APPENDIX A – HISTORICAL DRAWINGS

AZON CANADA 3130110300

REF. or DRAWING No. 97-FS-Q-2

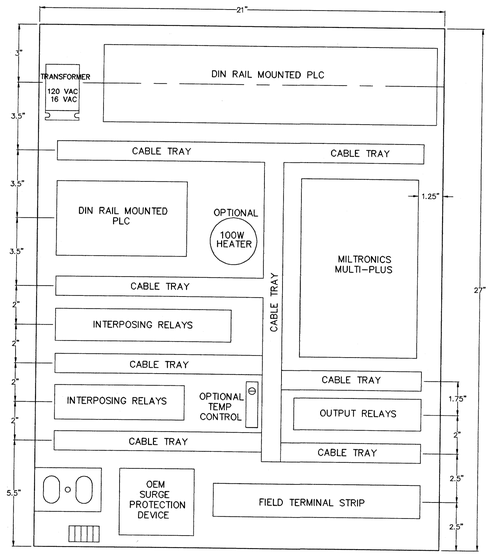
DETAILS

ALARM WIRING TEMPLATE

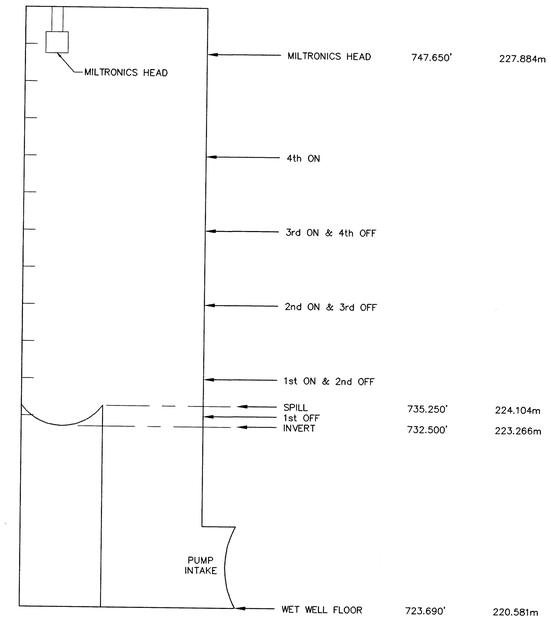
		PLC ADDRESS	
ALARM INPUT 1	LOCKOUT	10001	BLUE
ALARM INPUT 2	OVERFLOW	10002	BLUE/WHITE
ALARM INPUT 3	STATION FLOOD	10003	BLUE/RED
ALARM INPUT 4	LOW INSTR. AIR	10004	BLUE/BLACK
ALARM INPUT 5	LOW TEMP.	10005	RED
ALARM INPUT 6	LOSS OF SEAL WATER	10006	RED/BLACK
ALARM INPUT 7	GENERATOR RUN	10007	RED/WHITE
ALARM INPUT 8	POWER FAILURE	10008	ORANGE
ALARM INPUT 9	FLOOD STATION HIGH WET WELL	10009	ORANGE/RED
ALARM INPUT 10	FLOOD STATION FLOOD	10010	ORANGE/BLACK
ALARM INPUT 11	GENERATOR FAIL	10011	BLACK
ALARM INPUT 12	WET WELL UPPER	10012	BLACK/WHITE
ALARM INPUT 13	COM/PUMP FAILURE	10013	BLACK/RED
ALARM INPUT 14			GREEN
ALARM INPUT 15			GREEN/BLACK
ALARM INPUT 16			GREEN/WHITE

Any other types of alarms are to be wired to alarm inputs 14 through 16. Otherwise call the Metershop for further instructions.

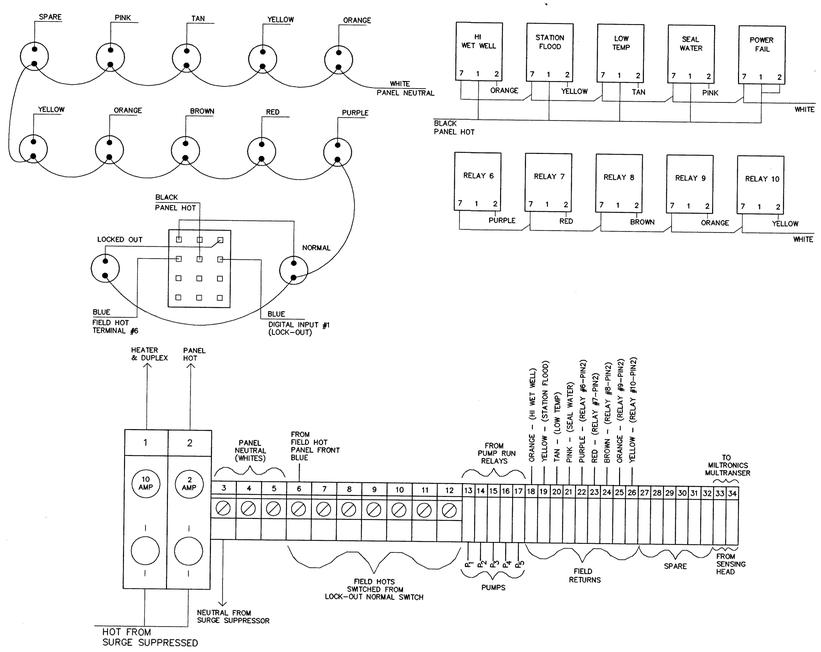
BACK PANEL LAYOUT



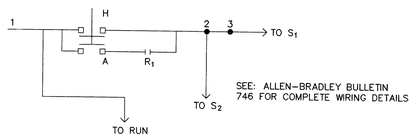
ASH



WIRING DIAGRAM

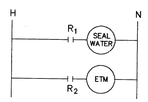


MOTOR STARTER MODIFICATION FOR HAND/AUTO CONTROL



SEE: ALLEN-BRADLEY BULLETIN 746 FOR COMPLETE WIRING DETAILS

RELAY R_1 IS ENERGIZED BY MILTRONICS



RELAY R_2 IS ENERGIZED WITH RUN CONTACTER

B.M. ELEV.	FIELD BOOK #:		
POSTED TO LBIS			
NO.	REVISIONS	DATE	BY

DESIGNED BY	DM	CHECKED BY	
DRAWN BY	CSN	APPROVED BY	
HOR. SCALE	N.T.S.	RELEASED FOR CONSTRUCTION	
VERTICAL			
DATE	1997 07 07	DATE	

ENGINEER'S SEAL

PLOT DATE: 1997 07 07

THE CITY OF WINNIPEG
WORKS AND OPERATIONS DIVISION
WATER AND WASTE DEPARTMENT

ASH FLOOD STATION

ELECTRICAL AND CONTROL

SHEET OF

CITY DRAWING NUMBER

97-FS-Q-2

O:\DRAWINGS\LANDDRAN\FLOPUMP\97FSQ2.DWG

A1 SIZE - 594mm x 841mm

LEGEND:

PPE: 4
29 CAL/CM²
- HAZARD/RISK CATEGORY
- INCIDENT ENERGY

FROM UTILITY
4.16 kV

UTILITY
CITY OF WINNIPEG

08

PPE: 3
9.5 CAL/CM²

XFMR-F1.FU
140A
COOPER BAYONET 353C17
(ASSUMED)

XFMR-F1
750 kVA PADMOUNT
TRANSFORMER
4.16kV:347/600V

MB HYDRO
SUPPLIED CABLE

C-CSTE
8-1C, 350 MCM AL
(ASSUMED)

PPE: 3
9.6 CAL/CM²

CSTE
600V, 1600A, 3ø, 4W,
C/W M.H APPROVED METERING.
JRS CAT # CSTE-442-16-3-4-M-WM

PARALLEL SERVICE GROUND
ELECTRODES (3)

C-CDP-6B
3 - 1/C 500 MCM CU RA90 (CORFLEX WITH
ALUM. SHEATH AND PVC JACKET). DIRECT BURY AS PER
CEC DIAGRAM B4-1 DETAIL 1, TABLE D8B.
PROVIDE 2 - I/C #1 AWG RA90
FOR ELECTRICAL MAIN SERVICE NEUTRAL, AND FOR WATER
MAIN GROUND CONNECTION.

C-CDP-6A
6 - I/C 750 MCM CU RA90 (CORFLEX WITH
ALUM. SHEATH AND PVC JACKET). DIRECT BURY AS PER
CEC DIAGRAM B4-1 DETAIL 3, TABLE D8B.
PROVIDE 2 - I/C #3/0 AWG RA90
FOR ELECTRICAL MAIN SERVICE NEUTRAL, AND FOR WATER
MAIN GROUND CONNECTION.

RLY-F1
PPE: 0
0.44CAL/CM²
11
27
POWER FAIL
VOLTAGE MONITOR

CDP-6B
600V, 400A, 3ø, 4W, CU.
25kA INTERRUPTING CAPACITY,
NEMA 3R RATED.

03 PPE: 1
3.1 CAL/CM²

SIEMENS
SJD69400NT

CB-CDP-6B
400AF
400AT
3P, LSI
25KAIC
07
PPE: 3
11 CAL/CM²

CDP-6A
600V, 1200A, 3ø, 4W, CU.
25kA INTERRUPTING CAPACITY
NEMA 3R RATED

02 PPE: 3
9.8 CAL/CM²

SIEMENS
SND69120ANGT

CB-CDP-6A
1200AF
1200AT
3P
LSIG
04

CB-RLY-F1
15A
12

CB-P-L1
250AF
125AT
01
3P, 25 KAIC
SIEMENS
HFD63F250
INST: 3 (1000A)

CB-P-L2
250AF
125AT
01
3P, 25 KAIC
SIEMENS
HFD63F250
INST: 3 (1000A)

CB-P-L3
250AF
125AT
01
3P, 25 KAIC
SIEMENS
HFD63F250
INST: 3 (1000A)

CB-RCP-1
60AT
3P, 100 KAIC
SIEMENS
CED63B060

CB-XFMR-2B
20AT
3P, 100 KAIC
SIEMENS
CED63B020

N
G
MAIN SERVICE
GROUND

CB-P-F1
600AF
400AT
SIEMENS
LD63F600
INST: 4 (2860A)
05

CB-P-F2
600AF
400AT
SIEMENS
LD63F600
INST: 4 (2860A)
05

CB-P-F3
600AF
400AT
SIEMENS
LD63F600
INST: 4 (2860A)
06

CB-P-F4
600AF
400AT
SIEMENS
LD63F600
INST: LO (2000A)

CB-XFMR-2A
150AF
30AT
2P

CB-SPL-F1
150AF
20AT
3P

N
G
MAIN SERVICE
GROUND

C-MSS-P-L1
3C, 4 AWG
TECK 90

C-MSS-P-L2
3C, 4 AWG
TECK 90

C-MSS-P-L3
3C, 4 AWG
TECK 90

C-RCP-1
3C, 6 AWG
TECK 90

C-XFMR-2B
EXISTING
TECK 90 CABLE

C-MS-P-F1
3C, 350 MCM
TECK 90

C-MS-P-F2
3C, 350 MCM
TECK 90

C-MS-P-F3
3C, 350 MCM
TECK 90

C-MS-P-F4
3C, 350 MCM
TECK 90

C-XFMR-2A
2C, 10 AWG
IN 21mm CONDUIT

C-SPL-F1
3C, 12 AWG
IN 21mm CONDUIT

MSS-P-L1
ALLEN BRADLEY
SOFT START
PPE: 0
0.4 CAL/CM²

MSS-P-L2
ALLEN BRADLEY
SOFT START
PPE: 0
0.4 CAL/CM²

MSS-P-L3
ALLEN BRADLEY
SOFT START
PPE: 0
0.4 CAL/CM²

XFMR-2B
600V:
120/208V, 3ø,
15kVA, 3.6%Z
TRANSFORMER
PPE: 0
0.3 CAL/CM²

MS-P-F1
AUTOXFMR
START
PPE: 0
1.1 CAL/CM²

MS-P-F2
AUTOXFMR
START
PPE: 0
1.1 CAL/CM²

MS-P-F3
AUTOXFMR
START
PPE: 0
1.1 CAL/CM²

MS-P-F4
AUTOXFMR
START
PPE: 0
0.9 CAL/CM²

XFMR-2A
600V:120/240V, 1ø,
15kVA, 6%Z
NEMA 3R RATED
TRANSFORMER
PPE: 0
0.1 CAL/CM²

SPL-F1

PPE: 0
0.1 CAL/CM²

FUSED DISCONNECT
SWITCHES (LOCK-OFF)
PPE: 0
0.1 CAL/CM²

C-P-L1
3C, 4 AWG
TECK 90

C-P-L2
3C, 4 AWG
TECK 90

C-P-L3
3C, 4 AWG
TECK 90

60A
3ø, 4W

C-PNL-2B
EXISTING
TECK 90 CABLE

C-P-F1

C-P-F2

C-P-F3

C-P-F4

C-PNL-2A
3C, 4 AWG
IN 27mm CONDUIT

EXISTING CABLE
IN CONDUIT

FDS-MS-DWP-F1

FDS-MS-EF-F1

12A
CLASS RK5
TIME-DELAY
09

1.5A
CLASS RK5
TIME-DELAY
10

ON/OFF PUSHBUTTON
STARTERS
PPE: 0
0.03 CAL/CM²

MS-DWP-F1

MS-EF-F1

M
P-L1
SANITATION PUMP
50HP

M
P-L2
SANITATION PUMP
50HP

M
P-L3
SANITATION PUMP
50HP

WELDING
RECEPTACLE
CROUSE HINDS
CAT# AR642-M72
(FUTURE)

PNL-2B
120/208V,
100A,
16 CCT PANELBOARD
PPE: 0
- CAL/CM²

M
P-F1
FLOOD PUMP
250HP
242 FLA
586 RPM

M
P-F2
FLOOD PUMP
250HP
242 FLA
586 RPM

M
P-F3
FLOOD PUMP
250HP
242 FLA
586 RPM

M
P-F4
FLOOD PUMP
175HP
171 FLA
706 RPM

PNL-2A
120/240V,
200A MAIN BREAKER,
24 CCT PANELBOARD
PPE: 0
- CAL/CM²

DWP-F1
DEWATERING
PUMP #1
7.5 HP

EF-F1
EXHAUST
FAN #1
3/4HP

ARC FLASH VALUES CALCULATED ARE BASED ON THE BREAKER SETTINGS SPECIFIED IN THIS DRAWING. THESE BREAKERS SETTINGS MUST BE CONFIRMED PRIOR TO APPLYING ARC FLASH LABELS.

GENERAL NOTES:

1. PERFORM ALL WORK IN ACCORDANCE WITH THE LATEST EDITION OF THE CANADIAN ELECTRICAL CODE (CEC) AND THE CITY OF WINNIPEG ELECTRICAL BY-LAWS. OBTAIN AND PAY ALL APPLICABLE CERTIFICATES AND PERMITS. ARRANGE ALL NECESSARY INSPECTIONS AND CORRECT ANY DEFICIENCIES THAT MAY ARISE.
2. AT THE COMPLETION OF THE WORK AND PRIOR TO ENERGIZATION, MEGGER ALL NEW CIRCUITS TO CONFIRM INSULATION INTEGRITY.
3. SUPPLY AND INSTALL ALL NECESSARY CIRCUIT GROUNDING AND EQUIPMENT BONDING AS PER CEC.
4. ALL CONDUITS USED SHALL BE RIGID ALUMINUM OR SCHEDULE 40 PVC.
5. ALL CONDUCTORS SHALL BE COPPER, RW90 (OR TECK 90 WHERE NOTED) COMPLETE WITH 1000V 90°C XLPE INSULATION. ALL CABLE FITTINGS SHALL BE WATER TIGHT TYPE.
6. RUN CABLES IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS. SUPPLY AND INSTALL PHYSICAL PROTECTION FOR ALL CABLE ENTRY INTO BUILDING.
7. COORDINATE SITE SERVICE SHUTDOWN AND SERVICE WORK WITH THE CITY OF WINNIPEG AND MANITOBA HYDRO. PAY ANY ASSOCIATED FEES.
8. FIRE STOP ALL PENETRATIONS OF FIRE RATED WALLS AND FLOORS.
9. ALL WORK, DEVICES, ITEMS SHOWN ARE NEW AND ARE TO BE SUPPLIED AND INSTALLED BY THE ELECTRICAL CONTRACTOR, UNLESS SPECIFICALLY NOTED OTHERWISE.

