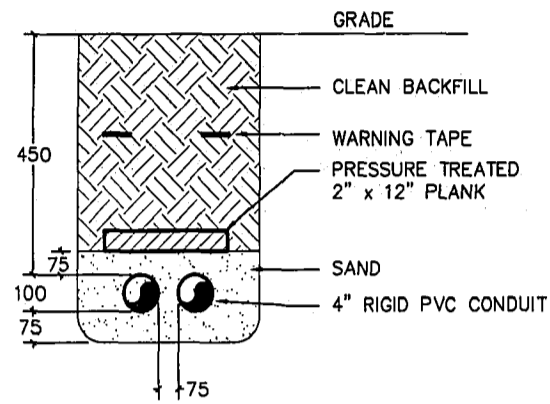
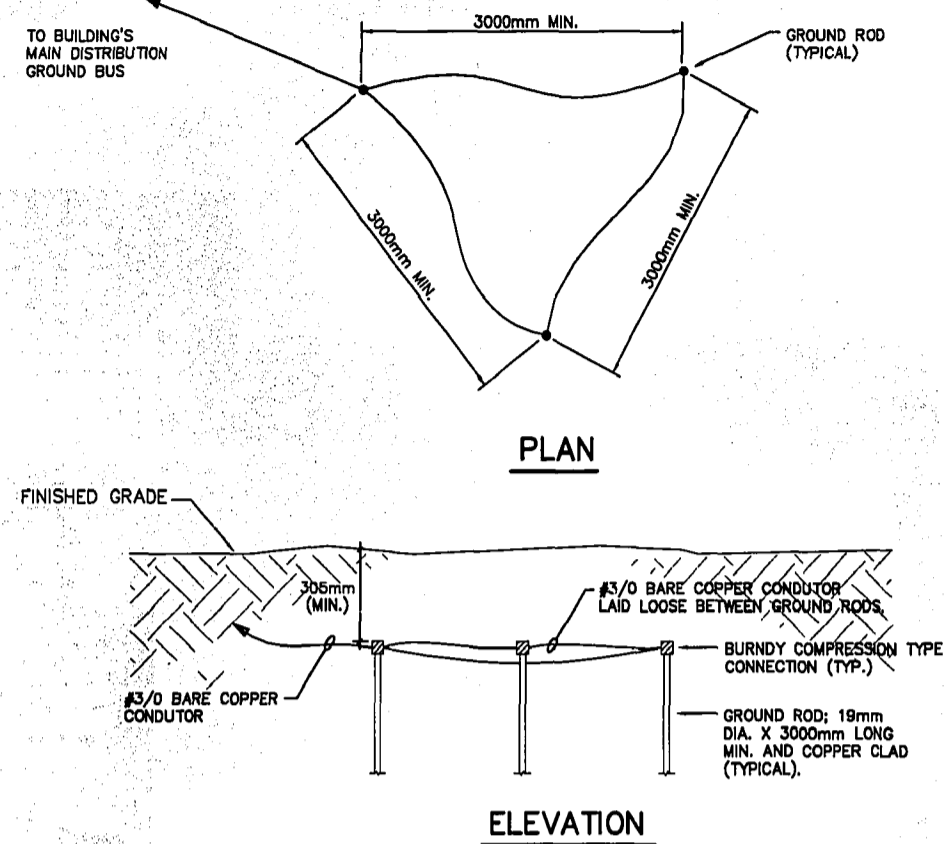


## APPENDIX C – MONTCALM PUMPING STATION HISTORICAL RECORD DRAWINGS

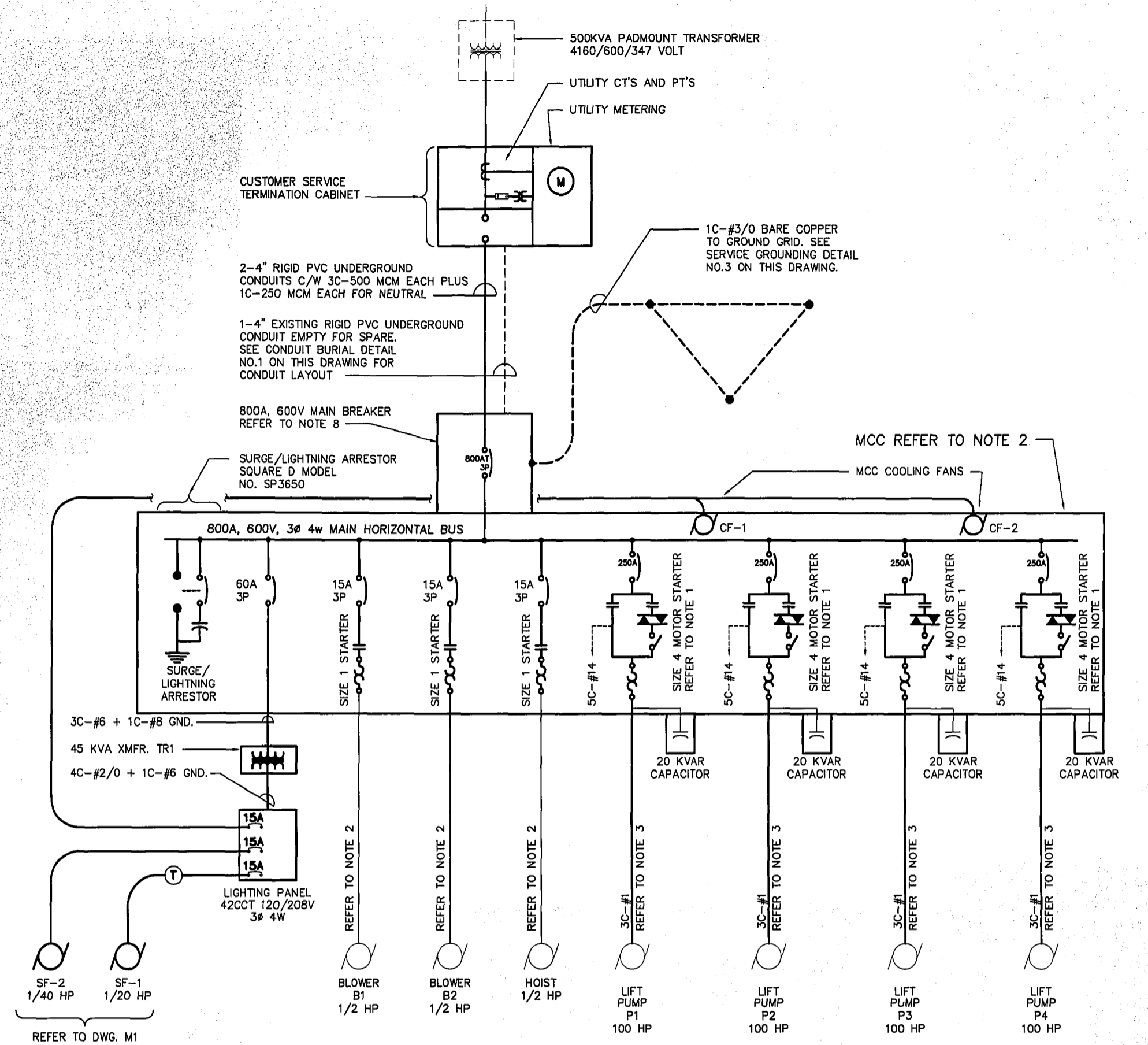
- **DRAWINGS:**
  - **DRAWING 261**
  - **DRAWING 262**
  - **DRAWING 263**
  - **DRAWING 264**
  - **DRAWING 265C**
  - **DRAWING 481**
  - **DRAWING 483**
  - **DRAWING 637**
  - **DRAWING 640**
  - **DRAWING 1541**
  - **DRAWING 1542**
  - **DRAWING 1543**



1 CONDUIT BURIAL DETAIL  
E2 SCALE N.T.S.



3 SERVICE GROUNDING DETAIL  
E2 SCALE N.T.S.



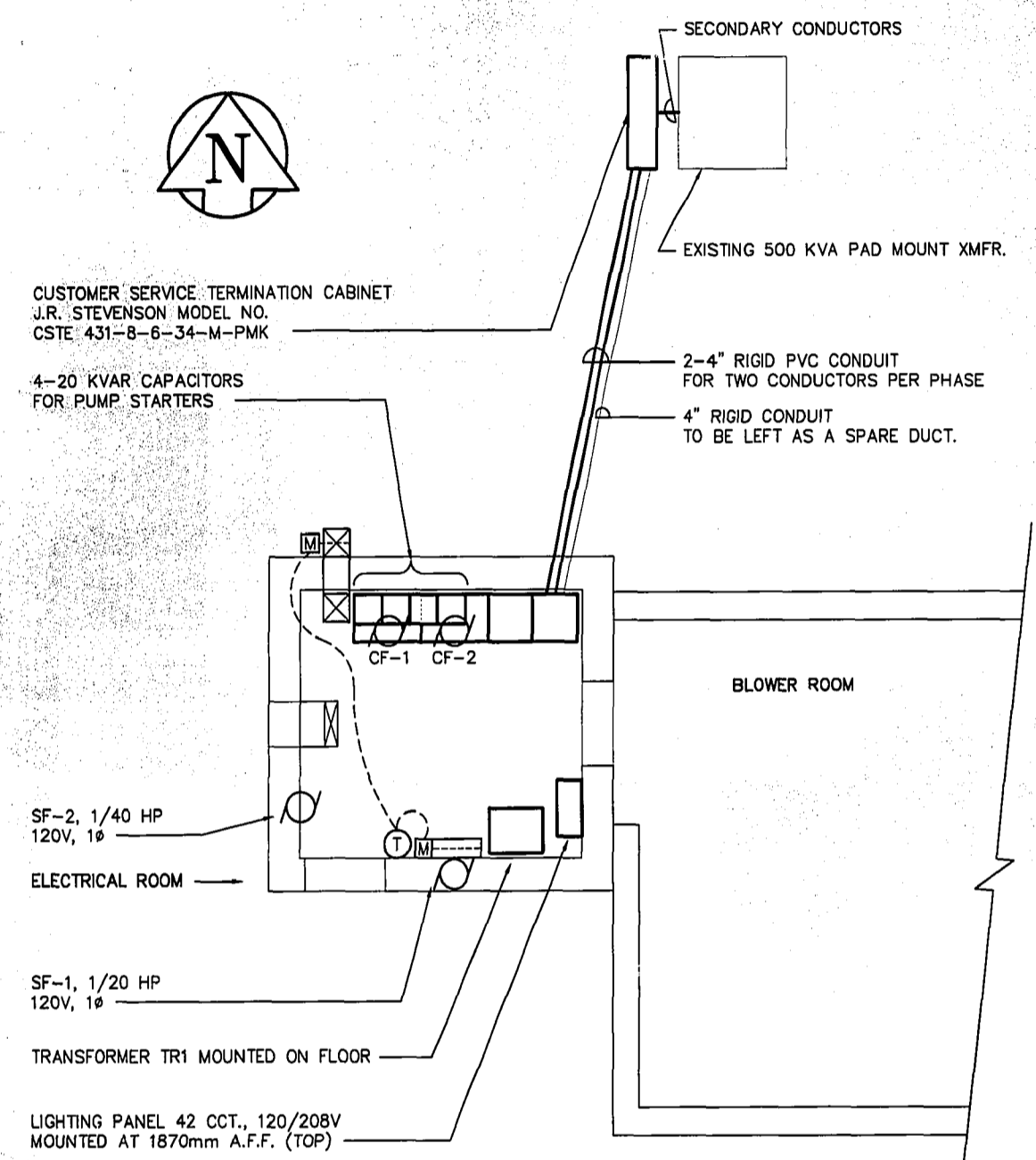
2 SINGLE LINE DIAGRAM  
E2 SCALE N.T.S.

UNIT NO.	NAME	MOTOR LOCATION	H.P.	VOLTS	CIRCUIT	BKR	FEEDER & CONTROL CONDUIT & WIRE	M.C.C. NO.	CONTROL								
									STARTER LOCATION	C.S.A. SIZE MAN	H.O.A.	ELAPSE TIME MT	EXTERNAL RESET	AMP METER	RED RUN P.L.	CONTROL XMFR.	THERMISTORS
BLOWER B1	AIR BLOWER NO. 1	BLOWER ROOM	1/2	600 3φ	—	15A 3P	REFER TO SINGLE LINE DIAGRAM	MCC	1	—	—	Δ	—	Δ	Δ	—	—
BLOWER B2	AIR BLOWER NO. 2	BELOW ELECTRICAL	1/2	600 3φ	—	15A 3P	REFER TO SINGLE LINE DIAGRAM	MCC	1	—	—	Δ	—	Δ	Δ	—	—
HOIST	ELECTRIC EQUIPMENT HOIST	ELECTRICAL ROOM	1/2	600 3φ	—	15A 3P	REFER TO SINGLE LINE DIAGRAM	MCC	1	—	—	—	—	Δ	—	—	
LIFT PUMP P1	LIFT PUMP NO. 1	PUMP ROOM	100	600 3φ	—	250A 3P	5C-#14 (CONTROL) 3C-#1 + #4 GND.(FEED)	MCC	4	□	Δ	Δ	Δ	Δ	Δ	—	CONTROL PANEL
LIFT PUMP P1	LIFT PUMP NO. 2	PUMP ROOM	100	600 3φ	—	250A 3P	5C-#14 (CONTROL) 3C-#1 + #4 GND.(FEED)	MCC	4	□	Δ	Δ	Δ	Δ	Δ	—	CONTROL PANEL
LIFT PUMP P1	LIFT PUMP NO. 3	PUMP ROOM	100	600 3φ	—	250A 3P	5C-#14 (CONTROL) 3C-#1 + #4 GND.(FEED)	MCC	4	□	Δ	Δ	Δ	Δ	Δ	—	CONTROL PANEL
LIFT PUMP P1	LIFT PUMP NO. 4	PUMP ROOM	100	600 3φ	—	250A 3P	5C-#14 (CONTROL) 3C-#1 + #4 GND.(FEED)	MCC	4	□	Δ	Δ	Δ	Δ	Δ	—	CONTROL PANEL
SF-1	SUPPLY FAN NO. 1	SOUTH WALL ELECTRICAL	1/20	120 1φ	—	15A 1P	3C-#12 TECK CABLE OR RW60 IN 1" RIGID ALUM.	—	—	—	—	—	—	—	—	—	T-STAT AND DAMPERS
SF-2	SUPPLY FAN NO. 2	WEST WALL ELECTRICAL	1/40	120 1φ	—	15A 1P	3C-#12 TECK CABLE OR RW60 IN 1" RIGID ALUM.	—	—	—	—	—	—	—	—	—	—

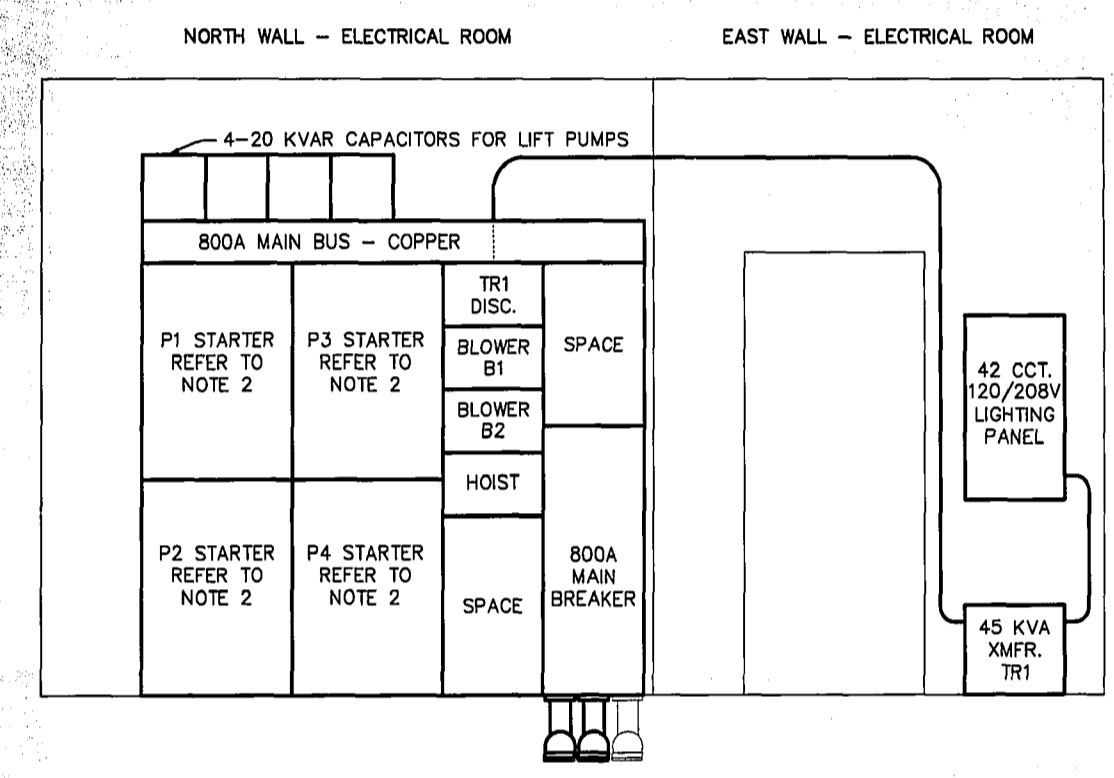
- NOTE:
- 5C-#14 IN 1" RIGID AL. CONDUCTOR FROM EACH PUMP MOTOR STARTER TO PUMP CONTROL PANEL (LCP1) WHICH IS LOCATED TWO LEVELS BELOW ELECTRICAL ROOM. CONTROL WIRING TERMINATED IN PUMP CONTROL PANEL AND PUMP MOTOR STARTERS.
  - ALL BUS BARS ARE TIN PLATED.
  - Cu AL COMPRESSION TYPE TERMINATION C/W HEATSHRINK OVER THE TERMINATION AND CONDUCTOR FOR THE MAIN SERVICE BREAKER AND THE 4-100 HP PUMPS CONNECTIONS.

REID, CROWTHER & PARTNERS LIMITED  
WINNIPEG  
**RECORD DRAWING**  
SIG. DATE DECEMBER 1996

		ENGINEER'S SEAL ORIGINAL SIGNED BY P. STRYK	<b>THE CITY OF WINNIPEG</b> WORKS AND OPERATIONS DIVISION WATER AND WASTE DEPT.
DESIGNED BY PS CHECKED BY PS DRAWN BY CPG APPROVED BY	HOR. SCALE: AS NOTED RELEASED FOR	REGIONAL OPERATIONS 96-01-31	CITY DRAWING NUMBER <b>1542</b> SHEET 2 OF 3
2 RECORD DRAWING 12/96 PS 1 ISSUED FOR TENDER 02/96 PS NO. REVISIONS DATE BY DATE	96-01-22 DATE 96-01-31 DATE	CONSULTANT DRAWING NO. 61776 - E2	<b>MONTCALM SEWAGE PUMPING STATION</b> ELECTRICAL ROOM SINGLE LINE DIAGRAM AND MISC. DETAILS <b>E2</b>



1 MAIN FLOOR EQUIPMENT  
E1 SCALE 1 : 50



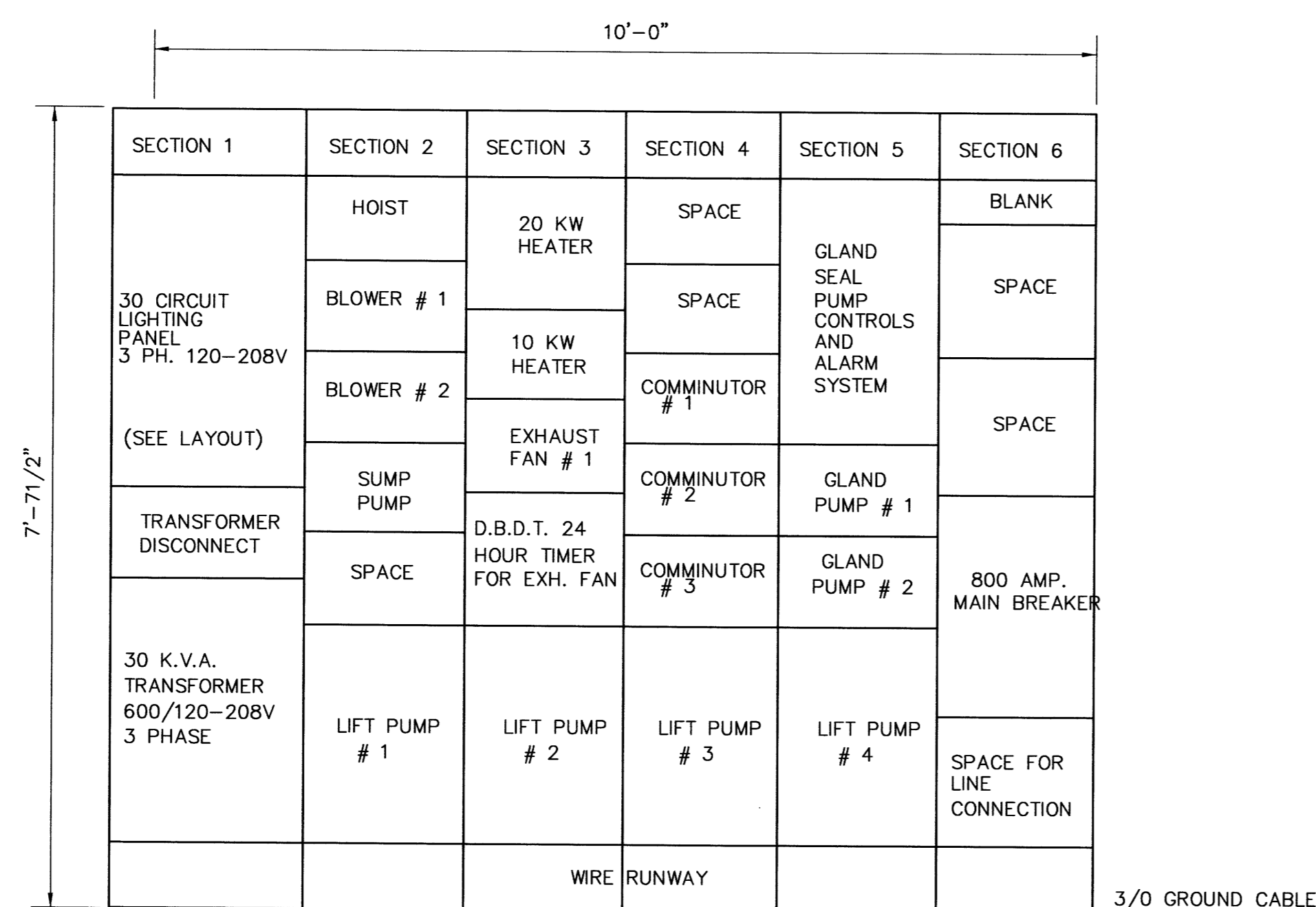
NOTE: 1. REFER TO DRAWING NO. E2-A FOR SINGLE LINE DIAGRAM.  
2. SC-#14 FOR EACH PUMP (P1 TO P4) STARTER TO THE CONTROL PANEL LOCATED ON THE "PUMP MOTOR ROOM" LEVEL LOCATED TWO LEVELS BELOW THE ELECTRICAL ROOM.

2 MCC ELEVATION  
E1 SCALE 1 : 25

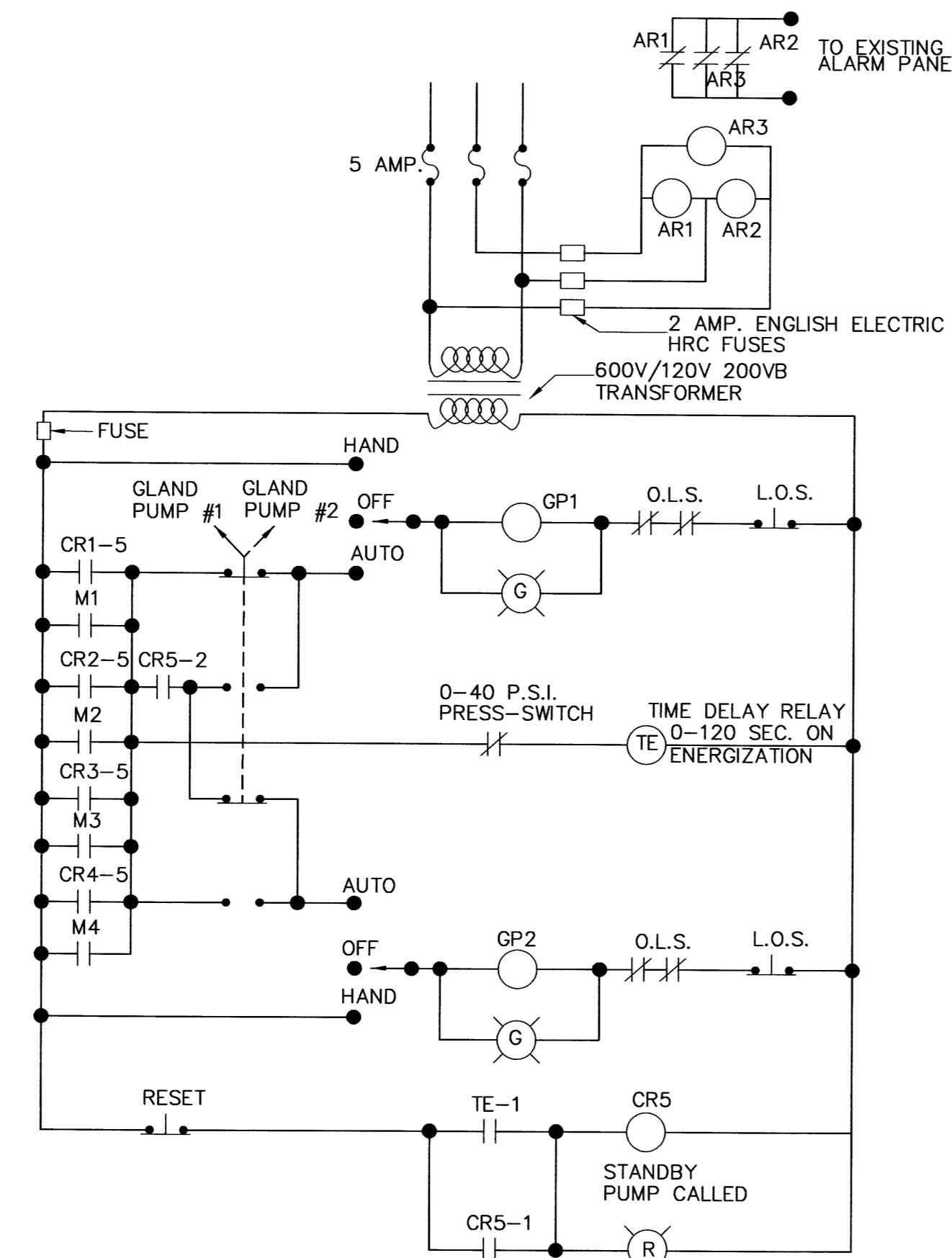
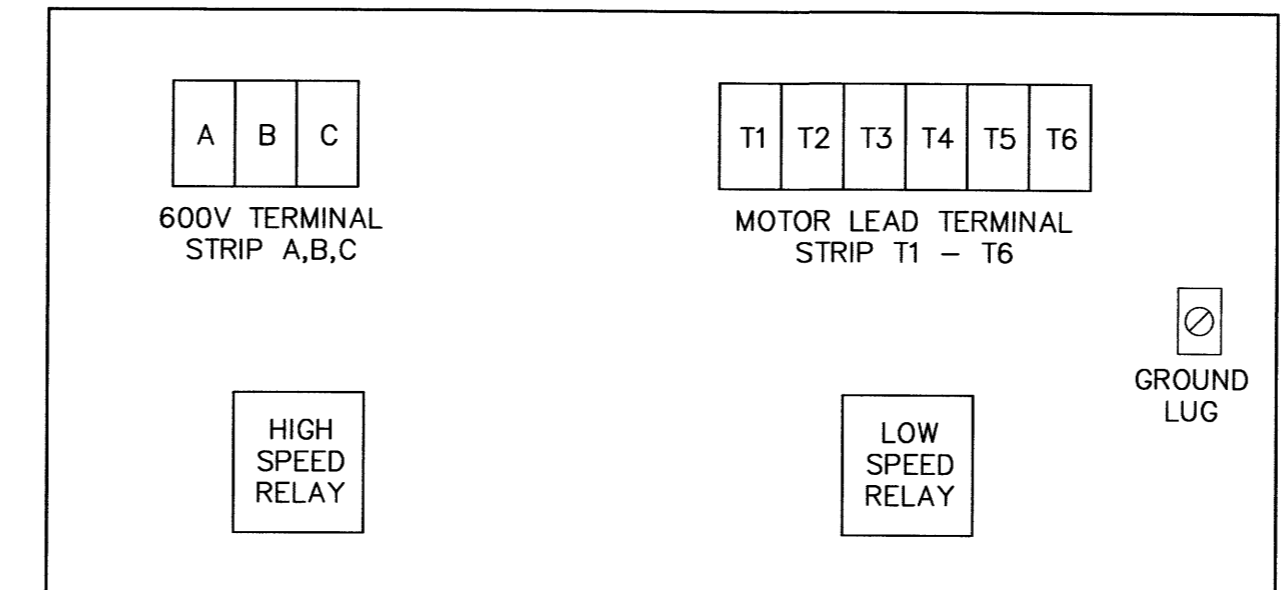
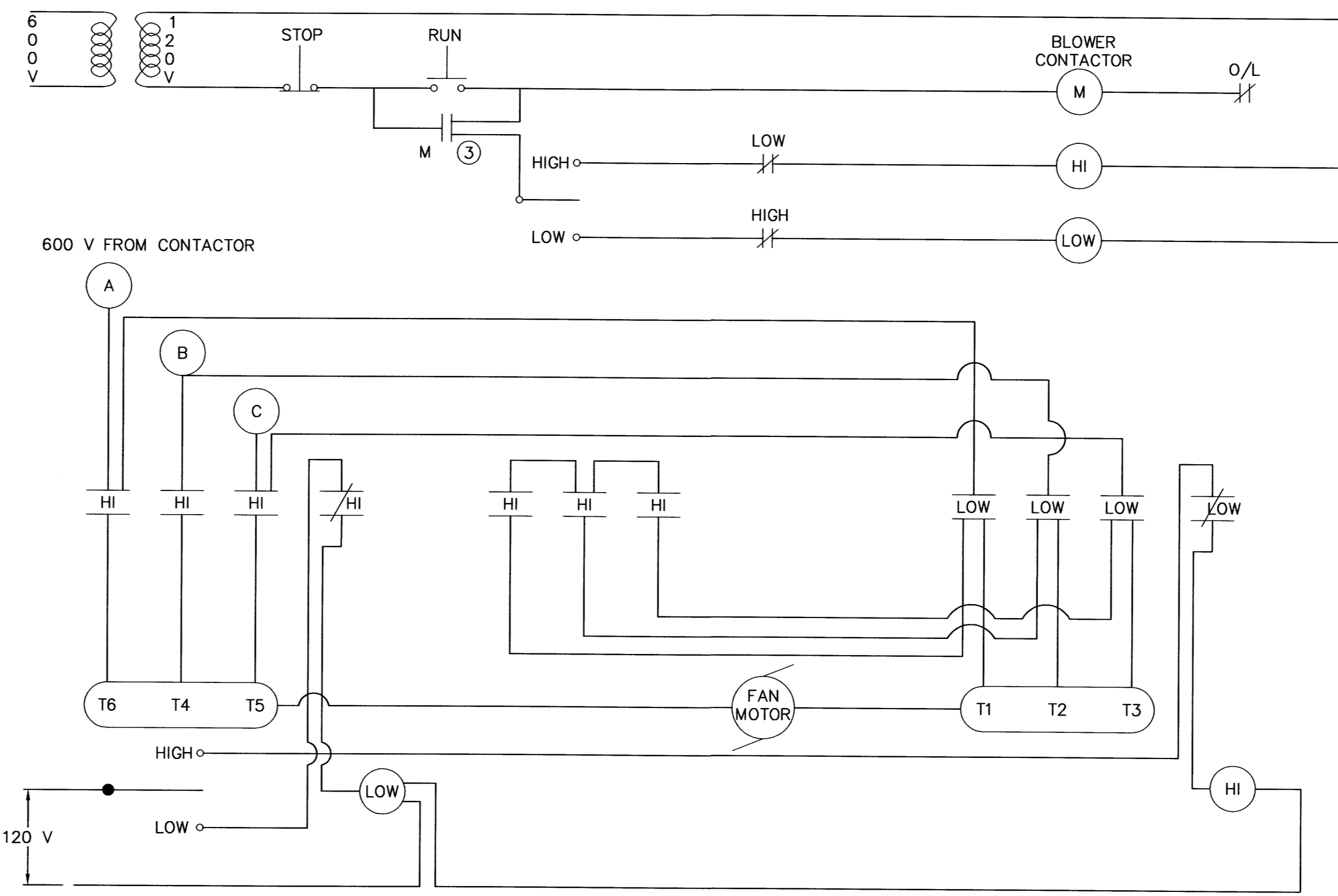
REID, CROWTHER & PARTNERS LIMITED  
WINNIPEG  
**RECORD DRAWING**  
SIG. DATE DECEMBER 1996

