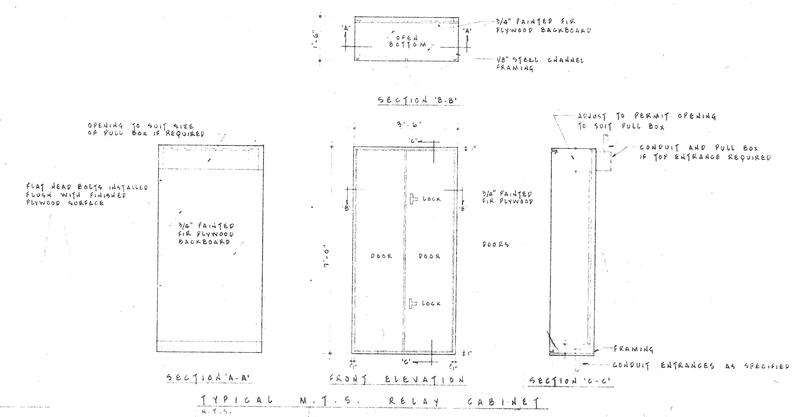


RELAY CABINET MATERIALS

CABINET	- NO. 12 GA. SHEET STEEL.
FRAMING	- 1/8" STEEL CHANNELS
DOORS	- NO. 16 GA. FORMED STEEL.
BACK PANEL	- 3/4" PAINTED FIR PLYWOOD
HINGES	- PIANO TYPE
LOCKS	- PANELBOARD TYPE - ALL KEYED ALIKE
CATCHES	- INSIDE TYPE ON LEFT HAND DOORS.
FINISH	- CABINET - STEPHENS 6000 DARK GREY BAKED ENAMEL. - DOORS - STEPHENS 6000A LIGHT GREY BAKED ENAMEL.



PLAN OF 999 EMERGENCY ROOM & PUBLIC RECEPTION ROOM - GROUND FLOOR
SCALE: 1/4" = 1'-0"



TYPICAL M.T.S. RELAY CABINET
N.T.S.

address 181 Princess Street
project no 6020
description Electrical
sheet no E8
description Second Floor Plan

NOTES

1. EXACT LOCATIONS OF ALL UNDERFLOOR DUCTS SHOWN ON THIS SHEET SHALL BE AS APPROVED ON SHOP DRAWINGS AT LATER DATE.
2. ALL UNDERFLOOR DUCTS SHOWN ON THIS SHEET SHALL BE 'TYPE 'D' UNLESS OTHERWISE SPECIFICALLY DESIGNATED.
3. IMPORTANT NOTE
   ALL CONDUITS SHALL BE COMPLETELY EMBEDDED IN CONCRETE FLOOR SLAB (NO EXPOSED CONDUIT IN BASEMENT AREA) THROUGH TO BASE OF CROSS-CONNECTING RACK AND PANELS AS NOTED ON DRAWINGS.
4. SEE NOTE 3 ON SHEET E5

REVISIONS

- Room 210, 221, 222, 246 - ADDED TEL. OUTLETS.
- Room 216 - ADDED TYPE "D" DUCT, ADDED TEL. OUTLET, DELETED TEL. OUTLETS NORTH WALL.
- Room 210, 211, 218, 219, 220, 241 - ADDED TEL. & CONV. OUTLETS, ADDED AND/OR RELOCATED CLOCKS.
- Room 226 - ADDED AND RELOCATED TYPE "D" DUCTS. - DELETED AND ADDED TEL. OUTLETS - ADDED CONV. OUTLETS - RELOCATED WALL CLOCKS.
- Room 257 - ADDED WALL CLOCK AND TEL. OUTLET & RELAY CAB. RELOCATED TEL. CONDUITS.
- Room 259 - DIVERTED TEL. CONDUITS TO ROOM 259.
- Room 249 - ADDED TYPE "D" DUCT AND TEL. OUTLETS.
- Room 261 - DIVERTED TEL. CONDUITS TO ROOM 252
- Room 252 - RELOCATED & ADDED TYPE "D" DUCTS. - ADDED TEL. & CONV. OUTLETS - ADDED TEL. RELAY CABINET. - RELOCATED TEL. CONDUITS.
- Room 263 - ADDED TEL. CONDUIT & TYPE "D" DUCT. ADDED WALL CLOCK.

DATE MAY 25'66

REVISED U/F DUCT LAYOUT (AUG. 31/67)

GENERAL REVISIONS OCT. 29/65

No.	PARTICULARS	DATE	BY
1	999 RECEIVERS & POLICE CCS CONSOLE & REGISTERS - CLARIFICATION NO.	DEC 20/66	H.E.C

REVISIONS

F1 (INSTALL 20A. 120V. RECEPTACLE)

PANEL "B" — PANEL "C" — PANEL "A" — PANEL "D" — PANEL "E" — PANEL "F" — PANEL "G"

STAIR NO. 1 — STAIR NO. 2

DIST'N. 200 PANELS 'D' & 'E' TEL. CAB. "2A" SIG. CAB. "2A"

DIST'N. 201 PANELS 'F' & 'G' TEL. CAB. "2B" SIG. CAB. "2B"

RELAY CAB. FOR M.T.S. 3'-6" W. X 1'-6" D. X 7'-0" H. SEE DETAIL

RELAY CABINET MATERIALS

CABINET	- NO. 12 GA. SHEET STEEL.
FRAMING	- 1/8" STEEL CHANNELS
DOORS	- NO. 12 GA. FORMED STEEL.
BACK PANEL	- 3/4" PAINTED FIR PLYWOOD
HINGES	- PIANO TYPE
LOCKS	- PANELBOARD TYPE - ALL KEYED ALIKE
CATCHES	- INSIDE TYPE ON LEFT HAND DOORS.
FINISH	- CABINET - STEPHENS 6900 DARK GREY BAKED ENAMEL. - DOORS - STEPHENS 6090A LIGHT GRAY BAKED ENAMEL.

POLICE CIRCUIT CONSOLE (N.I.C) + REGISTERS

SPEAKER / DISPATCHER SWITCHBOARD (N.I.C)

NOTE SHADED DUCT INDICATES EXTENT OF REMOVEABLE COVERS ON U/F DUCT.

999 EMERGENCY ROOM 158

PUBLIC RECEPTION 156

6"X12" DUCT THROAT FROM WIREWAY BELOW FLOOR. TERMINATE FLUSH WITH FIN. FLOOR

6"X6" DUCT THROAT FROM WIREWAY BELOW FLOOR. TERMINATE FLUSH WITH FIN. FL.

TYPE "B" DUCT

NOTE TERMINATE ALL CONDUITS SHOWN THUS → IN THIS PLAN WITH THREADED COUPLINGS FLUSH WITH FIN. CONC. TOPPING.

IMPORTANT NOTE SEE NOTE 3 THIS SHT.

TERMINATE CONDUITS WITH THREADED COUPLINGS FLUSH WITH FIN. FLOOR

TYPE "D" DUCT - SEE GROUND FLOOR PLAN SHEET E-6 FOR CONTINUATION OF U/F DUCT

NOTE FOR CONTINUATION OF U/F DUCT SEE 1/8" SCALE "GROUND FLOOR PLAN" ON SHEET E-6.

TO CROSS CONNECTING RACK LOCATED IN CONTROL EQUIPMENT ROOM 140

TRAFFIC CONTROLLER (N.I.C.)

999 RECEIVERS (N.I.C.)

EMERGENCY 999 TELEPHONE SWITCHBOARD (N.I.C.)

PLAN OF 999 EMERGENCY ROOM & PUBLIC RECEPTION ROOM - GROUND FLOOR

SCALE: 1/4" = 1'-0"

OPENING TO SUIT SIZE OF PULL BOX IS REQUIRED

FLAT HEAD BOLTS INSTALLED FLUSH WITH FINISHED PLYWOOD SURFACE

3/4" PAINTED FIR PLYWOOD BACKBOARD

SECTION 'A-A'

SECTION 'B-B'

1/8" STEEL CHANNEL FRAMING

3'-6" — 6" — DOOR — DOOR — LOCK — LOCK — 7'-0" — DOORS

FRONT ELEVATION

ADJUST TO PERMIT OPENING TO SUIT PULL BOX

CONDUIT AND PULL BOX IS TOP ENTRANCE REQUIRED

FRAMING

CONDUIT ENTRANCES AS SPECIFIED

SECTION 'C-C'

TYPICAL M.T.S. RELAY CABINET

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL DESIGN BY E.F.T. & L.W.

PRINTING DATE
1 DEC. 1966

DRAWN BY H.E.C

SCALE 1/8" = 1'-0"

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This drawing is not to be used for building purposes until countersigned by:

L. S. Buckler

LIBLING MICHENER & ASSOCIATES ARCHITECTS
265 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 3-4431
GREEN BLANKSTEIN RUSSELL ASSOCIATES
Mechanical & Electrical Consultants Telephone SP 4-3546

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

TITLE SECOND FLOOR PLAN ELECTRICAL
SHEET NO. 6020 - E-8

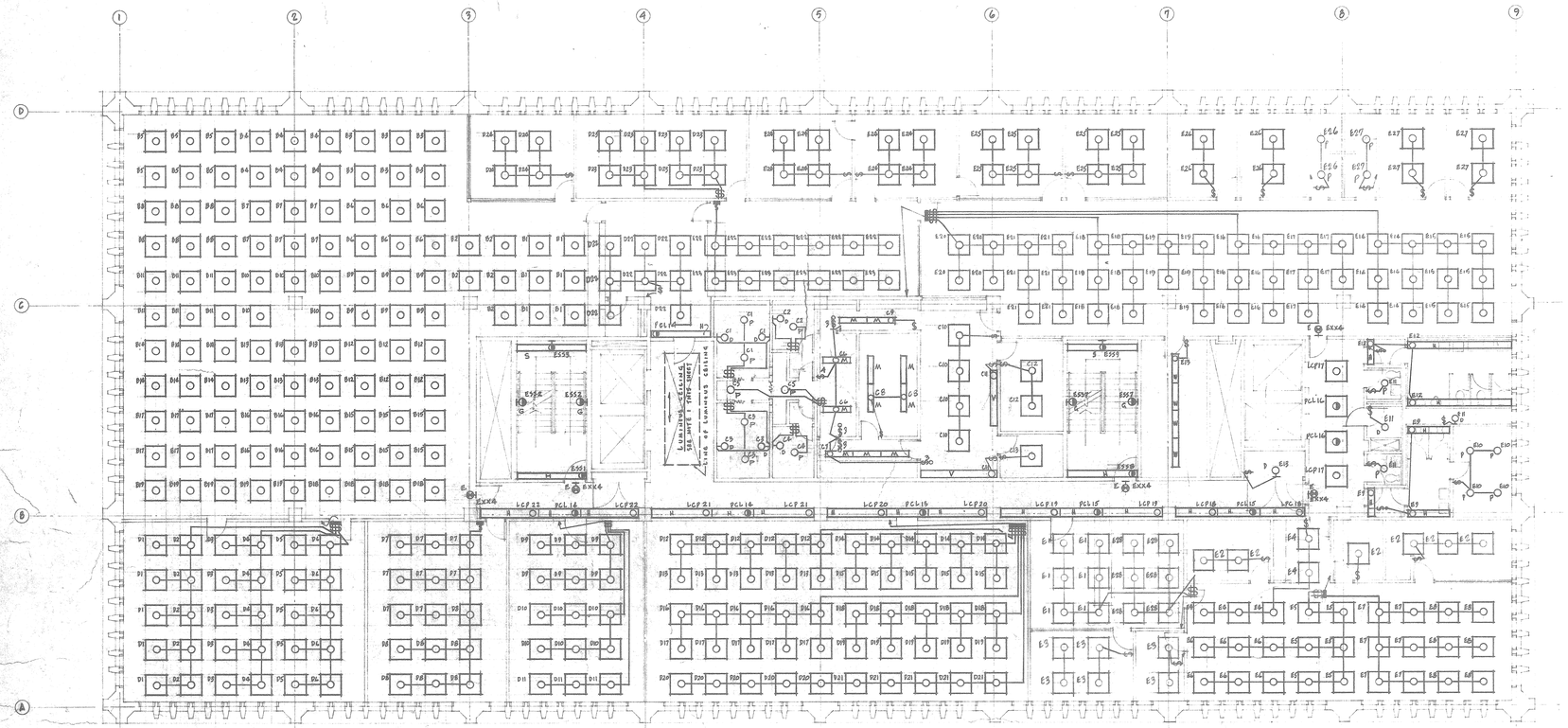
W.I.D. 172H

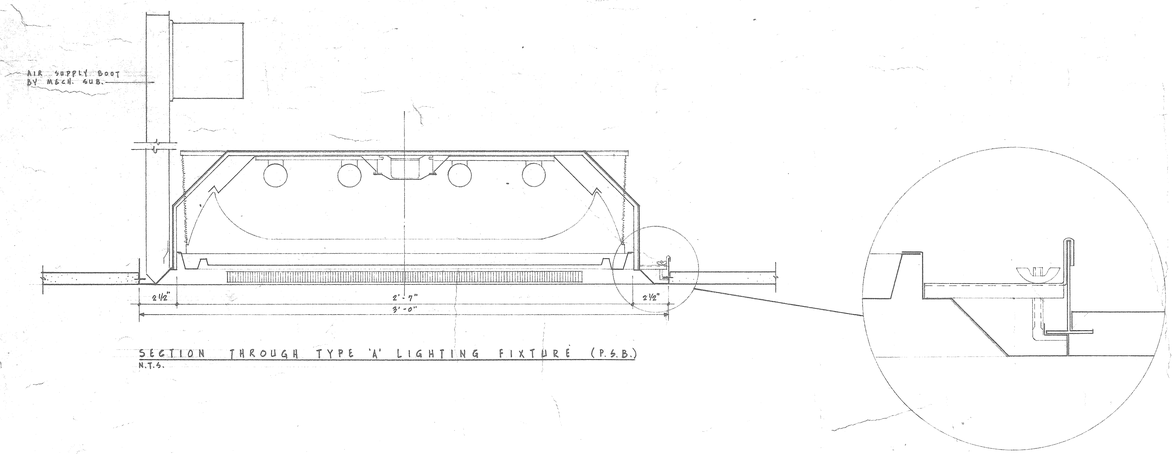
151 Princess Street
address

6020
project no

E7
sheet no

Second Floor Plan Electrical
description





SECTION THROUGH TYPE 'A' LIGHTING FIXTURE (P.S.B.)
N.T.S.

NOTES

1. SUPPLY, INSTALL, WIRE & CONNECT FIVE ROWS OF TYPE 'F' FIXTURES. EACH ROW SHALL CONSIST OF FIVE - 4'-0" FIXTURES. EACH ROW SHALL BE INSTALLED ON APPROX. 10" CENTERS. CONNECT 3 ROWS OF FIXTURES TO PANEL PCL (CCT. 17 CIRCUIT SHALL BE ALTERNATED: (CONNECT TO EVERY SECOND ROW TO PROVIDE A HALF LIGHT PATTERN). CONNECT REMAINING TWO ROWS TO PANEL LCP. CCT. 16.
2. ALL FLUORESCENT LIGHTING FIXTURES SHOWN ON THE SECOND FLOOR PLAN MEASURING 5'-0" SQUARE SHALL BE TYPE A
3. UNLESS OTHERWISE NOTED ALL OUTLETS ON THIS FLOOR SHALL BE WIRED & CONNECTED TO THE DESIGNATED PANELBOARDS LOCATED ON THIS FLOOR.
4. ALL OUTLETS ON THIS FLOOR DESIGNATED AS EXX, EXY, PCL & LCP SHALL BE WIRED & CONNECTED TO THE APPROPRIATE PANELS WHICH ARE LOCATED IN THE BASEMENT OF THIS BUILDING
5. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN - SHEET A26 FOR EXACT LOCATIONS OF LIGHTING FIXTURES.

GENERAL REVISIONS OCT. 29/65

No.	PARTICULARS	DATE	BY
REVISIONS			

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL DESIGN BY P.D.

PRINTING DATE
1 DEC. 1964

DRAWN BY M.E.C., B.R.H. & B.B.

SCALE: 1/8" = 1'-0"

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This drawing is not to be used for building purposes until countersigned by:
K.S. Buchler

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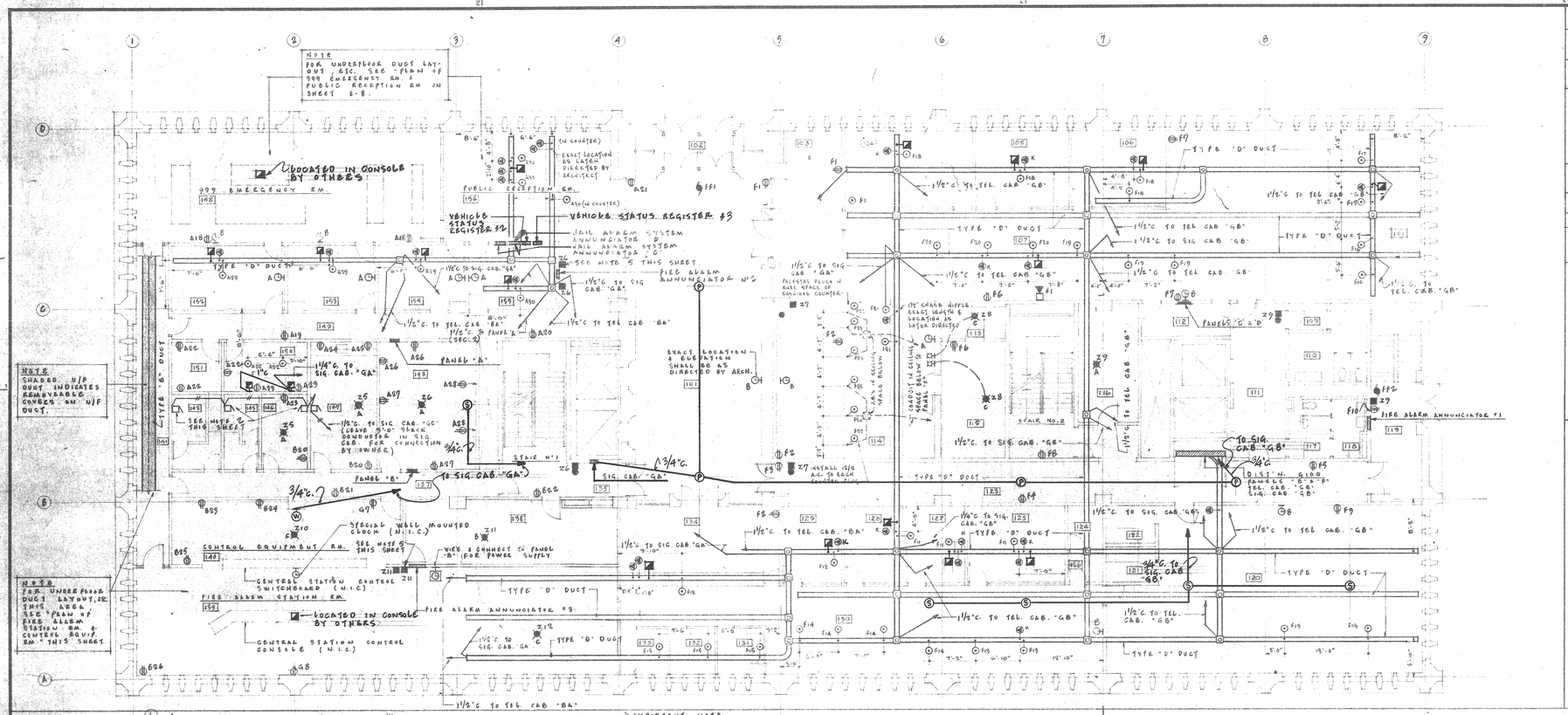
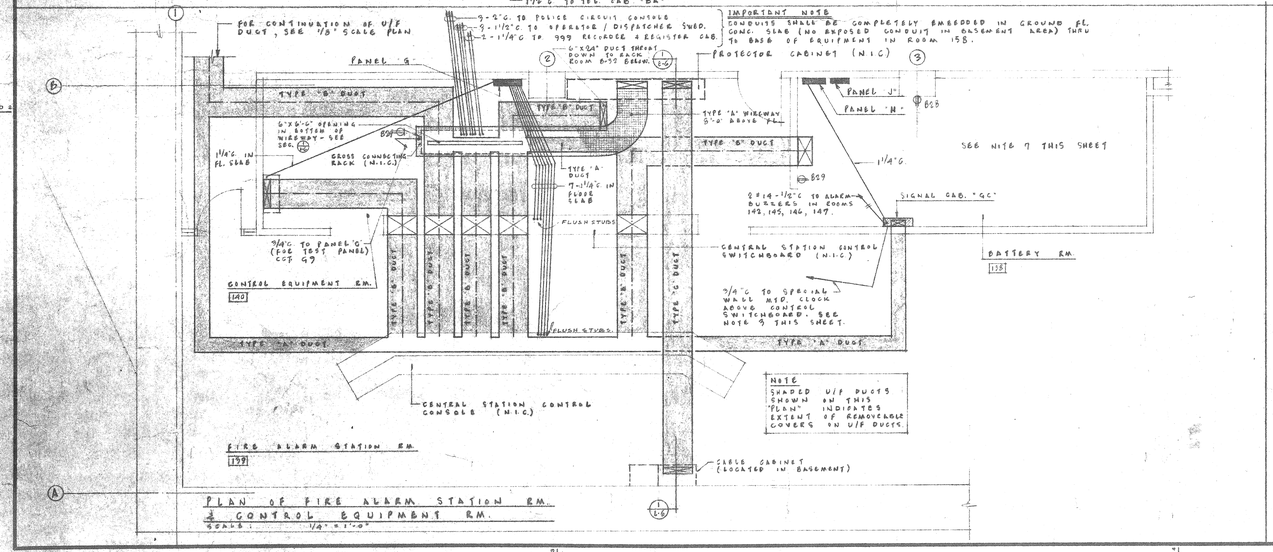
PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

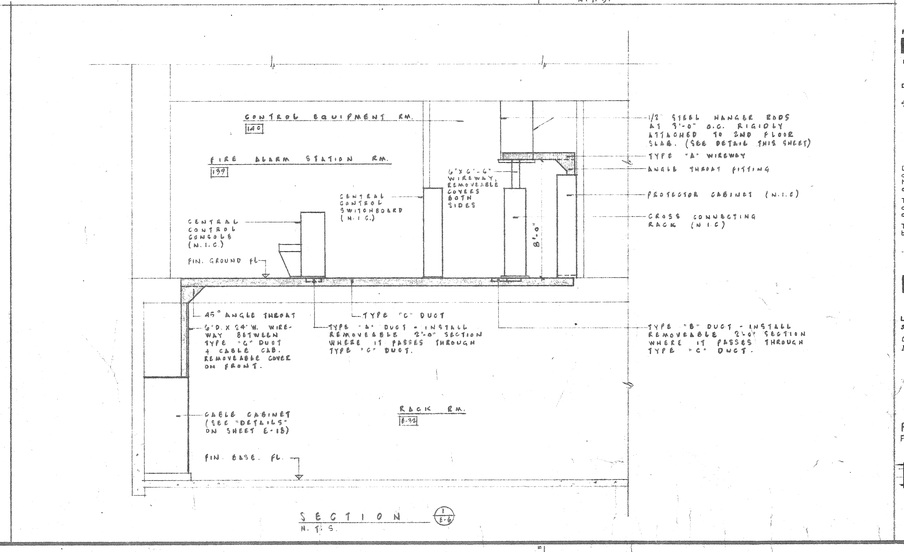
TITLE SECOND FLOOR PLAN ELECTRICAL
SHEET NO. 6020 — E-7

151 Princess Street
6020 Eb
Project No. Sheet No.
Ground Floor Plan Electrical
Description

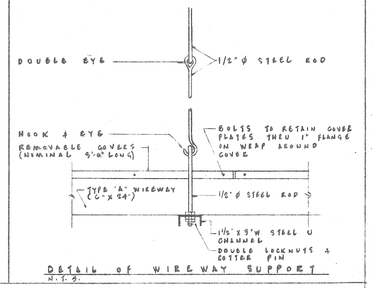




PLAN OF FIRE ALARM STATION RM. & CONTROL EQUIPMENT RM.
SCALE: 1/4" = 1'-0"



SECTION 1/E-6
N.T.S.



DETAIL OF WIREWAY SUPPORT
N.T.S.

NOTES

1. EXACT LOCATIONS OF ALL UNDERFLOOR DUCTS SHOWN ON THIS SHEET SHALL BE AS APPROVED ON SHOP DRAWINGS AT LATER DATE.
2. FLUSH MOUNTED ALARM BUZZERS, 24V. A.C., EDWARDS CAT. # 1983. WIRE & CONNECT WITH #14 TYPE "TW" CONDUCTORS.
3. ELECTRICAL SUBCONTRACTOR SHALL WIRE & CONNECT SPECIAL WALL MOUNTED CLOCK LOCATED ABOVE CONTROL SWITCHBOARD AS DIRECTED BY MUNICIPAL EQUIPMENT CONTRACTOR TO TERMINALS PROVIDED IN CONTROL CONSOLE. OUTLET BOX SHALL SUIT SPECIAL CLOCK. SPECIAL CLOCK SHALL BE SUPPLIED BY MUNICIPAL EQUIPMENT CONTRACTOR.
4. ALL UNDERFLOOR DUCTS SHOWN ON THE GROUND FLOOR PLAN SHALL BE TYPE "D" UNLESS OTHERWISE SPECIFICALLY DESIGNATED.
5. THIS FIRE ALARM STATION SHALL BE GENERAL ALARM TYPE SETCO #470.
6. SEE NOTE 3 ON SHEET E-3.
7. WIRING & CONNECTION OF BATTERY CHARGERS, ETC. SHALL BE AS LATER DIRECTED BY THE ARCHITECT, AND WILL BE PAID FOR FROM THE "CASH ALLOWANCE".

REVISIONS

ROOM 103 - ADDED WALL CLOCK.
ROOMS 104, 105, 106 - ADDED TEL. & CONV. OUTLETS.
ROOMS 107, 118, 125, 127, 128, 129, 136 - ADDED TEL. & CONV. OUTLETS.
ROOM 108, 152, 153, 154, 156 - RELOCATED TYPE "D" DUCT. ADDED TEL. & CONV. OUTLETS.
ROOM 120 - ADDED TELEPHONE OUTLET.
ROOMS 131, 132, 133 - ADDED CONV. OUTLETS
ROOM 130 - ADDED TYPE "D" DUCTS, ADDED TEL. & CONV. OUTLETS. RELOCATED WALL CLOCK.
ROOM 150 - ADDED CONV. OUTLETS.
ROOM 156 - ADDED TYPE "D" DUCTS, TEL. & CONV. OUTLETS.

DATE MAY 25/65

REVISED U/F DUCT LAYOUT (AUG. 31/65)

GENERAL REVISIONS OCT. 29/65

I.C. & PAGING SYSTEMS NOV. 15/65

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL DESIGN BY E.F.T.

PRINTING DATE
[redacted]
1 DEC 1964

DRAWN BY H.E.G.

SCALE: 1/8" = 1'-0"

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V. S. Buckler

LIBLING MICHENER & ASSOCIATES ARCHITECTS
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GREEN BLANKSTEIN RUSSELL ASSOCIATES
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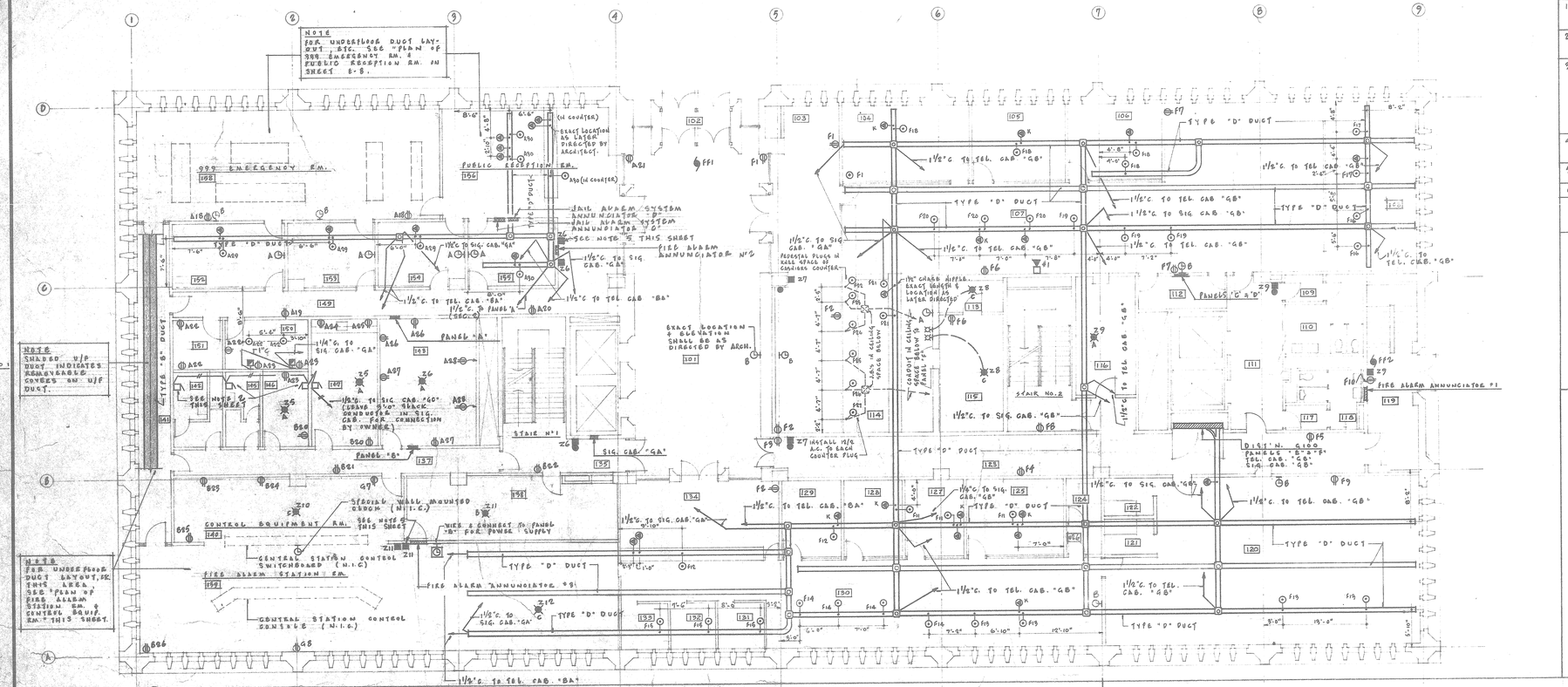
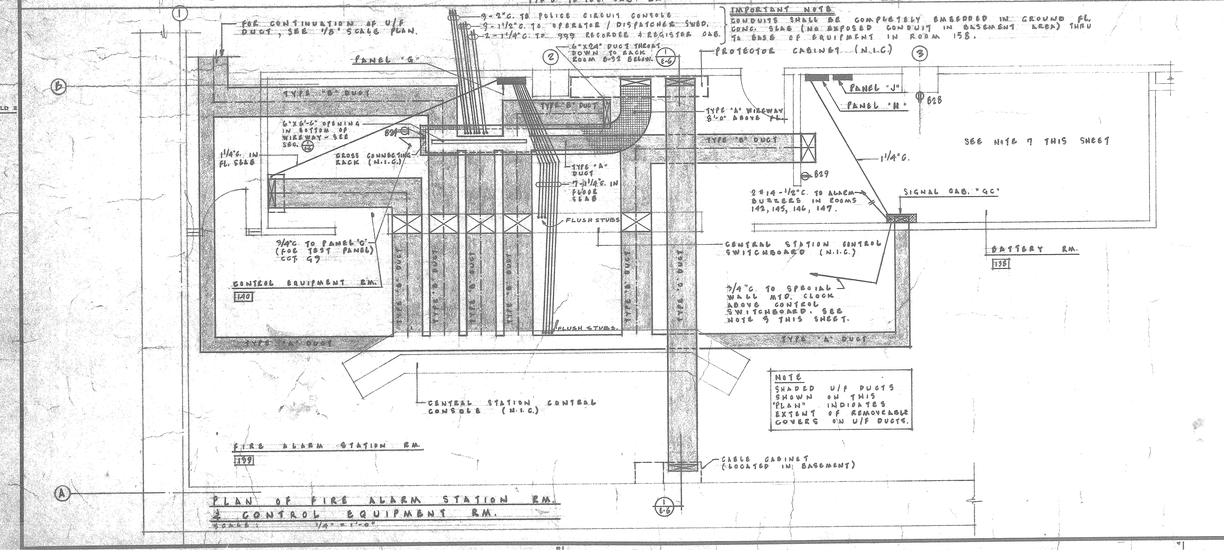
PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

I.C. & PAGING SYSTEMS

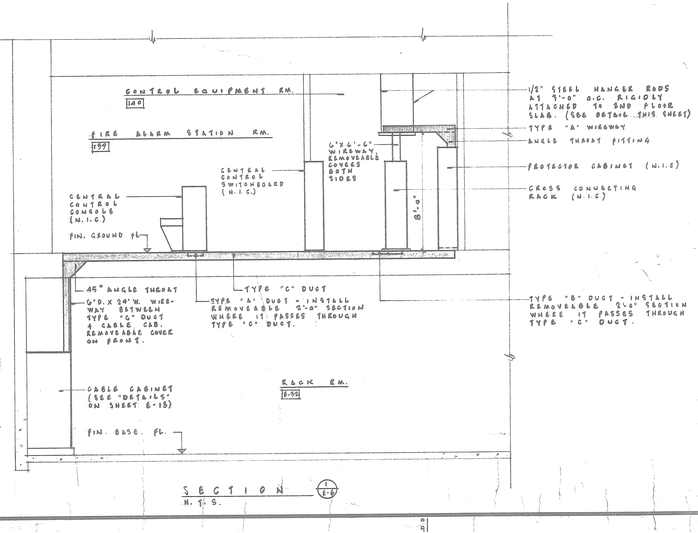
TITLE GROUND FLOOR PLAN ELECTRICAL
SHEET NO. 6020-E-6

W.J.D. 175H





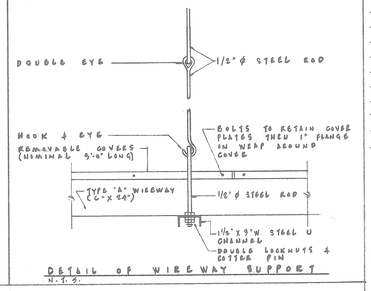
PLAN OF FIRE ALARM STATION RM. & CONTROL EQUIPMENT RM.
SCALE: 1/4" = 1'-0"



SECTION
N.T.S.

NOTES

1. EXACT LOCATIONS OF ALL UNDERFLOOR DUCTS SHOWN ON THIS SHEET SHALL BE AS APPROVED ON SHOP DRAWINGS AT LATER DATE.
2. FLUSH MOUNTED ALARM BUZZERS, 24V. A.C., EDWARDS CAT. #1983. WIRE & CONNECT WITH #14 TYPE 'TW' CONDUCTORS.
3. ELECTRICAL SUBCONTRACTOR SHALL WIRE & CONNECT SPECIAL WALL MOUNTED CLOCK LOCATED ABOVE CONTROL SWITCHBOARD AS DIRECTED BY MUNICIPAL EQUIPMENT CONTRACTOR TO TERMINALS PROVIDED IN CONTROL CONSOLE. OUTLET BOX SHALL SUIT SPECIAL CLOCK. SPECIAL CLOCK SHALL BE SUPPLIED BY MUNICIPAL EQUIPMENT CONTRACTOR.
4. ALL UNDERFLOOR DUCTS SHOWN ON THE GROUND FLOOR PLAN SHALL BE TYPE "D" UNLESS OTHERWISE SPECIFICALLY DESIGNATED.
5. THIS FIRE ALARM STATION SHALL BE "GENERAL ALARM" TYPE SETCO #470.
6. SEE NOTE 9 ON SHEET E-9.
7. WIRING & CONNECTION OF BATTERY CHARGERS, ETC. SHALL BE AS LATER DIRECTED BY THE ARCHITECT, AND WILL BE PAID FOR FROM THE "CASH ALLOWANCE".



DETAIL OF WIREWAY SUPPORT
N.T.S.

REVISIONS

ROOM 103 - ADDED WALL CLOCK.
ROOMS 104, 105, 106 - ADDED TEL. & CONV. OUTLETS.
ROOMS 107, 114, 125, 127, 128, 129, 136 - ADDED TEL. & CONV. OUTLETS.
ROOMS 108, 158, 159, 154, 156 - RELOCATED TYPE "D" DUCT. ADDED TEL. & CONV. OUTLETS.
ROOM 120 - ADDED TELEPHONE OUTLET.
ROOMS 131, 132, 133 - ADDED CONV. OUTLETS
ROOM 130 - ADDED TYPE "D" DUCTS, ADDED TEL. & CONV. OUTLETS. RELOCATED WALL CLOCK.
ROOM 150 - ADDED CONV. OUTLETS.
ROOM 156 - ADDED TYPE "D" DUCTS, TEL. & CONV. OUTLETS.

DATE MAY 25 '65

REVISED U/F DUCT LAYOUT (AUG. 31/65)

GENERAL REVISIONS OCT. 29/65

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL DESIGN BY E.F.T.

PRINTING DATE
[redacted]
1 DEC. 1964

DRAWN BY H.E.G.

SCALE: 1/8" = 1'-0"

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LIBLING MICHENER & ASSOCIATES ARCHITECTS
362 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 8-4491
GREEN BLANKSTEIN RUSSELL ASSOCIATES
Mechanical & Electrical Consultants Telephone SP 4-3546

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

TITLE GROUND FLOOR PLAN ELECTRICAL
SHEET NO. 6020-E-6

151 Princess S.
6020 Project no.
Ground Floor Plan Electrical
Description
E6 Sheet no.

FOLD 1
FOLD 2
FOLD 3

JOB NO.	6020
DRAWING NO.	E-4
SHEET NO.	

PSB BASEMENT FLOOR ELECTRICAL

191 PRINCESS ST.

NOTES

1. EXACT LOCATIONS OF ALL UNDERFLOOR DUCTS SHOWN ON THIS SHEET SHALL BE AS APPROVED ON SHOP DRAWINGS AT LATER DATE.
2. IMPORTANT NOTE
   ALL CONDUITS SHALL BE COMPLETELY EMBEDDED IN GROUND FLOOR SLAB (NO EXPOSED CONDUIT IN BASEMENT AREA) THROUGHOUT ENTIRE LENGTH OF CONDUIT RUNS.
3. TERMINATE CONDUIT UP 4'-0" ABOVE FIN. BASEMENT FLOOR. LABEL CONDUIT "CITY HALL TELEPHONE CABLEWAY".
4. ELECTRICAL SUBCONTRACTOR SHALL SUPPLY & INSTALL ELECTRIC AUTOMATIC ALTERNATORS FOR MOTORS P9 & P8 AND P15 & P14 ADJACENT TO THE CONTROL (TYPE "C") FOR THESE MOTORS. SEE SPEC'S. & MOTOR SCHEDULE".
5. SEE NOTE 9 ON SHEET E-3.

REVISIONS

ROOMS B-4 & B-36 - ADDED TELEPHONE OUTLET.
ROOM B-7 - ADDED TEL. OUTLET, ADDED TEL. SYSTEM RELAY CABINET & RELATED TEL. CONDUITS.
ROOM B-11 - RELOCATED & RATED/ED TYPE "D" DUCT. - RELOCATED WALL CLOCK. - ADDED TEL. & CONV. OUTLETS.
ROOM B-16 - ADDED & RELOCATED CONV. OUTLETS & BOOTS.
ROOM B-17 - RELOCATED TEL., SIGNAL & COM. OUTLETS.
ROOM B-33 - ADDED TWO OUTLETS - VENDING MACHINES.
ROOM B-35 - RELOCATED TEL. CONDUITS TO ROOM B-7.
ROOM B-31 - ADDED WALL CLOCK. - ADDED TEL. OUTLET.
ROOM B-32 - ADDED CONV. OUTLET. - ADDED PLYWOOD RELAY PANEL FOR M.T.S. - ADDED 3-1"ø C TO TRAFFIC CONTROLLER.
ROOMS B-39, B-34 & B-38 - ADDED TEL. & CONV. OUTLETS.
ROOM B-36 - ADDED CONV. OUTLET.
ROOM B-37 & B-39 - ADDED TEL. & CONV. OUTLETS. - RELOCATED TYPE "D" DUCT.
ROOM B-61 - ADDED WALL CLOCK - ADDED TEL. & CONV. OUTLET.

DATE: MAY 26'69

GENERAL REVISIONS OCT. 29/65

SYMBOLS - SEE SPECS

- SL KEY TYPE TELEPHONE OUTLET, TRIANGLE CAT. #2015, FLOOR PEDESTAL, BRUSHED CHROME FINISH, COMPLETE WITH ONE INCH BUSHED OPENING AND 1¼ INCH CHASE NIPPLE.
- REGULAR & 2L KEY TELEPHONE OUTLET, TRIANGLE CAT. #2005, FLOOR PEDESTAL, BRUSHED CHROME FINISH, COMPLETE WITH ¾ INCH BUSHED OPENING AND 1¼ INCH CHASE NIPPLE.
- TELEPHONE OUTLET WITH PLUG-IN JACK, TRIANGLE CAT. #2005, FLOOR PEDESTAL, BRUSHED CHROME FINISH, COMPLETE WITH ⅞ INCH HOLE FOR INSTALLATION OF JACK BY M.T.S., AND 1¼ INCH CHASE NIPPLE.
- WALL OUTLET FOR TELEPHONE - REFER TO SPECIFICATION CLAUSES "COVER PLATES" AND "TELEPHONE & INTER-TELEPHONE SYSTEM".
- WALL OUTLET FOR TELEPHONE - SAME AS ABOVE EXCEPTING THE PLATE WILL BE FITTED WITH A TELEPHONE JACK BY THE M.T.S.
- CONVENIENCE OUTLET, TRIANGLE CAT. #2015, FLOOR PEDESTAL, BRUSHED CHROME FINISH COMPLETE WITH 1¼ INCH CHASE NIPPLE AND FITTED WITH DUPLEX CONVENIENCE RECEPTACLES AS SPECIFIED IN CLAUSE "CONVENIENCE OUTLETS", SUB-CLAUSE (a) "WALL MOUNTED DUPLEX CONVENIENCE RECEPTACLES".

NOTE: ACTUAL LOCATION OF FLOOR PEDESTAL OUTLETS SHALL BE POSITIONED ACCORDING TO THE DOT SHOWN ON THE DUCT.

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL DESIGN BY C.F.T. & L.W.

PRINTING DATE
1 DEC. 1969

DRAWN BY H.S.C.

SCALE: 1/8"=1'-0"

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302 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 2-4321
GREEN BLANKSTEIN RUSSELL ASSOCIATES
Mechanical & Electrical Consultants Telephone SP 4-3546

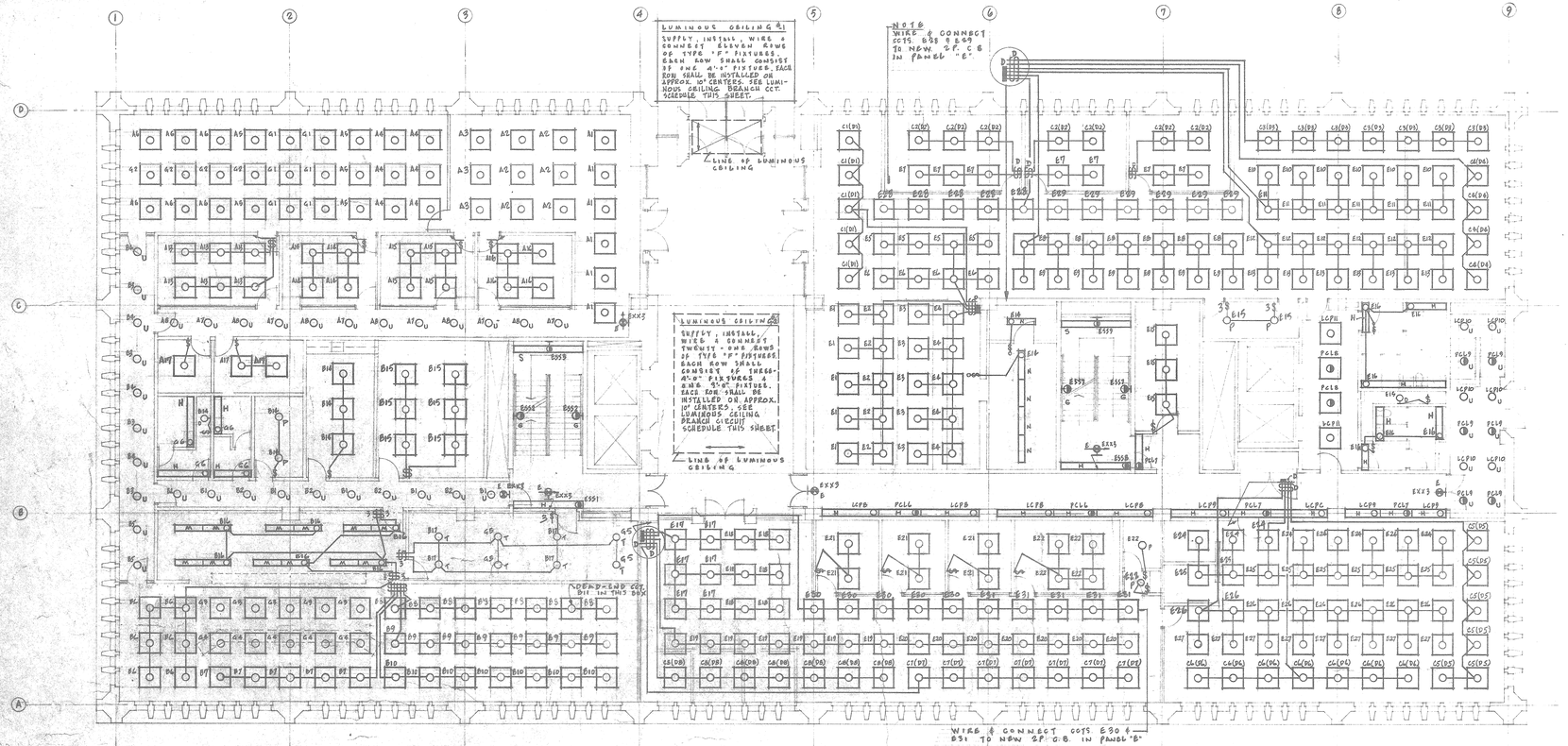
PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

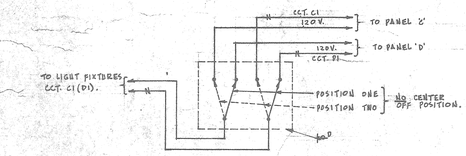
BASEMENT FLOOR PLAN
TITLE ELECTRICAL
SHEET NO. 6020-E-4

151 Princess Street
ADDRESS

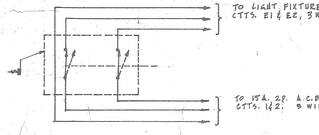
6020 E-5
PROJECT NO. SHEET NO.

Ground Floor Plan Electrical
DESCRIPTION

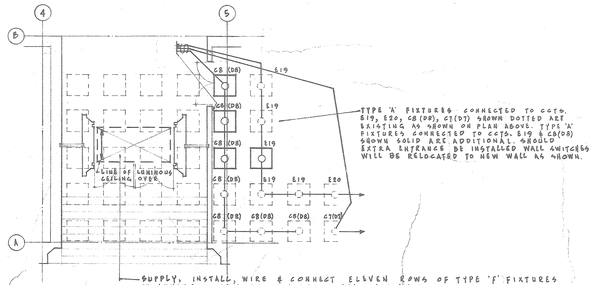




TYPICAL CONNECTION DIAGRAM FOR DOUBLE POLE DOUBLE THROW WALL SWITCH. (TWO POSITION) N.T.S.



TYPICAL CONNECTION DIAGRAM FOR DOUBLE POLE SINGLE THROW WALL SWITCH N.T.S.



PLAN OF EXTRA ENTRANCE

SEE SPEC'N. "GENERAL ELECTRICAL CLAUSES", CLAUSE "SEPARATE PRICES"

NOTES

1. ALL FLUORESCENT LIGHTING FIXTURES SHOWN ON THE GROUND FLOOR PLAN MEASURING 5'-0" SQUARE SHALL BE TYPE "A".
2. UNLESS OTHERWISE NOTED ALL OUTLETS ON THIS FLOOR SHALL BE WIRED & CONNECTED TO THE DESIGNATED PANEL-BOARDS LOCATED ON THIS FLOOR.
3. ALL OUTLETS ON THIS FLOOR DESIGNATED AS EXX, E99, PCL AND LCP SHALL BE WIRED & CONNECTED TO THE APPROPRIATE PANELS WHICH ARE LOCATED IN THE BASEMENT OF THIS BUILDING.
4. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN - SHEET A66 FOR EXACT LOCATIONS OF LIGHTING FIXTURES.

LUMINOUS CEILING BRANCH CIRCUIT SCHEDULE

LUMINOUS CEILING #1: CONNECT 6 ROWS OF FIXTURES TO PANEL 'PCL' CCT. 10 CIRCUIT SHALL BE ALTERNATED, (CONNECTED TO EVERY SECOND ROW) TO PROVIDE A HALF LIGHT PATTERN. CONNECT REMAINING 5 ROWS OF FIXTURES TO PANEL 'LCP' CCT. 12.

LUMINOUS CEILING #2: CONNECT 8 ROWS OF FIXTURES TO PANEL 'PCL' CCTS. 8-12 & 15, CIRCUITS SHALL BE ALTERNATED, (CONNECTED TO EVERY SECOND ROW) TO PROVIDE A HALF LIGHT PATTERN. MAXIMUM ROWS PER CIRCUIT SHALL NOT EXCEED 4. CONNECT REMAINING 10 ROWS TO PANEL 'LCP' CCTS. 13-14 & 15.