SPECIFIC NOTES:

01 ADJUST CB-P-L1, CB-P-L2 AND CB-P-L3 INSTANTANEOUS SETTING TO 3 (1000A).

02 THE ARC FLASH ENERGIES CALCULATED BEFORE THE MAIN BREAKER IN CDP-6A APPLY TO THE WHOLE CDP UNIT AS THE MAIN BREAKER IS NOT ADEQUATELY BARRIERED.

03 ARC FLASH ENERGIES WERE CALCULATED BEFORE AND AFTER THE MAIN BREAKER AS THERE IS A BARRIER SURROUNDING THE LIVE PARTS OF THE MAIN BREAKER. CATEGORY 3 PPE IS REQUIRED WHEN WORKING WITH THE BARRIER REMOVED.

04 THE 1200 A MAIN BREAKER SHALL BE SET AS FOLLOWS:
- LTPU: 70%
- LTD: 20 (CHANGED FROM 7 SEC.)
- STPU: 4
- STD: 0.28 I^2T In
- INST: 8
- GFDU: 70% (CHANGED FROM 20%)
- GFD: 0.2s

05 ADJUST INSTANTANEOUS SETTINGS OF BREAKERS CB-P-F1, CB-P-F2 AND CB-P-F3 TO 4 (2860A).

06 ADJUST INSTANTANEOUS SETTING OF BREAKER CB-P-F4 TO LO (2000A).

07 THE 400 A MAIN BREAKER SHALL BE SET AS FOLLOWS:
- LTPU: 100% (CHANGED FROM 35%)
- LTD: 25
- STPU: 4
- STD: 0.1 I^2T In
- INST: 20

08 ARC FLASH ENERGIES ARE CALCULATED BASED ON THE WORST CASE OF THE FOLLOWING SCENARIOS:

A) MAXIMUM FAULT SCENARIO
- MANITOBA HYDRO TRANSFORMER %Z=3.5 (MINIMUM VALUE PROVIDED BY MANITOBA HYDRO)
- MAXIMUM EXPECTED FAULT LEVELS

B) NORMAL FAULT SCENARIO
- MANITOBA HYDRO TRANSFORMER %Z=5.75 (TYPICAL FOR A 750KVA TRANSFORMER)
- NORMAL FAULT LEVELS

09 REPLACE FUSES IN FDS-MS-DWP-F1 WITH 12A, CLASS RK5, TIME-DELAY FUSES.

10 REPLACE FUSES IN FDS-MS-EF-F1 WITH 1.5A, CLASS RK5, TIME-DELAY FUSES.

11 REPLACE FUSES IN POWER FAIL RELAY RLY-F1 WITH 15A, CLASS J FUSES.

12 INSTALL A NEW 15A, 25kA RATED BREAKER IN CDP-6A TO FEED RLY-F1

13 AFFIX IDENTIFICATION LAMACOIDS TO:
- CB-CDP-6A
- CB-CDP-6B
- CB-P-F1
- CB-P-F2
- CB-P-F3
- CB-P-F4
- CB-P-L1
- CB-P-L2
- CB-P-L3
- CB-SPL-F1
- CB-XFMR-2A
- CB-XFMR-2B
- CDP-6A
- CDP-6B
- FDS-MS-DWP-F1
- FDS-MS-EF-F1
- MS-DWP-F1
- MS-EF-F1
- MS-P-F1
- MS-P-F2
- MS-P-F3
- MS-P-F4
- MSS-P-L1
- MSS-P-L2
- MSS-P-L3
- PNL-2A
- PNL-2B
- SPL-F1
- XFMR-2A
- XFMR-2B

03

ELECTRICAL SINGLE LINE DRAWING
NTS

APEGM
Certificate of Authorization
SNC-Lavalin Inc.
No. 4489

NO.	REVISIONS	DATE	DESIGN	CHECK
03	ISSUED FOR CITY USE	2011/11/23	VE	CJR
02	UPDATED TITLE BLOCK	2010/02/09	-	TMC
01	UPDATED BREAKER SETTINGS & ARC FLASH LEVELS	2009/12/22	BDK	CJR
00	ISSUED FOR CONSTRUCTION	2008/04/15	DEB	CWB
PA	ISSUED FOR CLIENT REVIEW	2008/02/07	CGA	CWB

SNC·LAVALIN
SNC-LAVALIN INC.
148 Nature Park Way
Winnipeg, MB, Canada R3P 0X7
204-786-8080

DESIGNED BY: D.E. BECKER	CHECKED BY: C. WEISS-BUNDY
DRAWN BY: D.E. BECKER	APPROVED BY:
SCALE: NTS	RELEASED FOR CONSTRUCTION BY:
DATE: 2008/01/07	DATE:
CONSULTANT NO.: 113286-0000-47DD-XXXX	

ENGINEER'S SEAL

ORIGINAL DRAWING
SEALED BY:
C. J. REIMER
SNC-LAVALIN INC.
MEMBER #21968
2011/12/01
REV. 03

Winnipeg
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT

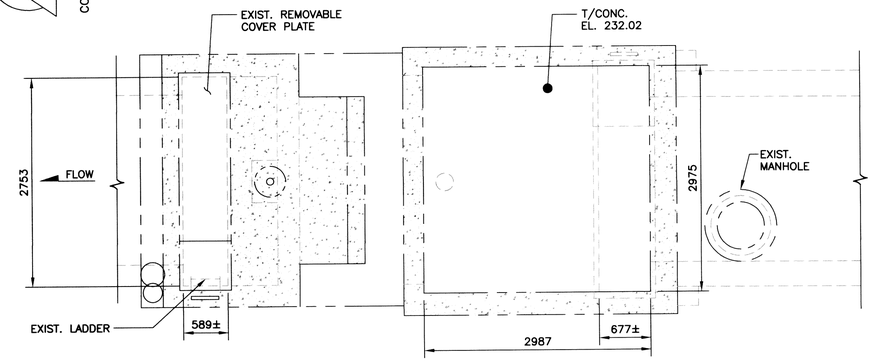
ASH WASTEWATER & FLOOD PUMPING STATIONS
PUMPING STATION UPGRADES
ELECTRICAL SINGLE LINE DIAGRAM

CITY DRAWING NUMBER	SHEET	REV.	SIZE
1-0114A-E0001	001	03	A1

1-0114A-E0001-001-03.dwg

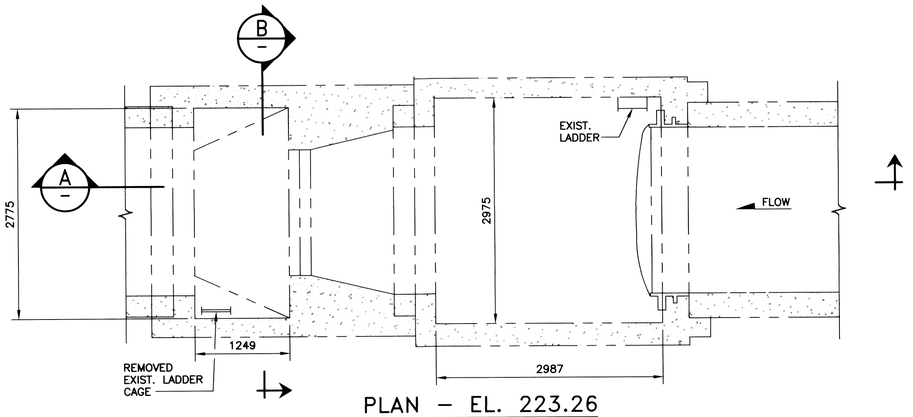
LAST SAVE: 2011/12/01 - 3:10pm
PATH: M:\113286\4ENG\47ELE\DD - General DWG\1-0114A-E0001-001-03.dwg

CONSTRUCTION NORTH



PLAN – EL. 231.22

SCALE: 1:40



PLAN – EL. 223.26

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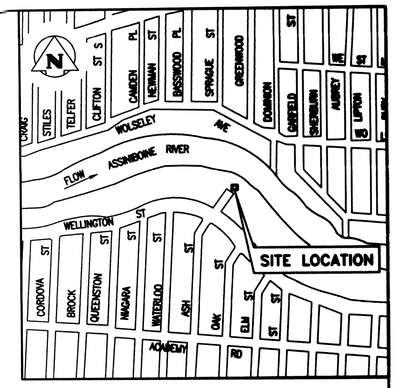
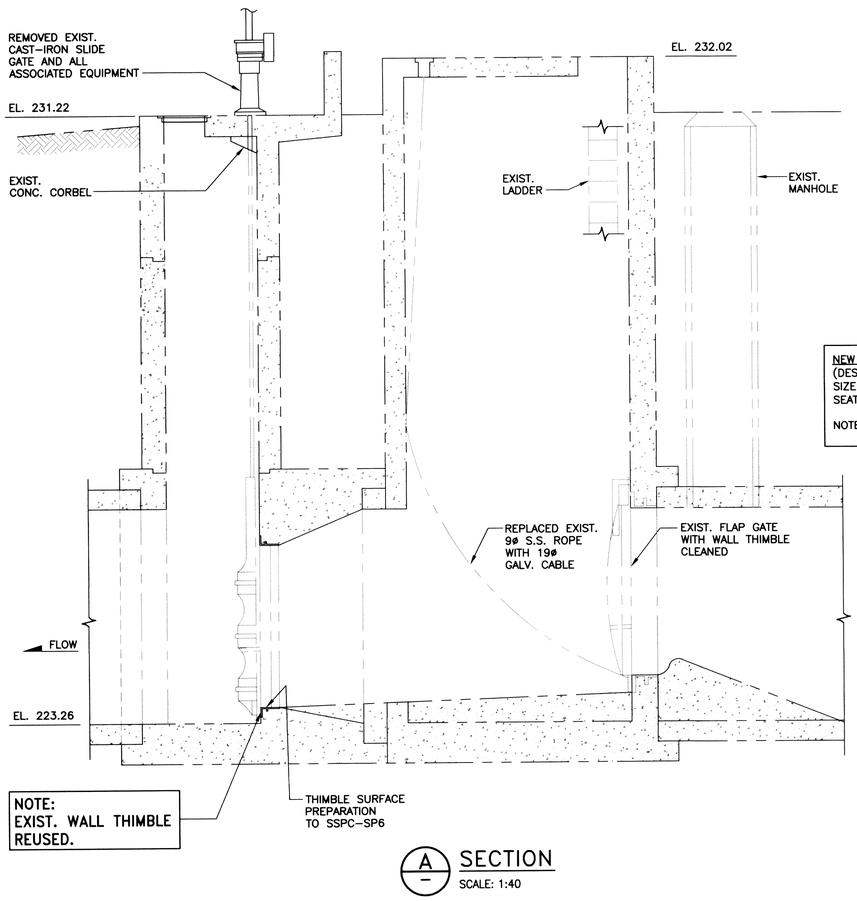


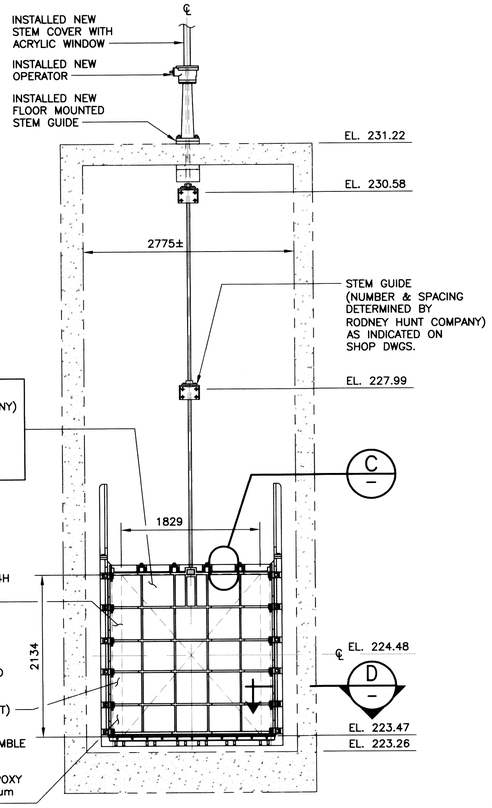
SITE PLAN

N.T.S.



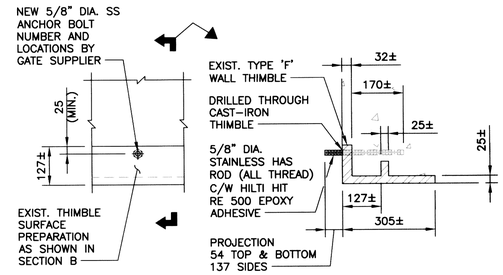
A SECTION

SCALE: 1:40



B SECTION

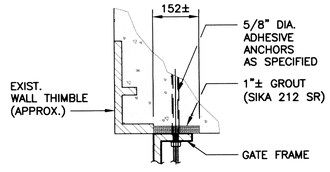
SCALE: 1:40



(TYPICAL ANCHOR BOLT DETAIL–TOP AND BOTTOM)

C DETAIL

SCALE: 1:10



(TYPICAL ANCHOR BOLT DETAIL–SIDES)

D DETAIL

SCALE: 1:10

NOTE:
ANCHORING DETAIL WAS MODIFIED DURING CONSTRUCTION DUE TO OVERSIZED GATE.

800 0 800 1600 2400 3200

SCALE: 1:40 METRIC (A1)
1:80 METRIC (A3)

200 0 200 400 600 800

SCALE: 1:10 METRIC (A1)
1:20 METRIC (A3)

RECORD DRAWING

WATER & WASTE DEPARTMENT

PROJECT COMPLETION DATE : 7 MAY 13
CONTRACTOR : TRI–CORE PROJECTS MANITOBA LTD.

METRIC

WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

APEGM Certificate of Authorization KGS Group No. 245

B.M. ELEV. N/A | FIELD BOOK #:

POSTED TO LBIS

NO.	REVISIONS	DATE	BY
1	RECORD DRAWING	2013-07-11	CMS
0	ISSUED FOR CONSTRUCTION	2011-08-23	CMS

KGS GROUP CONSULTING ENGINEERS

DESIGNED BY	KRD	CHECKED BY	CMS
DRAWN BY	FBV	APPROVED BY	
HOR. SCALE		RELEASED FOR CONSTRUCTION	
VERTICAL			
DATE	2011-03-01	DATE	

ENGINEER'S SEAL: PROVINCE OF MANITOBA · C.M. SIEPMAN · Member 20813 · REGISTERED PROFESSIONAL ENGINEER

TENDER No.
FILENAME I-0114F-S0001-001-Rev 1.dwg
PLOT DATE: 2013/07/11

Winnipeg

THE CITY OF WINNIPEG

WATER AND WASTE DEPARTMENT

ASH FLOOD PUMPING STATION
SLIDE GATE REFURBISHMENT
STRUCTURAL
PLAN, SECTIONS & DETAILS

SHEET 1 OF 1

CITY DRAWING NUMBER
1-0114F-S0001-001

FileName: \\k-file-4\p-data\Projects\2010\10-0107-19\Doc.Control\ToBeIssued\DWG\1-0114F-S0001-001-Rev 1.dwg - Tab: S1 Plotted By: DDeroche 07/11/2013 [Thu 1:36pm]

ASSINIBOINE RIVER

ST.