				ENGINEER'S SEAL ORIGINAL SIGNED BY P. STRYK 96-01-31		<b>THE CITY OF WINNIPEG</b> WORKS AND OPERATIONS DIVISION WATER AND WASTE DEPT.	
DESIGNED BY PS CHECKED BY PS DRAWN BY CPG APPROVED BY				REGIONAL OPERATIONS		CITY DRAWING NUMBER <b>1541</b> SHEET 1 OF 3	
2 RECORD DRAWING 12/96 PS 1 ISSUED FOR TENDER 02/96 PS NO. REVISIONS DATE BY DATE 96-01-18 DATE 96-10-17				HOR. SCALE: AS NOTED RELEASED FOR		CONSULTANT DRAWING NO. 61776 - E1	
						MONTCALM SEWAGE PUMPING STATION ELECTRICAL ROOM EQUIPMENT ELEVATIONS, FLOOR PLANS	
						E1	





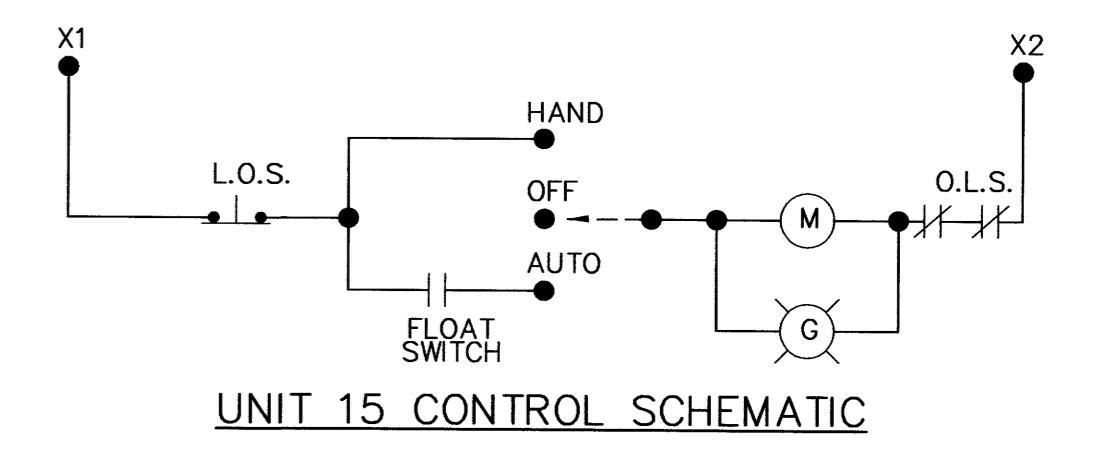
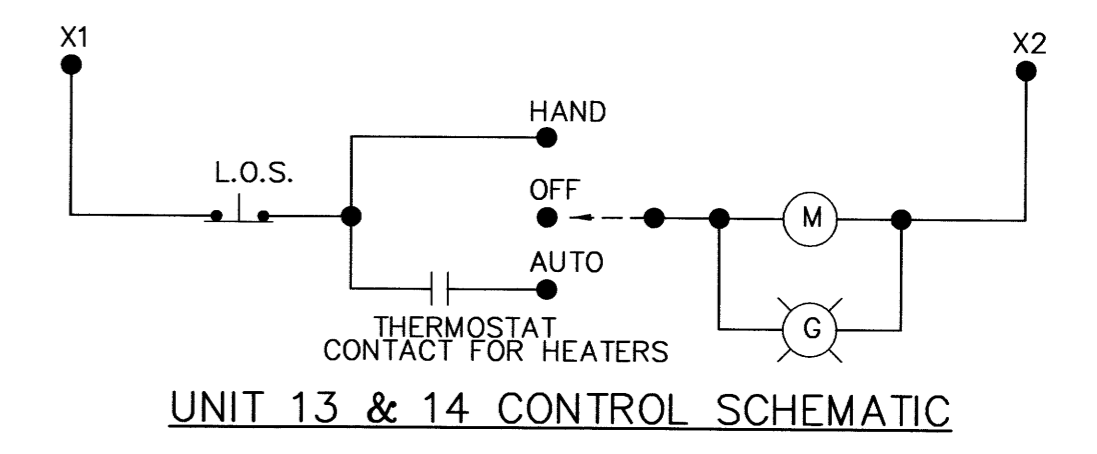
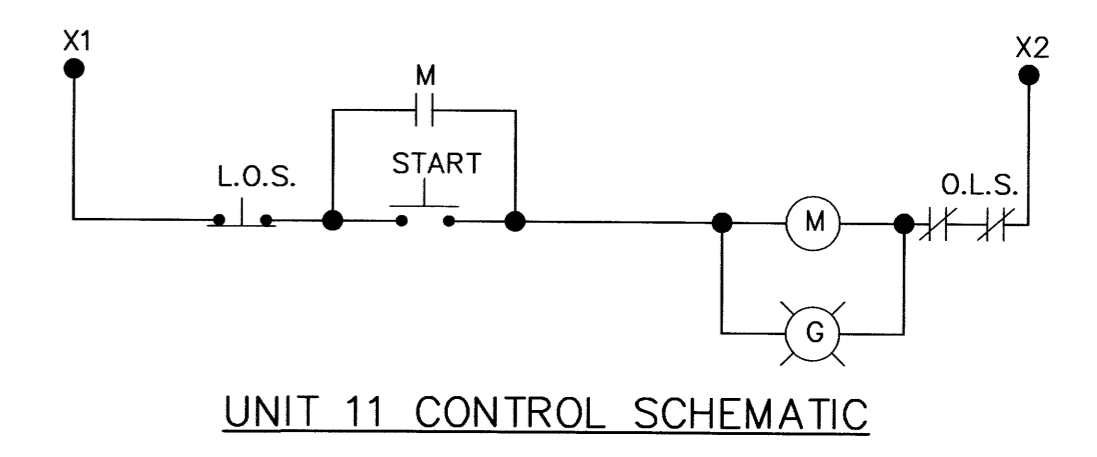
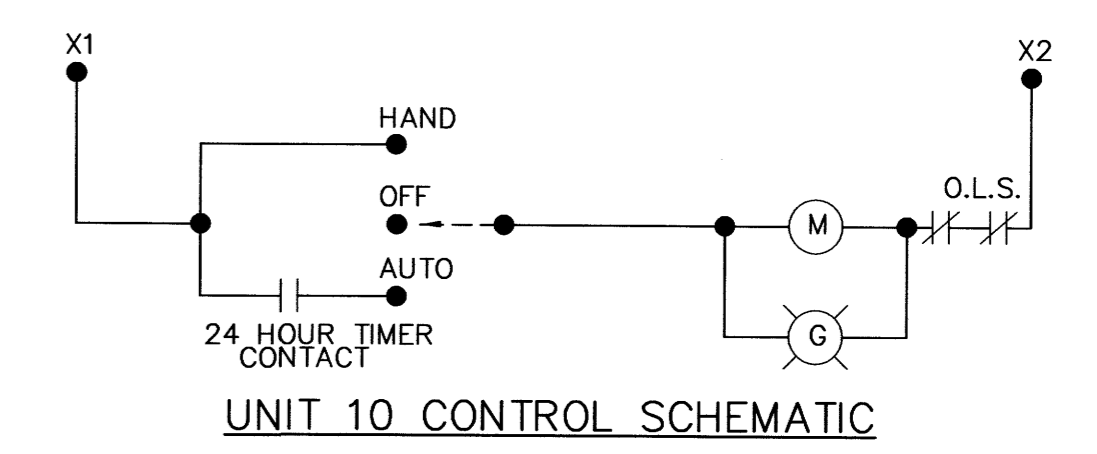
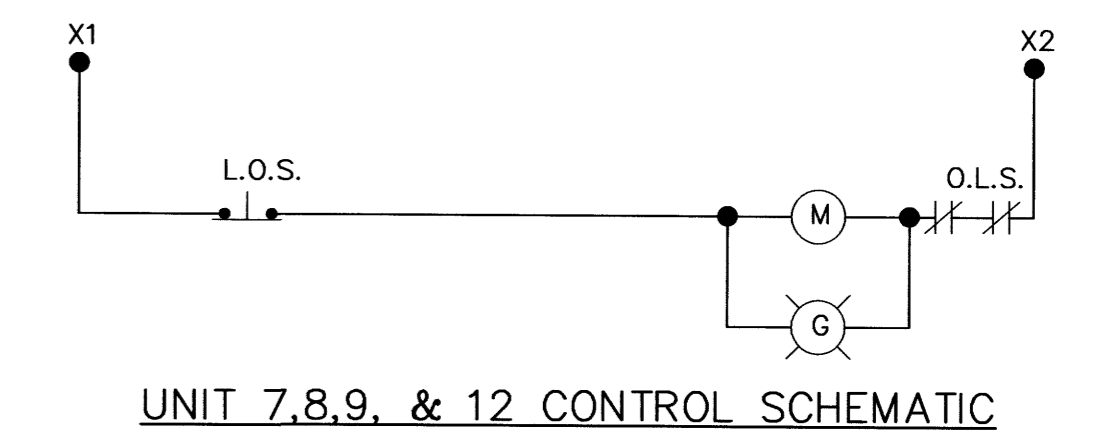
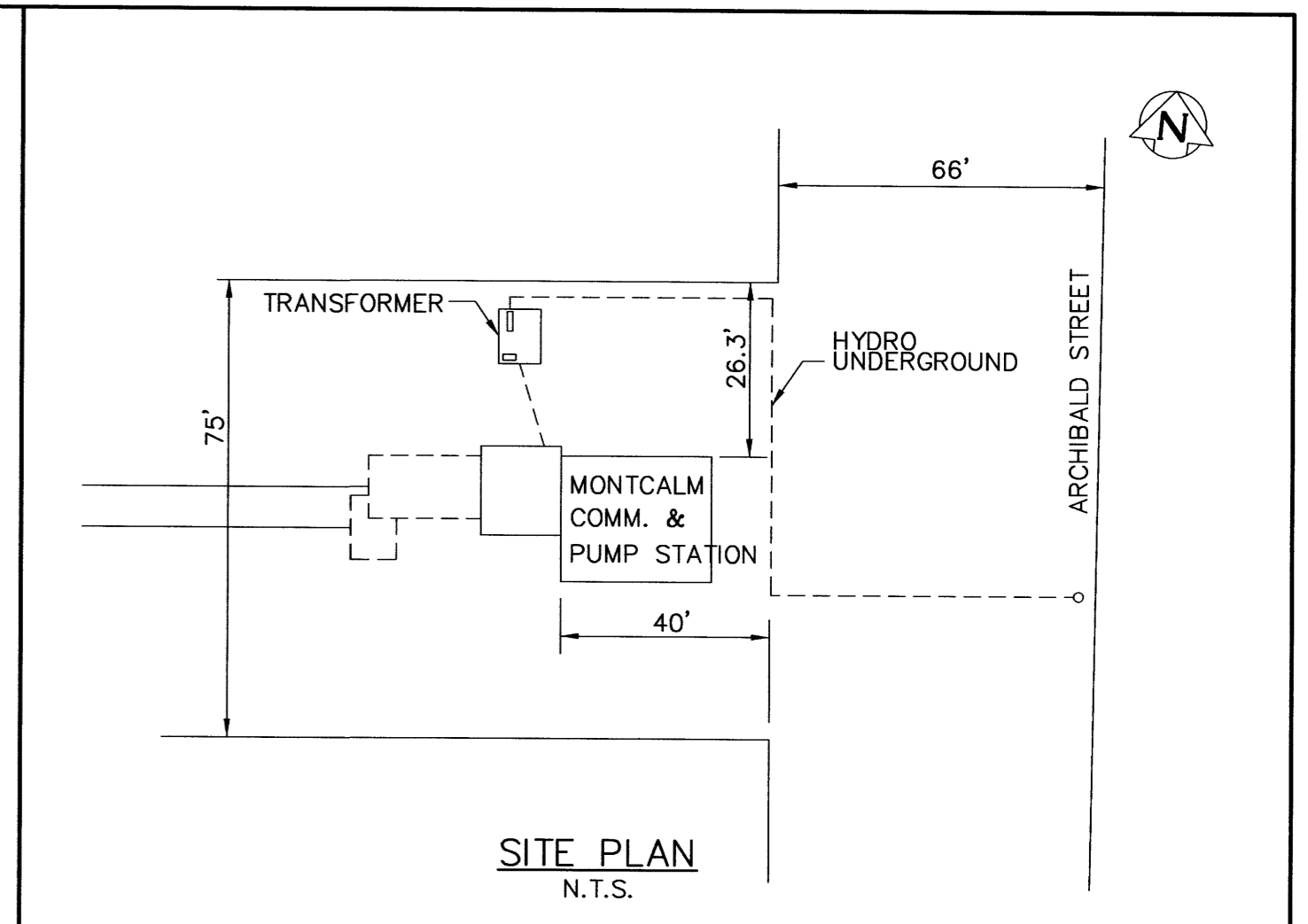
**POWER DISTRIBUTION CENTER**  
CLASS 1 TYPE B CEMA 1 WITH GASKET ON DOORS



NO.	UNIT & NO.	H.P.	PHASE	VOLTS		STARTER		BREAKER		ACCESSORIES & CONTROLS						
						TYPE	SIZE	TYPE	FRAME	EXTERNAL RESET	H.O.A. SELECTOR	GREEN RUN LT	ELAPSE TIME MT	AMP. METER	CONTROL	CONTROL TRANSF.
1	LIFT PUMP NO. 1	100	3	550	NEW	FV MAG	4	225A.	JKL	•	X	•	•	•	•	•
2	LIFT PUMP NO. 2	100	3	550	NEW	FV MAG	4	225A.	JKL	•	X	•	•	•	•	•
3	LIFT PUMP NO. 3	100	3	550	NEW	FV MAG	4	225A.	JKL	•	X	•	•	•	•	•
4	LIFT PUMP NO. 4	100	3	550	NEW	FV MAG	4	225A.	JKL	•	X	•	•	•	•	•
5	GLAND PUMP NO. 1	1/2	3	550	NEW	FV MAG	1	15A	EF	•	•	•	•	•	•	•
6	GLAND PUMP NO. 2	1/2	3	550	NEW	FV MAG	1	15A	EF	•	•	•	•	•	•	•
7	COMMUNOTOR NO. 1	1 1/2	3	550	EXIST.	FV MAG	1	15A	EF	•	•	•	•	•	•	•
8	COMMUNOTOR NO.2	1 1/2	3	550	EXIST.	FV MAG	1	15A	EF	•	•	•	•	•	•	•
9	COMMUNOTOR NO. 3	1 1/2	3	550	EXIST.	FV MAG	1	15A	EF	•	•	•	•	•	•	•
10	EXHAUST FAN NO.1		3	550	EXIST.	FV MAG	1	15A	EF	•	⊗	•	•	•	•	•
11	AIR BLOWER NO. 1		3	550	EXIST.	FV MAG	1	15A	EF	•	•	•	•	•	•	•
12	AIR BLOWER NO.2		3	550	NEW	FV MAG	1	15A	EF	•	•	•	•	•	•	•
13	10 K.W. HEATER		1	550	EXIST.	MAG	1	30A	EF	•	•	•	•	•	•	•
14	20 K.W. HEATER		1	550	EXIST.	MAG	2	30A	EF	•	•	•	•	•	•	•
15	SUMP PUMP	1/2	3	208-220-440	NEW	FV MAG	1	15A	EF	•	•	•	•	•	•	•
16	TRANSFORMER DISC		3	550	NEW	---	---	50A	EF	•	•	•	•	•	•	•
17	MAIN BREAKER		3	550	NEW	---	---	800A	KM	•	•	•	•	•	•	•
18	HOIST	1/2	3	550	EXIST.	---	---	15A	EF	•	•	•	•	•	•	•

\* NOT HOOKED UP

• REQUIRED ON UNIT IN CENTRE  
⊗ H.O.A. SELECTOR NEAR EXHAUST FAN  
X H.O.A. SELECTOR IN LOCAL CONTROL PANEL



B.M. ELEV.					
DESIGNED BY	R.B.	CHECKED BY	R.B.		
DRAWN BY	M.B.D.	APPROVED BY			
HOR. SCALE	N/A	RELEASED FOR CONSTRUCTION			
DATE	JANUARY 26, 1995	DATE			

ENGINEER'S SEAL

**THE CITY OF WINNIPEG**  
WORKS AND OPERATIONS DIVISION  
WATERWORKS WASTE AND DISPOSAL DEPARTMENT

**MONTCALM SEWAGE PUMPING STATION**

ELECTRICAL NO. 3  
CONTROLS & MISC. DETAILS

CITY DRAWING NUMBER  
**640**

SHEET 1 OF 2  
PLOT DATE: 2003.10.03

FRAME OPENING THROUGH EXISTING WALL WITH 1/2 GALVANIZED STEEL FRAME

ALUMINUM LOUVER 24" X 16" WITH ALUMINUM INSECT SCREEN

SEE DETAIL FOR BY-PASS

7" Ø OUTLET WITH ADJUSTABLE DAMPER AND GRILL SET FLUSH WITH TOP OF CONC. BLOCK

ELEV. 30.06

ALUMINUM SHEET METAL AROUND EXISTING UNIT HEATER OPENING WITH ALUMINUM BACK DRAFT DAMPER - SEE DETAIL ELEV. 20.00

ELEV. 20.00

16" X 5 1/2" OUTLET WITH ADJUSTABLE DAMPER

ELEV. 4.22

7 1/2" Ø WITH ADJUSTABLE DAMPER

ELEV. 4.21

SECTION A-A

SCALE 3/8" = 1'-0"

SECTION B-B

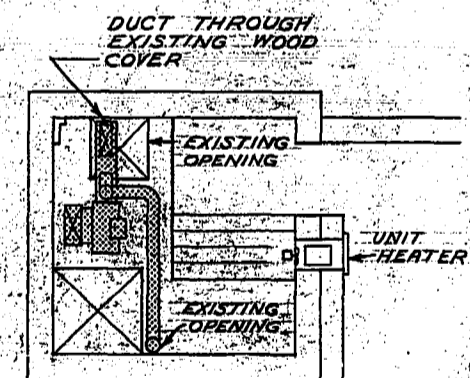
ELEV. 4.22 SCALE 3/8" = 1'-0"

SECTION C-C

ELEV. -4.21 SCALE 3/8" = 1'-0"

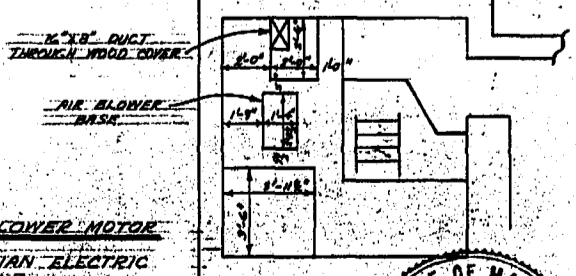
LEGEND

NEW VENT PIPING

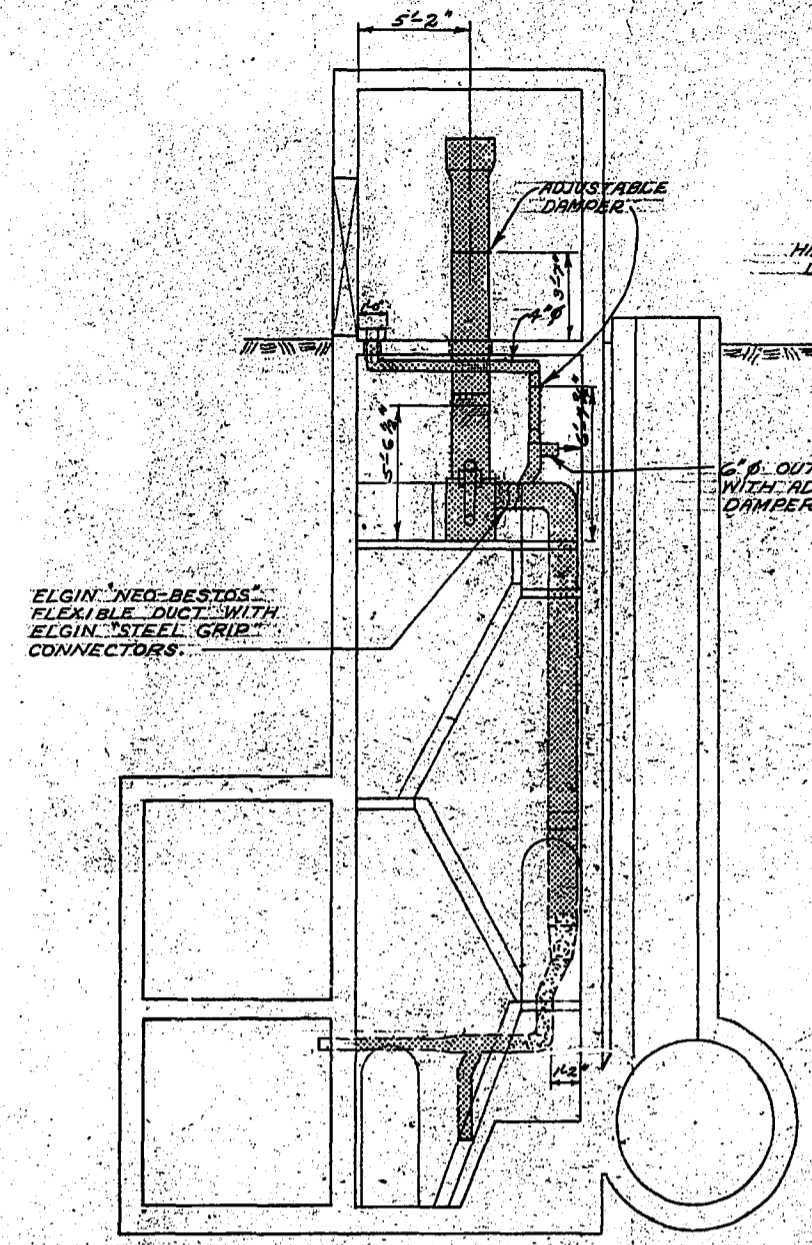
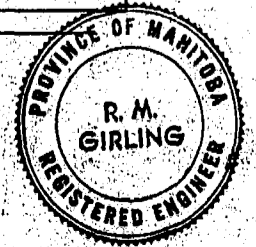


SECTION E-E

SCALE 3/8" = 1'-0"



AIR BLOWER MOTOR CANADIAN ELECTRIC 1/2 H.P. 1725 R.P.M. 550 V. 3. PH.



ELGIN NEG-BESTOS FLEXIBLE DUCT WITH ELGIN STEEL GRIP CONNECTORS

HINGED DAMPER

6" Ø OUTLET WITH ADJUSTABLE DAMPER

DETAIL OF BY-PASS

N.T.S.

SUPERSTRUCTURE

39 1/2" X 86 1/2" OPENING (EXISTING)

4" HOLLOW TILE

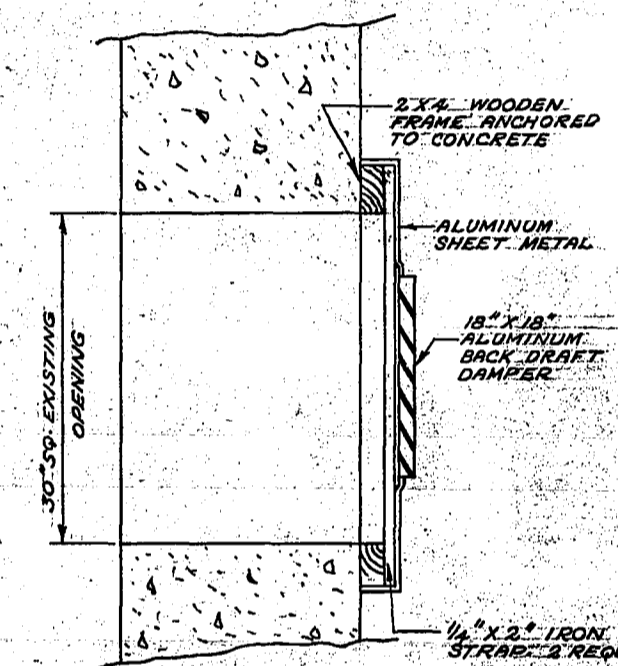
2" FORM GLASS

8" BRICK

WESTEEL DOOR AND FRAME WITH DOUBLE SPRINGS AND CHAIN DOOR STOP

DOOR & FRAME DETAIL - ELEV. 30.06

SCALE 3/8" = 1'-0"



2x4 WOODEN FRAME RIVETED TO CONCRETE

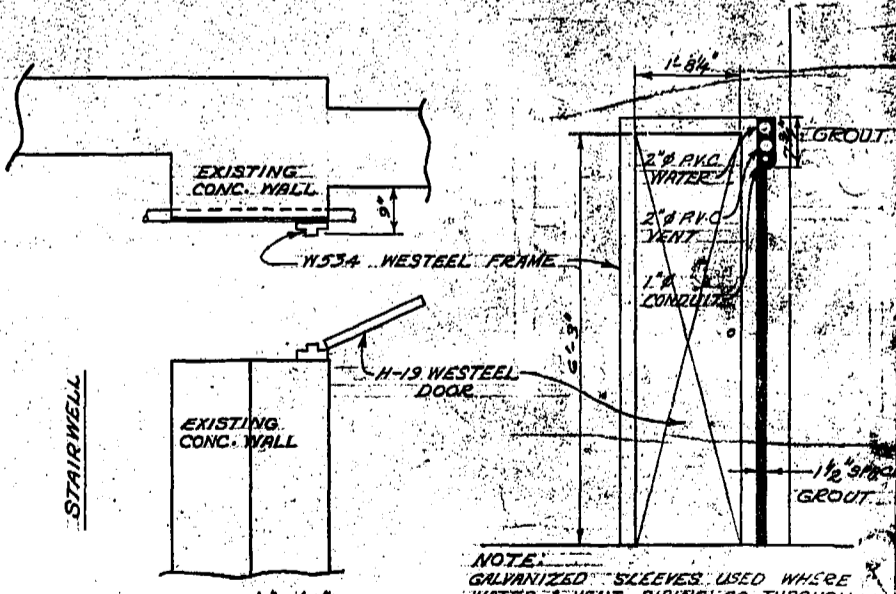
ALUMINUM SHEET METAL

18" X 18" ALUMINUM BACK DRAFT DAMPER

1/2" X 2" IRON STRAP 2 REQUIRED

DETAIL UNIT HEATER OPENING

NOTE:



EXISTING CONC. WALL

W534 WESTEEL FRAME

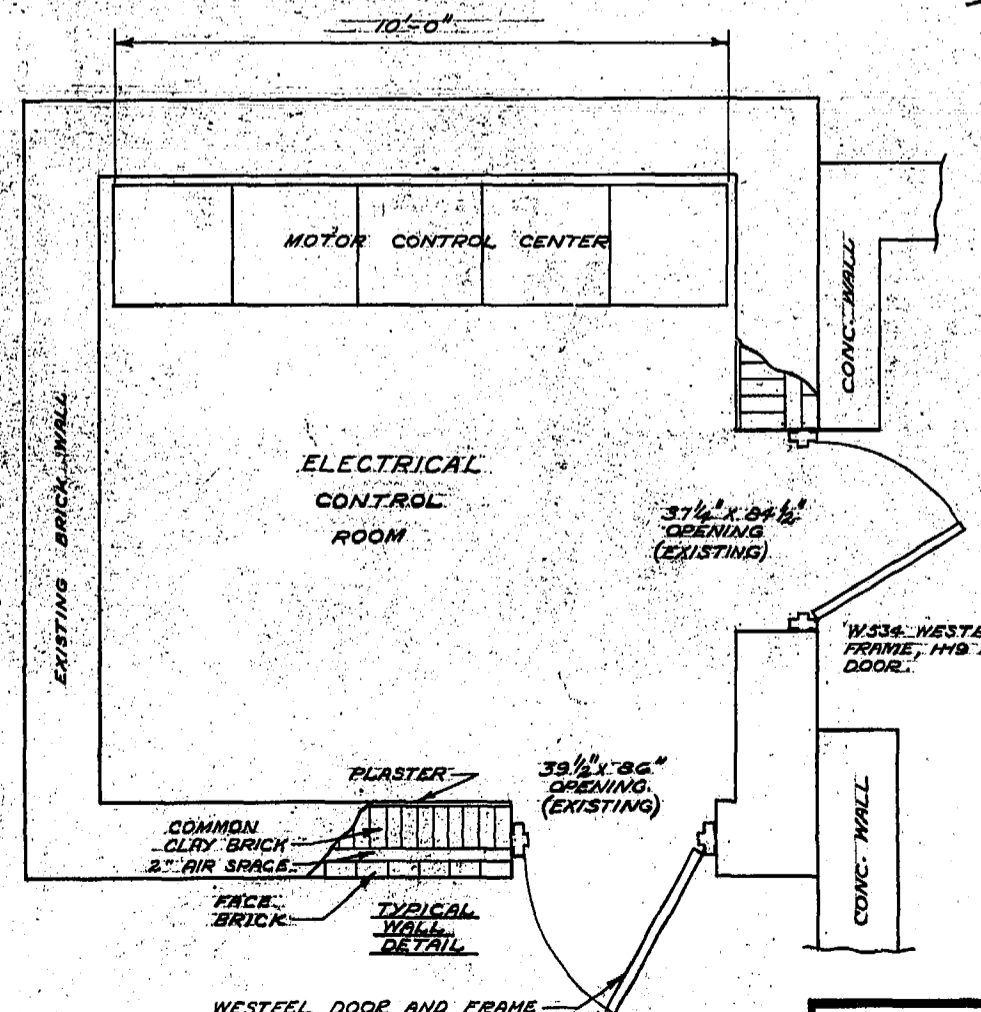
H-13 WESTEEL DOOR

EXISTING CONC. WALL

SCALE 1/2" = 1'-0"