GENERAL REVISIONS OCT. 29/65

NO.	PARTICULARS	DATE	BY
	REVISIONS		

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DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL DESIGN BY P.O.

PRINTING DATE
1 DEC 1964

DRAWN BY H.E.C & B.L.
SCALE: 1/8" = 1'-0"

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302 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 2-4491
GREEN BLANKSTEIN RUSSELL ASSOCIATES
Mechanical & Electrical Consultants Telephone SP 4-3546

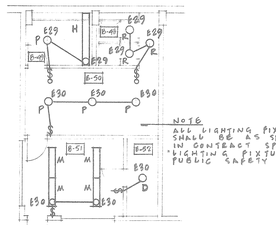
PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

TITLE GROUND FLOOR PLAN ELECTRICAL
SHEET NO. 6020—E-5

151 Princess Street
address
6020 E3
project no. sheet no.
Basement Floor Plan
description
Electrical

NOTES

1. ALL FLUORESCENT LIGHTING FIXTURES SHOWN ON THE BASEMENT FLOOR PLAN MEASURING 9'-0" SQUARE SHALL BE TYPE "A".
2. SUPPLY, INSTALL, WIRE & CONNECT FIVE ROWS OF TYPE "F" FIXTURES. EACH ROW SHALL CONSIST OF FOUR - 4'-0" FIXTURES EACH ROW SHALL BE INSTALLED ON APPROX. 10" CENTRES. CONNECT 3 ROWS OF FIXTURES TO PANEL "PCL", CCT. 9. CIRCUIT SHALL BE ALTERNATED (CONNECTED TO EVERY SECOND ROW TO PROVIDE A WALL LIGHT PATTERN) CONNECT REMAINING 2 ROWS TO PANEL "LCP", CCT Nº 23.
3. UNLESS OTHERWISE NOTED ALL OUTLETS ON THIS FLOOR SHALL BE WIRED & CONNECTED TO THE DESIGNATED PANELBOARDS LOCATED ON THIS FLOOR.
4. LOCATE TYPE 'D' FIXTURES & SWITCHES IN ELEVATOR PITS TO ELEVATOR SUBCONTRACTOR'S SATISFACTION.
5. BUS LOADING BAY & HOLDING RM. LIGHTING FIXTURES - HOLOPHANE PSYCHOPATHIC FIXTURE CAT #93-41 MOUNTED ON SIDE OF BEAMS AT MAXIMUM ELEVATIONS TO GIVE BEST LIGHT DISTRIBUTION.



REVISED PLAN OF CHAUFFEURS, LOCKER RM. SHOWER RM. & WASHROOM LOCATED AT WEST WALL OF PARKING GARAGE BASEMENT.

NOTE:
REFER TO ARCHITECTURAL REFLECTED CEILING PLAN - SHEET A-49 FOR EXACT LOCATIONS OF LIGHTING FIXTURES

NOTE:
FOR LIGHTING ETC. THIS AREA SEE SHEET E-5.

SEE SPEC'S. WIRING IN MECHANICAL AREAS.

SEE SPEC'S. WIRING IN MECHANICAL AREAS.

SEE NOTE 5 THIS SHEET

SEE NOTE 2 THIS SHEET

LUMINOUS CEILING SEE NOTE 2 THIS SHEET

SEE NOTE 4

SEE NOTE 6

CHAIN SUSPEND TYPE "WW" FIXTURES TO ELEVATION AS LATER DIRECTED.

S-WAY SWS.

S-WAY SWS.

GENERAL REVISIONS OCT. 29/65

NO.	PARTICULARS	DATE	BY

REVISIONS

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL DESIGN BY P.O.

PRINTING DATE
1 DEC. 1964

DRAWN BY H.E.C.

SCALE 1/8"=1'-0"

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K. S. Buckler

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303 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 2-4491

GREEN BLANKSTEIN RUSSELL ASSOCIATES
Mechanical & Electrical Consultants Telephone SP 4-3566

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOB

TITLE BASEMENT FLOOR PLAN ELECTRICAL

SHEET NO. 6020-E-3

151 Princess Street
WINNIPEG
6020
DRAWING NO.
E2
SHEET NO.
Basement Floor Plan
DESCRIPTION
Electrical

NOTES

1. EXACT LOCATIONS OF ALL UNDERFLOOR DUCTS SHOWN ON THIS SHEET SHALL BE AS APPROVED ON SHOP DRAWINGS AT LATER DATE
2. IMPORTANT NOTE
   ALL CONDUITS SHALL BE COMPLETELY EMBEDDED IN GROUND FLOOR SLAB (NO EXPOSED CONDUIT IN BASEMENT AREA) THROUGHOUT ENTIRE LENGTH OF CONDUIT RUNS
3. TERMINATE CONDUIT UP 4'-0" ABOVE FIN. BASEMENT FLOOR. LABEL CONDUIT "CITY HALL TELEPHONE RACEWAY".
4. ELECTRICAL SUBCONTRACTOR SHALL SUPPLY & INSTALL ELECTRIC AUTOMATIC ALTERNATORS FOR MOTORS P7 & P8 AND FOR F13 & F14 ADJACENT TO THE CONTROL (TYPE 'C') FOR SHEET MOTORS. SEE SPEC'S. - MOTOR SCHEDULE".
5. SEE NOTE 9 ON SHEET E-3.

REVISIONS

ROOMS B-6 & B-34 - ADDED TELEPHONE OUTLET.
ROOM B-7 - ADDED TEL OUTLET, ADDED TEL. SYSTEM RELAY CABINET & FACILITY TEL. CONDUITS.
ROOM B-11 - RELOCATED & RELABELED TYPE "D" DUCT. - ELIMINATED WALL CLOCK. - ADDED TEL & COM. OUTLETS.
ROOM B-14 - ADDED & RELOCATED CONV. OUTLETS & BOOTH.
ROOM B-17 - RELOCATED TEL., SIGNAL & COM. OUTLETS.
ROOM B-31 - ADDED TWO OUTLETS - VENDING MACHINES.
ROOM B-35 - RELOCATED TEL CONDUITS TO ROOM B-7.
ROOM B-37 - ADDED WALL CLOCK. - ADDED TEL. OUTLET.
ROOM B-38 - ADDED CONV. OUTLET. - ADDED PLYWOOD RELAY PANEL FOR M.T.S. - ADDED 3-1/4"C TO TRAFFIC CONTROLLER.
ROOMS B-39 & B-38 - ADDED TEL & CONV. OUTLETS.
ROOM B-36 ADDED CONV. OUTLET.
ROOM B-42 & 39 - ADDED TEL & CONV. OUTLETS. - RELOCATED TYPE "D" DUCT.
ROOM B-41 ADDED WALL CLOCK. - ADDED TEL & CONV. OUTLET.

DATE: MAY 26/65

GENERAL REVISIONS OCT. 29/65

I.C. & PAGING SYSTEMS NOV. 15/65

SYMBOLS - SEE SPECS

- S - 30 KEY TYPE TELEPHONE OUTLET - TRIANGLE CAST BASE, FLUSH PEDESTAL, BRUSHED CHROME FINISH, COMPLETE WITH ONE INCH BUSHED OPENING AND 1/2 INCH CHASE NIPPLE.
- S - REGULAR 6 PL KEY TELEPHONE OUTLET, TRIANGLE CAST BASE, FLUSH PEDESTAL, BRUSHED CHROME FINISH, COMPLETE WITH 3/4 INCH BUSHED OPENING AND 1/2 INCH CHASE NIPPLE.
- S - TELEPHONE OUTLET WITH PLUG-IN JACK, TRIANGLE CAST BASE, FLUSH PEDESTAL, BRUSHED CHROME FINISH, COMPLETE WITH 1/2 INCH HOLE FOR INSTALLATION OF JACK BY M.T.S., AND 1/4 INCH CHASE NIPPLE.
- WALL OUTLET FOR TELEPHONES - REFER TO SPECIFICATION CLAUSES "COVER PLATES" AND "TELEPHONE & MTS TELEPHONE SYSTEM".
- WALL OUTLET FOR TELEPHONE - SAME AS ABOVE EXCEPTING THE PLATE WILL BE FITTED WITH A TELEPHONE JACK BY THE M.T.S.
- CONVENIENCE OUTLET, TRIANGLE CAST BASE, FLUSH PEDESTAL, BRUSHED CHROME FINISH COMPLETE WITH 1/2 INCH CHASE NIPPLE AND FITTED WITH DUPLEX CONVENIENCE RECEPTACLE AS SPECIFIED IN CLAUSE "CONVENIENCE OUTLETS", 900 - CLAUSE (a) (iv) - MOUNTED DUPLEX CONVENIENCE RECEPTACLES".

NOTE: ACTUAL LOCATION OF FLOOR PEDESTAL OUTLETS SHALL BE ASCERTAINED ACCORDING TO THE CAT SHOWN ON THE DUCT.

SYMBOL SCHEDULE
I.C. AND PAGING SYSTEMS

- (S) CEILING MTD. LOUDSPEAKER OUTLET. LOWELL MFG. MODEL ALS-A BAFFLE, C/W LOWELL XCP84 BACK-BOX OR EQUAL, (4" DEPTH) FLUSH MTD. IN FIN. CEILING, SURFACE MTD. IN AREAS WITHOUT FINISHED CEILINGS.
- (HS) WALL MTD. LOUDSPEAKER OUTLET. LOWELL MFG. MODEL FHS-A WALL GRILLE C/W LOWELL PO8X BACK-BOX (4" DEPTH) FLUSH MOUNTED.
- (P) CEILING MTD. PAGING SYSTEM LOUDSPEAKER OUTLET. SAME COMPONENTS AND MOUNTING METHOD AS DESCRIBED FOR SYMBOL (S)
- (W) WALL MTD. INTER-COMMUNICATION STATION OUTLET. 10"X 7 3/4" FLUSH MOUNTED BOX - REFER TO DETAIL ON DRAWING. UP 4'-6"
- (M) FLOOR MTD. MICROPHONE OUTLET (COURTROOM PAGING SYSTEM) PEDESTAL FITTING CONNECTED TO "SIGNAL" CELL OF UNDERFLOOR DUCT TRIANGLE CAT. #900 PEDESTAL C/W ONE INCH BUSHED OPENING ON ONE SIDE. REFER TO CLAUSE KK-B.73 "QUANTITIES OF UNDERFLOOR RACEWAY SYSTEM SERVICE FITTINGS."
- (I) INTERCOMMUNICATION SYSTEM FLOOR MOUNTED OUTLET. PEDESTAL FITTING CONNECTED TO "SIGNAL" CELL OF UNDERFLOOR DUCT TRIANGLE CAT. #900 PEDESTAL C/W ONE INCH BUSHED OPENING ON ONE SIDE. REFER TO CLAUSE KK-B.73 "QUANTITIES OF U/F RACEWAY SYSTEM SERVICE FITTINGS."

NOTES
A #14 PULL-IN WIRE SHALL BE INSTALLED IN ALL CONDUIT WORK. LOUDSPEAKERS, INTERCOMMUNICATION STATIONS, PAGING EQUIPMENT, AMPLIFIERS AND ALL CONDUCTOR AND CABLE WORK ASSOCIATED THEREWITH WILL BE SUPPLIED AND INSTALLED BY THE OWNERS.
ALL CONDUIT SHALL BE 1/2" I.D UNLESS OTHERWISE NOTED ON THE DRAWINGS.

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL DESIGN BY C.F.T. & L.W.

PRINTING DATE
1 DEC. 1964

DRAWN BY H. B. C.
SCALE: 1/8"=1'-0"

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The contractor is to verify dimensions and data noted herein with conditions on the site and is held responsible for reporting any discrepancy to the architects for adjustment.
This drawing is not to be used for building purposes until countersigned by:

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Mechanical & Electrical Consultants Telephone SP 4-3546

PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

I.C. & PAGING SYSTEMS

BASEMENT FLOOR PLAN
ELECTRICAL
TITLE
SHEET NO. 6020-E-4

W.J.D. 175H

151 Princess Street
address
6020 E2
project no sheet no
Garage & Basement Floor
description
Plan - Electrical

NOTES

1. MOUNT RECEPTACLES CONNECTED TO CIRCUITS F6-7, 8-9, 11-12, 13 ON FRONT OF WORK BENCHES AS DIRECTED AT SITE.
2. UNLESS OTHERWISE NOTED ALL CONVENIENCE RECEPTACLES SHOWN ON THIS SHEET SHALL BE INSTALLED UP 4'-0".
3. MINIMUM SIZE BRANCH CIRCUIT CONDUCTORS FOR WIRING TO ALL OUTLETS ON THIS SHEET SHALL BE #10 A.W.G. TYPE 'TW' INSULATED. ALL OUTLETS LOCATED IN EXCESS OF 150'-0" FROM THEIR RELATED PANELBOARD SHALL BE WIRED WITH #8 A.W.G. CONDUCTORS UNLESS OTHERWISE SPECIFIED OR SHOWN ON THE DRAWINGS ALL OUTLETS LOCATED IN EXCESS OF 250'-0" FROM THEIR RELATED PANELBOARD SHALL BE WIRED WITH #6 A.W.G. CONDUCTORS UNLESS OTHERWISE SPECIFIED OR SHOWN ON THE DRAWINGS. ALL CONDUITS FOR BRANCH CIRCUIT WIRING SHALL BE SIZED IN FULL COMPLIANCE WITH THE LATEST EDITION OF THE CANADIAN ELECTRICAL CODE.
4. — DENOTES THESE CONDUCTORS IN CONDUIT. CONDUIT LAYOUT SHOWN IN THIS AREA IS IN GENERAL TYPICAL FOR ALL CONDUIT WORK TO ALL CEILING OUTLETS SHOWN ON THIS SHEET. ALL CONDUITS BETWEEN OUTLETS SHALL BE RUN AS SHOWN & EXTENDED DIRECTLY OUT OF THE STORAGE AREA FOR RETURNS TO "PANEL E". NO JUNCTION BOXES ON RETURN LINES ALLOWED IN STORAGE AREA.
5. ALL CONDUIT AND WIRING IN STORAGE AREA SHALL BE RUN AS SHOWN & EXTENDED DIRECTLY OUT OF THE STORAGE AREA FOR RETURNS TO "PANEL E". NO JUNCTION BOXES ON RETURN LINES ALLOWED IN STORAGE AREA.
6. FIXTURES IN THIS AREA SHALL BE MOUNTED WITH BOTTOMS FLUSH WITH BOTTOM OF JOISTS AND INSTALLED TO SUIT OVERHEAD HOIST TRACK.
7. FROM EVSEY TEL. & INTER-TEL OUTLET RUN 3/4" CONDUIT TO TEL. CAB "PA". FROM EVSEY INTERCOM OUTLET RUN 1" CONDUIT TO SIGNAL CABINET "PA".
8. IN AREA BETWEEN COL. LINES 1-15, A-D ALL METAL WORK BENCHES TO BE REGROUNDED.

REVISIONS

ROOMS 4-14 & 4-A - ADDED TELEPHONE OUTLET
ROOM 4-9 - RELOCATED TELEPHONE OUTLET
ROOM B-48 - ADDED SHOWER LIGHT FIXTURES
ROOM B-49 - ADDED TYPE "B" FIXTURE
ROOM B-50 - ADDED TYPE "B" FIXTURES AND SWITCHES
ROOM B-51 - ADDED TYPE "C" FIXTURES, SWITCHES AND TELEPHONE OUTLET
ROOM B-52 - ADDED TYPE "C" FIXTURE.
DATE: MAY 26/66.

GENERAL REVISIONS OCT. 29/65

Note
REFER TO "REVISED PLAN" ON SHEETS B-3 & B-4 FOR ELECTRICAL LAYOUT IN THIS AREA.

GARAGE & BASEMENT FLOOR PLAN
SCALE 1/16" = 1'-0"

PLAN OF RAMP
SCALE: 1/16" = 1'-0"

NOTE:
REFER TO SPECIFICATION CLAUSE "HEATING SYSTEM FOR SNOW MELTING" & "DRAIN PIPE HEATING" FOR THIS AREA. WIRE AND CONNECT TO PANELS "BB" & "CC"

SECTION
N.T.S.

TYPICAL DETAIL FOR SUPPORT OF CONDUITS, BOXES, ETC. AT 1'6" CAST CONCRETE TEE JOINTS.

NOTE:
METAL PLATES & BOLTS SHALL BE OF APPROVED GAUGES & SIZES FOR THE SPECIFIC WEIGHTS SUPPORTED.

NOTE:
REFER TO SPECIFICATION CLAUSE "RAMP HEATING SYSTEM FOR SNOW MELTING" AND "DRAIN PIPE HEATING" FOR THIS AREA. WIRE & CONNECT TO PANEL "AA"

PLAN OF ACCESS TUNNEL
SCALE: 1/8" = 1'-0"

TELEPHONE & SIGNAL RISER DIAGRAM. (PARKADE)
N.T.S.

SECTION
N.T.S.

DIESEL - ELECTRIC GENERATOR ROOM
N.T.S.

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL DESIGN BY P.A. & W. J.S.

PRINTING DATE
1 DEC. 1964

DRAWN BY H.E.C & C.S.
SCALE: 1/16" = 1'-0"

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K.S. Buckler

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GREEN BLANKSTEIN RUSSELL ASSOCIATES
Mechanical & Electrical Consultants Telephone SP 4-3566

ACCESS & FINISHING TO BASEMENT OF PARKING GARAGE

FOR THE CITY OF WINNIPEG , MANITOBA

GARAGE & BASEMENT FLOOR PLAN ELECTRICAL
TITLE
SHEET NO. 6020 — G — E-2

W.J.D. 17TH

NOTES

1.	EXACT LOCATIONS OF ALL UNDERFLOOR DUCTS SHOWN ON THIS SHEET SHALL BE AS APPROVED ON SHOP DRAWINGS AT LATER DATE.
2	IMPORTANT NOTE: ALL CONDUITS SHALL BE COMPLETELY EMBEDDED IN GROUND FLOOR SLAB (NO EXPOSED CONDUIT IN BASEMENT AREA) THROUGHOUT ENTIRE LENGTH OF CONDUIT RUNS.
3.	TERMINATE CONDUIT UP 4'-0" ABOVE FIN. BASEMENT FLOOR. LABEL CONDUIT "CITY HALL TELEPHONE RACEWAY".
4.	ELECTRICAL SUBCONTRACTOR SHALL SUPPLY & INSTALL ELECTRIC AUTOMATIC ALTERNATORS FOR MOTORS P7 & P8 AND FOR P13 & P14 ADJACENT TO THE CONTROL (TYPE "C") FOR THESE MOTORS. SEE SPEC'S. "MOTOR SCHEDULE".
5	SEE NOTE 3 ON SHEET E-3.

REVISIONS

ROOMS B-6 & B-36 - ADDED TELEPHONE OUTLET.
ROOM B-7 - ADDED TEL. OUTLET, ADDED TEL. SYSTEM RELAY CABINET & RELATED TEL. CONDUITS.
ROOM B-11 - RELOCATED & EXTENDED TYPE "D" DUCT. - RELOCATED WALL CLOCK. - ADDED TEL. & COM. OUTLETS.
ROOM B-16 - ADDED & RELOCATED CONV. OUTLETS IN BOOTH.
ROOM B-17 - RELOCATED TEL., SIGNAL & COM. OUTLETS.
ROOM B-29 - ADDED TWO OUTLETS - VENDING MACHINES.
ROOM B-25 - RELOCATED TEL. CONDUITS TO ROOM B-7.
ROOM B-31 - ADDED WALL CLOCK. - ADDED TEL. OUTLET.
ROOM B-32 - ADDED CONV. OUTLET. - ADDED PLYWOOD RELAY-PANEL FOR M.T.S. - ADDED 3-1½"C TO TRAFFIC CONTROLLER.
ROOMS B-33, B-34 & B-38 - ADDED TEL. & CONV. OUTLET.
ROOM B-35 - ADDED CONV. OUTLET.
ROOM B-37 & B-39 - ADDED TEL. & CONV. OUTLETS. - RELOCATED TYPE "D" DUCT.
ROOM B-51 - ADDED WALL CLOCK - ADDED TEL. & CONV. OUTLET.
DATED MAY 25'65

GENERAL REVISIONS OCT. 29/65

I.C. & PAGING SYSTEMS NOV. 15/65

SYMBOLS - SEE SPECS.

●-K	5L KEY TYPE TELEPHONE OUTLET, TRIANGLE CAT. #411F, FLOOR PEDESTAL, BRUSHED CHROME FINISH, COMPLETE WITH ONE INCH BUSHED OPENING AND 1¼ INCH CHASE NIPPLE.
●	REGULAR & 2L KEY TELEPHONE OUTLET, TRIANGLE CAT. #400F, FLOOR PEDESTAL, BRUSHED CHROME FINISH, COMPLETE WITH 3/4 INCH BUSHED OPENING AND 1¼ INCH CHASE NIPPLE.
●-J	TELEPHONE OUTLET WITH PLUG-IN JACK, TRIANGLE CAT. #400F, FLOOR PEDESTAL, BRUSHED CHROME FINISH, COMPLETE WITH 1/2 INCH HOLE FOR INSTALLATION OF JACK BY M.T.S., AND 1¼ INCH CHASE NIPPLE.
◀	WALL OUTLET FOR TELEPHONE - REFER TO SPECIFICATION CLAUSES "COVER PLATES" AND "TELEPHONE & INTER-TELEPHONE SYSTEM".
◀J	WALL OUTLET FOR TELEPHONE - SAME AS ABOVE EXCEPTING THE PLATE WILL BE FITTED WITH A TELEPHONE JACK BY THE M.T.S.
⊙	CONVENIENCE OUTLET, TRIANGLE CAT. #201F, FLOOR PEDESTAL, BRUSHED CHROME FINISH COMPLETE WITH 1¼ INCH CHASE NIPPLE AND FITTED WITH DUPLEX CONVENIENCE RECEPTACLE AS SPECIFIED IN CLAUSE "CONVENIENCE OUTLETS", SUB-CLAUSE (a) "WALL MOUNTED DUPLEX CONVENIENCE RECEPTACLES".

NOTE: ACTUAL LOCATION OF FLOOR PEDESTAL OUTLETS SHALL BE POSITIONED ACCORDING TO THE DOT SHOWN ON THE DUCT.

SYMBOL SCHEDULE
I.C. AND PAGING SYSTEMS

Ⓢ	CEILING MTD. LOUDSPEAKER OUTLET. LOWELL MFG. MODEL ALS-A BAFFLE, C/W LOWELL XCP84 BACK-BOX OR EQUAL, (4" DEPTH) FLUSH MTD. IN FIN. CEILING, SURFACE MTD. IN AREAS WITHOUT FINISHED CEILINGS.
⊢Ⓢ	WALL MTD. LOUDSPEAKER OUTLET. LOWELL MFG. MODEL FHS-A WALL GRILLE C/W LOWELL P68X BACK-BOX, (4" DEPTH) FLUSH MOUNTED.
Ⓟ	CEILING MTD. PAGING SYSTEM LOUDSPEAKER OUTLET. SAME COMPONENTS AND MOUNTING METHOD AS DESCRIBED FOR SYMBOL Ⓢ
⊢Ⓦ	WALL MTD. INTER-COMMUNICATION STATION OUTLET. 10"X 7 3/4" FLUSH MOUNTED BOX. REFER TO DETAIL ON DRAWING UP 4-6"
—Ⓜ	FLOOR MTD. MICROPHONE OUTLET (COURTROOM PAGING SYSTEM) PEDESTAL FITTING CONNECTED TO "SIGNAL" CELL OF UNDERFLOOR DUCT, TRIANGLE Nº 400F PEDESTAL C/W ONE INCH BUSHED OPENING ON ONE SIDE. REFER TO CLAUSE KK-B.73 "QUANTITIES OF UNDERFLOOR RACEWAY SYSTEM SERVICE FITTINGS."
—◪	INTERCOMMUNICATION SYSTEM FLOOR MOUNTED OUTLET. PEDESTAL FITTING CONNECTED TO "SIGNAL" CELL OF UNDERFLOOR DUCT, TRIANGLE CAT. #400F PEDESTAL C/W ONE INCH BUSHED OPENING ON ONE SIDE. REFER TO CLAUSE KK-B.73 "QUANTITIES OF U/F RACEWAY SYSTEM SERVICE FITTINGS".

NOTES

A #14 PULL-IN WIRE SHALL BE INSTALLED IN ALL CONDUIT WORK. LOUDSPEAKERS, INTERCOMMUNICATION STATIONS, PAGING EQUIPMENT, AMPLIFIERS AND ALL CONDUCTOR AND CABLE WORK ASSOCIATED THEREWITH WILL BE SUPPLIED AND INSTALLED BY THE OWNERS.

ALL CONDUIT SHALL BE 1/2" I.D. UNLESS OTHERWISE NOTED ON THE DRAWINGS.

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL DESIGN BY E.F.T. & L.W.

PRINTING DATE [redacted]
1 DEC. 1964

DRAWN BY H.E.C.

SCALE: 1/8"=1'-0"

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This drawing is not to be used for building purposes until countersigned by: V.S. Buckler

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PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG, MANITOBA

I.C. & PAGING SYSTEMS.

BASEMENT FLOOR PLAN
TITLE ELECTRICAL
SHEET NO. 6020-E-4

Electrical

NOTES

1.	EXACT LOCATIONS OF ALL UNDERFLOOR DUCTS SHOWN ON THIS SHEET SHALL BE AS APPROVED ON SHOP DRAWINGS AT LATER DATE.
2	IMPORTANT NOTE: ALL CONDUITS SHALL BE COMPLETELY EMBEDDED IN GROUND FLOOR SLAB (NO EXPOSED CONDUIT IN BASEMENT AREA) THROUGHOUT ENTIRE LENGTH OF CONDUIT RUNS.
3.	TERMINATE CONDUIT UP 4'-0" ABOVE FIN. BASEMENT FLOOR. LABEL CONDUIT "CITY HALL TELEPHONE RACEWAY".
4.	ELECTRICAL SUBCONTRACTOR SHALL SUPPLY & INSTALL ELECTRIC AUTOMATIC ALTERNATORS FOR MOTORS P7 & P8 AND FOR P13 & P14 ADJACENT TO THE CONTROL (TYPE "C") FOR THESE MOTORS. SEE SPEC'S. "MOTOR SCHEDULE".
5	SEE NOTE 3 ON SHEET E-3.

REVISIONS

ROOMS B-6 & B-36 - ADDED TELEPHONE OUTLET.
ROOM B-7 - ADDED TEL. OUTLET. ADDED TEL. SYSTEM RELAY CABINET & RELATED TEL. CONDUITS.
ROOM B-11 - RELOCATED & EXTENDED TYPE "D" DUCT. - RELOCATED WALL CLOCK. - ADDED TEL. & COM. OUTLETS.
ROOM B-16 - ADDED & RELOCATED CONV. OUTLETS IN BOOTH.
ROOM B-17 - RELOCATED TEL., SIGNAL & COM. OUTLETS.
ROOM B-23 - ADDED TWO OUTLETS - VENDING MACHINES.
ROOM B-25 - RELOCATED TEL. CONDUITS TO ROOM B-7.
ROOM B-31 - ADDED WALL CLOCK. - ADDED TEL. OUTLET.
ROOM B-32 - ADDED CONV. OUTLET. - ADDED PLYWOOD RELAY PANEL FOR M.T.S. - ADDED 3-1½"C TO TRAFFIC CONTROLLER.
ROOMS B-33, B-34 & B-38 - ADDED TEL. & CONV. OUTLET.
ROOM B-35 - ADDED CONV. OUTLET.
ROOM B-37 & B-39 - ADDED TEL. & CONV. OUTLETS. - RELOCATED TYPE "D" DUCT.
ROOM B-51 - ADDED WALL CLOCK - ADDED TEL. & CONV. OUTLET.

DATE: MAY 25'65

GENERAL REVISIONS OCT. 29/65

SYMBOLS - SEE SPECS

K	5L KEY TYPE TELEPHONE OUTLET, TRIANGLE CAT. #411F, FLOOR PEDESTAL, BRUSHED CHROME FINISH, COMPLETE WITH ONE INCH BUSHED OPENING AND 1¼ INCH CHASE NIPPLE.
	REGULAR & 2L KEY TELEPHONE OUTLET, TRIANGLE CAT. #400F, FLOOR PEDESTAL, BRUSHED CHROME FINISH, COMPLETE WITH 3/4 INCH BUSHED OPENING AND 1¼ INCH CHASE NIPPLE.
J	TELEPHONE OUTLET WITH PLUG-IN JACK, TRIANGLE CAT. #400F, FLOOR PEDESTAL, BRUSHED CHROME FINISH, COMPLETE WITH ½ INCH HOLE FOR INSTALLATION OF JACK BY M.T.S., AND 1¼ INCH CHASE NIPPLE.
	WALL OUTLET FOR TELEPHONE - REFER TO SPECIFICATION CLAUSES "COVER PLATES" AND "TELEPHONE & INTER-TELEPHONE SYSTEM".
J	WALL OUTLET FOR TELEPHONE - SAME AS ABOVE EXCEPTING THE PLATE WILL BE FITTED WITH A TELEPHONE JACK BY THE M.T.S.
	CONVENIENCE OUTLET, TRIANGLE CAT. #201F, FLOOR PEDESTAL, BRUSHED CHROME FINISH COMPLETE WITH 1¼ INCH CHASE NIPPLE AND FITTED WITH DUPLEX CONVENIENCE RECEPTACLE AS SPECIFIED IN CLAUSE "CONVENIENCE OUTLETS", SUB-CLAUSE (a) "WALL MOUNTED DUPLEX CONVENIENCE RECEPTACLES".
NOTE:	ACTUAL LOCATION OF FLOOR PEDESTAL OUTLETS SHALL BE POSITIONED ACCORDING TO THE DOT SHOWN ON THE DUCT.

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL DESIGN BY E.F.T. & L.W.

PRINTING DATE
[redacted]
1 DEC. 1964

DRAWN BY H.B.C.

SCALE: 1/8"=1'-0"

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V. S. Buckler

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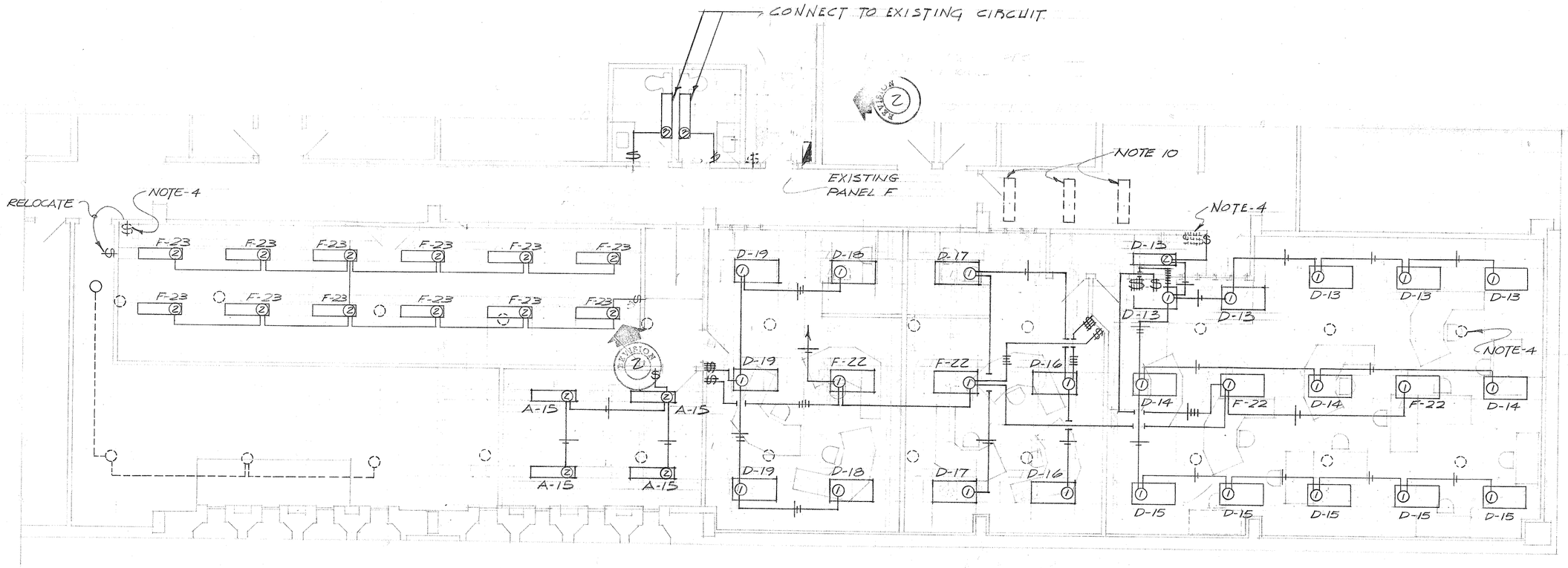
PUBLIC SAFETY BUILDING
FOR THE CITY OF WINNIPEG MANITOBA

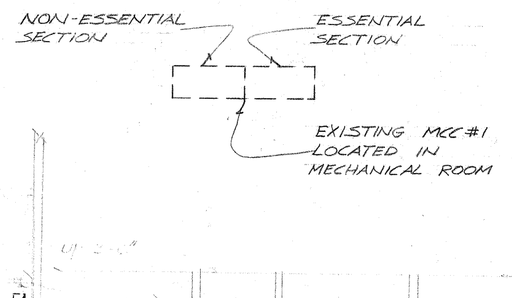
TITLE BASEMENT FLOOR PLAN ELECTRICAL
SHEET NO. 6020-E-4

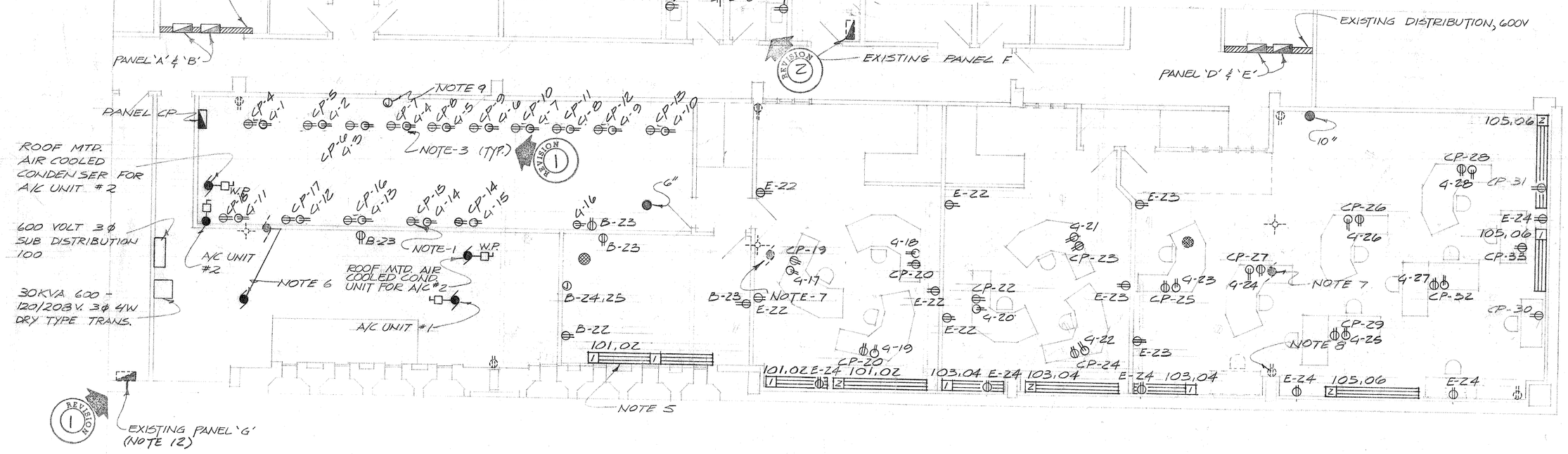


LIGHTING LAYOUT
SCALE: 1/8" = 1'-0"

LUMINAIRE SCHEDULE				
TYPE	MANUFACTURER	CATALOGUE NO.	LAMPS	REMARKS
1	ELECTROLIER	KISAST-34-448	4-F40 C.W.	RECESSED IN T-BAR CEILING 4'W RADIO SUPPRESSORS, TWO INSIDE LAMPS SWITCHED TOGETHER & TWO EXTERIOR LAMPS SWITCHED TOGETHER.
2	"	KISAST-34-248	2-F40 C.W.	AS TYPE-1 ONLY 1'x4'.
3	"	KACW-89-248	"	CEILING MTD.

ELECTRIC HEATER SCHEDULE						
NO.	TYPE	MANUFACTURER	CATALOGUE NO.	WATTS	VOLTS	REMARKS
1	BASEBOARD	CHROMALOX	B5-7215-TD-5-600	1500	600V 1ϕ	C/W B.I.T.
2	"	"	B5-10825-TD-5-600	2500	600V 1ϕ	" "





POWER & SYSTEMS
SCALE: 1/8" = 1'-0"

GENERAL NOTES

1. ALL RECEPTACLES SHOWN ARE MTD. UNDER FLOOR UNLESS NOTED OTHERWISE.
2. DELETED.
3. SUPPLY & INSTALL A HUBBELL TWISTLOCK 20 AMPERE DUPLEX REC. MTD. 1" FLOOR.
4. REMOVE ALL EXISTING INCANDESCENT LUMINAIRES & SWITCHES NOT RELOCATED AND HAND OVER TO OWNERS.
5. HEATER TO BE CONTROLLED BY STAT IN HEATER ADJACENT TO SAME.
6. DISCONNECT AND EXTEND CIRCUIT FOR RELOCATED UNIT HEATER.
7. DISCONNECT EXISTING UNIT HEATER & MAKE GOOD.
8. EXTEND ALL OUTLETS ON EXTERIOR WALL TO ACCOMMODATE NEW STRAPPING.
9. CHECK LOCATION OF EMERGENCY BATTERY BANK TO ENSURE SAME DOES NOT CONFLICT WITH CEILING. RELOCATE IF REQUIRED.
10. DISCONNECT '3' EXISTING LUMINAIRES, EXTEND BX, RE-INSTALL & ENERGIZE ONCE DUCT IS IN PLACE.
11. SUPPLY & INSTALL SEPARATE #6 GROUND WIRE FOR EQUIPMENT GROUND BACK TO MAIN SERVICE GROUND.
12. SUPPLY & INSTALL NECESSARY 20A-1P BREAKERS IN EXISTING PANEL 'G'. CHANGE PANEL 'G' IF LESS THAN 30 CIRCUIT PANEL. PANEL 'G' CONNECTED TO ESSENTIAL POWER SOURCE (PROPANE GENERATOR).

2. UPDATED TO AS-BUILT DRAWINGS — Nov. 7/79 KFG
1. ADD NEW HUBBELL OUTLETS & NOTE 12 — APR 20/78 KFG

No.	PARTICULARS	DATE	BY
REVISIONS			

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The contractor is to verify dimensions and data noted herein with conditions on the site and is held responsible for reporting any discrepancy to the designers for adjustment.

This drawing is not to be used for building purposes until countersigned by:

Environmental Space Planning Ltd.
300 - 290 Vaughan Street, Winnipeg, Man. R3B 2N8, Phone (204) 943-2895

PROJECT TITLE
ALTERATIONS TO WINNIPEG PUBLIC SAFETY BUILDING FOR INTERNATIONAL AERADIO LTD.

E7963

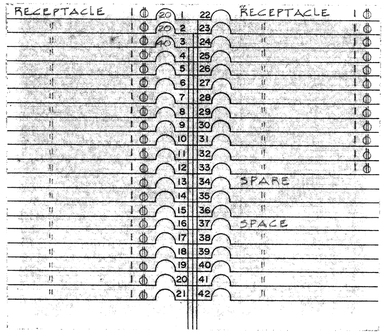
PROVINCE OF MANITOBA — A.E. BURSTEIN — REGISTERED ENGINEER

a. e. burstein & assoc. ltd.
consulting electrical engineers
400 - 175 hargrave street, wpg., man. R3C 3R9 944-9242

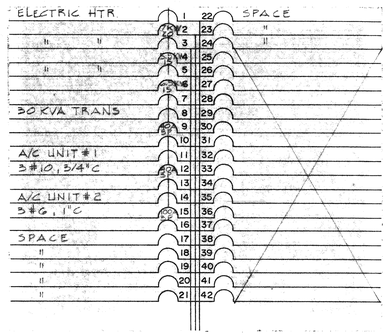
SHEET No.	DRAWN BY
E-1 OF 2.	R.J.L.
	DATE DEC/77

ELECTRICAL SPECIFICATIONS

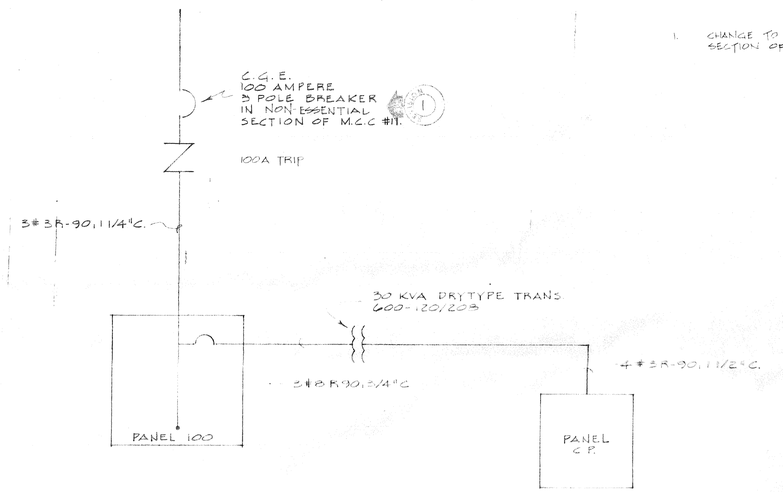
1. Supply all labour, materials, etc., as specified and/or shown on the plans.
2. The electrical installation shall be in accordance with the current edition of the Canadian Electrical Code including all City, Provincial, Municipal and other codes, rules and regulations.
3. Obtain all permits and pay all fees required for the electrical installation.
4. Examine all related Architectural, Mechanical and Structural drawings, etc., as well as, local site conditions which pertain to the work under this contract. Any discrepancies in the drawings shall be reported to the Engineer before prices are submitted. If this is not done, the Engineer will assume the Contractor has priced the best and most expensive method to do the work.
5. Full co-operation shall be shown with other trades to facilitate installations and to avoid any delays in carrying out the work.
6. Supervise the work through a responsible and competent supervisor.
7. Outlets, wiring or equipment shall be moved to any point within a 10 foot radius of the point shown on the drawings when relocation is requested by the Owner. The work shall be done without any cost providing the request for relocation is made before the work is substantially completed.
8. Price shall be based on materials specified. Any request for equals or alternates shall be submitted to the Engineer five (5) working days before prices are submitted.
9. Complete installation shall be tested and ready for operation.
10. Wiring shall be run in EMT conduit or BX where permissible by Code.
11. All wiring shall be concealed in walls, floors or ceilings in finished areas unless noted otherwise. (Any surface or exposed wiring shall be run parallel to, or at right angles to, the building lines.)
12. Outlet, junction and switch boxes shall be galvanized pressed steel of size and type to suit the requirements of each outlet.
13. Wire shall be standard AWG sizes with 600V insulation, and be color coded. Minimum wire size shall be No. 14 AWG or X-link of similar rating. (Copper wire shall be utilized.)
14. Panelboards, switchboards, telephone cabinets, starters, disconnects, etc., shall be identified by means of engraved Lamacoid nameplates.
15. Supply and install all motor starters for ventilating and plumbing equipment.
16. All control wiring shall be installed in BX by the Electrical Contractor. The Control Contractor shall supply the Electrical Contractor with detailed diagrams and give him on the site assistance when necessary.
17. All lighting fixtures shall be as specified.
18. Coverplates shall be stainless steel in finished area.
19. Panelboards shall be mounted as shown on the drawing. (Load centres not acceptable.) Breakers to be bolt-on. Panels to be as manufactured by Federal Pacific.
20. Telephone conduit shall be completely independent from other conduit. Installation shall be made in strict accordance with the local Telephone System regulations with regard to pull boxes, bends, etc.
21. Switches shall be specification grade standard quality toggle switches rated at 15 amperes, 120/277 volts.
22. Receptacles shall be specification grade safety receptacles rated at 15 amperes, 125 volts.
23. Distribution shall be provided as shown.
24. Electric heating to be provided as shown.
25. Extend existing fire alarm system to incorporate new fire alarm devices as indicated on drawings. Equipment to match existing.
26. Supply and install dry core transformer to conform to C.S.A. standards.



PANEL 'CP'
120/208V 30 4W



PANEL '100'
600V 30 3W



MAIN DISTRIBUTION
SINGLE LINE SCHEMATIC

ALL APPROVALS, STAMPS AND SIGNATURES AFFIXED TO THIS DRAWING WHICH DO NOT CARRY A DATE LATER THAN OCT 31 1978 ARE OBSOLETE AND DO NOT APPLY TO THE REVISED CONTENTS OF THIS SEPIA.

THE LM ARCHITECTURAL GROUP, WINNIPEG, CAN.

GENERAL NOTES

ELECTRICAL LEGEND

	FLUORESCENT FIXTURE ('f' DENOTES TYPE)
$①_{42}$	INCANDESCENT FIXTURE ('①' DENOTES PANEL) ('42' DENOTES CIRCUIT)
⊢①	INCANDESCENT FIXTURE WALL MOUNTED
EX	EXIT LIGHT FIXTURE
	EMERGENCY LIGHT FIXTURE WALL MOUNTED
	EMERGENCY LIGHT FIXTURE CEILING MOUNTED
	EMERGENCY BATTERY BANK
	DUPLEX RECEPTACLE
	SINGLE RECEPTACLE
$_{30}$	208 V - 1 Ø RECEPTACLE ('30' DENOTES AMPERAGE)
	3 Ø RECEPTACLE
	SPLIT-WIRED RECEPTACLE
$_{P}$	RECEPTACLE FLOOR MOUNTED ('P' DENOTES PEDESTAL)
	DRYER OUTLET
	RANGE OUTLET
$_{R}$	RAZOR RECEPTACLE
	JUNCTION BOX
$	SINGLE POLE SWITCH
$	2 - GANG SWITCH
$_{3}	3 - WAY SWITCH
$_{4}	4 - WAY SWITCH
$_{1000W}	DIMMER SWITCH ('1000W' DENOTES WATTAGE)
	MOTOR OUTLET
	DISCONNECT SWITCH
	MANUAL MOTOR STARTER
	MAGNETIC MOTOR STARTER
	THERMOSTAT
	PUSHBUTTON
	TELEPHONE OUTLET WALL MOUNTED
	TELEPHONE OUTLET FLOOR MOUNTED
	SUITE INTERCOM WALL MOUNTED
	TELEVISION OUTLET
	SOUND OUTLET CEILING MOUNTED
	SOUND OUTLET WALL MOUNTED
$_{B}$	CLOCK OUTLET ('B' DENOTES C/W BUZZER)
	BUZZER
	MAGNETIC DOOR HOLDER
$_{D}$	SMOKE DETECTOR ('D' DENOTES DUCT MOUNTED)
	HEAT DETECTOR
$_{FT}$	HEAT DETECTOR ('FT' DENOTES FIXED TEMP.)
	FIRE ALARM BELL
	FIRE ALARM MANUAL PULL STATION
	NURSE CALL EMERGENCY STATION
	NURSE CALL STATION
	ELECTRIC HEATER ('f' DENOTES TYPE)
	NURSE CALL DOME LIGHT
$_{D}$	DOOR CONTACT

No.	PARTICULARS	DATE	BY
1.	CHANGE TO NON-ESSENTIAL AFE 20/78 FR, SECTION OF M.C.C #1.		

REVISIONS

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300 290 Vaughan Street, Winnipeg, Man. R3B 2N8, Phone (204) 943-2895

PROJECT TITLE
ALTERATIONS TO WINNIPEG PUBLIC SAFETY BUILDING FOR INTERNATIONAL AERADIO LTD.

E7763

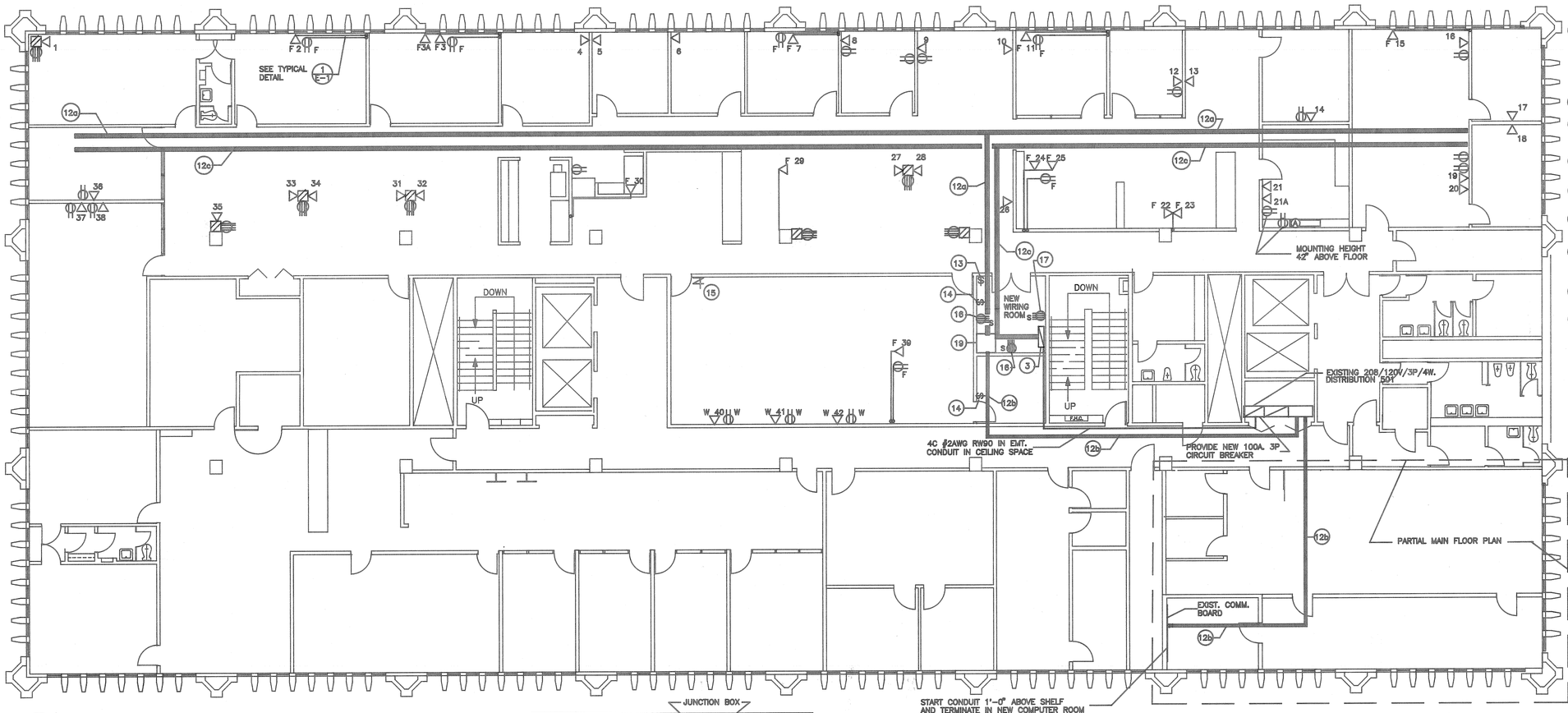
a. e. burstein & assoc. ltd.
consulting electrical engineers
400 - 175 hargrave street, wpg., man. R3C 3R9 944-9242

SHEET No. E-2 OF 2

DRAWN BY H.B.