66'

101.71'

66.07'

66.07'

R = 1280.3'

EASEMENT FOR FLOOD PUMPING STN. SHOWN SHADED

76'

16'

HOLDING

LOT 10 BLK. 6 PLAN 1643

LOT 11 BLK. 6 PLAN 1643

LOT 12 BLK. 6 PLAN 1643

311.3'

311.3'

311.85'

233'

ASH

CRESCENT

R = 968.73'

50'

50'

60.89'

WELLINGTON

WWD No SE-14479

TITLE:
EASEMENT
PROPOSED FLOOD PUMPING STATION - ASH ST.

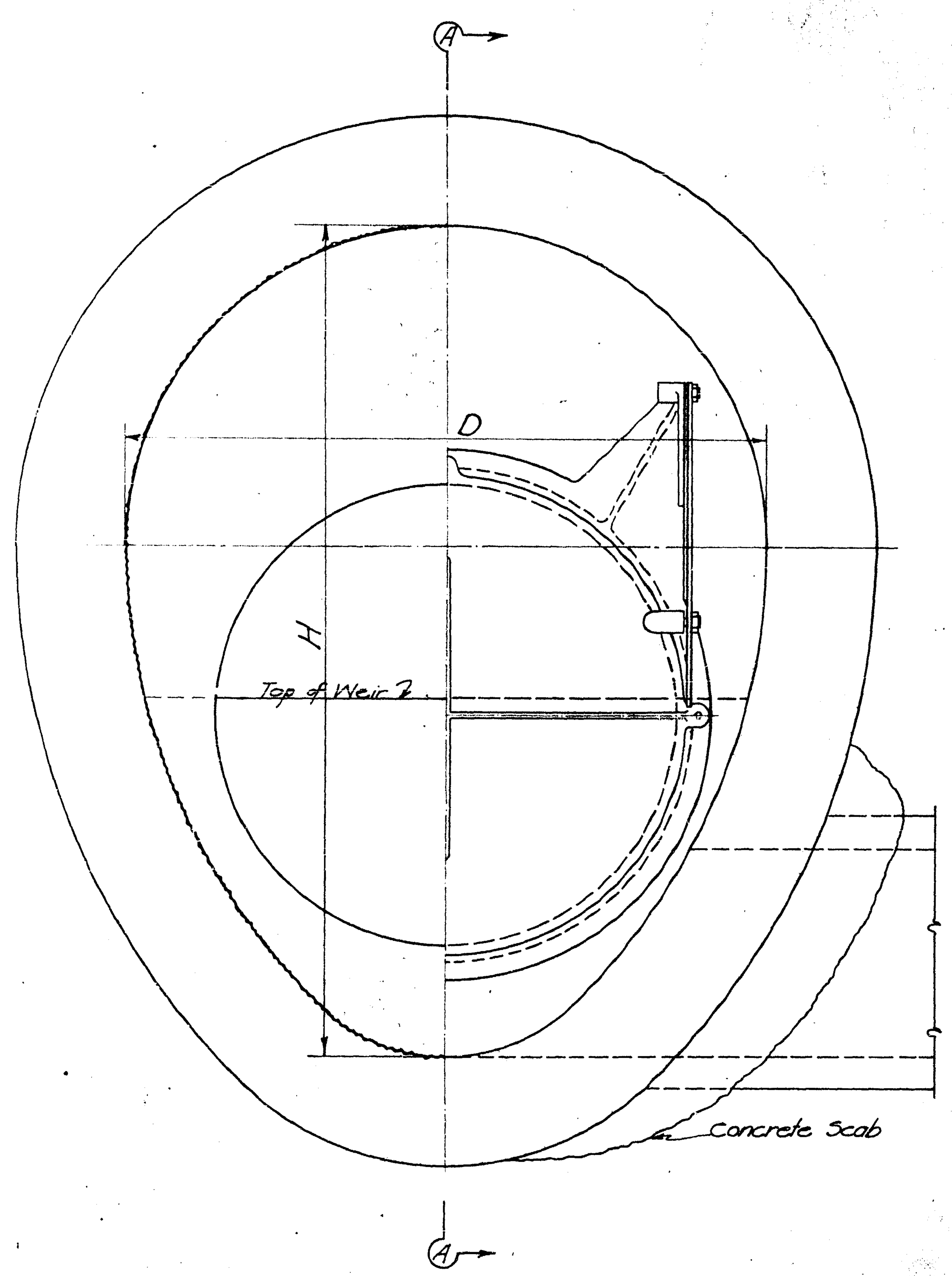
CITY OF WINNIPEG
ENGINEERING DEPT.
W. D. HURST, CITY ENGINEER
A. J. S. TAUNTON, DEPUTY CITY ENGINEER

DRAWN BY S.J.B DATE 14/5/57
TRACED BY E.K. 28/5/57
CHECKED BY S.J.B.
APPROVED

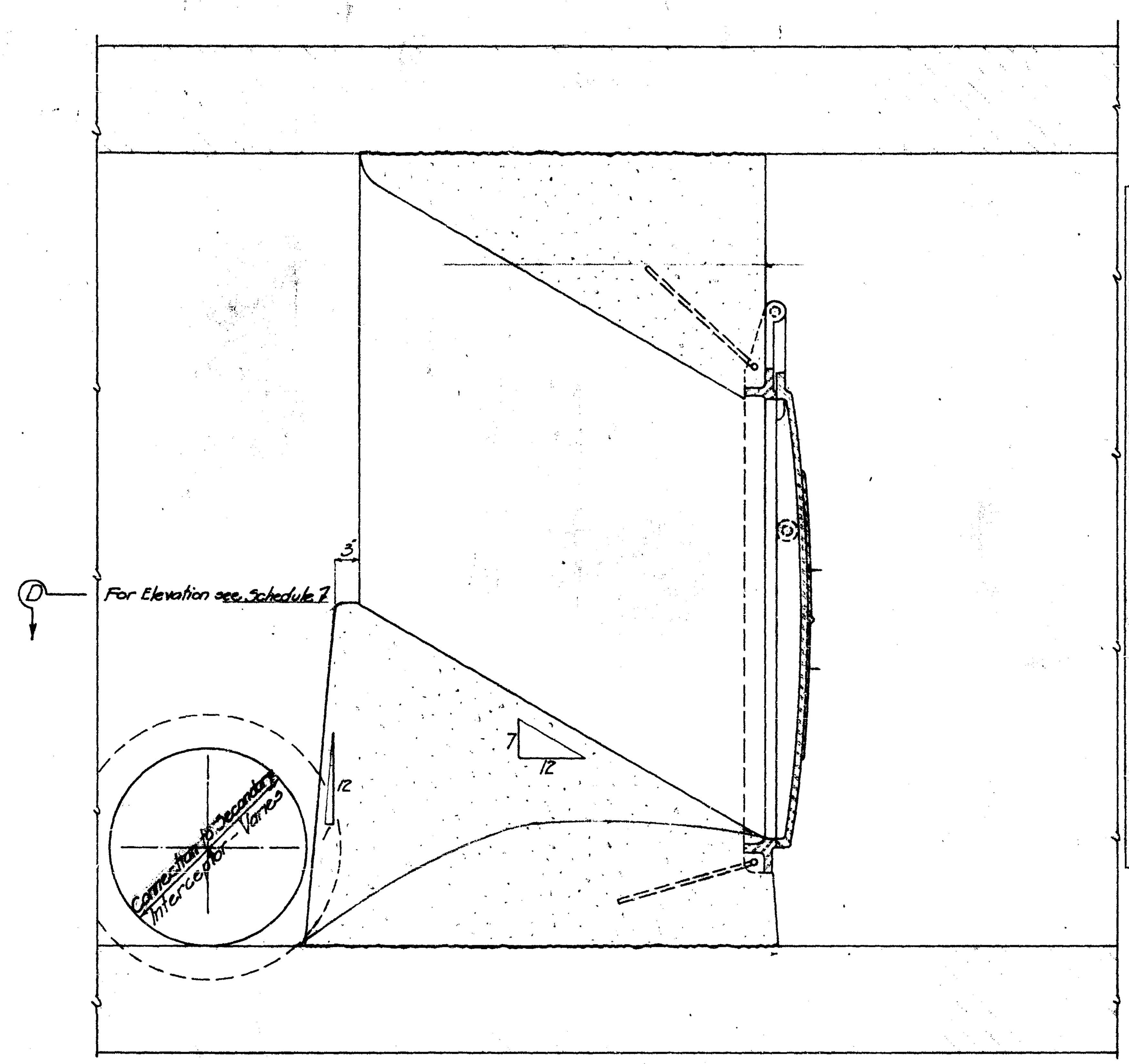
SCALE 1" = 40'

DRAWING No. 14479

PAVT. DWG. No.



HALF SECTION C-C   HALF SECTION B-B



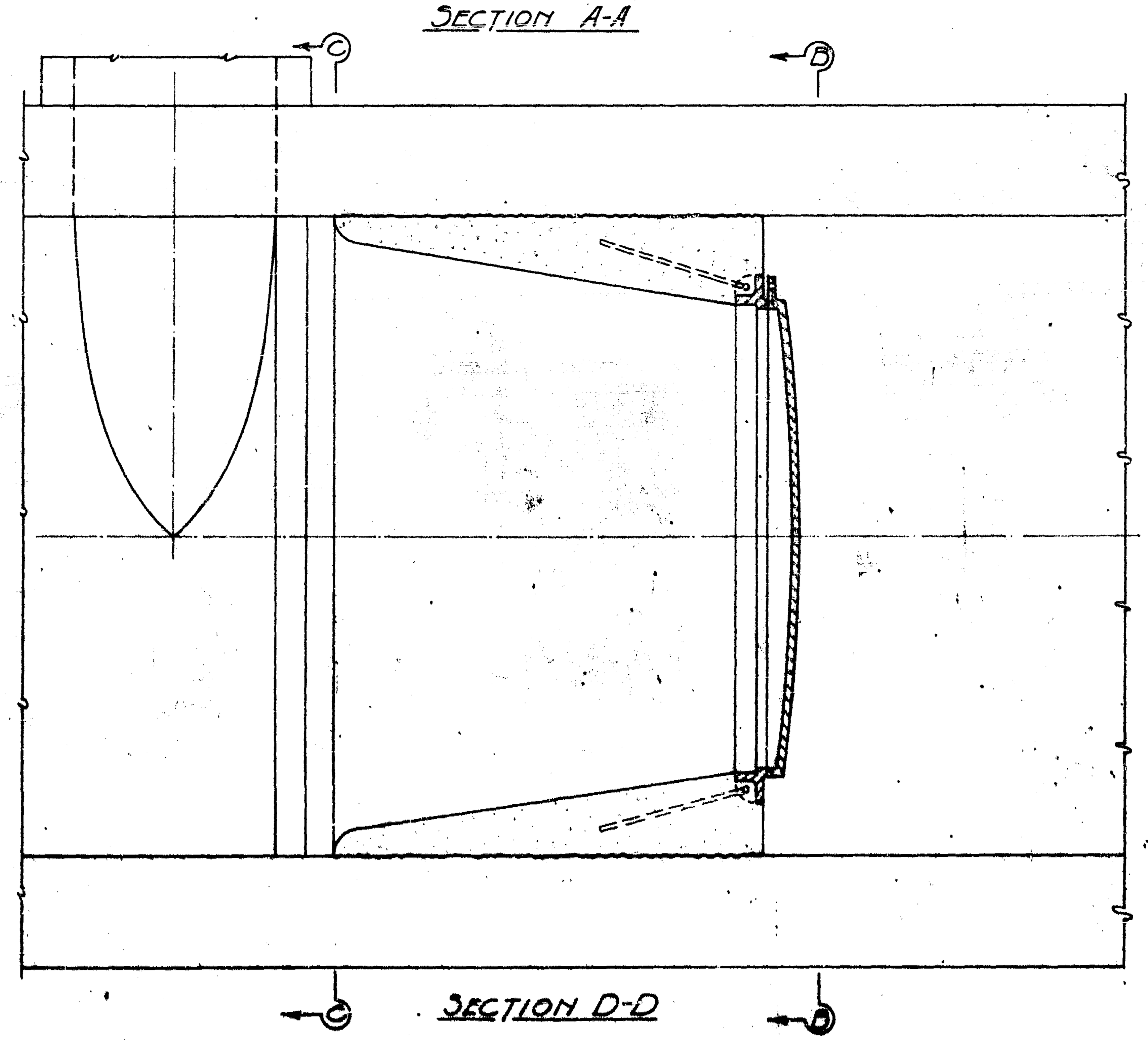
SECTION A-A

SCHEDULE OF GATES AND WEIRS

TRUNK	SIZE CIRCULAR	SIZE EGG SHAPED H	SIZE EGG SHAPED D	CONSTRUCTION	GATE DIAM (Inches)	APPROXIMATE INVT ELEV. of Sewer	ELEV. TOP OF WEIR	APPROXIMATE GROUND ELEV.	SIZE OF CONNECTION TO SECONDARY INTERCEPTOR	APPROXIMATE LOCATION OF WEIR
ASH		10'-0"	8'-6"	Concrete	60"	+3.61	+9.70	+32.20	24"	Opposite N. End of Pump House
AUBREY		9'-4"	7'-2"	"	60"	+5.40	+6.30	+32.94	24"	Opposite S. End of Pump House
JESSIE		8'-1"	6'-3"	"	54"	+3.00	+6.50	+34.65	24"	Opposite E. Side of Pump House
ORLEANS		6'-10"	5'-4"	"	42"	+5.92	+9.38	+31.20	24" (Not in this Contract)	10' ± E. of W. Line of Montcalm on ℄ of Orleans
HART		9'-4"	7'-2"	"	60"	+3.76	+8.14	+25.06	18"	Opposite W. End of Pump House
MUNROE		10'-6"	7'-0"	"	60"	+6.18	+9.01	+29.80	18"	Opposite W. End of Pumping Station
BANNATYNE	5'-0"ϕ			Brick	36"	+7.40	+9.36	+25.46	3-12" ϕ C.I. Pipe	15' ± E. of Intersection of ℄ of Bannatyne & Ship Sts.
POLSON		7'-3"	5'-10"	Concrete	48"	+2.48	+6.50	+24.90	30"	7' ± E. of E. Line of Scotia & on ℄ Polson
JEFFERSON		14'-0"	9'-4"	"	84"	+4.37	+6.50	+29.88	18" 5'-0" (Overflow)	15' ± E. of M.H. at Jefferson & Scotia
WEST END OF RIVER AVE.	2'-0"			Wood	24"	-2.28	No Weir	End of Outlet exposed	None	(See Drg. 187) West End of Wooden Outlet

Note · For Sections of Trunk Sewers Showing Position of Gate Frames with Elevations of Inverts See Drgs. 188 & 189.