NOTE: GALVANIZED SLEEVES USED WHERE WATER & VENT PIPING GO THROUGH WALL. DUCT SEAL BETWEEN PIPE & SLEEVE

DOOR & FRAME DETAIL - ELEV. 20.00



MOTOR CONTROL CENTER

ELECTRICAL CONTROL ROOM

37 1/2" X 84 1/2" OPENING (EXISTING)

PLASTER

39 1/2" X 86 1/2" OPENING (EXISTING)

COMMON CLAY BRICK 2" AIR SPACE

FACE BRICK

TYPICAL WALL DETAIL

WESTEEL DOOR AND FRAME WITH DOUBLE SPRINGS & CHAIN DOOR STOP

DOOR & FRAME DETAIL - ELEV. 30.06

ELECTRICAL CONTROL ROOM

SCALE 3/8" = 1'-0"

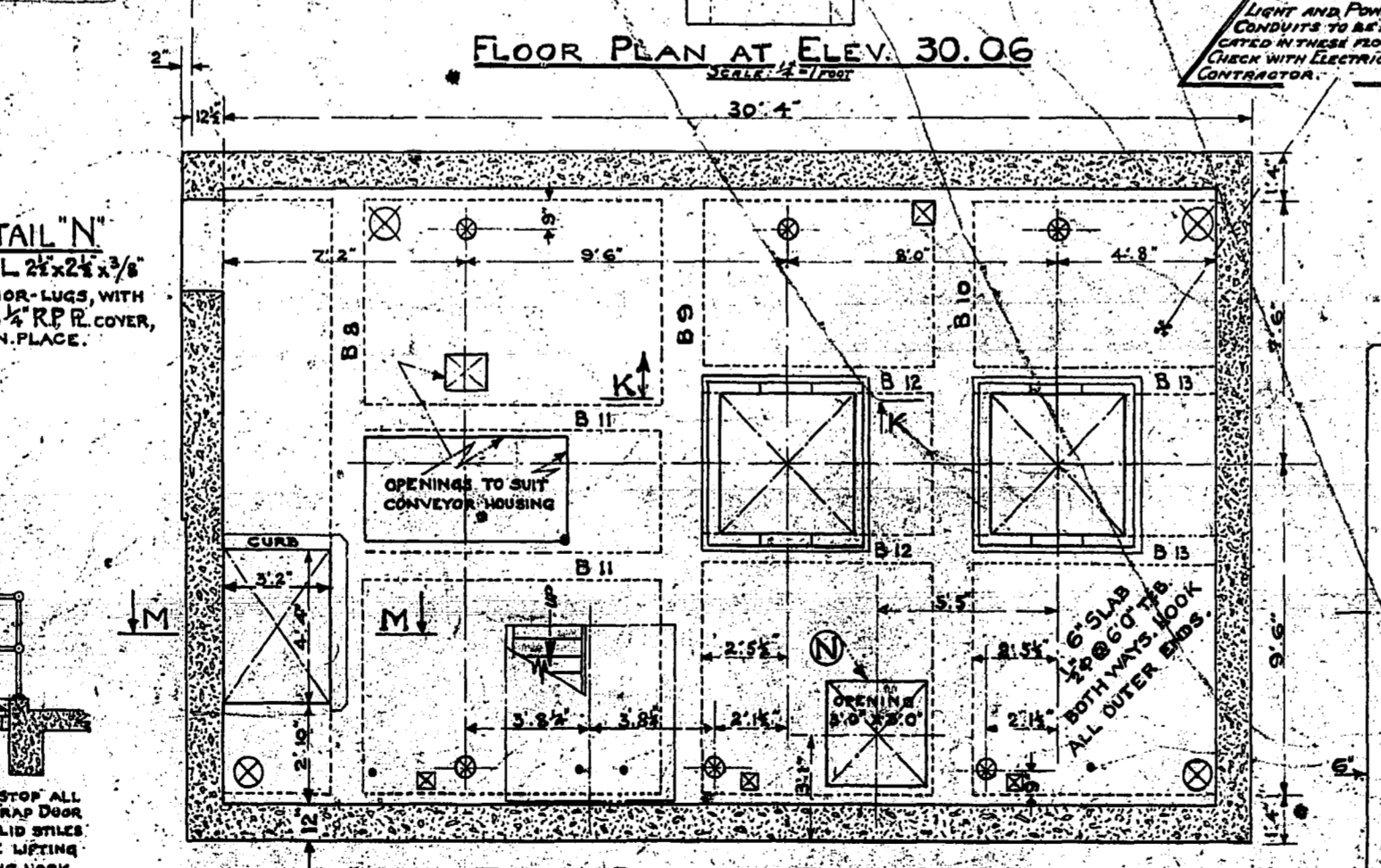
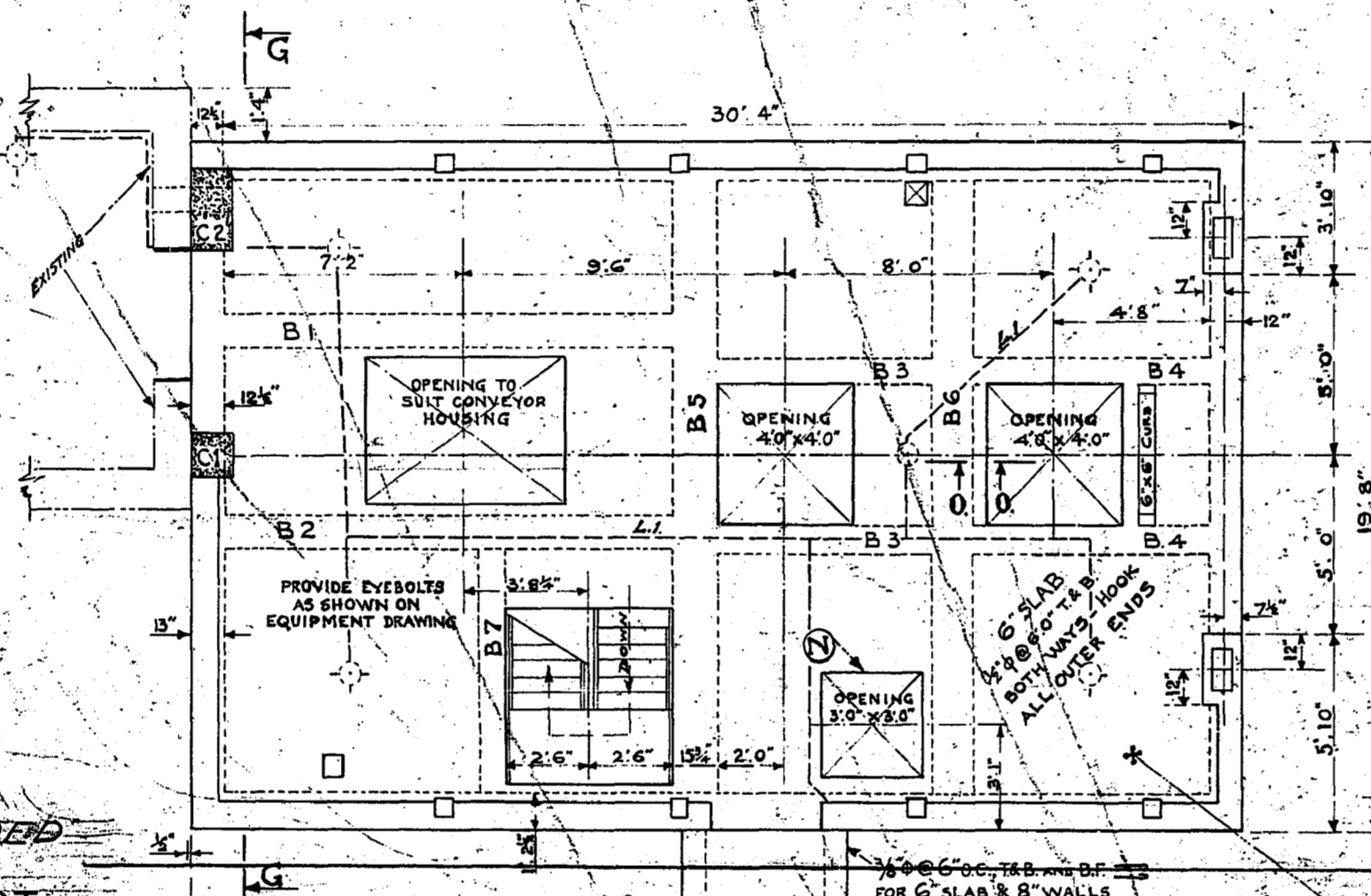
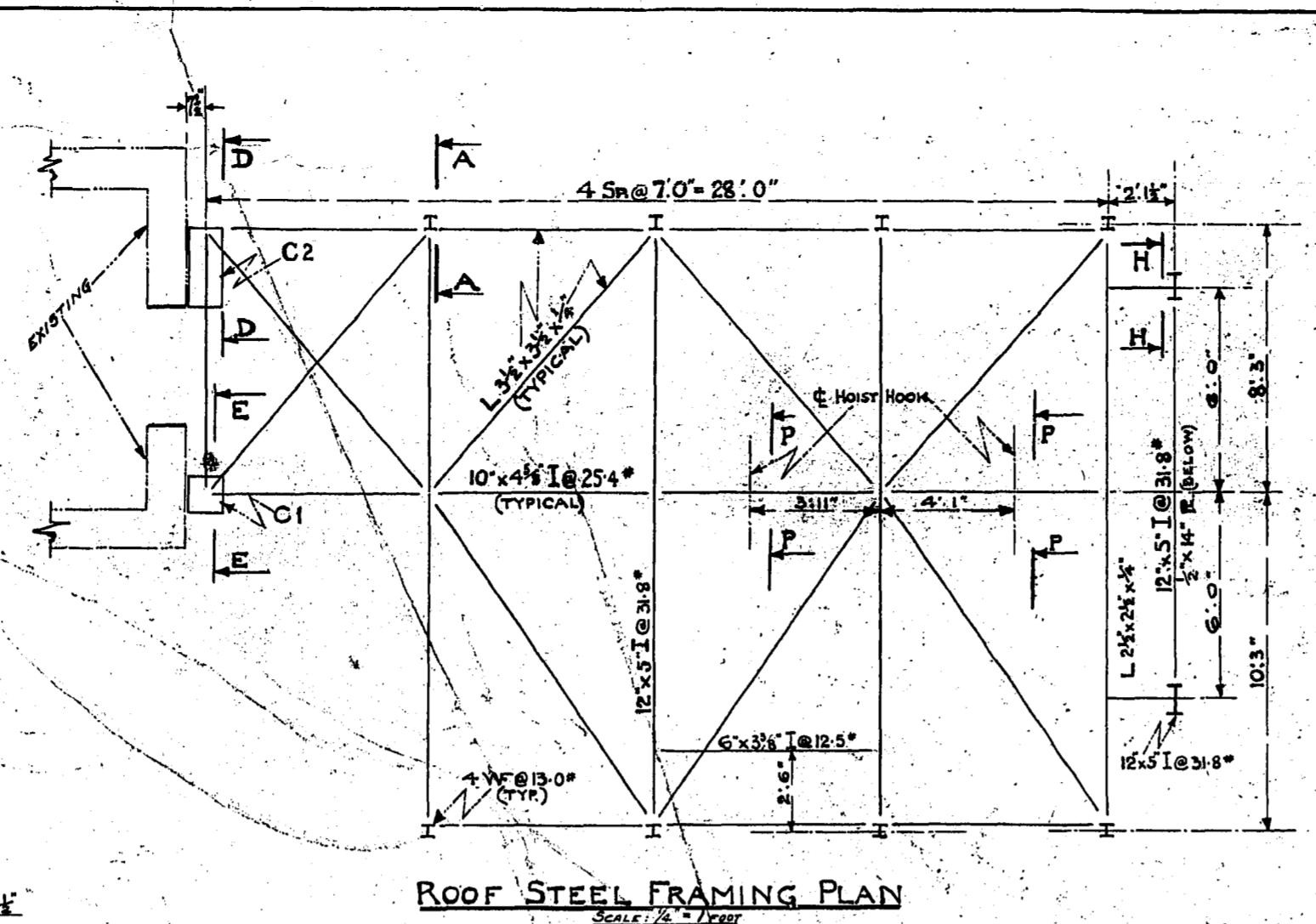
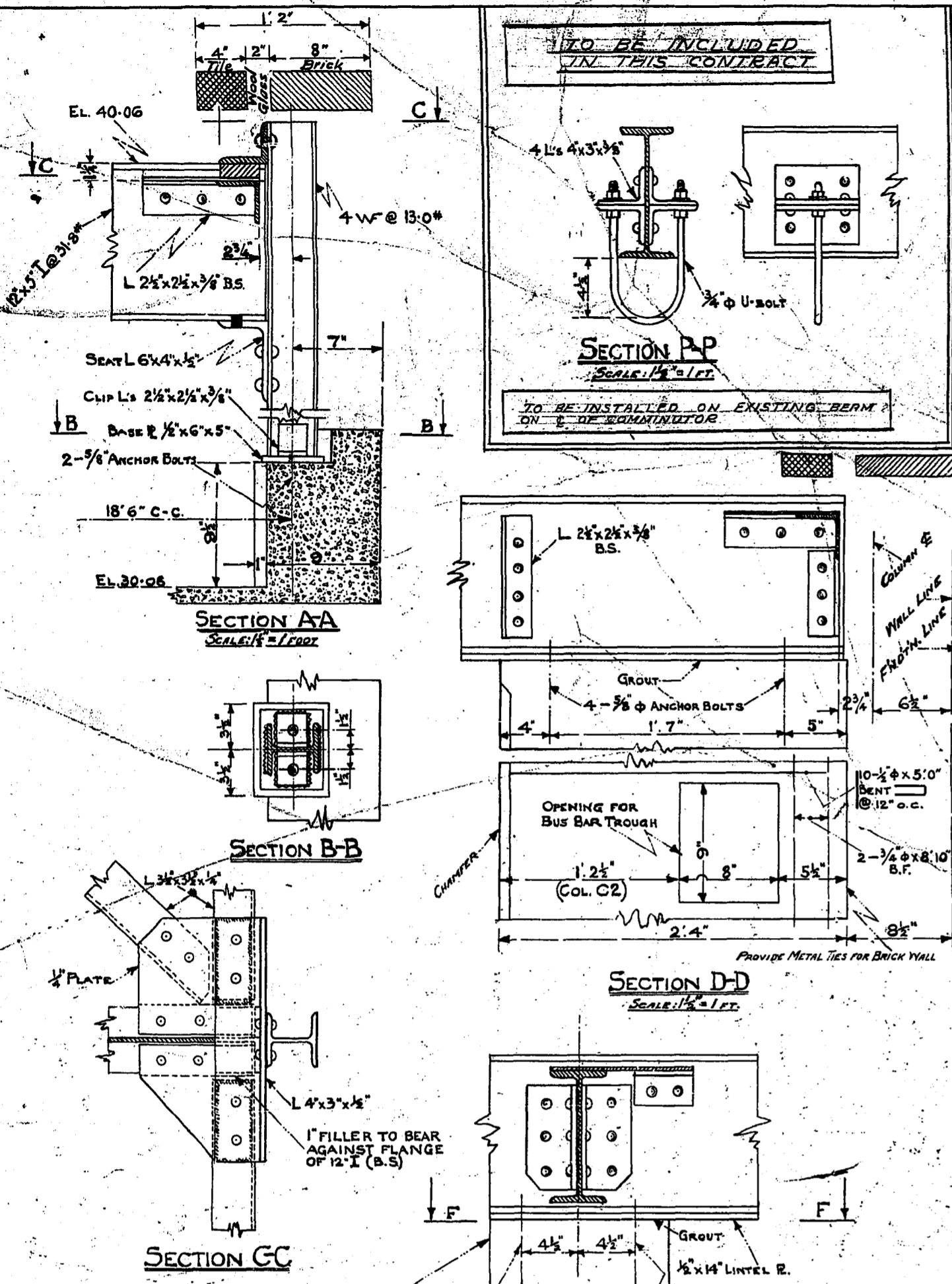
AS CONSTRUCTED OCT. 14, 1969. V.O.

THE METROPOLITAN CORPORATION OF GREATER WINNIPEG WATERWORKS & WASTE DISPOSAL DIVISION A. PENMAN - DIRECTOR

Table with project details: SEWAGE DISPOSAL, MONTCALM SEWAGE PUMPING STATION, VENTILATION AND NEW DOOR DETAILS, drawing number 637.

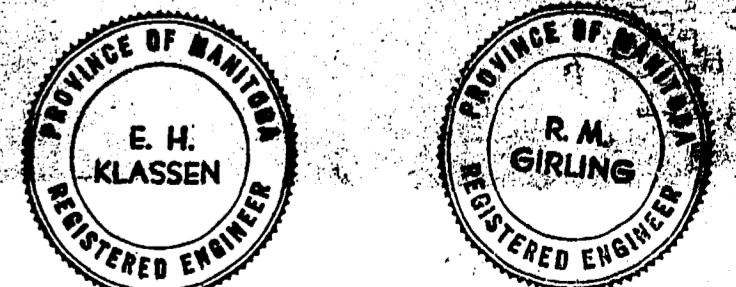
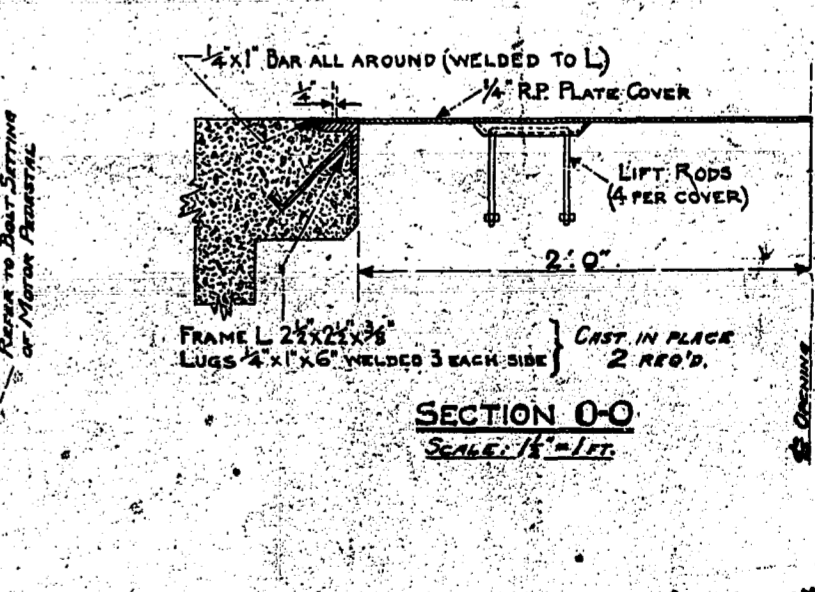
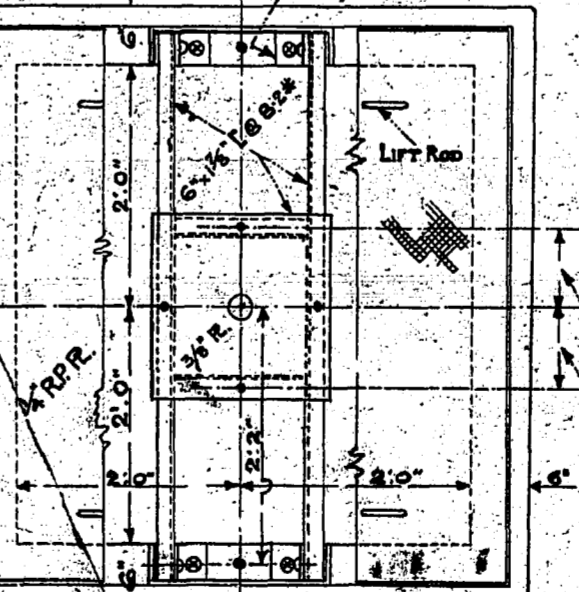
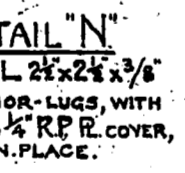
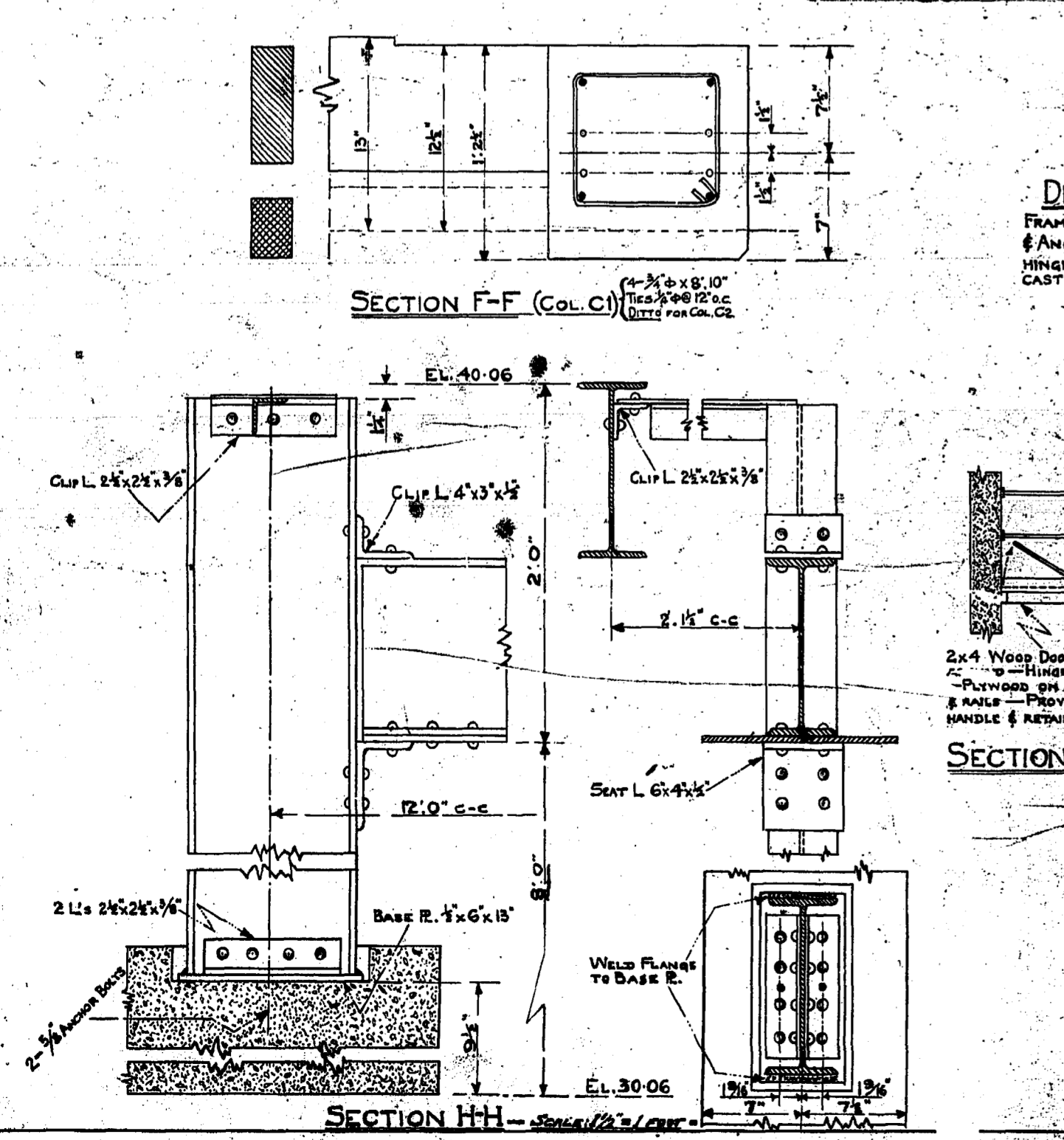
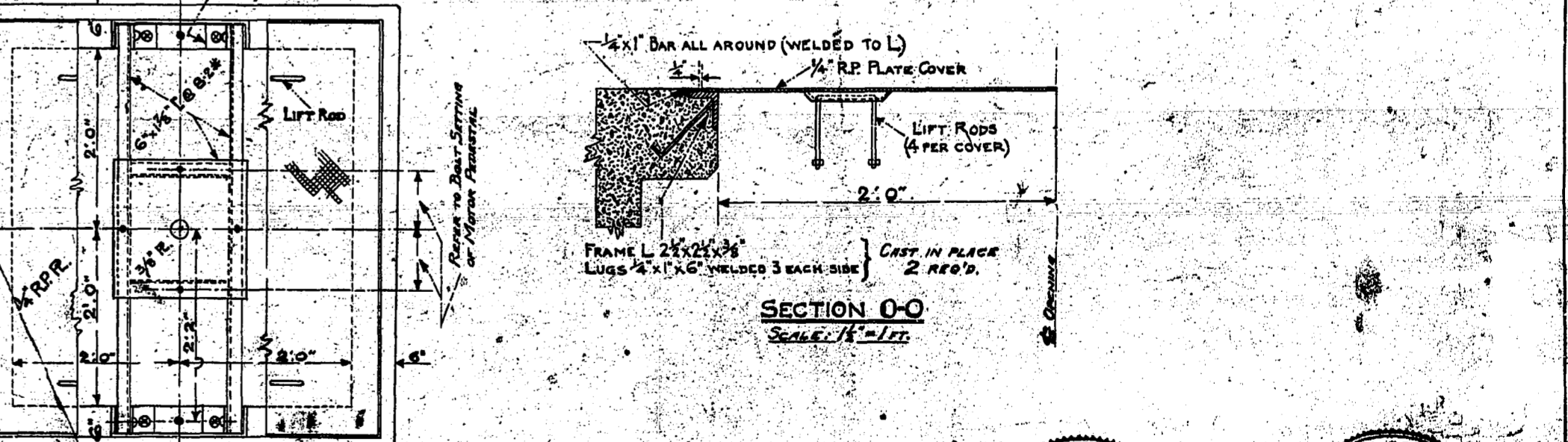
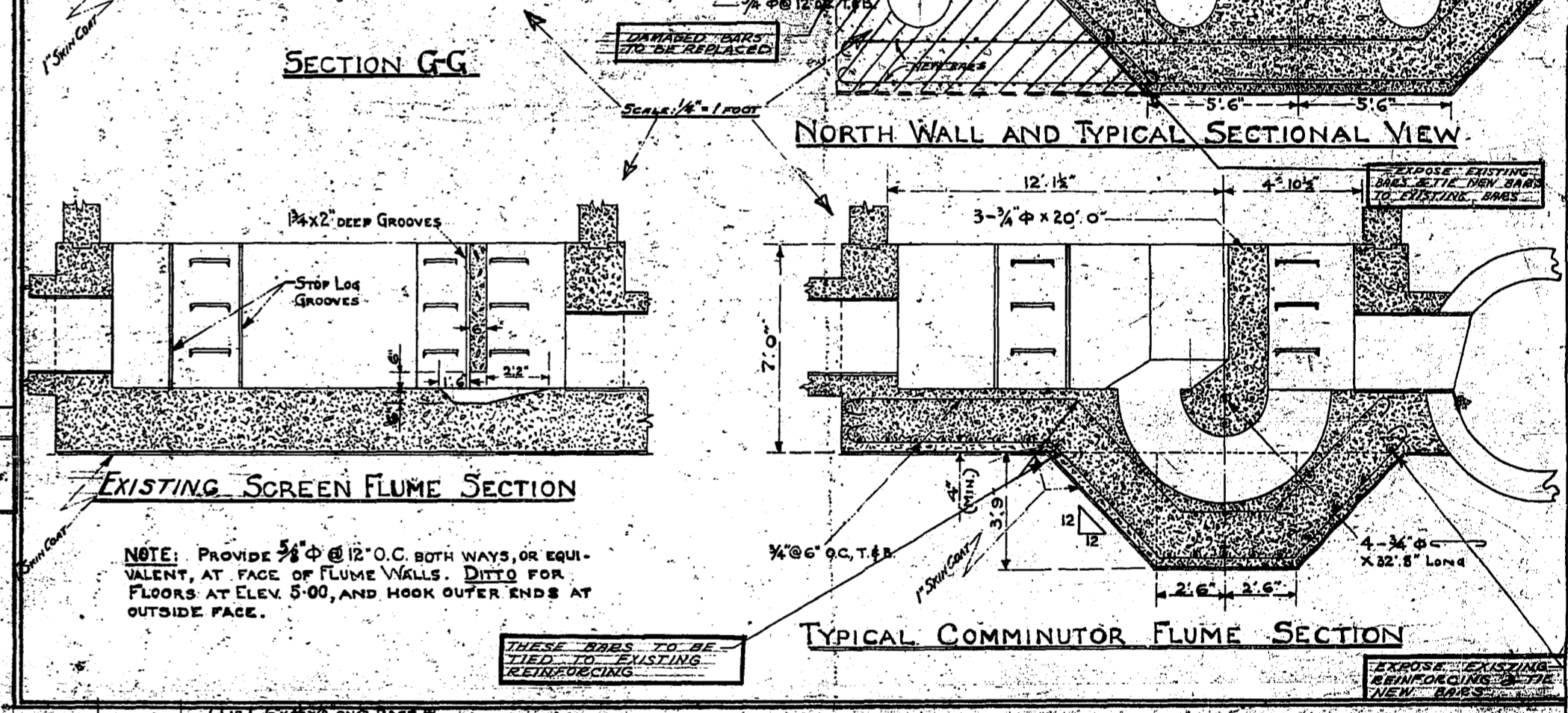
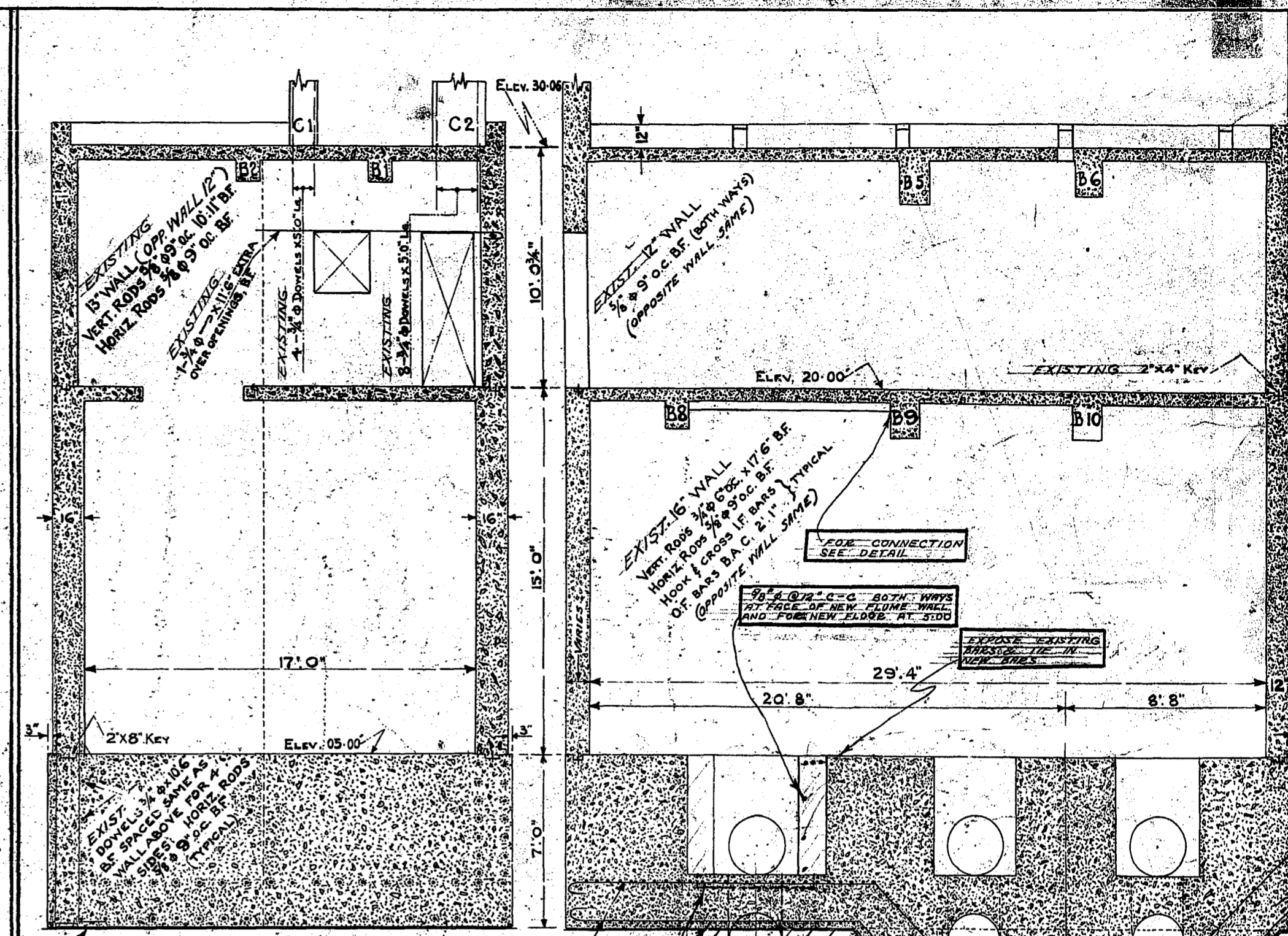
MICROFILMED