DATE DEC/77

ALT. FOR INT. AERADIO LTD.
description
ELECTRICAL



NOTES

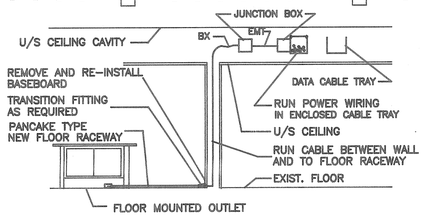
SUPPLY AND INSTALL ELECTRICAL WORK AS SHOWN ON PLAN AND THE FOLLOWING:

1. ALL POWER WIRING SHALL BE COPPER, MIN. #12 AWG. WIRING IN CEILING SPACE SHALL RUN IN EMT. MIN. SIZE 3/4" OR ENCLOSED WIREWAY SPECIFIED, EXCEPT WHERE CONCEALED BY WALLS, WIRING SHALL BE AC90 X-LINK BX CABLE. PROVIDE JUNCTION BOX FOR MAKING CONNECTIONS BETWEEN OUTLETS AND WIREWAY WIRING. HORIZONTAL RUN OF EXPOSED BX CABLE IN CEILING SHALL NOT EXCEED 10 FEET.
2. SURFACE WIRING IN FINISHED AREA SHALL RUN NEATLY IN WIREMOLD RACEWAY.
3. NEW SURFACE MOUNTED PANEL "N", 30 CCT. BOLT ON TYPE CIRCUIT BREAKERS , 200A. RATED, 120V/208/3PH. 4W. PROVIDE POWER HOOK UP TO ALL NEW RECEP. FROM THIS PANEL.
4. EXACT MOUNTING HEIGHT OR LOCATION OF OUTLETS NOT INDICATED MUST BE VERIFIED WITH OWNERS BEFORE PROCEEDING WITH INSTALLATION.
5. COVER PLATE FOR RECESSED RECEPTACLES AND OUTLETS SHALL BE STAINLESS STEEL, SURFACE RACEWAY OUTLETS SHALL HAVE MATCHING WIREMOLD COVER PLATE.
6. AT THE COMPLETION OF THE JOB, PANEL BOARD DIRECTORIES SHALL BE NEATLY TYPED, WITH CLEAR DESCRIPTION CORRESPONDING TO CIRCUITS INSTALLED.
7. ISOLATED GROUND DUPLEX OUTLET RECEPTACLES SHALL NOT EXCEED 4 PER CIRCUIT. POWER POLE RECEPTACLES SHALL NOT EXCEED TWO POLE PER CIRCUIT (IE. TWO DUPLEX RECEPTACLES PER POLE)
8. ALL POWER OUTLETS, RECEPTACLES SHALL HAVE LAMACOID LABELS AT THE COVER PLATE INDICATING PANEL CIRCUIT NUMBER SUCH AS CCT. N2. ETC.
9. THE PLANS ARE CONSIDERED AS DIAGRAMMATIC ONLY AND THE ENGINEER RESERVES THE RIGHT TO CHANGE THE LOCATION OF EQUIPMENT, OUTLETS, SWITCHES AND DEVICES TO WITHIN 10 FEET OF WHERE SHOWN PROVIDED SUCH CHANGE MADE BEFORE INSTALLATION.
10. FT4 COMPUTER CABLES TO BE SUPPLIED BY OWNER (CSD) AND INSTALLED BY CONTRACTOR USING THE NEW CABLE TRAY 12a. CABLE RUNS SHALL BEGIN IN NEW WIRING ROOM AND TERMINATE AT EACH COMPUTER OUTLETS MARKED ◁
11. UPON COMPLETION, CONTRACTOR TO PROVIDE 4 AS-BUILT DRAWINGS INDICATING ALL COMPUTER CABLE RUNS AND EXACT DISTANCES OF EACH CABLE INSTALLED, FILL OUT ATTACHED TABLE IN SPECIFICATION.
12. a. DATA CABLE TRAY SHALL BE CANTROUGH CABLE TRAY, STEEL CONSTRUCTION, VENTILATED BOTTOM SIZE 6"X6" TYPE "D",
    b. DATA CABLE TRAY SAME AS 12a. EXCEPT SIZE 4"W X1.3"H TYPE C-10
    c. POWER CABLE TRAY SHALL BE CANTROUGH, 3"H X 6"W TYPE SP TOTALLY ENCLOSED WIRE WAY.
    - PROVIDE ALL NECESSARY FITTINGS SUCH AS ELBOW, TEE, OFFSETS TO SUIT EXISTING STRUCTURE FOR ALL CABLE TRAY INSTALLATIONS.
    - CABLE TRAY SHALL BE INSTALLED IN CEILING SPACE SUFFICIENTLY SUPPORTED FROM UNDERSIDE OF STRUCTURE MIN. ON 3m CENTRE.
    - CONTRACTOR SHALL PROVIDE ALL NECESSARY OPENINGS AT EXIST. BLOCK WALLS AND ALLOW FOR OFFSETS AS REQ. FOR INSTALLATION OF CABLE TRAY
    - REMOVE AND RE-INSTALL EXISTING CEILING TILES
13. REMOVE EXIST.3 WAY SWITCH AND BLANK OFF; BYPASS THE SWITCH SUCH THAT THE OTHER 3 WAY SWITCH SHALL CONTROL THE SIX LIGHT FIXTURES IN THE NEXT ROOM.
14. PROVIDE LIGHT SWITCH FOR CONTROL LIGHTS IN THIS ROOM.
15. EXISTING LIGHT SWITCH CONTROLS 6 LIGHT FIXTURES; REWIRE TO CONTROL 3 LIGHT FIXTURES IN THIS ROOM, THE OTHER 3 LIGHT FIXTURES SHALL BE CONTROLLED BY NEW LIGHT SWITCHES 1N NOTE 14.
16. AT EXISTING OUTLET JUNCTION BOX, PROVIDE ISOLATED GROUND 4-PLEX SEPARATE CCT. RECEPTACLE.
17. PROVIDE 1 4-PLEX ISOLATED GROUND SEPARATE CIRCUIT RECEPTACLE SURFACE MOUNTED.
18. -SUPLLY AND INSTALL 10-BELDEN #9269 RG62A/U-S1 FT4 COAXIAL CABLES FROM MAIN FLOOR TO 5 TH FLOOR NEW WIRING ROOM.
    -PROVIDE CABLE TRAY 12b IN MAIN FLOOR AND 5 TH FLOOR CEILINGS, AND 2" EMT. AT EXISTING COMMUNICATIONS CABINET RISERS BETWEEN FLOORS FOR RUNNING OF NEW COAXIAL CABLES.
    -AFTER THE NEW 10 CABLES HAVE BEEN INSTALLED, REMOVE THE EXISTING CABLES (QUANITY OF 9 TO 10 AND TO BE IDENTIFIED BY THE CITY COMPUTER SERVICES DEPARTMENT) BETWEEN THE MAIN FLOOR AND THE COMPUTER TERMINALS AT VARIOUS LOCATIONS ON THE 5 TH FLOOR. BLANK OFF THE EXISTING OUTLETS WITH STAINLESS STEEL FLOOR OR WALL COVER PLATES AS REQUIRED.
19. AT EXISTING CEILING, REMOVE TILE TO PROVIDE 2'-6"X 2'-6" OPENING FOR RUNNING OF CABLING

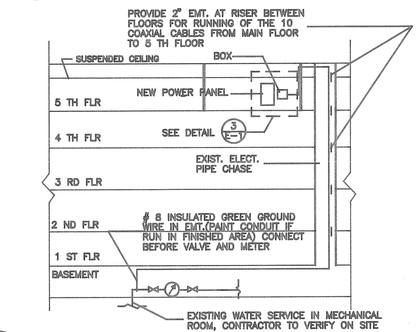
NORTH

LEGEND

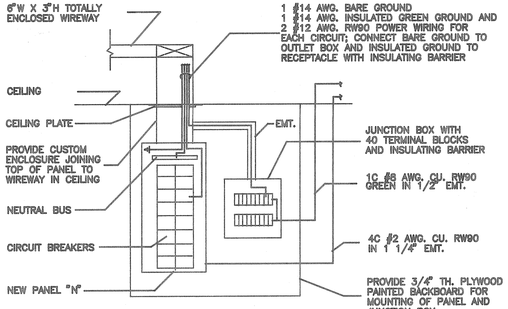
- WALL RECESSED ISOLATED GROUND DUPLEX RECEPTACLE 18" ABOVE FLOOR 120V/1PH.
- F WIREMOLD CSA PANCAKE FLOOR MOUNT RACEWAY MODEL 1500 ISOLATED GROUND DUPLEX RECEPTACLE OUTLET 120V/1PH.
- W WIREMOLD CSA WALLMOUNT RACEWAY MODEL 800 IVORY COLOR ISOLATED GROUND DUPLEX RECEPTACLE 120V/1PH.
- $_{S}$ WALL RECESSED ISOLATED GROUND SEPARATE CIRCUIT QUAD RECEPTACLE 120V/1PH.
- ◁$_{10}$ WALL RECESSED DATA OUTLET, 18" ABOVE FLOOR, 10 INDICATES OUTLET NUMBER
- ◁$_{F}$ WIREMOLD CSA PANCAKE FLOOR MOUNT RACEWAY MODEL 2600 DATA OUTLET
- ◁$_{W}$ WIREMOLD CSA WALL MOUNT RACEWAY MODEL 800 IVORY COLOR DATA OUTLET
- 33 34 WIREMOLD CSA ALUMINUM TELE-POWER POLE SERIES CALTP-410 WITH ISOLATED GROUND RECEPTACLES AND #14N INTERFACE CABLE ADAPTORS FOR TWO DATA OUTLETS.
- (A) SYLVANIA SERIES 88 KACW 88-148-120 1X34W C/W ENERGY SAVING BALLAST, BUILT-IN TOGGLE SWITCH CONNECT LIGHT FIXTURE TO NEAREST EXISTING LIGHTING CIRCUIT



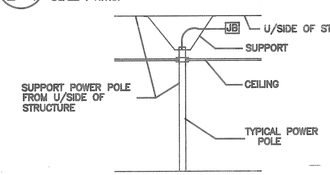
1 / E-1 FLOOR RACEWAY DETAIL (TYPICAL)
SCALE : N.T.S.



2 / E-1 ISOLATED GROUND AND CONDUIT DETAILS
SCALE : N.T.S.



3 / E-1 PANEL DETAIL
SCALE : N.T.S.



4 / E-1 DETAIL
SCALE : N.T.S.

NO	REVISION/DESCRIPTION	BY	DATE

SEALS

PROVINCE OF MANITOBA — NOV. 90 — S.K.W. LEE — REGISTERED PROFESSIONAL ENGINEER

DRAWN BY B.K. | CHECKED BY | APPROVED

DATE NOV./90 | USER APPROVAL

THE CITY OF WINNIPEG
CIVIC PROPERTIES DEPARTMENT
4-180 KING ST. R3B 3G8

PROJECT

PUBLIC SAFETY BUILDING
5 TH FLOOR
151 PRINCESS STREET

SHEET TITLE

COMPUTER NETWORK WIRING

SCALE	PROJECT NO.	SHEET NO.
1/8"=1'-0"	90932	E-1

P0151F06.DWG

90932E1.DWG

address: 151 Princess St. | project no.: 90932 | description: Computer Network Wiring | sheet no.: E-1

SCALE 1/8"=1'-0" | SCALE 1/4"=1'-0" | SCALE 3/8"=1'-0" | SCALE 1/2"=1'-0" | SCALE 1:200 | SCALE 1:100 | SCALE 1:50

IF THIS SHEET IS NOT 33 1/8" X 23 3/8" (841 X 594mm) IT IS A REDUCED PRINT - READ DWG. ACCORDINGLY

DRAWING LIST

DRAWING NO.	DRAWING TITLE
E1.1	SYMBOL LEGEND AND SCHEDULES
E2.1	SUB-BASEMENT/PARKING GARAGE PLAN - POWER AND SYSTEMS
E3.1	BASEMENT PLAN - LIGHTING
E4.1	GROUND FLOOR PLAN - LIGHTING
E5.1	SECOND FLOOR PLAN - LIGHTING
E6.1	THIRD FLOOR PLAN - LIGHTING
E7.1	SIXTH FLOOR PLAN - LIGHTING
E8.1	BASEMENT FLOOR PLAN - POWER
E9.1	GROUND FLOOR PLAN - POWER
E10.1	SECOND FLOOR PLAN - POWER
E11.1	THIRD FLOOR PLAN - POWER
E12.1	SIXTH FLOOR PLAN - POWER
E13.1	BASEMENT FLOOR PLAN - SYSTEMS
E14.1	GROUND FLOOR PLAN - SYSTEMS
E15.1	SECOND FLOOR PLAN - SYSTEMS
E16.1	THIRD FLOOR PLAN - SYSTEMS
E17.1	FIFTH FLOOR PLAN - SYSTEMS
E18.1	SIXTH FLOOR PLAN - SYSTEMS
E19.1	SECURITY AND FIRE ALARM SYSTEM RISER SCHEMATIC AND DETAILS
E20.1	SINGLE LINE DISTRIBUTION SCHEMATIC
E21.1	MISCELLANEOUS PART FLOOR PLANS & DATA/PHONE RISER DIAGRAM
E22.1	HEATING COILS REPLACEMENT - SIXTH FLOOR MECHANICAL ROOM

FIXTURE SCHEDULE

TYPE	MANUFACTURER	CATALOGUE NUMBER	LAMPS	VOLTS	REMARKS
A	HALO LIGHTOLIER PRESCOLITE	H7800T-1800C 1225-482	150W A21	120	INCANDESCENT POTLIGHT C/W CLEAR ALZAK REFLECTOR & WHITE TRIM RING
B	PRESCOLITE	CFR826-492	1-42W BIAX	120	FLUORESCENT POTLIGHT C/W CLEAR ALZAK REFLECTION & WHITE TRIM RING.
C	HALO LIGHTOLIER PRESCOLITE	H247-71 1102F1-1178 TL-30	13W DTT BIAX	120	FLUORESCENT SHOWER LIGHT C/W OPAL LEXAN LENS, WHITE TRIM
D	LIMBURG	4849	1-QT 32 (150W)	120	PENDANT SUSPENDED FIXTURE, STAINLESS STEEL FINISH
E	PRESCOLITE	CFT-832-9TF-802	1-F42 BIAX	120	POTLIGHT C/W DIMMING BALLAST AND SLOPE ADJUSTER
F	PRESCOLITE	CFT-832-STF-802	1-F42 BIAX	120	POTLIGHT C/W DIMMING BALLAST
G	ELLIPTIPAR	H452-0150-S-X-A	150W HPS	120	SURFACE MOUNTED FIXTURE, CUSTOM COLOUR, C/W MOUNTING FEET AND EXTERIOR SPLICE KIT, AND CUTOFF VISOR
J	BEGA	3014	1-13W BIAX	120	WALL SCONCE, STAINLESS STEEL FINISH, 3-PLY OPAL LENS
K	HALO	H1889T	1-150W R40	120	358" ADJUSTABLE EYEBALL, TRIM AND COLOUR AS DIRECTED BY ARCHITECT
L	ELLIPTIPAR	T203-0150-T-00	150W QUATRZ	120	WALL WASHER, SEMI RECESSED C/W CUSTOM COLORED TRIM - ADJUSTABLE
M	ALKCO	R-2058-3	2-15W A:15 1-200W A:23	120	DARKROOM SAFELIGHT, 3 COMPARTMENTS 2 FILTERED- 1 GENERAL ILLUMINATION. PROVIDE 'KODAK' FILTERS AS DIRECTED BY OWNER AT TIME OF SHOP DRAWINGS
N	ELLIPITAR	M452-070N	70W MH-COATED	120	ADJUSTABLE FLOOD MOUNTED IN ARCHITECTURAL COVE
P	MARUS	CL1000	AS DIRECTED	120	DENTAL TYPE CEILING MOUNTED FIXTURE
AA	METALUX COLUMBIA LIGHTOLIER	PGSAX232	2-32W T8	120	DEEP CELL PARABOLIC 1' x 4' FIXTURE, LOW IRIDESCENT IES-RP24 PREFERRED
BB	METALUX COLUMBIA LIGHTOLIER	P5GAX2032	2-32W T8	120	DEEP CELL PARABOLIC 2' x 4' FIXTURE, LOW IRIDESCENT IES-RP24 PREFERRED
BE	CFI METALUX YORK	AA448-AA/FX92x4 2FPXF-440A. 125 TF448-12-. 125	4-32W T8	120	2' x 4' IN DRYWALL C/W HINGED FRAMED .125" K12 ACRYLIC LENS
CA	METALUX CFI LITHONIA	FP-232A.125 AA2W8-AA-FX92X4 TF232A12125	2-32W T8	120	RECESSED FLANGED 1'x4' IN DRYWALL CEILING C/W CAM ACTION HINGED FRAMED .125" K12 ACRYLIC LENS
CB	METALUX CFI LITHONIA	FP-232A.125 AA2W8-AA-FX92X4 TF232A12125	2-32W T8	120	RECESSED FLANGED 1'x4' IN T-BAR CEILING C/W CAM ACTION HINGED FRAMED .125" K12 ACRYLIC LENS
CC	METALUX COLUMBIA LIGHTOLIER	P5GAX332	3-32W T8	120	DEEP CELL PARABOLIC 2' x 4' FIXTURE, LOW IRIDESCENT IES-RP24 PREFERRED. TWO BALLASTS FOR TWO LEVEL SWITCHING
DD/X	LEDALITE (X=LENGTH)	EURO55-226T03SN-0821EX	3-F32T8 PER 4' SECTION	120	FIXTURE UP/DOWN. SEPARATELY SWITCHED CUSTOM COLOUR AS DIRECTED BY ARCHITECT AT TIME OF SHOP DRAWINGS. LENGTH AS NOTED ON PLANS OR EACH FIXTURE.
FF	COLUMBIA	4PS2F-52-222X	2-F40 BIAX	120	2' x 2' RECESSED GASKETTED FLUORESCENT IN DRYWALL CEILING C/W HINGED FRAMED .125" K12 ACRYLIC LENS
GG	LEDALITE	FLEXXA #2803T02TH	6-F32 T8	120	12'-8" (+/-) FIXTURE, AIRCRAFT CABLE SUSPENDED, COLOR AS DIRECTED BY ARCHITECT
HH	LEDALITE	FLEXXA #2803T02TH	14-F32 T8	120	28'-8" (+/-) FIXTURE, AIRCRAFT CABLE SUSPENDED, COLOR AS DIRECTED BY ARCHITECT
JJ	LEDALITE	FLEXXA #2803T02TH	18-F32 T8	120	36'-8" (+/-) FIXTURE, AIRCRAFT CABLE SUSPENDED, COLOR AS DIRECTED BY ARCHITECT
KA	CFI METALUX YORK	SB148 SS-140 P148	1-32W T8	120	4' STRIP FIXTURE
KB	CFI METALUX YORK	SB136 SS-130 P148	1-F25W T8	120	3' STRIP FIXTURE
KE	CFI METALUX YORK	SB248 SS-240 P248	2-32W T8	120	4' STRIP FIXTURE
KK	LEDALITE	FLEXXA #2803T02TH	10-F32 T8	120	20'-8" (+/-) FIXTURE, AIRCRAFT CABLE SUSPENDED, COLOUR AS DIRECTED BY ARCHITECT
LL	LEDALITE	MINUET 8216T02PN	6-F32 T8	120	8' (+/-) FIXTURE, AIRCRAFT CABLE SUSPENDED, COLOUR AS DIRECTED BY ARCHITECT, DIMMING BALLASTS
MM	LEDALITE	MINUET - CUSTOM (SEE DETAIL)	2-F32 T8 PER 4'	120	CUSTOM FIXTURE - CABLE SUSPENDED. COLOUR AS DIRECTED BY ARCHITECT
NN	LEDALITE	MINUET #2803T02TH	4-F32W T8	120	8'-4" (+/-) FIXTURE, AIRCRAFT CABLE SUSPENDED. COLOUR AS DIRECTED BY ARCHITECT, DIMMING BALLASTS
OO	LEDALITE	MINUET #2803T02TH	8-F32W T8	120	16'-_" (+/-) FIXTURE, AIRCRAFT CABLE SUSPENDED. COLOUR AS DIRECTED BY ARCHITECT, DIMMING BALLASTS
PB	CFI METALUX YORK	AA248-AA GPXF-240A. 125 JH248-12-.125	2-F32W T8	120	1' x 4' IN T-BAR C/W HINGED FRAMED .125" K12 ACRYLIC LENS
PC	CFI METALUX YORK	AA2W8-AA 2GPXF-240A. 125 JH248-24-12- .125	2-F32W T8	120	2' x 4' IN T-BAR C/W HINGED FRAMED .125" K12 ACRYLIC LENS
PE	CFI METALUX YORK	AA448-AA 2GPXF-440A. 125 JH448-122-. 125	4-F32W T8	120	2' x 4' IN T-BAR C/W HINGED FRAMED .125" K12 ACRYLIC LENS. TWO BALLASTS FOR TWO LEVEL SWITCHING
PP	CFI METALUX YORK	FF248 DIM232 ITU232	2-F32W T8		2 LAMP INDUSTRIAL FLUORESCENT - TUMET SOCKETS
QD	CFI METALUX YORK	AA348-AA 2GP-340A.125 JH348-24-12-.125	3-F32W T8	120	2' X 4' IN T-BAR C/W HINGED FRAMED .125" K12 ACRYLIC LENS. TWO BALLASTS FOR TWO LEVEL SWITCHING
XA	MORLITE	CHM-89-332-1B-F1-EB-120	3-F32W T8	120	14 GA. STEEL, MEDIUM SECURITY FIXTURE, CORNER MOUNTED, PRISMATIC ACRYLIC LENS INSIDE FIXTURE, CLEAR POLYCARBONATE EXTERIOR LENS, ELECTRONIC BALLAST, RF FILTER, POLYESTER POWER COAT PAINT FINISH, ALLEN HEAD (CENTRE PIN REJECT) COLORS DIRECTED BY ARCHITECT ON SHOP DRAWINGS
XB	RIG-A-LITE	HEF-3L-TM-A	3-F32W T8	120	CLASS I, DIVISION II FIXTURE, CENTER LAMP SEPARATELY SWITCHED. TEMPERED GLASS LENS.
E-1	READYLITE EMERGI-LITE LUMACELL	SEE SPEC.	LED	120	SINGLE SIDED EXIT C/W ARROWS AS SHOWN ON PLANS
E-2	READYLITE EMERGI-LITE LUMACELL	SEE SPEC.	LED	120	DOUBLE SIDED EXIT C/W ARROWS AS SHOWN ON PLANS
▬	READYLITE EMERGI-LITE LUMACELL	SEE SPEC.		120/12vdc	BATTERY PACK - 30 MINUTES
▲▲	READYLITE EMERGI-LITE LUMACELL	SEE SPEC.		12vdc	EMERGENCY LIGHT - WALL CUBE
▨	READYLITE	RX500-FM-120 - "xxx" REFER TO REMARKS FOR WORDING	2-PL9	120	"ROOM IN USE" "INTERVIEW IN PROGRESS" "VIDEO TAPING IN PROGRESS"

SYMBOL LEGEND

m-n	FLUORESCENT FIXTURE, A1-PANEL AND CIRCUIT NUMBER, B-CONTROL
▨	DENOTES LIGHTING FIXTURE CONNECTED TO EMERGENCY POWER
○	INCANDESCENT, FLUORESCENT OR H.I.D. FIXTURE
○	INCANDESCENT, FLUORESCENT OR H.I.D. FIXTURE (WALL MOUNTED)
EXIT	EXIT LIGHT - ARROW DENOTES DIRECTION
$KEY	SINGLE POLE KEY OPERATED SWITCH
$	SINGLE POLE SWITCH
$3	THREE WAY SWITCH
$#	SINGLE POLE SWITCHES IN MULTIPLE GANG
D	DIMMER SWITCH
T	TIME SWITCH
TC	TIME CLOCK
M	LIGHTING MOTION DETECTOR
	DUPLEX RECEPTACLE
TV	DUPLEX OUTLET FOR TV, MOUNT IN CEILING SPACE
	SPLIT FED DUPLEX RECEPTACLE
	ISOLATED GROUND RECEPTACLE
	GROUND FAULT RECEPTACLE
	SINGLE RECEPTACLE
	FOURPLEX RECEPTACLE
	DRYER OUTLET
	RANGE OUTLET
	SPECIAL POWER OUTLET (AS NOTED)
	POWER POLE
	JUNCTION AND/OR OUTLET BOX
	HAND DRYER OUTLET. REFER TO ARCHITECTURAL DRAWINGS FOR ELEVATIONS
	POWER AND/OR LIGHTING PANEL
	MOTOR OUTLET
	MAGNETIC STARTER
	MANUAL STARTER OR TOGGLE SWITCH
	DISCONNECT SWITCH
	SPEED CONTROLLER
	CONDUIT RUN UP
	CONDUIT RUN DOWN
	STUBBED CONDUIT RUN
	DOOR STRIKE
	PHONE/DATA OUTLET
	TELEVISION OUTLET MTD IN CLG. SPACE C/W 3/4" EMT TO WIRING CLOSET.
	C.C.T.V. CAMERA OUTLET, MOUNTED 6" BELOW FINISHED CEILING
	CEILING SOUND OUTLET, PAGING SYSTEM (S-DENOTES FEED FROM F.A. PANEL)
	WALL MOUNTED SPEAKER
	MICROPHONE OUTLET
	INTERCOM OUTLET
	ELECTRIC OR MAGNETIC DOOR LOCK
	DOOR ALARM SWITCH
	CARD READER
MD	SECURITY SYSTEM MOTION DETECTOR (REQUEST TO EXIT)
P	PANIC HARDWARE, REQUEST TO EXIT DEVICE CONNECTION
	MAGNETIC DOOR LOCK CONNECTION
	PUSHBUTTON
D	DURESS ALARM PUSHBUTTON
	EMERGENCY BATTERY BANK
	WALL MOUNTED EMERGENCY LIGHTING FIXTURE (SINGLE HEAD)
	WALL MOUNTED EMERGENCY LIGHTING FIXTURE (DOUBLE HEAD)
	CEILING MOUNTED EMERGENCY LIGHTING FIXTURE
	EMERGENCY BATTERY BANK C/W LIGHTING HEADS
F/T	AUTOMATIC FIRE ALARM DETECTOR ("F/T" DENOTES FIXED TEMPERATURE)
	SMOKE DETECTOR
	FIRE ALARM PULL STATION
	FIRE ALARM BELL (10" UNLESS OTHERWISE NOTED)
	MAGNETIC DOOR HOLDER CONNECTION
S	CEILING MOUNTED FIRE ALARM SYSTEM SPEAKER ("S" DENOTES STROBE (S-DENOTES FEED FROM F.A. PANEL)
	VOLUME SWITCH
	FLOW SWITCH
	PRESSURE ELECTRIC SWITCH
	TAMPER SWITCH
S	SPRINKLER SOLENOID VALVE
P	FIRE ALARM PRE-SIGNAL ACKNOWLEDGE SWITCH
	STROBE (1 - 1ST STAGE, 1 - 2ND STAGE)
a	ADJACENT TO SYMBOL DENOTES "MOUNTED ABOVE COUNTER"
c	ADJACENT TO SYMBOL DENOTES "MOUNTED IN CEILING"
DF	ADJACENT TO SYMBOL DENOTES "DRINKING FOUNTAIN CONNECTION"
F	ADJACENT TO SYMBOL DENOTES "FLUSH FLOOR MOUNTED"
P	ADJACENT TO SYMBOL DENOTES "PEDESTAL MOUNTED"
P.L.	ADJACENT TO SYMBOL DENOTES "PILOT LIGHT"
W.P.	ADJACENT TO SYMBOL DENOTES "WEATHER PROOF"
1D	ADJACENT TO SYMBOL DENOTES "NUMBER OF DATA JACKS REQUIRED"
1T	ADJACENT TO SYMBOL DENOTES "NUMBER OF TELEPHONE JACKS REQUIRED"
1A	ADJACENT TO SYMBOL DENOTES AFIS DATA JACK REQUIRED
1F	ADJACENT TO SYMBOL DENOTES NUMBER OF "FAX" JACKS REQUIRED.
R	ADJACENT TO EXISTING DEVICE MEANS TO BE REMOVED.

ALL ELECTRICAL EQUIPMENT IN DASHED LINES IS EXISTING TO REMAIN UNLESS OTHERWISE NOTED

—□— AS-BUILT JUNCTION BOX WITH CIRCUIT RUN

KEY TO DETAIL LOCATION

(No. / No.) DETAIL NUMBER / DRAWING NUMBER

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NO.	REVISION/ISSUE	DATE

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THE CITY OF WINNIPEG
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WINNIPEG POLICE SERVICE

Carruthers Shaw and Partners Limited Architects
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Toronto, Ontario M4P 2E5
416 482-5002 Fax 482-5040

DRAWN BY: C.B./S.D.

CHECKED BY: B.D.L.

DATE: 24 AUGUST 1998

PROJECT TITLE:

Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building

151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:

SYMBOL LEGEND AND SCHEDULES

SCALE: N.T.S.

PROJECT NO.	DWG. NO.
96023	E1.1

P.D.No. 98-038

G. MALLIN ELECTRIC LTD.
636 KEEWATIN ST
WINNIPEG, MB R2X 2R9
PHONE (204) 632-1568

AS-BUILTS 03/28/00

98-171-03

Scouten Mitchell Sigurdson Consulting Engineers
Scouten Mitchell Sigurdson and Associates Limited
770 Bradford Street, Winnipeg, Manitoba R3H 0N3
Telephone (204) 775-0281 Fax (204) 772-2153

Public Safety Bldg Redevelopment 2000 Project Const. Year

SCALE 1/8"=1'-0" | SCALE 1/4"=1'-0" | SCALE 3/8"=1'-0" | SCALE 1/2"=1'-0" | SCALE 1:200 | SCALE 1:100 | SCALE 1:50

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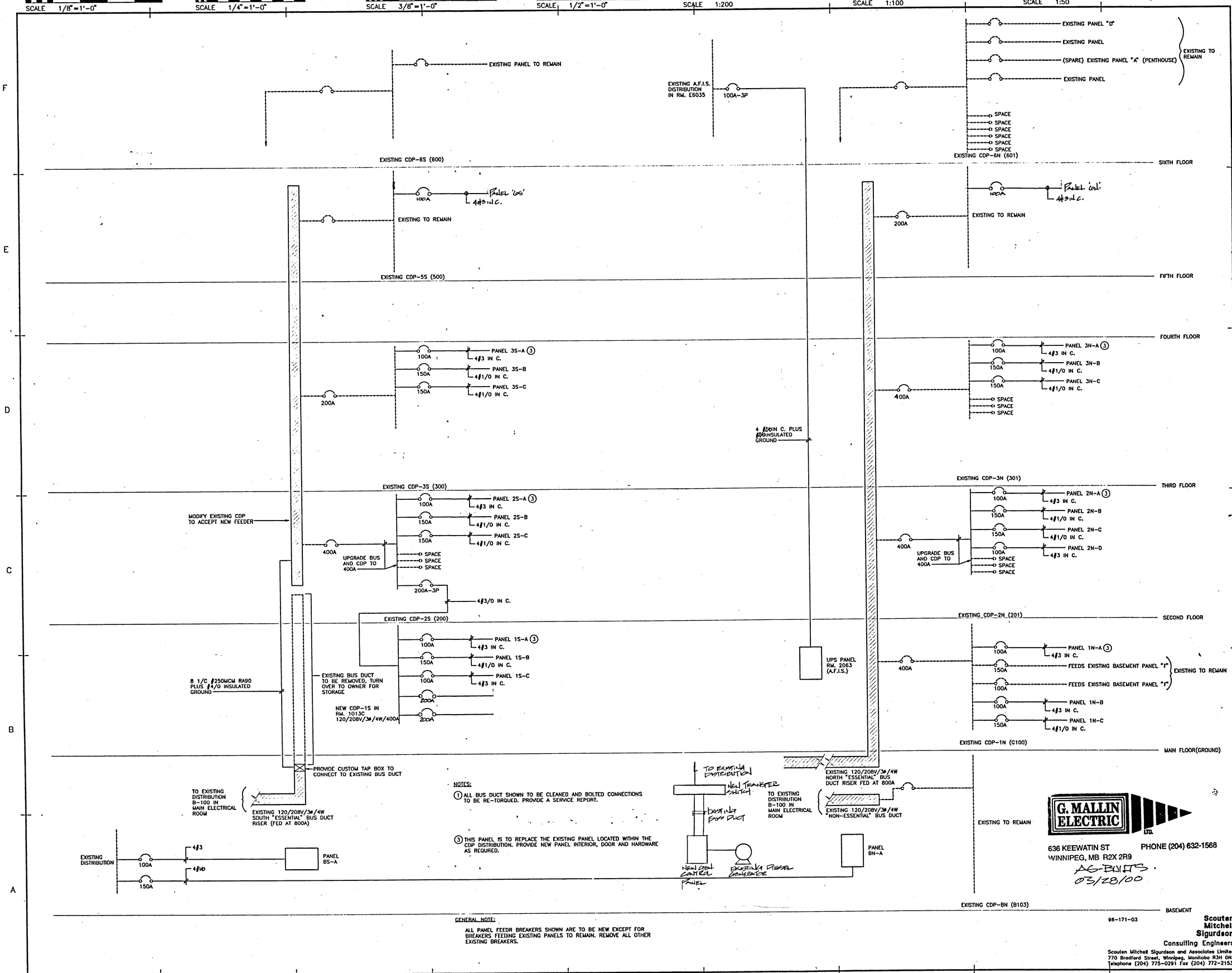

NOTES:

(1) ALL BUS DUCT SHOWN TO BE CLEANED AND BOLTED CONNECTIONS TO BE RE-TORQUED. PROVIDE A SERVICE REPORT.

(3) THIS PANEL IS TO REPLACE THE EXISTING PANEL LOCATED WITHIN THE CDP DISTRIBUTION. PROVIDE NEW PANEL INTERIOR, DOOR AND HARDWARE AS REQUIRED.

GENERAL NOTE:

ALL PANEL FEEDR BREAKERS SHOWN ARE TO BE NEW EXCEPT FOR BREAKERS FEEDING EXISTING PANELS TO REMAIN. REMOVE ALL OTHER EXISTING BREAKERS.

98-171-03

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Consulting Engineers
Scouten Mitchell Sigurdson and Associates Limited
770 Bradford Street, Winnipeg, Manitoba R3H 0N3
Telephone (204) 775-0291 Fax (204) 772-2153

KEY TO DETAIL LOCATION

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No. — DRAWING NUMBER

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THE CITY OF WINNIPEG
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WINNIPEG POLICE SERVICE

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2345 Yonge Street
Toronto, Ontario M4P 2E5
416 482-5002 Fax 482-5040

DRAWN BY: C.B./D.L./A.A./S.D.

CHECKED BY: A.M.L.

DATE: 24 AUGUST 1998

PROJECT TITLE:

Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building

151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:

SINGLE LINE DISTRIBUTION SCHEMATIC

G. MALLIN ELECTRIC ltd.
636 KEEWATIN ST PHONE (204) 632-1568
WINNIPEG, MB R2X 2R9

AS-BUILTS
03/28/00

SCALE: N.T.S.

PROJECT NO.	DWG. NO.
96023	E20.1

P.D.No. 98-038

SCALE 1/8"=1'-0" | SCALE 1/4"=1'-0" | SCALE 3/8"=1'-0" | SCALE 1/2"=1'-0" | SCALE 1:200 | SCALE 1:100 | SCALE 1:50

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THE CITY OF WINNIPEG
PROPERTY AND DEVELOPMENT SERVICES
WINNIPEG POLICE SERVICE

CONSTRUCTION NORTH

Carruthers Shaw and Partners Limited Architects
2345 Yonge Street
Toronto, Ontario M4P 2E5
416 482-5002 Fax 482-5040

DRAWN BY: C.B./S.D./Y.Z./A.A.
CHECKED BY: B.D.L./P.J.I.
DATE: 24 AUGUST 1998

PROJECT TITLE:

Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building

151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:

BASEMENT LEVEL FLOOR PLAN SYSTEMS

SCALE: 1/8"=1'-0"

PROJECT NO.	DWG. NO.
96023	E13.1

P.D.No. 98-038

BASEMENT PLAN – SYSTEMS

SCALE: 1/8"=1'-0"

TYPICAL DOOR SECURITY SYSTEM DETAIL

N.T.S.

. NO SPLICES, ALL WIRING IS TERMINATED AT THE 'ACU' & MAGNETIC LOCK CONTROL PANEL
. ALL WIRING TO BE IN CONDUIT

NOTES:

1. EXISTING TO REMAIN.
2. EXISTING SECURITY SYSTEM PANEL ACU-B. FOR ALL PARKADE AND BASEMENT CONTROLLED DOORS.
3. KEY SWITCH TO BYPASS CARD ACCESS READER.
5. FIRE ALARM SYSTEM RISER. ALL ADDRESSABLES TO BE WIRED VIA THIS JUNCTION BOX RISER.
9. NEW P.A. SYSTEM EQUIPMENT RACK.
11. DURESS ALARM SYSTEM RISER. REFER TO ED-9.
13. B DENOTES TELEPHONE ADDRESSE
10. C DENOTES DATA ADDRESSE

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER • BICSI
EXPIRES 12/31/00
Regis. No. 00857

G. MALLIN ELECTRIC LTD.
636 KEEWATIN ST
WINNIPEG, MB R2X 2R9
PHONE (204) 632-1568
03/28/00

96-171-03

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770 Bradford Street, Winnipeg, Manitoba R3H 0N3
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SCALE 1/8"=1'-0" | SCALE 1/4"=1'-0" | SCALE 3/8"=1'-0" | SCALE 1/2"=1'-0" | SCALE 1:200 | SCALE 1:100 | SCALE 1:50

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THE CITY OF WINNIPEG
PROPERTY AND DEVELOPMENT SERVICES
WINNIPEG POLICE SERVICE

CONSTRUCTION MONITOR

Carruthers Shaw and Partners Limited Architects
2345 Yonge Street
Toronto, Ontario M4P 2E5
416 482-5002 Fax 482-5040

DRAWN BY: C.B./S.D./A.A./Y.Z.
CHECKED BY: B.D.L.
DATE: 24 AUGUST 1998

PROJECT TITLE:

Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building

151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:

BASEMENT LEVEL FLOOR PLAN POWER

SCALE: 1/8"=1'-0"

PROJECT NO.	DWG. NO.
96023	E8.1

P.D.No. 98-038

BASEMENT PLAN – POWER

SCALE: 1/8"=1'-0"

G. MALLIN ELECTRIC LTD.
636 KEEWATIN ST PHONE (204) 632-1568
WINNIPEG, MB R2X 2R9
03/28/00

98-171-03

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EXIST. FIRING RANGE

PORTABLE DURESS DEVICE INTERCONNECTED WITH DURESS SYSTEM

INTERCOM

FIRE ALARM HORN

EXIST. STAIR

EXIST. SMALL FARTS

EXIST. STORAGE

EXIST. RADIO SHOP

EXIST. SIGNALS

EXIST. TRAFFIC LAB

EXIST. FIRE DEPT. WORKSHOP

EXIST. MACHINE SHOP

DARKROOM P02

IDENT. ROOM P01

EXIST. MAJOR CRIME EXAM ROOM P04

EXIST. OFFICE P06

S/SGT OFFICE P03

EXIST. STORAGE ROOM

EXIST. ELECT. ROOM

EXIST. ELECT ROOM

EXIST. MACHINE RM

EXIST. LOBBY

EXISTING OVERHEAD DOOR MOTOR AND CONTROLS. WIRE AND CONNECT TO ACU-B FOR AUTOMATIC OPERATION FROM RAMP CARD READER.

EXISTING DISTRIBUTION 'B104' (EMERGENCY POWER 120/208V)

MOTOR CONTROL CARD READER DOOR CONTACTS

EXISTING PARKING

RELOCATE LIGHT FOR NEW DUCTWORK

FIRE ALARM RELAYS FOR EMERGENCY GENERATOR RUNNING AND TROUBLE. WIRE AND CONNECT TO NEW CONTROL PANEL

EXISTING 1000 AMP FEEDER BUSDUCT TO EXISTING EMERGENCY DISTRIBUTION. CLEAN ARE-TORQUE BOLTED CONNECTIONS OF THE BUSDUCT. PROVIDE A SERVICE REPORT. PROVIDE NEW 4/0 BARE GROUND TO EMERGENCY DISTRIBUTION (B100)

BUS DUCT STOPS ABOVE. REMOVE EXISTING 1/C COREFLEX REPLACE AS NOTED ON SINGLE LINE SCHEMATIC BELOW.

NEW CARD ACCESS DEVICE MOUNTED IN EXISTING PEDESTAL. WIRE AND CONNECT CARD READER TO OPEN EXISTING OVERHEAD DOOR AT BOTTOM OF RAMP (2' READER). SEE DETAIL SHEET ED-7 FOR RISER SCHEMATIC. REUSE EXISTING CONDUIT IF SUITABLE. (ACU-B)

PROPOSED LOCATION OF TEMPORARY DIESEL GENERATOR 750 KVA/600V/3Φ EXACT LOCATION TO BE DETERMINED ON SITE WITH OWNER

EXISTING OVERHEAD DOOR MOTOR AND CONTROLS. WIRE AND CONNECT TO AACU-B FOR AUTOMATIC OPERATION FROM RAMP CARD READER.

NEW REMOTE RADIATOR MOTOR LOCATED ON PARKADE LEVEL 1 FOR NEW GENERATOR. REMOVE EXISTING. MODIFY MOUNTING AS REQUIRED.

PROPANE STORAGE

EXHAUST PIT

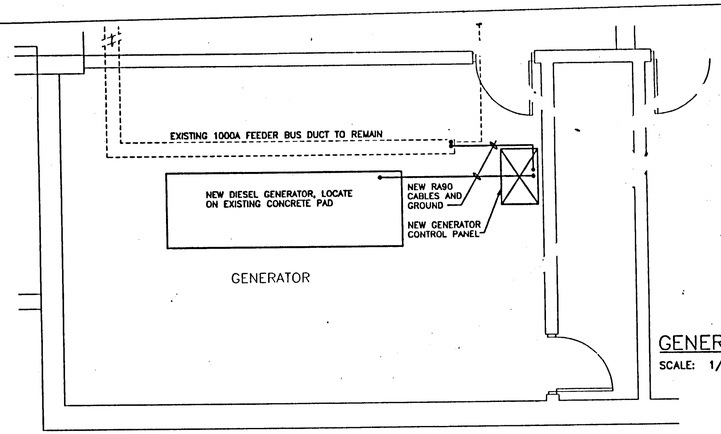
DN TO PARKADE

EXISTING SIX STOREY BUILDING

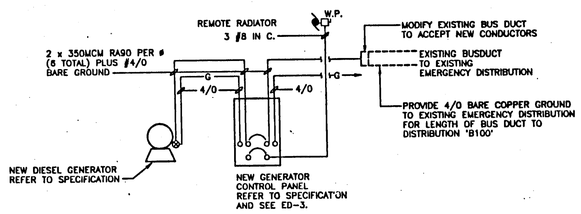
APPROXIMATE LOCATION OF THE EXISTING MAIN ELECTRICAL ROOM AT BASEMENT LEVEL

RAMP DN.

DN.



GENERATOR ROOM DETAIL
SCALE: 1/4"= 1'-0"



EMERGENCY POWER PARTIAL DISTRIBUTION SCHEMATIC
SCALE: N.T.S.

DRAWING NOTES:

1. NEW WALL MOUNTED INTERCOM. LOCATE AS DIRECTED ON SITE BY OWNER (GARAGE ATTENDANT). REFER TO ED-7.
3. REFER TO DETAIL SHEET ED-12.

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DRAWN BY: C.B./S.D./A.A.
CHECKED BY: B.D.L.
DATE: 24 AUGUST 1998

PROJECT TITLE:

Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building

151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:

SUB-BASEMENT AND PARKING GARAGE POWER AND SYSTEMS

SCALE: 1/8"=1'-0"

PROJECT NO.	DWG. NO.
96023	E2.1

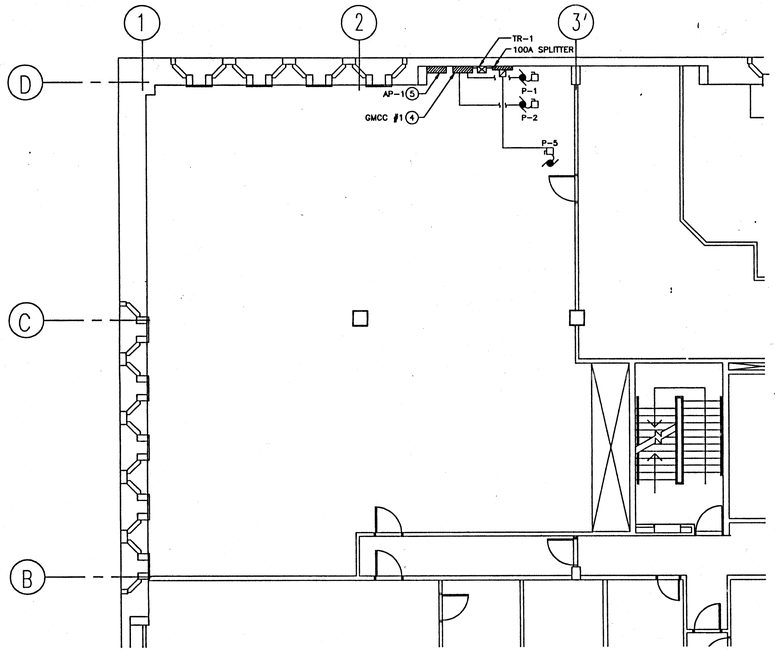
P.D.No. 98-038

0 5 10 25ft. SCALE 1/8"=1'-0" | 0 1 5 10ft. SCALE 1/4"=1'-0" | 0 1 5 8ft. SCALE 3/8"=1'-0" | 0 1 2 5ft. SCALE 1/2"=1'-0" | 0 5 10 15 SCALE 1:200 | 0 1 2 5 8 SCALE 1:100 | 0 .5 1 2 3 4 SCALE 1:50

IF THIS SHEET IS NOT 33 1/8" X 23 3/8" (841 X 594mm) IT IS A REDUCED PRINT – READ DWG. ACCORDINGLY

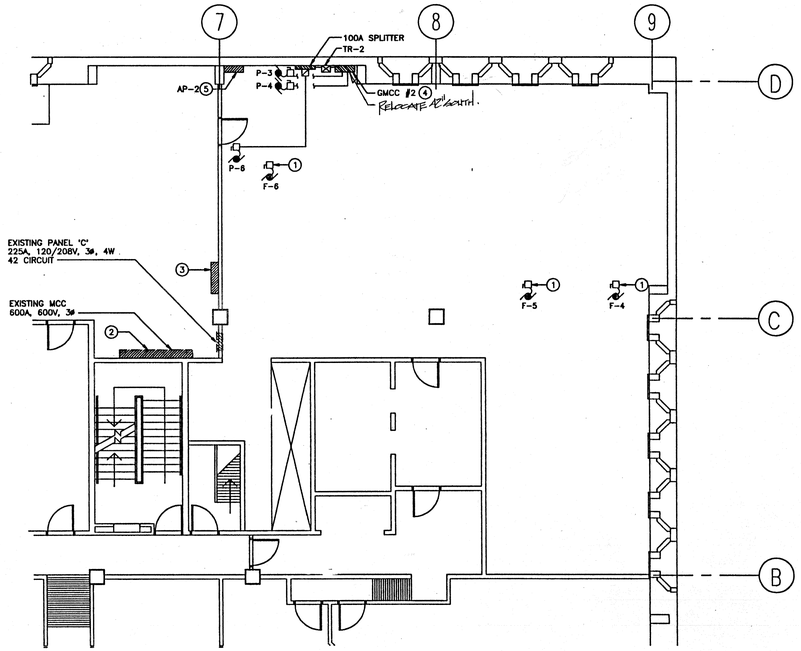
NOTES:

1. DISCONNECT EXISTING INTERCONNECTION WITH BUILDING FIRE ALARM SYSTEM. FANS F-1 THRU F-6 TO REMAIN ON DURING FIRE ALARM. PROVIDE AND INSTALL WIRING FROM NEW FIRE ALARM CONTROL PANEL TO EXISTING DDC CONTROL PANEL. DAMPERS TO OPEN TO 100% DURING FIRE ALARM. COORDINATE INSTALLATION WITH DIVISION 15.
2. PROVIDE AND INSTALL NEW 200A DISCONNECT SWITCH FUSED AT 200A IN EXISTING MCC. INSTALL DISCONNECT SWITCH ON SECTION FED FROM EMERGENCY POWER.
3. PROVIDE AND INSTALL NEW 400A, 600V, CDP PANEL. REFER TO SINGLE LINE SCHEMATIC DIAGRAM.
4. PROVIDE AND INSTALL TWO (2) NEW FOURPLEX GROUPED MOTOR CONTROL CENTRES (GMCC #1, GMCC #2) IN EMMAC 1 ENCLOSURE (SPRINKLER PROOF) FOURPLEX MCC'S SHALL BE WESTINGHOUSE OR APPROVED EQUAL. (2 REQUIRED)
5. NEW REMOTE PANELS TO CONTROL P-1 AND P-2 OR P-3 AND P-4 SUPPLIED BY DIVISION 15. DIVISION 16 TO WIRE AND CONNECT AS PER MANUFACTURER'S REQUIREMENTS. COORDINATE INSTALLATION WITH DIVISION 15.