CHANGED SEE DRAWING NO. M.107
" " " " 218
" " " " M106 June 15-1942
" " " " M106
" " " " M106
" " " " M.106
" " " " M106

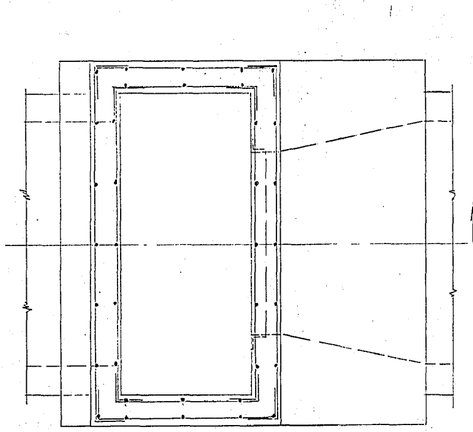


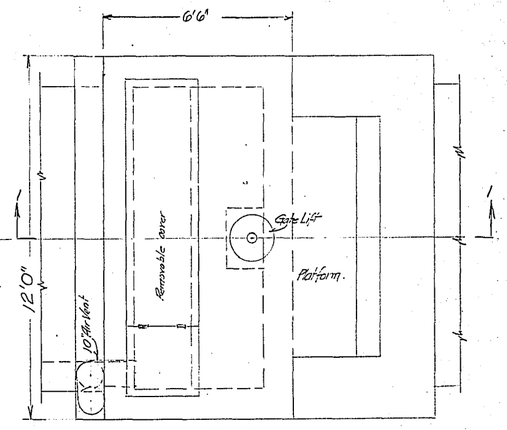
SECTION D-D

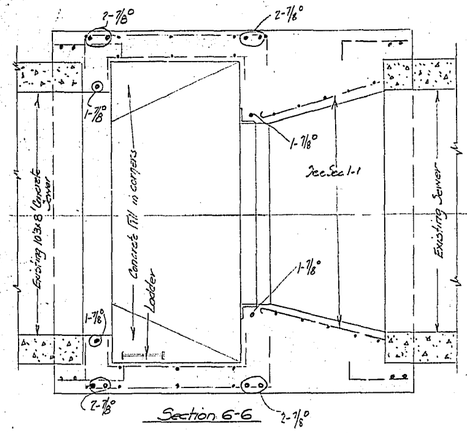
DISTRICT

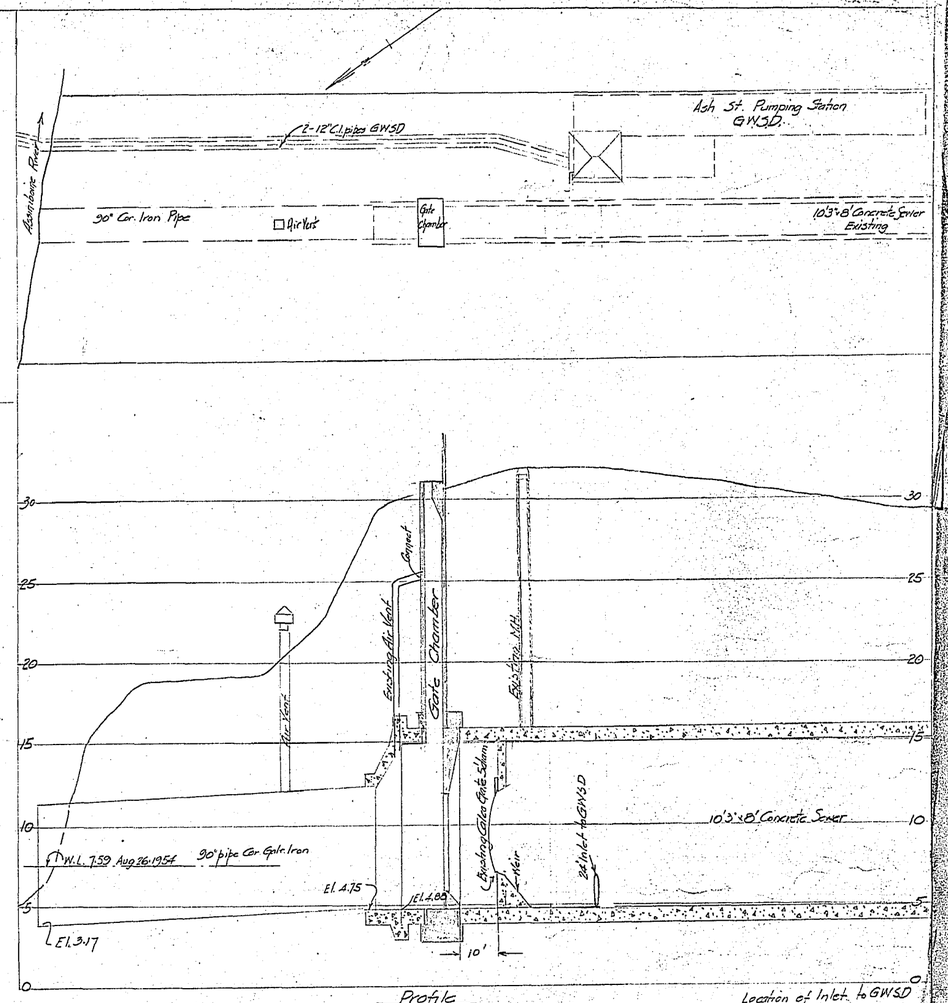
190

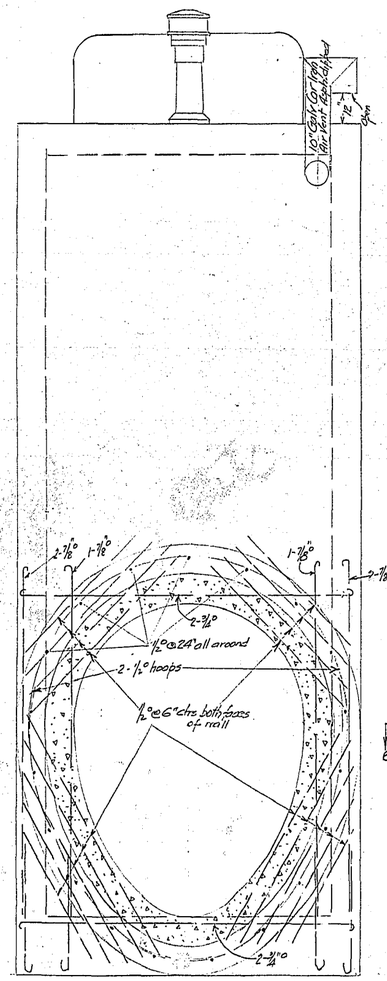
Revision A - Notes re Gates & Weirs on Bannatyne & Jessie by FSA
" 2 - June 15, 1942 Notes re gates & weirs changes added
" 3 - Nov 11/43 Aubrey weir lowered from 6.50 to 6.30

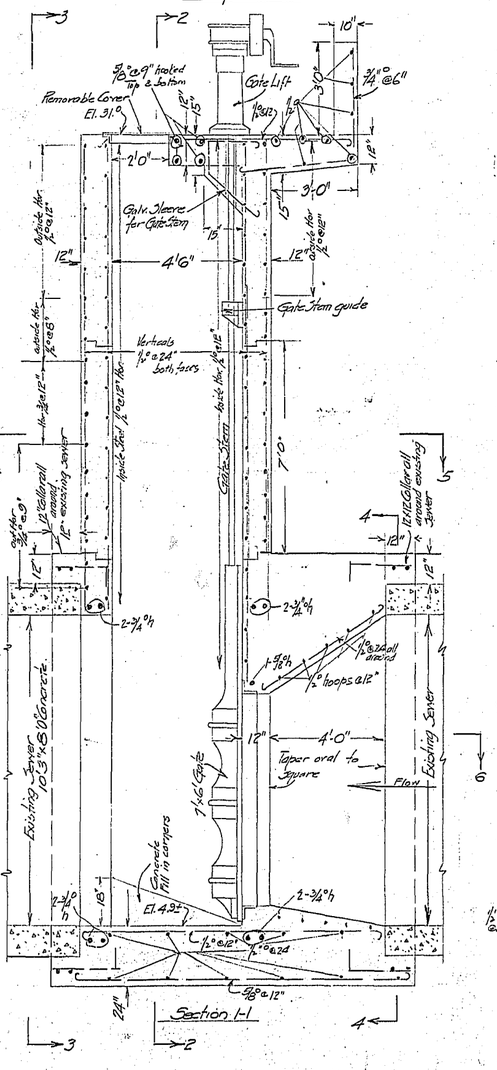


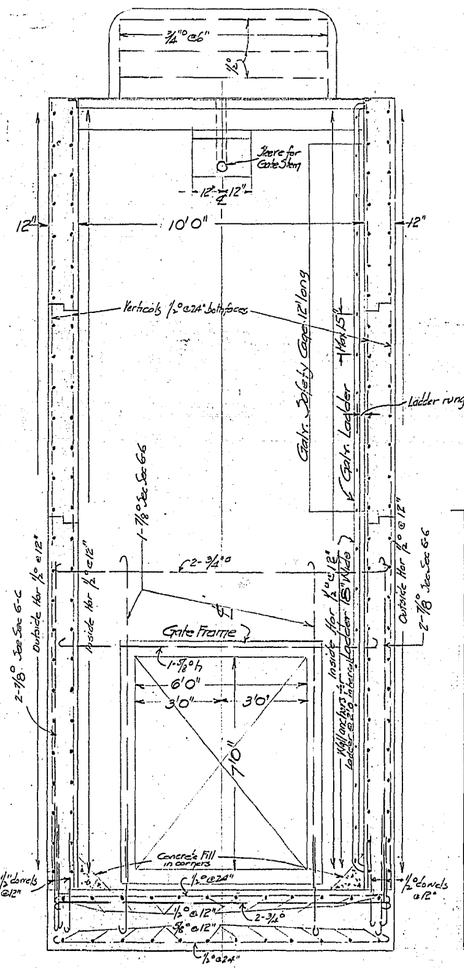


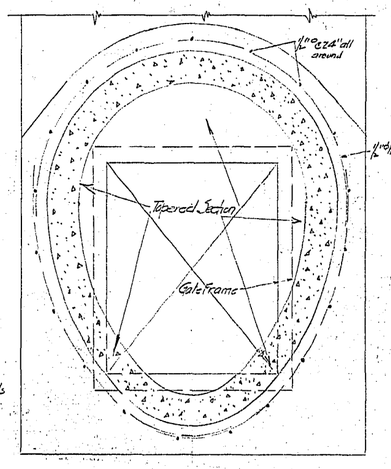


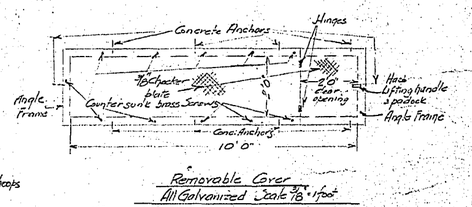












PROVINCE OF MANITOBA
J. C. D. TAYLOR
REGISTERED ENGINEER

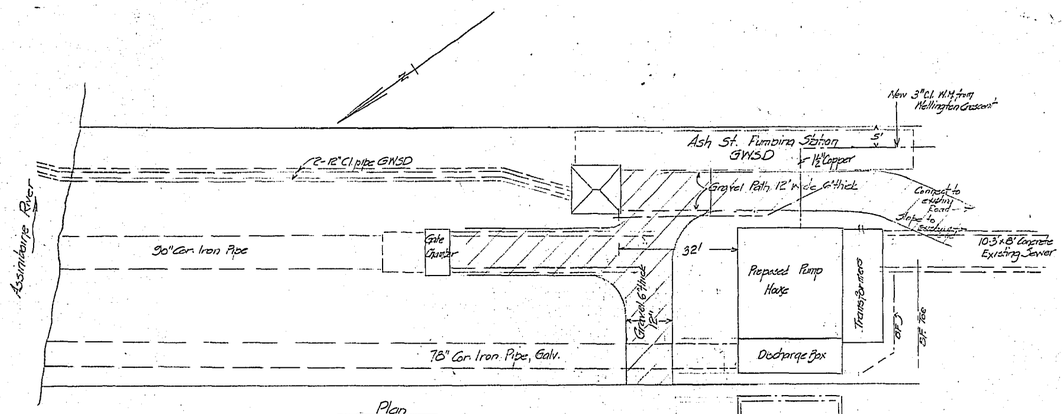
FLOOD GATE
ASH STREET

CITY OF WINNIPEG
ENGINEERING DEPARTMENT
W. D. HURST, CITY ENGINEER
A. J. S. TAUNTON, DEPUTY CITY ENGINEER

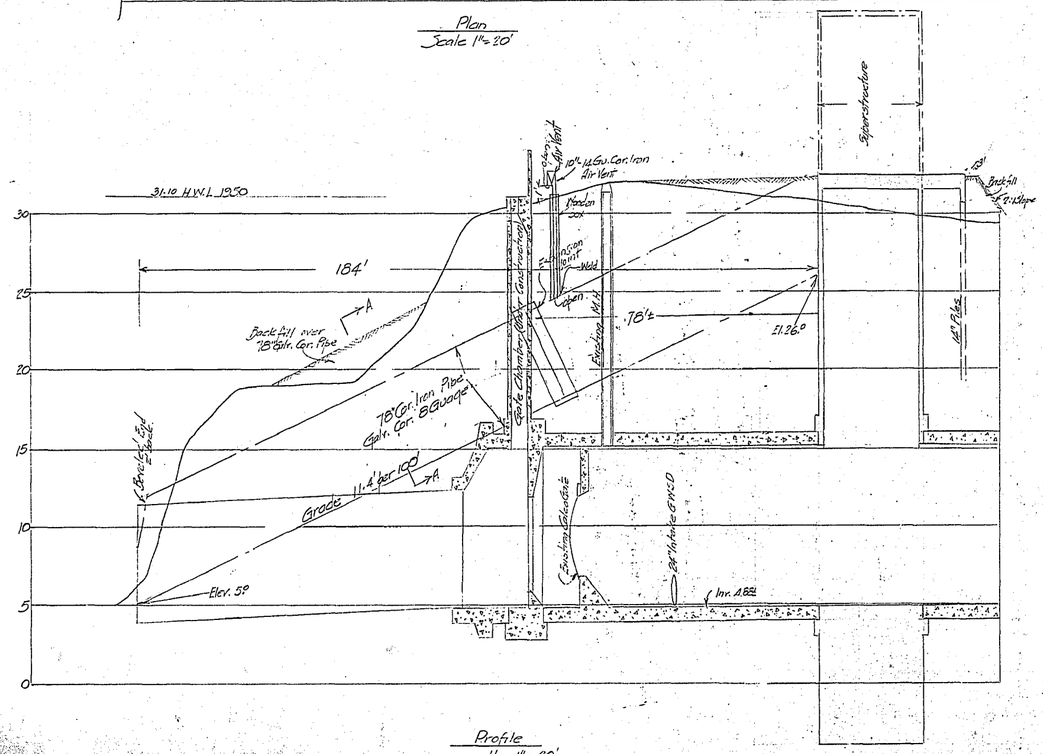
DRAWN BY ..... DATE Sept. 1, 1954
TRACED BY .....
CHECKED BY .....
APPROVED .....

SCALE 3/8" = 1 foot
DRAWING NO. 584-1

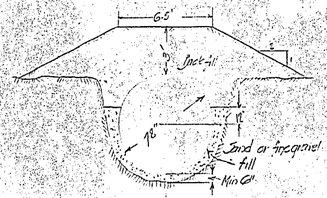
R-118



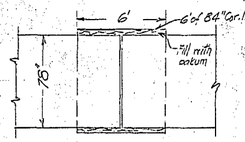
Plan
Scale 1"=20'



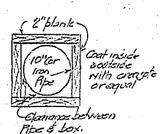
Profile
Scales Hor. 1"=20'
Ver. 1"=5'



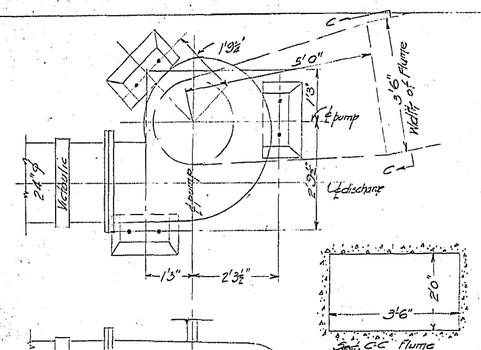
Section A-A
Scale 1"=5'

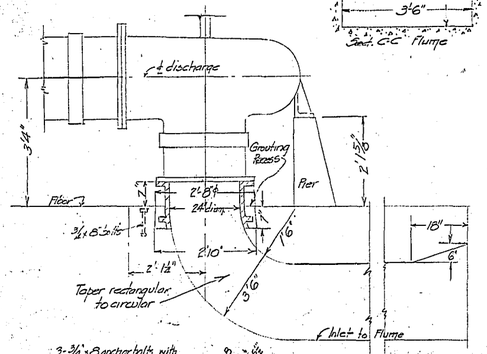


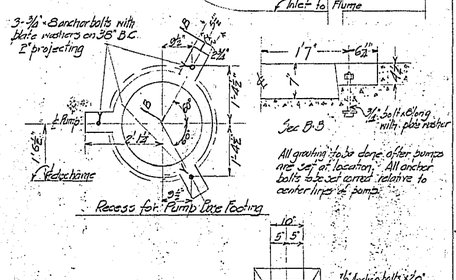
Expansion Joint
Scale 1"=5'



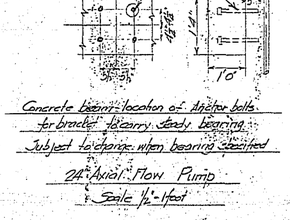
Box for Air Vent



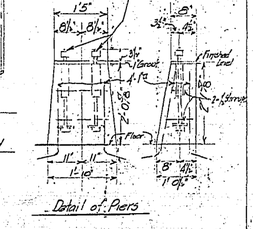




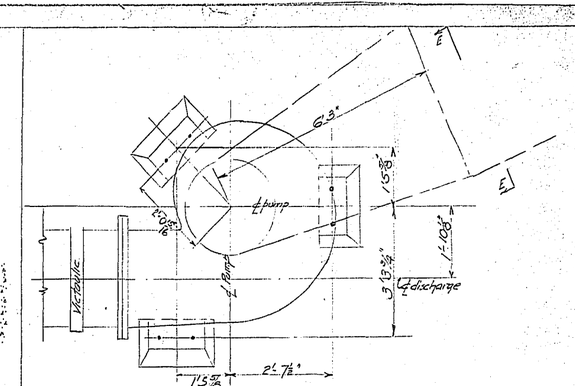
All grouting to be done after pumps are set at location. All anchor bolts to be set correct relative to center lines of pumps.