**BEAM SCHEDULE**

MARK.	NO.	WIDTH	DEPTH	STEEL	RMKS.
B1	1	12	19	3-3/4" x 11.8"	HKS. CONTINUE STEEL THROUGH SUCCEEDING BEAM WHERE APPLICABLE AND HOOK ALL OUTER ENDS.
B2	1	12	19	3-3/4" x 11.8"	
B3	2	9	15	3-3/4" x 11.8"	
B4	2	9	15	3-3/4" x 11.8"	
B5	1	15 1/2	28	6-3/4" x 17.8"	
B6	1	15 1/2	24	5-3/4" x 17.8"	
B7	1	9	12	3-3/4" x 11.8"	
B8	1	12	22	4-3/4" x 17.8"	
B9	1	13	26	5-3/4" x 17.8"	
B10	1	15	26	5-3/4" x 17.8"	
B11	2	9	18	3-3/4" x 11.8"	
B12	2	9	18	3-3/4" x 11.8"	
B13	2	9	15	3-3/4" x 11.8"	



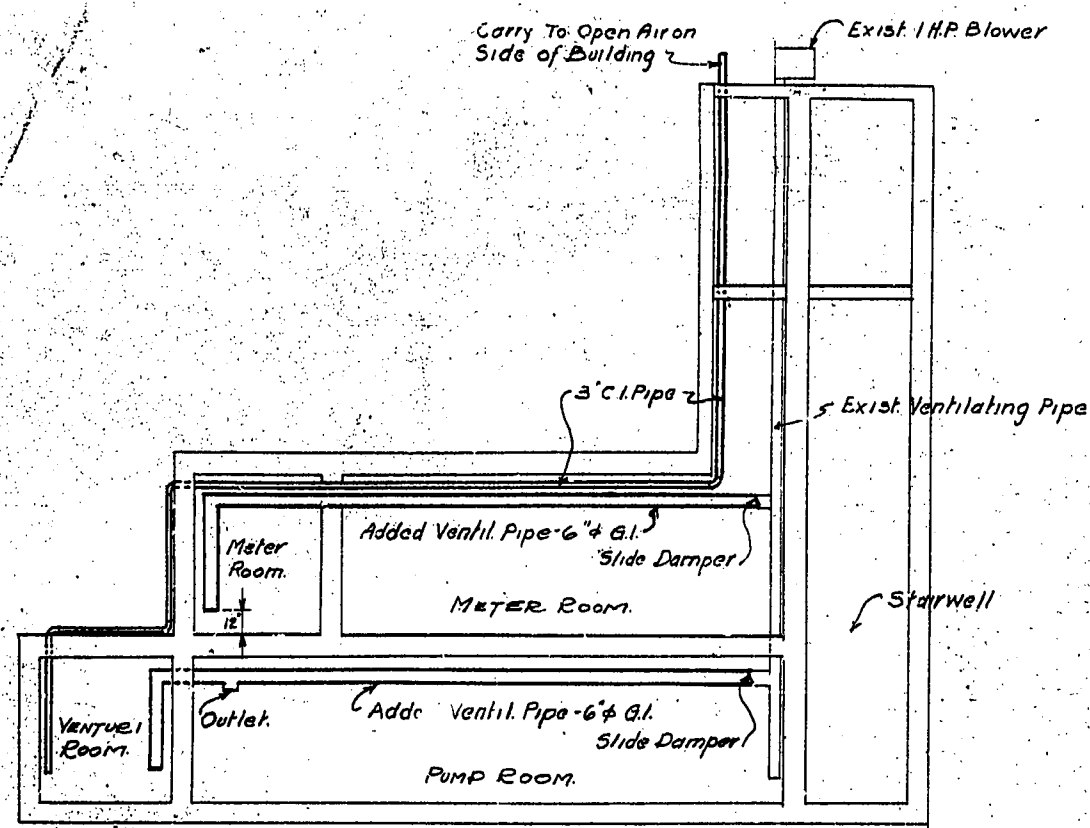
THE METROPOLITAN CORPORATION OF GREATER WINNIPEG  
**WATERWORKS & WASTE DISPOSAL DIVISIONS**  
N. S. BUBBIS - DIRECTOR

SEWAGE DISPOSAL DEPT.  
**ALTERATIONS - MONTCALM PUMPING STA.**  
CONC. & STEEL DETAILS

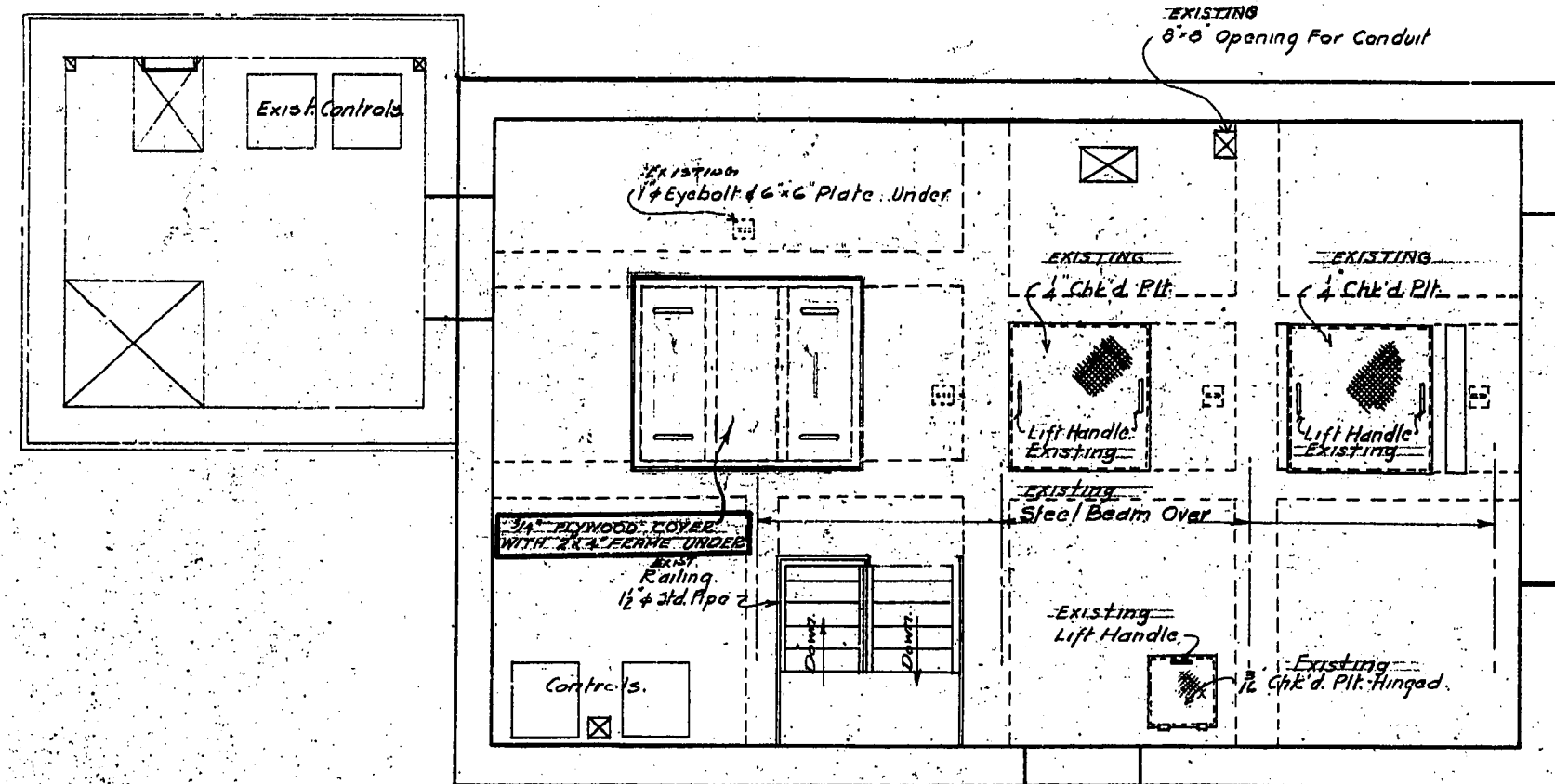
DES. *Paul Chkd.*  
DRN. CON. & V.P. DATE *APR 31*  
ENG. DES. *A.M. Girling*  
ENG. *A. Girling*  
APPROVED *Paul*

SCALE AS NOTED  
DRAWING NO. **483**

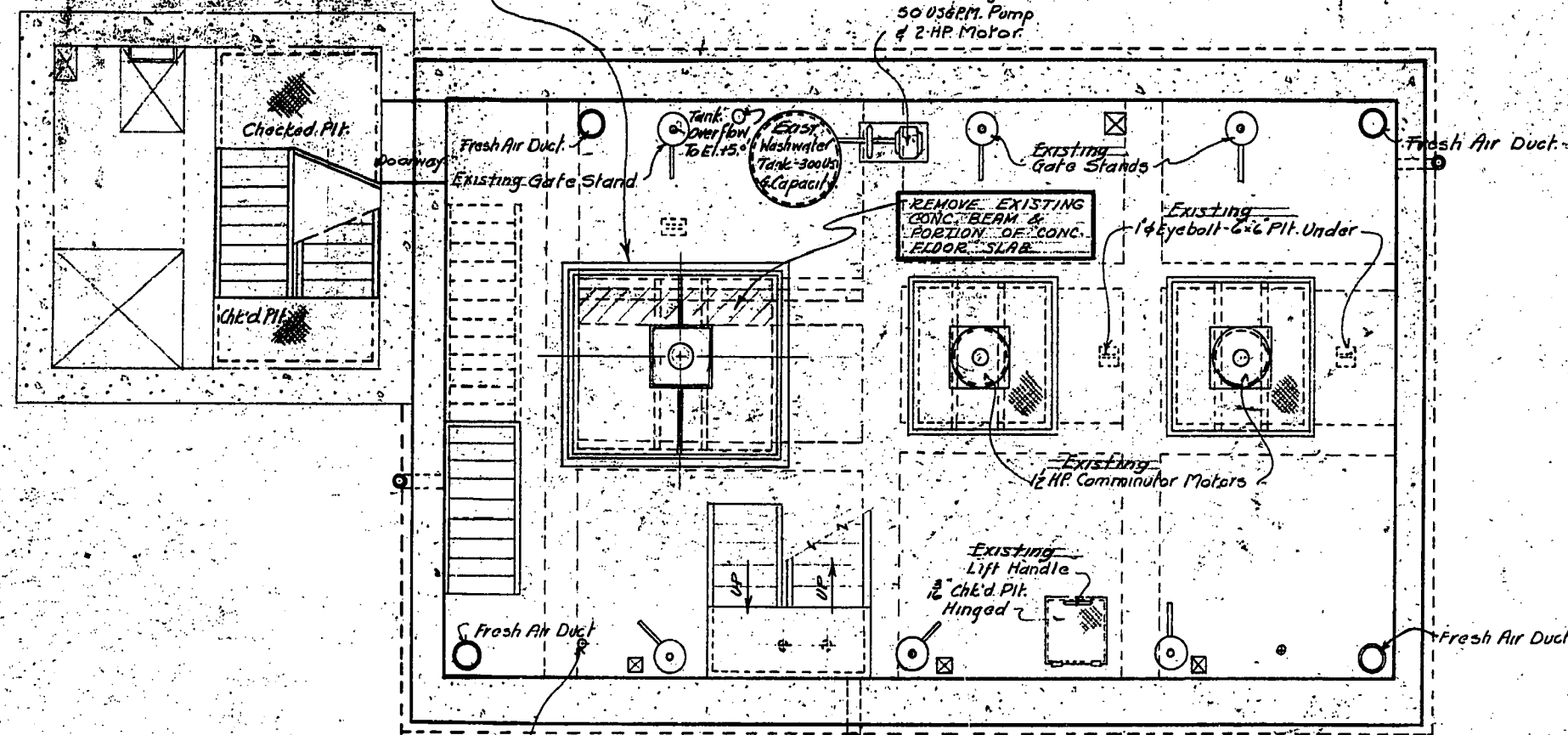




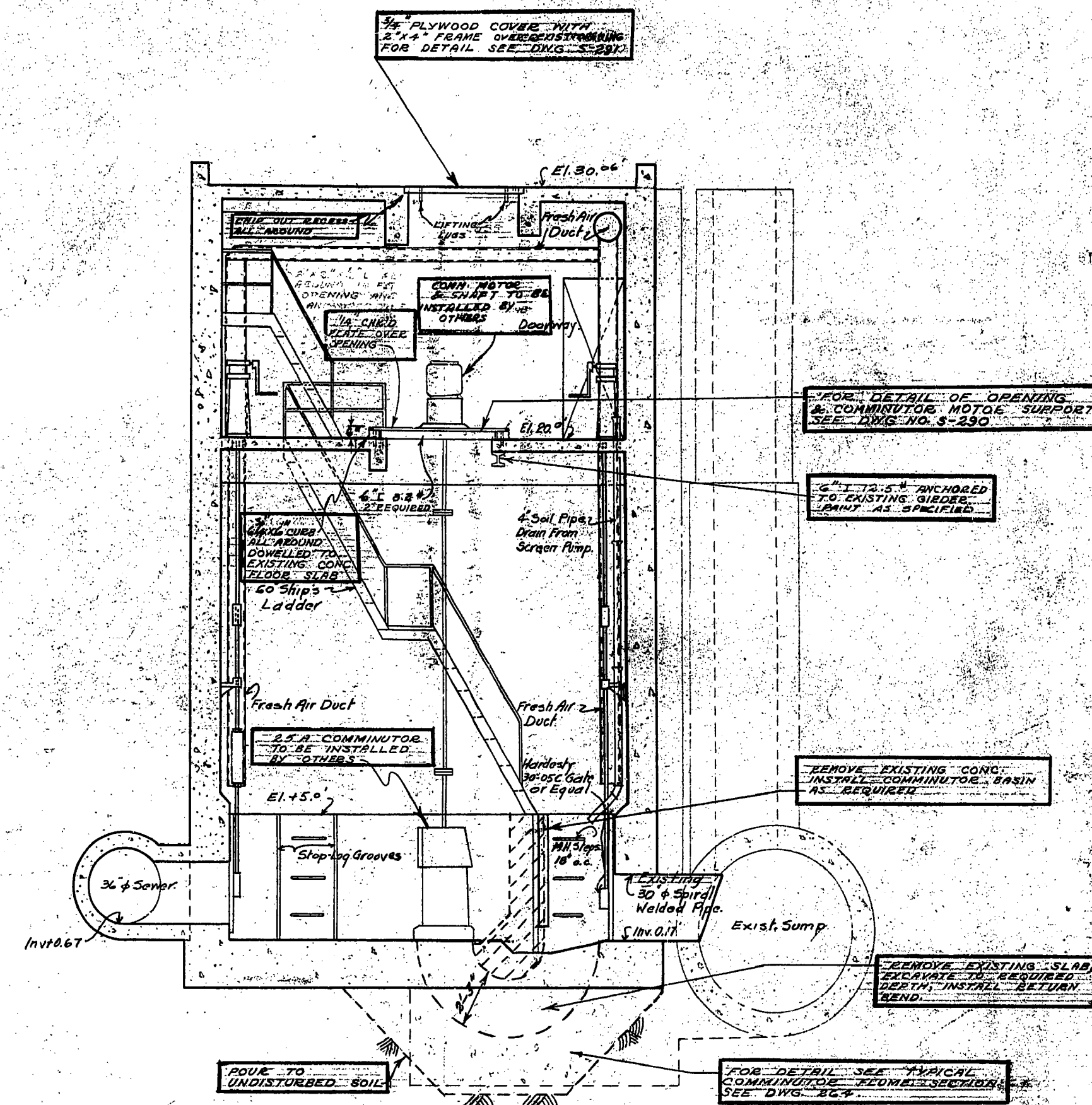
EXTENSION TO EXISTING VENTILATING SYSTEM.



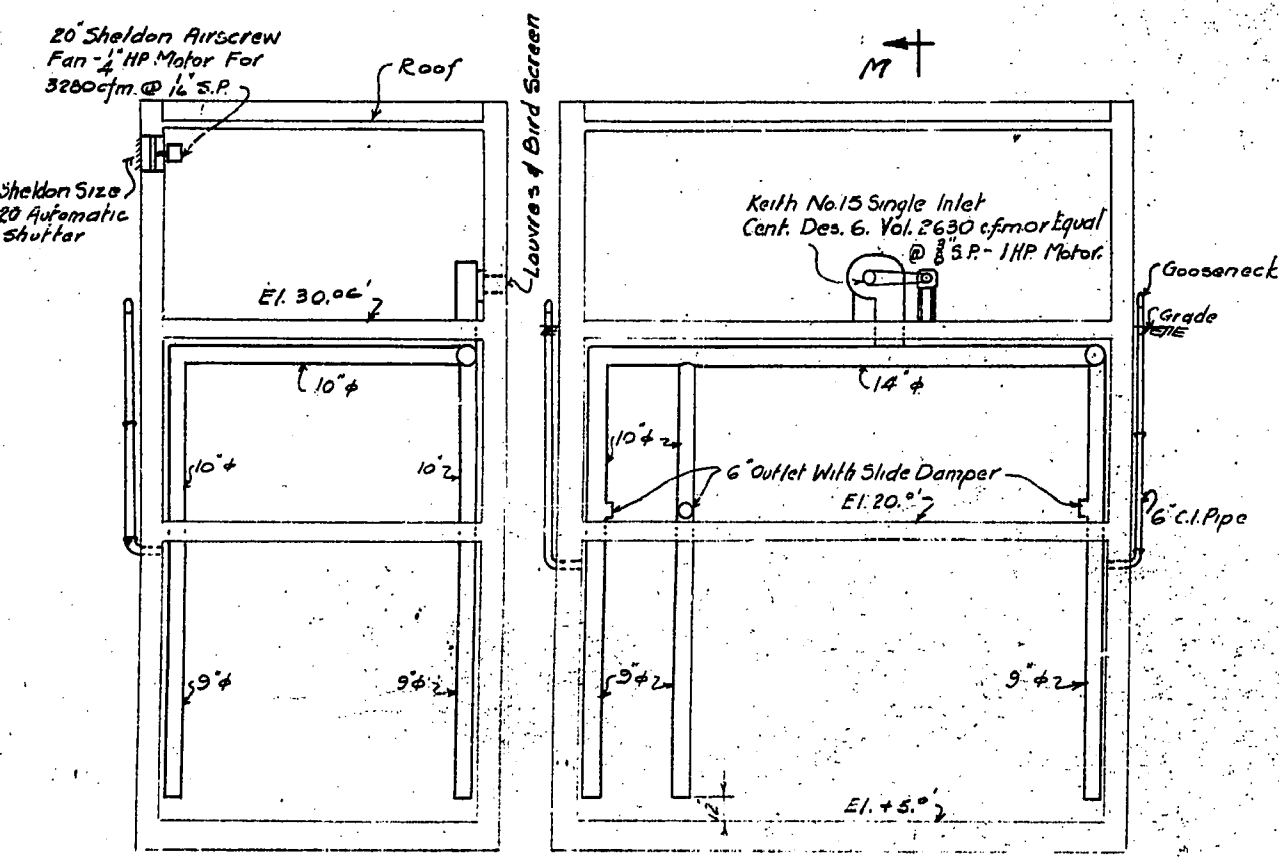
PLAN VIEW - EL. 30.06'  
Scale: 1/4" = 1'-0"



PLAN VIEW - EL. 20.0'  
Scale: 1/4" = 1'-0"



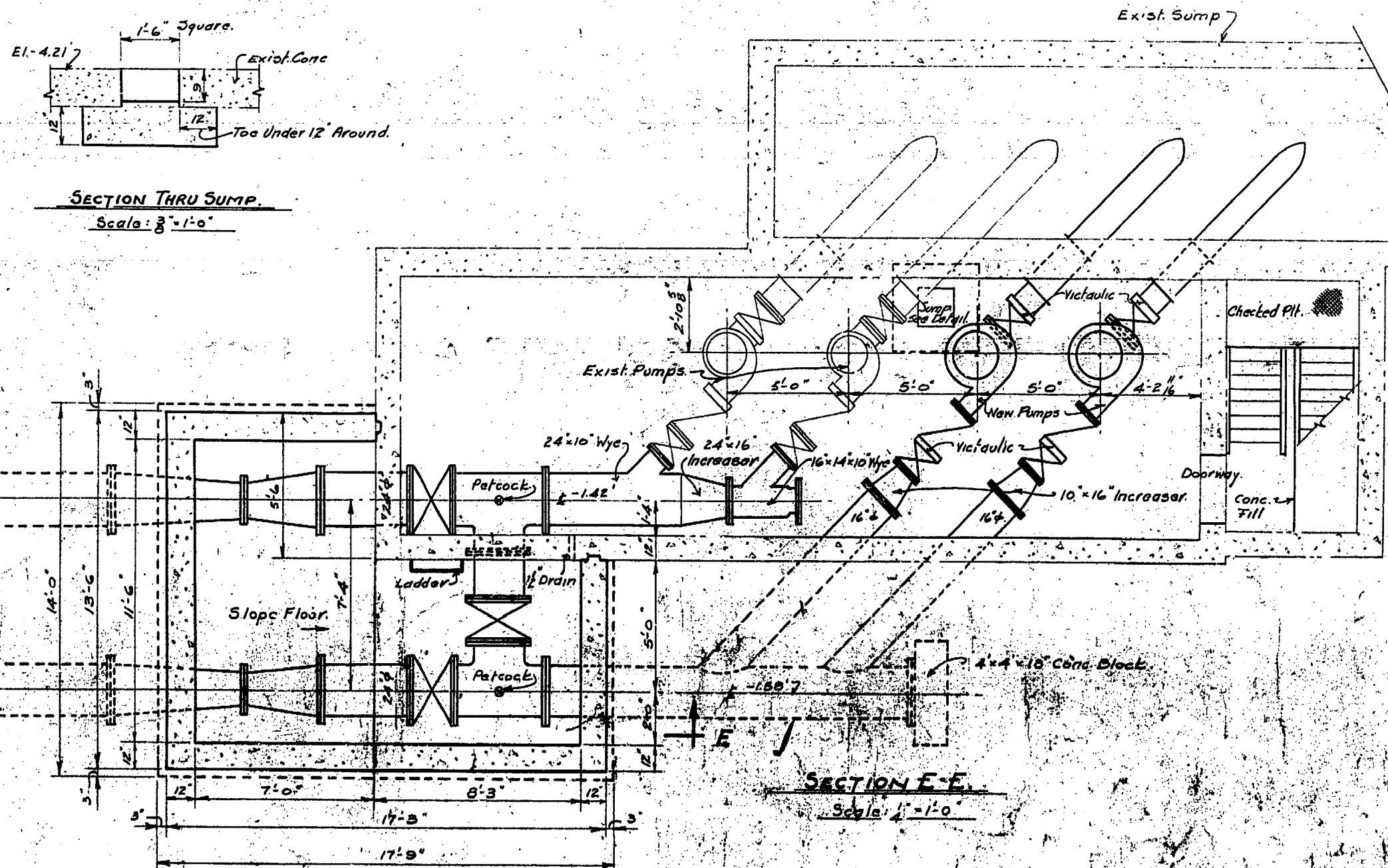
SECTION THRU EXISTING SCREEN CHAMBER  
Scale: 1/4" = 1'-0"



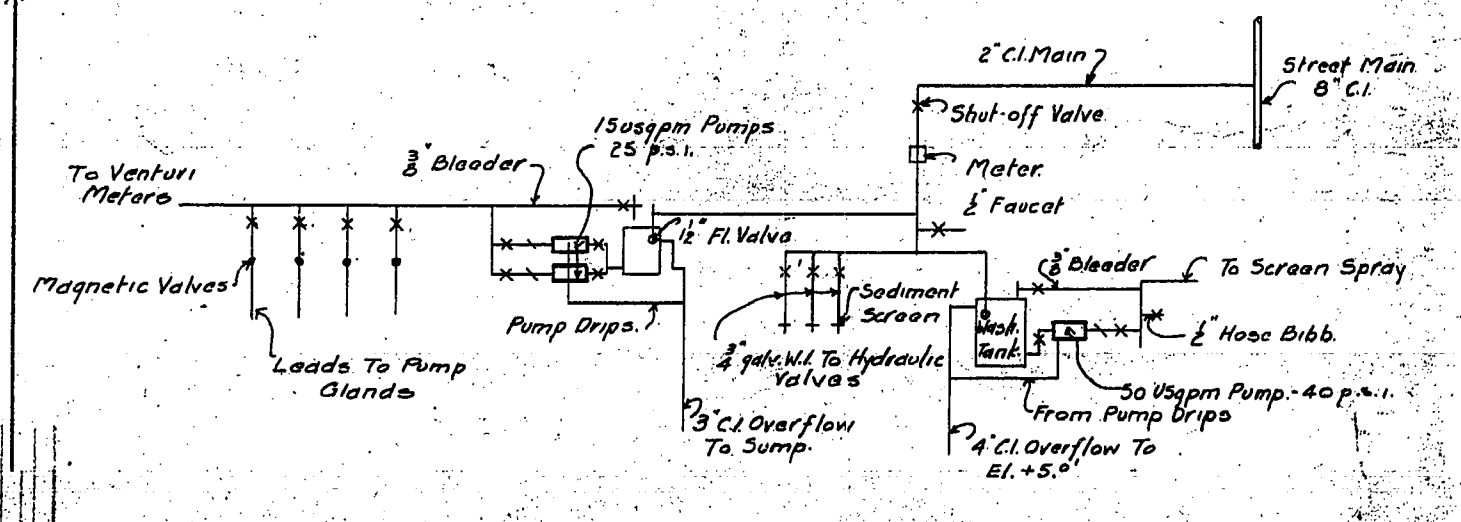
SECTION M-M

VENTILATING SYSTEM - MAIN BUILDING ADDITION

NOT INCLUDED IN THIS CONTRACT

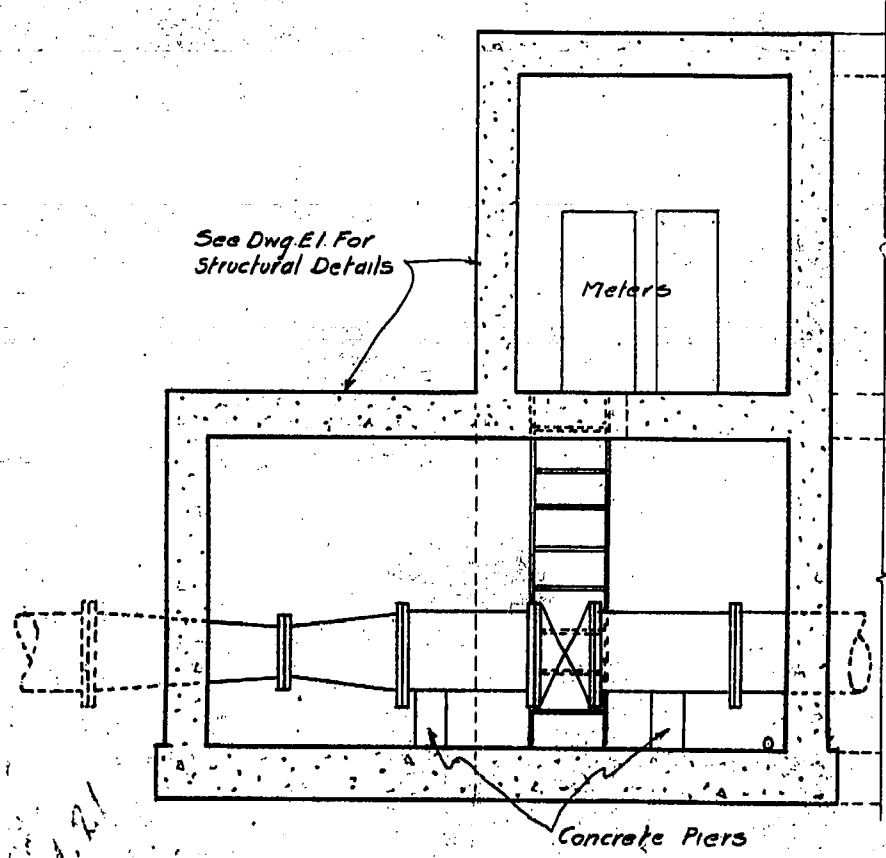


SECTION E-E  
Scale: 1/4" = 1'-0"



SCHEMATIC DIAGRAM - WATER SUPPLY

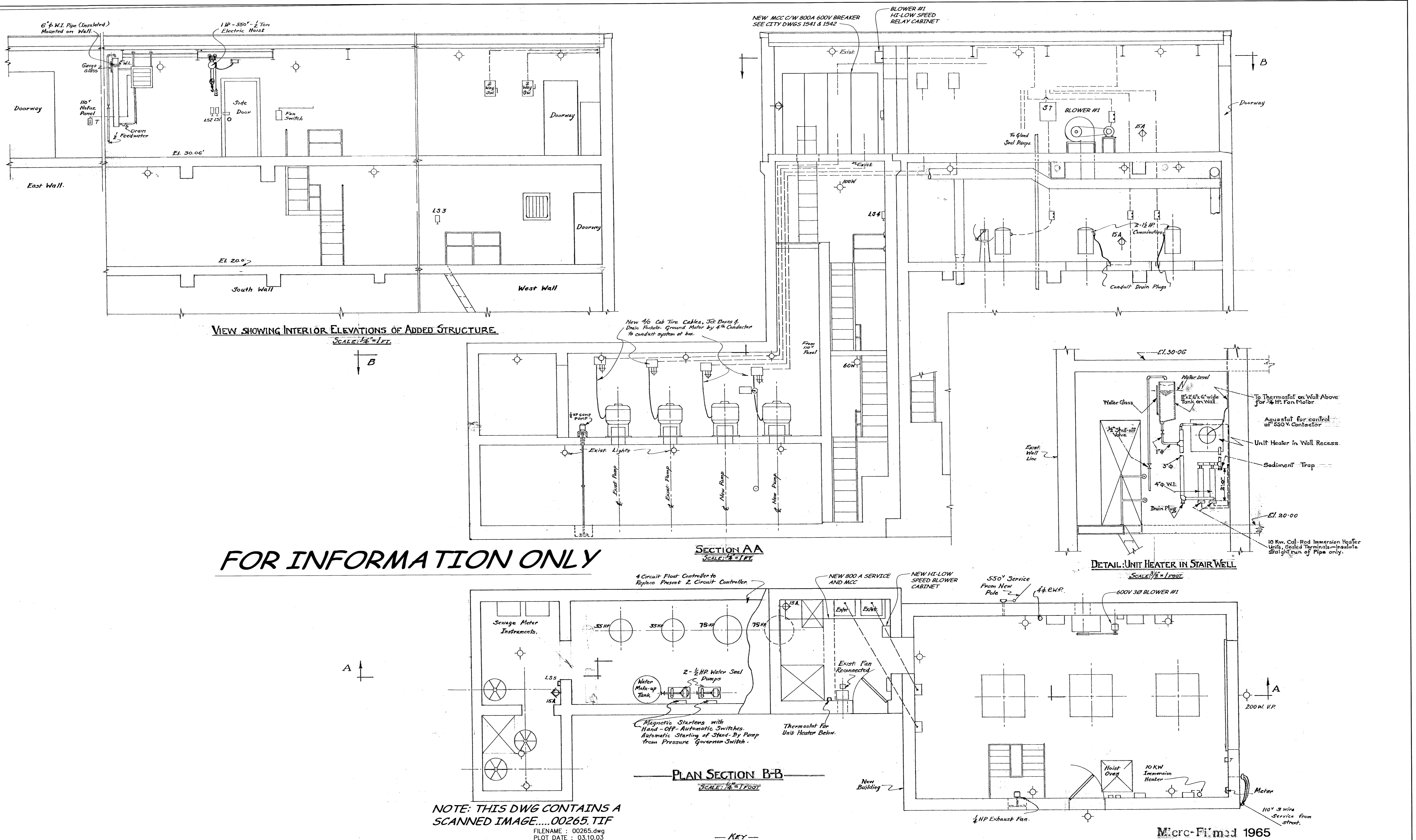
NOTE: See Dwg. E1 For Location of Sect. E-E.