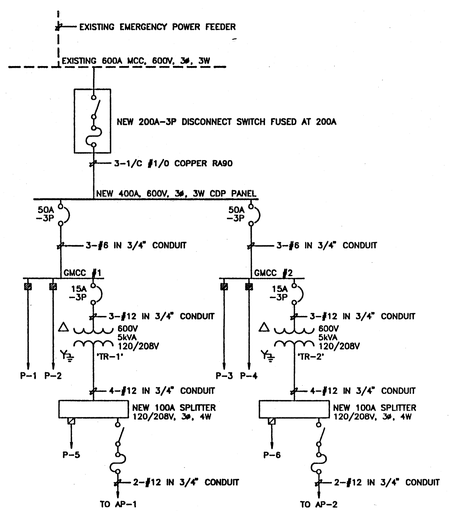
SOUTH MECHANICAL ROOM – ELECTRICAL

SCALE 1/4"=1'-0"



NORTH MECHANICAL ROOM – ELECTRICAL

SCALE 1/4"=1'-0"



PARTIAL SINGLE LINE DISTRIBUTION SCHEMATIC

SCALE N.T.S.

MOTOR SCHEDULE

MOTOR NO.	DESCRIPTION	LOCATION	KW	H.P.	VOLTS	STARTER & ACCESS MAN.	MAG.	P.L.	H.O.A.	CIRCUIT	STARTER LOCATION	FEEDER SIZE	REMARKS
AC-1 CONDENSER	AHS ROOM CONDENSING UNIT	ROOF	1		600V/1ø							2-#12	PACKAGED UNIT INTERLOCKS WITH AC-1 FAN
F-1/F-2	EXISTING SUPPLY AIR UNITS	SOUTH MECHANICAL ROOM											REFER TO NOTE 1 THIS DRAWING
F-3	EXISTING RETURN AIR UNITS	SOUTH MECHANICAL ROOM											REFER TO NOTE 1 THIS DRAWING
F-4/F-5	EXISTING SUPPLY AIR UNITS	NORTH MECHANICAL ROOM											REFER TO NOTE 1 THIS DRAWING
F-6	EXISTING RETURN AIR UNITS	NORTH MECHANICAL ROOM											REFER TO NOTE 1 THIS DRAWING
P-1	GLYCOL HEATING PUMP	SOUTH MECHANICAL ROOM	1.5		600V/1ø		•	•	•	GMCC #1		3-#12	DIVISION 16 TO WIRE AND CONNECT P-1 AND P-2 TO ALTERNATOR PANEL (AP-1) SUPPLIED BY DIVISION 15
P-2	GLYCOL HEATING PUMP	SOUTH MECHANICAL ROOM	1.5		600V/3ø		•	•	•	GMCC #1		3-#12	DIVISION 16 TO WIRE AND CONNECT P-1 AND P-2 TO ALTERNATOR PANEL (AP-1) SUPPLIED BY DIVISION 15
P-3	GLYCOL HEATING PUMP	NORTH MECHANICAL ROOM	1.5		600V/3ø		•	•	•	GMCC #2		3-#12	DIVISION 16 TO WIRE AND CONNECT P-3 AND P-4 TO ALTERNATOR PANEL (AP-2) SUPPLIED BY DIVISION 15
P-4	GLYCOL HEATING PUMP	NORTH MECHANICAL ROOM	1.5		600V/3ø		•	•	•	GMCC #2		3-#12	DIVISION 16 TO WIRE AND CONNECT P-3 AND P-4 TO ALTERNATOR PANEL (AP-2) SUPPLIED BY DIVISION 15
P-5	GLYCOL FILL PUMP	SOUTH MECHANICAL ROOM		1/3	120V/1ø	•		•		GMCC #1	ADJACENT PUMP	2-#12	REFER TO PARTIAL SINGLE LINE DISTRIBUTION SCHEMATIC THIS DRAWING
P-6	GLYCOL FILL PUMP	NORTH MECHANICAL ROOM		1/3	120V/1ø	•		•		GMCC #2	ADJACENT PUMP	2-#12	REFER TO PARTIAL SINGLE LINE DISTRIBUTION SCHEMATIC THIS DRAWING

NOTE: MOTOR NUMBERS ON THIS PLAN ONLY APPLY TO THIS DRAWING

INCOMING CABLES

MAGNETIC STARTER FOR:	MAGNETIC STARTER FOR:	15A-3P BREAKER FOR:	MAGNETIC STARTER FOR:	15A-3P BREAKER FOR:	15A-1P BREAKER FOR:	SPACE	SPACE
P-1 OR P-3	P-2 OR P-4	TR-1 OR TR-2	FC-1 OR FC-2	CU-1 OR CU-2	AC-1 CONDENSER GMCC-2 (ONLY) P-4		

GROUPED MOTOR CONTROL CENTRE TYPICAL FOR GMCC #1 AND GMCC #2

SCALE N.T.S.

KEY TO DETAIL LOCATION

No. — DETAIL NUMBER / DRAWING NUMBER

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NO.	REVISION/ISSUE	DATE

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CHECKED BY: B.D.L.

DATE: 24 AUGUST 1998

PROJECT TITLE:

Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building

151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:

HEATING COILS REPLACEMENT SIXTH FLOOR MECHANICAL ROOMS

SCALE: AS NOTED

PROJECT NO.	DWG. NO.
96023	E22.1

P.D.No. 98-038

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AS BUILTS 03/28/00

98-171-03

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25ft. 0 1 5 10ft. SCALE 1/4"=1'-0" | 0 1 5 8ft. SCALE 3/8"=1'-0" | 0 1 2 5ft. SCALE 1/2"=1'-0" | 0 5 10 15 SCALE 1:200 | 0 1 2 5 8 SCALE 1:100 | 0 .5 1 2 3 4 SCALE 1:50

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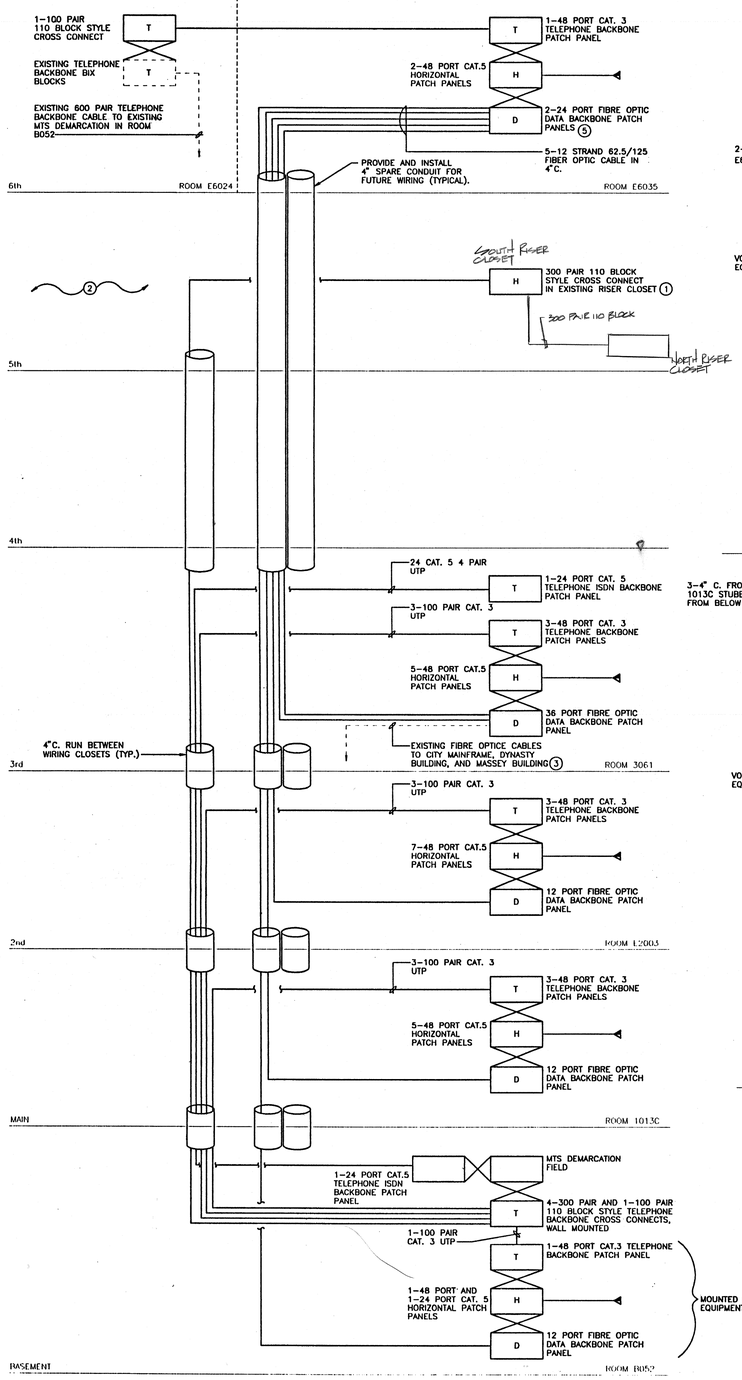
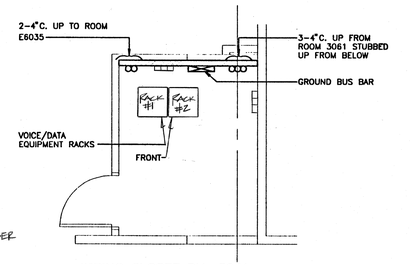
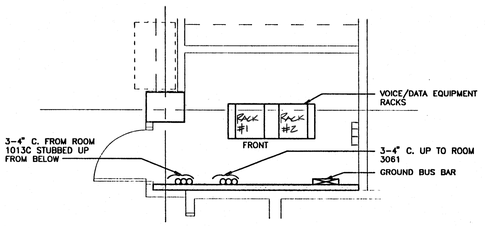
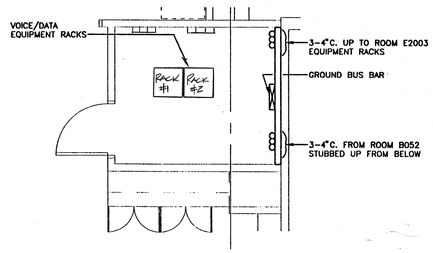




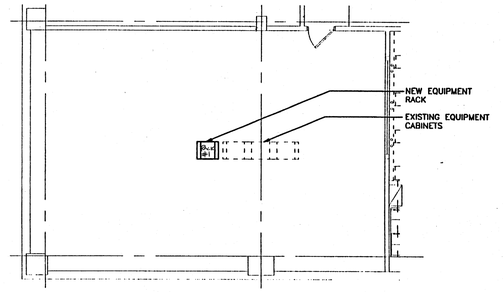
WIRING CLOSET RM. 3061
SCALE: 1/4" = 1'-0"



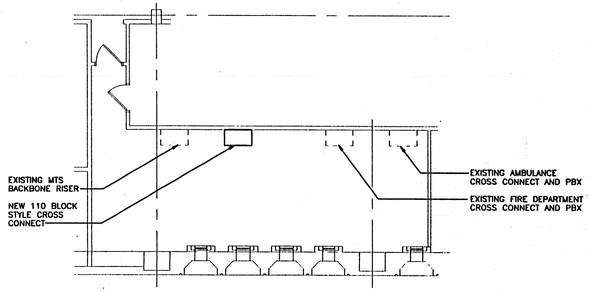
WIRING CLOSET RM. E2003
SCALE: 1/4" = 1'-0"



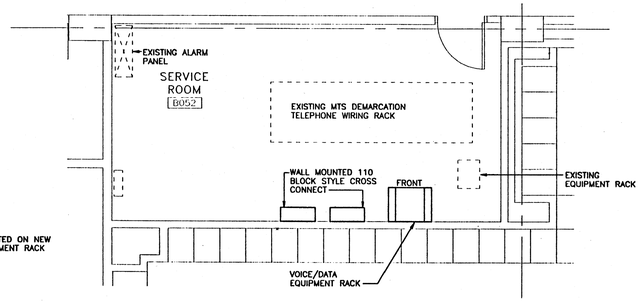
DATA RACK CLOSET RM. 1013C
SCALE: 1/4" = 1'-0"



EXISTING COMPUTER ROOM E6035
SCALE: 1/8" = 1'-0"



EXISTING MECHANICAL ROOM E6024
SCALE: 1/8" = 1'-0"



BASEMENT "SERVICE ROOM" B052
SCALE: 1/4" = 1'-0"

NOTES:

1. INSTALL NEW 110 BLOCK FIELD AT EXISTING RISER CLOSET. CROSS CONNECT ALL EXISTING TELEPHONE SETS TO NEW BACKBONE CROSS CONNECT FIELD. DISCONNECT AND REMOVE REDUNDANT EXISTING TELEPHONE BACKBONE RISER CABLE. EXISTING TELEPHONE SETS TO REMAIN ACTIVE AND IN NORMAL OPERATION, COORDINATE WITH OWNER PRIOR TO PATCHING OVER TO NEW BACKBONE.
2. ALL EXISTING TELEPHONE AND DATA DEVICES TO REMAIN ACTIVE AND IN NORMAL OPERATION. EXISTING WORKSTATION DEVICE CABLING IS TERMINATED IN EXISTING 5TH, 4TH AND 3RD FLOOR WIRING CLOSETS. TEST AND VERIFY ALL EXISTING CABLING TO ENSURE DEVICES REMAIN IN NORMAL OPERATION PRIOR TO DISCONNECTING.
3. PROVIDE NEW TERMINATION FOR EXISTING FIBER OPTIC CABLES. EXISTING FIBER TO REMAIN ACTIVE AND IN NORMAL OPERATION. COORDINATE NEW TERMINATIONS INTO NEW PATCH PANEL WITH OWNER.

KEY TO DETAIL LOCATION

No. (DETAIL NUMBER) / No. (DRAWING NUMBER)

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NO.	REVISION/ISSUE	DATE

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CHECKED BY: B.D.L./P.J.I.

DATE: 24 AUGUST 1998

PROJECT TITLE:

Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building

151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:

MISCELLANEOUS PART FLOOR PLANS ELECTRICAL AND DATA/PHONE RISER

SCALE: AS NOTED

PROJECT NO.	DWG. NO.
96023	E21.1

P.D.No. 98-038

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WINNIPEG, MB R2X 2R9
AS BUILTS
03/28/00

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
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Regis. No. 00857

96-171-03

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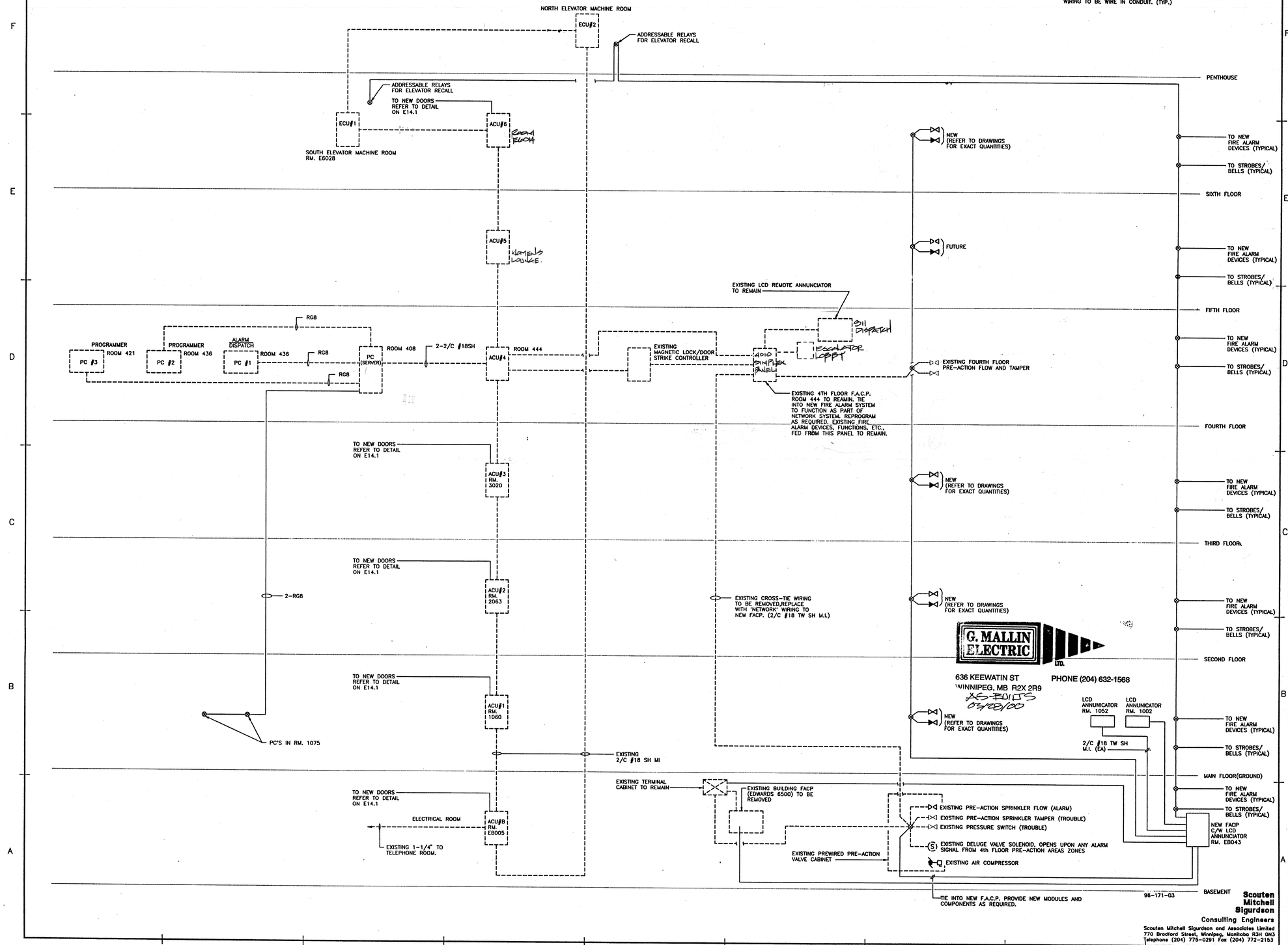
SCALE 1/8"=1'-0" | SCALE 1/4"=1'-0" | SCALE 3/8"=1'-0" | SCALE 1/2"=1'-0" | SCALE 1:200 | SCALE 1:100 | SCALE 1:50

GENERAL NOTE:

PROVIDE MINIMUM OF ONE LOOP PER FLOOR, EACH LOOP WIRED WITH 2/C #8 TW SH M.I. FROM FIRE ALARM CONTROL PANEL TO JUNCTION BOX ON EACH FLOOR. SIGNAL CIRCUIT WIRING TO BE WIRE IN CONDUIT. (TYP.)



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151 Princess Street
Project No. 96023
Fire Alarm System Schematic
Drawing Title
Sheet No. E19.1
Public Safety Bldg Redevelopment 2000
Project
Const. Year

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DRAWN BY: C.B./D.L./A.A./S.D.

CHECKED BY: B.D.L.

DATE: 24 AUGUST 1998

PROJECT TITLE:

Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building

151 Princess Street
Winnipeg **Manitoba**

DRAWING TITLE:

SECURITY AND FIRE ALARM SYSTEM RISER SCHEMATIC & DETAILS

SCALE: N.T.S.

PROJECT NO.	DWG. NO.
96023	E19.1

P.D.No. 98-038

151 Princess Street

Sixth Floor Plan - Systems
Drawing Title

E18.1
Sheet No.

96023
Project No.

Public Safety Bldg Redevelopment 2000
Project

Const. Year

SCALE 1/8"=1'-0" | SCALE 1/4"=1'-0" | SCALE 3/8"=1'-0" | SCALE 1/2"=1'-0" | SCALE 1:200 | SCALE 1:100 | SCALE 1:50

SIXTH FLOOR PLAN – SYSTEMS

SCALE: 1/8"=1'-0"

NOTES:

1. EXISTING TO REMAIN.
2. EXISTING SECURITY SYSTEM PANEL ECU-2.
3. EXISTING SECURITY SYSTEM PANEL ECU-1 IN ELEVATOR MACHINE ROOM.
4. EXISTING UPS MONITOR TO BE RELOCATED TO RADIO SHOP E6020, LOCATED AS DIRECTED.
6. FIRE ALARM SYSTEM RISER, ALL ADDRESSABLE DEVICES TO BE WIRED VIA THIS JUNCTION BOX RISER.
7. CEILING HUNG C.C.T.V. MONITOR. PROVIDE SUITABLE BREAKER. BREAKER.
9. DURESS ALARM SYSTEM RISER. REFER TO ED-9.

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WINNIPEG, MB R2X 2R9
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AS-BUILTS
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CHECKED BY: B.D.L./P.J.I.

DATE: 24 AUGUST 1998

PROJECT TITLE:

Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building

151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:

SIXTH FLOOR PLAN SYSTEMS

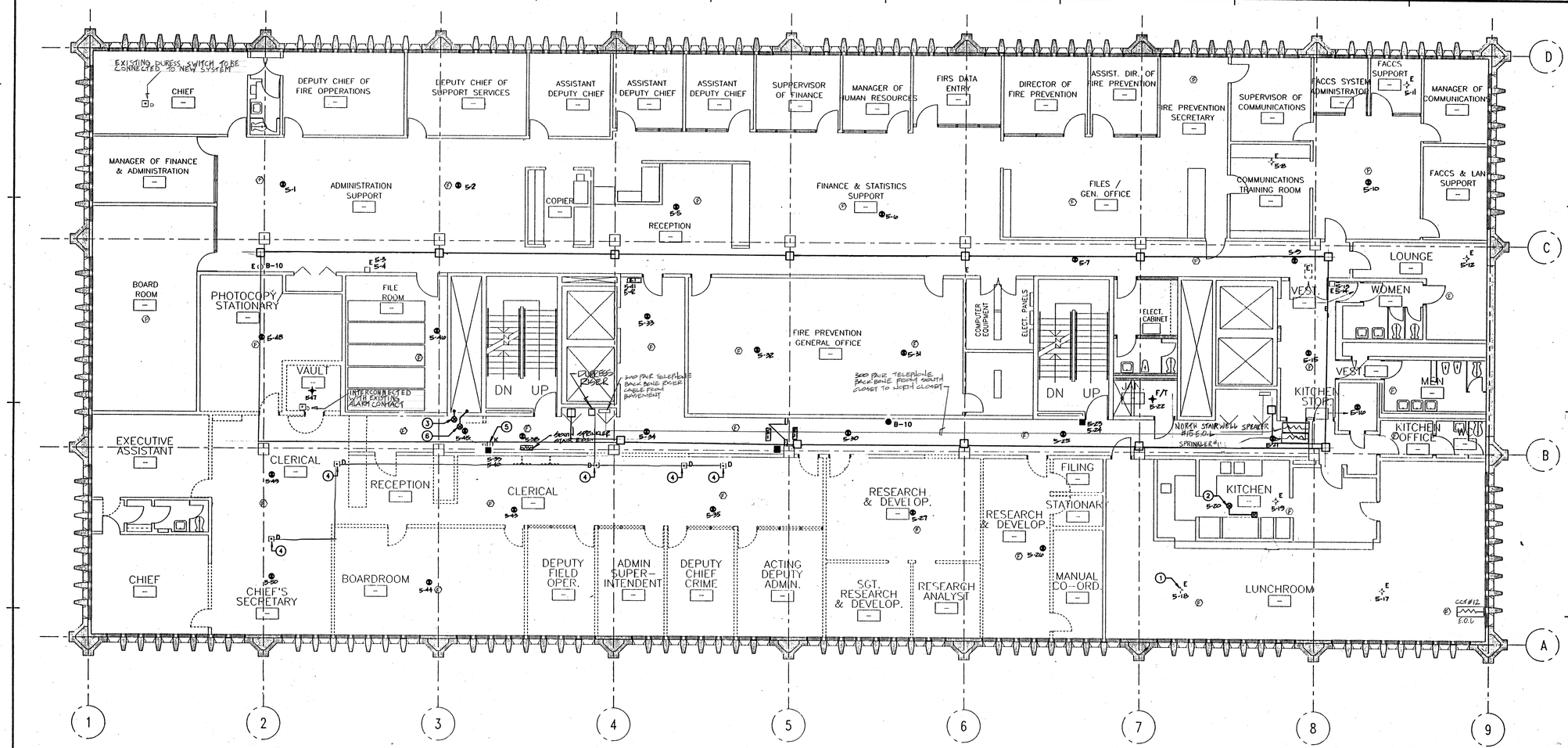
SCALE: 1/8"=1'-0"

PROJECT NO. 96023

DWG. NO. E18.1

P.D.No. 98-038

SCALE 1/8"=1'-0" | SCALE 1/4"=1'-0" | SCALE 3/8"=1'-0" | SCALE 1/2"=1'-0" | SCALE 1:200 | SCALE 1:100 | SCALE 1:50



FIFTH FLOOR PLAN – SYSTEMS

SCALE: 1/8"=1'-0"

NOTES:

(2) EXISTING KITCHEN HOOD EXTINGUISHING SYSTEM.

(3) EXISTING FIRE ALARM SYSTEM RISER, ALL ADDRESSABLE DEVICES TO BE WIRED VIA THIS JUNCTION BOX RISER.

(6) DURESS ALARM SYSTEM RISER. REFER TO ED-9.

G. MALLIN ELECTRIC LTD.
636 KEEWATIN ST
WINNIPEG, MB R2X 2R9
PHONE (204) 632-1568

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Scouten Mitchell Sigurdson and Associates Limited
770 Bradford Street, Winnipeg, Manitoba R3H 0N5
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KEY TO DETAIL LOCATION
No. / No. — DETAIL NUMBER / DRAWING NUMBER

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DRAWINGS SHOULD NOT BE SCALED.

NO.	REVISION/ISSUE	DATE

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THE CITY OF WINNIPEG
PROPERTY AND DEVELOPMENT SERVICES
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CONSTRUCTION NORTH

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DRAWN BY: C.B./D.L./A.A./Y.Z.
CHECKED BY: B.D.L./P.J.I.
DATE: 24 AUGUST 1998

PROJECT TITLE:
Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building
151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:
FIFTH FLOOR PLAN SYSTEMS

SCALE: 1/8"=1'-0"

PROJECT NO.	DWG. NO.
96023	E17.1

P.D.No. 98–038

Project
Const. Year
Public Safety Bldg. Redevelopment 2000

SCALE 1/8"=1'-0" | SCALE 1/4"=1'-0" | SCALE 3/8"=1'-0" | SCALE 1/2"=1'-0" | SCALE 1:200 | SCALE 1:100 | SCALE 1:50

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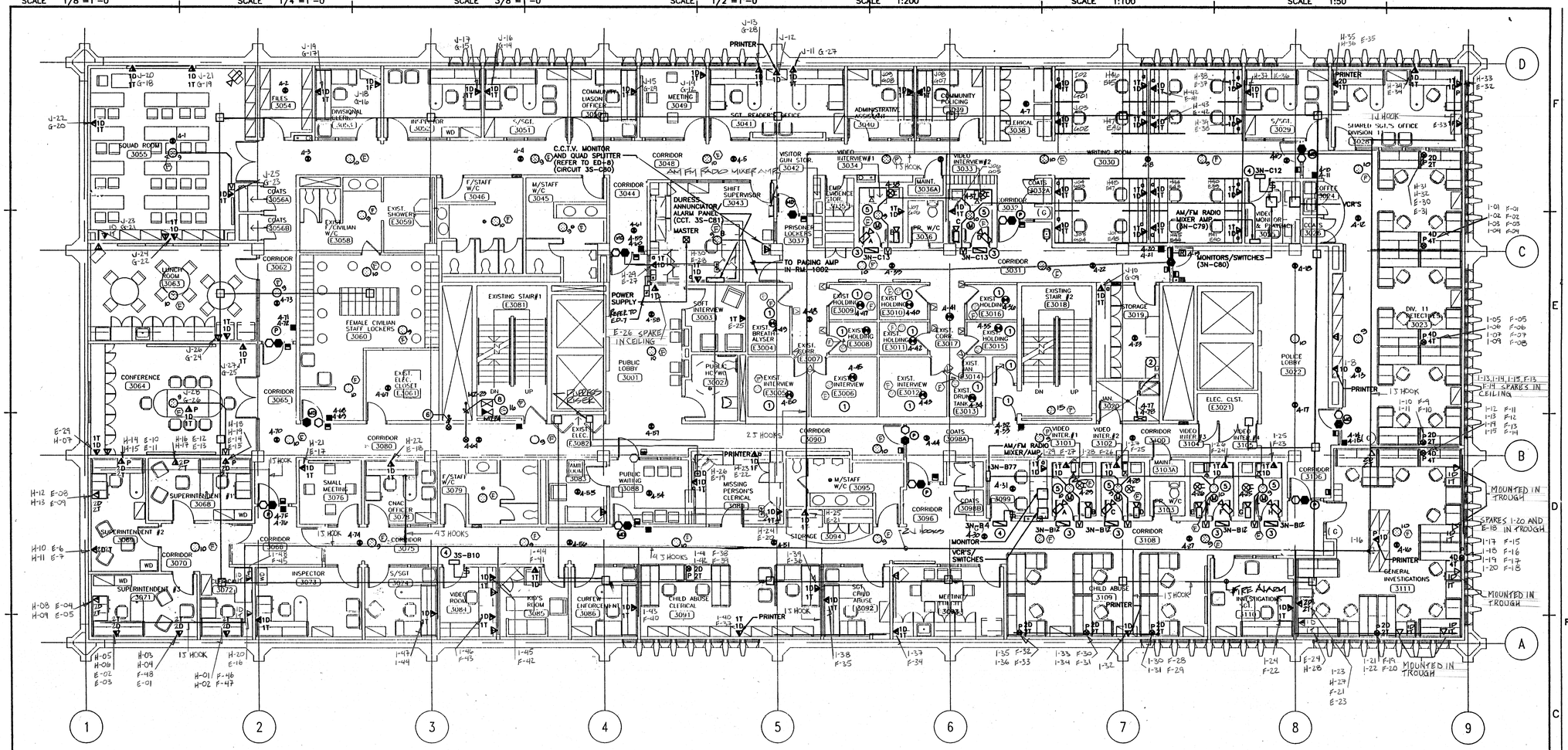
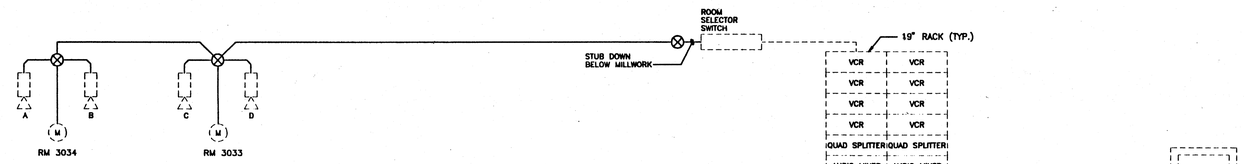


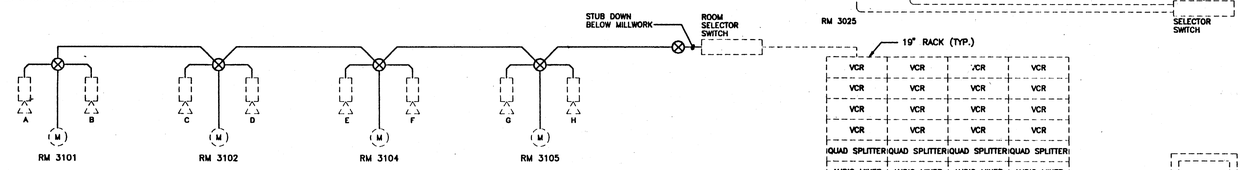
THIRD FLOOR PLAN – SYSTEMS

SCALE: 1/8"=1'-0"



TRAFFIC INTERVIEW CCTV CONDUIT SCHEMATIC ROOMS 3034 AND 3033

REFER TO ED-5 FOR TYPICAL WIRING SCHEMATIC



TRAFFIC INTERVIEW CCTV CONDUIT SCHEMATIC ROOMS 3101, 3102, 3104 AND 3105

REFER TO ED-5 FOR TYPICAL WIRING SCHEMATIC

NOTES:

1. EXISTING TO REMAIN.
6. FIRE ALARM SYSTEM RISER. ALL ADDRESSABLE DEVICES TO BE WIRED VIA THIS JUNCTION BOX RISER.
B. DURESS ALARM SYSTEM RISER. REFER TO ED-9.
1. H,I,J DENOTES DATA ADDRESSES
10. E,F,G DENOTES TELEPHONE ADDRESSES

KEY TO DETAIL LOCATION

No. DETAIL NUMBER
No. DRAWING NUMBER

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NO.	REVISION/ISSUE	DATE

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DRAWN BY: C.B./S.D./A.A.

CHECKED BY: B.D.L./P.I.

DATE: 24 AUGUST 1998

PROJECT TITLE:

Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building

151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:

THIRD FLOOR PLAN SYSTEMS

SCALE: 1/8"=1'-0"

PROJECT NO.	DWG. NO.
96023	E16.1

P.D.No. 98–038

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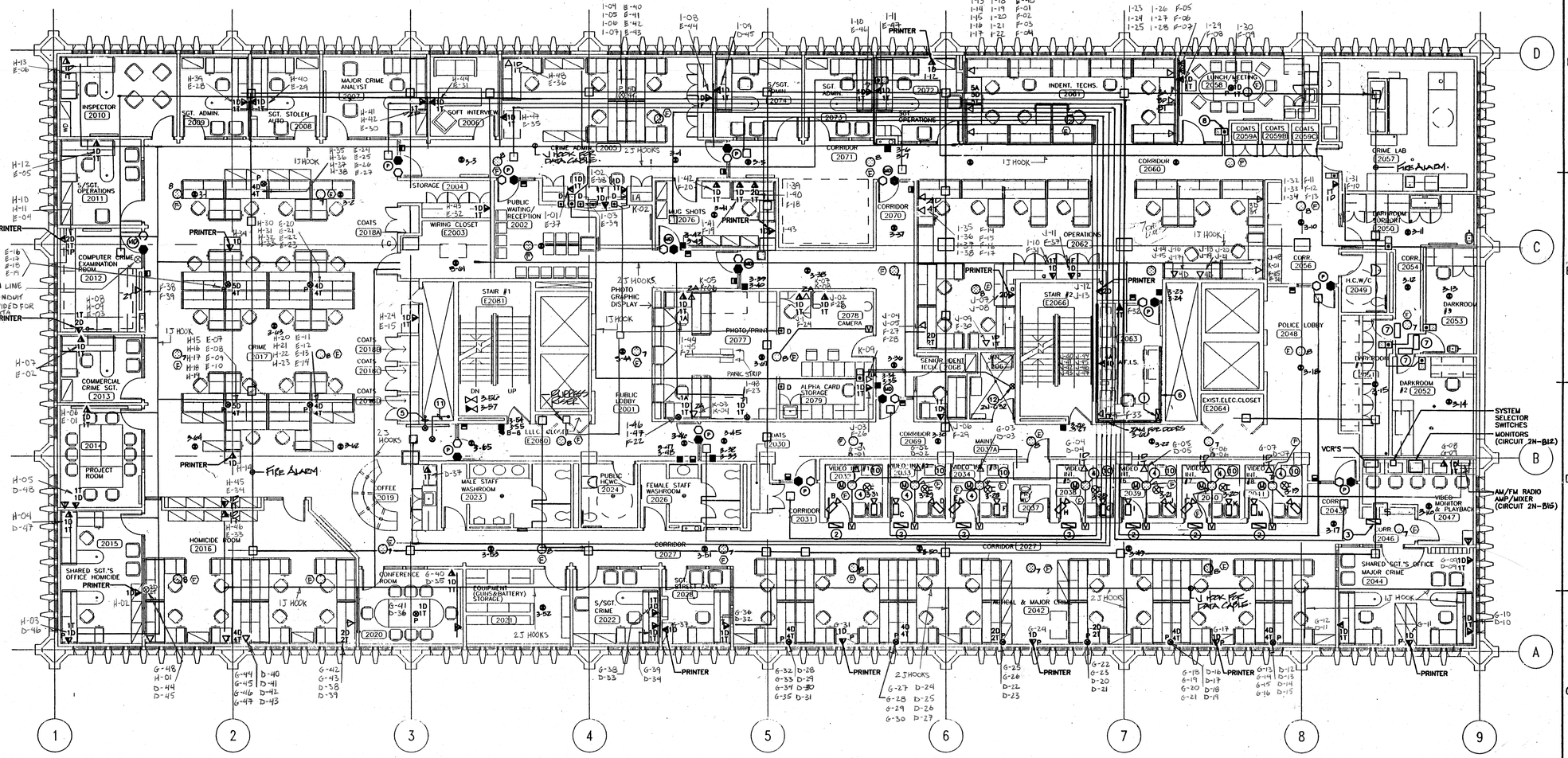
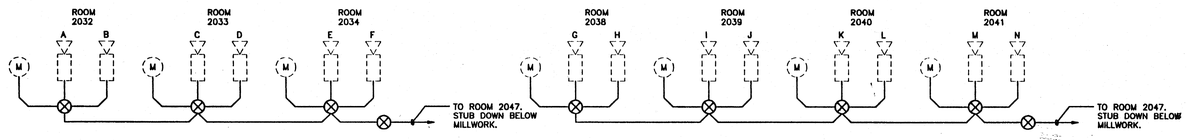
Public Safety Bldg Redevelopment 2000
Const. Year
Project

SCALE 1/8"=1'-0" | SCALE 1/4"=1'-0" | SCALE 3/8"=1'-0" | SCALE 1/2"=1'-0" | SCALE 1:200 | SCALE 1:100 | SCALE 1:50



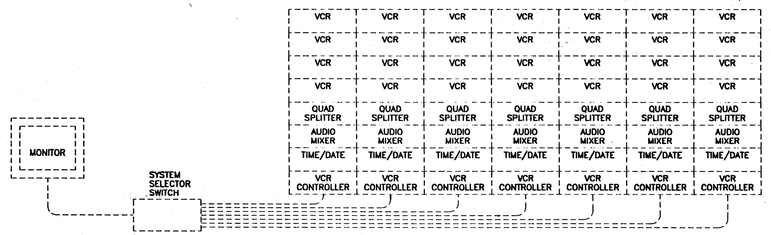
SECOND FLOOR PLAN – SYSTEMS

SCALE: 1/8"=1'-0"



INTERVIEW ROOM CCTV CONDUIT SCHEMATIC

REFER TO ED-5 FOR TYPICAL WIRING SCHEMATIC.



ROOM 2047 CCTV CONDUIT SCHEMATIC

REFER TO ED-5 FOR TYPICAL WIRING SCHEMATIC.

NOTES:

1. EXISTING SECURITY SYSTEM PANEL ACU-2. FOR ALL SECOND FLOOR CONTROLLED DOORS.
2. "INTERVIEW IN PROGRESS" SIGN C/W ON/OFF SWITCH MOUNTED ADJACENT TO DOOR. (CIRCUIT 2N-B11)
3. "VIDEO TAPING IN PROGRESS" SIGN MOUNTED ABOVE DOOR. (CIRCUIT 2N-B12)
5. FIRE ALARM SYSTEM RISER. ALL ADDRESSABLE DEVICES TO BE WIRED VIA THIS JUNCTION BOX RISER.
10. THE FINAL LAYOUT OF ALL DEVICES IN THIS ROOM TO BE COORDINATED WITH THE OWNER.
11. DURESS ALARM SYSTEM RISER. REFER TO ED-9.
13. D,E,F DENOTES TELEPHONE ADDRESSE
19. G,H,I,J,K DENOTES DATA ADDRESSE

G. MALLIN ELECTRIC LTD.
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KEY TO DETAIL LOCATION

No. DETAIL NUMBER
No. DRAWING NUMBER

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NO.	REVISION/ISSUE	DATE

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CONSTRUCTION NORTH

Carruthers Shaw and Partners Limited Architects
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Toronto, Ontario M4P 2E5
416 482-5002 Fax 482-5040

DRAWN BY: C.B./S.D./A.A.
CHECKED BY: B.D.L./P.J.I.
DATE: 24 AUGUST 1998

PROJECT TITLE:

Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building

151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:

SECOND FLOOR PLAN SYSTEMS

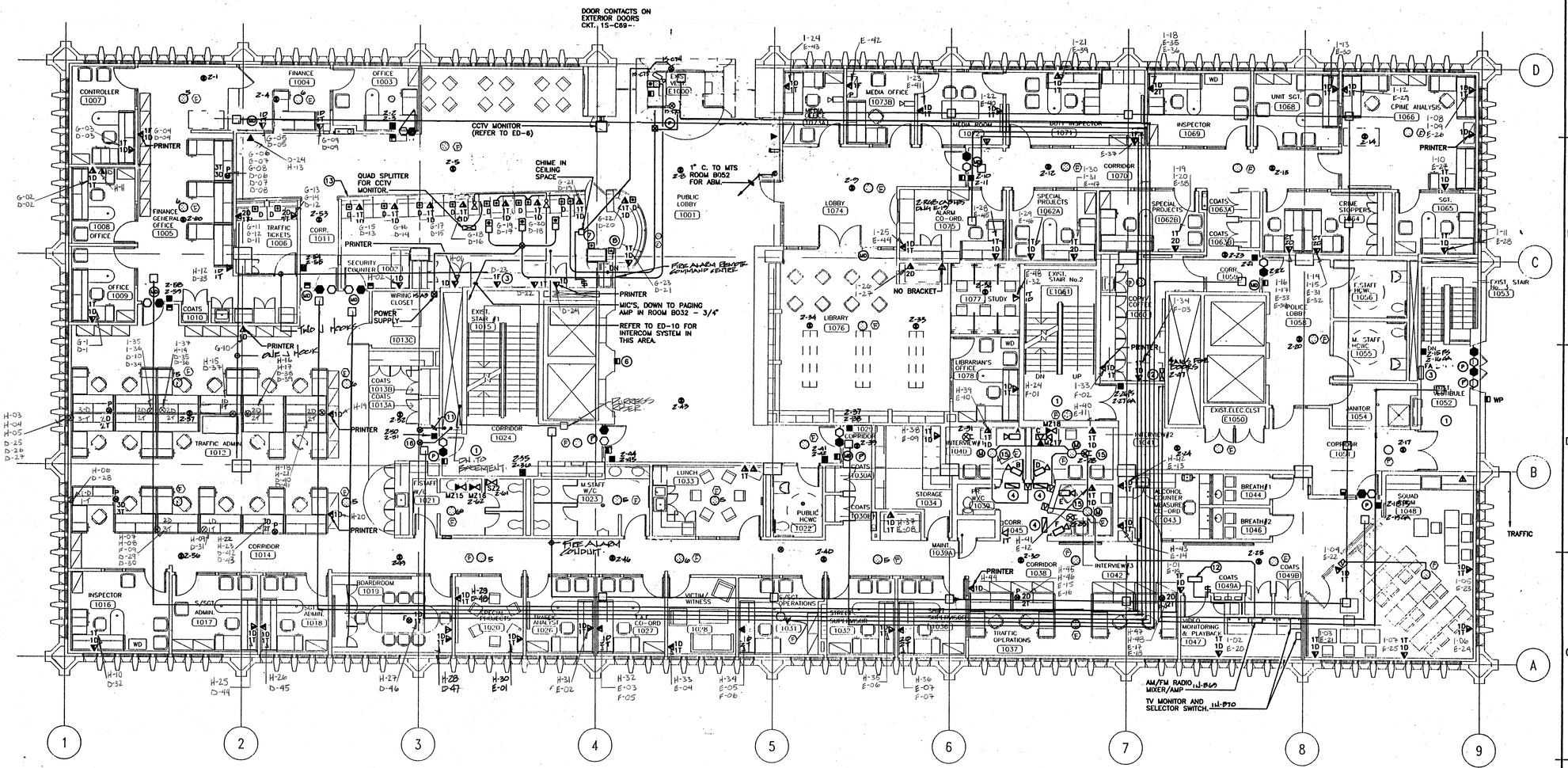
SCALE: 1/8"=1'-0"

PROJECT NO.	DWG. NO.
96023	E15.1

P.D.No. 98-038

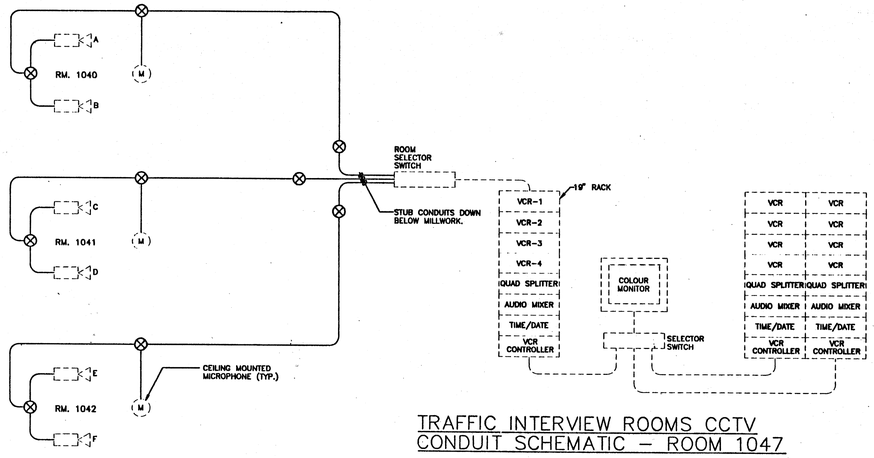
SCALE 1/8"=1'-0" | SCALE 1/4"=1'-0" | SCALE 3/8"=1'-0" | SCALE 1/2"=1'-0" | SCALE 1:200 | SCALE 1:100 | SCALE 1:50

WP LOCATED ON PARKADE WALL



GROUND FLOOR PLAN – SYSTEMS

SCALE: 1/8"=1'-0"



TRAFFIC INTERVIEW ROOMS CCTV CONDUIT SCHEMATIC – ROOM 1047

NOTE:
* REFER TO ED-5 FOR TYPICAL INTERWIRING SCHEMATIC

NOTES:

1. EXISTING TO REMAIN.
2. EXISTING SECURITY SYSTEM PANEL ACU-1 FOR ALL GROUND FLOOR CONTROLLED DOORS.
3. REMOTE LCD FIRE ALARM SYSTEM ANNUNCIATOR.
4. "INTERVIEW IN PROGRESS" SIGN C/W ON/OFF SWITCH MOUNTED ADJACENT TO DOOR. (CIRCUIT 1N-B12)
5. OPEN NUMBER
6. CARD READER TO CONNECT TO SOUTH ELEVATOR MACHINE ROOM. PROGRAM TO RESTRICT ACCESS AFTER "PUBLIC HOURS". COORDINATE WITH ELEVATOR CONTRACTOR.
7. PUSHBUTTONS FOR REMOTE OPEN OF SOUTH O.H. DOOR TO U/G PARKADE.
8. PUSHBUTTON TIED TO SECURITY SYSTEM TO OVERRIDE CARD ACCESS FOR SOUTH ELEVATORS AFTER HOURS.
11. FIRE ALARM SYSTEM RISER. ALL ADDRESSABLE DEVICES TO BE WIRED VIA THIS JUNCTION BOX RISER.
12. "VIDEO TAPING IN PROGRESS" SIGN MOUNTED ABOVE DOOR. (CIRCUIT 1N-B13)
13. REFER TO ARCHITECTURAL PLAN FOR DEVICES MOUNTED IN SECURITY COUNTER.
14. ALL EXISTING TELEPHONE SET CONNECTIONS ON EXISTING RISER CROSS CONNECT FIELD SHALL BE DISCONNECTED FOR DEMOLITION AND REMOVAL OF EXISTING HORIZONTAL CABLING. VOICE AND DATA CONTRACTOR TO TEST AND LOCATE EACH EXISTING SET INDIVIDUALLY AT THE RISER TO VERIFY EXISTING TELEPHONE PAIR. DISCONNECT AND REMOVE ALL REDUNDANT EXISTING RISER CABLES AFTER ALL EXISTING HORIZONTAL CABLING CROSS CONNECTS HAVE BEEN DISCONNECTED.
15. THE FINAL LAYOUT OF ALL DEVICES IN THIS ROOM TO BE COORDINATED WITH THE OWNER.
16. DURESS ALARM SYSTEM RISER. REFER TO ED-9.