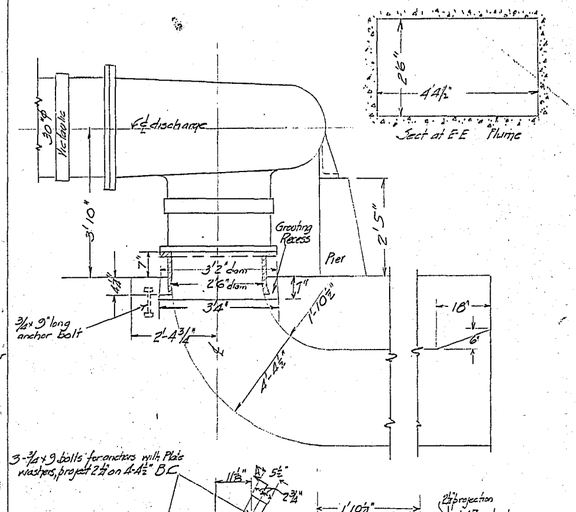


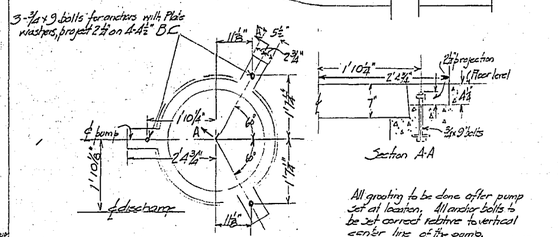
24" Axial Flow Pump
Scale ½"=1 foot



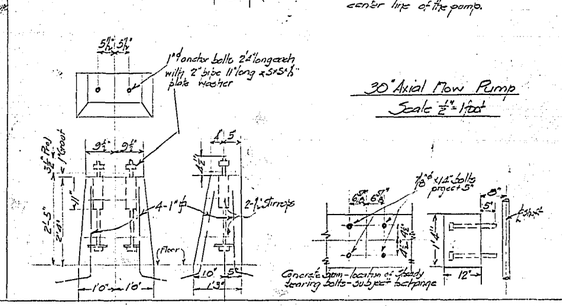
Detail of Piers





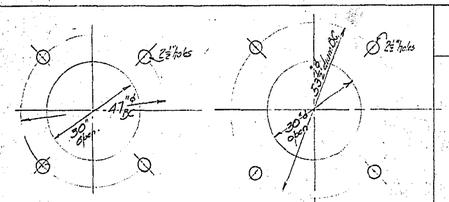


All grouting to be done after pump set at location. All anchor bolts to be set correct relative to vertical center line of the pump.



30" Axial Flow Pump
Scale ½"=1 foot

Note Pump layouts shown are general. Pumps are not yet purchased and suction flumes, gates, layout of pumps, motors, discharge pipes may be altered



Base 125½
24" Pump

Base 127
30" Pump

Motor Base Setting (Subject to change to suit motor)
Scale ½"=1 foot

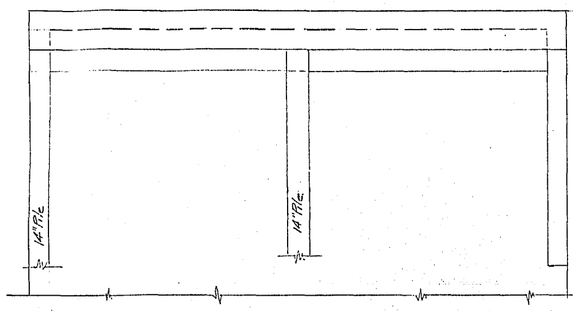
ASH STREET FLOOD PUMPING STATION
LOCATION PLAN & DETAILS

CITY OF WINNIPEG
ENGINEERING DEPARTMENT
W. D. HURST, CITY ENGINEER
A. J. S. TAUNTON, DEPUTY CITY ENGINEER

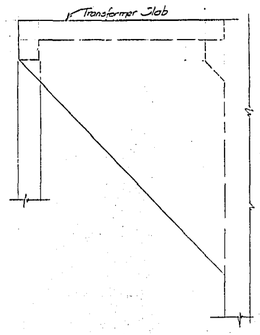
DRAWN BY ..... DATE Nov. 3, 1954
TRACED BY .....
CHECKED BY .....
APPROVED .....

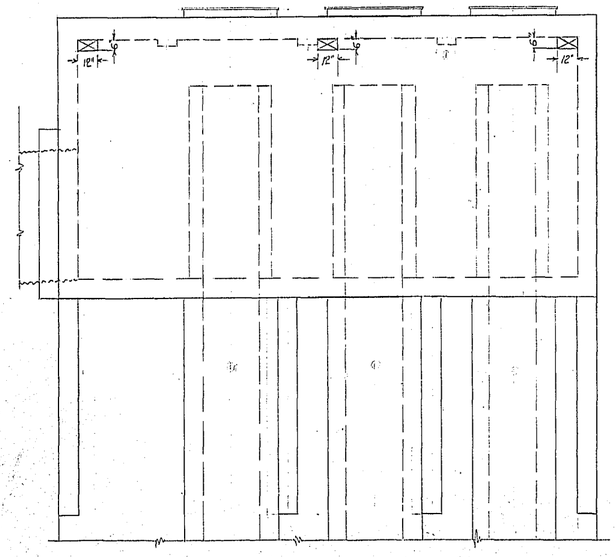
SCALE As Shown
DRAWING NO. 6843

R-121

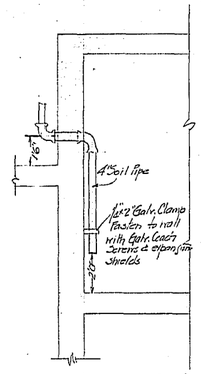


View 8-8

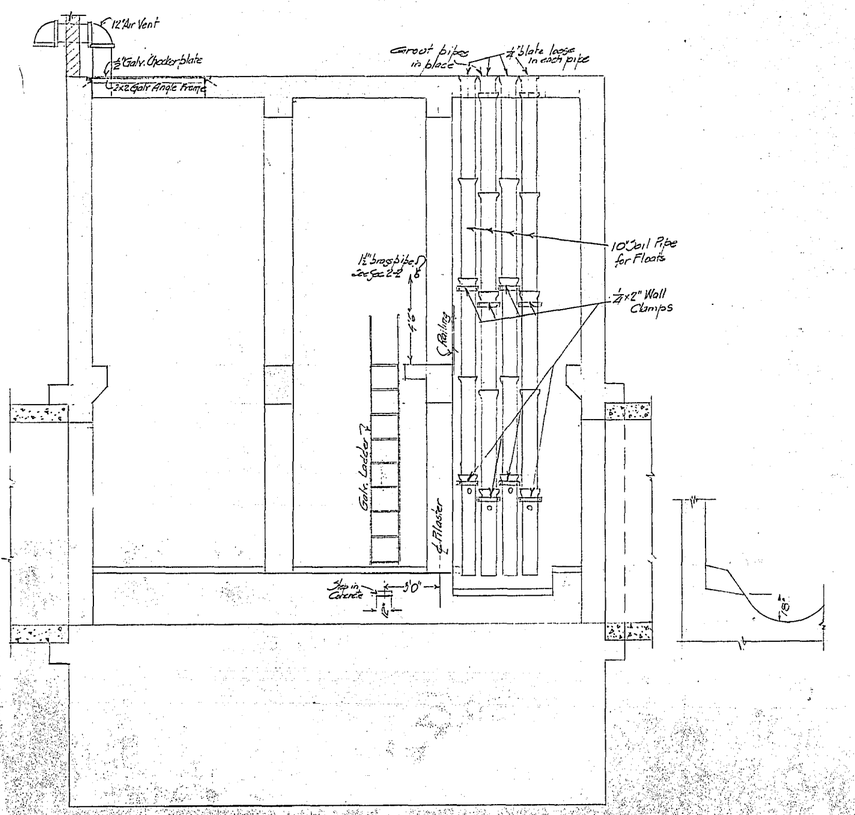




View 7-7



Rain Water Discharge.



Section 9-9

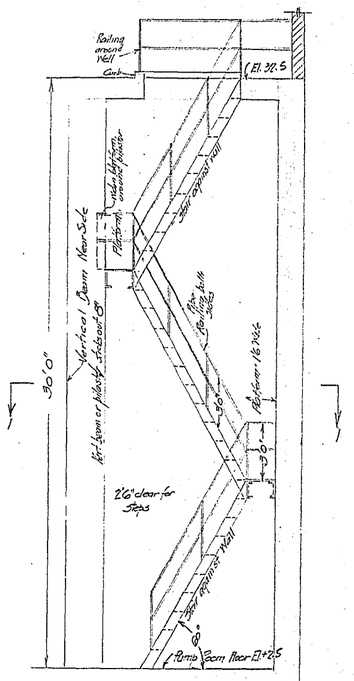
ASH STREET FLOOD PUMPING STATION.
SECTIONS & DETAILS

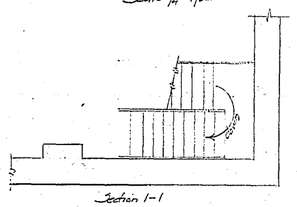
CITY OF WINNIPEG
ENGINEERING DEPARTMENT
W. D. HURST, CITY ENGINEER
A. J. S. TAUNTON, DEPUTY CITY ENGINEER

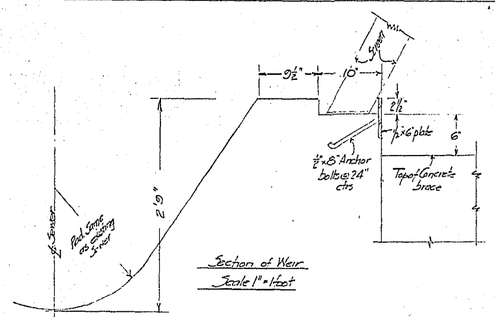
DRAWN BY ... DATE Nov. 9. 1954
TRACED BY ...
CHECKED BY ...
APPROVED ...

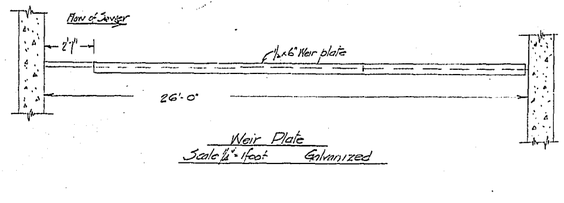
SCALE 1/4 = 1'0"
DRAWING NO. 6845

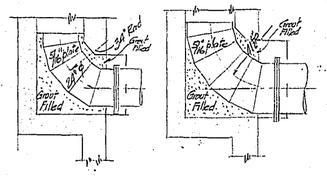
R-123.











Ships Ladder - Supports not shown
Scale 1/4" = 1 foot

Section 1-1

Section of Weir
Scale 1" = 1 foot

Weir Plate
Scale 1/4" = 1 foot Galvanized

Top View of Screens
Scale 1/4" = 1 foot

Front View of Screens
Scale 1/4" = 1 foot

Pump Discharges

Plates in Openings Plate Discharge Scale 3/8" = 1 foot

2 required for 30" pumps

1 required for 24" pump

Wooden Cover Top Floor El. 32.5

Removable Cover over Stair Well
Scale 1/4" = 1 foot

Railings in Wet Well are bolted to concrete. Other railings set in pipe sockets

Railings

Screens 1-13 inclusive
Scale 1 1/2" = 1 foot
All Welded - all galvanized.

Fixed Screen
Scale 1/2" = 1 foot
All Welded & All Galv.

Screens

Scales as shown

Screens Galv. all over

Check in field distance between walls

Sump Pump
Not to Scale

Drain in Pump Room
Scale 1/4" = 1 foot

Anchor bolts for Gate Lift

Anchor bolt setting for Armco Fully Adjustable Stem Guides

Gasket between frame & wall
No 11 Guage Sheet Lead

Ventilation
Scale 1/8" = 1 foot

Diagram of Seal Water Supply for Pumps
Not to Scale

Manhole Steps
Galvanized

Eyebolt
Galvanized

Holes for Railing Posts

Ladders - Galv.