SECTION F-F  
Scale: 1/4" = 1'-0"

THE METROPOLITAN CORPORATION OF GREATER WINNIPEG <b>WATERWORKS &amp; WASTE          DISPOSAL DIVISION</b> N. S. RUBBIS - DIRECTOR	SEWAGE DISPOSAL DEPT. <b>ALTERATIONS - MONTCALM          ST. PUMPING STA. COMM          STRUCTURE</b>	DES. <i>R.M.</i> CHK'D. <i>J.S.</i> DRN. C.O.W. & V.D. DATE APR. 63 ENG. DES. <i>F.H. McCord</i> ENG. <i>A. Penner</i> APPROVED <i>[Signature]</i>	SCALES AS NOTED DRAWING NO. <b>481</b>
	PROVINCE OF MANITOBA <b>E. H. KEASSEN</b> REGISTERED ENGINEER		PROVINCE OF MANITOBA <b>R. M. GIRLING</b> REGISTERED ENGINEER
	NOT INCLUDED IN THIS CONTRACT		
	APPROVED <i>[Signature]</i>		





REFERENCE DWGS: Dwg No. 185 E.1 & E.4

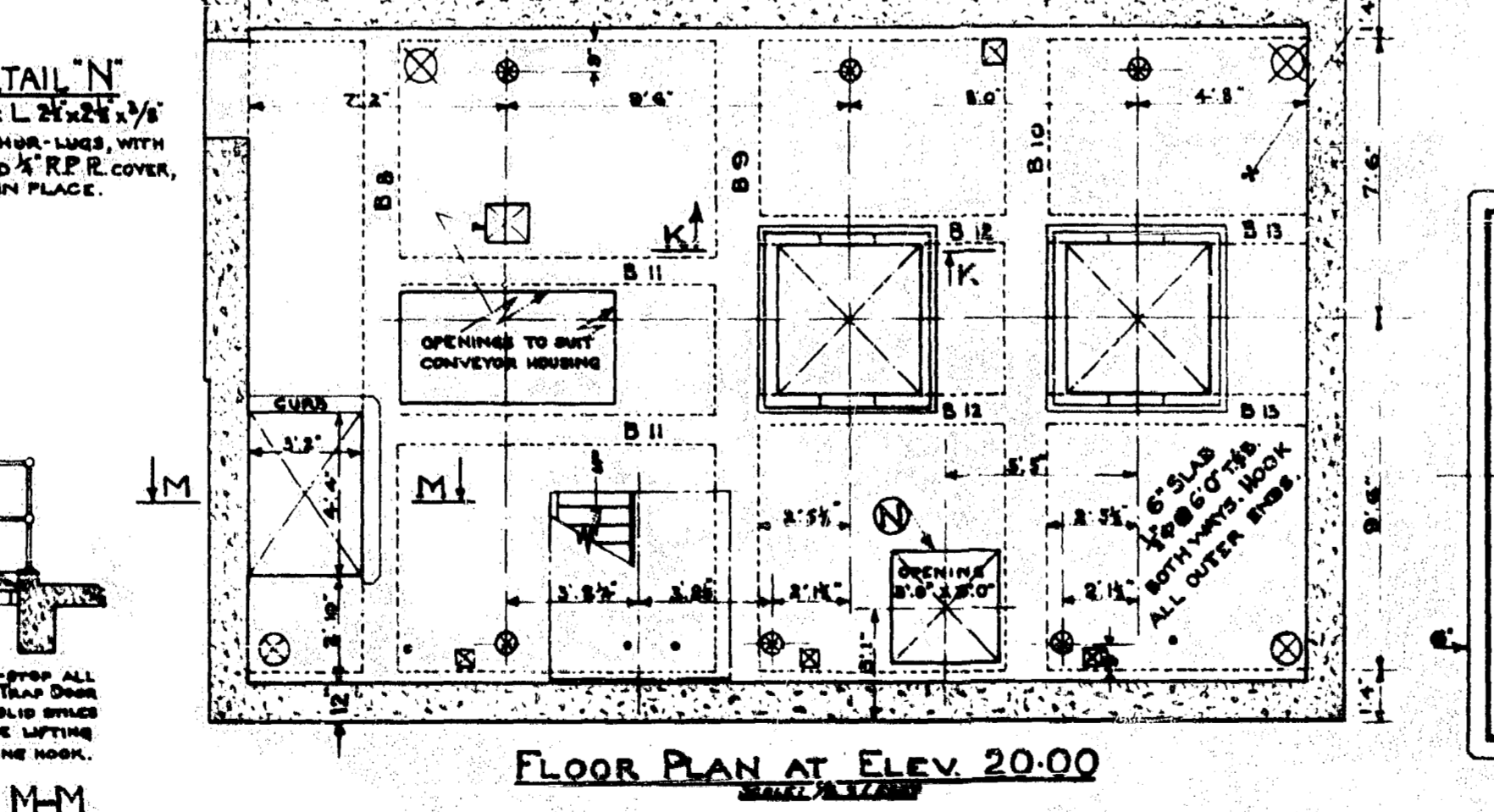
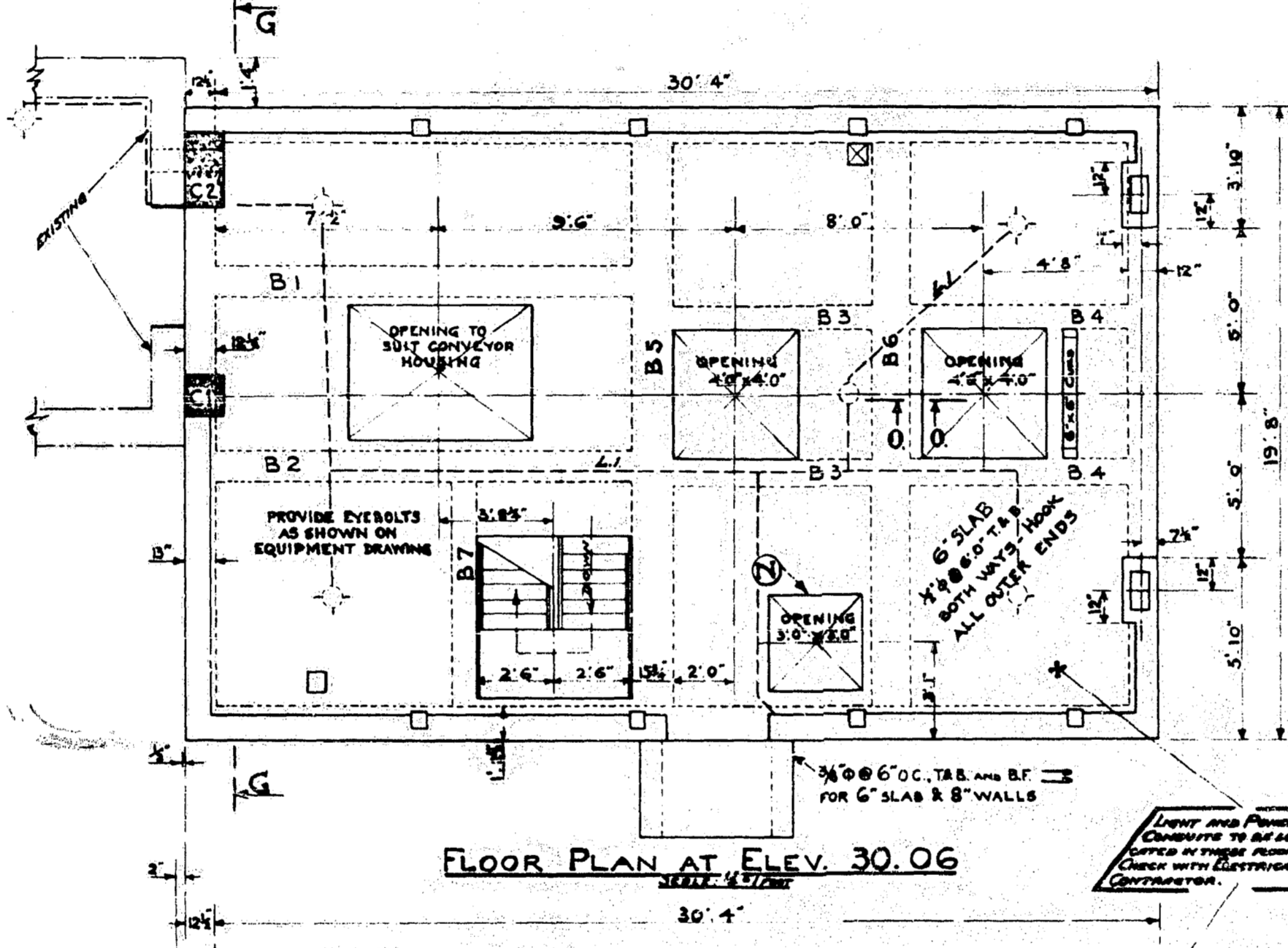
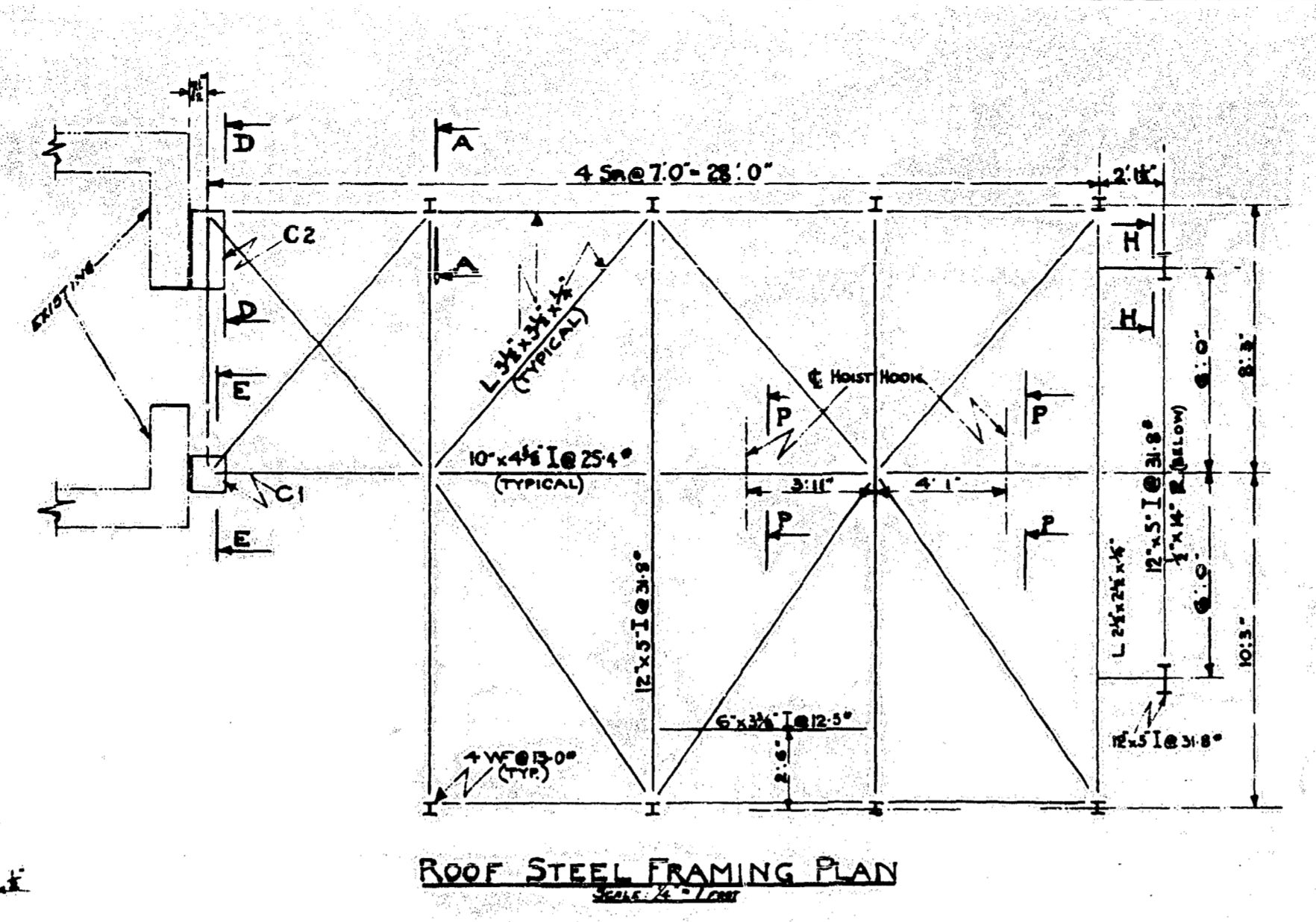
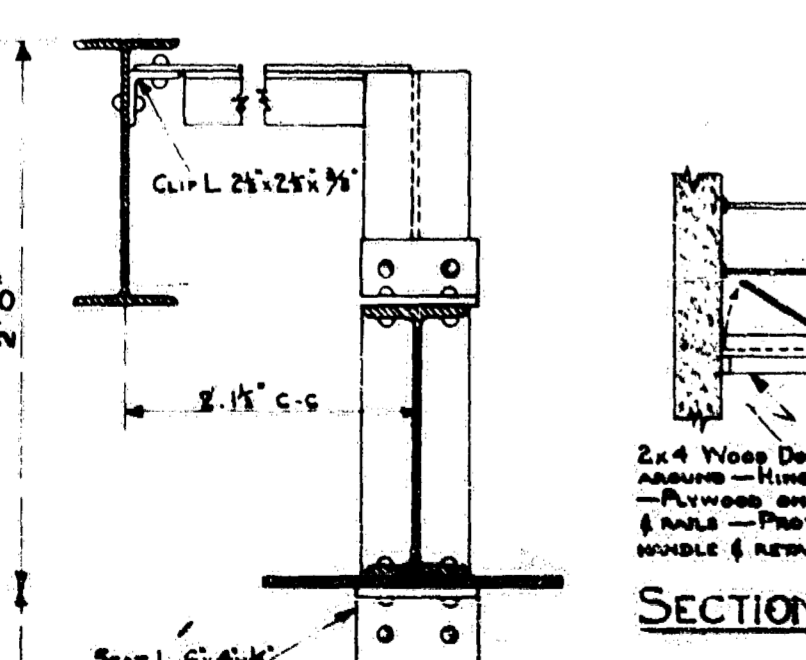
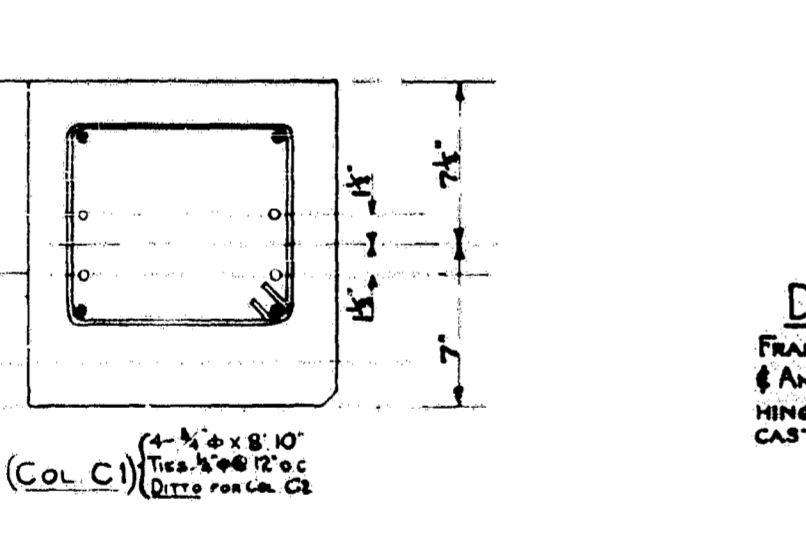
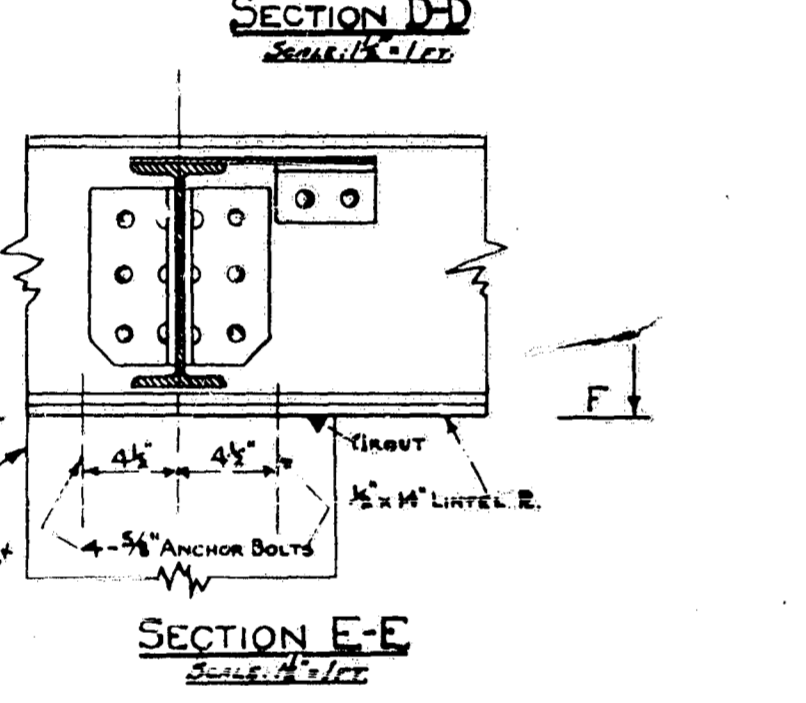
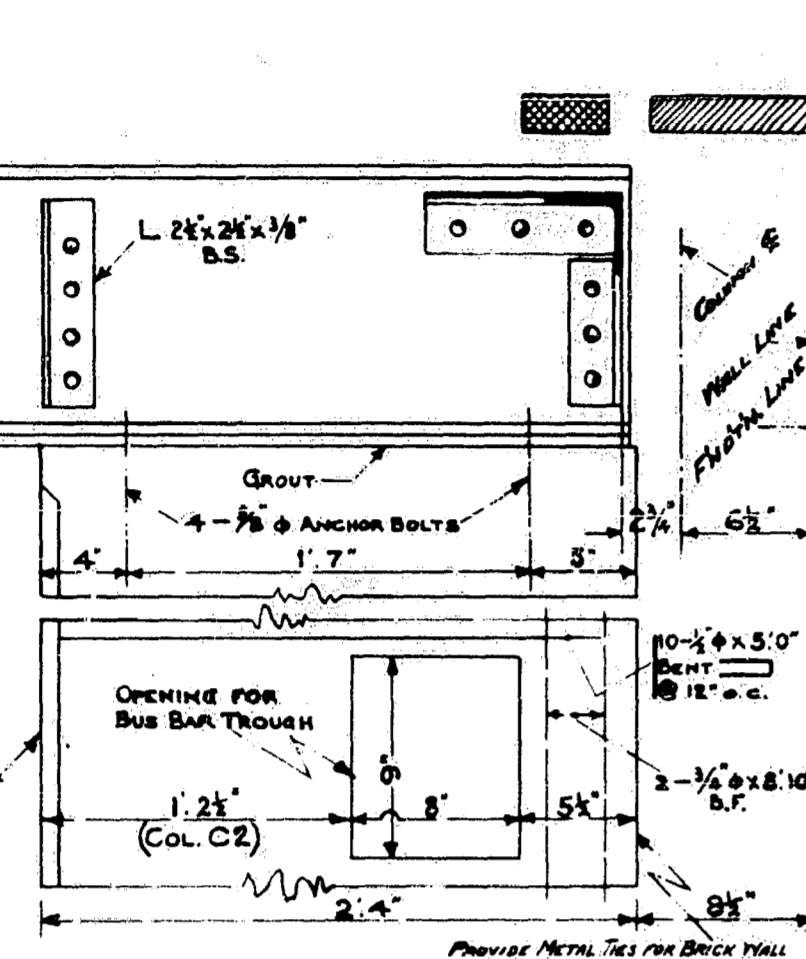
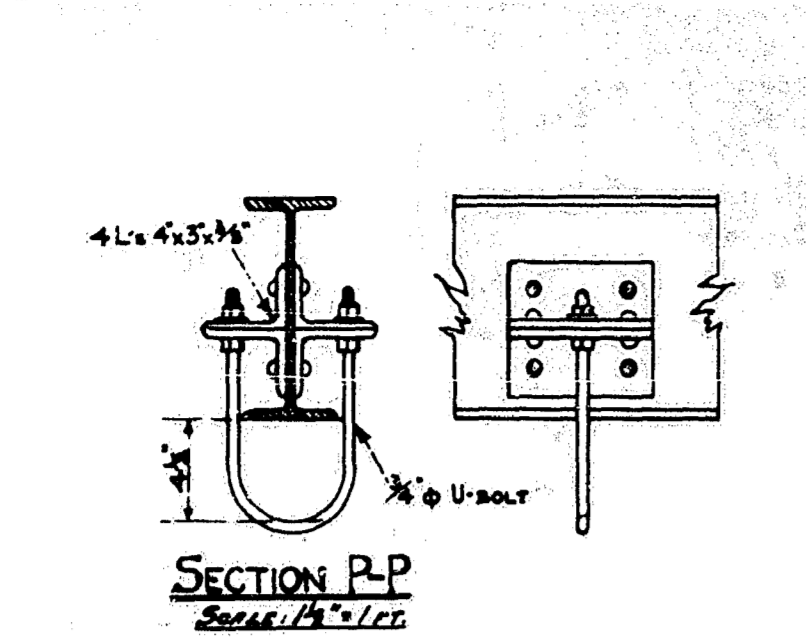
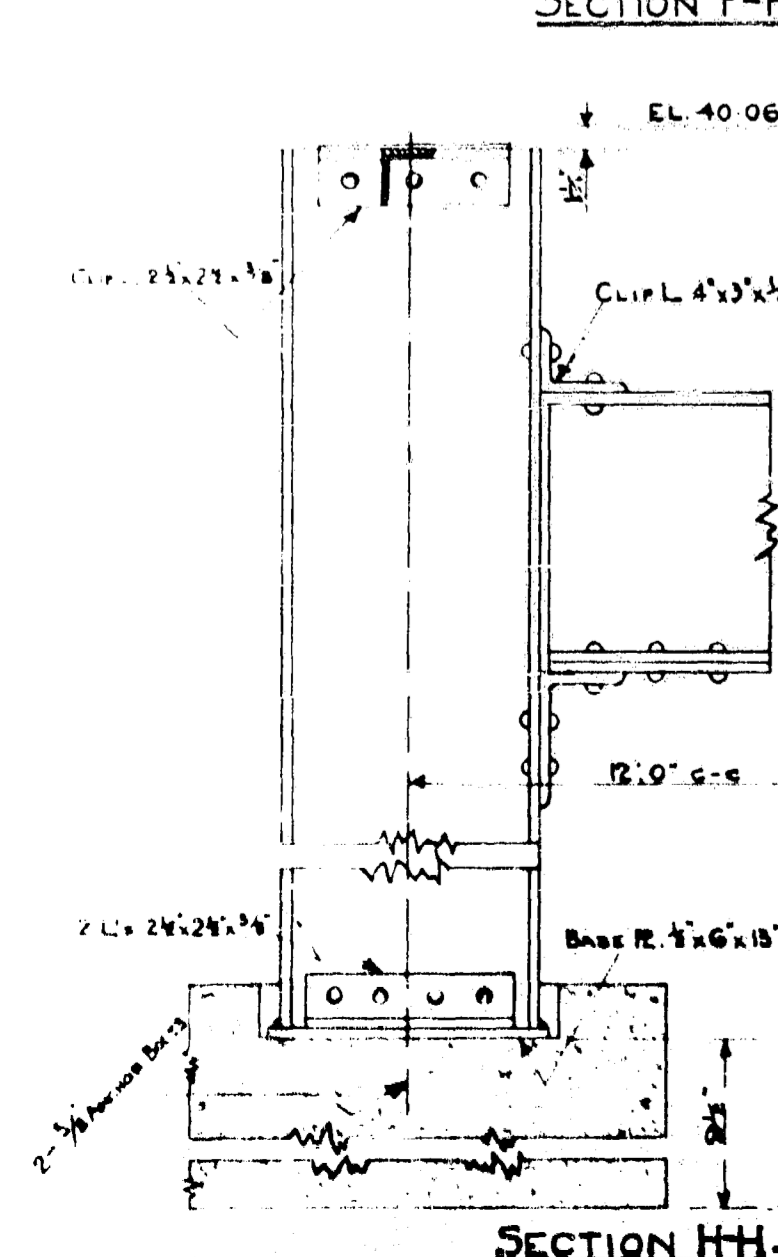
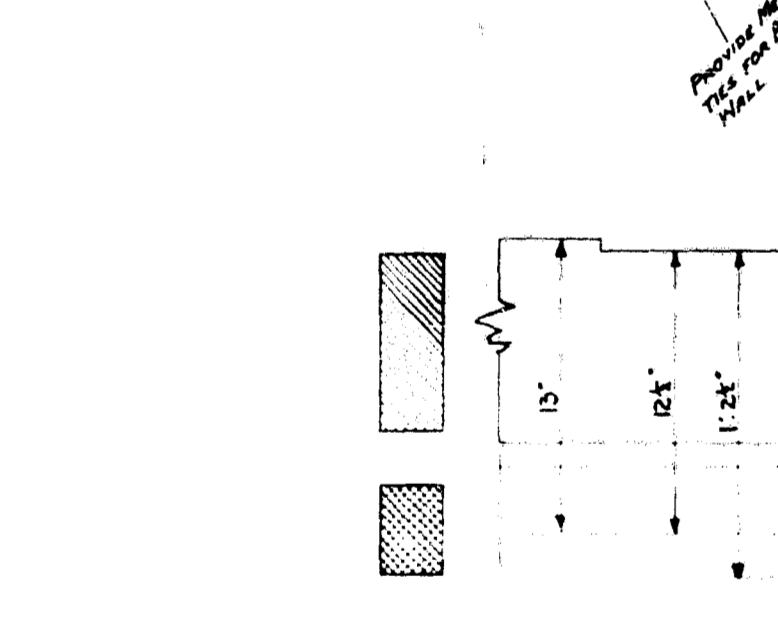
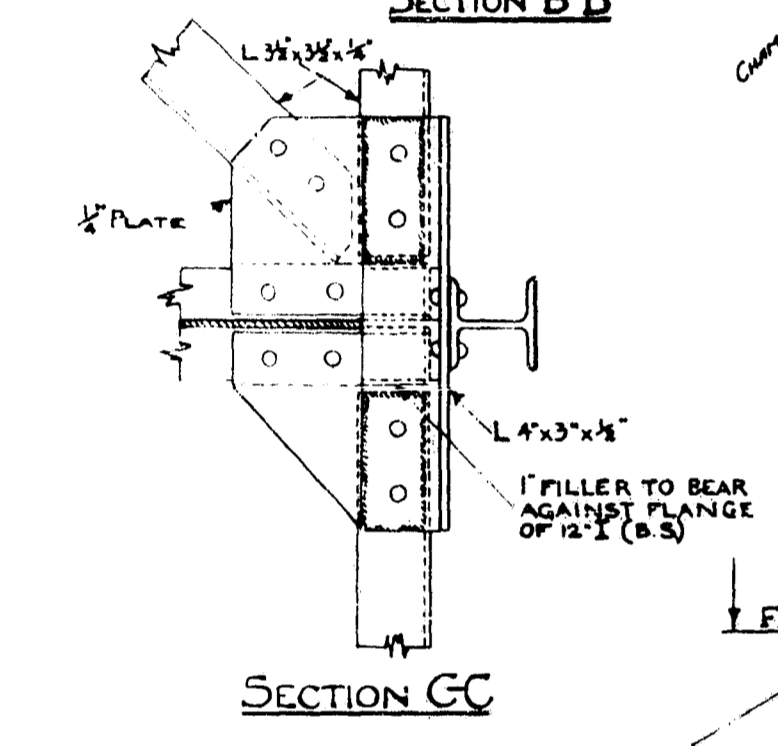
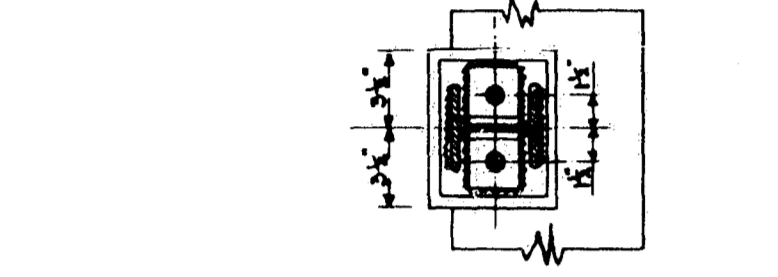
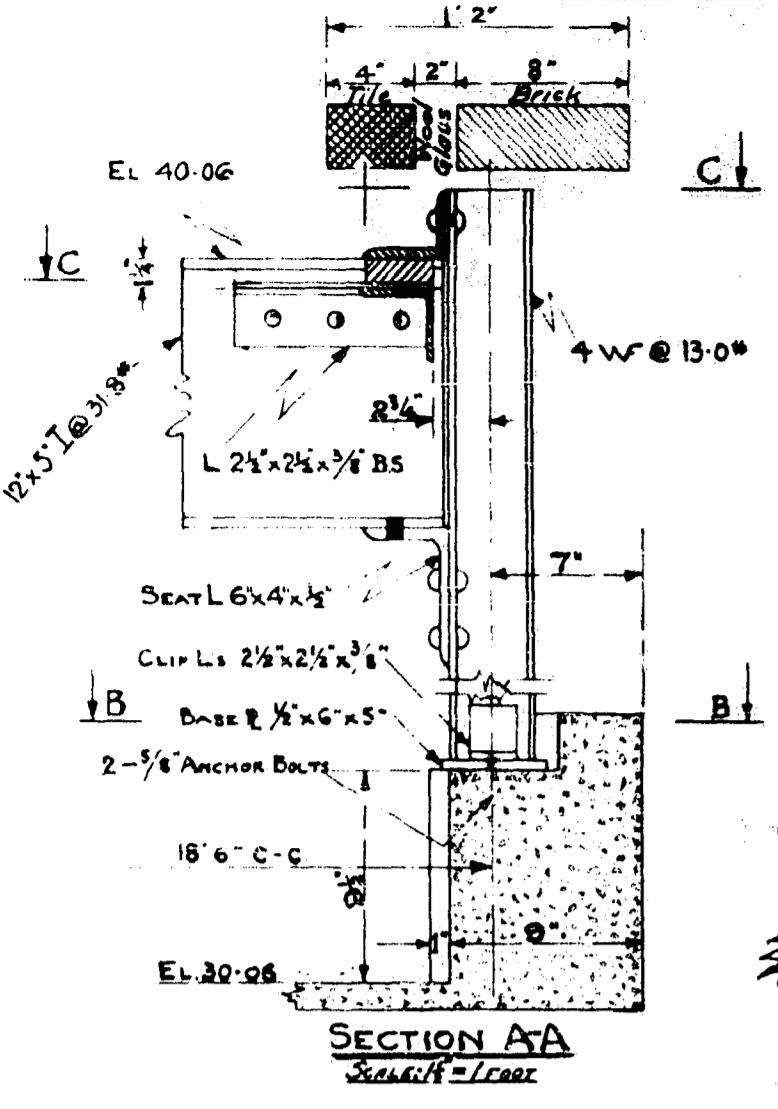
For Existing Electrical Layout Lighting locations not shown on this Dwg.