(T) A,B,C,D,E,F DENOTES TELEPHONE ADDRESSE
(D) G,H,I,J,K DENOTES DATA ADDRESSE

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REVISIONS 03/28/00

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No. DETAIL NUMBER
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THE CITY OF WINNIPEG
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WINNIPEG POLICE SERVICE

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DRAWN BY:	C.B./S.D./A.A.
CHECKED BY:	B.D.L./P.J.I.
DATE:	24 AUGUST 1998

PROJECT TITLE:
Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building
151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:
GROUND FLOOR PLAN SYSTEMS

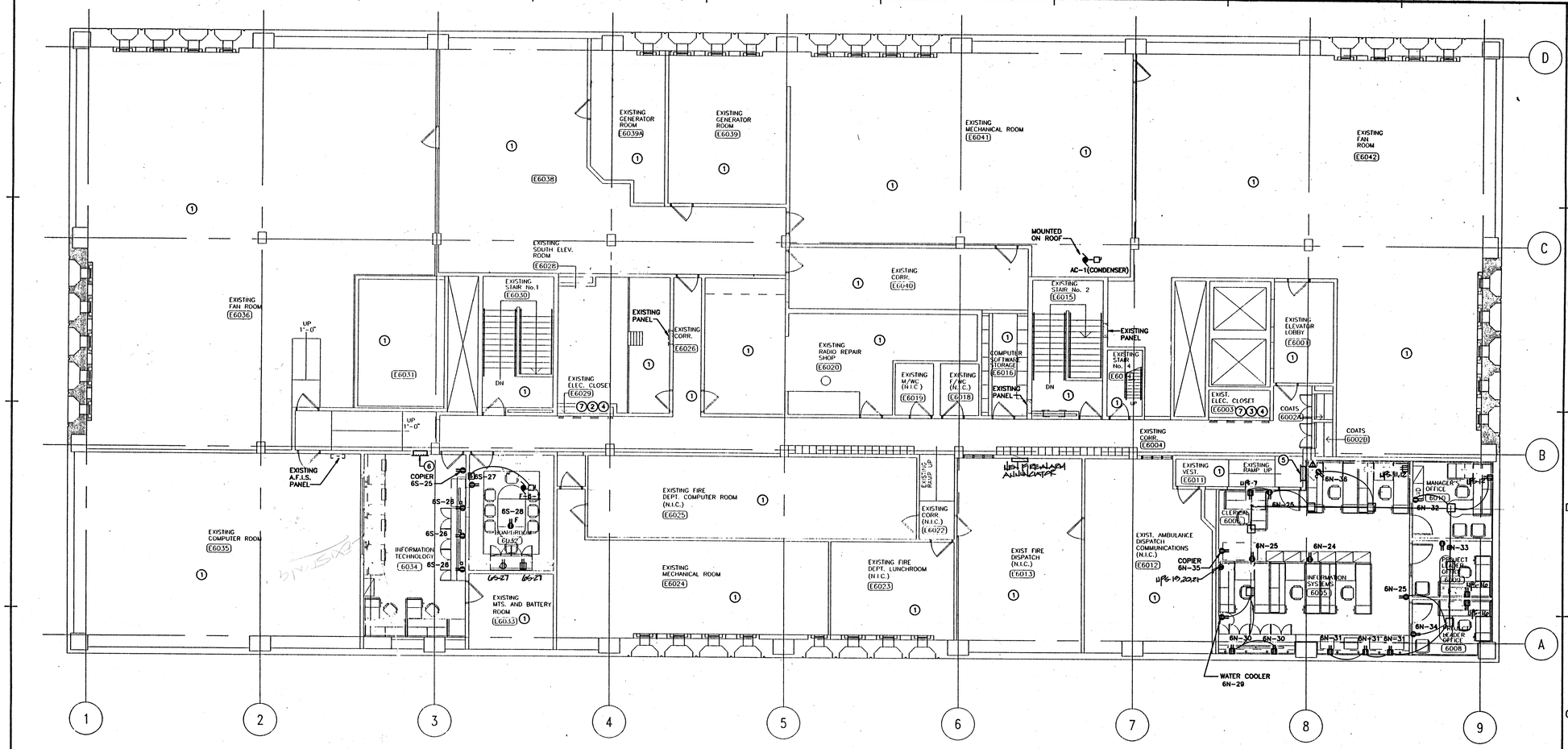
SCALE: 1/8"=1'-0"

PROJECT NO.	DWG. NO.
96023	E14.1

P.D.No. 98-038

Public Safety Bldg Redevelopment 2000 Const. Year
Project

SCALE 1/8"=1'-0" | SCALE 1/4"=1'-0" | SCALE 3/8"=1'-0" | SCALE 1/2"=1'-0" | SCALE 1:200 | SCALE 1:100 | SCALE 1:50



SIXTH FLOOR PLAN – POWER

SCALE: 1/8"=1'-0"

NOTES:

1. EXISTING TO REMAIN.
2. EXISTING 'CDP-6S' AND PANEL '6S-A'.
3. EXISTING 'CDP-6N' AND PANEL '6N-A'.
5. NEW PANEL '6N', FED FROM 'CDP-5N'.
6. NEW PANEL '6S', FED FROM 'CDP-5S'.

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WINNIPEG, MB R2X 2R9
03/28/00

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416 482-5002 Fax 482-5040

DRAWN BY: C.B./S.D./Y.Z./A.A.
CHECKED BY: B.D.L.
DATE: 24 AUGUST 1998

PROJECT TITLE:
Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building
151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:
SIXTH FLOOR PLAN POWER

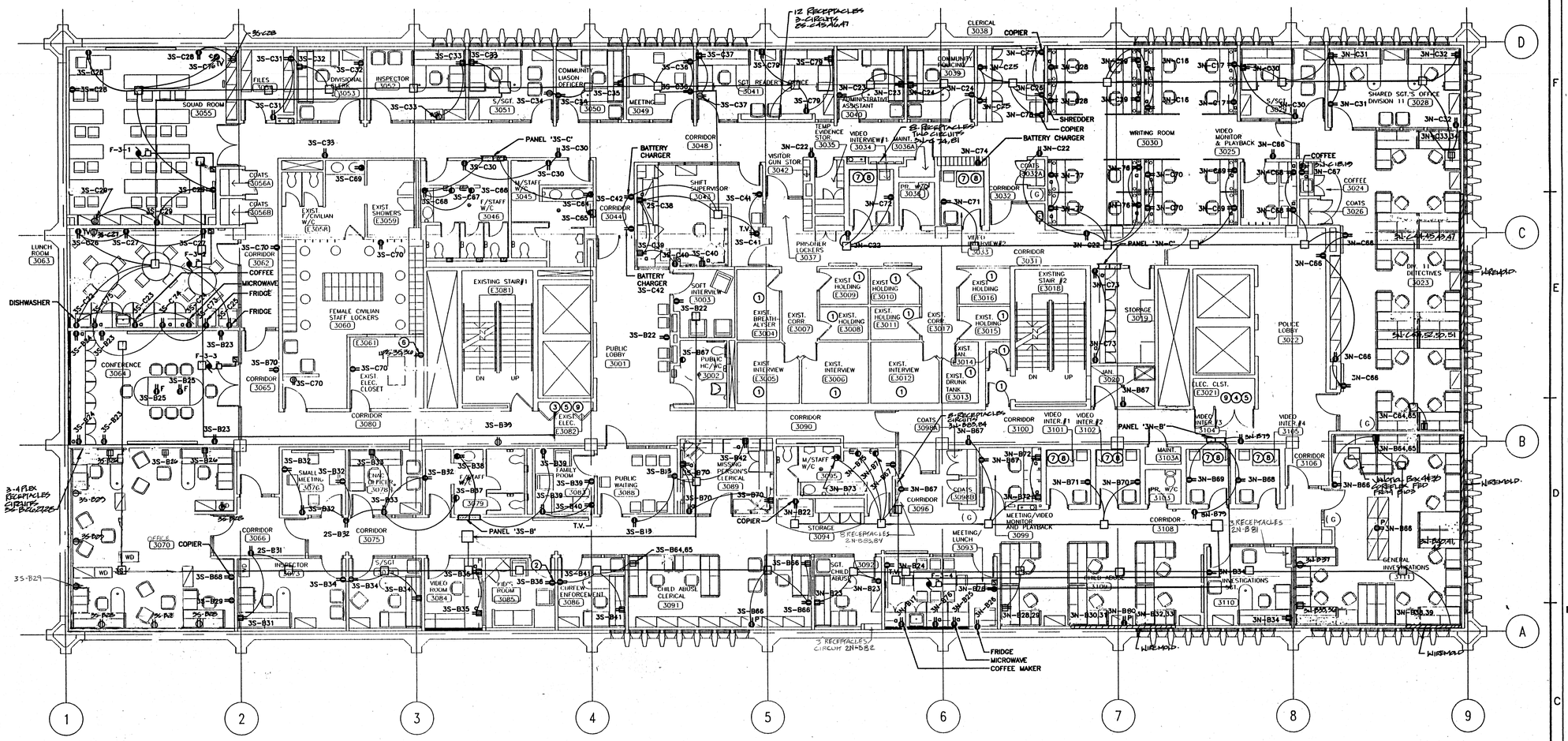
SCALE: 1/8"=1'-0"

PROJECT NO.	DWG. NO.
96023	E12.1

P.D.No. 98-038

151 Princess Street
Project No. 96023
Sixth Floor Plan - Power
Sheet No. E12.1
Drawing Title
Public Safety Bldg Redevelopment 2000
Const. Year
Project

SCALE 1/8"=1'-0" | SCALE 1/4"=1'-0" | SCALE 3/8"=1'-0" | SCALE 1/2"=1'-0" | SCALE 1:200 | SCALE 1:100 | SCALE 1:50



THIRD FLOOR PLAN – POWER

SCALE: 1/8"=1'-0"

NOTES:

③ EXISTING CDP 3S AND PANEL 3S-A.
④ EXISTING CDP 3N AND PANEL 3N-A.

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NO.	REVISION/ISSUE	DATE

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THE CITY OF WINNIPEG
PROPERTY AND DEVELOPMENT SERVICES
WINNIPEG POLICE SERVICE

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416 482-5002 Fax 482-5040

DRAWN BY: C.B./S.D./A.A./Y.Z.
CHECKED BY: B.D.L.
DATE: 24 AUGUST 1998

PROJECT TITLE:
Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building
151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:
THIRD FLOOR PLAN POWER

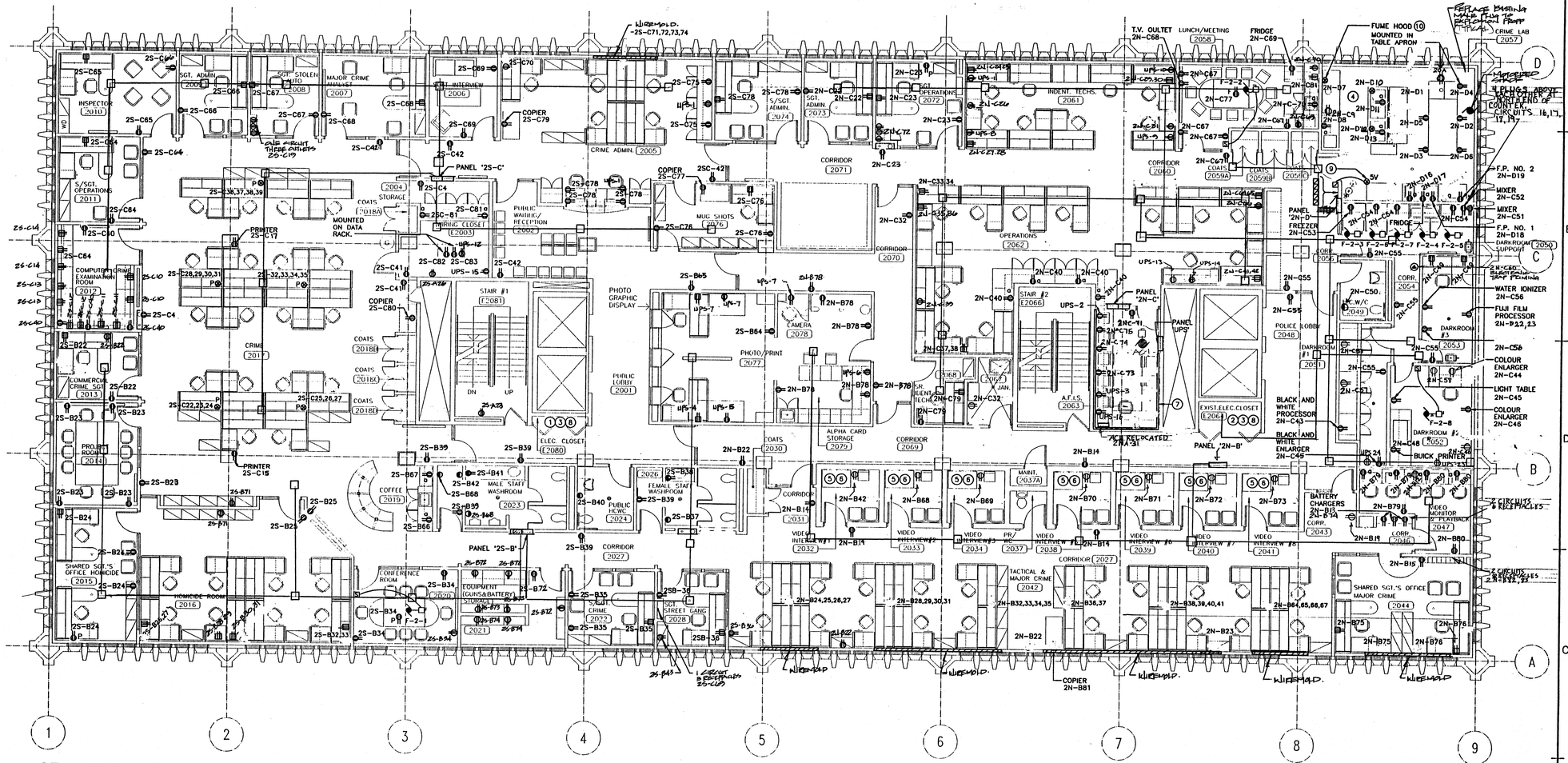
SCALE: 1/8"=1'-0"

PROJECT NO.	DWG. NO.
96023	E11.1

P.D.No. 98-038

Public Safety Bldg Redevelopment 2000
Project
Const. Year
Drawing Title
Sheet No.

SCALE 1/8"=1'-0" | SCALE 1/4"=1'-0" | SCALE 3/8"=1'-0" | SCALE 1/2"=1'-0" | SCALE 1:200 | SCALE 1:100 | SCALE 1:50



SECOND FLOOR PLAN – POWER

SCALE: 1/8"=1'-0"

NOTES:

1. EXISTING 'CDP-2S' AND PANEL '2S-A'.
2. EXISTING 'CDP-2N' AND PANEL '2N-A'.

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WINNIPEG, MB R2X 2R9

AS BUILTS 03/28/00

98-171-03

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CHECKED BY: B.D.L.

DATE: 24 AUGUST 1998

PROJECT TITLE:

Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building

151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:

SECOND FLOOR PLAN POWER

SCALE: 1/8"=1'-0"

PROJECT NO.	DWG. NO.
96023	E10.1

P.D.No. 98-03

Public Safety Bldg Redevelopment 2000 | Const. Year | Project

SCALE 1/8"=1'-0" | SCALE 1/4"=1'-0" | SCALE 3/8"=1'-0" | SCALE 1/2"=1'-0" | SCALE 1:200 | SCALE 1:100 | SCALE 1:50

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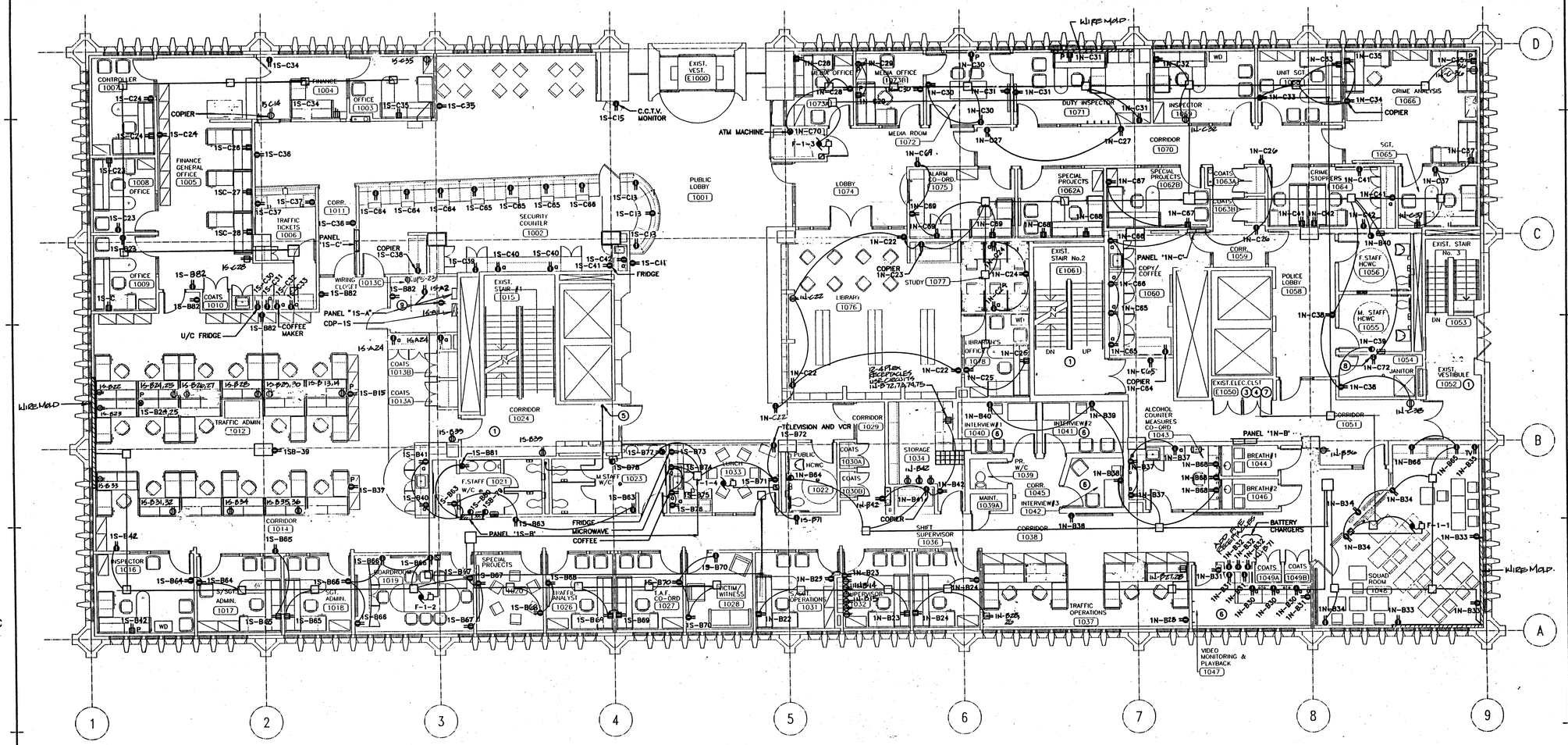

GROUND FLOOR PLAN – POWER

SCALE: 1/8"=1'-0"

NOTES:
1. EXISTING TO REMAIN.
2. NEW 'CDP-1S' AND PANEL '1S-A'.
3. EXISTING 'CDP-1N' AND PANEL '1N-A'.

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CHECKED BY: B.D.L.

DATE: 24 AUGUST 1998

PROJECT TITLE:

Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building

151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:

GROUND FLOOR PLAN POWER

SCALE: 1/8"=1'-0"

PROJECT NO.	DWG. NO.
96023	E9.1

P.D.No. 98-038

G. MALLIN ELECTRIC LTD.
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AS-BUILTS 02/28/00

96-171-03

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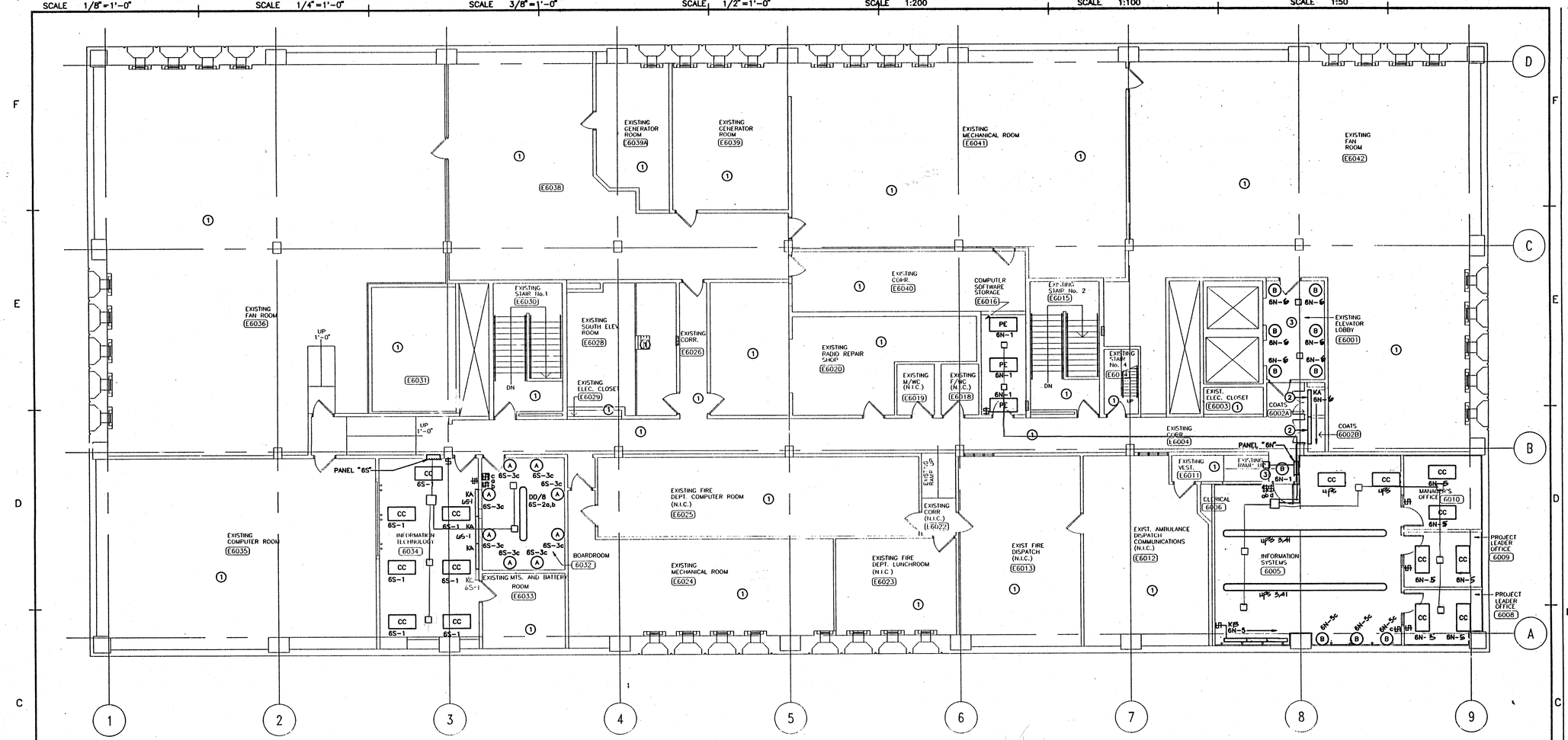
Public Safety Bldg Redevelopment 2000
Const. Year
Project

SCALE 1/8"=1'-0" | SCALE 1/4"=1'-0" | SCALE 3/8"=1'-0" | SCALE 1/2"=1'-0" | SCALE 1:200 | SCALE 1:100 | SCALE 1:50



SIXTH FLOOR PLAN – LIGHTING

SCALE: 1/8"=1'-0"

NOTES:

(3) LIGHTS FOR THIS AREA ARE "BREAKER" SWITCHED.

(4) 6S-B12 DENOTES CIRCUIT NUMBER, WHERE "3S-B" DENOTES THE PANEL, "12" DENOTES THE CIRCUIT NUMBER. ALL SWITCH LEGS WILL BE NOTED ADJACENT TO THE FIXTURE (TYPICAL).

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03/28/00

98-171-03

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THE CITY OF WINNIPEG
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WINNIPEG POLICE SERVICE

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DRAWN BY: C.B./S.D./A.A.
CHECKED BY: B.D.L.
DATE: 24 AUGUST 1998

PROJECT TITLE:
Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building
151 Princess Street
Winnipeg Manitoba

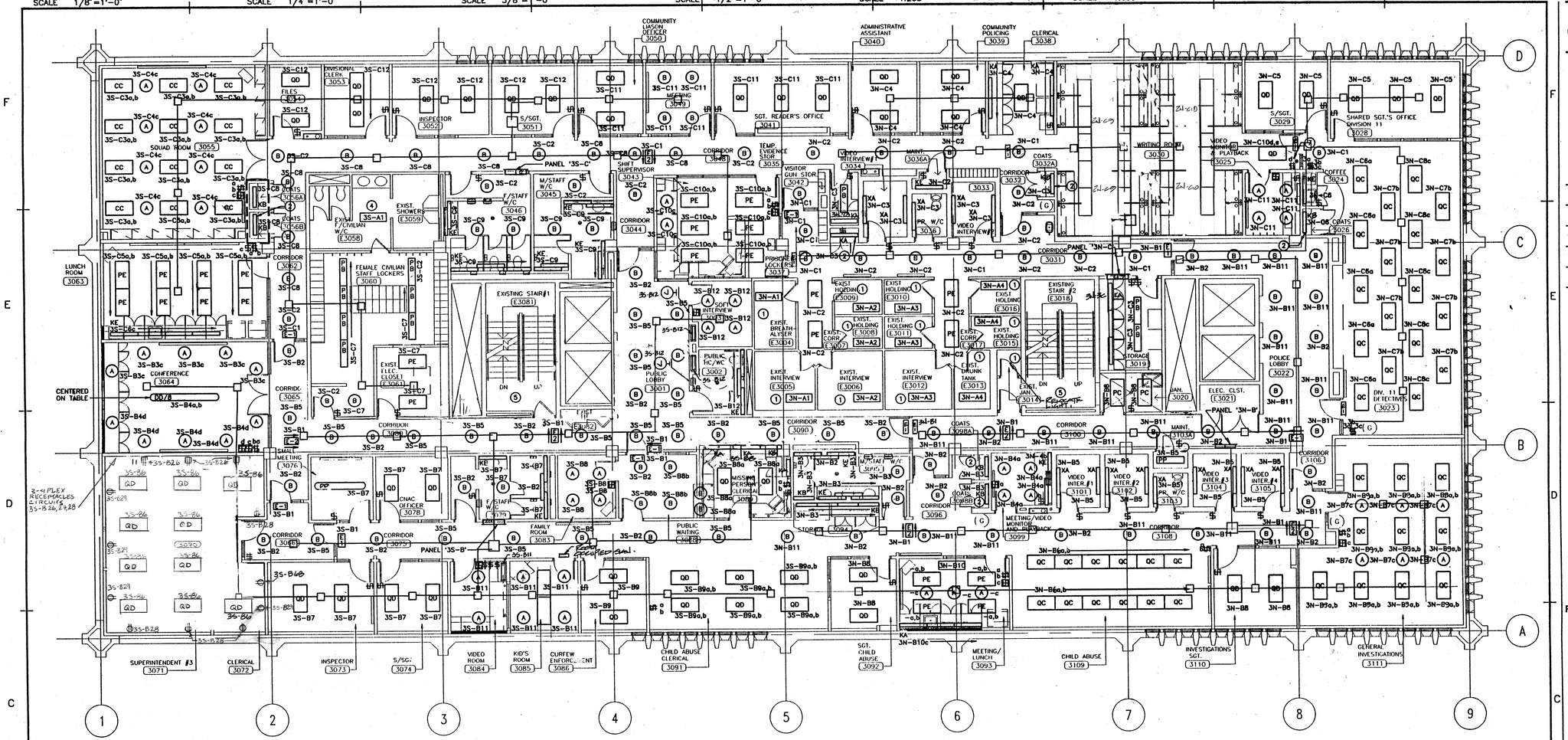
DRAWING TITLE:
SIXTH FLOOR PLAN LIGHTING

SCALE: 1/8"=1'-0"

PROJECT NO.	DWG. NO.
96023	E7.1

P.D.No. 98-038

Public Safety Bldg Redevelopment 2000
Const. Year
Project



THIRD FLOOR PLAN – LIGHTING ③

SCALE: 1/8"=1'-0"

NOTES:

③ 35-B12 DENOTES CIRCUIT NUMBER, WHERE "35-B" DENOTES THE PANEL, "12" DENOTES THE CIRCUIT NUMBER. ALL SWITCH LEGS WILL BE NOTED ADJACENT TO THE FIXTURE (TYP.).

④ REMOVE THE CIRCUITS FOR 5TH FLOOR LIGHTING FROM EXISTING PANELS AT THE 3RD FLOOR LIVING AREA. REMOVE IN DEMOLITION / COLLECT TO PANEL 'D' AT THE 5TH FLOOR IN SECTIONS 1 AND 2 AS REQUIRED.

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THE CITY OF WINNIPEG
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WINNIPEG POLICE SERVICE

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DATE: 24 AUGUST 1998

PROJECT TITLE:
Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building
151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:
THIRD FLOOR PLAN LIGHTING

SCALE: 1/8"=1'-0"

PROJECT NO.	DWG. NO.
96023	E6.1

P.D.No. 98-038

Public Safety Bldg Redevelopment 2000
Const. Year
Project

SCALE 1/8"=1'-0" | SCALE 1/4"=1'-0" | SCALE 3/8"=1'-0" | SCALE 1/2"=1'-0" | SCALE 1:200 | SCALE 1:100 | SCALE 1:50

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PROJECT TITLE:
Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building
151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:
SECOND FLOOR PLAN LIGHTING

SCALE: 1/8"=1'-0"

PROJECT NO.	DWG. NO.
96023	E5.1

P.D.No. 98-038

SECOND FLOOR PLAN – LIGHTING

SCALE: 1/8"=1'-0"

NOTES:

(B) 2S-B12 DENOTES CIRCUIT NUMBER, WHERE "2S-B" DENOTES THE PANEL, "12" DENOTES THE CIRCUIT NUMBER. ALL SWITCH LEGS WILL BE NOTED ADJACENT TO THE FIXTURE (TYP.).

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AS-BUILTS 03/28/00

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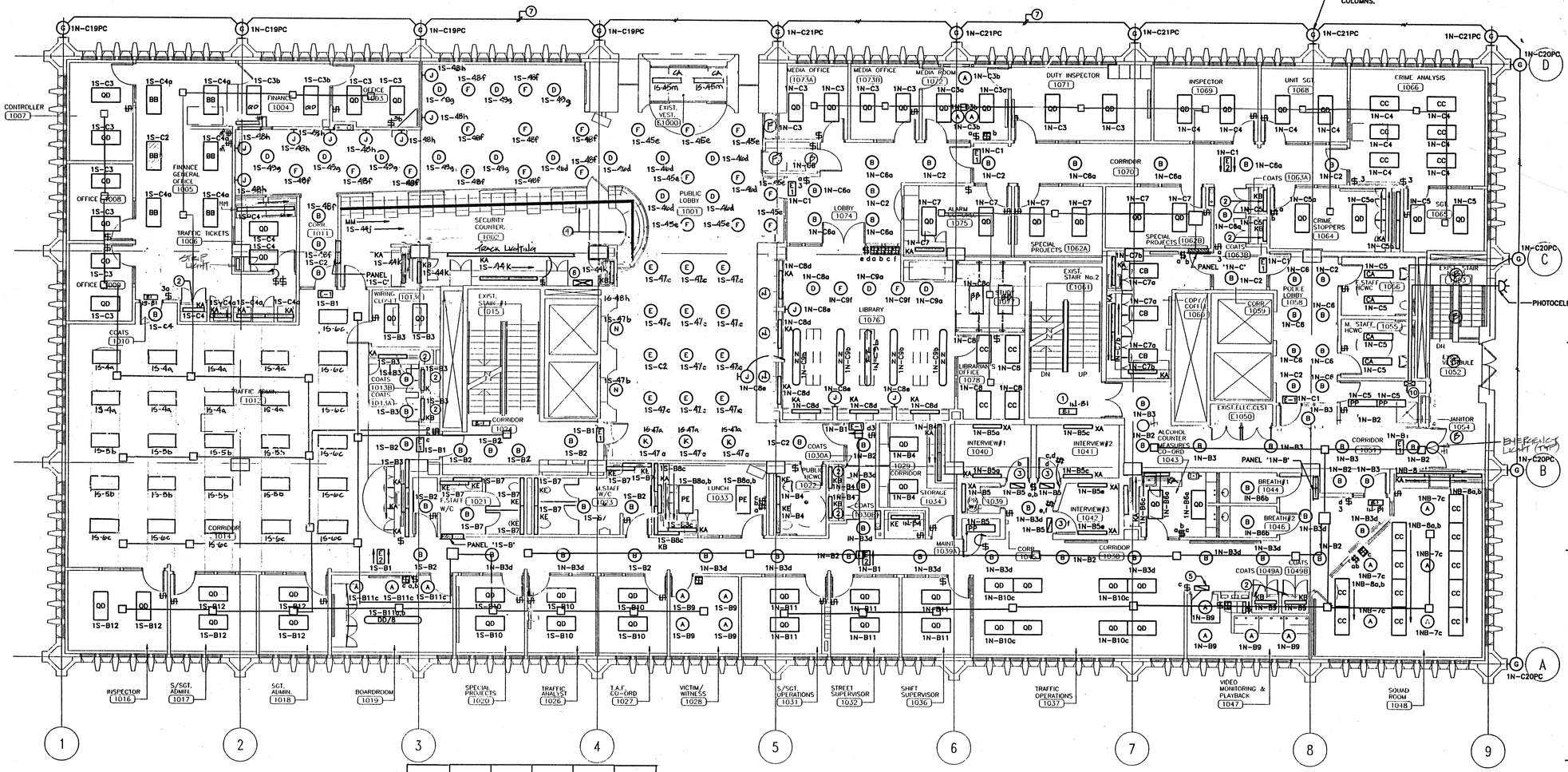
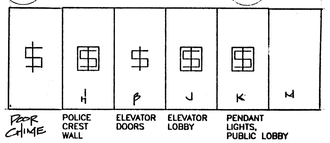
Public Safety Bldg Redevelopment 2000
Const. Year
Project

SCALE 1/8"=1'-0" | SCALE 1/4"=1'-0" | SCALE 3/8"=1'-0" | SCALE 1/2"=1'-0" | SCALE 1:200 | SCALE 1:100 | SCALE 1:50



GROUND FLOOR PLAN – LIGHTING

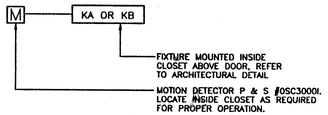
SCALE: 1/8"=1'-0"



* FOR SWITCHES c, e AND f THE DIMMER SHALL BE C/W AN ADJUSTABLE "MINIMUM" SETTING, SET TO APPROX. 20% OF MAXIMUM OUTPUT. ADJUST ON SITE AS DIRECTED BY CONSULTANT.

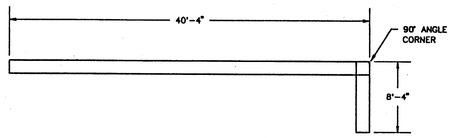
LIGHT SWITCH MOUNTING DETAIL

N.T.S.



CLOSET LIGHTING WIRING SCHEMATIC DETAIL

N.T.S.



FIXTURE TYPE "MM" DETAIL

N.T.S.

NOTES:

(11) 1N-B9 DENOTES CIRCUIT NUMBER, WHERE "1N-B" DENOTES THE PANEL "9" DENOTES THE CIRCUIT NUMBER. ALL SWITCH LEGS WILL BE NOTED ADJACENT TO THE FIXTURE (TYP.).

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CHECKED BY: B.D.L.
DATE: 24 AUGUST 1998

PROJECT TITLE:

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151 Princess Street
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DRAWING TITLE:

GROUND FLOOR PLAN LIGHTING

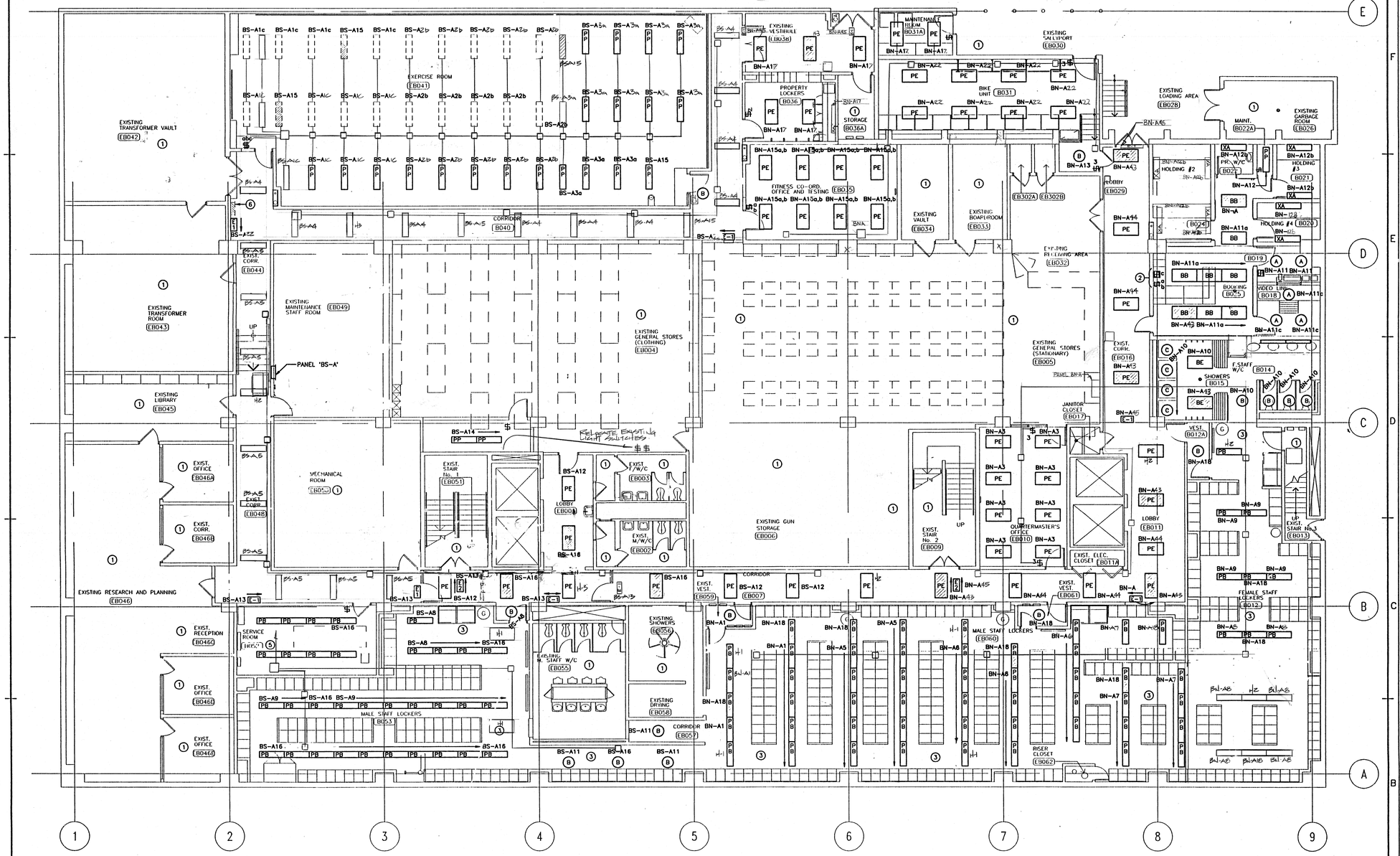
SCALE: 1/8"=1'-0"

PROJECT NO.	DWG. NO.
96023	E4.1

P.D.No. 98-038

Public Safety Bldg Redevelopment 2000 Const. Year Project

SCALE 1/8"=1'-0" | SCALE 1/4"=1'-0" | SCALE 3/8"=1'-0" | SCALE 1/2"=1'-0" | SCALE 1:200 | SCALE 1:100 | SCALE 1:50



BASEMENT PLAN – LIGHTING

SCALE: 1/8"=1'-0"

NOTES:

1. EXISTING LIGHTING TO REMAIN.
2. REFER TO ARCHITECTURAL ELEVATIONS FOR THIS WALL.
3. LOCKER ROOM LIGHTS TO BE SWITCHED FROM PANEL.
5. RE-USE EXISTING LIGHTING CIRCUITS.
6. EXISTING PANEL TO REMAIN.
7. BN-A18 DENOTES CIRCUIT NUMBER, WHERE "3S-B" DENOTES THE PANEL, "12" DENOTES THE CIRCUIT NUMBER. ALL SWITCH LEGS WILL BE NOTED ADJACENT TO THE FIXTURE (TYP.).

G. MALLIN ELECTRIC Ltd.
636 KEEWATIN ST PHONE (204) 632-1568
WINNIPEG, MB R2X 2R9

AS BUILTS 03/28/00

98-171-03

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IF THIS SHEET IS NOT 33 1/8" X 23 3/8" (841 X 594mm) IT IS A REDUCED PRINT – READ DWG. ACCORDINGLY

KEY TO DETAIL LOCATION

No. / No. — DETAIL NUMBER / DRAWING NUMBER

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DRAWINGS SHOULD NOT BE SCALED.

NO.	REVISION/ISSUE	DATE

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THE CITY OF WINNIPEG
PROPERTY AND DEVELOPMENT SERVICES
WINNIPEG POLICE SERVICE

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416 482-5002 Fax 482-5040

DRAWN BY: C.B./S.D./A.A.

CHECKED BY: B.D.L.

DATE: 24 AUGUST 1998

PROJECT TITLE:

Police Headquarters Redevelopment Renovations to the City of Winnipeg Public Safety Building

151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:

BASEMENT LEVEL FLOOR PLAN LIGHTING

SCALE: 1/8"=1'-0"

PROJECT NO.	DWG. NO.
96023	E3.1

P.D.No. 98-038

151 Princess Street
Project No. 96023
Basement Plan- Lighting
Sheet No. E3.1
Drawing Title
Public Safety Bldg Redevelopment 2000
Project
Const. Year

0 5 10 25ft. SCALE 1/8"=1'-0" | 0 1 5 10ft. SCALE 1/4"=1'-0" | 0 1 5 8ft. SCALE 3/8"=1'-0" | 0 1 2 5ft. SCALE 1/2"=1'-0" | 0 5 10 15 SCALE 1:200 | 0 1 2 5 8 SCALE 1:100 | 0 .5 1 2 3 4 SCALE 1:50

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ELECTRICAL SPECIFICATION
96–171–04

SECTION 16010 ELECTRICAL GENERAL PROVISIONS

1 GENERAL
.1 PROVIDE ALL MATERIALS, LABOUR, PLANT AND EQUIPMENT NECESSARY TO MAKE A COMPLETE INSTALLATION AS DESCRIBED AND SHOWN. THIS INSTALLATION SHALL BE LEFT COMPLETE AND READY FOR OPERATION.
.2 THE ENTIRE INSTALLATION SHALL BE GUARANTEED FOR ONE YEAR FROM DATE OF FINAL ACCEPTANCE BY THE OWNER. REPLACE AT NO ADDITIONAL COST ANY WORK OR MATERIAL WHICH MAY FAIL OR PROVE DEFECTIVE DURING THE GUARANTEE PERIOD.
.3 THE INSTALLATION SHALL CONFORM IN EVERY RESPECT TO THE RULES AND REGULATIONS OF THE LATEST EDITION OF THE CANADIAN ELECTRICAL CODE AND ALL LOCAL CODES. ALL WORK SHALL BE UNIFORM AND HIGH QUALITY. ALL EQUIPMENT SUPPLIED UNDER THIS CONTRACT SHALL BE NEW AND BUILT IN ACCORDANCE WITH EEMAC STANDARDS AND SHALL BE CSA AND LOCALLY APPROVED. PROVIDE INSPECTION CERTIFICATE UPON COMPLETION OF THE WORK.
.4 CAREFULLY EXAMINE ALL PLANS AND SPECIFICATIONS PERTAINING TO THIS CONTRACT AND VISIT SITE TO DETERMINE ALL FACTORS AFFECTING COSTS AND INCLUDE SAME IN TENDER. NOTIFY ENGINEER OF DISCREPANCIES OR CONFLICTS WITH ANY REGULATION BEFORE SUBMITTING PRICE. FAILING SUCH NOTIFICATION, THIS CONTRACTOR SHALL MEET ALL SUCH REQUIREMENTS WITHOUT EXTRA COST TO THE OWNER.
.5 OBTAIN ALL NECESSARY PERMITS, PAY ALL NECESSARY FEES, GIVE ALL NECESSARY NOTICES AND OBTAIN APPROVAL OF THE ELECTRICAL AUTHORITIES HAVING JURISDICTION.
.6 THESE SPACES ARE ?TEMPORARY? EXCEPT FOR THOSE AREAS LOCATED IN THE PARKING GARAGE WHICH ARE PERMANENT SPACES.

2 SHOP DRAWINGS
.1 SUBMIT SIX (6) COPIES OF SHOP DRAWINGS FOR ALL EQUIPMENT.
.2 EQUIPMENT PROPOSED SHALL MEET THE SAME STANDARDS OF PERFORMANCE, QUALITY AND WORKMANSHIP AS THAT SPECIFIED.

3 AS–BUILTS
.1 PROVIDE TWO COPIES OF "AS–BUILT" DRAWINGS.

4 OPERATION AND MAINTENANCE MANUALS
.1 PROVIDE DATA FOR INCORPORATION INTO MAINTENANCE MANUAL. MANUAL SHALL INCLUDE INSTRUCTIONS FOR ALL EQUIPMENT SUPPLIED, COPY OF REVIEWED SHOP DRAWINGS AND TECHNICAL DATA SUCH AS PARTS LISTS, OPERATING INSTRUCTIONS, MAINTENANCE INSTRUCTIONS, ETC. THREE (3) HARD COVER COPIES OF MAINTENANCE MANUALS ARE TO BE SUBMITTED.

5 REMOVALS
.1 REMOVE ALL UNNECESSARY EXISTING ELECTRICAL EQUIPMENT, WIRING AND FIXTURES IN THOSE PORTIONS OF THE EXISTING BUILDING WHICH ARE BEING REMODELLED OR DEMOLISHED. THE EQUIPMENT MAY BE REUSED ON THIS PROJECT IF, IN THE OPINION OF THE CONSULTANT, SUCH EQUIPMENT IS IN SATISFACTORY CONDITION AND MEETS THE STANDARDS ESTABLISHED. THE OWNER MAY SELECT FROM THE MATERIALS AND/OR EQUIPMENT REMAINING WHICH HE WISHES TO RETAIN AND THE REMAINDER SHALL BE REMOVED FROM THE SITE.
.2 ANY ELECTRICAL EQUIPMENT IN REMODELLED SECTIONS OR IN STRUCTURES REMOVED OR ALTERED, ADJACENT TO NEW WORK, NECESSARY FOR THE OPERATION OF THE EXISTING BUILDING, SHALL BE RELOCATED AS NECESSARY.
.3 ALL EXISTING EQUIPMENT REUSED SHALL BE MADE GOOD AND GUARANTEED.
.4 POWER INTERRUPTIONS SHALL BE KEPT TO A MINIMUM AND SHALL BE A TIME SUITABLE TO THE BUILDING OCCUPANT(S).

6 WORK IN EXISTING BUILDING
.1 CO–ORDINATION.
.1 THE BUILDING SHALL REMAIN OPEN AND IN NORMAL OPERATION DURING THE CONSTRUCTION PERIOD.
.2 WHERE EXISTING SERVICES SUCH AS ELECTRICAL POWER, FIRE ALARM SYSTEM, SOUND SYSTEM, ETC. ARE REQUIRED TO BE DISRUPTED AND/OR SHUT DOWN, CO–ORDINATE THE SHUTDOWNS WITH THE OWNER AND CARRY OUT THE WORK AT A TIME AND IN A MANNER ACCEPTABLE TO THEM. CAREFULLY SCHEDULE ALL DISRUPTION AND/OR SHUT–DOWNS AND ENSURE THAT THE DURATION OF SAME IS KEPT TO THE ABSOLUTE MINIMUM. SUBMIT FOR APPROVAL A WRITTEN, CONCISE SCHEDULE OF EACH DISRUPTION AT LEAST 120 HOURS IN ADVANCE OF PERFORMING WORK AND OBTAIN OWNER'S WRITTEN CONSENT PRIOR TO IMPLEMENTING.
.3 SHOULD ANY TEMPORARY CONNECTIONS BE REQUIRED TO MAINTAIN SERVICES DURING WORK IN THE EXISTING BUILDING, SUPPLY AND INSTALL ALL NECESSARY MATERIAL AND EQUIPMENT AND PROVIDE ALL LABOUR AT NO EXTRA COST. SHOULD ANY EXISTING SYSTEM BE DAMAGED, MAKE FULL REPAIRS WITHOUT EXTRA COST, AND TO THE SATISFACTION OF THE OWNER AND CONSULTANT.
.4 IF EXISTING EQUIPMENT SHOWN ON DRAWINGS IS DEFECTIVE IT SHOULD BE BROUGHT TO THE CONSULTANT AND OWNERS ATTENTION PRIOR TO WORK COMPLETION.
.2 INSTALLATION
.1 INSTALL BOXES, CONDUIT AND WIRING THROUGH EXISTING AREAS AS REQUIRED FOR THE NEW INSTALLATION.
.2 ADD MODULES, SWITCHES, ETC. IN EXISTING CONTROL PANELS, AS REQUIRED, TO EXTEND EXISTING SYSTEMS TO NEW OR RENOVATED AREAS.
.3 WIRING IN ALL AREAS MAY BE INSTALLED SURFACE OR RECESSED ON/IN EXISTING WALLS, WHERE SPACES ARE DESIGNATED "TEMPORARY". ONLY SPACES LOCATED IN THE PARKADE SHALL BE CONSTRUCTED AS "PERMANENT".
.4 WHERE NEW CABLES OR CONDUITS HAVE BEEN INSTALLED THROUGH EXISTING FIRE RATED WALLS, SEAL OPENING AROUND CABLES AND CONDUIT TO MAINTAIN FIRE RATING.
.3 ALL EXISTING EQUIPMENT REUSED SHALL BE MADE GOOD AND GUARANTEED.
.4 POWER INTERRUPTIONS SHALL BE KEPT TO A MINIMUM AND SHALL BE A TIME SUITABLE TO THE BUILDING OCCUPANT(S).