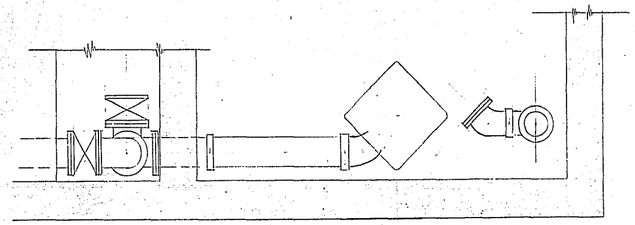
Bolt Setting for Armco Model 173 - 48"x30" Gate
Scale 1" = 1 foot

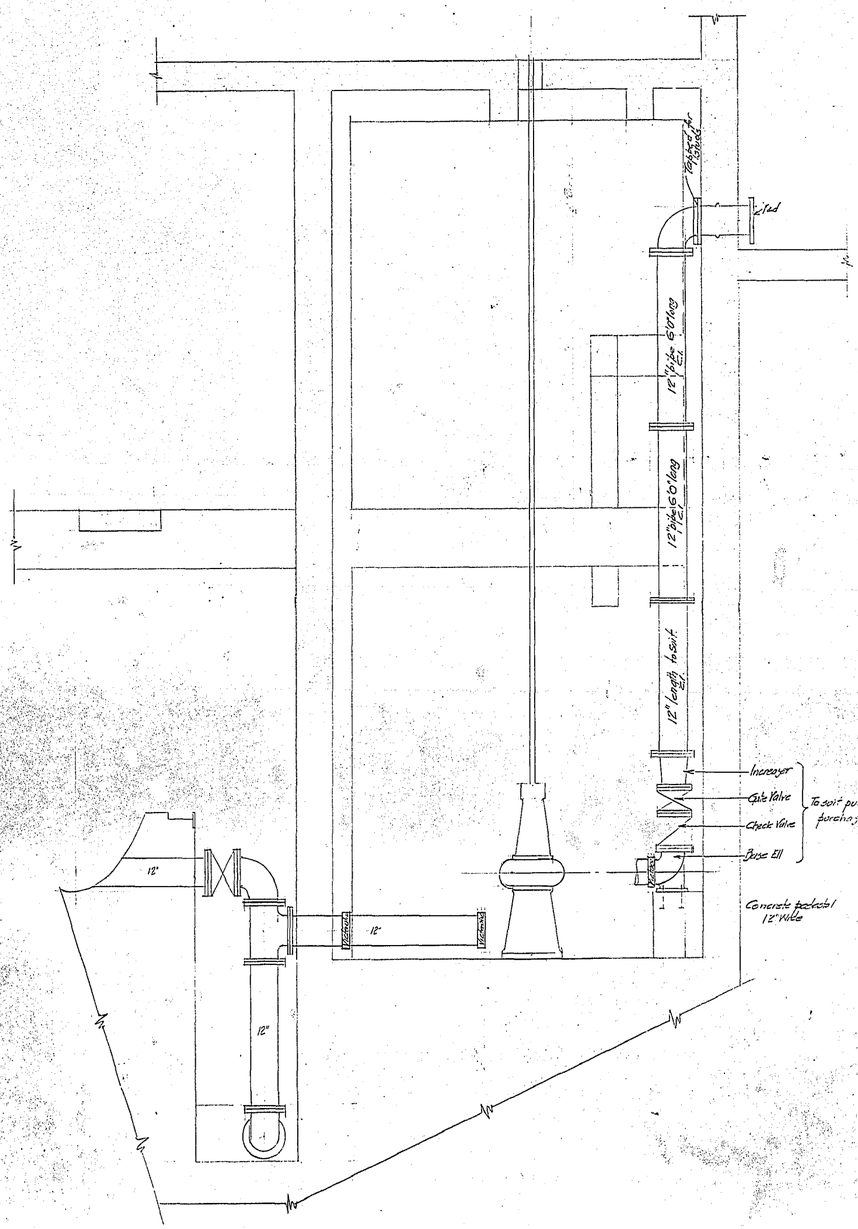
Note:- Check with Gate Manufacturers before Setting bolts

Bolt Setting for Armco Model 173 - 60"x36" Gate
Scale 1" = 1 foot

R-124

ASH STREET FLOOD PUMPING STATION DETAILS	CITY OF WINNIPEG ENGINEERING DEPARTMENT W. D. HURST, CITY ENGINEER A. J. S. TAUNTON, DEPUTY CITY ENGINEER	DRAWN BY H.E.D. DATE Nov. 5, 1954 TRACED BY ...... CHECKED BY ...... APPROVED	SCALE As Shown DRAWING NO. 684-6





ASH STREET FLOOD PUMPING STATION
3000 Imp GPM Pump Installation

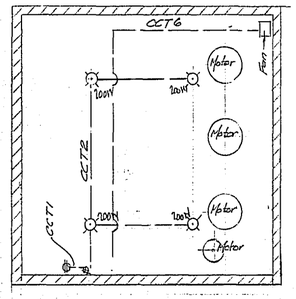
CITY OF WINNIPEG
ENGINEERING DEPARTMENT
W. D. HURST, CITY ENGINEER
A. J. S. TAUNTON, DEPUTY CITY ENGINEER

DRAWN BY ..... DATE Nov 17/1954
TRACED BY .....
CHECKED BY .....
APPROVED .....

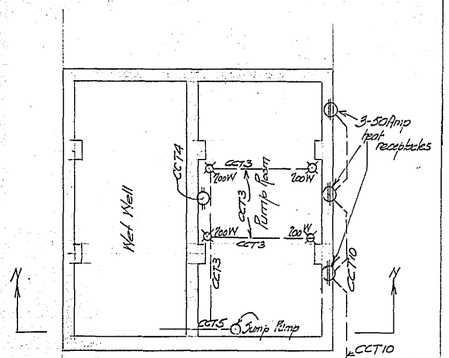
SCALE 3/16 = 1'0"
DRAWING NO. 684-7

R-125

CCT	Description	CB
1	Plug Top Floor	15 Amps
2	Top Floor Lights 4-200 W	15 Amps
3	Pump Room Lights 4-200 W, 1-100 W	15 Amps
4	" " Plug	15 Amps
5	Sump Pump ½ HP	20 Amps
6	Fan ¾ HP	20 Amps
7	Spare	
8	Spare	
9	Spare	
10	Heat Receptacles (3)	30 Amp 1ph
11		
12		

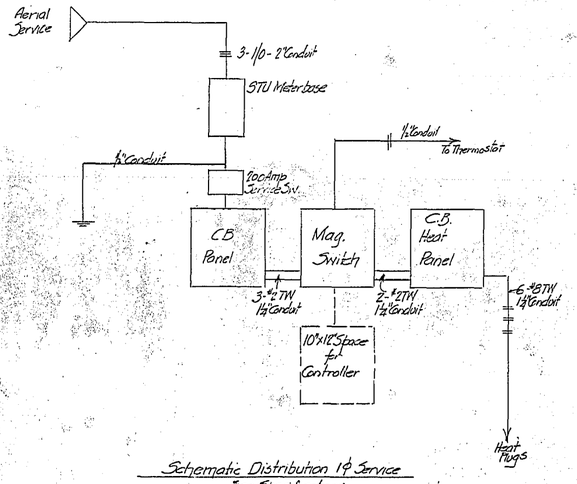


Section O-O

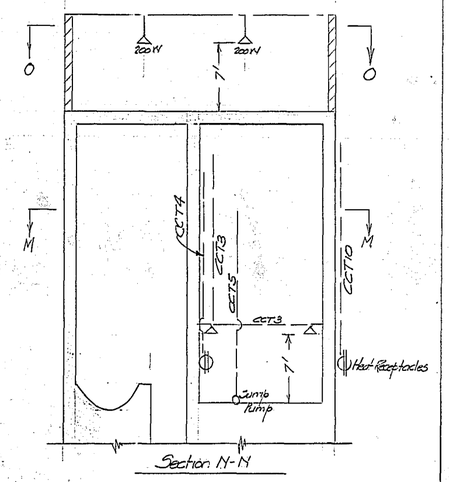


Section M-M.

CCT10 6-8TW up in 1" conduit to distribution

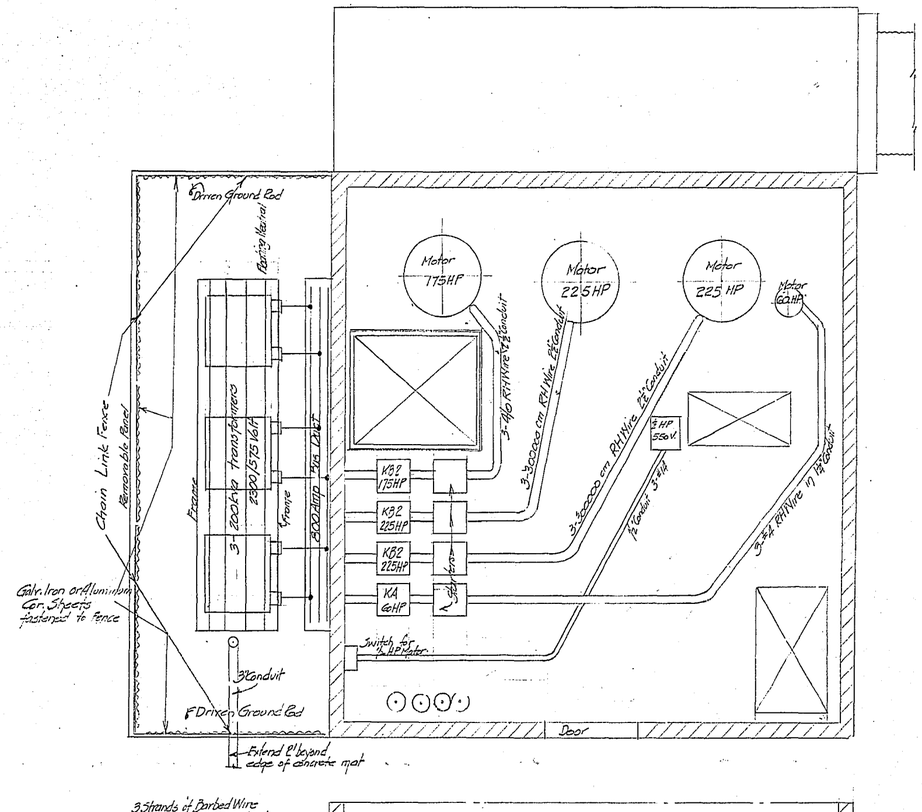


Schematic Distribution 1φ Service
See Specifications



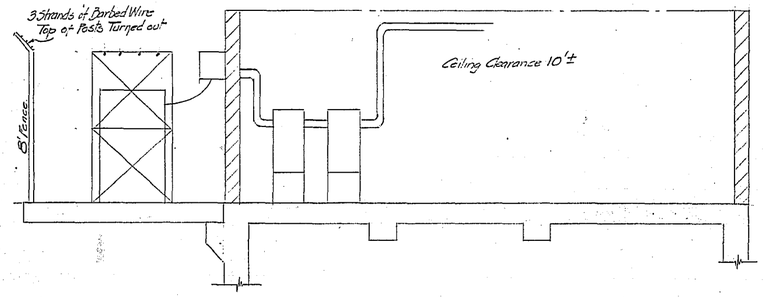
Section N-N

Scale 1/8" = 1 foot

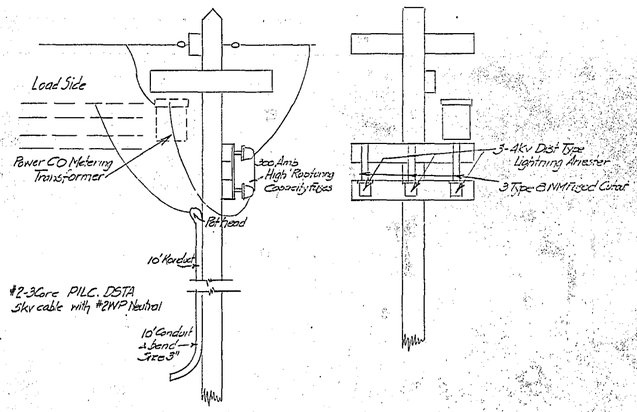


Motors
2 - 225 HP - 550 V - 60 c - 3 ph
1 - 175 HP - 550 V - 60 c 3 ph
1 - 60 HP 550 V 60 c 3 ph
½ Hp 550 V, 60 cyc 3 ph - Seal Water Pump

¾" HP for Fan 1 φ
½ HP for Sump Pump 1 φ

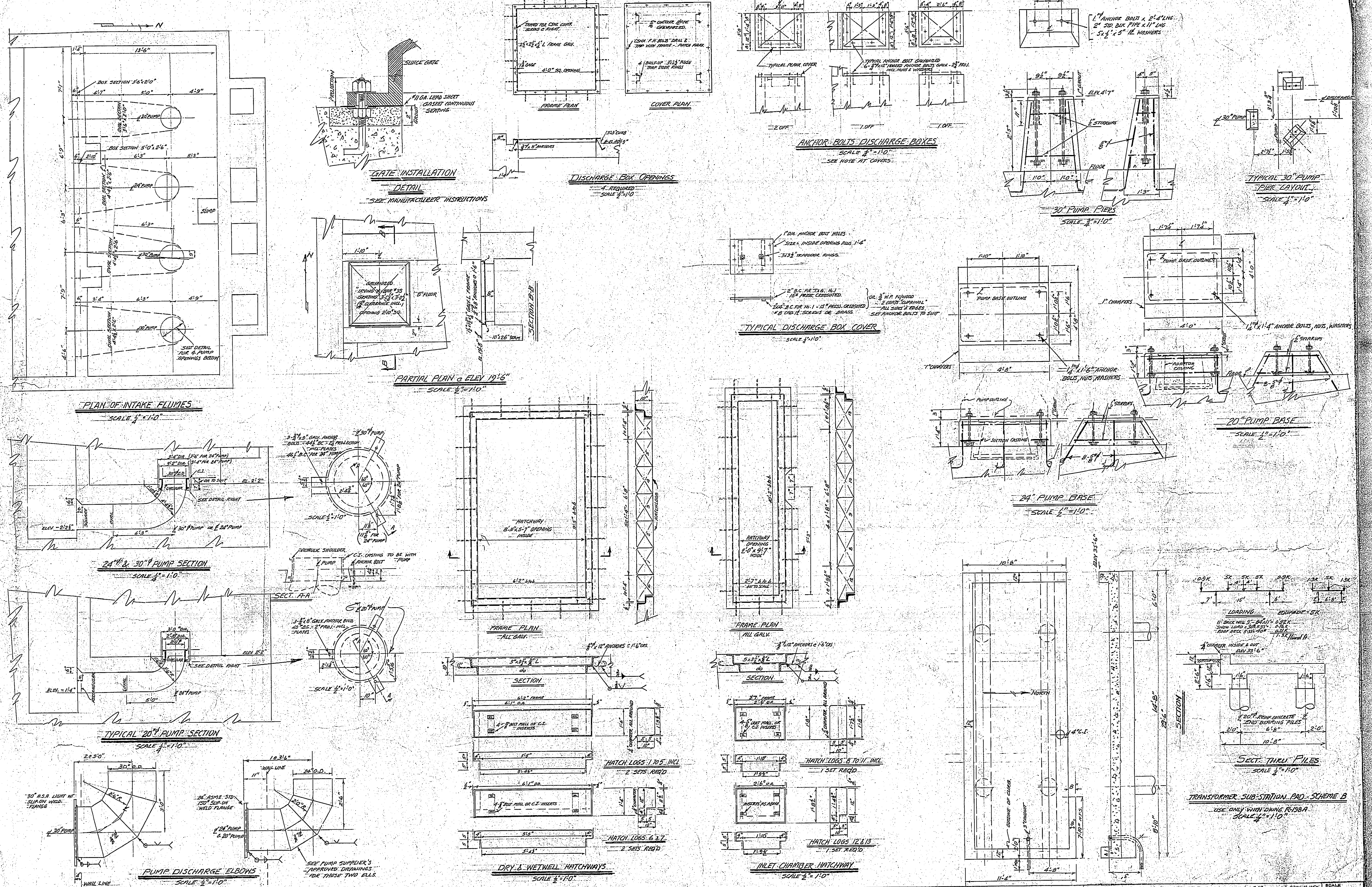


Primary bus & primary risers #6 VC WP
Secondary bus duct 800 Amp Copper
Secondary risers 4/0 VC WP 600 V



R-126

ASH STREET FLOOD PUMPING STATION ELECTRICAL	CITY OF WINNIPEG ENGINEERING DEPARTMENT W. D. HURST, CITY ENGINEER A. J. S. TAUNTON, DEPUTY CITY ENGINEER	DRAWN BY ..... DATE Feb. 11/1954 TRACED BY ..... CHECKED BY ..... APPROVED	SCALE 1/8 & 1/2" - 1 foot DRAWING NO. 684-8