NO.	REVISIONS	DATE	BY
1.	CONVERTED TO CAD DWG & REVISED TO DATE	03.09.15	WKT
NO.	REVISIONS	DATE	BY

- KEY**
- 550V 3-Phase Circuit
  - 110V Single Phase Circuit
  - 550V Control Circuit
  - Hand-Off Automatic Selector Switch
  - On-Off Push-Button Switch
  - Thermostat
  - Lighting Fixture *All 100-Watt unless otherwise noted*
  - Utility Outlet with Cover (110V 2-wire)
  - Removable Glass Drain Sump
  - Push-Pull Light Switch
  - Bus in Trough Enclosure
  - Externally-operated Fused Switch

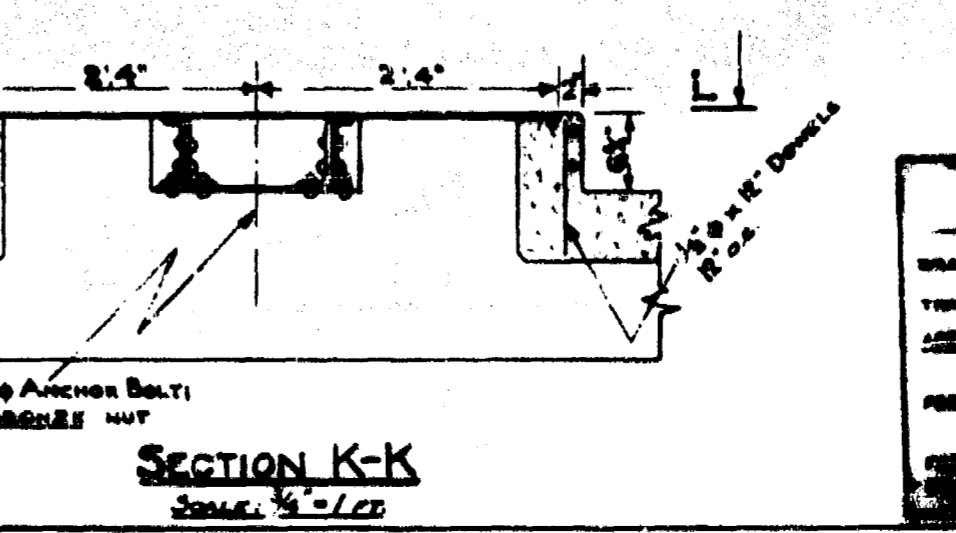
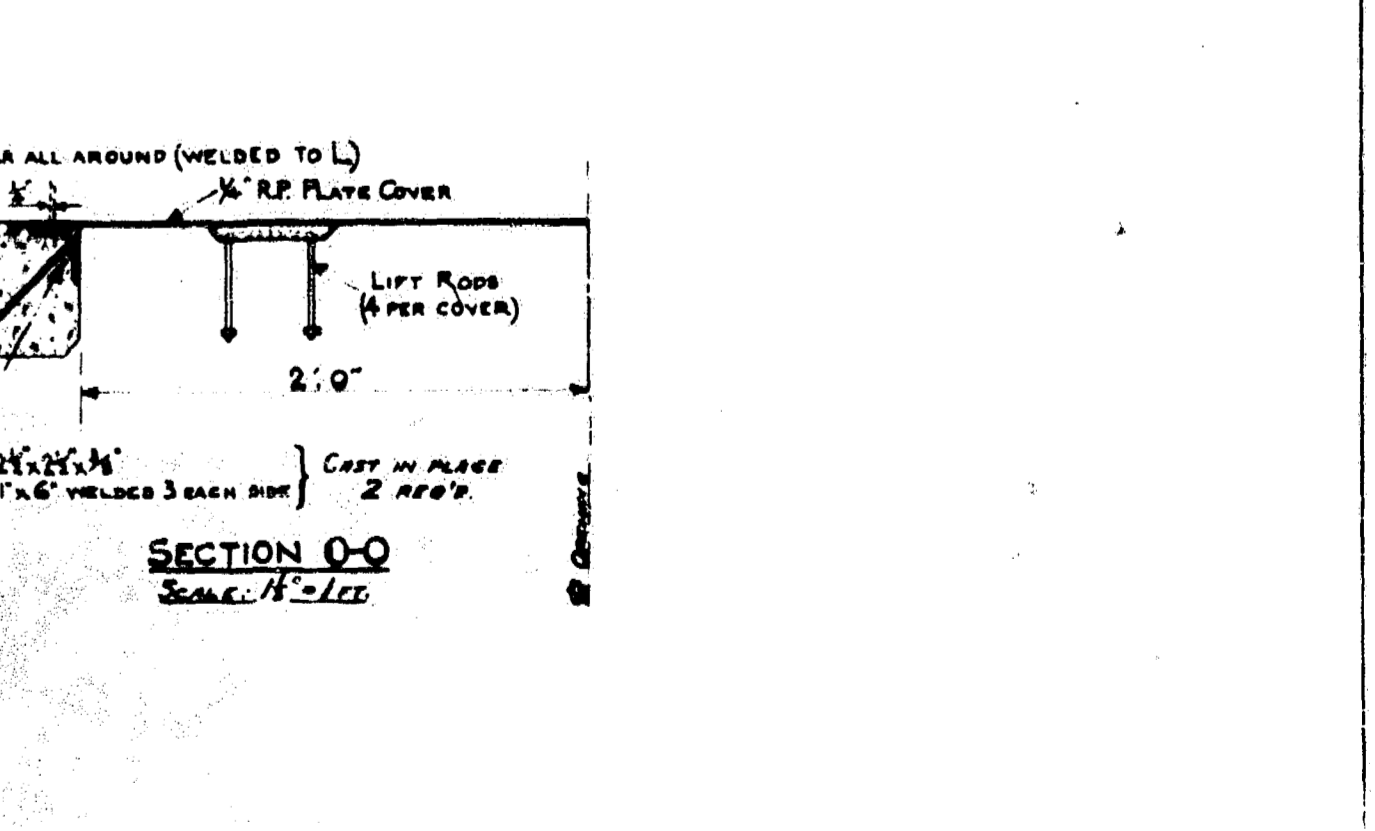
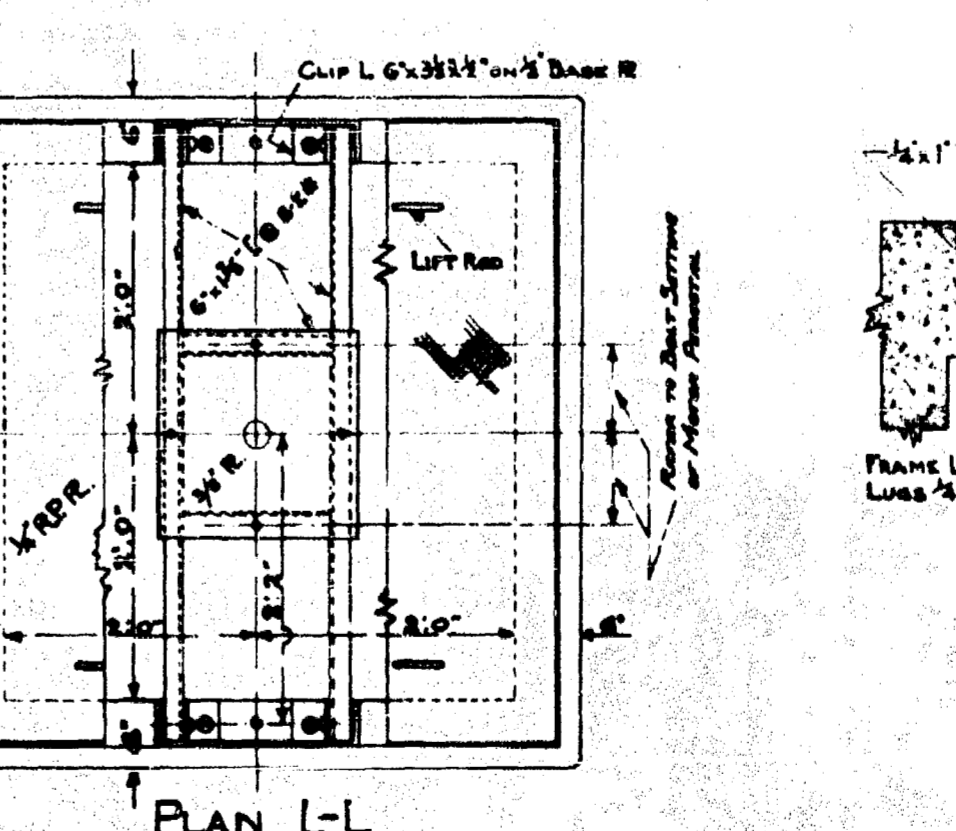
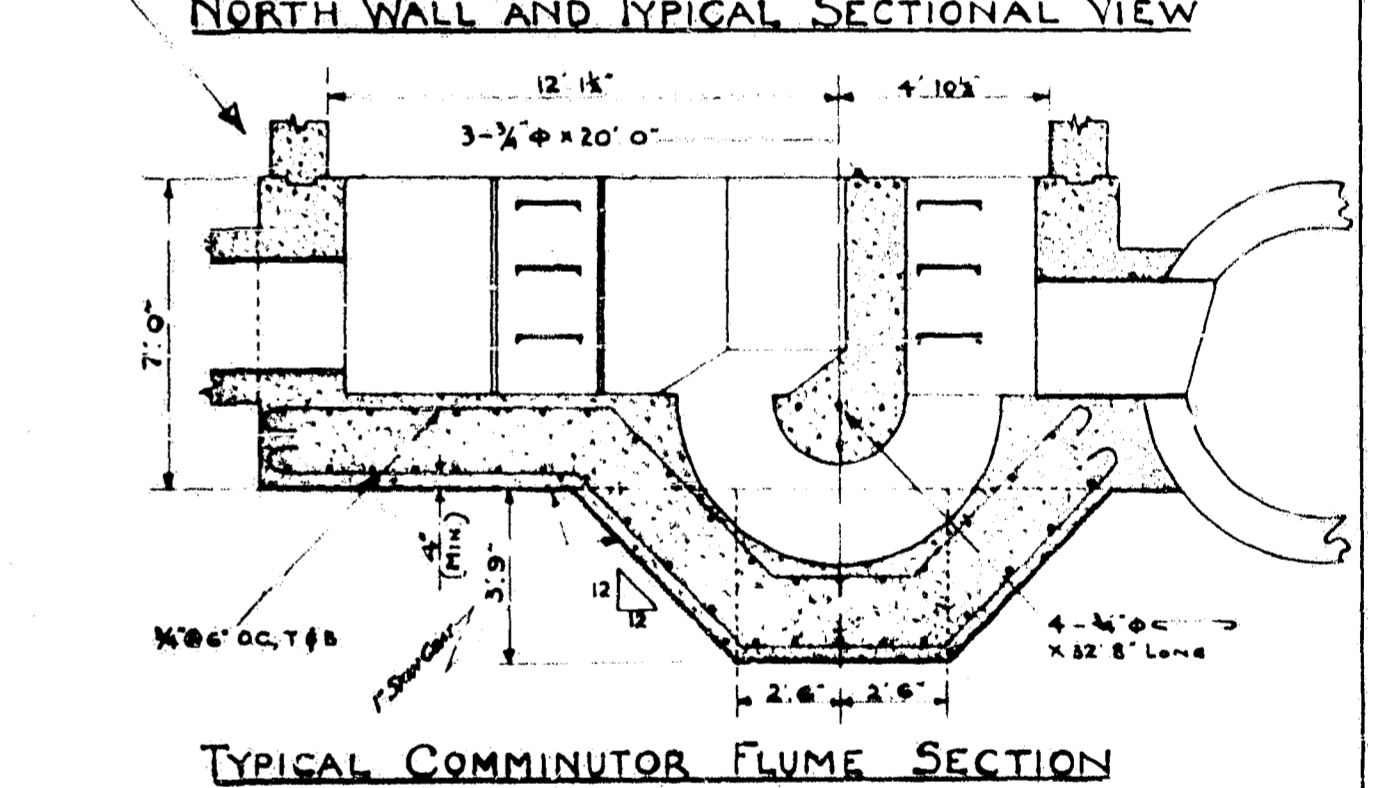
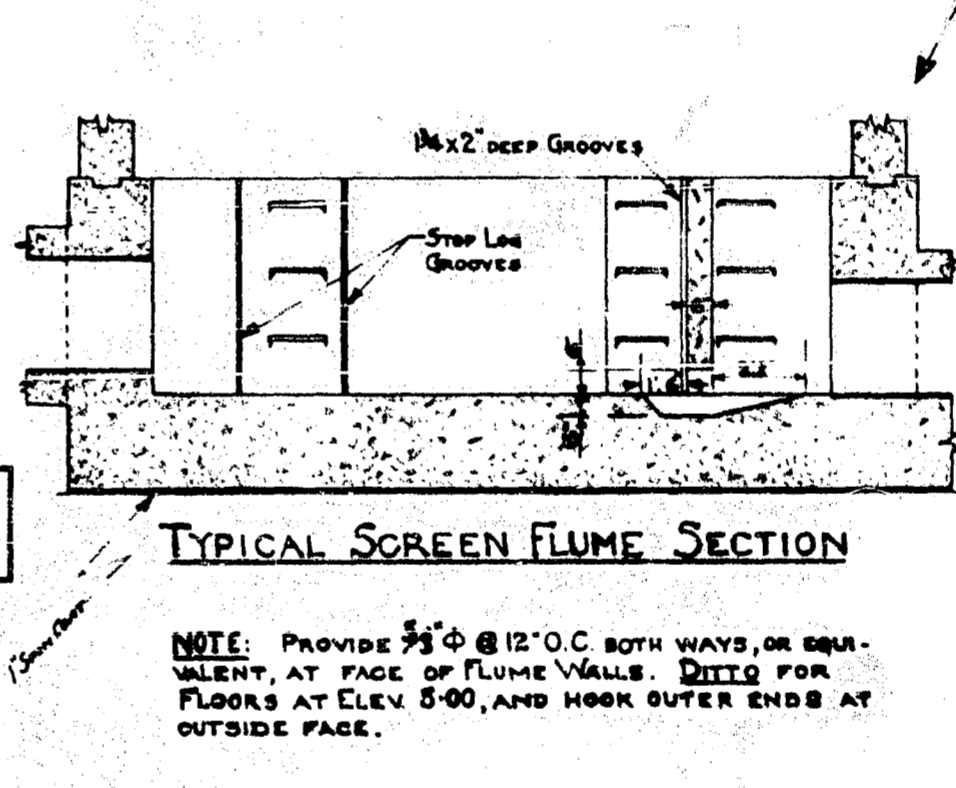
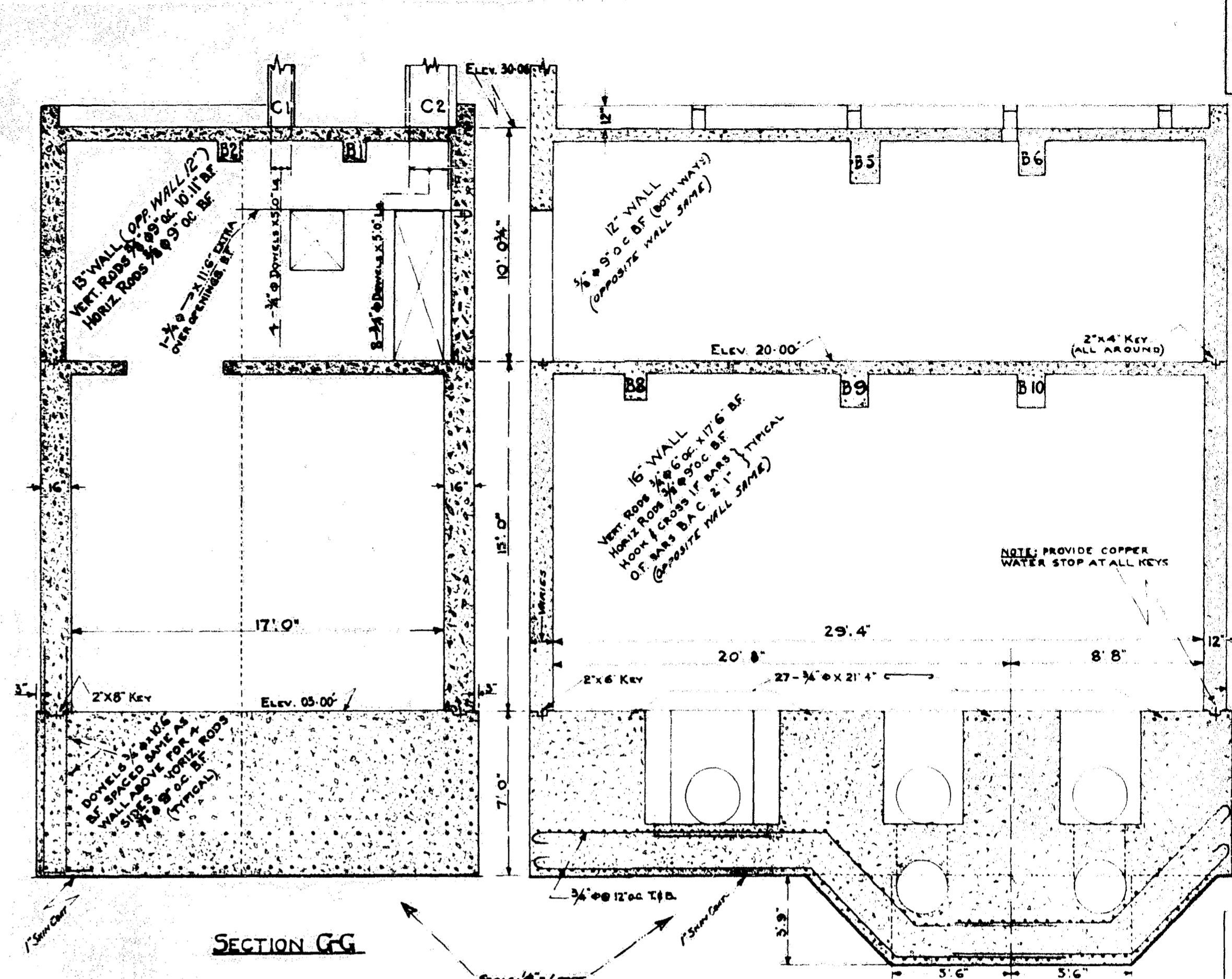
<b>GREATER WINNIPEG SANITARY DISTRICT</b>		
DRAWN BY <u>G.A.C.</u> DATE <u>Aug 7/80</u> TRACED BY <u>G.A.C.</u> CHECKED BY <u>W.H.H.</u> APPROVED: <u>[Signature]</u> SUPV. FOR DISTRICT: <u>[Signature]</u> GEN. ENG. FOR CONSULTING ENGINEERS: <u>[Signature]</u>	W. D. HURST CHIEF ENGINEER N. S. BUBBIS GENERAL MANAGER ALVORD, BURDICK & HOWSON CONSULTING ENGINEERS	TITLE <b>MONTCALM ST PUMPING STA™</b> <b>ELECTRIC POWER, LIGHT &amp; HEAT</b> SCALE: As Shown DRAWING NO. <b>265C</b>





**BEAM SCHEDULE**

MR.	NO.	WIDTH	DEPTH	STEEL	REMARKS
B1	1	12	19	3-3/4" I.T.B.	HKS.
B2	1	12	19	3-3/4" I.T.B.	CONTINUE STEEL THROUGH SUCCEEDING BEAM WHERE APPLICABLE, AND HOOK ALL OUTER ENDS.
B3	2	9	15	3-3/4" I.T.B.	
B4	2	9	15	3-3/4" I.T.B.	
B5	1	15	24	6-3/4" I.T.B.	
B6	1	15	24	5-3/4" I.T.B.	
B7	1	9	12	3-3/4" I.T.B.	
B8	1	12	23	4-3/4" I.T.B.	
B9	1	15	24	5-3/4" I.T.B.	
B10	1	15	24	5-3/4" I.T.B.	
B11	2	9	15	3-3/4" I.T.B.	
B12	2	9	15	3-3/4" I.T.B.	
B13	2	9	15	3-3/4" I.T.B.	



**GREATER WINNIPEG SANITARY DISTRICT**

DESIGNED BY: *[Signature]*  
 DRAWN BY: *[Signature]*  
 CHECKED BY: *[Signature]*