SECTION 16100 ELECTRICAL MATERIALS AND INSTALLATION

1 WIRING METHOD
.1 FOR GENERAL PURPOSE WIRING: DRY LOCATIONS IN MASONRY AND METAL STUD USE TYPE AC–90 ARMOURED CABLE WITH INTEGRAL GROUND. WIRING MAY BE SURFACE MOUNTED FOR "TEMPORARY" AREAS.
.2 FOR CONNECTION TO MOTORS AND MISCELLANEOUS MECHANICAL EQUIPMENT USE LIQUIDTIGHT FLEXIBLE CONDUIT.
.3 RUN ALL CONDUIT AND CABLE CONCEALED, WHERE POSSIBLE IN "PERMANENT" AREAS PARALLEL AND PERPENDICULAR TO BUILDING LINES, STAPLED AND/OR CLIPPED IN A NEAT WORKMANLIKE MANNER.
.4 ALL CONDUCTORS SHALL BE COPPER. MINIMUM CONDUCTOR SIZE SHALL BE #12 AWG EXCEPT AS NOTED.

2 GROUNDING
.1 THE ENTIRE INSTALLATION SHALL BE GROUNDED IN CONFORMANCE TO THE LATEST EDITION OF THE CANADIAN ELECTRICAL CODE.

3 BOXES
.1 OUTLET, JUNCTION AND SWITCH BOXES SHALL BE GALVANIZED STEEL AND SIZED ACCORDING TO THE ELECTRICAL CODE TO SUIT EACH APPLICATION.

4 WIRING DEVICES
.1 PROVIDE WIRING DEVICES FOR ALL OUTLETS AS REQUIRED AND INDICATED. COLOUR AND MOUNTING TO MATCH EXISTING.
.2 STANDARD ACCEPTANCE FOR DEVICES SHALL BE AS FOLLOWS:
.1 SINGLE POLE, 2–POLE, 3–WAY AND 4–WAY MOUNTED GENERAL PURPOSE SWITCHES SHALL BE PREMIUM SPECIFICATION TOGGLE TYPE 15A 125VAC. TO BE SERIES HUBBELL NO. 1201, ARROW HART NO. 1891, BRYANT NO. 4801, SMITH & STONE NO. 4801 OR LEVITION NO. 1201.
.3 NEMA 5–15R 15A 125VAC RECEPTACLES SHALL BE U–GROUND PARALLEL SLOT SIDE WIRED AS FOLLOWS:
.1 GENERAL PURPOSE DUPLEX AND SIMPLEX TO BE SERIES HUBBELL NO. 5262, ARROW HART NO. 5262, BRYANT NO. 5262, CGE NO. 4065 OR LEVITON NO. 5262.
.4 COVERPLATES FOR DEVICES SHALL BE PLASTIC IN "TEMPORARY" AREAS, STAINLESS STEEL IN "PERMANENT" AREAS.

5 LIGHTING SYSTEM – GENERAL
.1 PROVIDE FIXTURES EQUAL TO THOSE SPECIFIED WITH LAMPS, SUSPENSION HARDWARE, LENSES AND ALL OTHER ACCESSORIES REQUIRED TO COMPLETE THE INSTALLATION.
.2 FLUORESCENT FIXTURE BALLASTS SHALL BE T–8 ELECTRONIC TYPE. BALLAST MUST BE LISTED BY MANITOBA HYDRO AS ACCEPTABLE BY THEIR POWER SMART REBATE PROGRAM.

6 TELEPHONE WIRING/DATA WIRING
.1 PROVIDE AND INSTALL OUTLET BOXES AND CONDUITS IN WALLS FOR THE TELEPHONE/DATA SYSTEM AS SHOWN ON THE DRAWINGS (PERMANENT AREAS ONLY). CONDUIT INSTALLATION FOR PERMANENT OUTLETS SHALL BE CARRIED OUT IN CONJUNCTION WITH AND TO THE SATISFACTION OF THE CONSULTANT. "TEMPORARY" OUTLET LOCATIONS DO NOT REQUIRE OUTLET BOXES. WIRING SHALL BE SURFACE ON THE EXISTING WALL, DIRECT TO A CONNECTOR. ALL PHONE AND DATA WIRING IS BY THE OWNER. OUTLETS SHOWN IN "TEMPORARY" AREAS ARE FOR COORDINATION PURPOSES ONLY.

7 MOUNTING HEIGHTS
.1 MOUNTING HEIGHT IS CENTERLINE OF EQUIPMENT ABOVE FINISHED FLOOR. IF MOUNTING HEIGHT IS NOT INDICATED VERIFY BEFORE PROCEEDING WITH INSTALLATION. MOUNT SAME HEIGHT AS EXISTING IF DIFFERENT FROM THAT SHOWN HERE UNLESS INDICATED OTHERWISE ON DRAWING.
.2 MOUNTING HEIGHTS ARE AS FOLLOWS:
.1 LOCAL SWITCHES: 54 INCHES (1350MM)
.2 WALL RECEPTACLES:
.1 GENERAL: 14 INCHES (350MM)
.2 ABOVE COUNTER OR SPLASHBACK: 7 INCHES (175MM)
.3 IN SERVICE ROOMS: 54 INCHES (1350MM)
.3 TELEPHONE OUTLETS:
.1 GENERAL: 14 INCHES (350MM)
.2 WALL MOUNTED: 48 INCHES (1200MM)
.4 COMPUTER OUTLET: 14 INCHES (350MM)

8 MECHANICAL EQUIPMENT CONNECTIONS
.1 REFER TO MECHANICAL DRAWINGS FOR THE EXACT LOCATION OF MOTOR CONTROL DEVICES, AND OTHER MECHANICAL EQUIPMENT REQUIRING AN ELECTRICAL CONNECTION.
.2 OBTAIN FULL INFORMATION FROM DIV. 15, REGARDING WIRING, CONTROLS, OVERLOAD HEATERS, EQUIPMENT RATINGS AND OVERCURRENT PROTECTION. NOTIFY THE DIV. 15 SUBCONTRACTOR, AT ONCE, IF ANY INFORMATION PROVIDED IS INCORRECT OR UNSATISFACTORY.
.3 CO–ORDINATE CONTROL WIRING REQUIREMENTS WITH DIV. 15.DIV. 15 TO PROVIDE ALL INTERLOCKING WIRE CONDUITS.

9 CONDUITS AND CABLE
.1 DRAWINGS DO NOT INDICATE ALL CONDUIT AND CABLE RUNS. THOSE INDICATED ARE IN DIAGRAMMATIC FORM ONLY.
.2 MINIMUM CONDUIT SIZE SHALL BE 3/4" UNLESS INDICATED OTHERWISE.

10 CONDUITS, FASTENINGS AND FITTINGS
.1 ONE HOLE STEEL STRAPS TO SECURE SURFACE CONDUITS 50MM AND SMALLER.
.2 FITTINGS FOR RACEWAYS: TO CSA C22.2 NO. 18
.3 FITTINGS: MANUFACTURED FOR USE WITH CONDUIT SPECIFIED COATING SAME AS CONDUIT.
.4 FACTORY "ELLS" WHERE 90° BENDS ARE REQUIRED FOR 25MM AND LARGER CONDUITS.

11 DISCONNECT SWITCHES
.1 FUSIBLE AND NON–FUSIBLE DISCONNECT SWITCH IN CSA ENCLOSURE.
.2 PROVISION FOR PADLOCKING ON ON–OFF SWITCH POSITION BY THREE LOCKS.
.3 MECHANICAL INTERLOCKED DOOR TO PREVENT OPENING WHEN HANDLE IN ON POSITION.
.4 QUICK–MAKE, QUICK–BREAK ACTION.
.5 ON–OFF SWITCH POSITION INDICATION ON SWITCH ENCLOSURE COVER.
.6 INSTALL DISCONNECT SWITCHES AS INDICATED ON DRAWINGS.
.7 WEATHERPROOF WHERE REQUIRED.

12 MANUAL MOTOR STARTERS
.1 MANUAL MOTOR STARTERS WITH COMPONENTS AS FOLLOWS:
.1 SWITCHING MECHANICAL QUICKMAKE AND BREAK.
.2 OVERLOAD HEATERS, MANUAL RESET, TRIP INDICATING HANDLE.
.2 ACCESSORIES:
.1 TOGGLE SWITCH LABELLED.
.2 INDICATING LIGHT: TYPE AND COLOR TO MATCH EXISTING STARTERS.

13 FULL VOLTAGE MAGNETIC STARTERS
.1 MAGNETIC OF SIZE, TYPE, RATING AND ENCLOSURE TYPE AS INDICATED WITH COMPONENTS AS FOLLOWS:
.1 CONTACTOR SOLENOID OPERATED, RAPID ACTION TYPE.
.2 MOTOR OVERLOAD PROTECTIVE DEVICE IN EACH PHASE, MANUALLY RESET FROM OUTSIDE ENCLOSURE.
.3 POWER AND CONTROL TERMINALS.
.4 WIRING AND SCHEMATIC DIAGRAM INSIDE STARTER ENCLOSURE IN VISIBLE LOCATION.
.5 IDENTIFY EACH WIRE AND TERMINAL FOR EXTERNAL CONNECTIONS, WITHIN STARTER, WITH PERMANENT NUMBER MARKING IDENTICAL TO DIAGRAM.
.6 CONTROL TRANSFORMER.
.2 ACCESSORIES:
.1 PUSHBUTTONS AND SELECTOR SWITCHES: LABELLED AS INDICATED.
.2 INDICATING LIGHTS: TYPE AND COLOR AS INDICATED.
.3 SINGLE PHASE, DRY TYPE, CONTROL TRANSFORMER WITH PRIMARY VOLTAGE AS INDICATED AND 120V SECONDARY, COMPLETE WITH SECONDARY FUSE, INSTALLED IN WITH STARTER AS INDICATED.
.4 SIZE CONTROL TRANSFORMER FOR CONTROL CIRCUIT LOAD PLUS 20% SPARE CAPACITY.

14 POWER DISTRIBUTION SYSTEM (PANEL "FF" – PARKING GARAGE ONLY)
.1 PROVIDE ALL BREAKERS, CONDUIT, DISCONNECTS, CONDUCTORS AND ACCESSORIES REQUIRED FOR THE INSTALLATION OF PANELBOARDS AS INDICATED ON THE DRAWING AND IN THIS SPECIFICATION.
.2 SUBMIT SHOP DRAWINGS IN ACCORDANCE WITH SECTION 16010.
.3 DRAWINGS TO INCLUDE ELECTRICAL DETAIL OF PANEL, BRANCH BREAKER TYPE, QUANTITY, AMPACITY AND ENCLOSURE DIMENSION.
.4 IN ADDITION TO CSA REQUIREDMENTS, MANUFACTURER'S NAMEPLATE MUST SHOW FAULT CURRENT THAT THE PANEL, INCLUDING BREAKERS, HAS BEEN BUILT TO WITHSTAND.
.5 PANELBOARDS: TO CSA C–22.2 NO. 29.
.6 PANELBOARDS: PRODUCT OF ONE MANUFACTURER.
.7 250V BRANCH CIRCUIT PANELBOARDS: BUS AND BREAKERS RATED FOR 10KA (SYMMETRICAL) INTERRUPTING CAPACITY MINIMUM OR AS INDICATED.
.8 SEQUENCE PHASE BUSSING SUCH THAT CIRCUIT BREAKERS WILL BE NUMBERED IN CONSECUTIVE ORDER, WITH EACH BREAKER IDENTIFIED BY PERMANENT NUMBER IDENTIFICATION AS TO CIRCUIT NUMBER AND PHASE.
.9 PANELBOARDS: MAINS, NUMBER OF CIRCUITS, AND NUMBER AND SIZE OF BRANCH CIRCUIT BREAKERS AS INDICATED.
.10 PROVIDE PANEL COVERS FOR ALL PANELBOARDS AND SUPPLY TWO KEYS FOR EACH PANELBOARD AND KEY PANELBOARDS ALIKE.
.11 ALUMINUM BUS WITH NEUTRAL OF SAME AMPERE RATING AS MAINS.
.12 MAIN: SUITABLE FOR BOLT–ON 25MM WIDE BREAKERS.
.13 MULTI–POLE BREAKERS SHALL BE OF ONE–PIECE CONSTRUCTION WITH COMMON TRIP.
.14 PROVIDE BREAKERS AS INDICATED IN THE PANEL SCHEDULE AND AS INDICATED ON THE DRAWING.
.15 ALL NEW BREAKERS SHALL MATCH PANEL VOLTAGE UNLESS INDICATED OTHERWISE. CIRCUIT BREAKERS SHALL BE THERMAL MAGNETIC TYPE.
.16 NAMEPLATE FOR EACH PANELBOARD 20 X 90MM ENGRAVED AS INDICATED.
.17 COMPLETE CIRCUIT DIRECTORY WITH TYPEWRITTEN LEGEND SHOWING LOCATION AND LOAD OF EACH CIRCUIT.
.18 ACCEPTABLE MANUFACTURERS: FPE.
.19 LOCATE PANELBOARDS AS INDICATED AND MOUNT SECURELY, PLUMB, TRUE AND SQUARE, TO ADJOINING SURFACES.
.20 WIRING IN PANELBOARDS SHALL BE NEAT AND SET IN AS IF LACED. ALL NEUTRAL CONDUCTORS SHALL BE IDENTIFIED IN THE PANEL WITH THEIR ASSOCIATED CIRCUIT NUMBERS BY MEANS OF BRADY MARKERS.
.21 ALL PANELBOARDS THROUGHOUT THE BUILDING SHALL BE PHASED TOGETHER SUCH THAT THE LEFT–HAND, CENTRE AND RIGHT–HAND PANELBOARD BUSSES REPRESENT PHASES A, B AND C RESPECTIVELY. ALL INDICATING METERS SHALL BE IDENTIFIED TO THIS SEQUENCE.
.22 INTERRUPTING CAPACITY OF BREAKERS SHALL MATCH EXISTING.

15 PA SYSTEM
.1 PROVIDE AND INSTALL ALL MATERIAL AND LABOUR AS REQUIRED TO PROVIDE A LOCAL PA SYSTEM TO BE LOCATED ON THE BASEMENT LEVEL, DWG. E3.1. THE PA SYSTEM WILL CONSIST OF A SINGLE CHANNEL PA AMPLIFIER C/W MICROPHONE INPUT AND A SINGLE CHANNEL OUTPUT. SPEAKER WIRING (FT 4) SHALL BE INSTALLED "OPEN" WHERE SHOWN. SPEAKERS SHALL BE C/W SEALED BACKBOX AMD MULTI–TAP TRANSFORMERS. BALANCE AUDIO OUTPUT AS PER THE OWNER'S REQUIREMENTS.

AMPLIFIER – DUKANE NO. 1A–1620
MICROPHONE – DUKANE NO. 7A766
SPEAKERS/BAFFLE/BACKBOX – BURTEK NO. COMB855B/BRM11/ER8

DRAWING LIST:

E1.1 SYMBOLS, SPECIFICATIONS, DRAWING LIST AND SCHEDULES
E2.1 PARKING GARAGE PART PLANS – LIGHTING, POWER AND SYSTEMS
E3.1 BASEMENT LEVEL PART PLANS – LIGHTING, POWER ANBD SYSTEMS
E4.1 GROUND FLOOR AND THIRD FLOOR PART PLANS – LIGHTING, POWER AND SYSTEMS

SYMBOL LEGEND

SYMBOL	DESCRIPTION
A1-B	FLUORESCENT FIXTURE, A1–PANEL AND CIRCUIT NUMBER, B–CONTROL
	DENOTES LIGHTING FIXTURE CONNECTED TO EMERGENCY POWER
$	SINGLE POLE SWITCH
$	SINGLE POLE SWITCHES IN MULTIPLE GANG
	SINGLE RECEPTACLE
	DUPLEX RECEPTACLE
	FOURPLEX RECEPTACLE
	SPECIAL RECEPTACLE
	POWER POLE
	JUNCTION AND/OR OUTLET BOX
	MOTOR OUTLET
	MAGNETIC STARTER
	MANUAL STARTER OR TOGGLE SWITCH
	DISCONNECT SWITCH
	POWER AND/OR LIGHTING PANEL
▼	TELEPHONE OUTLET (1 GANG)
▽	COMPUTER OUTLET (1 GANG)
	COMBINATION VOICE/DATA OUTLET (2 GANG)
	C.C.T.V. CAMERA OUTLET
	MICROPHONE OUTLET
	CEILING SOUND OUTLET, PAGING SYSTEM
	STUBBED CONDUIT RUN (1" MINIMUM FOR PHONE/DATA)
	EMERGENCY PUSHBUTTON
a	ADJACENT TO SYMBOL DENOTES "MOUNTED ABOVE COUNTER"
ER	ADJACENT TO SYMBOL DENOTES "EXISTING TO BE RELOCATED"
1D	ADJACENT TO SYMBOL DENOTES "NUMBER OF DATA JACKS REQUIRED" (BY OWNER)
1P	ADJACENT TO SYMBOL DENOTES "PARCS" COMPUTER SYSTEM DATA CONNECTIONS
1T	ADJACENT TO SYMBOL DENOTES "NUMBER OF TELEPHONE JACKS REQUIRED" (BY OWNER)

ALL ELECTRICAL EQUIPMENT IN DASHED LINES IS EXISTING TO REMAIN UNLESS OTHERWISE NOTED

FIXTURE SCHEDULE

TYPE	MANUFACTURER	CATALOGUE NUMBER	LAMPS	VOLTS	REMARKS
M	ALKCO	R–2058–3	2–15W A15 1–200W A23	120V	DARKROOM SAFELIGHT, 3 COMPARTMENTS – 2 FILTERED, 1 GENERAL ILLUMINATION. PROVIDE 'KODAK' FILTERS AS DIRECTED BY OWNER AT TIME OF SHOP DRAWINGS.
PD	CFI METALUX YORK	AA348–AA 2GPXF–340A.125 JH348–122–.125	3–F32W T8	120V	2' x 4' 3 LAMP FLUORESCENT FIXTURE IN T–BAR CEILING. CENTER LAMP TO BE ON ONE SWITCH, AND THE TWO OUTER LAMPS TO BE ON ANOTHER SWITCH. FIXTURE TO BE C/W HINGED FRAMED K12 LENS AND TWO ELECTRONIC BALLASTS.
RIU	READYLITE	RX5000–FH–120–RIU	2–PL7	120V	"ROOM IN USE" SIGN

MOTOR SCHEDULE

MOTOR NO.	DESCRIPTION	LOCATION	KW	H.P.	VOLTS	STARTER & ACCESS: MAN.	MAG.	P.L.	H.O.A.	CIRCUIT	STARTER LOCATION	FEEDER SIZE	REMARKS
AHU–1	AIR HANDLER	PARKADE		1.5	208V/3ø					FF–6,7,8		3 #12	PACKAGED UNIT, C/W STARTER AND OVERLOADS. DIVISION 15 TO INTERLOCK WITH F–B–5.
CU–1	CONDENSING UNIT	PARKADE (SEE MECHANICAL)	(17A)		208V/3ø					F–1,2,3		3 #8	PACKAGED UNIT, DIVISION 15 TO INTERLOCK WITH AHU–1. PROVIDE 30A–3P BREAKER IN PANEL "F".
F–B–1	FUME HOOD EXHAUST FAN	PARKADE		0.25	120V/1ø	X		X		FF–5		2 #12	EXISTING FAN TO BE RELOCATED. DIVISION 15 TO INTERLOCK WITH MAU–1. PROVIDE AUXILIARY CONTACT ON MANUAL STARTER.
F–B–5	RETURN AIR FAN	PARKADE	0.387		120V/1ø		X	X	X	FF–4		2 #12	DIVISION 15 TO INTERLOCK WITH AHU–1.
MAU–1	MAKE–UP AIR UNIT	PARKADE		1	208V/3ø					FF–1,2,3		3 #12	PACKAGED UNIT, C/W STARTER AND OVERLOADS. DIVISION 15 TO INTERLOCK WITH F–B–1, SO THAT MAU–1 RUNS WHEN F–B–1– IS ON.

96–171–04

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THE CITY OF WINNIPEG
PROPERTY AND DEVELOPMENT SERVICES
WINNIPEG POLICE SERVICE

PROVINCE OF MANITOBA
A.M. LOHSE
Aug 13/98
REGISTERED ENGINEER

Carruthers Shaw and Partners Limited Architects
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416 482-5002 Fax 482-5040

DRAWN BY: S.D.

CHECKED BY: C.B.

DATE: 17 AUGUST 1998

PROJECT TITLE:

Temporary Staging For Police Headquarters Renovations City of Winnipeg Public Safety Building

151 Princess Street

Winnipeg Manitoba

DRAWING TITLE:
SYMBOL LEGEND, SPECIFICATIONS, DRAWING LIST AND SCHEDULES

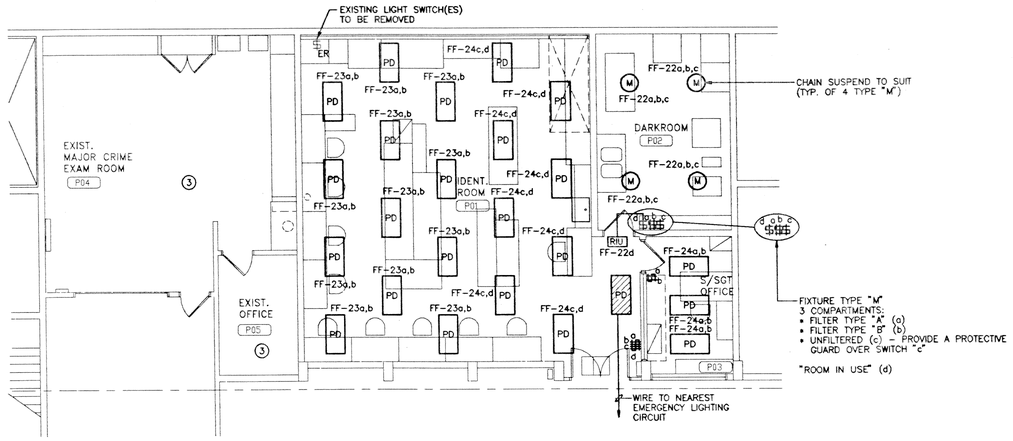
SCALE: N.T.S.

PROJECT NO. 98024 DWG. NO. E1.1

RFQ No. 889–98

File name: G:\PROJECTS\1996\96171CS.PSB\04\CADD\E\6171E1.DWG Last edited: 98/08/13 @ 09:36

SCALE 1/8"=1'-0" | SCALE 1/4"=1'-0" | SCALE 3/8"=1'-0" | SCALE 1/2"=1'-0" | SCALE 1:200 | SCALE 1:100 | SCALE 1:50



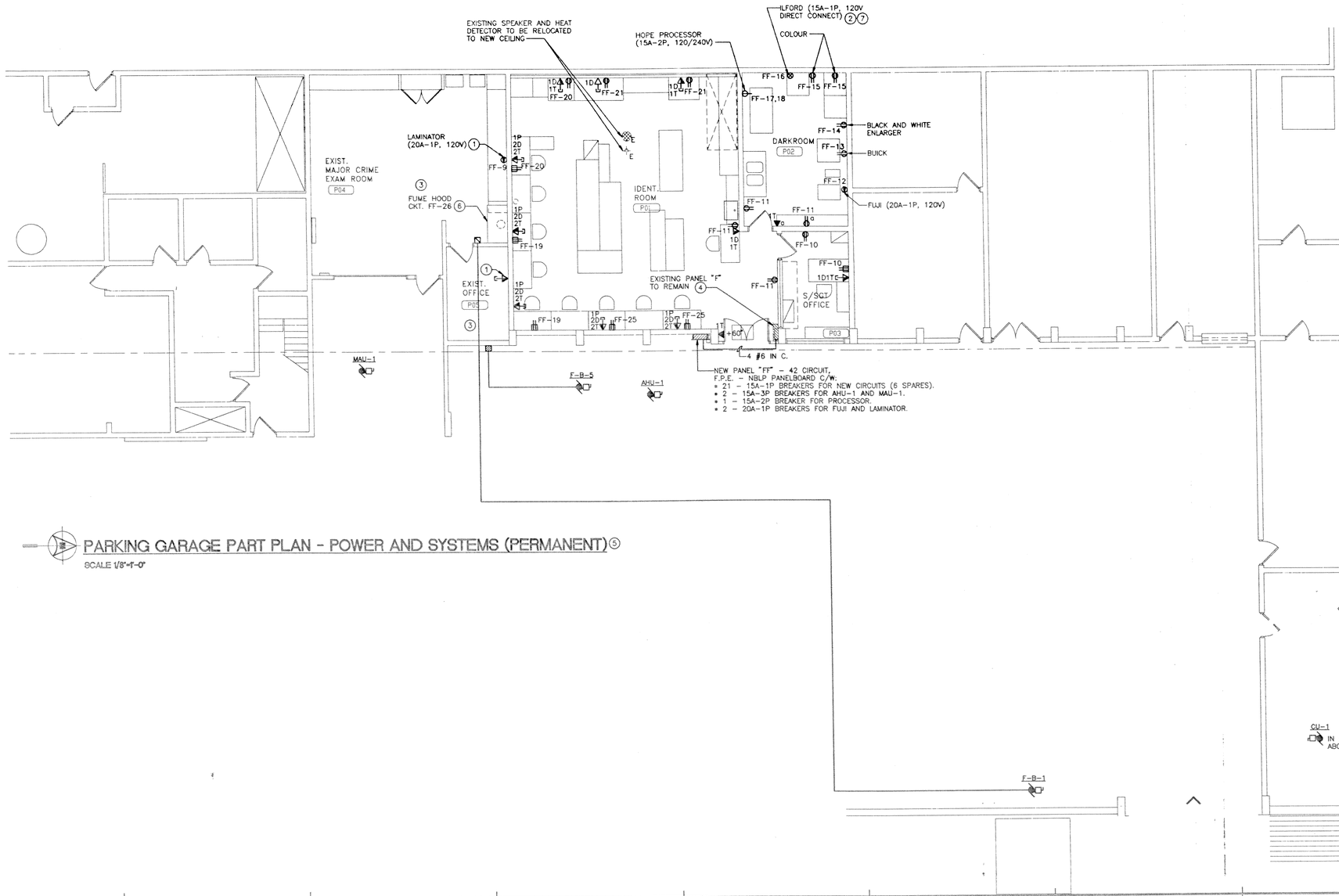
PARKING GARAGE PART PLAN - LIGHTING (PERMANENT) ⑤

SCALE 1/16"-1'-0"

NOTES:

1. EXACT LOCATION TO BE DETERMINED ON SITE WITH OWNER.
2. CONFIRM OUTLET REQUIREMENT ON SITE WITH OWNER.
3. EXISTING LIGHTING, POWER AND SYSTEMS TO REMAIN EXCEPT AS SHOWN.
4. EXISTING PANEL "F", 30 CIRCUIT, C/W:
   - 27 – 15A-1P BREAKERS
   - 1 SPACE
   - 1 – 50A-2P BREAKER.

   TRACE OUT EXISTING CIRCUITS, REMOVE OBSOLETE/ABANDONED CIRCUIT WIRING. REUSE EXISTING BREAKERS FOR NEW CIRCUITS. SUBFEED NEW PANEL "FF" AS SHOWN. PROVIDE 60A-3P BREAKER FOR PANEL "FF" AND 30A-3P BREAKER FOR CU-1. TRANSFER CIRCUITS TO PANEL "FF" IF REQUIRED, EXTEND BRANCH CIRCUIT WIRE AND CONDUIT AS REQUIRED.
5. CIRCUIT NUMBERS SHOWN ARE FOR CIRCUIT LOADING ONLY. EXACT CIRCUIT NUMBERS TO BE DETERMINED ON SITE BY ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO PROVIDE ALL NECESSARY BREAKERS, ETC., AS REQUIRED.
6. WIRE AND CONNECT BUILT-IN LIGHT AND OUTLET.
7. PROVIDE A 7-DAY/24 HOUR TIME CLOCK, DIRECT WIRE TO THE ILFORD PROCESSOR, MOUNT TIME CLOCK ON WALL BY ILFORD.



PARKING GARAGE PART PLAN - POWER AND SYSTEMS (PERMANENT) ⑤

SCALE 1/8"-1'-0"

96-171-04

Scouten Mitchell Sigurdson
Consulting Engineers
Scouten Mitchell Sigurdson and Associates Limited
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IF THIS SHEET IS NOT 33 1/8" X 23 3/8" (841 X 594mm) IT IS A REDUCED PRINT – READ DWG. ACCORDINGLY

KEY TO DETAIL LOCATION

No. DETAIL NUMBER
No. DRAWING NUMBER

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DRAWINGS SHOULD NOT BE SCALED.

NO.	REVISION/ISSUE	DATE

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PROPERTY AND DEVELOPMENT SERVICES
WINNIPEG POLICE SERVICE

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DRAWN BY: S.D.

CHECKED BY: C.B.

DATE: 17 AUGUST 1998

PROJECT TITLE:

Temporary Staging For Police Headquarters Renovations
City of Winnipeg
Public Safety Building
151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:
PARKING GARAGE PART PLAN – LIGHTING, POWER AND SYSTEMS

SCALE: AS NOTED

PROJECT NO.	DWG. NO.
98024	E2.1

RFQ No. 889-98

File name: G:\PROJECTS\1996\96171CS.PSB\04\CADD\EX\6171E2.DWG Last edited: 98/08/13 @ 09:53

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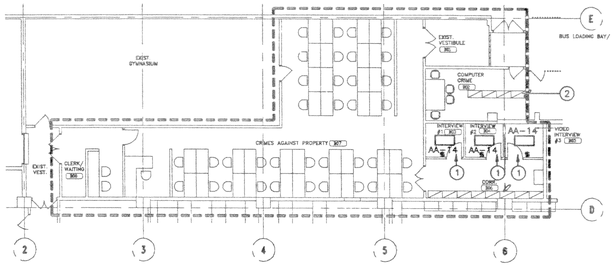
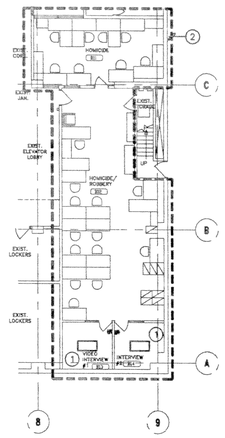


BASEMENT LEVEL PART PLAN -LIGHTING (TEMPORARY)

SCALE 1/16"=1'-0"



BASEMENT LEVEL PART PLAN - LIGHTING (TEMPORARY)

SCALE 1/16"=1'-0"

NOTES:

1. PROVIDE 120V, 4 LAMP 2' x 4' FLUORESCENT T-BAR FIXTURE WITH LAY-IN K12 LENS. WIRE AND CONNECT TO AN EXISTING SWITCH AT DOOR WHERE SHOWN. REUSE EXISTING CIRCUITS.
2. EXISTING LIGHTING TO REMAIN EXCEPT WHERE NOTED.
3. INSTALL VIDEO CAMERAS AND MICROPHONE, WIRE AND CONNECT TO VIDEO EQUIPMENT LOCATED IN ROOM B05. EQUIPMENT IS SUPPLIED BY OWNER. WIRING TO BE SUPPLIED BY CONTRACTOR.
4. INSTALL VIDEO CAMERAS AND MICROPHONE, WIRE AND CONNECT TO VIDEO EQUIPMENT LOCATED IN ROOM B13. EQUIPMENT IS SUPPLIED BY OWNER. WIRING TO BE SUPPLIED BY CONTRACTOR.
5. PUSHBUTTON AND BUZZER TO BE EDWARDS NO. 854/147-725 C/W L.V. TRANSFORMER, OR EQUAL.
6. CIRCUIT NUMBERS SHOWN ARE FOR CIRCUIT LOADING ONLY. EXACT CIRCUIT NUMBERS TO BE DETERMINED ON SITE BY ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO PROVIDE ALL NECESSARY BREAKERS, ETC., AS REQUIRED.
7. PROVIDE 20 WATT AMP C/W PAGING MICROPHONE. WIRE TO NEW SPEAKERS AS SHOWN.

BASEMENT LEVEL PART PLAN - POWER AND SYSTEMS (TEMPORARY)

SCALE 1/8"=1'-0"

BASEMENT LEVEL PART PLAN POWER AND SYSTEMS (TEMPORARY)

SCALE 1/8"=1'-0"

KEY TO DETAIL LOCATION

No. — DETAIL NUMBER
No. — DRAWING NUMBER

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NO.	REVISION/ISSUE	DATE

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THE CITY OF WINNIPEG
PROPERTY AND DEVELOPMENT SERVICES
WINNIPEG POLICE SERVICE

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DRAWN BY: S.D.
CHECKED BY: C.B.
DATE: 17 AUGUST 1998

PROJECT TITLE:

Temporary Staging For Police Headquarters Renovations City of Winnipeg Public Safety Building
151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:
BASEMENT LEVEL PART PLANS – LIGHTING, POWER AND SYSTEMS

SCALE: AS NOTED

PROJECT NO.	DWG. NO.
98024	E3.1

RFQ No. 889-98

96-171-04

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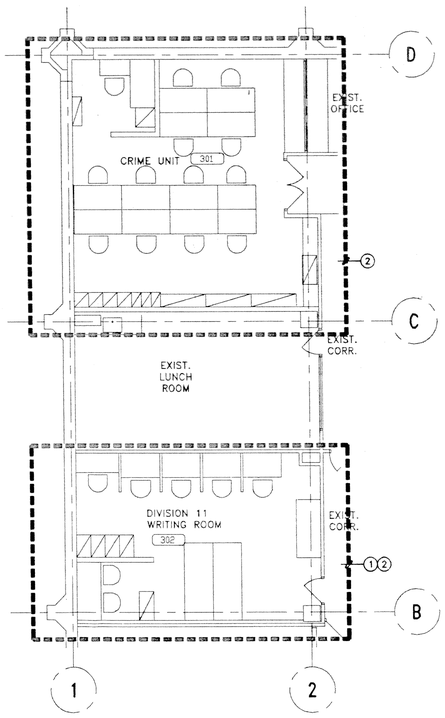
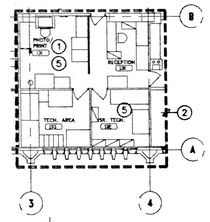


THIRD FLOOR PART PLAN LIGHITNG (TEMPORARY)

SCALE 1/8"=1'-0"

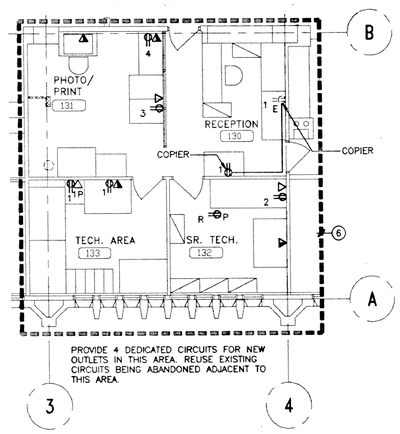


GROUND FLOOR PART PLAN LIGHTING (TEMPORARY)

SCALE 1/8"=1'-0"

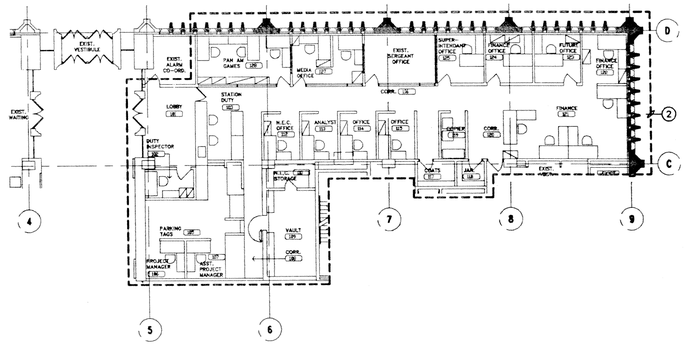
NOTES:

1. RELOCATED VIDEO LIGHT.
2. EXISTING LIGHTING TO REMAIN.
3. RELOCATE EXISTING C.C.T.V. MONITORS, PA SYSTEM, DURESS ALARMS AND ASSOCIATED EQUIPMENT. EXTEND/REROUTE WIRING AS REQUIRED.
4. EXISTING POWER AND SYSTEMS TO REMAIN.
5. REPLACE EXISTING T12 LAMPS. NEW FLUORESCENT LAMPS TO BE "FULL SPECTRUM" 3000°K, 85CRI.
6. CIRCUIT NUMBERS SHOWN ARE FOR CIRCUIT LOADING ONLY. EXACT CIRCUIT NUMBERS TO BE DETERMINED ON SITE BY ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO PROVIDE ALL NECESSARY BREAKERS, ETC., AS REQUIRED.



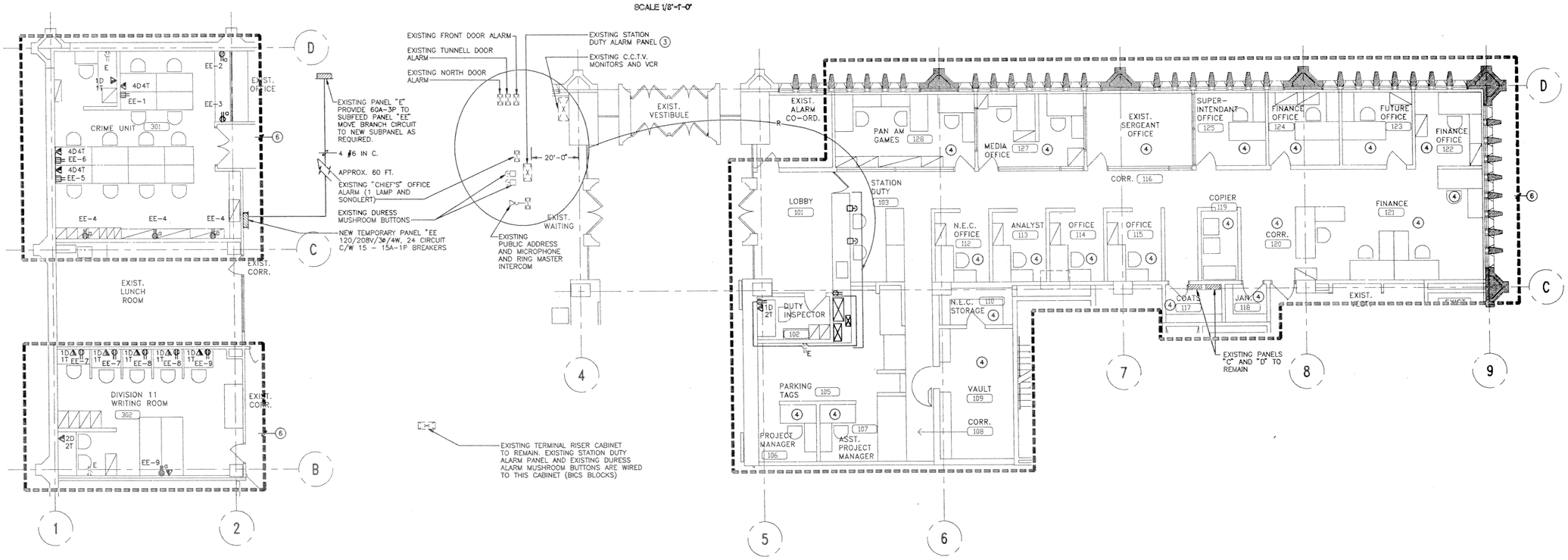
GROUND FLOOR PART PLAN POWER AND SYSTEMS (TEMPORARY)

SCALE 1/8"=1'-0"



GROUND FLOOR PART PLAN – LIGHTING (TEMPORARY)

SCALE 1/8"=1'-0"



THIRD FLOOR PART PLAN POWER AND SYSTEMS (TEMPORARY)

SCALE 1/8"=1'-0"

GROUND FLOOR PART PLAN – POWER AND SYSTEMS (TEMPORARY)

SCALE 1/8"=1'-0"

KEY TO DETAIL LOCATION

No. (DETAIL NUMBER) / No. (DRAWING NUMBER)

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THE CITY OF WINNIPEG
PROPERTY AND DEVELOPMENT SERVICES
WINNIPEG POLICE SERVICE

PROVINCE OF MANITOBA — A.M. LOHSE — REGISTERED ENGINEER

Carruthers Shaw and Partners Limited Architects

DRAWN BY: S.D.

CHECKED BY: C.B.

DATE: 17 AUGUST 1998

PROJECT TITLE:

Temporary Staging For Police Headquarters Renovations
City of Winnipeg Public Safety Building
151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:
GROUND FLOOR AND THIRD FLOOR PART PLANS – LIGHTING, POWER AND SYSTEMS

SCALE: AS NOTED

PROJECT NO.	DWG. NO.
98024	E4.1

RFQ No. 889-98

96-171-04

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PENTHOUSE
SIXTH FLOOR
FIFTH FLOOR
FOURTH FLOOR
THIRD FLOOR
SECOND FLOOR
GROUND FLOOR
BASEMENT

DISTRIBUTION 6S(NON-ESSENTIAL) 120/208V/3Φ/4W
CDP 400A 600V/3Φ
MCC1 (NON-ESSENTIAL) 3Φ/3W (SEC 2)
MCC1 (ESSENTIAL) 3Φ/3W (SEC 1)
AIR COMPRESSOR NO. 2
HEATING PUMPS 4TH FLOOR
CHILLED WATER PUMP
CONDENSER WATER PUMP
RETURN FANS
COOLING TOWER FANS
WASHROOM EXHAUST FANS
BASEMENT EXHAUST FAN
SOUTH SUPPLY
NORTH SUPPLY
AIR COND. NO. 1
CARRIER A/C
DISTRIBUTION 6N (NON-ESSENTIAL) 120/208V/3Φ/4W (SEC 1)
DISTRIBUTION 5S 120/208V/3Φ/4W
DISTRIBUTION 5N 120/208V/3Φ/4W (SEC 1)
SEE DRAWING E2.1 FOR FOURTH FLOOR LAYOUT
DISTRIBUTION 3S 120/208V/3Φ/4W
DISTRIBUTION 3N 120/208V/3Φ/4W
DISTRIBUTION 2S 120/208V/3Φ/4W
DISTRIBUTION 2N 120/208V/3Φ/4W
CDP-1S
DISTRIBUTION 1N 120/208V/3Φ/4W
MCC1 SEC2
WINNIPEG HYDRO VAULT
HYDRO 120/208V
HYDRO 600V/3Φ/3W
DISTRIBUTION B101 (NON-ESSENTIAL) 600V/3Φ/3W (SEC 1)
DISTRIBUTION B100 (ESSENTIAL) 120/208V/3Φ/4W (SEC 4)
DISTRIBUTION B100 (NON-ESSENTIAL) 120/208V/3Φ/4W (SEC 1A & 2)
DISTRIBUTION B103 (NON-ESSENTIAL) 120/208V/3Φ/4W
MAIN GENERATOR TRANSFER SWITCH
DISTRIBUTION B101 (NON-ESSENTIAL) 600V/3Φ/3W (SEC 2)
DISTRIBUTION B102 (ESSENTIAL) 600V/3Φ/3W
DISTRIBUTION B101 (ESSENTIAL) 600V/3Φ/3W (SEC 3)
DISTRIBUTION B104 (IN GARAGE) (NON-ESSENTIAL) 120/208V/3Φ/4W (SEC 1)
DISTRIBUTION B104 (IN GARAGE) (ESSENTIAL) 120/208V/3Φ/4W (SEC 2)
DISTRIBUTION B100 (ESSENTIAL) 120/208V/3Φ/4W (SEC 5)
DISTRIBUTION B100 (NON-ESSENTIAL) 120/208V/3Φ/4W (SEC 1B)
MAIN GENERATOR SERVICE ROOM
SPLITTER 120/240V
CAT GENERATOR 600V 750KVA
EXHAUST FAN
TO RADIATOR PUMP IN CAR PARK (171 PRINCESS)
PROPANE GENERATOR 120/240V
IN PROPANE GEN. ROOM
IN GARAGE
TRANSFORMER ISOLATOR
SIDE OF DIST. B100
BACK OF DIST. B100
LOCATED IN BASEMENT ELEC. ROOM
TO 6TH FLOOR COMPUTER ROOM FLOOR
SOUTH ELEVATORS 1 & 2 6TH FLOOR
NORTH ELEVATORS 3 & 4 PENTHOUSE
FIRE PUMP
FACCS FEED MCC1 SEC2
SEE DRAWING E2.1 FOR FOURTH FLOOR LAYOUT
NOTE 1

LEGEND:

- CIRCUIT BREAKER
- AIR CIRCUIT BREAKER
- MOTOR
- SWITCH
- FUSE
- TRANSFORMER
- DELTA

NOTES:
1. EMERGENCY BUS TIE (NOT NORMALLY CONNECTED).

DRAWINGS SHOULD NOT BE SCALED.

NO.	REVISION/ISSUE	DATE

THE CITY OF WINNIPEG
WINNIPEG POLICE SERVICE

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Telephon:s 204.772.0291 Fax 204.772.7153
sms@smseng.mb.ca

00-203-01

DRAWN BY: AMP
CHECKED BY: DK
DATE: 01/25/01

PROJECT TITLE:

City of Winnipeg
Public Safety Building
151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:

SINGLE LINE RISER DISTRIBUTION DIAGRAM

SCALE: NTS

PROJECT NO. —
DWG. NO. E1.1

1999-012 Project No.
E1.1 Sheet No.
2001 Const. Year
Line Dist. Diagram Drawing Title
PSB Project
SUPERSEDED
151 Princess St

Address 151 PRINCESS STREET Project No. Description PARTIAL ELECT. SCHEMATIC Sheet no. E-1 Date SEPT. 1997 File Name

BASEMENT ELECTRICAL ROOM

EXISTING 600V/3Φ/3W MAIN DISTRIBUTION SWITCHGEAR (NON ESSENTIAL)

400 A. 3P.

300 A. 3P.

OUTSIDE OF DOHN DEERE M/G ROOM

NO E
NC D
NC C
NC B
NO A

AUTO TRANSFER SWITCH

225 A. 3P MAIN BREAKER

150 KW, 187.5 KVA., .8 pf 347/600V/3Φ/4W EMERGENCY DIESEL GENERATOR

200A.

SOUTH FAN ROOM 347/600V/3Φ/4W/400A. COMPUTER SUB-DISTRIBUTION 'CSD600-6A'

70 A. 3P A/C SPLITTER

600V/3Φ/3W A/C SPLITTER

EXIST. A/C UNIT

EXIST. A/C UNIT

EXIST. FAN F-1

30 A. 3P

15 KVA

PANEL TR - 6A

100 A. 3P

75 KVA

120/208V/3Φ/4W/300A. UPS BYPASS SPLITTER

200 A. 3P. MAINT. BYPASS

PC7

200 A. 3P. UPS/STATIC BYPASS

PC8

125 A. 3P UPS RECTIFIER FEED UPS (P.A.R.C.S.)

100 A. 3P

600V/3Φ/3W DRY TYPE TRANSFORMER TR-6C

75 KVA K20

120/208V/3Φ/4W

50 A. 3P UPS RECTIFIER FEED A.F.I.S.

20 A. 3P

225 A. 3P

225 A. 3P

100 A. 3P

100 A. 3P A/C

100 A. 3P

KOHLER M/G ROOM

125 A. 600 V NONESSENTIAL SPLITTER (IN CAD GENERATOR RM.)

JOHN DEERE DISCONNECT 6

125 A. 3P NONESSENTIAL MCC 1 6 TH FLOOR

3 200 A. 3P NONESSENTIAL DISCONNECT

AUTO TRANSFER SWITCH 4

AUTO TRANSFER SWITCH 5

200 A. 3P MANUAL TRANSFER SWITCH 7

125 A. 600V SPLITTER

1 15 A. 2P DAMPER CONTROL DISCONNECT

600 V

120V

TO DAMPER CONTROL

2 125 A.

125 A. 3P KOEHLER M/G DISCONNECT

NATURAL GAS GENERATOR

UPS (P.A.R.C.S.) PARCS COMP. RM.

120/208V/3Φ/4W 400 A. SPLITTER

LIQUIDTITE FLEXIBLE CONNECTION

PARCS COMP.ROOM

UPS FOR A.F.I.S.

40 KVA., UPGRADABLE TO 50 KVA., BREAKERS SIZED FOR 40 KVA & FEEDERS SIZED FOR 50 KVA

TO P.A.R.C.S. AUTO-TRANSFER SWITCH TO INHIBIT BATTERY CHARGING WHILE ON EMERGENCY POWER

UPS/STATIC BYPASS

200 A. 3P MAINT. BYPASS

MAINT. BYPASS C/W 2-200 A. 3P NON-AUTO BREAKERS BREAK BEFORE MAKE

200 A. SHUNT TRIP DISCONNECT

A.F.I.S. DIST. 6 TH FLOOR PARCS CPU ROOM

PC9 N.C.

PC10

N.O.

225 A.

MAINT. BYPASS

MAKE BEFORE BREAK

200 A.

120/208//3Φ/4W/250A. COMPUTER SUB-DISTRIBUTION 'CSD208 - 6A'

150 A. SHUNT TRIP DISCONNECT

PANEL UPS - A

70 A.

60 A.

PANEL 6

PANEL 6A

100 A.

4 TH FLOOR POLICE DISPATCH

A.F.I.S. 120/208V/3Φ/4W/PANELBOARD 225 A.