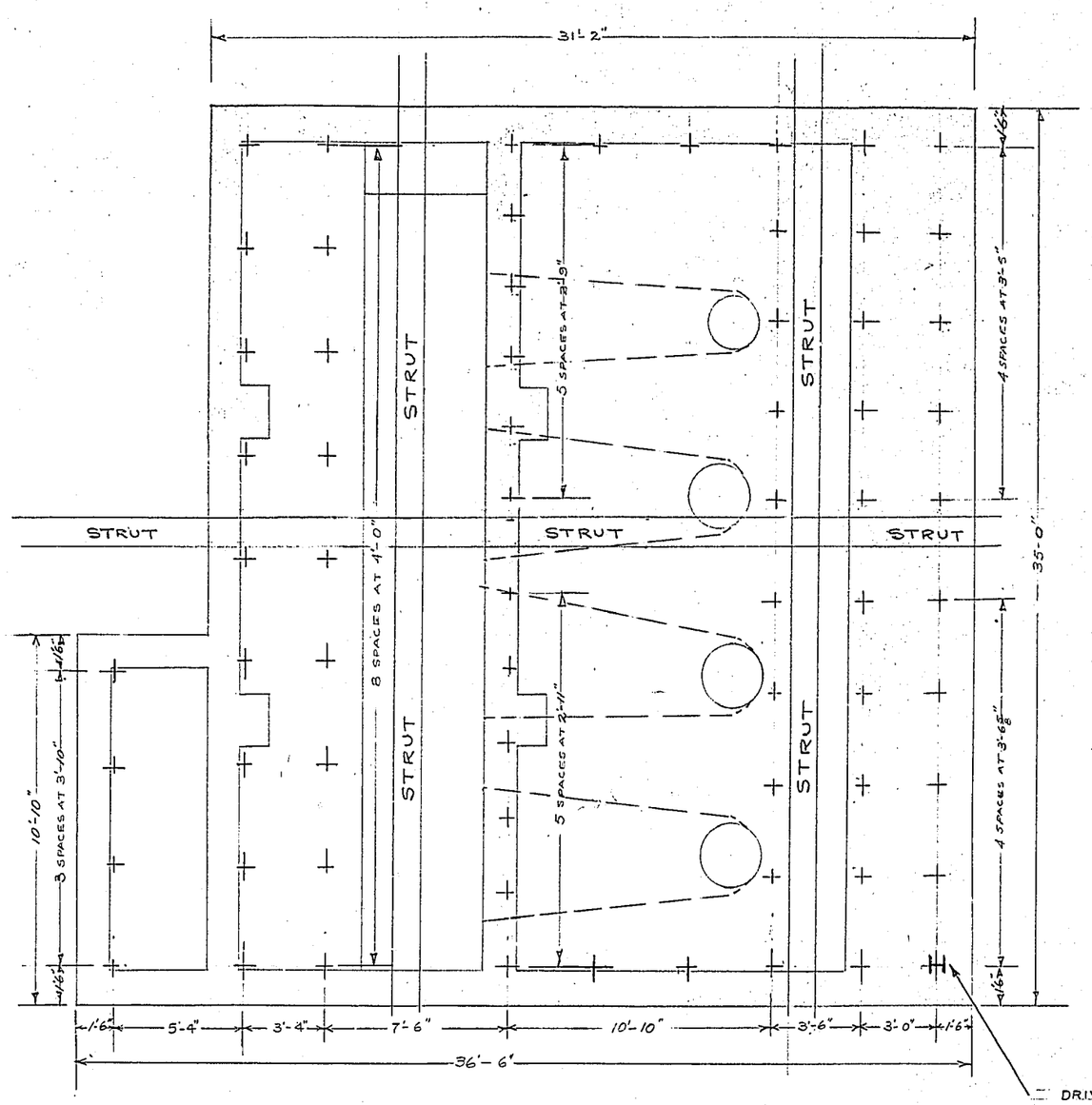

PLAN OF INTAKE FLUMES
SCALE 1/4" = 1'-0"
GATE INSTALLATION DETAIL
SEE MANUFACTURER INSTRUCTIONS
FRAME PLAN
COVER PLAN
DISCHARGE BOX OPENINGS
4 REQUIRED
ANCHOR BOLTS DISCHARGE BOXES
SCALE 1/4" = 1'-0"
SEE NOTE AT COVERS
30" PUMP PIERS
TYPICAL 30" PUMP PIER LAYOUT
SCALE 1/4" = 1'-0"
PARTIAL PLAN @ ELEV 19'-6"
SCALE 1/2" = 1'-0"
SECTION B-B
TYPICAL DISCHARGE BOX COVER
20" PUMP BASE
SCALE 1/2" = 1'-0"
24" PUMP BASE
SCALE 1/2" = 1'-0"
24" & 30" PUMP SECTION
SCALE 1/4" = 1'-0"
TYPICAL 20" PUMP SECTION
SCALE 1/4" = 1'-0"
SECT. A-A
FRAME PLAN
ALL GALV.
SECTION
HATCH LOGS 1 TO 5 INCL
2 SETS REQ'D
HATCH LOGS 6 & 7
2 SETS REQ'D
DRY & WETWELL HATCHWAYS
SCALE 1/2" = 1'-0"
HATCH LOGS 8 TO 11 INCL.
1 SET REQ'D
HATCH LOGS 12 & 13
1 SET REQ'D
INLET CHAMBER HATCHWAY
SCALE 1/2" = 1'-0"
PUMP DISCHARGE ELBOWS
SCALE 1/2" = 1'-0"
SEE PUMP SUPPLIER'S APPROVED DRAWINGS FOR THESE TWO ELLS.
SECTION
SECT. THRU PILES
SCALE 1/4" = 1'-0"
TRANSFORMER SUB-STATION PAD - SCHEME B
USE ONLY WITH DWG. R-198A
SCALE 1/4" = 1'-0"

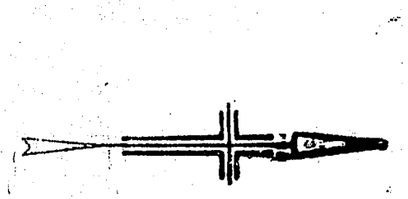
NO.	DATE	REVISION		
		GENERAL REVISIONS		
		HATCH FRAMING TO CONFORM TO MISC. IRON PRINTS		
		PUMP BASES PIERS IMPLEMENTED, PUMP SECT. REVISED	SJB	

ASH STREET FLOOD PUMPING STATION
DETAIL & TRANSFORMER PAD.

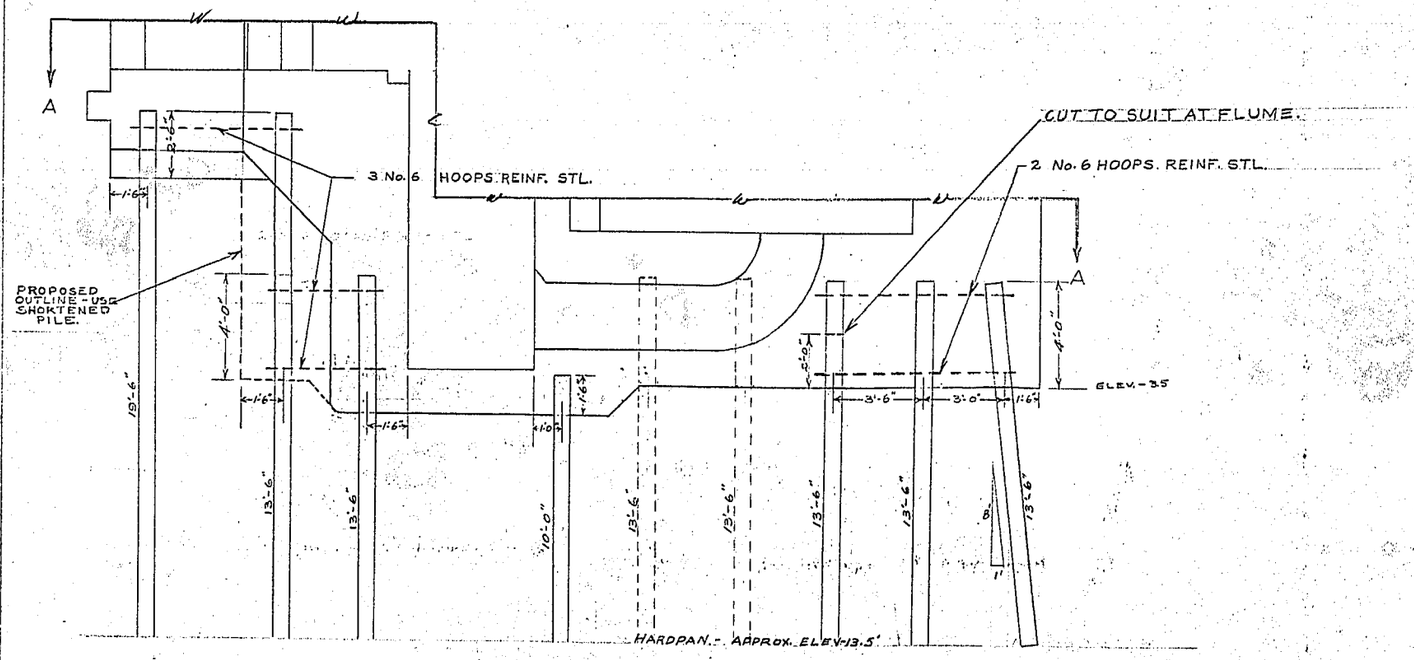
CITY OF WINNIPEG
ENGINEERING DEPARTMENT
W. D. HURST, CITY ENGINEER
A. J. S. TAUNTON, DEPUTY CITY ENGINEER

DRAWN BY SJB
TRACED BY
CHECKED BY
APPROVED
SCALE AS NOTED
DRAWING NO. R203





SECT. A-A



NOTE.
ALL PILES TO BE 8 x 8 WIDE FLANGE AT 40 LBS. PER FOOT.

ASH ST. FLOOD PUMPING STATION
PROPOSED PILING LAYOUT

CITY OF WINNIPEG
ENGINEERING DEPARTMENT
W. B. HURST, CITY ENGINEER
A. J. S. TAUNTON, DEPUTY CITY ENGINEER

DRAWN BY A.L. DATE 6 Feb 58
TRACED BY
CHECKED BY
APPROVED

SCALE 1" = 4'
DRAWING NO. R199A

SITE PLAN

SCALE 1"=20'

SEE DWNG R210 FOR EASEMENT
APPROVAL OF ENGINEER REQ'D FOR REMOVAL OF TREES

LEGEND

- POLE
- SHRUB
- TREE

12" VENT FOR OUTFALL

SCALE 1"=4'0"

OUTFALL SLIP JOINT

SCALE 1"=4'0"
2-REQUIRED

ELEVATION

SCALE 1"=20' HOR. & VERT.

SECTION

PLAN

SCALE 1"=4'0"

SECT. A-A

SECT. B-B

SECT. C-C

INTAKE

REFERENCES

F.B. 810 - P 36, 37, 38.
F.B. 810 - P 19.
F.B. 759 - P 40.
C.E.D. DWNG # 5875 (GWSD PRINT)
C.E.D. DWNG # 5876 (GWSD PRINT)
C.E.D. DWNG # 684-1 - GATE CHAMBER
F.B. 744 - P 43

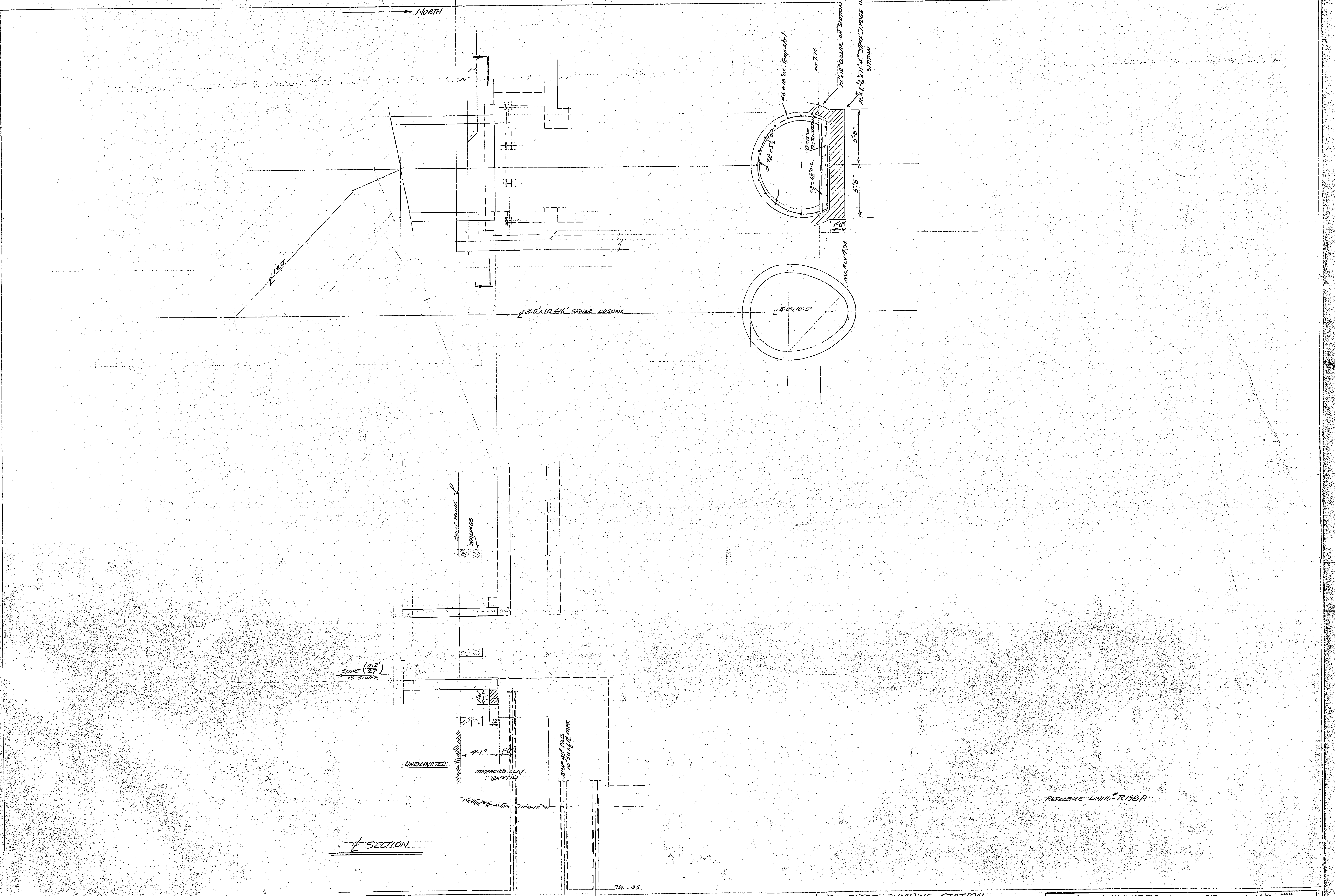
No.	DATE	REVISIONS	BY	
2	27/2/58	PUMP STN. RELOCATED TO ORIGINAL LOCATION	SJB	
1	17/2/57	GENERAL REVISIONS	HCH.	SJB