W. D. MURPHY  
 CONSULTING ENGINEER

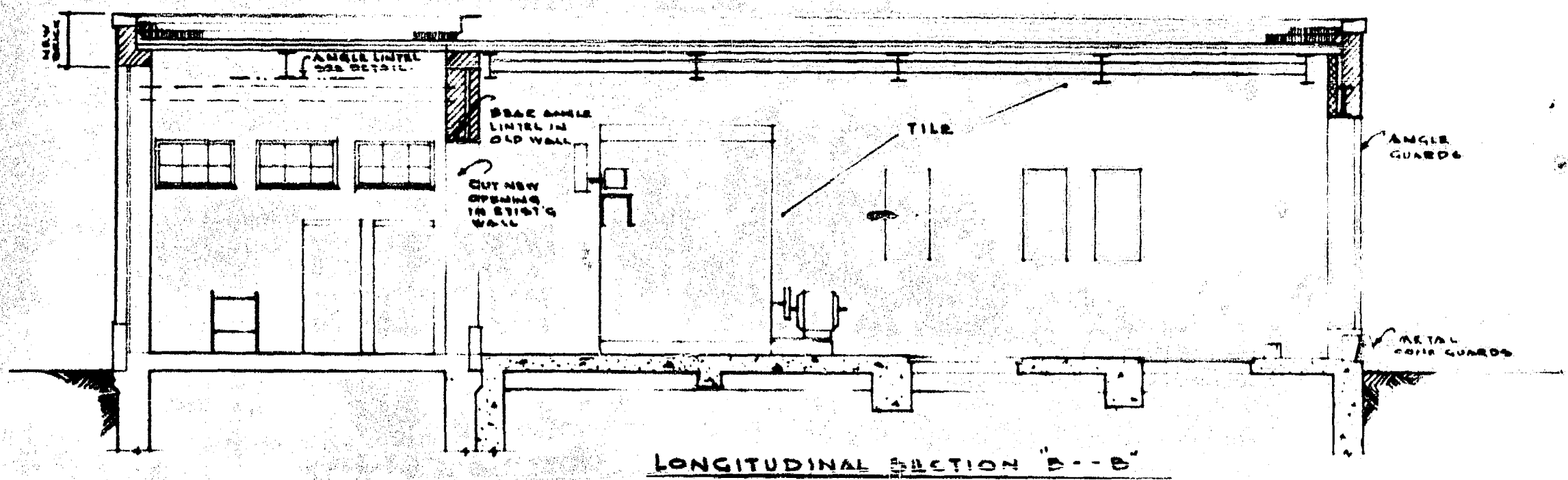
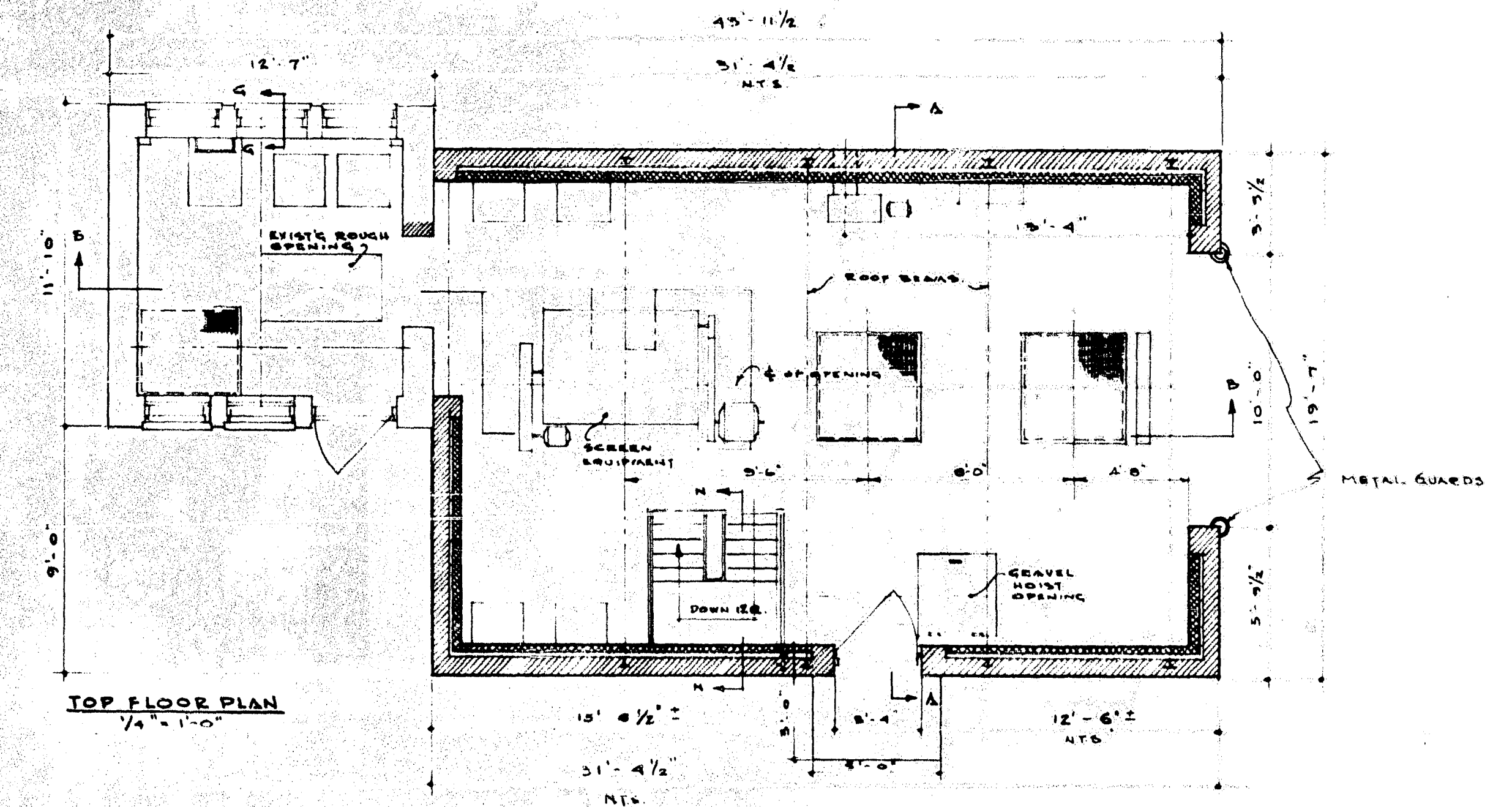
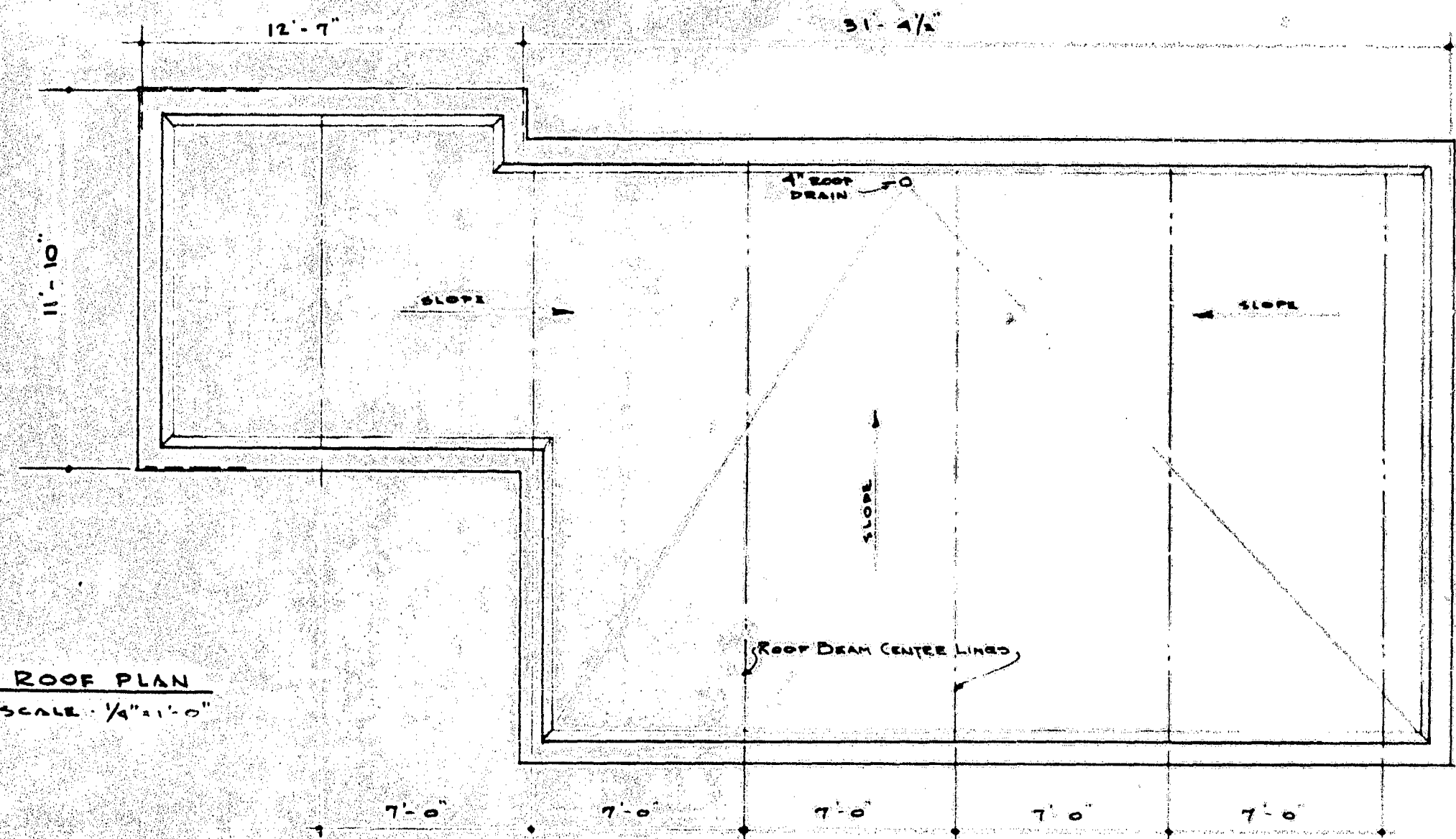
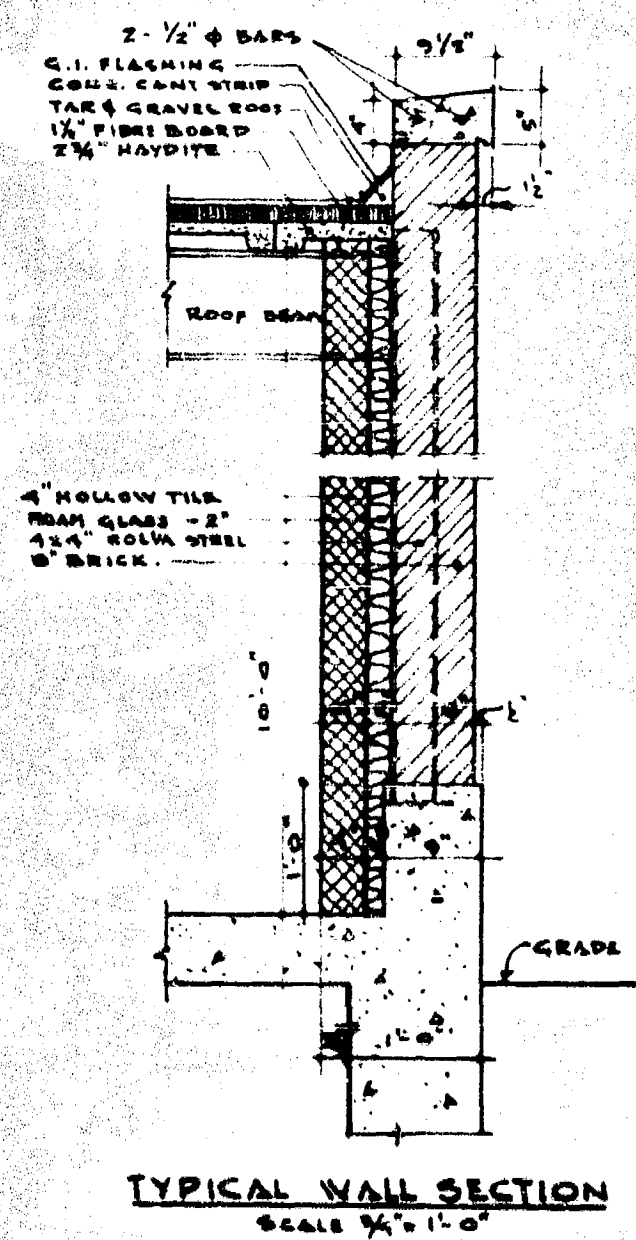
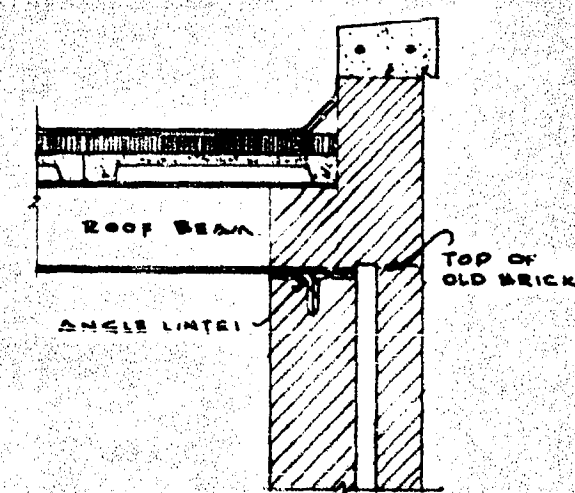
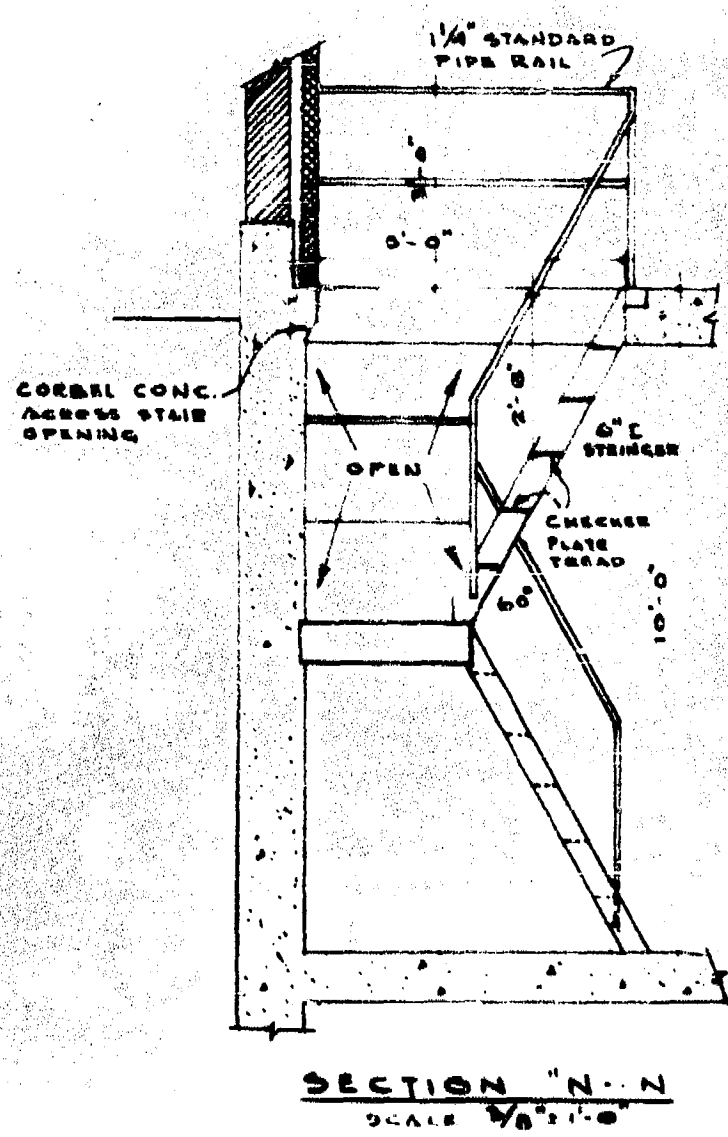
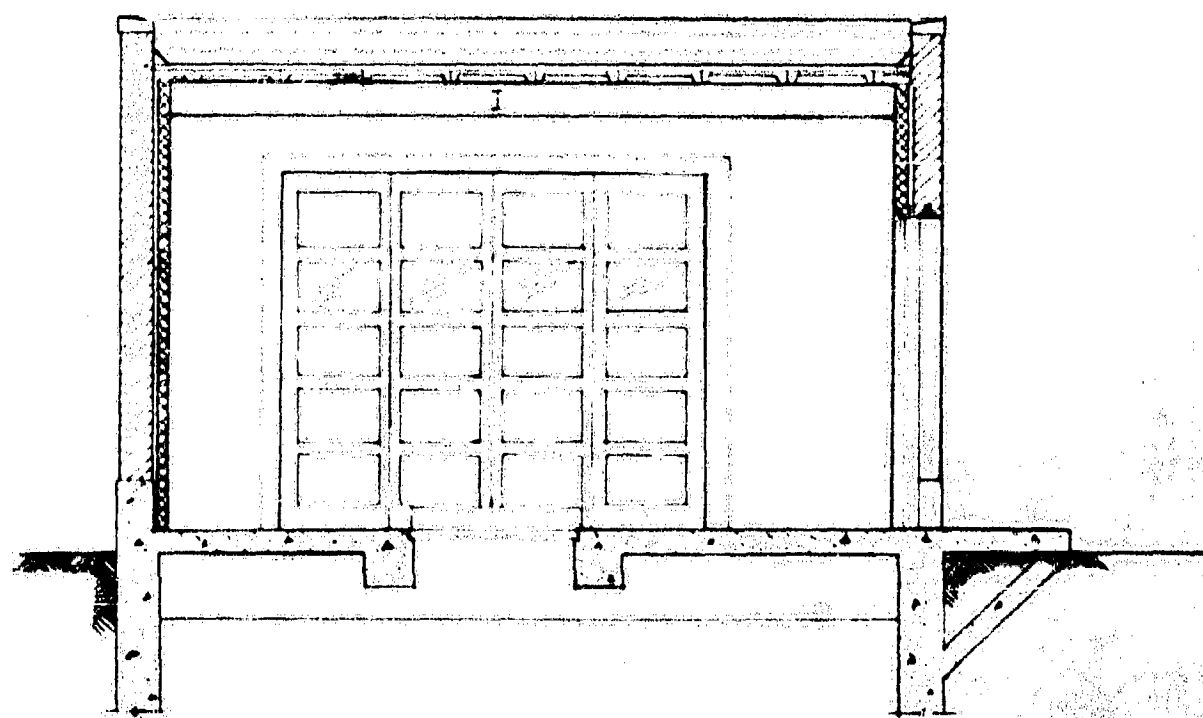
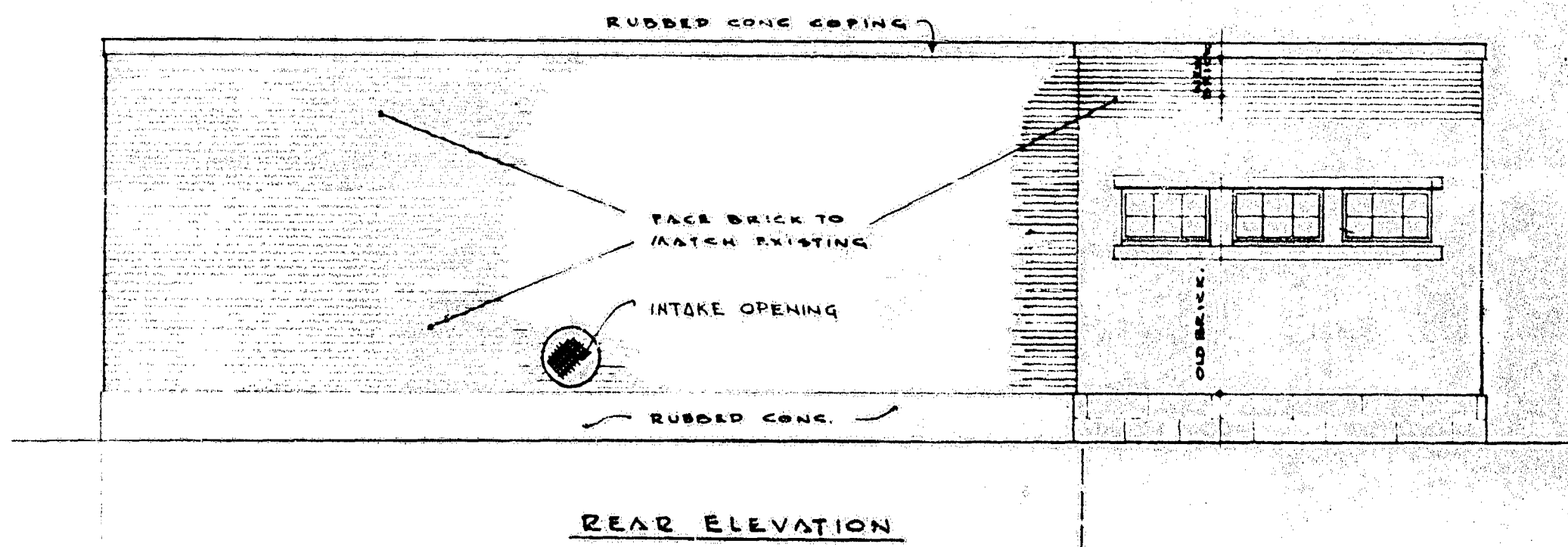
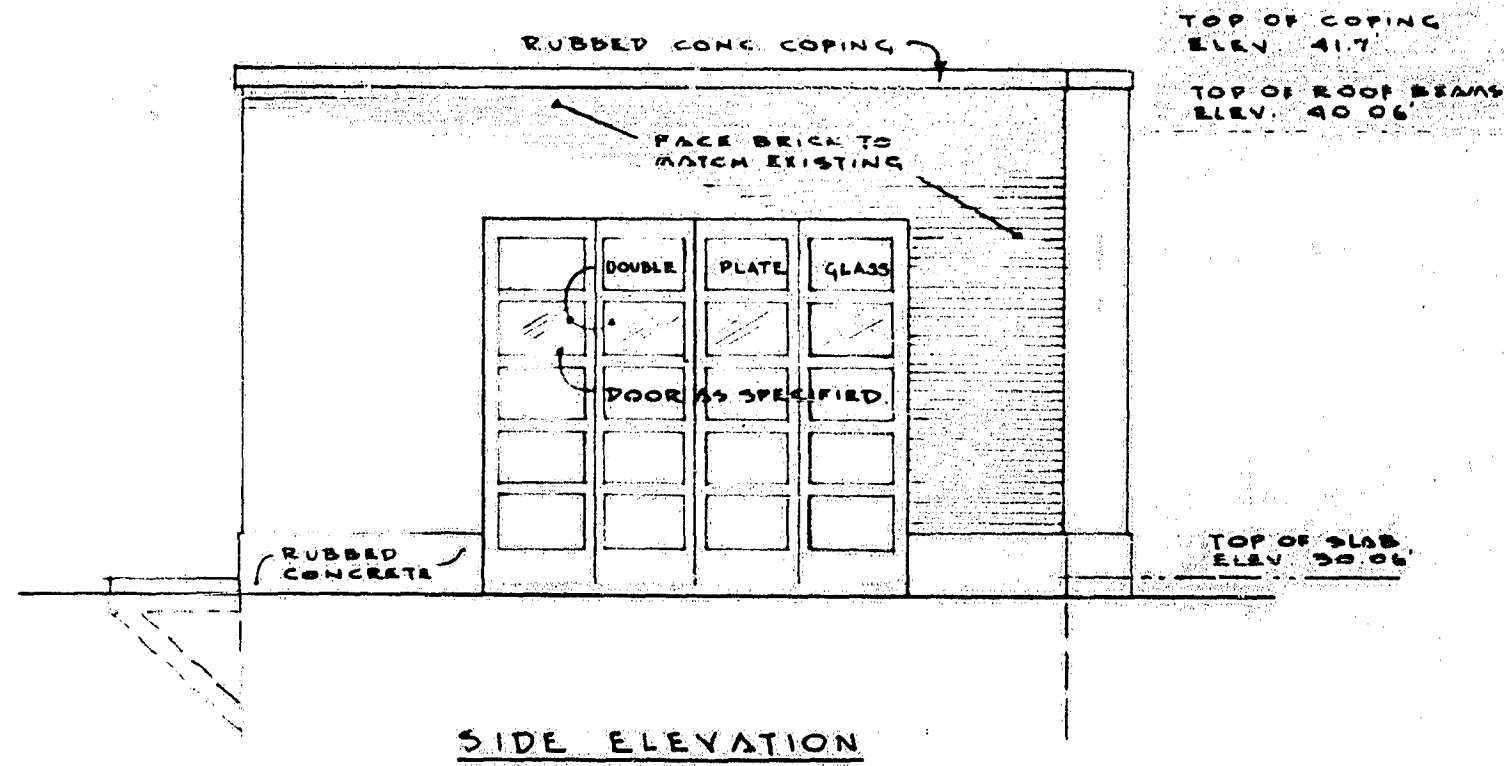
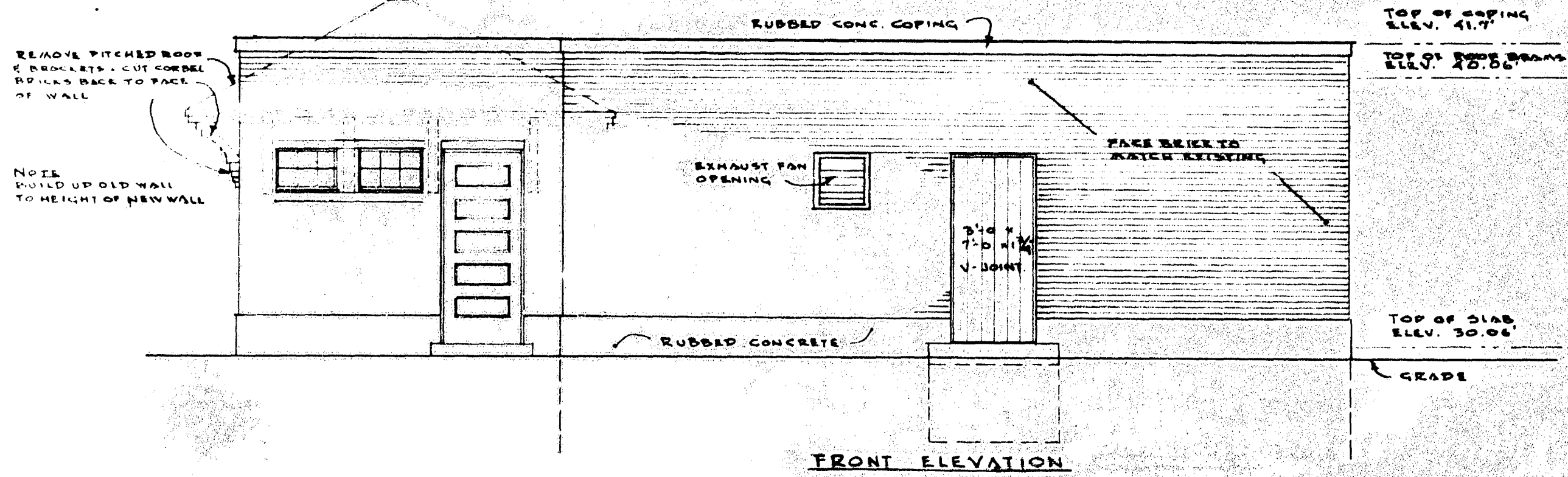
N. S. BLISS  
 CONSULTING ENGINEER

ALVORD, BURDICK & HOWSON  
 CONSULTING ENGINEERS

W. H. MONTCALM ST. PUMPING STATION - CONCRETE AND STEEL DETAIL

As Shown **264**





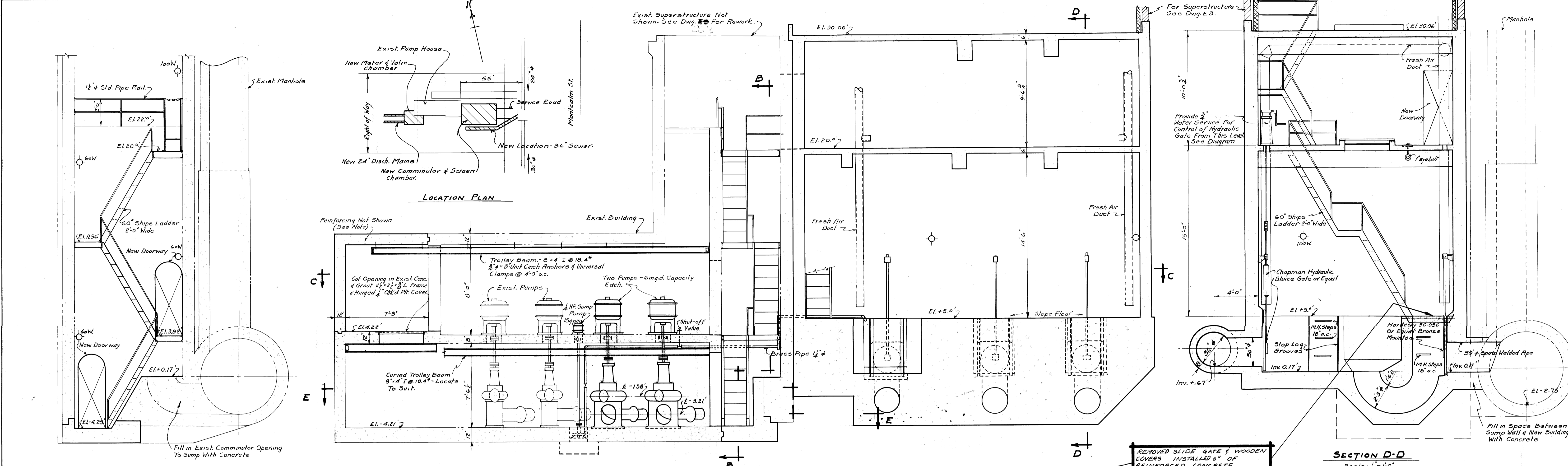
GREATER WINNIPEG SANITARY DISTRICT		
DRAWN BY: J.E. CHECKED BY: J.E. DATE: OCT. 1910	W. D. HURST MEMBER OF BOARD OF SUPERVISORS H. S. GIBBS GENERAL ENGINEER ALYDOR, BURDICK & HOWSON CONSULTING ENGINEERS	TYPE: DETAILS SUPERSTRUCTURE MONCALM ST. PUMPING STATION. SCALE: NOTED SHEET NO. 263







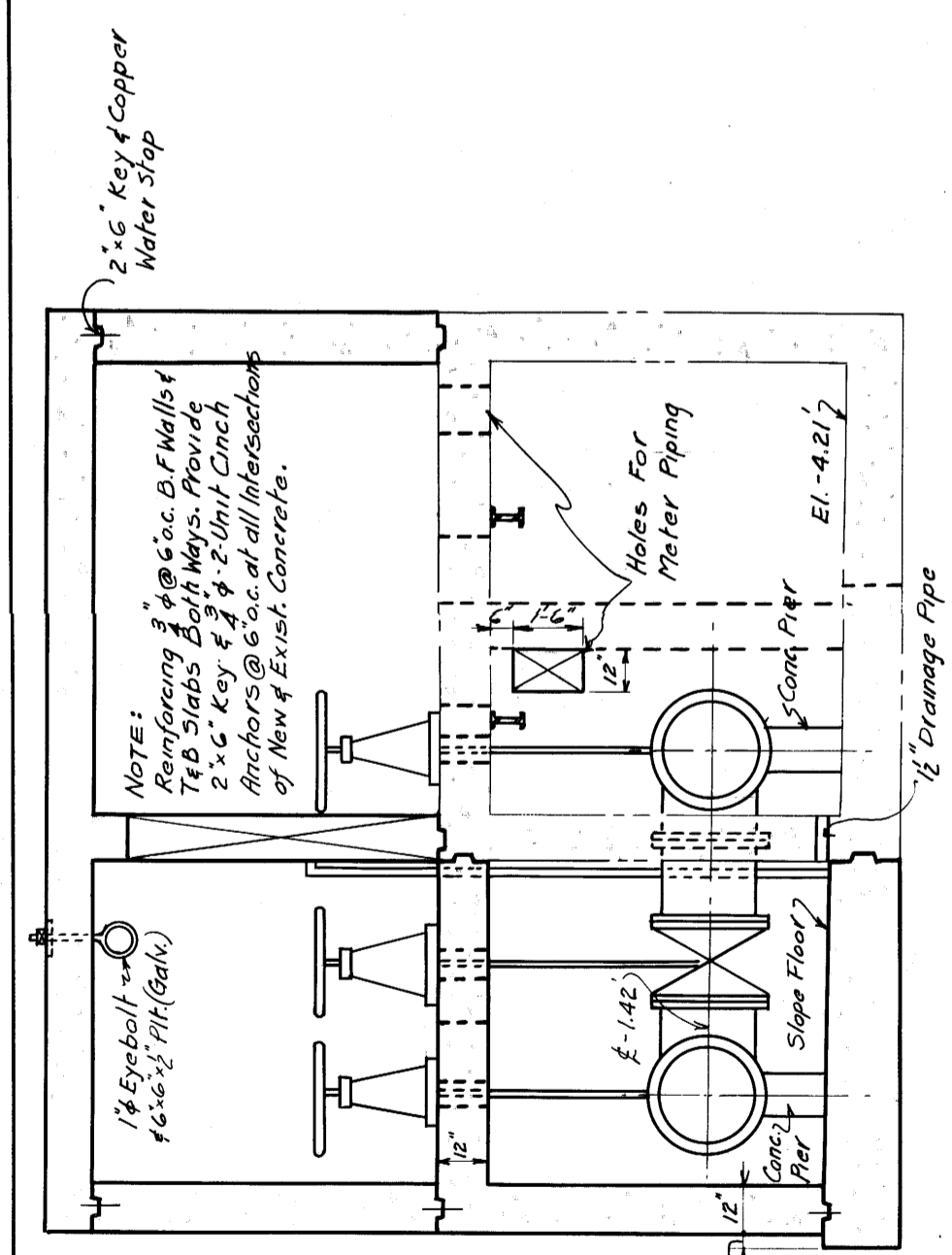
261 file # SP10050  
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 DETAILS



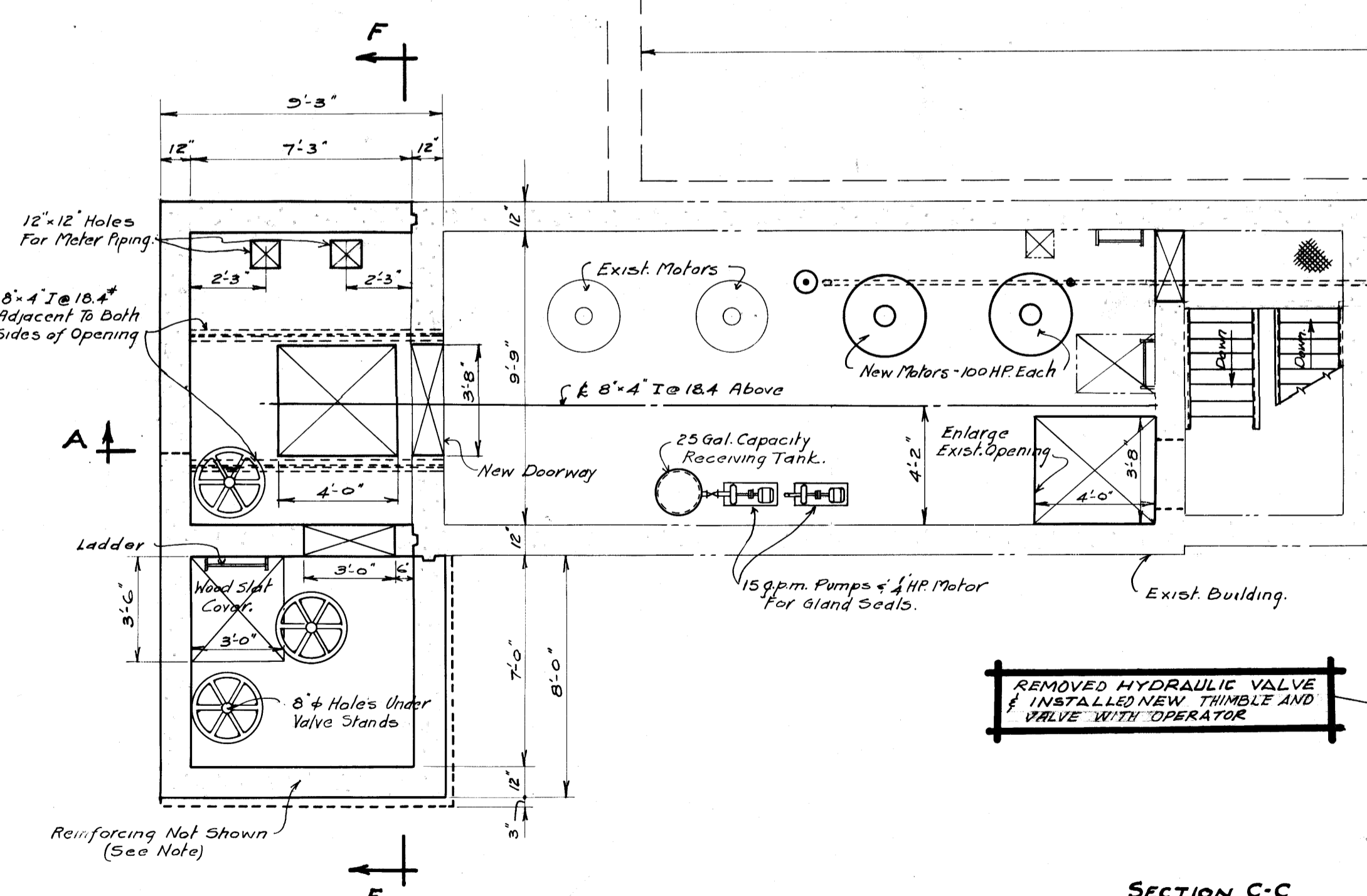
SECTION B-B  
 Scale: 1/4" = 1'-0"