60 A.

TO 2 ND FLOOR A.F.I.S. TERMS. ONLY

MTS/MACHINE ROOM

MTS/MACHINE ROOM CDP 100 600V/3Φ

70 A. 3P

70 A. SPARE

15 A.

30 A.

100 A.

40 A.

15 A.

20 A.

15 A.

40 A.

3Φ, 3W, 125 A. MAINS

50 A. 3P

45 KVA 600 : 120/208V,3Φ

60 A. 3P

50 KVA 600 : 480V, 3Φ AUTO TRANSFORMER

A/C CAD LIEBERT

A/C # 1

A/C # 2 DISPATCH

LIEBERT CONDENSER

BASEBOARD HEATERS

BASEBOARD HEATERS POLICE DISPATCH

600 V.

120/208V

FACCS COMPUTER ROOM

100 A. N.C.

100 A. N.C.

100 A. N.C.

100 A. N.C.

100 A. N.C.

PANEL CPA

PANEL CP

UPS B CAD

U 200

4 TH FLOOR POLICE DISPATCH DISTRIBUTION

UPS 5

5 TH FLOOR SERVER ROOM

OFF

MAINT. BYPASS MAKE BEFORE BREAK

NEW 40 KVA UPS

FACCS UPS

PANEL GB

TRANSMITTER ROOM

NO.	REVISION/DESCRIPTION	BY	DATE

SEALS

DRAWN BY B.K.	CHECKED BY	APPROVED
DATE Jan. 1998	USER APPROVAL	

THE CITY OF WINNIPEG
CIVIC BUILDINGS DEPARTMENT
400-180 KING ST. R3B 3G8

PROJECT

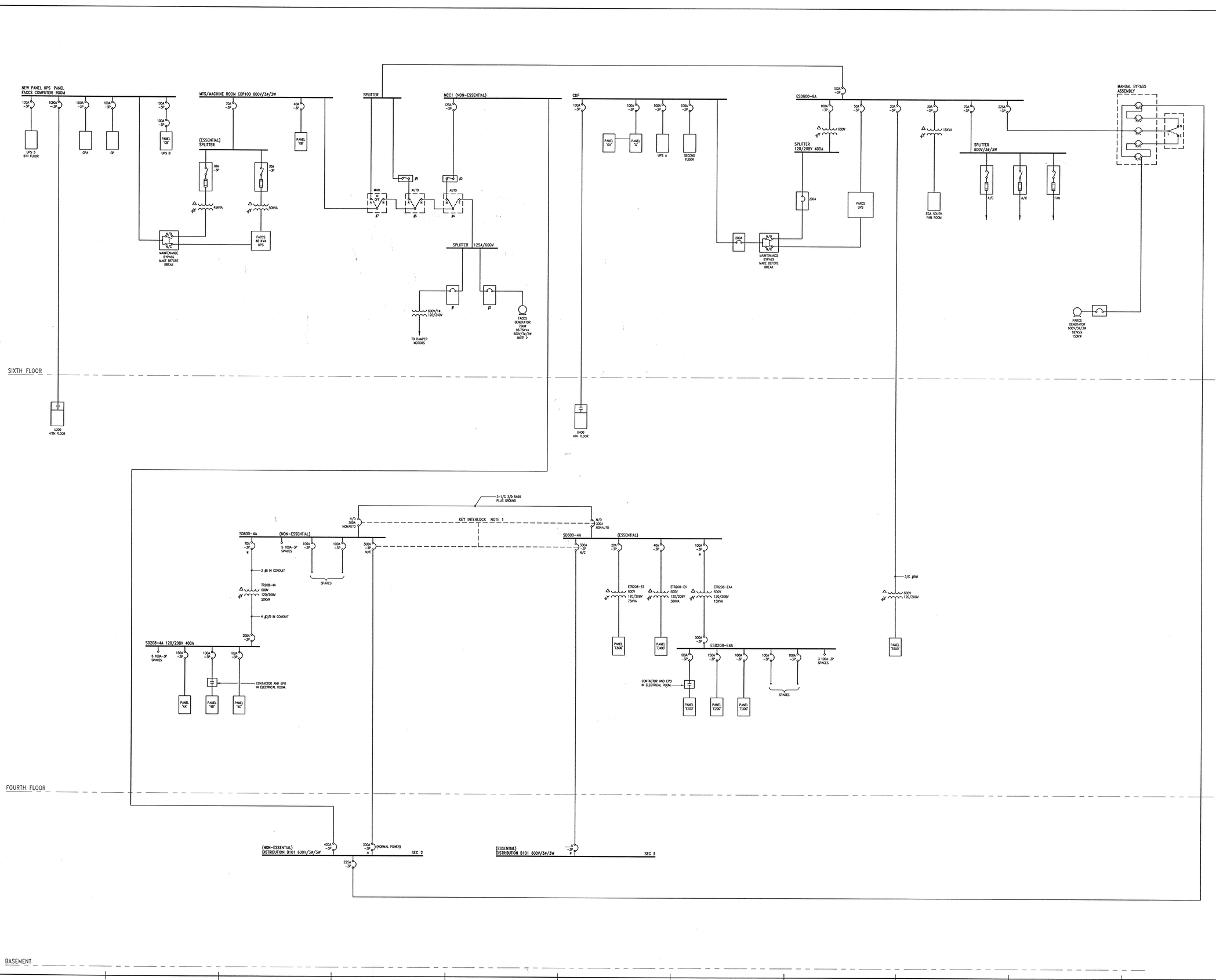
PUBLIC SAFETY BUILDING
151 PRINCESS STREET

SHEET TITLE

SINGLE LINE ELECTRICAL DISTRIBUTION SCHEMATIC

SCALE	PROJECT NO	SHEET NO
N.T.S.		E-1

IF THIS SHEET IS NOT 39.4" X 27.8"
(1000 X 706mm) IT IS A REDUCED
PRINT – READ DWG. ACCORDINGLY



LEGEND:

- CIRCUIT BREAKER
- AIR CIRCUIT BREAKER
- MOTOR
- SWITCH
- FUSE
- TRANSFORMER
- DELTA

NOTES:

1. MANUAL KEY INTERLOCK.
2. IF THE FALLS GENERATOR FAILS TO OPERATE, THE LOAD WILL BE AUTOMATICALLY TRANSFERRED TO THE PARCS GENERATOR.

DRAWINGS SHOULD NOT BE SCALED.

NO.	REVISION/ISSUE	DATE

THE CITY OF WINNIPEG
WINNIPEG POLICE SERVICE

SMS ENGINEERING
SMS Engineering Ltd. Consulting Engineers
770 Bradford Street Winnipeg MB Canada R3H 0N3
Telephone 204.775.0291 Fax 204.772.2153
sms@smseng.mb.ca

00-203-01

DRAWN BY: AMP
CHECKED BY: DK
DATE: 01/25/01

PROJECT TITLE:

City of Winnipeg
Public Safety Building
151 Princess Street
Winnipeg Manitoba

DRAWING TITLE:

SINGLE LINE RISER DISTRIBUTION DIAGRAM LEVEL 4 AND 6

SCALE: NTS

PROJECT NO.	DWG. NO.
–	E2.1

1999-012 Project No.
E2.1 Sheet No.
2001 Const. Year
SUPERSEDED
PSB Project
Line Riser. Diagram Drawing Title
151 Princess St

EXISTING 600V/3Φ/3W MAIN DISTRIBUTION SWITCHGEAR (NON-ESSENTIAL) IN BASEMENT ELECTRICAL ROOM.

225A-3P INTERRUPTING CAPACITY OF NEW BREAKER TO MATCH EXISTING.

ISOLATION BY-PASS SWITCHES IN CEMA I ENCLOSURE DESIGNED TO ISOLATE THE TRANSFER SWITCH AND TO BY-PASS EITHER THE NORMAL OR EMERGENCY POWER AROUND THE BY-PASS SWITCH. PROVIDE INTER-LOCKING. INTERRUPTING CAPACITY TO BE MIN. 18 000 AMPS RMS SYM. PROVIDE NAMEPLATE WITH OPERATING INSTRUCTIONS & SCHEMATIC.

NON-AUTO MOULDED CASE BREAKERS IN SWITCH (TYPICAL)

4/C#4/0 TECK CABLE

RIGHT SIDE

NORMAL BY-PASS

TO TEST M/G FAIL THIS SW.

ISOLATION SWITCH

EMERGENCY BY-PASS

LEFT SIDE

600V FEED FROM MAIN DIST.

600V HOUSE POWER TO TRANSFER SWITCH

AUTOMATIC TRANSFER SWITCH SUPPLIED & MOUNTED BY GEN. SET SUPPLIER. (BESIDE PARCS ISOLATION BY-PASS SWITCH)

600V EMERGENCY POWER TO TRANSFER SWITCH

600V EMERGENCY POWER TO LOAD

4/C#4/0 TECK CABLE

150 KW, 187.5 KVA, .8 pf 347/600V/3Φ/4W EMERGENCY DIESEL GENERATOR SET TO BE PROVIDED & INSTALLED BY GEN SET SUPPLIER.
DIESEL TURN ON DELAY ≈ 20 SEC.
DIESEL TO ASSUME LOAD ≈ 15 SEC.
TOTAL P/F ≤ 35 SEC.

OUTSIDE MOTOR GENERATOR ROOM

225A-3P MAIN BREAKER

347/600V/3Φ/4W/400A COMPUTER SUB-DISTRIBUTION 'CSD600-6A'

PARCS COMPUTER PANEL CSD 600-6A

ON NORTH WALL

70A-3P AIR CONDITIONING SPLITTER

3-#6 (RW90) IN 1"C.

EXIST. 600V/3Φ/3W AIR CONDITIONING SPLITTER

EXISTING FUSED DISCONNECTS

EXISTING COMBINATION MAG STARTER WITH FUSED DISCONNECT

EXISTING AIR COND. UNIT

EXISTING COND. UNIT

EXIST. FAN F-1

30A-3P 15KVA TFMR TR-6A FOR PANEL A

3-#10 (RW90) IN 1/2"C.

600V/3Φ/3W

15 KVA DRY TYPE TRANSFORMER 'TR-6A' ABOVE PANEL EGA

120/208V/3Φ/4W

4-#6 (RW90) IN 1"C.

PANEL 'EGA' "A"

ORANGE PLUGS/SWITCHES IN TRAINING ROOM

75 KVA TMFR TR6B

100A-3P UPS BY-PASS

3-#3 (RW90) & 1-#3 (RW90) GREEN GND. IN 1 1/4"C.

600V/3Φ/3W

75 KVA DRY TYPE TRANSFORMER 'TR-6B'

4-#250 MCM (RW90) & 1-#4/0 (RW90) GREEN GND. IN 3"C.

120/208V/3Φ/4W

120/208V/3Φ/4W/800A UPS SPLITTER

125A-3P UPS

4-100A-3P & 2-225A-3P SPACES

4/C#1 TECK CABLE

PARCS

RIGHT

BOTTOM

EAST WALL

200A-3P BREAKER IN CEMA I ENCLOSURE

TO BY-PASS

BESIDE 600/208V TRANSFORMER

TO UPS

4/C#3/0 TECK CABLE

UPS (UNINTERRUPTABLE POWER SUPPLY)

FAN ROOM

PARCS COMPUTER ROOM

AUTOMATIC OPEN BY UPS

RECTIFIER/CHARGER

INVERTER

BATTERIES

MANUAL CLOSE ONLY AFTER INVERTER HAS STARTED

4/C#3/0 TECK CABLE

INTERLOCK BREAKERS

LEFT SW

RIGHT SW

MAINTENANCE BY-PASS FOR UPS IN CEMA I ENCLOSURE. BREAKERS TO BE NON-AUTO MOULDED CASE (MIN. INTERRUPTING CAPACITY TO BE 10,000 AMPS RMS SYMMETRICAL)

4-#3/0 (RW90) & 1-#3/0 (RW90) GREEN GROUND IN 2 1/2"C.

MAIN BREAKER

200A-3P 120/208V/3Φ/4W/250A COMPUTER SUB-DISTRIBUTION 'CSD208-6A'

DISTRIBUTION IN PARCS COMPUTER ROOM BESIDE MAINTENANCE BY-PASS

PANEL UPS A

150A-3P 4W SHUNT TRIP. SEE NOTE-2.

70A-3P 4W SHUNT TRIP. SEE NOTE-4.

PANEL G

4-100A-3P & 2-225A-3P SPACES

4-#1/0 (RW90) & 1-#1/0 (RW90) GREEN GND. IN 2"C.

4-#4 (RW90) & 1-#4 (RW90) GREEN GND. IN 1 1/4"C.

SHUNT CONTROL BESIDE COMPUTER ROOM DOOR OR FIRE CONTROL PANEL

PARCS

CPU

RIGHT PANEL

EXIST. PANEL 'UPS-A'

EXIST. PANEL 'G'

EXIST. PANEL 'GA'

G&GA IN COMMS BR TX'R ROOM

EXISTING 120/208V/3Φ/4W SPLITTER IN COMPUTER ROOM FED FROM EXIST. UPS

CAD CPU ROOM

100A-3P BREAKER IN CEMA I ENCLOSURE C/W SHUNT TRIP. SEE NOTE-3.

4-#3 (RW90) & 1-#3 (RW90) GREEN GROUND IN 1 1/4"C.

ORANGE PLUGS/LITES SWITCH'S

EXIST. PANEL 'CP'

EXIST. PANEL 'CPA'

EXIST. PANEL 'UPS-B'

NOTES

1. DISTRIBUTION SHOWN WITH DASHED LINES IS EXISTING TO REMAIN UNLESS OTHERWISE INDICATED.
2. MINIMUM INTERRUPTING CAPACITY OF BREAKERS IN SUB-DISTRIBUTION 'CSD600-6A' SHALL BE 18000 AMPS RMS SYMMETRICAL.
3. WIRE & CONNECT SHUNT TRIP IN BREAKER TO "EMERGENCY POWER OFF" PANEL IN P.A.R.C.S. COMPUTER ROOM SO THAT BREAKER OPENS ON ACTIVATION OF "EMERGENCY POWER OFF" PANEL. MAKE ALL MODIFICATIONS AS REQUIRED.
4. SHUNT TRIP FOR BREAKER FOR PANEL 'G' IS FOR FUTURE CONNECTION.

NO	REVISION/DESCRIPTION	BY	DATE
1	AS BUILT	W.S	SEPT. 1986

SEALS

PROVINCE OF MANITOBA — Feb 3/86 — B. D. LESKO — B.D. Kozo — ENGINEERS

DRAWN BY N.L.C. | CHECKED BY B.D.L. | APPROVED B.D.L.
DATE FEB. 1986 | USER APPROVAL

THE CITY OF WINNIPEG
CIVIC PROPERTIES DEPARTMENT
6 - 510 Main St. R3B 1B9

PROJECT
RENOVATIONS FOR P.A.R.C.S. PHASE II
PUBLIC SAFETY BUILDING
WINNIPEG MANITOBA

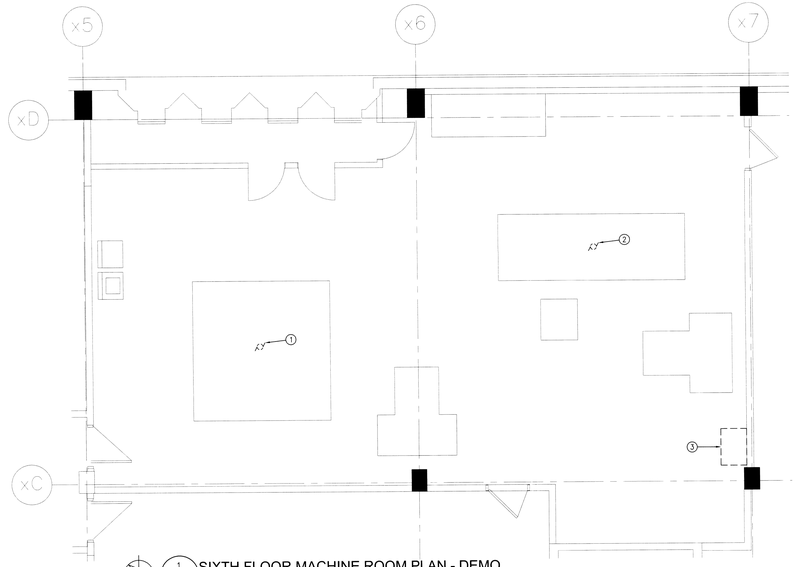
SHEET TITLE
ELECTRICAL DISTRIBUTION SCHEMATIC

85-120-01

Scouten Mitchell Sigurdson
Consulting Engineers
Scouten Mitchell Sigurdson and Associates Limited
770 Bradford Street, Winnipeg, Manitoba R3H 0N3 Telephone (204) 775-0291

SCALE	PROJECT NO	SHEET NO
AS NOTED	P.D. 85-228 85-120-01	E-5

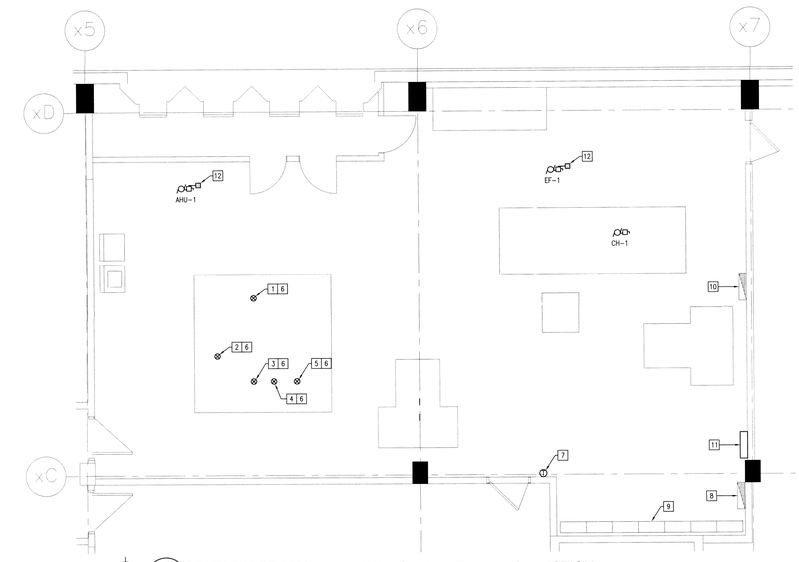
address
project no.
sheet no.
description ELECTRICAL DISTRIBUTION SCHEMATICS



1 / E1 SIXTH FLOOR MACHINE ROOM PLAN - DEMO
SCALE: 1/4"-1'0"

DRAWING NOTES (DEMO)

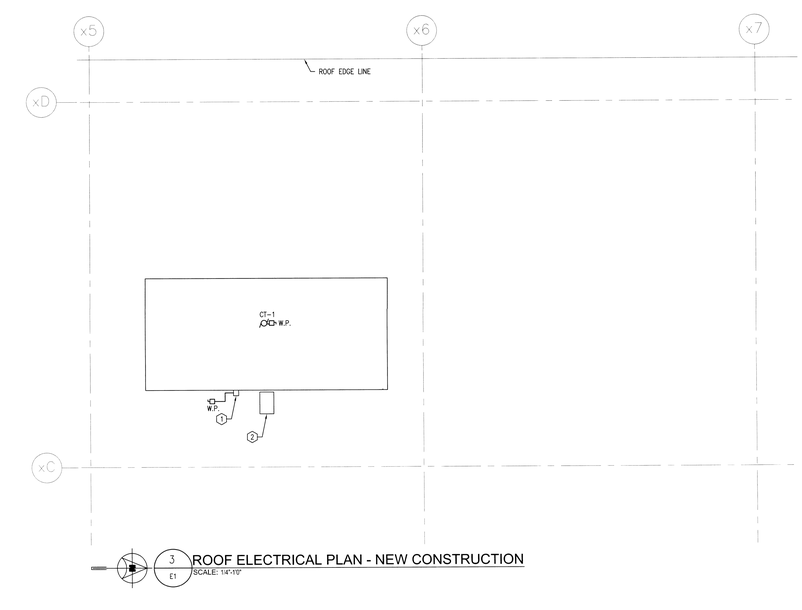
1. EXISTING 20H.P. COOLING TOWER TO BE DISCONNECTED. REMOVE ALL EXISTING CONDUIT & WIRE NO LONGER REQUIRED.
2. EXISTING CHILLER TO BE DISCONNECTED. REMOVE ALL EXISTING CONDUIT & WIRE NO LONGER REQUIRED.
3. EXISTING FUSED STARTER FOR EXISTING CHILLER (SEE NOTE 2) TO BE REMOVED ALONG WITH ALL WIRING & CONDUIT FROM STARTER TO CHILLER. EXISTING SINGLE CONDUCTOR CABLE TO PRIMARY SIDE OF STARTER TO REMAIN & BE RE-USED (SEE ELECTRICAL DISTRIBUTION RISER #2).



2 / E1 SIXTH FLOOR MACHINE ROOM PLAN - NEW CONSTRUCTION
SCALE: 1/4"-1'0"

DRAWING NOTES (NEW CONSTRUCTION)

1. DIVISION 16 TO HEAT TRACE MECH. 8" RETURN LINE (1" INSULATION). HEAT TRACE CABLE TO BE 2 RUNS OF TYCO #BXL1-CR (260 WATTS) C/W ALL REQUIRED COMPONENTS. MINIMUM 13' OF EACH CABLE.
2. DIVISION 16 TO HEAT TRACE MECH. 8" SUPPLY LINE (1" INSULATION). HEAT TRACE CABLE TO BE 2 RUNS OF TYCO #BXL1-CR (260 WATTS) C/W ALL REQUIRED COMPONENTS. MINIMUM 13' OF EACH CABLE.
3. DIVISION 16 TO HEAT TRACE MECH. 1" DRAIN LINE (1" INSULATION). HEAT TRACE CABLE TO BE TYCO #BXL1-CR (130 WATTS) C/W ALL REQUIRED COMPONENTS. MINIMUM OF 13' OF CABLE.
4. DIVISION 16 TO HEAT TRACE MECH. 1" DRAIN LINE (1" INSULATION). HEAT TRACE CABLE TO BE TYCO #BXL1-CR (130 WATTS) C/W ALL REQUIRED COMPONENTS. MINIMUM OF 13' OF CABLE.
5. DIVISION 16 TO HEAT TRACE MECH 1" WATERLINE (1" INSULATION). HEAT TRACE CABLE TO BE TYCO #BXL1-CR (130 WATTS) C/W ALL REQUIRED COMPONENTS. MINIMUM OF 13' OF CABLE.
6. DIVISION 16 TO HEAT TRACE MECH. PIPING MINIMUM 2' INTO BUILDING WARM SPACE.
7. DIVISION 16 TO SUPPLY & INSTALL A TYCO #EC-TS STAT TO CONTROL ALL HEATING CABLES. WIRE & CONNECT THERMOSTAT & HEATING CABLES TO A DEDICATED 120 VOLT CIRCUIT IN EXIST. PANEL 'C'. THERMOSTAT SENSING BULB TO BE EXTENDED TO EXTERIOR OF BUILDING. SUPPLY & INSTALL ALUMINUM GUARD OVER SENSING BULB. COORDINATE THERMOSTAT FINAL LOCATION WITH SENSING BULB CABLE LENGTH.
8. EXIST. 120/208/3ø/4W, F.P.E. 24 CKT. PANEL 'C'. MODIFY AS REQUIRED TO ACCEPT NEW BREAKERS. SUPPLY & INSTALL NEW UPDATED TYPED DIRECTORY.
9. EXIST. GENERAL ELECTRIC MODEL CR7092C, TYPE B, CLASS 1 MOTOR CONTROL CENTRE.
10. EXIST. 600V/3ø/3W F.P.E. DISTRIBUTION.
11. NEW 600V/3ø/3W SPLITTER SP600-A.
12. MOUNT STARTERS & DISCONNECTS ON VERTICAL UNI-STRUT SUPPORTS. SECURE UNI-STRUT TO FLOOR & CEILING SYSTEM.



3 / E1 ROOF ELECTRICAL PLAN - NEW CONSTRUCTION
SCALE: 1/4"-1'0"

DRAWING NOTES (ROOF CONSTRUCTION)

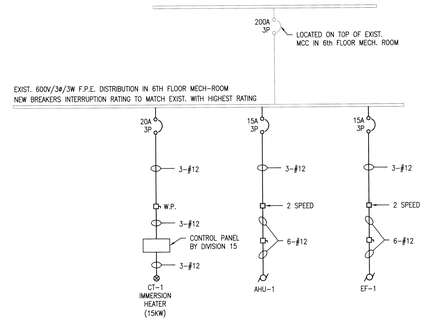
1. IMMERSION HEATER CONTROL PANEL BY DIVISION 15. DIVISION 16 TO WIRE & CONNECT FROM CONTROL PANEL TO 15KW, 600V/3ø/3W CT-1 ELECTRIC IMMERSION HEATER.
2. CT-1 VFD BY DIVISION 15. MOUNTED ON UNIT. VERIFY EXACT LOCATION WITH DIVISION 15.

SYMBOL LEGEND

	JUNCTION BOX
	DISCONNECT
	MOTOR
	MAGNETIC STARTER
T	THERMOSTAT
WP	WEATHER PROOF

* PLEASE NOTE *

ALL EQUIPMENT SHOWN "FADED BACK" IS EXISTING TO REMAIN UNLESS OTHERWISE NOTED.
ALL EQUIPEMENT SHOWN "DASHED" IS EXISTING TO BE REMOVED UNLESS OTHERWISE NOTED.



4 / E1 ELECTRICAL DISTRIBUTION RISER #1
SCALE: NTS

5 / E1 ELECTRICAL DISTRIBUTION RISER #2
SCALE: NTS

6 / E1 MOTOR CONTROL CENTRE RISER
SCALE: NTS

ELECTRICAL DISTRIBUTION RISER NOTES

a. EXISTING F.P.E. HF-1 TYPE(100KA RATING) 600A-3P BREAKER TO BE REPLACED WITH NEW 400A-3P BREAKER. INTERRUPTING RATING OF NEW BREAKER TO MATCH EXISTING. SUPPLY BREAKER C/W PADLOCKABLE "LOCK-OFF".

b. EXISTING PARALLEL SINGLE CONDUCTOR COPPER FEEDERS PRESENTLY INSTALLED FROM EXISTING 600A BREAKER TO EXISTING CHILLER STARTER IN 6th FLOOR MECH-ROOM.

KEY PLAN
SCALE: NTS

NO.	Revisions	BY	DD/MM/YY
7.			
6.			
5.			
4.			
3.			
2.			
1.		XX	DD/MM/YY

APEGM
Certificate of Authorization
SMS Engineering Ltd.
No. 166 Expiry April 30, 2011

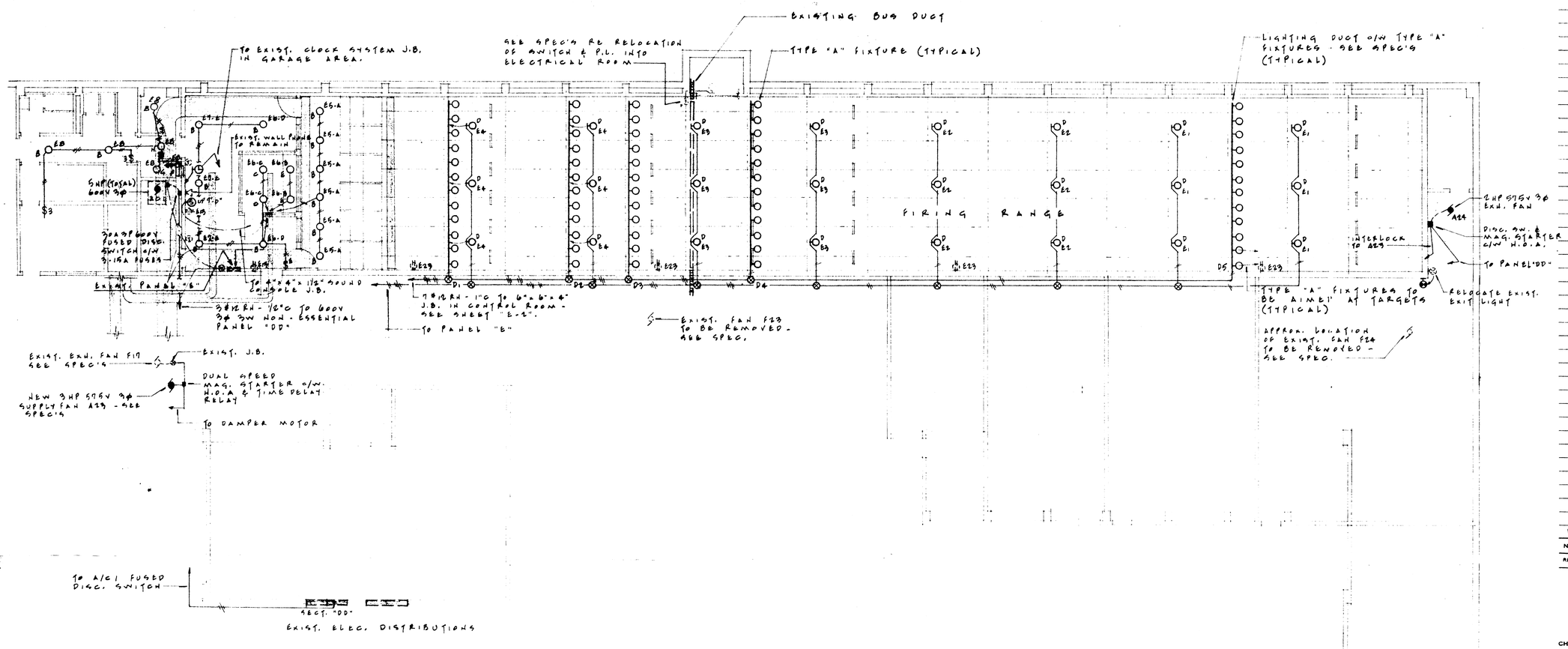
PRELIMINARY
NOT FOR CONSTRUCTION
DATE PLOTTED
December 10, 2010

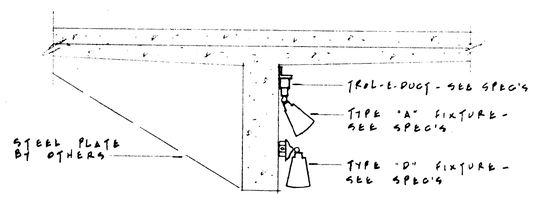
SMS ENGINEERING
SMS Engineering Ltd. Consulting Engineers
770 Bradford Street Winnipeg MB Canada R3H 0N3
Telephone 204.775-0251 Fax 204.772.2153
sms@smseng.com

Project Title
PUBLIC SAFETY BUILDING
COOLING PLANT REPLACEMENT
151 PRINCESS STREET

Drawing Title
MACHINE ROOM COOLING PLANT
ELECTRICAL PLANS

Drawn By	Checked By	Approved By
WPD	IR	BDL
Scale: AS NOTED	Date: MAY 2010	Project No.: 09-307-01
Revision Number: 0	Drawing Number: E1	Sheet Order: 1 OF 1





TYPICAL TYPE "A" & "D" FIXTURE MOUNTING DETAIL
N.T.S.

GENERAL NOTES

No.	PARTICULARS	DATE	BY
1	FOR CONSTRUCTION	APRIL 18/67	

REVISIONS

PROVINCE OF MANITOBA
V. S. BUCKLER
REGISTERED ENGINEER

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL V.S.B.

PRINTING DATE
[redacted]

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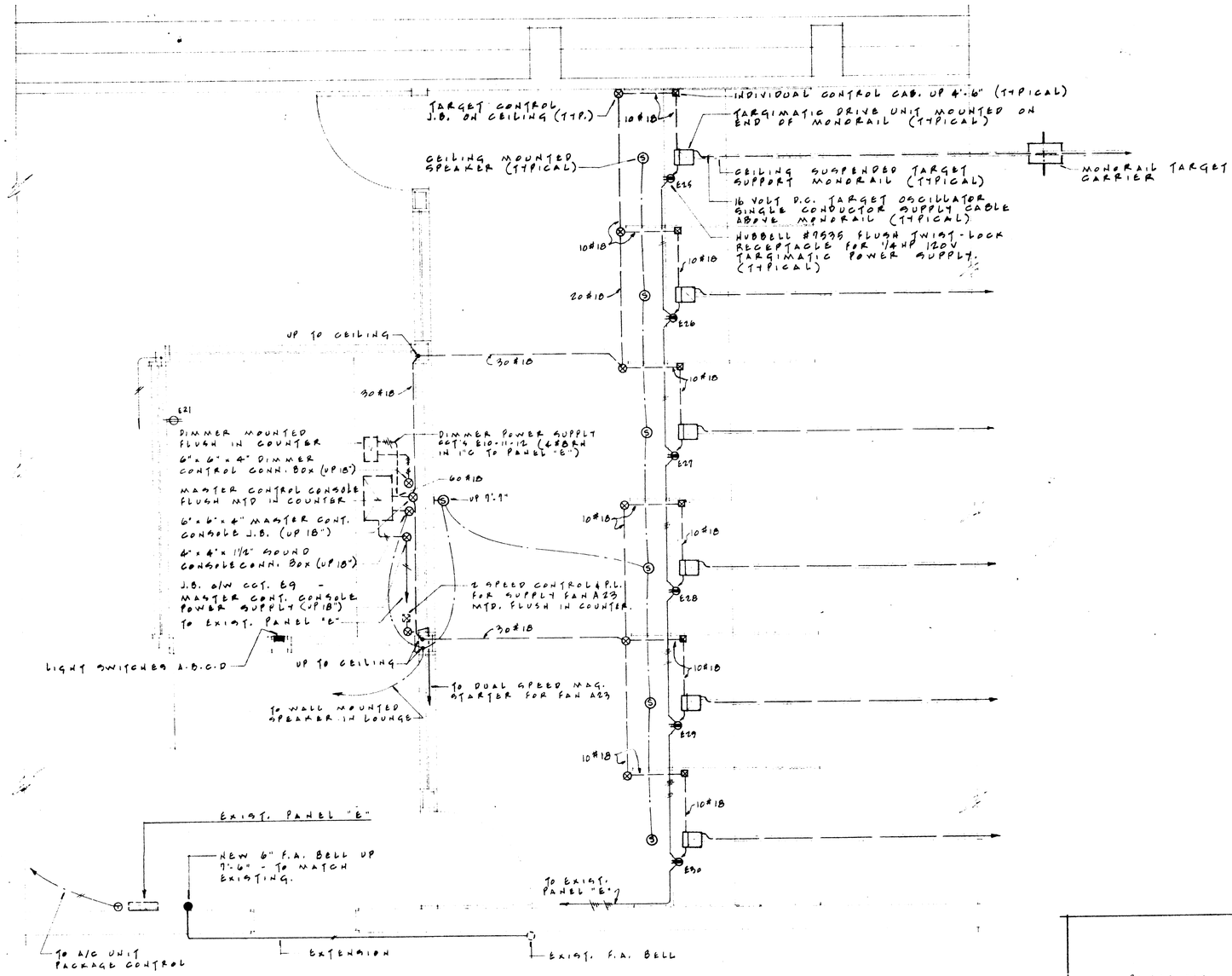
368 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 3-4491

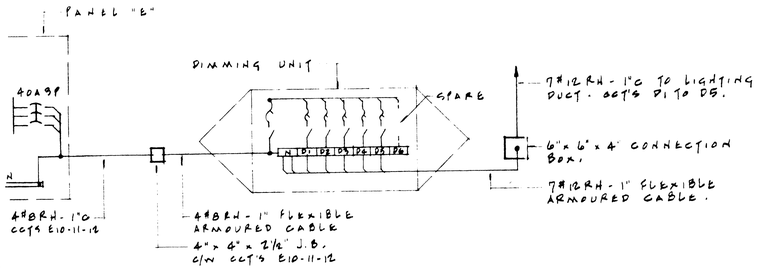
MB CONSULTANTS ELECTRICAL DIV.
576 ST. MARY'S RD. WINNIPEG 8, MAN.

PUBLIC SAFETY BUILDING
FIRING RANGE
WINNIPEG MANITOBA

TITLE PART BASEMENT PLAN
SHEET NO. 6639 E-1

B-14
FILE
REMOVED DIVISIONS PROPERTIES BUILDING INVENTORY.
4 01 1





DIMMER CONNECTION DETAIL
N.T.S.

B-14

GENERAL NOTES

No.	PARTICULARS	DATE	BY
1	FOR CONSTRUCTION	APRIL 10/67	

REVISIONS

PROVINCE OF MANITOBA
V. S. BUCKLER
REGISTERED ENGINEER

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ELECTRICAL V. S. B.

PRINTING DATE [redacted]

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MB CONSULTANTS ELECTRICAL DIV.
576 ST. MARY'S RD. WINNIPEG 8, MAN.

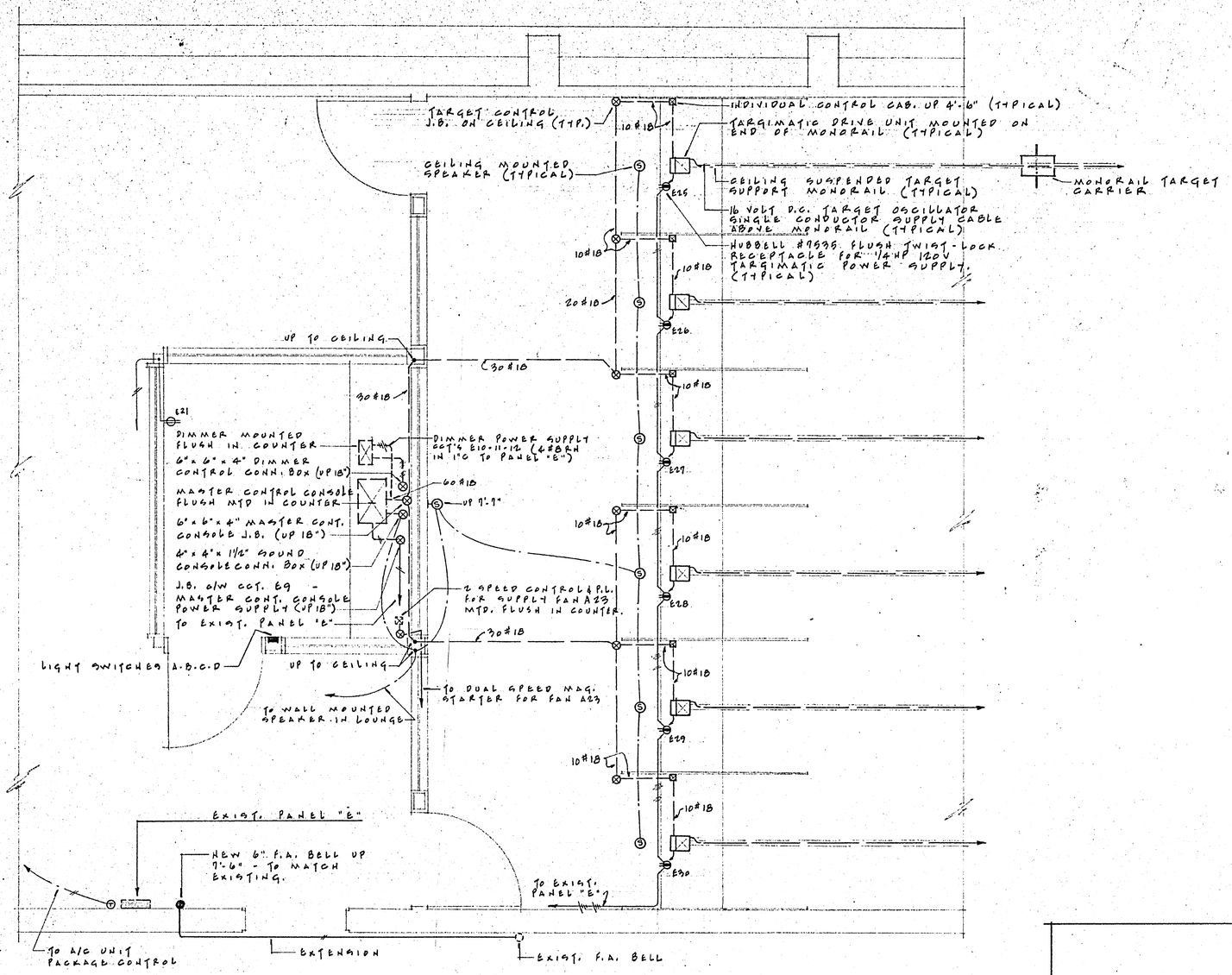
PUBLIC SAFETY BUILDING

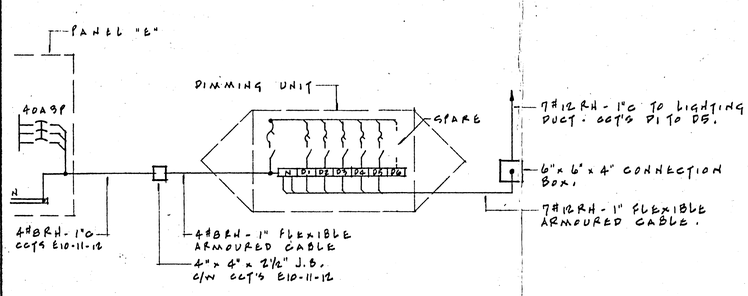
FIRING RANGE

WINNIPEG MANITOBA

TITLE ELECTRICAL DETAILS

SHEET NO. 6639 E-2





DIMMER CONNECTION DETAIL
N.T.S.

B-14

GENERAL NOTES

NO.	PARTICULARS	DATE	BY.
1	FOR CONSTRUCTION	APRIL 19/67	
REVISIONS			

PROVINCE OF MANITOBA
V. S. BUCKLER
REGISTERED ENGINEER

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL V. S. B.

PRINTING DATE

DRAWN BY J. E. V.

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368 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 3-4491

MB CONSULTANTS ELECTRICAL DIV.
576 ST. MARY'S RD. WINNIPEG 8, MAN.

PUBLIC SAFETY BUILDING

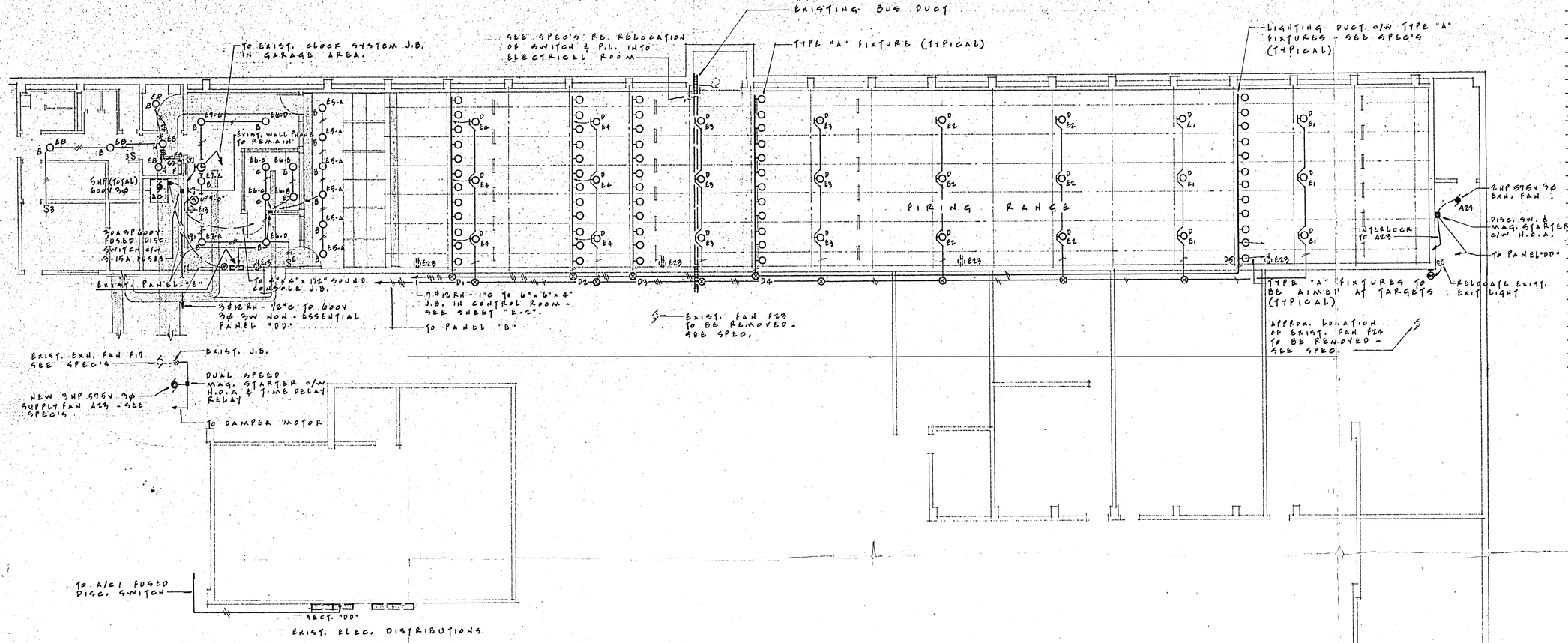
FIRING RANGE

WINNIPEG MANITOBA

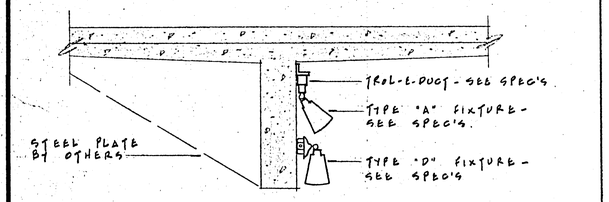
TITLE ELECTRICAL DETAILS

SHEET NO. 6699 E-2

W.J.D. 178H



EXIST. ELEC. DISTRIBUTIONS



TYPICAL TYPE "A" & "D" FIXTURE MOUNTING DETAIL
N.T.S.

GENERAL NOTES

No.	PARTICULARS	DATE	BY
REVISIONS			
1	FOR CONSTRUCTION	APRIL 18/67	

PROVINCE OF MANITOBA
V. S. BUCKLER
REGISTERED ENGINEER

CHECKED FOR:
DESIGN
DETAILS
STRUCTURE
MECHANICAL
ELECTRICAL V.S.B.

PRINTING DATE

DRAWN BY J.E.V.

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The contractor is to verify dimensions and data noted herein with conditions on the site and is held responsible for reporting any discrepancy to the architects for adjustment.

This drawing is not to be used for building purposes until countersigned by:

LIBLING MICHENER & ASSOCIATES ARCHITECTS
368 Main Street, Winnipeg 1, Manitoba, Telephone WHitehall 3-4491

MB CONSULTANTS ELECTRICAL DIV.
576 ST. MARY'S RD. WINNIPEG 8, MAN.

PUBLIC SAFETY BUILDING

FIRING RANGE

WINNIPEG MANITOBA

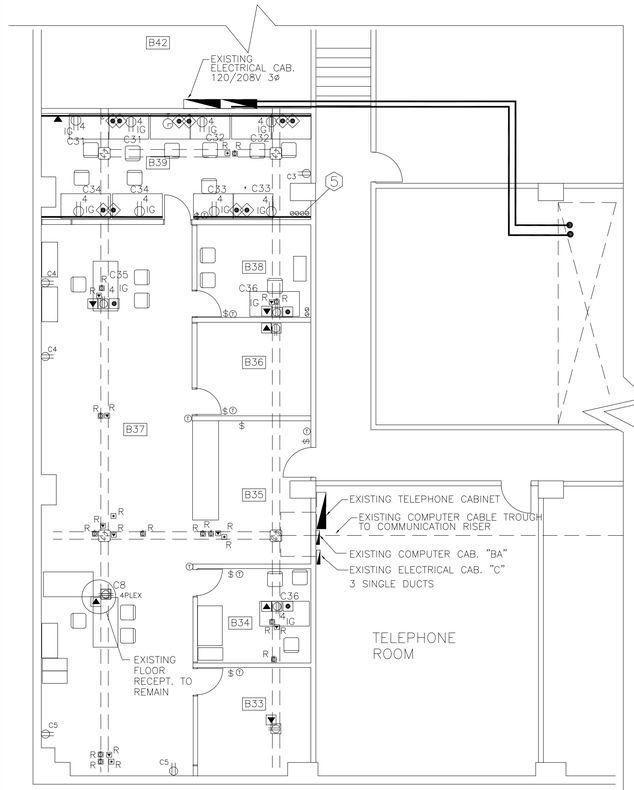
TITLE PART BASEMENT PLAN

SHEET NO. 6699. E-1

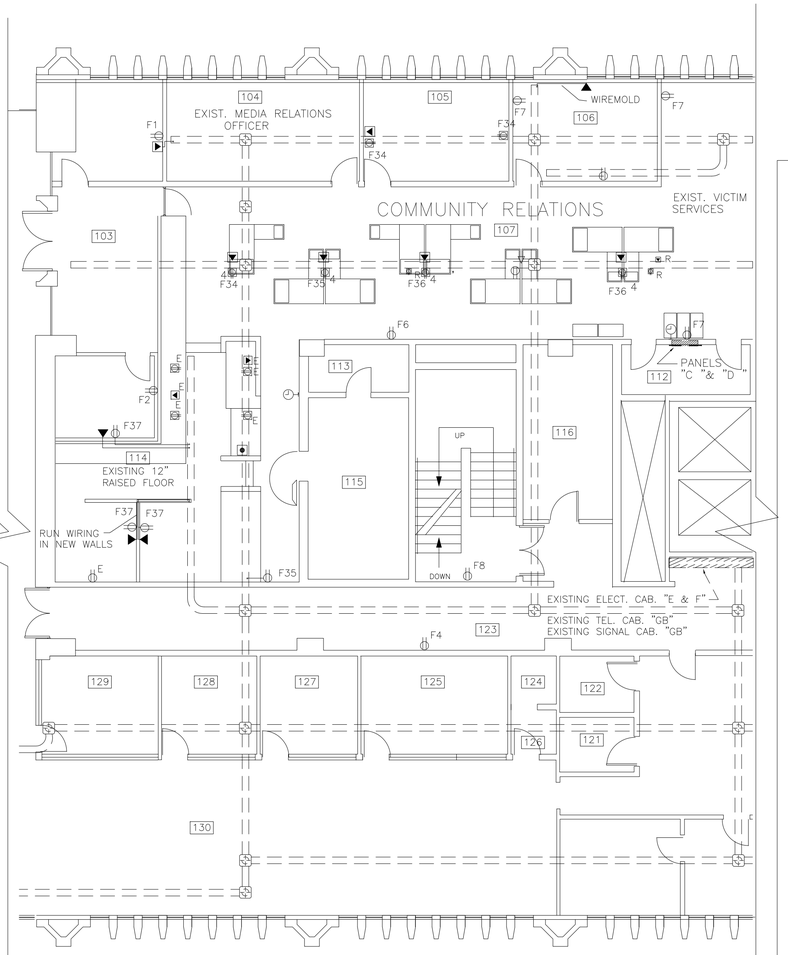
B-14
FILE
RETURN TO CMHC PROPERTIES BUILDING INVENTORY.
4 01 11

1. REMOVE EXISTING FLOOR MOUNTED COMPUTER, TELEPHONE & ELECTRICAL RECEPTACLES AS SHOWN ON PLAN.
2. PROVIDE NEW WALL MOUNTED WIREMOLD COMPUTER,TELEPHONE & ELECTRICAL RECEPT. AS SHOWN ON PLAN & TYPE SPECIFIED IN SPECIFICATION.
3. EXISTING UNDER FLOOR RACEWAY SYSTEM AS SHOWN.
4. PROVIDE NEW FLOOR MTD. COMPUTER,PHONE & ELECT. RECEPTACLES AT UNDER FLOOR DUCT SYSTEM AS SHOWN.
5. 4. BELDON CABLES TYPE 8723 4 CONDUCTOR TWISTED PAIR UP TO THE 6TH FLOOR TELEPHONE ROOM. REFER TO NOTE 6 ON DRAWING E-3.
6. ALL COMPUTER CABLES TYPE AT-424 HSD ALLIED CABLE 100 OHM/16 MV TYPE PCC FT4 RATED ARE TO BE RUN TO EXIST. CABINET "BA" AND THEN UP TO THE 2ND FLOOR TERMINATION CABINET SHOWN ON E-2. THE COMPUTER CABLES ARE TO GO UP THE RISER TO THE 3RD FLOOR AND BACKDOWN TO THE 2ND FLOOR. AT THE COMPUTER TERMINAL OUTLETS LEAVE 10 FEET OF EXCESS CABLE, 25 FEET OF EXCESS CABLE ON THE 3RD FLOOR AND 15 FEET OF CABLE AT THE 2ND FLOOR COMMUNICATION CABINET. ALL CABLES ARE TO BE RUN IN EXISTING CABLE TROUGHS OR CONDUIT.
7. ALL COMPUTER CABLES ARE TO BE RUN TO THE 2ND FLOOR WIRING TERMINATION CABINET VIA THE 3RD FLOOR. RUN ALL CABLES IN THE EXISTING UNDERFLOOR DUCT SYSTEM, CABLE TRAY AND RISER SYSTEM.
8. RUN 2 COMPUTER CABLES UP TO THE 2ND FLOOR CABINET VIA THE 3RD FLOOR. CABLE TYPE BELDON 9907 c/w BNC ENDS INSTALLED AT THE JOB SITE REFER TO NOTE #6.
9. RUN NEW POWER FEEDS FROM THE EXIST. 120/208V PANEL IN EXISTING CABLE TROUGH IN BASEMENT TO THE AIR SHAFT AND UP TO THE 6TH FLOOR REFER TO DRAWING E-3 FOR THE 6TH FLOOR CONTINUATION.