SECTION A-A  
 Scale: 1/4" = 1'-0"

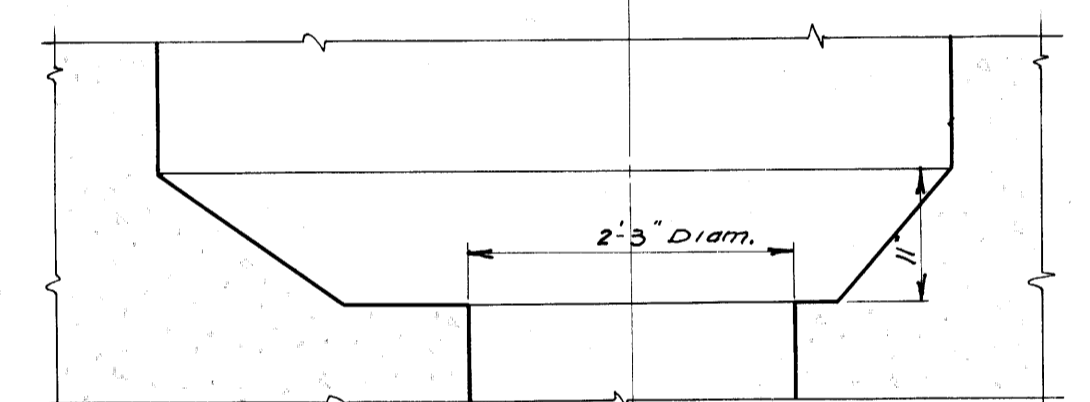
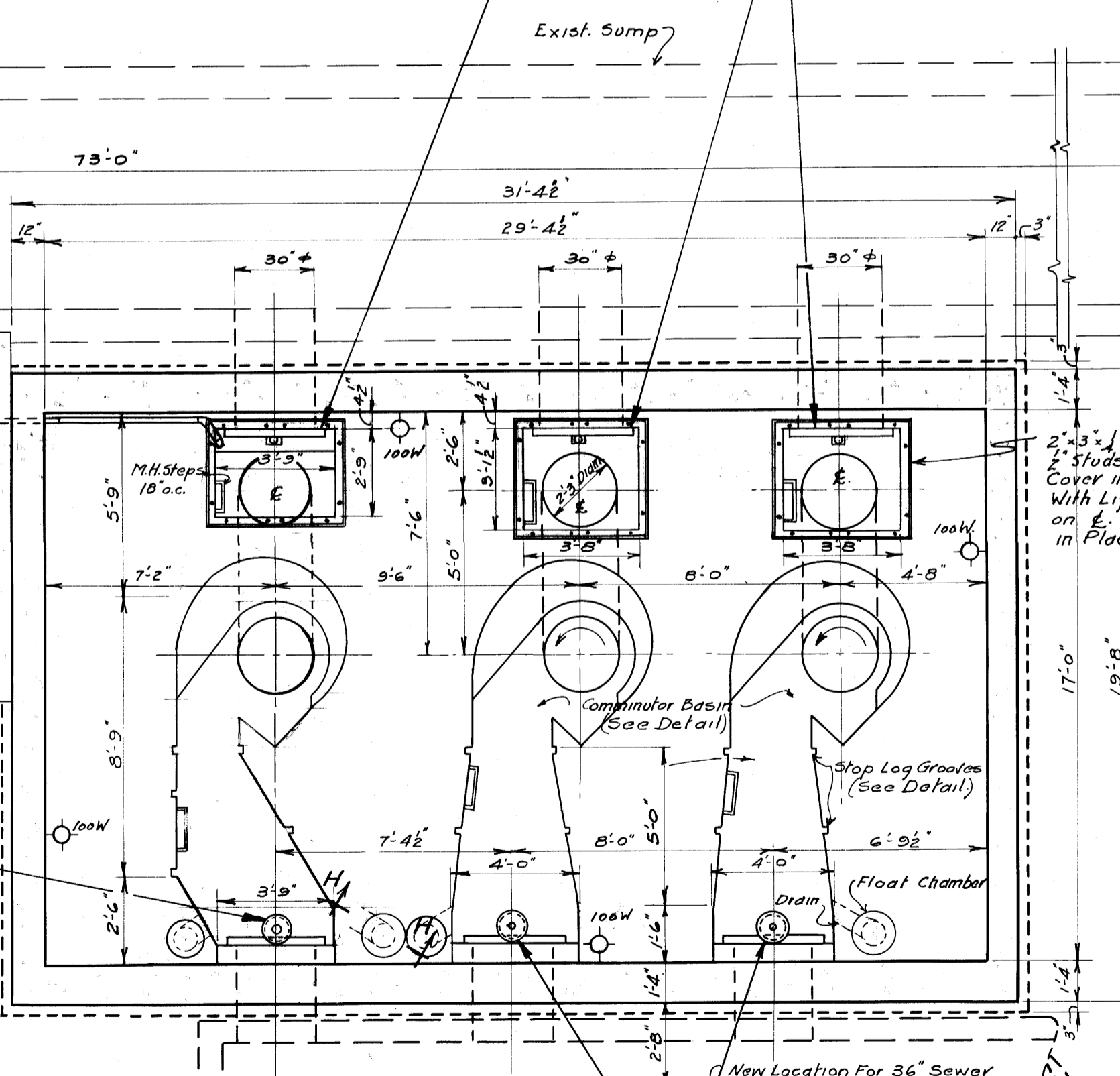
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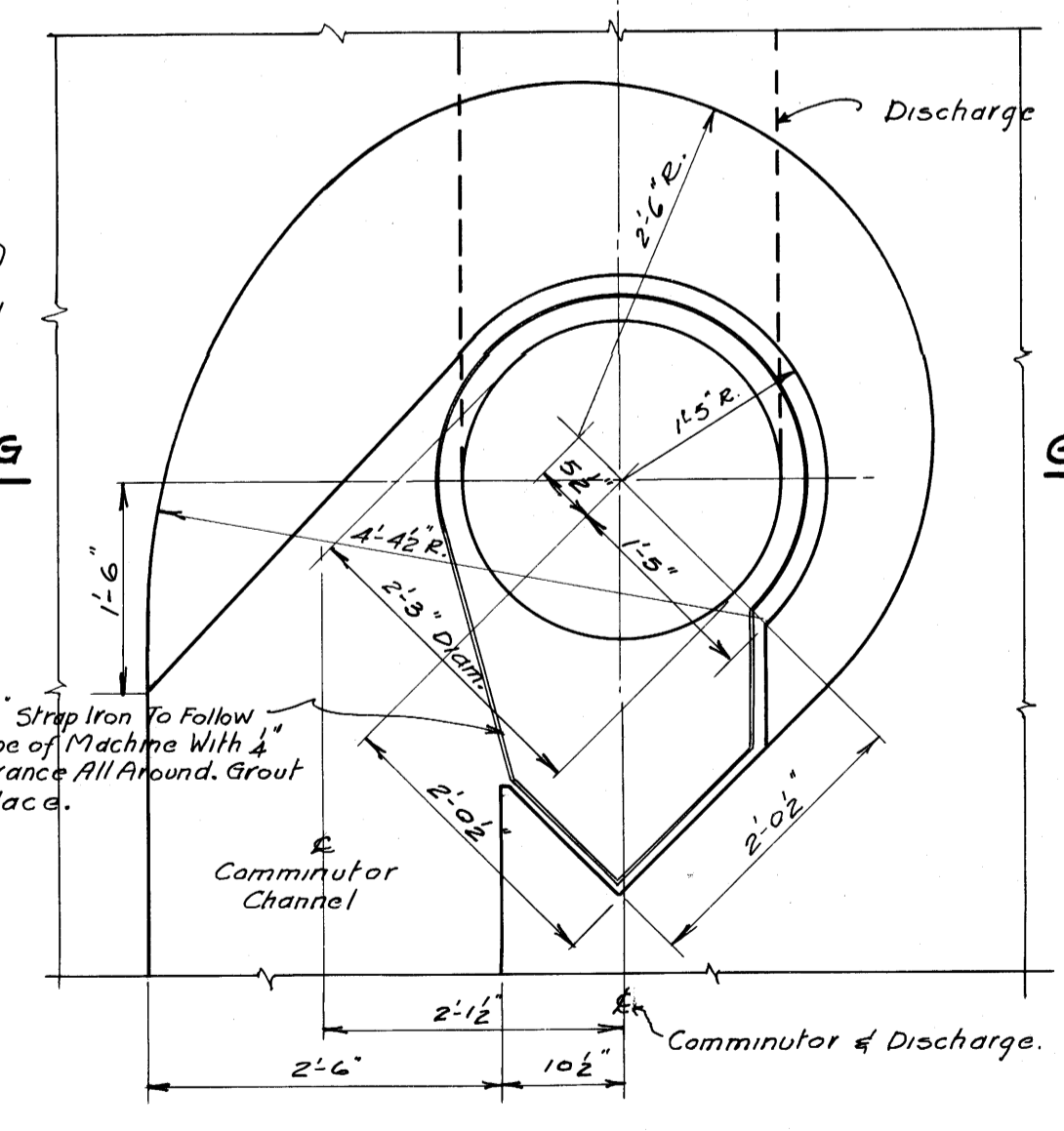
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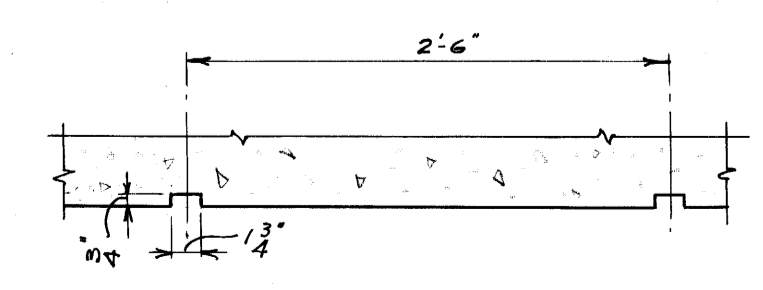
SECTION C-C  
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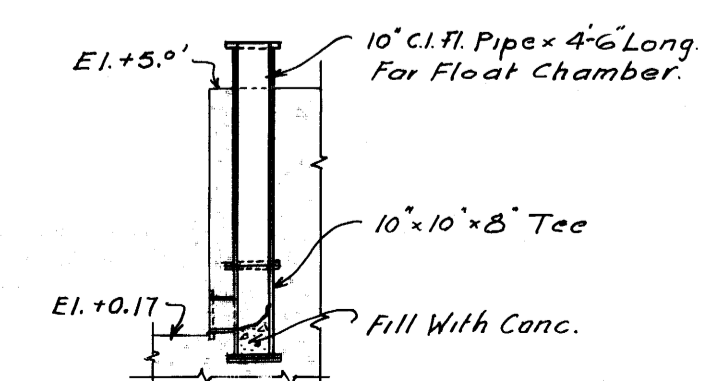
SECTION G-G  
 Scale: 3/8" = 1'-0"



PLAN VIEW - COMMUNITOR BASIN  
 Scale: 3/8" = 1'-0"



DETAIL - STOP LOG GROOVES  
 Scale: 1" = 1'-0"



SECTION H-H  
 Scale: 1/4" = 1'-0"

NOTE:  
 For Sect. E-E See Dwg. E2.  
 For Superstructure See Dwg. E3.  
 For Steel & Reinforcing See Dwg. E4.  
 For Electric Lights See Dwg. E4; Heat & Power E5.

NOT TO SCALE EXCEPT FOR WORK OUTLINED THUS COMPLETED 1989

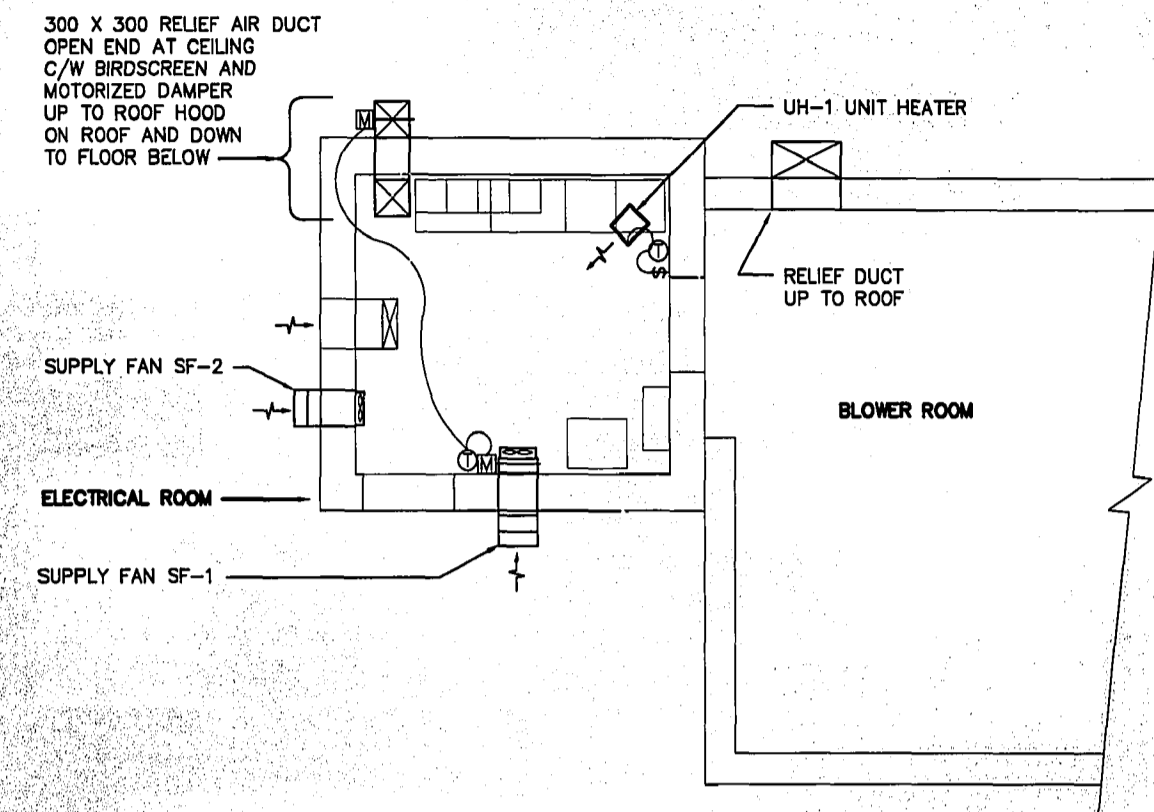
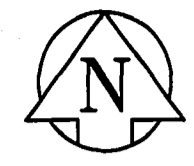
GREATER WINNIPEG SANITARY DISTRICT		
DRAWN BY: J.C.T. (1988) 317-50 TRACED BY: M.R.H. (1989) 61-0-0 APPROVED: [Signature] FOR OFFICE: [Signature]	W. D. HUBERT CHIEF ENGINEER OF SANITARIAN H. S. BUBBIS CHIEF ENGINEER ALVING HENDIX CHIEF ENGINEER	TITLE: <b>MONTCALM PUMPING STATION ADDITIONS - (EQUIPMENT)</b> DATE: [Blank] NOTED: [Blank]
261		Micro-Filmed 1989



**MECHANICAL SPECIFICATION**

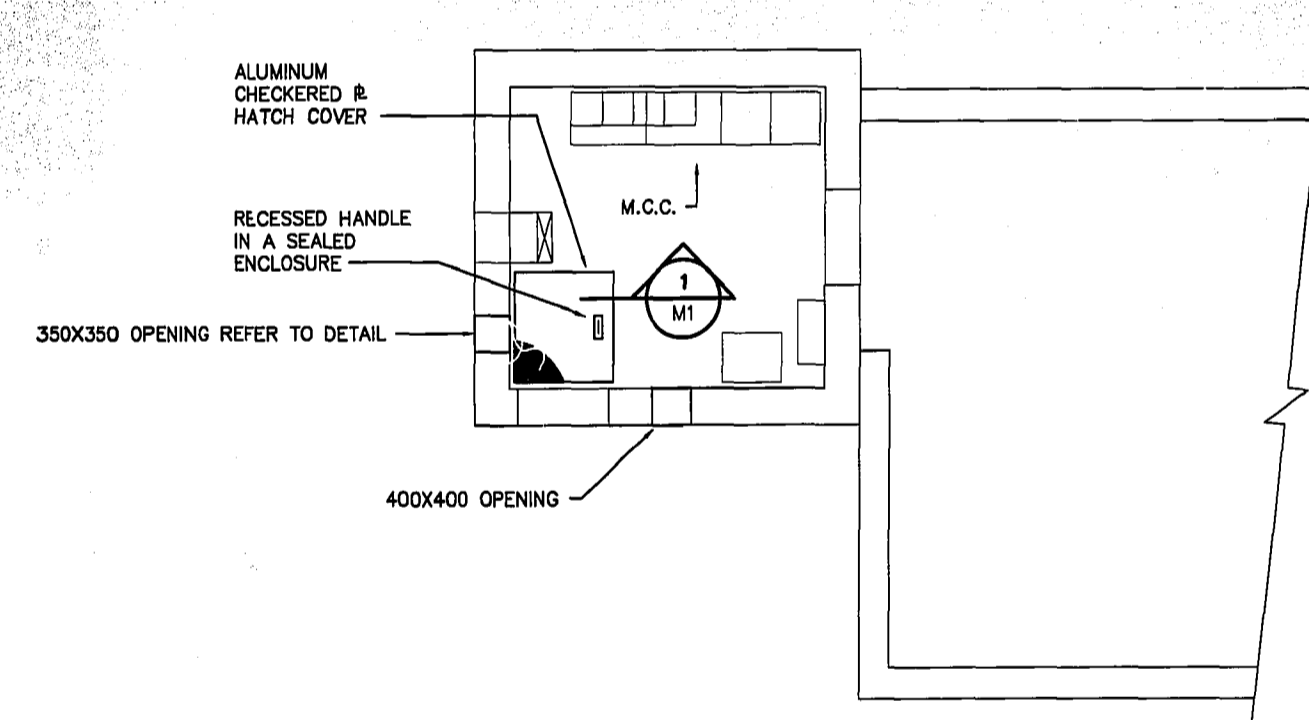
- 1.0 GENERAL
- 1.1 IT IS THE INTENT OF THE SPECIFICATIONS AND DRAWINGS TO CALL FOR FINISHED WORK TESTED AND PLACED IN OPERATION. MINOR DETAILS NOT USUALLY SHOWN OR SPECIFIED BUT NECESSARY FOR OPERATION OF THE WORK SHALL BE INCLUDED AS REQUIRED.
- 1.2 ALL WORK SHALL COMPLY WITH THE CURRENT EDITIONS OF THE MANITOBA BUILDING REGULATIONS, THE FIRE PROTECTION ACT, AND ALL OTHER CODES, REGULATIONS, AND AUTHORITIES HAVING JURISDICTION.
- 1.3 ALL MATERIALS SHALL BE NEW AND OF FIRST CLASS QUALITY.
- 1.4 GIVE ALL NECESSARY NOTICES, OBTAIN ALL PERMITS AND PAY FOR ALL GOVERNMENTAL FEES, TAXES, AND OTHER COSTS IN CONNECTION WITH THE WORK.
- 1.5 GIVE FULL COOPERATION TO THE OWNER AND ALL TRADES INVOLVED WITH THE INSTALLATION.
- 1.6 COORDINATE ALL WORK WITHIN THE BUILDING WITH THE OWNER OR HIS REPRESENTATIVE AND PROTECT ALL PORTIONS OF THE BUILDING AFFECTED BY THE INSTALLATION FROM DAMAGE. COST OF ANY DAMAGE CAUSED BY THIS DIVISION SHALL BE BORNE BY THIS DIVISION.
- 1.7 WORK IS TO BE COORDINATED AND SCHEDULED IN SUCH A MANNER TO INTERRUPT THE NORMAL OPERATION OF THE TENANT AND THE OWNER OR HIS REPRESENTATIVE AS LITTLE AS POSSIBLE.
- 1.8 BEFORE SUBMITTING BID, VISIT THE SITE AND EXAMINE ALL EXISTING EQUIPMENT AND SPACE CONDITIONS WHICH WILL AFFECT THE INSTALLATION IN ANY WAY. COST FOR EXTRA WORK WHICH WOULD HAVE BEEN EVIDENT FROM VISITING THE SITE AND WHICH WERE NOT REPORTED PRIOR TO SUBMITTING BID, WILL BE BORNE BY THIS DIVISION. COORDINATE SITE VISIT WITH THE BUILDING MANAGER OR HIS REPRESENTATIVE.
- 1.9 ALL WORK SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER, TRUE TO BUILDING LINES AND READILY ACCESSIBLE FOR OPERATION, MAINTENANCE, AND REPAIR.
- 1.10 CUTTING AND PATCHING AS REQUIRED FOR THE MECHANICAL INSTALLATION SHALL BE PROVIDED BY THIS DIVISION.
- 1.11 ALL WORK DONE ON PREMIUM TIME SHALL BE THE RESPONSIBILITY OF THIS DIVISION AND COST OF THE SAME SHALL BE BORNE BY THIS DIVISION.
- 1.12 DUCTWORK AND DUCT SUPPORT SHALL COMPLY WITH LOCAL CODES AND THE STANDARDS SET OUT IN THE ASHRAE HANDBOOKS LATEST EDITION.
- 1.13 TURN OVER ALL EXISTING EQUIPMENT REMOVED BUT NOT REUSED TO THE OWNER OR HIS REPRESENTATIVE. IF OWNER DOES NOT WANT REMOVED EQUIPMENT, THE CONTRACTOR SHALL REMOVE IT FROM THE SITE AND DISPOSE OF IT.
- 1.14 REPAIR ALL DAMAGE TO BUILDING OR BUILDING FINISHES. ALL REPAIR WORK SHALL MATCH EXISTING.
- 1.15 AS-BUILT DRAWINGS, TURN OVER AN ACCURATE MECHANICAL DRAWING WITH ALL DEVIATIONS FROM THE TENDER DRAWINGS CLEARLY INDICATED.
- 1.16 PROVIDE FOUR HOURS OF OPERATOR TRAINING AT THE COMPLETION OF THE PROJECT.
- 1.17 SPECIFICATIONS SHALL BE READ IN CONJUNCTION WITH THE ARCHITECTURAL, STRUCTURAL, AND ELECTRICAL SPECIFICATIONS, GENERAL CONDITIONS, SUPPLEMENTARY GENERAL CONDITIONS, AND INSTRUCTIONS TO BIDDERS INCLUDING ADDENDUMS.
- 1.18 ALL MECHANICAL EQUIPMENT INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

- 1.19 DUCTS SHALL BE SEALED WITH "ALUMINASTIC" SEALER OR APPROVED EQUAL SEALER SHALL BE APPLIED SO THAT IT OVERLAPS THE BREAK IN THE METAL BY 12 MM ON EITHER SIDE. SEAL ALL OPENINGS BETWEEN DUCTS.
- 1.20 ALL FRESH AIR DUCTWORK SHALL BE INSULATED WITH 25 MM RFRFK FOIL FACE DUCT INSULATION.
- 2.0 AIR BALANCING
- 2.1 THE SYSTEM SHALL BE BALANCED AS FOLLOWS:
- 2.1.1 AIR QUANTITIES SET TO WITHIN 10 PERCENT OF DESIGN REQUIREMENTS.
- 2.1.2 INCLUDE, AT TIME OF TENDER, ANY ADDITIONAL BALANCING DAMPERS OR HARDWARE THAT MAY BE REQUIRED TO ENSURE PROPER OPERATION OF THE SYSTEM.
- 3.0 THERMOSTATS
- 3.1 NEW THERMOSTATS SHALL BE SUPPLIED BY THE CONTRACTOR IN LOCATIONS INDICATED ON DRAWINGS.
- 4.0 MOTORIZED DAMPERS
- 4.1 MOTORIZED DAMPERS SHALL BE OPPOSED BLADE TYPE WITH MINIMUM 2.4 MM GALVANIZED STEEL FRAME, 1.6 MM ROLL FORMED STEEL BLADES. BLADE END SEALS STAINLESS STEEL, CLOSED CELL NEOPRENE BLADE EDGE SEALS AND OILITE BEARINGS. DAMPERS SHALL BE EQUAL TO TAMCO SERIES 9000
- 4.2 DAMPER AND SEALS SHALL BE SUITABLE FOR SMOOTH OPERATION IN TEMPERATURE OF -40 DEGREES C TO 35 DEGREES C.
- 5.0 LOUVRES
- 5.1 LOUVRES SHALL BE EQUAL TO E.H. PRICE AIRLOTE MODEL K6774, 100 MM THICK, 45 DEGREE BLADE, 12 GA. EXT. ALUMINUM BLADES AND JAMBS, COMPLETED WITH BIRDSCREEN, SIZES AS INDICATED ON DRAWINGS. FINAL COLOUR COAT TO MATCH EXISTING LOUVRES.
- 6.0 SUPPLY FANS
- 6.1 SF-1 SHALL BE EQUAL TO GREENHECK MODEL S1-10-428P AT 241 L/S, 1650 RPM, 37 WATTS MOTOR, 120V/1PH. COMPLETE WITH WEATHERHOOD BIRDSCREEN, WALL COLLAR, MOTOR GUARD AND MOTORIZED DAMPER.
- 6.2 SF-2 SHALL BE EQUAL TO GREENHECK MODEL S1-8-424G AT 90 L/S, 1350 RPM, 19 WATT MOTOR, 120V/1PH. COMPLETE WITH WEATHERHOOD, BIRD SCREEN, REVERSE BACK DRAFT DAMPER WALL COLLAR AND MOTOR GUARD.
- 7.0 UNIT HEATER
- 7.1 UH-1 SHALL BE EQUAL TO CHROMALOX MODEL BUH-04D 4 kW 208V/3PH 3.7 WATT MOTOR 1200 RPM 118 L/S
- 8.0 CONTROLS
- 8.1 PROVIDE TWO-WAY THERMOSTAT. UPON RISE IN TEMPERATURE ABOVE SET POINT OF 30 DEGREES C, THE MOTORIZED DAMPER SHALL BE FULLY OPEN AND THE FAN SF-1 SHALL START.
- 8.2 SF-2 FAN SHALL RUN CONTINUOUSLY. SET TO 90 L/S
- 8.3 UH-1 PROVIDE THERMOSTAT AND CONTACT SWITCH. THERMOSTAT SHALL BE INTERLOCKED WITH CONTACT SWITCH WHEN SWITCH IS ON THERMOSTAT SHALL BE ENERGIZED AND UNIT HEATER SHALL RUN. WHEN SWITCH IS OFF THERMOSTAT SHALL BE DISABLED AND UNIT HEATER SHALL BE LOCKED OUT.



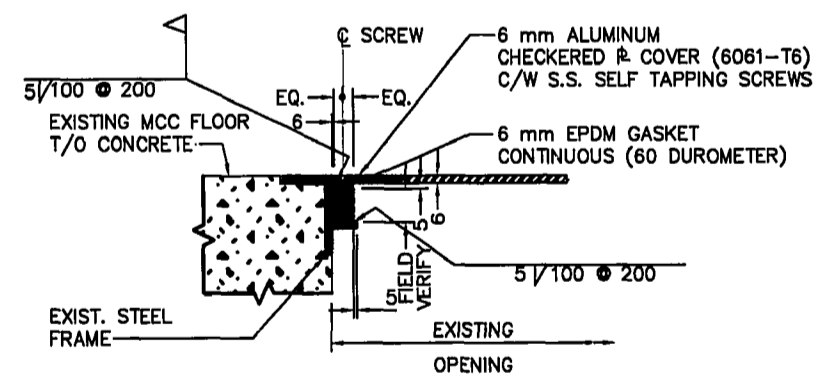
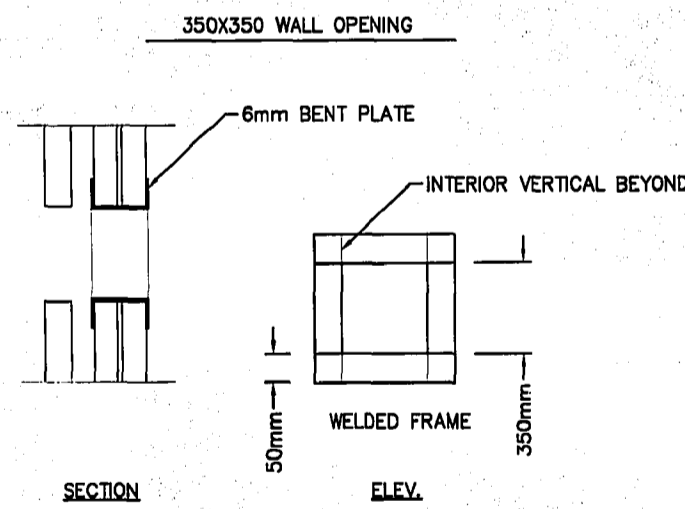
**MAIN FLOOR EQUIPMENT**

SCALE 1:50



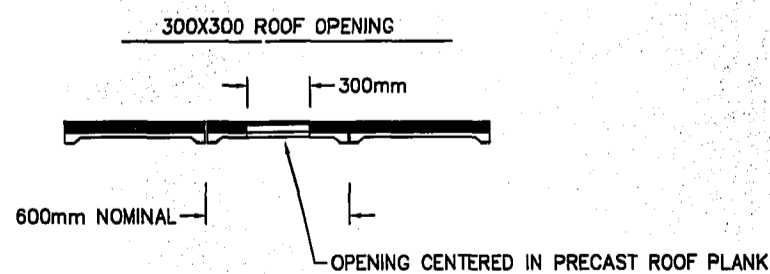
**HATCH LOCATION PLAN**

SCALE 1:50



**1 DETAIL**  
M1 SCALE N.T.S.

NOTES:  
1. DESIGN LIVE LOAD 4.8 kPa



REID, CROWTHER & PARTNERS LIMITED  
WINNIPEG  
**RECORD DRAWING**  
SIG. DATE DECEMBER 1996

				ENGINEER'S SEAL ORIGINAL SIGNED BY G.S. REABURN 96-01-31 CONSULTANT DRAWING NO. 61776 M1		<b>THE CITY OF WINNIPEG</b> WORKS AND OPERATIONS DIVISION WATER AND WASTE DEPT. REGIONAL OPERATIONS ELECTRICAL ROOM VENTILATION UPGRADE		CITY DRAWING NUMBER <b>1543</b> SHEET 3 OF 3  M1
DESIGNED BY	LJR	CHECKED BY	GSR	NO.	REVISIONS	DATE	BY	
DRAWN BY	AGT	APPROVED BY	GSR	2	RECORD DRAWING	12/96	GSR	
HOR. SCALE:	AS NOTED	RELEASED FOR		1	ISSUED FOR REVIEW	02/96	GSR	
DATE	29/01/96	DATE	31/01/96					