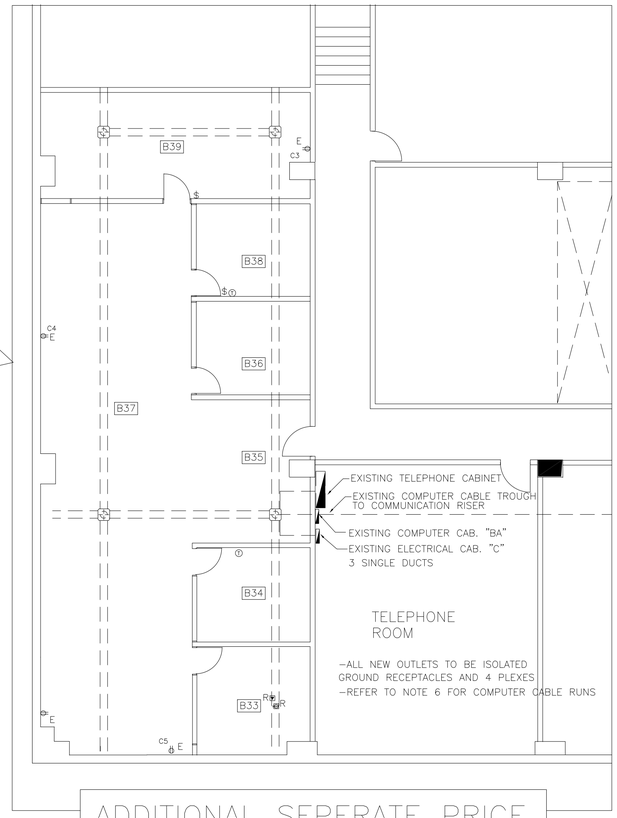
RUN 3 #3/0 AWG R90 IN 2"ø CONDUIT FOR PDU UNIT
RUN 3 #2 AWG R90 IN 1 1/2"ø COND. FOR AC-1 UNIT



BASEMENT FLOOR PLAN
SOUTHEAST CORNER



MAIN FLOOR PLAN
COMMUNITY RELATIONS SECTION



ADDITIONAL SEPERATE PRICE
BASEMENT FLOOR PLAN
REFER TO SPECIFICATION PRICE SHEET

LEGEND

- —EXISTING UNDER FLOOR DUCT SYSTEM 3 COMPARTMENT (PHONE,POWER & COMPUTER)
- —EXISTING ACCESS HANDHOLES FOR UNDER FLOOR DUCT SYSTEM (12" DIA.)
- R —EXISTING FLOOR MOUNTED DUPLEX RECEPTACLE TO BE REMOVED.
- C32 WALL / FLOOR —NEW WALL OR FLOOR MOUNTED DUPLEX RECEPT. SHOWN WIRED TO PANEL & CIRCUIT NO.
- F15 4 —NEW FLOOR MOUNTED 4PLEX RECEPTACLE SHOWN WIRED TO PANEL & CCT. NO.
- 4 IG —NEW WALL MOUNTED 4PLEX ISOLATED GOUND RECEPTACLE
- IG —NEW WALL MOUNTED ISOLATED GROUND RECEPTACLE
- —NEW WALL MOUNTED ISOLATED GROUND RECEPTACLE
- S —NEW SWITCH CONTROLLED WALL MOUNTED DUPLEX RECEPTACLE
- R R —EXISTING WALL OR FLOOR MTD. TELEPHONE OUTLET TO BE REMOVED
- WALL / FLOOR —NEW WALL OR FLOOR MTD. TELEPHONE OUTLET TO BE INSTALLED
- R —EXISTING FLOOR MOUNTED COMPUTER RECEPT. TO BE REMOVED
- WALL / FLOOR —NEW WALL OR FLOOR MOUNTED COMPUTER RECEPT. TO BE INSTALLED
- $ —NEW SINGLE POLE SWITCH
- —EXISTING GANG SWITCHES TO BE RELOCATED
- IC —EXISTING INTERCOM SPEAKER OUTLET
- IC —NEW INTERCOM OUTLET
- —NEW POWER POLE
- —INTERCOM SPEAKER OUTLET
- —DISCONNECT SWITCH
- $ P —SWITCH WITH PILOT LIGHT
- S —HEAT DETECTOR

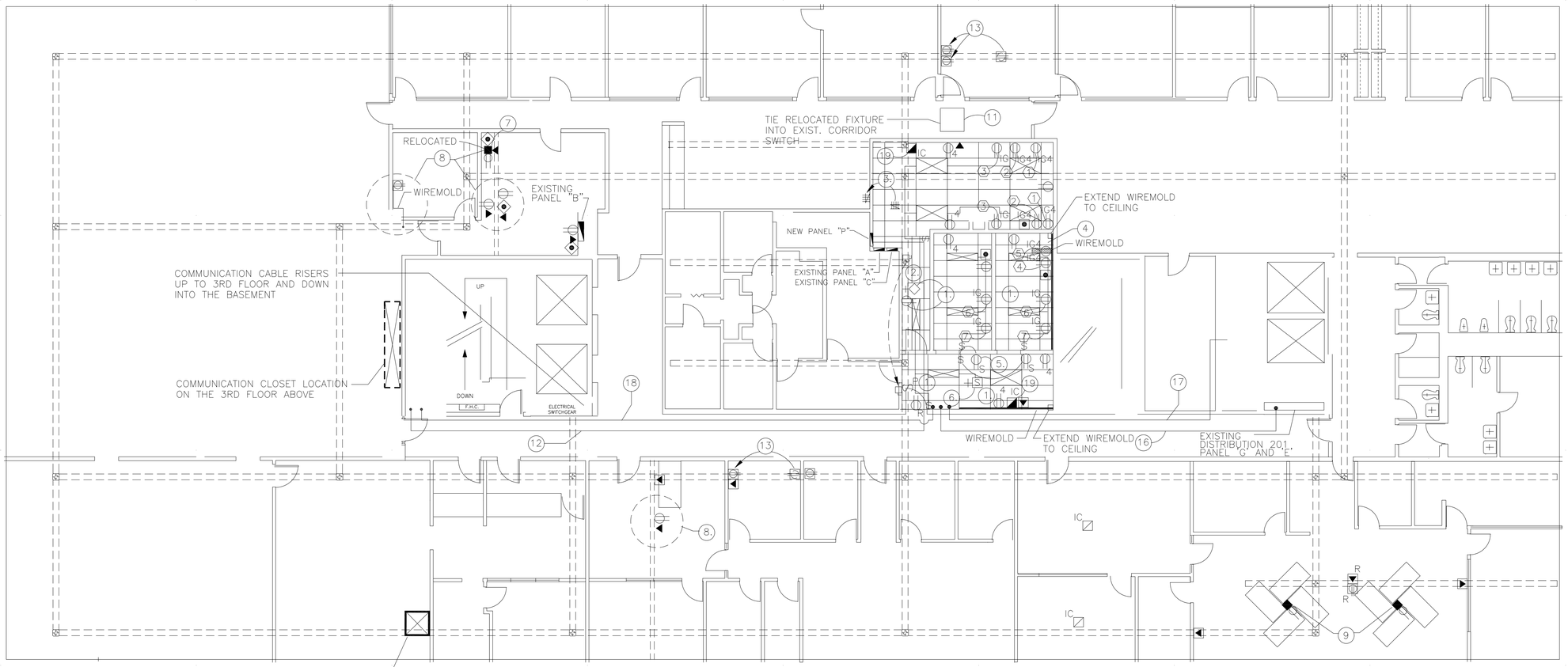
JAD

MAY91

151 PRINCESS STREET
PUBLIC SAFETY BUILDING
RENOVATIONS FOR A.F.I.S.
INSTALLATION

PARTIAL BASEMENT &
MAIN FLOOR PLAN
ELECTRICAL

1/8"=1'-0" 90118 E-1
90118E1.DWG



EXISTING COMMUNICATION CABINET TO WHICH ALL COMPUTER CABLES FROM THE BASEMENT, 1ST AND 2ND FLOOR ARE TO BE RUN TO VIA THE 3RD FLOOR CLOSET ABOVE. LEAVE 15' OF CABLE AT THE CABINET

SECOND FLOOR PLAN

SCALE : 1/8" = 1'-0"

NOTES

1. RELOCATE RECEPTACLES, SWITCHES AND INTERCOM SPEAKERS TO ACCOMODATE FURRED OUT WALLS.
2. RELOCATE ALLEN BRADLEY "DUMP SWITCH" AND RECESS INTO WALL.
3. RELOCATE 4 GANG SWITCHES TO NEW WALL.
4. REMOVE COMMUNICATIONS CABINET AND REMOVE AS MUCH WIRE AS POSSIBLE.
5. MOUNT RECEPTACLE 7'-0" ABOVE FINISH FLOOR.
6. REMOVE EXIST. HEAT DETECTOR
7. INSTALL 1-TELEPHONE AND 1-COMMUNICATION OUTLET INTO EXIST. POWERPOLE.
8. REFER TO SCHEDULE OF PRICES IN TENDER FOR SEPARATE PRICE ITEM.
9. NEW POWER POLES W/ 2-15A DUPLEX RECEPT. WIRED TO PANEL "G" RUN WIRING IN FALSE CEILING SPACE.
10. INSTALL NEW PANEL "P" AND FEED FROM THE 6TH FLOOR PDU UNIT.
11. REMOVE 18-3'X3' FLUORESCENT LIGHT FIXTURES FROM CONSTRUCTION AREA, WHICH INCLUDES 5 FIXTURES THAT INTERFERE WITH NEW WALLS. RELOCATE 1 EXIST. LIGHT FIXTURE TO CORRIDOR.
12. RUN WIRING IN FALSE CEILING SPACE TO PANEL "P" FROM THE SIXTH FLOOR INSTALL 4#2AWG IN 11/2"ø CONDUIT.
13. RELOCATE EXISTING FLR. MTD. RECEPTACLE TO NEW LOCATION, AND INSTALL FLR. MTD. RECEP. C/W SEPERATE CIRCUIT FED FROM PANEL 'A' OR 'C'.
14. ALL RECEPTACLES NOT LISTED IN THE EQUIPMENT SCHEDULE ARE TO BE POWERED OFF OF PANELS 'A' OR 'C'. THERE ARE TO BE NO MORE THAN 2 DUPLEX RECEPTACLES PER CIRCUIT.
15. NEW LIGHTING CIRCUITS ARE TO BE POWERED BY THE EXISTING BREAKERS AND BRANCH CIRCUITS MADE AVAILABLE WHEN THE OLD LIGHTS ARE REMOVED.
16. POWER FEED FROM PANEL 'G' TO AC-2 IS TO BE 208V 3ø. THE BRANCH CIRCUIT CONSISTS OF A 60 AMP. BREAKER AND 3-#6AWG R90 IN 11/4"ø CONDUIT.
17. AC-2 TO CONDENSER CONTROL WIRING IN CONDUIT UP TO THE ROOF VIA THE AIR SHAFT.
18. RUN AN 11/4"ø CONDUIT PARALLEL TO THE PNL 'P' CONDUIT FROM THE 6TH FLOOR COMPUTER ROOM. PROVIDE 14" PULL BOXES ON EACH FLOOR. ALL BENDS TO BE 90° OR LESS AND 90° TURN RADIUS IS TO BE AT LEAST 18".
19. STUB UP 3/4"ø CONDUIT IN THE WALL UP TO THE CEILING SPACE. PROVIDE AN OUTLET BOX IN THE WALL 12" OFF THE FLOOR.

EQUIPMENT SCHEDULE (TO BE POWERED OFF PANEL 'P')

NO.	EQUIPMENT NAME	KEY	QUANITY	NUMBER OF BREAKERS	BREAKER TYPE	RECEPTACLE
(1)	BASE PRC UNT	(BPU)	2	2	1P20A	N5-20R4
(2)	ADD DSK	(DKU)	2	2	1P20A	N5-20R4
(3)	FNGRPT RDR	FR (S)	2	2	1P20A	N5-20R
(4)	BASE PRC UNT	(BPU)	1	1	1P20A	N5-20R4
(5)	ADD DSK	(DKU)	1	1	1P20A	N5-20R4
(6)	SCANNER ASSY	L-FS	2	2	1P20A	N5-20R2
(7)	LASER JET	PPR	2	2	1P20A	N5-20R2

NOTE:

ALL CIRCUITS TO BE ISOLATED GROUND
N5-20R4 NEMA 5-20AMP. RECEPTACLE 4 PLEX
ALL OF THE ABOVE IS TO BE WIRED TO PANEL 'P'

LIGHTING FIXTURE LEGEND

- NEW 2' x 4' RECESSED FLUORESCENT LIGHT FIXTURE
- NEW 1' x 4' RECESSED FLUORESCENT LIGHT FIXTURE
- EXIST. 3'X3' LIGHT FIXTURE TO BE RELOCATED

J.A.D./B.E.K.

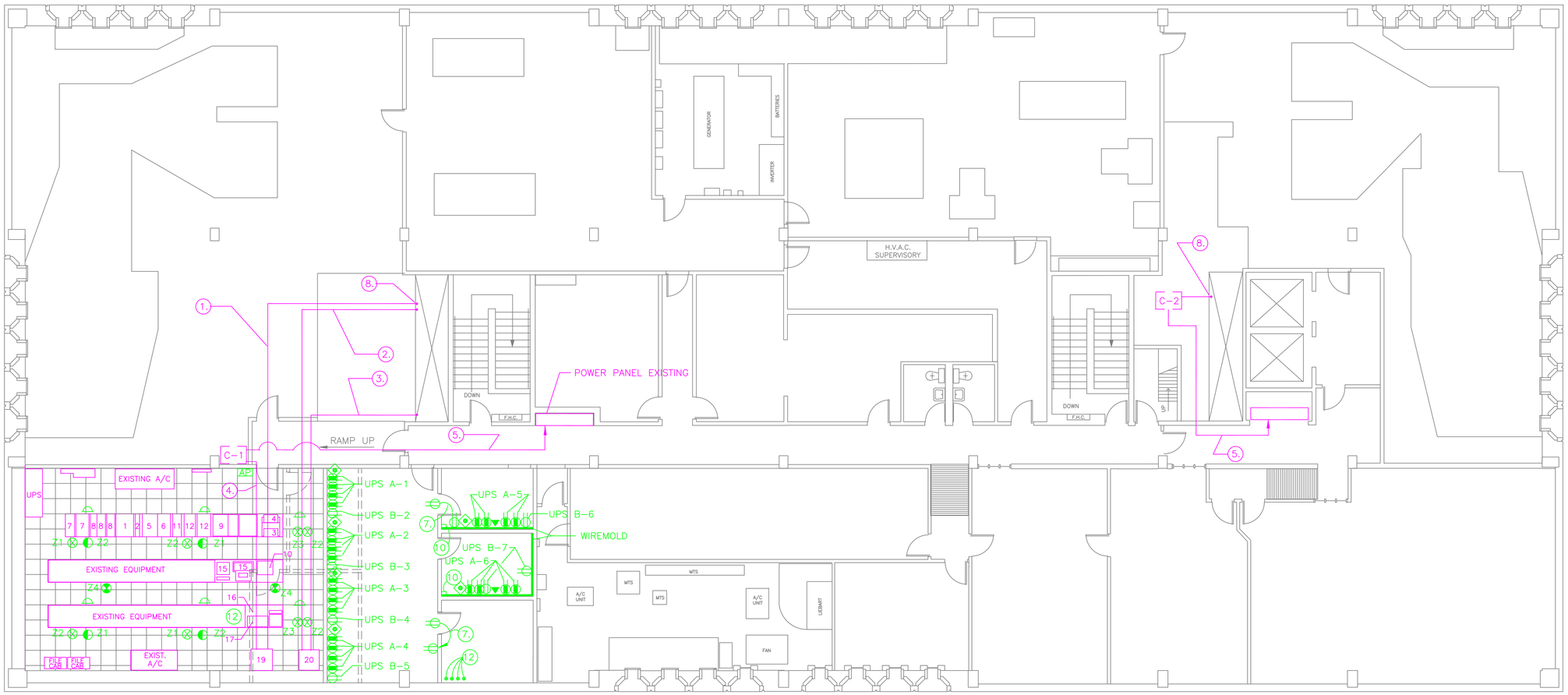
MAY/1991

151 PRINCESS STREET
PUBLIC SAFETY BUILDING
RENOVATIONS FOR A.F.I.S.
INSTALLATION

2ND FLOOR ELECTRICAL

1/8"=1'-0" 90118 E-2
90118E2.DWG

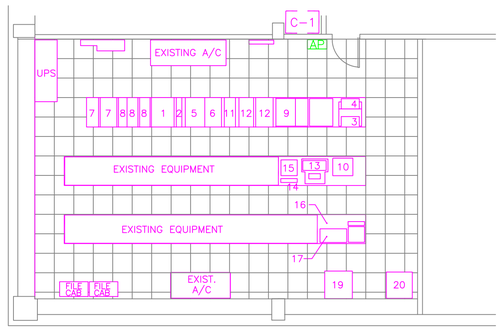
NORTH



NOTES

1. POWER FEED TO AC-1 208V 3ø FROM THE BASEMENT MAIN DISTRIBUTION IS TO BE 3-R90 #2 IN 1 1/2"ø CONDUIT.
2. POWER FEED TO THE PDU UNIT FROM THE BASEMENT MAIN DISTRIBUTION 208V 3ø IS TO BE 3-R90 #3/0 IN 2"ø CONDUIT.
3. POWER FEED FROM THE PDU UNIT TO THE 2ND FLOOR PANEL P IS TO BE 120/208V 3ø 4-R90 #2 IN 1 1/2"ø CONDUIT.
4. CONTROL WIRING FROM THE AC-1 UNIT TO THE CONDENSER ON THE ROOF IN CONDUIT.
5. POWER TO THE ROOFTOP CONDENSERS AND LEE TEMP. HEATER PADS IS 3ø 208V IS TO BE 3R90 #12 IN 3/4"ø CONDUIT. 3-R90.
6. THE DISTANCE FROM THE COMPUTER ROOM ON THE 6TH FLOOR TO THE POWER DISTRIBUTION IN THE BASEMENT IS 100 FEET VERTICALLY AND 72 FEET HORIZONTALLY.
7. RELOCATE RECEPTACLE TO WALL TO ACCOMODATE DOOR OPENING.
8. CONDUIT IS TO RUN DOWN AIRSHAFT.
9. C-1 AND C-2 ARE CONDENSER ON THE ROOF.
10. FEED WIREMOLD DOWN FROM CEILING
11. ALL RECEPTACLES AND BRANCH CIRCUIT WIRING IS TO REMOVED FROM THE TWO OFFICES BEING REMOVED FROM THE COMPUTER ROOM. THE EXISTING CIRCUITS UPS A-1 TO A-6 AND UPS B-2 TO B-6 ARE TO BE EXTENDED INTO THE OFFICES NEXT TO THE COMPUTER ROOM. PANEL BREAKERS AND DUPLEX RECEPTACLES ARE TO BE REUSED.
12. ALL COMPUTER CABLING ON THE 6TH FLOOR TERMINATES IN THE 6TH FLOOR COMPUTER ROOM.
12. 4-BELDON TYPE 8723 CABLES TO TRANSMITTER ROOM (BASEMENT), LEAVE 20' OF EACH CABLE IN ROOM.

EXISTING HALON SYSTEM WIRING	
◐	UNDERFLOOR DETECTOR
⊗	ABOVE CEILING DETECTOR
⊗	CEILING DETECTOR
⌓	REMOTE ALARM LAMP
AP	REMOTE ALARM LAMP
Z2	ZONE IDENTIFICATION
	ALTERATIONS REQUIRED
⊗Z3	BECOMES ⊗Z2
◐Z2	ADD 2 NEW UNDERFLOOR DETECTORS PROVIDE REWIRING BACK TO THE ALARM PANEL



NEW EQUIPMENT SCHEDULE

NO.	EQUIPMENT NAME	QUANTITY	NUMBER OF BREAKERS	BREAKER TYPE	RECEPTACLE
1	M-SUB PROC	1	2	2P30A	FW-3#10AWG
2	PERPH. PROC	1	1	2P20A	FW-3#12AWG
3	LINE PRINTER	1	1	2P20A	FW-3#12AWG
4	STACKER	1	1	2P20A	FW-3#12AWG
5	MAG TAPE	1	1	2P20A	FW-3#12AWG
6	MAG TAPE	1	1	2P20A	FW-3#12AWG
7	DISK DR.	2	2	2P20A	FW-3#12AWG
8	DISK DR.	3	3	2P20A	FW-3#12AWG
9	FNGR PRNT MA	1	1	3P30A	FW-4#10AWG
10	FMP CON	1	1	1P20A	N5-20R
11	OPT DSK PRC	1	1	1P20A	N5-20R
12	OPT DSK UNIT	2	2	1P20A	N5-20R
13	OPT DSK UNIT	6	6	1P20A	N5-20R
14	OPERATOR STA	1	2	1P20A	5-20R4
	DISPLAY				
	KEYBOARD				
	FLOPPY DSK				
15	SER PRT	1	1	1P20A	5-20R
16	ON-LINE TERMINAL	1		1P20A	N5-20R4
	BASE PRC UNT	1	1	FM BPU	
	DISPLAY	1	1		
	KEYBOARD	1			
17	PRINTER (P5)	1	1	1P20A	N5-20R
18	MODEM	3	3	1P20A	N5-20R4
19	AIR CONDITIONER #1	1			
20	50 KVA POWER DISTRIBUTION UNIT	1			

NOTE:

FW - FIELD WIRED TO UNIT
ALL CIRCUITS TO BE ISOLATED GROUND
N5-20R4 NEMA 5-20AMP. RECEPTACLE 4 PLEX
ALL OF THE ABOVE IS TO BE WIRED TO THE PDU

J.A.D./B.E.K.

MAY/1991

151 PRINCESS STREET
PUBLIC SAFETY BUILDING
RENOVATIONS FOR A.F.I.S.
INSTALLATION 6 TH FLOOR

6TH FLOOR ELECTRICAL

1/8"=1'-0" 90118 E-3
90118E3.DWG

NOTES

WORK TO BE DONE

THE WORK INCLUDES THE SUPPLY, DELIVERY, INSTALLATION, TESTING AND PUTTING INTO OPERATION THE EQUIPMENT LISTED BELOW AND SHOWN ON THIS DRAWING :

1. PROVIDE 2"ø CONDUIT FROM EXIST. JUNCTION BOX LOCATED IN DYNASTY BUILDING BASEMENT PARKADE BUILDING AND TERMINATE IN NEW JUNCTION BOX LOCATED ON SOUTH WALL OF PARKADE.
2. PROVIDE 2"ø CONDUIT FROM NEW JUNCTION BOX LOCATED IN GENERATOR ROOM BASEMENT PARKADE 171 PRINCESS ST. TO 3RD FLOOR WIRING CLOSET PUBLIC SAFETY BUILDING. EXTEND THE CONDUIT TO THE NORTH RISER CABINET FROM THE NEW JUNCTION BOX LOCATED IN THE BASEMENT OF THE PUBLIC SAFETY BUILDING.
3. PROVIDE 2"ø CONDUIT FROM WIRING CLOSET 1 TO WIRING CLOSET 4 LOCATED IN 5 TH FLOOR PUBLIC SAFETY BUILDING.
4. PROVIDE 2"ø CONDUIT FROM JUNCTION BOX LOCATED IN SUB-BASEMENT TUNNEL TO WIRING CLOSET LOCATED IN MAIN FLOOR OF COUNCIL BUILDING (CITY CLERK'S DEPT.)
5. PROVIDE 2"ø CONDUIT FROM JUNCTION BOX LOCATED IN SUB-BASEMENT TUNNEL TO WIRING CLOSET LOCATED IN BASEMENT OF 510 MAIN ST. ADMINISTRATION BLDG.
6. PROVIDE 2"ø CONDUIT FROM WIRING CLOSET 6 TO WIRING CLOSET 1 LOCATED IN 510 MAIN ST. ADMINISTRATION BUILDING.
7. PROVIDE A 4"ø PVC CONDUIT UNDER JAMES AVENUE AS SHOWN. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE ALL SERVICES AND TO PROTECT THEM FROM DAMAGE DURING CONSTRUCTION. THE STREET WORK IS TO BE DONE BY A LICENSED CONTRACTOR WHO IS TO TAKE OUT ALL PERMITS REQUIRED TO PERFORM THE WORK.
8. STREET CUTTING AND RESULTING REPAIRS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
9. PROVIDE PULL WIRE IN ALL NEW CONDUIT.

NORTH

MANDARIN BUILDING

JB (EXIST)

JB (EXIST)

EXIST. 4" CONDUIT

KING STREET

ADMINISTRATION BUILDING

UNDERGROUND TUNNEL

COUNCIL BUILDING

J.B. LOCATED IN BASEMENT

PUBLIC SAFETY BUILDING

- J.B. IN DUCT SHAFT ON MAIN FLOOR
- CONDUIT UP DUCT SHAFT TO 3 RD FLOOR, FROM 3RD FLOOR TO 5 TH FLOOR.
- 3 J.B.S ON 5 TH FLOOR, 1 IN FILE ROOM, OTHER 2 IN HALLWAY CEILING.
- CEILING IS MARKED "J.B" AT LOCATIONS.

DYNASTY BUILDING

UNDERGROUND PARKING STRUCTURE

JAMES AVENUE

CURB

20' H.E.W.M.

STEAM

4"ø GAS

3" GAS

12"S.

12"W.M.

CURB

M.T.S.

GENERATOR ROOM

ELEVATORS, STAIRS, ETC.

171 PRINCESS STREET PARKADE
BASEMENT LEVEL

111'
110'
109'
108'
107'
106'
105'
104'
103'
102'
101'
100'

EXIST. DUCT

DYNASTY PARKADE

4"ø PVC CONDUIT

PSB GENERATOR ROOM

INVERT ELEVATION OF CONDUIT TO BE 105.5'

TOP OF FLOOR BASE ELEVATION 100'

SECTION A-A
SCALE : N.T.S.

LEGEND - WIRING CLOSET LOCATIONS

1	MAIN FLOOR MANDARIN BUILDING
2	FIFTH FLOOR DYNASTY BUILDING
3	THIRD FLOOR PUBLIC SAFETY BUILDING
4	FIFTH FLOOR PUBLIC SAFETY BUILDING
5	MAIN FLOOR COUNCIL BUILDING
6	BASEMENT ADMINISTRATION BUILDING
7	BASEMENT ADMINISTRATION BUILDING (NORTHEAST CORNER OF BUILDING)
8	THIRD FLOOR ADMINISTRATION BUILDING
9	FIFTH FLOOR ADMINISTRATION BUILDING
10	SIXTH FLOOR ADMINISTRATION BUILDING

SITE SERVICES LEGEND

- 12" SEWER
- 12" WATER MAIN
- TELEPHONE DUCTS
- 12" HIGH PRESSURE WATER MAIN
- GAS LINE
- STREET LIGHTING

LEGEND

- NEW EMT CONDUIT WITH PULL BOX 50' ON CENTRE
- EXISTING CONDUIT
- PVC CONDUIT SCEPTER MODEL DB-2
- JB JUNCTION BOX 8"X8"X4" DEEP

NO	REVISION/DESCRIPTION	BY	DATE
1.	AS-BUILT		OCT. 31 92

SEALS

DRAWN BY B.K | CHECKED BY | APPROVED
DATE JUNE, 92 | USER APPROVAL

PROJECT

THE CITY OF WINNIPEG
CIVIC PROPERTIES DEPARTMENT
400-180 KING ST. R3B3G8

CITY HALL
COMPUTER SERVICE LOOP
CONDUIT UPGRADING

SHEET TITLE

SITE PLAN

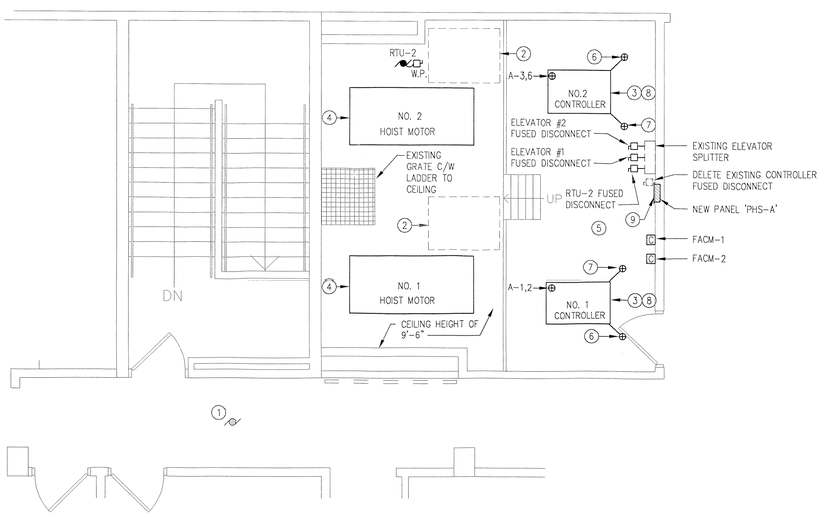
SCALE	PROJECT NO	SHEET NO
1'=30'-0"	92832	E-1

FSITE1.DWG

Description Modernization of Existing Elevators Date 2002.01. File Name

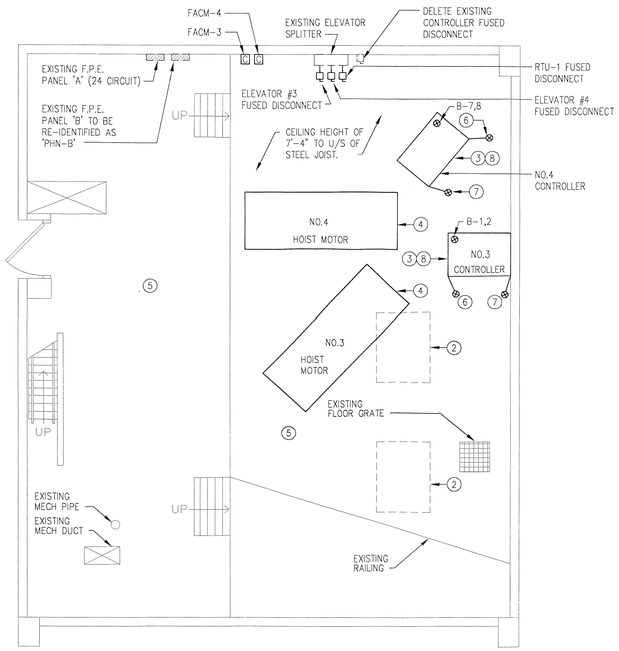
Address 151 Princess St. Project No. 2001-121

18803e1.dwg 9-11-02 3:46:09 pm CST



SOUTH ELEVATOR MACHINE ROOM (ELEVATORS NO. 1 AND 2)

SCALE ¼" = 1'-0"



RTU-1
W.P.

NORTH ELEVATOR MACHINE ROOM (ELEVATORS NO. 3 AND 4)

SCALE ¼" = 1'-0"

NOTES :

SYMBOL LEGEND	
	MOTOR OUTLET
	DISCONNECT SWITCH
C	FIRE ALARM CONTROL MODULE

ALL EQUIPMENT IN DASHED LINES IS EXISTING TO REMAIN UNLESS OTHERWISE NOTED

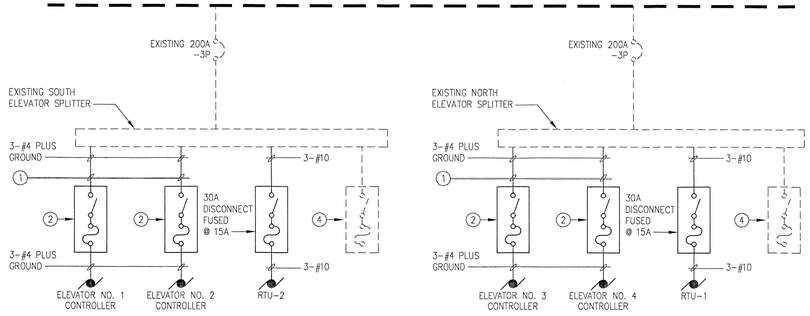
NOTES:

1. EXISTING EXHAUST BLOWER MOTOR TO BE DISCONNECTED BY DIVISION 16. DIVISION 16 TO REMOVE ALL REDUNDANT CONDUIT, WIRING ETC. BACK TO SOURCE.
2. EXISTING ELEVATOR MOTOR GENERATORS TO BE REMOVED.
3. EXISTING ELEVATOR CONTROLLER TO BE REPLACED WITH NEW.
4. EXISTING ELEVATOR HOIST MOTOR TO BE REPLACED WITH NEW.
5. CLEAN AND RE-LAMP EXISTING LIGHT FIXTURES.
6. DIVISION 16 TO SUPPLY AND INSTALL ¾" CONDUIT TO EXISTING MTS BACKBOARD LOCATED IN 6TH FLOOR MECHANICAL ROOM E6024 FOR EACH ELEVATOR CAB PHONE.
7. DIVISION 16 TO WIRE AND CONNECT FROM ELEVATOR CONTROLLER TO EXISTING AUTOMATIC TRANSFER SWITCH IN BASEMENT ELECTRICAL ROOM FOR 'PRE-TRANSFER' RELAY. PRIOR TO TRANSFER FROM EMERGENCY BACK TO NORMAL THE ELEVATOR SHALL STOP AND RESUME OPERATION AFTER TRANSFER TO UTILITY POWER. DIVISION 16 SHALL MODIFY EXISTING TTI TRANSFER SWITCH IN BASEMENT TRANSFORMER ROOM EB043 AS REQUIRED.
8. DIVISION 16 TO MAKE GOOD EXISTING ELEVATORS CARD ACCESS SYSTEM. REFER TO PROJECT SPECIFICATIONS FOR SUMMARY OF WORK.
9. APPROXIMATELY 150 FEET FROM NEW PANEL "PHS-A" IN SOUTH ELEVATOR MACHINE ROOM TO EXISTING PANEL "PHN-B" IN NORTH ELEVATOR MACHINE ROOM.

MOTOR SCHEDULE

MOTOR NO.	DESCRIPTION	LOCATION	KW	H.P.	VOLTS	STARTER & ACCESS MAN.	MAG.	P.L.	H.O.A.	CIRCUIT	DISCONNECT LOCATION	FEEDER SIZE	REMARKS
RTU-1	ROOFTOP UNIT	ROOF		¾	600	C/W UNIT				SEE RISER IN THIS DRAWING	NORTH MECHANICAL ROOM		REFER TO DIVISION 15 FOR CONTROL
RTU-2	ROOFTOP UNIT	ROOF		¾	600	C/W UNIT				SEE RISER IN THIS DRAWING	SOUTH MECHANICAL ROOM		REFER TO DIVISION 15 FOR CONTROL

EXISTING EMERGENCY DISTRIBUTION B101
600V/3ϕ/3W IN BASEMENT ELECTRICAL ROOM



EXISTING 600V/3ϕ/3W ELEVATOR DISTRIBUTION RISER ③

SCALE N.T.S.

RISER NOTES:

1. REPLACE EXISTING WIRING FROM SPLITTER TO NEW DISCONNECT.
2. REPLACE EXISTING DISCONNECT WITH NEW 100 AMP DISCONNECT FUSED @ 80 AMPS.
3. SUPPLY AND INSTALL LAMACOID IDENTIFICATION ON ALL NEW AND EXISTING ELECTRICAL DISTRIBUTION SYSTEM IN ELEVATOR MACHINE ROOMS. INCLUDING EXISTING PANELBOARDS, RECEPTACLES, LIGHT SWITCHES, ETC. REMOVE/CLEAN EXISTING PAINTED IDENTIFICATION FOR ALL EXISTING ELECTRICAL EQUIPMENT.
4. EXISTING ELEVATOR 'DISPATCH' FUSED DISCONNECT TO BE REMOVED.

PANEL BOARD SCHEDULE

PROJECT: PSB ELEVATOR MODERNIZATION FILE: 01-188-03 PANEL: PHN-B (ESSENTIAL POWER) TYPE: –
PANEL LOCATION: NORTH ELEVATOR MACHINE ROOM VOLT/PHASE: 120/208V, 3ϕ, 4W CAPACITY: 225A

SMS ENGINEERING

No.	Item	VA	C.B. Size	No.	Item	VA	C.B. Size
1 A	ELEVATOR NO. 3 CONTROLLER	500	15A	7 A	ELEVATOR NO. 4 CONTROLLER	500	15A
2 B	ELEVATOR NO. 3 CAB LIGHTS	500	15A	8 B	ELEVATOR NO. 4 CAB LIGHTS	500	15A
3 C	SPACE			9 C	SPACE		
4 A	SPARE		15A	10 A	PANEL 'PHS-A' SOUTH ELEVATOR MACHINE ROOM #4 #8 AWG	500	30A -3P
5 B	SPARE		15A	11 B		500	
6 C	SPARE		15A	12 C		1000	
Totals	Phase A 500 Phase B 500 Phase C 0 Totals			Totals	Phase A 1200 Phase B 1200 Phase C 700 Totals		

Fed from:	Grand total VA Phase 'A'	1500
Feeder distance:	Grand total VA Phase 'B'	1500
Current carrying Conductors:	Grand total VA Phase 'C'	1000
Neutral Conductors:	Grand total VA	4000
Protected by:		

Notes
1. EXIST. F.P.E. PANEL IS LABELED 'PANEL B'. DIV. 16 SHALL SUPPLY AND INSTALL NEW LAMACOID IDENTIFICATION AS NOTED.
2. EXIST. BREAKER FOR OKT'S NO. 1 & 2 FOR OLD ELEV. CONTROLLERS SHALL BE REUSED.
3. ONLY ELEVATOR RELATED LOADS ARE TO BE FED FROM THIS PANEL.
4. DIV. 16 TO MODIFY EXIST. PANEL DOOR AND INSTALL NEW SOLID STEEL HASP TO ACCEPT PADLOCK.

PANEL BOARD SCHEDULE

PROJECT: PSB ELEVATOR MODERNIZATION FILE: 01-188-03 PANEL: PHS-A (ESSENTIAL POWER) TYPE: –
PANEL LOCATION: SOUTH ELEVATOR MACHINE ROOM VOLT/PHASE: 120/208V, 3ϕ, 4W CAPACITY: 225A

SMS ENGINEERING

No.	Item	VA	C.B. Size	No.	Item	VA	C.B. Size
1 A	ELEVATOR NO. 1 CONTROLLER	500	15A	7 A	SPACE		
2 B	ELEVATOR NO. 1 CAB LIGHTS	500	15A	8 B	SPACE		
3 C	ELEVATOR NO. 2 CONTROLLER	500	15A	9 C	SPACE		
4 A	SPACE			10 A	SPARE		15A
5 B	SPACE			11 B	SPARE		15A
6 C	ELEVATOR NO. 2 CAB LIGHTS	500	15A	12 C	SPARE		15A
Totals	Phase A 500 Phase B 500 Phase C 1000 Totals			Totals	Phase A 0 Phase B 0 Phase C 0 Totals		

Fed from:	Grand total VA Phase 'A'	500
Feeder distance:	Grand total VA Phase 'B'	500
Current carrying Conductors:	Grand total VA Phase 'C'	1000
Neutral Conductors:	Grand total VA	2000
Protected by:		

Notes
1. PANEL DOORS TO BE COMPLETE WITH SOLID STEEL PADLOCKABLE DOOR HASP.

FIRE ALARM SCHEDULE

ZONE	DESCRIPTION
FACM-1	SOUTH ELEVATOR MAIN FLOOR HOMING
FACM-2	SOUTH ELEVATOR ALTERNATE FLOOR HOMING
FACM-3	NORTH ELEVATOR MAIN FLOOR HOMING
FACM-4	NORTH ELEVATOR ALTERNATE FLOOR HOMING
EXISTING	EXISTING SOUTH ELEVATOR MAIN FLOOR LOBBY. NOTE (1).
EXISTING	EXISTING NORTH ELEVATOR MAIN FLOOR LOBBY. NOTE (1).

NOTES:
1. DIVISION 16 TO REPROGRAM EXISTING SMOKE DETECTORS AS REQUIRED TO HOME DESIGNATED FIRE FIGHTERS ELEVATORS TO MAIN FLOOR ON FIRE CONDITION. ELEVATORS SHALL HOME TO THE DESIGNATED ALTERNATE FLOOR LEVEL IN THE EVENT OF AN ALARM ON THE PRIMARY (MAIN) ELEVATOR HOMING FLOOR.

SMS ENGINEERING
SMS Engineering Ltd. Consulting Engineers
770 Bradford Street Winnipeg MB Canada R3H 0N3
Telephone 204.775.0291 Fax 204.772.2153
sms@smseng.mb.ca

01-188-03

NO.	REVISION/DESCRIPTION	BY	DATE
2	ISSUED FOR TENDER	IR	13SEP02
1	95% FOR PRE-TENDER REVIEW	IR	

SEALS

PROVINCE OF MANITOBA A.M. LOHSE Sept 11/02 REGISTERED ENGINEER

APEGM Certificate of Authorization No. 166 Expires 30 APRIL 2003 signature Sept. 11/02 date

DRAWN BY NC/AA CHECKED BY IR APPROVED AML
DATE 2002.01.18 USER APPROVAL

Winnipeg
CITY OF WINNIPEG
PLANNING, PROPERTY & DEVELOPMENT DEPARTMENT
CIVIC ACCOMMODATIONS DIVISION
300 – 65 GARRY ST. R3C 4K4

PROJECT
Modernization of Existing Elevators at The Public Safety Building
151 Princess St.

SHEET TITLE
North & South Elevator Machine Rooms - Electrical

SCALE	PROJECT NO.	SHEET NO.
1/4" = 1'-0"	2001-121	E-1

Address 151 PRINCESS STREET Project No. 2003-244 Description PARTIAL ELECT. SCHEMATIC Sheet no.E-IRI Date JAN. 1998 File Name 2003244EIRI.DWG

EXISTING 600V/3Ø/3W MAIN DISTRIBUTION SWITCHGEAR (NON ESSENTIAL)

225A. 3P. PARCS FEED

300A. 3P. FACCS FEED

NO E 600V FEED FROM MAIN DISTRIBUTION

NC D 600V HOUSE POWER TO TRANSFER SWITCH

NC C LOAD

NC B EMERGENCY POWER TO TRANSFER SWITCH

NO A 600V EMERGENCY POWER TO LOAD

AUTO TRANSFER SWITCH

150 KW. 1875 KVA., .8 pf
347/600V/3Ø/4W
EMERGENCY DIESEL GENERATOR

200 A.

125 A. 3P

NONESSENTIAL MCC 1 6 TH FLOOR

225 A. 3P MAIN BREAKER

347/600V/3Ø/4W/400A. COMPUTER SUB-DISTRIBUTION 'CSD600-6A'

70 A. 3P A/C SPLITTER

600V/3Ø/3W A/C SPLITTER

EXIST. A/C UNIT

EXIST. A/C UNIT

EXIST. FAN F-1

30 A. 3P

15 KVA

PANEL TR - 6A

100 A. 3P

600V/3Ø/3W.
DRY TYPE TRANSFORMER TR-6C

75 KVA K20

120/208V/3Ø/4W

50 A. 3P UPS RECTIFIER FEED A.F.I.S.

20 A. 3P

225 A. 3P

225 A. 3P

100 A. 3P

100 A. 3P A/C

100 A. 3P

125 A, 600 V NONESSENTIAL SPLITTER (IN CAD GENERATOR RM.)

200 A. MANUAL SWITCH

6 JOHN DEERE DISCONNECT

3 200 A. 3P NONESSENTIAL DISCONNECT

AUTO TRANSFER SWITCH

5

4

200 A. 3P MANUAL TRANSFER SWITCH

7

120/208V/3Ø/4W 400 A. SPLITTER

LIQUIDTITE FLEXIBLE CONNECTION

UPS FOR A.F.I.S.

40 KVA., UPGRADABLE TO 50 KVA., BREAKERS SIZED FOR 40 KVA & FEEDERS SIZED FOR 50 KVA

TO P.A.R.C.S. AUTO-TRANSFER SWITCH TO INHIBIT BATTERY CHARGING WHILE ON EMERGENCY POWER

UPS/STATIC BYPASS

200 A. 3P MAINT. BYPASS

MAINT. BYPASS C/W 2-200 A. 3P NON-AUTO BREAKERS MAKE BEFORE MAKE

125 A. 600V SPLITTER

15 A. 2P DAMPER CONTROL DISCONNECT

1

600 V

120V

TO DAMPER CONTROL

125 A.

2

125 A. 3P KOEHLER M/G DISCONNECT

KOEHLER NATURAL GAS GENERATOR

120V/208V/3Ø/4W/250A. COMPUTER SUB-DISTRIBUTION 'CSD208-6A'

150 A. SHUNT TRIP DISCONNECT

PANEL UPS - A PARCS COMPUTER ROOM

70 A.

60 A.

PANEL G TRANSMITTER ROOM

PANEL GA TRANSMITTER ROOM

100 A. 4 TH FLOOR POLICE DISPATCH

200 A. SHUNT TRIP DISCONNECT

A.F.I.S. DIST. 6 TH FLOOR PARCS CPU ROOM

A.F.I.S PANELBOARD 120/208V 3Ø/4W 225A

60 A.

A.F.I.S. DIST. 6 TH FLOOR PARCS CPU ROOM

2 ND FLOOR A.F.I.S. AREA

PANEL P

MTS/MACHINE ROOM CDP 100 600V/3Ø

70 A. 3P

70 A. SPARE

15 A.

30 A.

100 A.

40 A.

15 A.

20 A.

15 A.

40 A.

A/C CAD LIEBERT

A/C # 1

A/C # 2 DISPATCH

LIEBERT CONDENSER

BASEBOARD HEATERS

BASEBOARD HEATERS POLICE DISPATCH

3Ø, 3W, 125 A. MAINS

50 A. 3P

60 A. 3P

45 KVA 600 : 120/208V,3Ø

50 KVA 600 : 480V., 3Ø AUTO TRANSFORMER

600 V.

120/208V

PANEL GB

TRANSMITTER ROOM

100 A. N.C. PANEL CPA

100 A. N.C. PANEL CP

100 A. N.C. UPS B CAD

100 A. N.C. U 200

100 A. N.C. UPS 5

4 TH FLOOR POLICE DISPATCH DISTRIBUTION

5 TH FLOOR SERVER ROOM

OFF

MAINT. BYPASS MAKE BEFORE BREAK

FACCS 40 KVA UPS

FACCS UPS

1). "CSD208-6A" RECONNECTED TO A.F.I.S. DIST. 6th FLOOR REMOVED "EAST WALL SOUTH FAN RM", "UPS PARCS COMP RM, & MAINT. BYPASS". MBD 11/03

NO.	REVISION/DESCRIPTION	BY	DATE

SEALS

DRAWN BY B.K. | CHECKED BY | APPROVED

DATE Jan. 1998 | USER APPROVAL

THE CITY OF WINNIPEG
CIVIC BUILDINGS DEPARTMENT
400-180 KING ST. R3B 3G8

PROJECT

PUBLIC SAFETY BUILDING
151 PRINCESS STREET

SHEET TITLE

SINGLE LINE ELECTRICAL DISTRIBUTION SCHEMATIC

SCALE	PROJECT NO	SHEET NO
N.T.S.	2003-244	E-1R1