ASH STREET FLOOD PUMPING STATION
OUTFALL - SITE PLAN - INTAKE

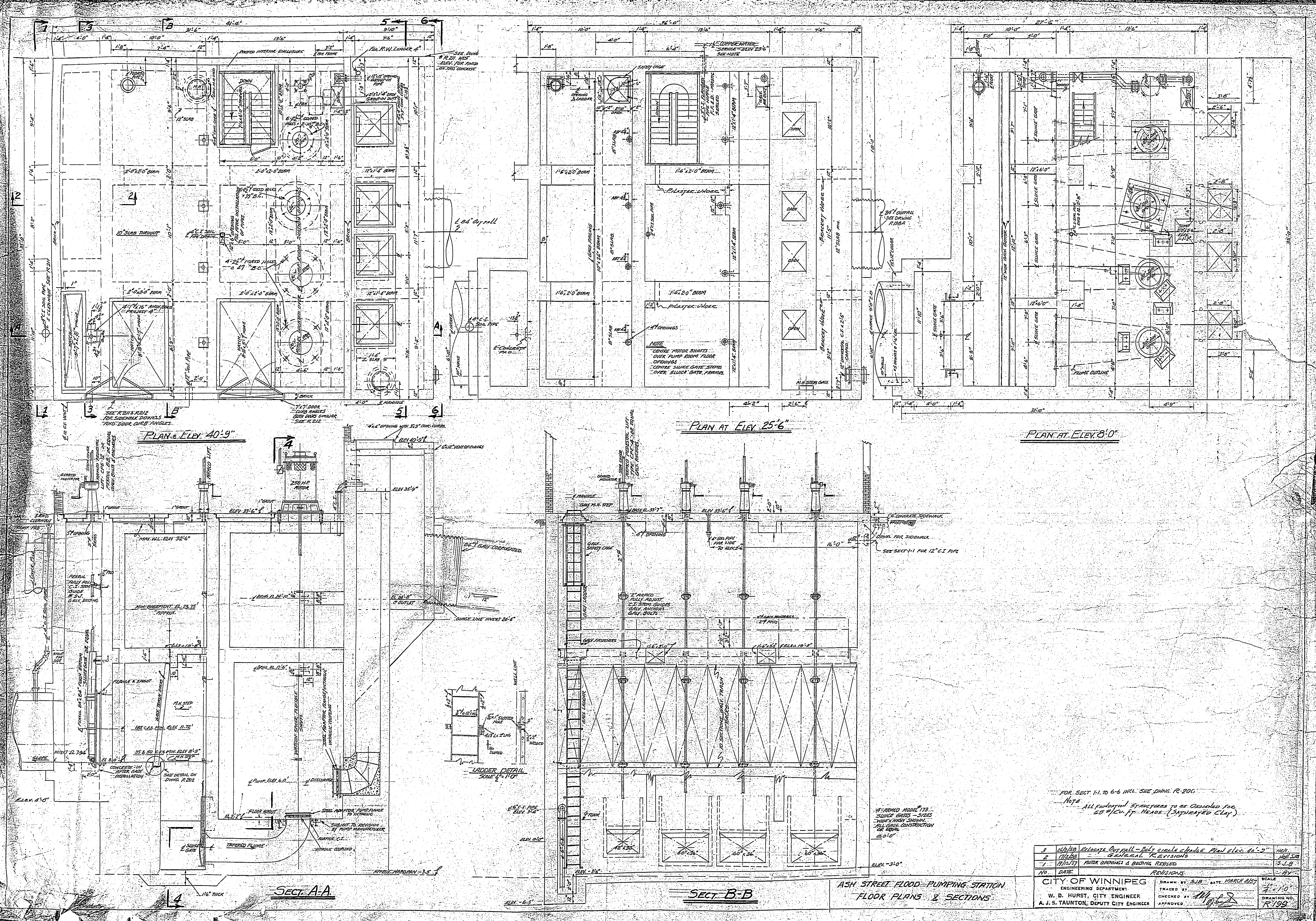
CITY OF WINNIPEG
ENGINEERING DEPARTMENT
W. D. HURST, CITY ENGINEER
A. J. S. TAUNTON, DEPUTY CITY ENGINEER

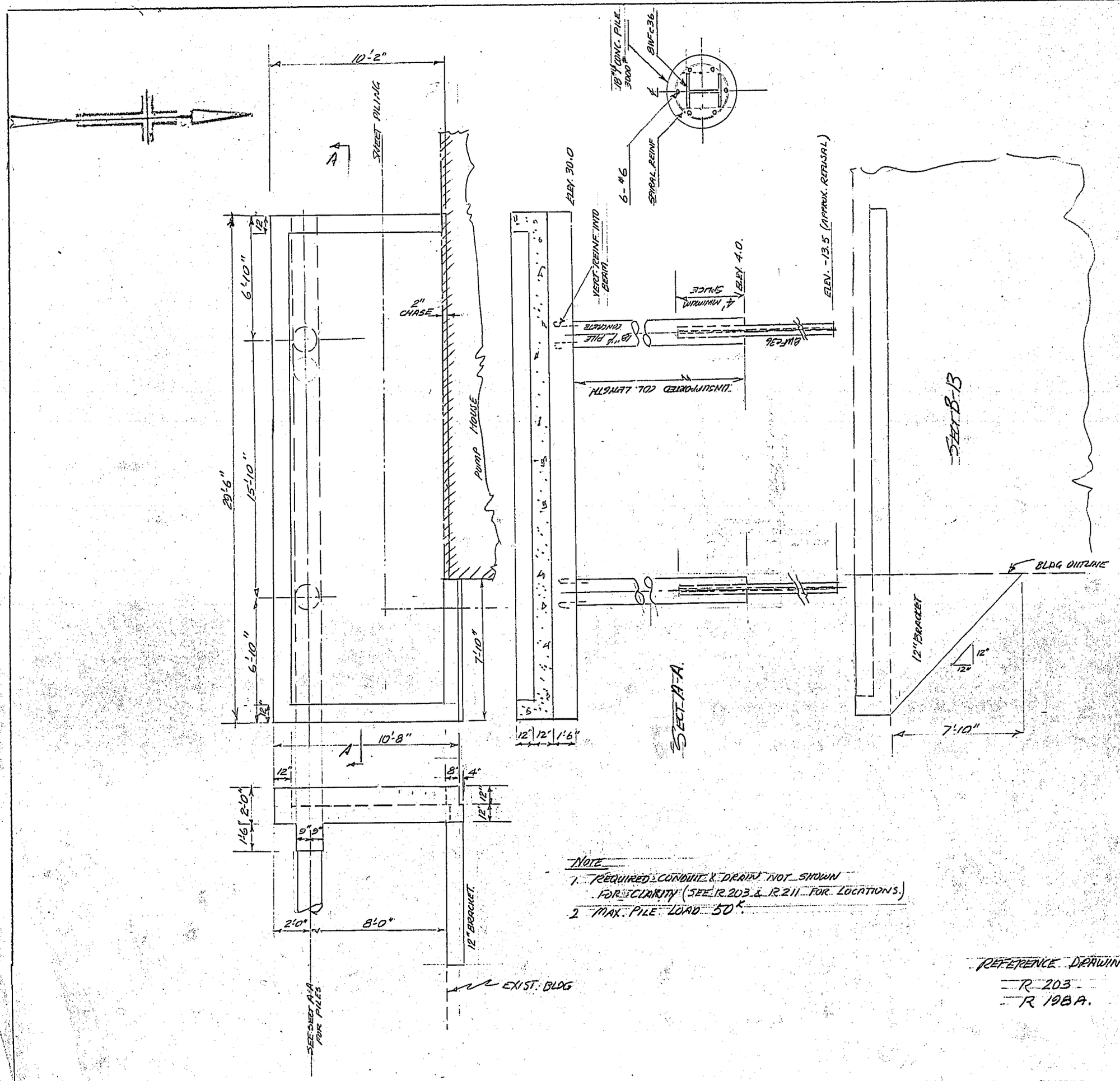
DRAWN BY SJB DATE April 23 1957
TRACED BY
CHECKED BY
APPROVED

SCALE 1"=20'0"
DRAWING NO. R198A



FLOOD PUMPING STATION ASH STREET RE-DESIGN INLET OPENING TO STATION	CITY OF WINNIPEG ENGINEERING DEPARTMENT W. D. HURST, CITY ENGINEER A. J. S. TAUNTON, DEPUTY CITY ENGINEER	DRAWN BY SJB DATE MAR 24/58 TRACED BY CHECKED BY [initials] APPROVED	SCALE ¼" = 1'-0" DRAWING NO. R198B


PLAN @ ELEV. 40'-9"
PLAN AT ELEV. 25'-6"
PLAN AT ELEV. 8'-0"
SECT. A-A
SECT. B-B
LADDER DETAIL
NOTE
CENTRE MOTOR SHAFTS OVER PUMP ROOM FLOOR OPENINGS
CENTRE SLUICE GATE STEMS OVER SLUICE GATE FRAMES
4-ARMCO MODEL #173 SLUICE GATES - SIZES WIDE x HIGH SHOWN. ALL GALV. CONSTRUCTION OR EQUAL
FOR SECT. 1-1 TO 6-6 INCL. SEE DWNG. R-200
Note
ALL FOUNDATION STRUCTURES TO BE DESIGNED FOR 65#/CU. FT. HEADS (SATURATED CLAY)
3 | 26/2/58 | RELOCATE OUTFALL - BOLT CIRCLE CHANGE PLAN ELEV. 40'-9" | HCH.
2 | 17/2/58 | GENERAL REVISIONS | HCH. SJB
1 | 19/12/57 | MOTOR OPENINGS & BOLTING REVISED | S.J.B.
NO. | DATE. | REVISIONS | BY
ASH STREET FLOOD PUMPING STATION
FLOOR PLANS & SECTIONS
CITY OF WINNIPEG
ENGINEERING DEPARTMENT
W. D. HURST, CITY ENGINEER
A. J. S. TAUNTON, DEPUTY CITY ENGINEER
DRAWN BY SJB DATE MARCH 8/57
TRACED BY
CHECKED BY
APPROVED
SCALE 1/4" = 1'-0"
DRAWING NO. R199



NOTE

1. REQUIRED CONDUIT & DRAIN NOT SHOWN FOR CLARITY (SEE R.203 & R.211 FOR LOCATIONS.)
2. MAX. PILE LOAD 50 K.

REFERENCE DRAWINGS

R 203
R 198A.

1.	CHANGE TO 16" ϕ PILES, WIDTH OF PAD REVISED, LOCATION, WEST PILE CHANGED	S.J.B.	MAY 13/58

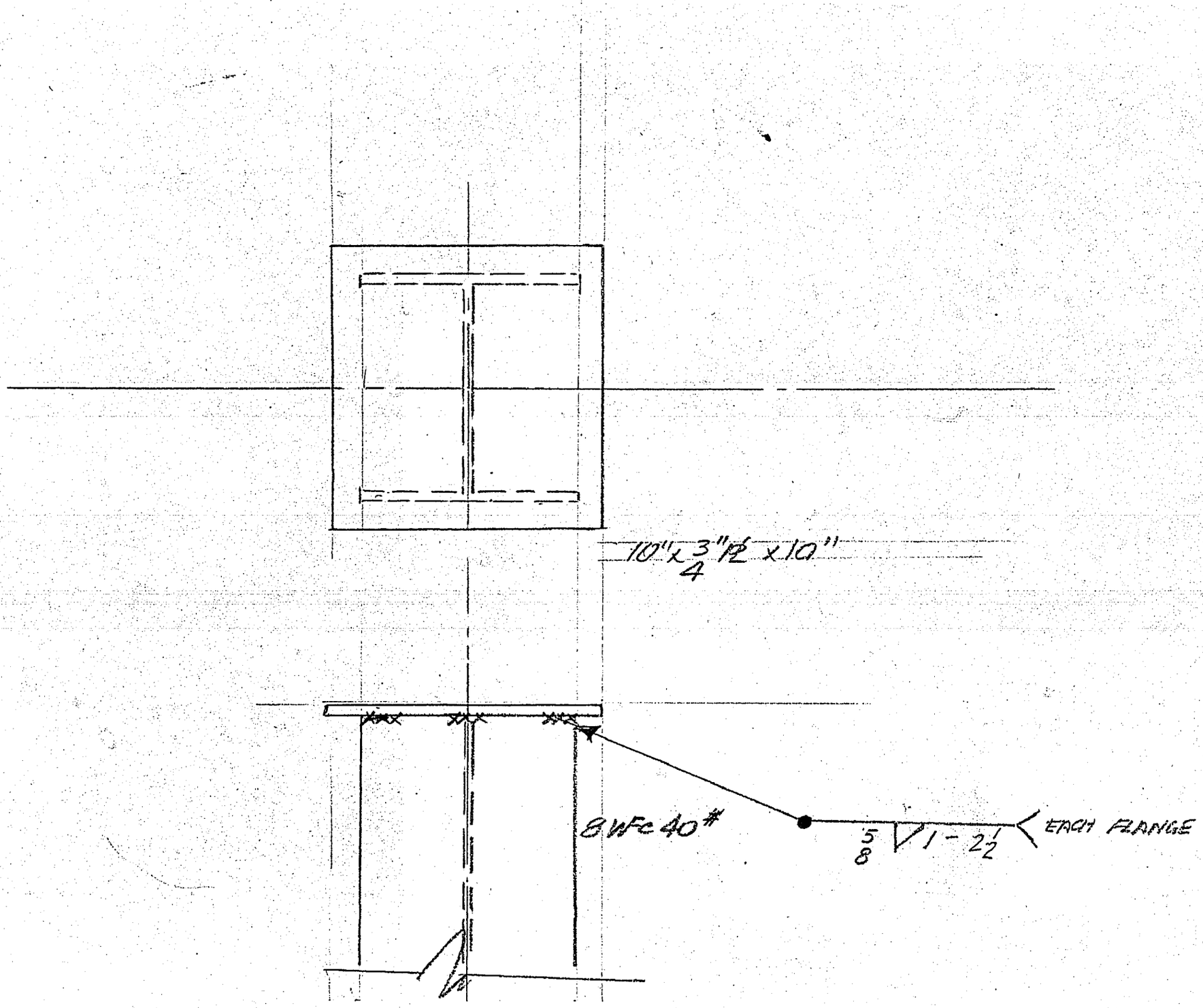
ASH STREET FLOOD PUMPING STATION

PROPOSED REVISIONS TO TRANSFORMER PAD.

CITY OF WINNIPEG
ENGINEERING DEPARTMENT
W. D. HURST, CITY ENGINEER
A. J. S. TAUNTON, DEPUTY CITY ENGINEER

DRAWN BY S.J.B. DATE MAY 9/58
TRACED BY
CHECKED BY JMH
APPROVED

SCALE 1/4"=1'-0"
DRAWING NO. R 199B.



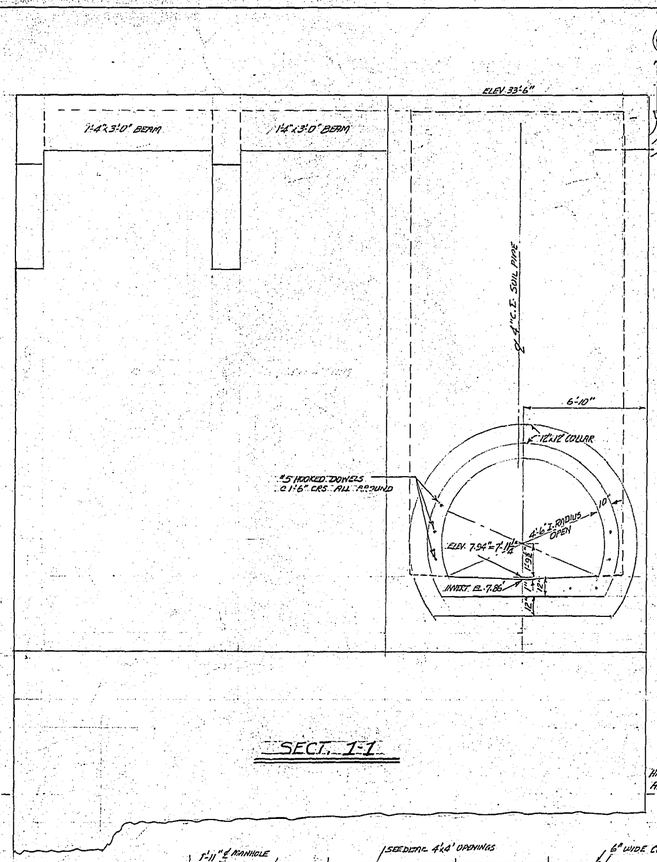
FLOOD PUMPING STATION
ASH STREET
PILE CAPS

CITY OF WINNIPEG
ENGINEERING DEPT.
W. D. HURST, CITY ENGINEER
A. J. S. TAUNTON, DEPUTY CITY ENGINEER

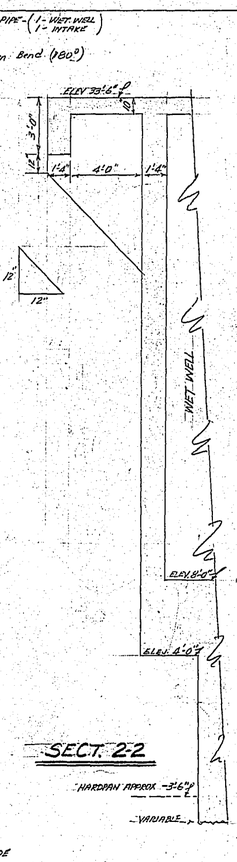
DRAWN BY SJB DATE 27/2/58
TRACED BY
CHECKED BY
APPROVED

SCALE
SKETCH

DRAWING No.
R199B



SECT. 1-1



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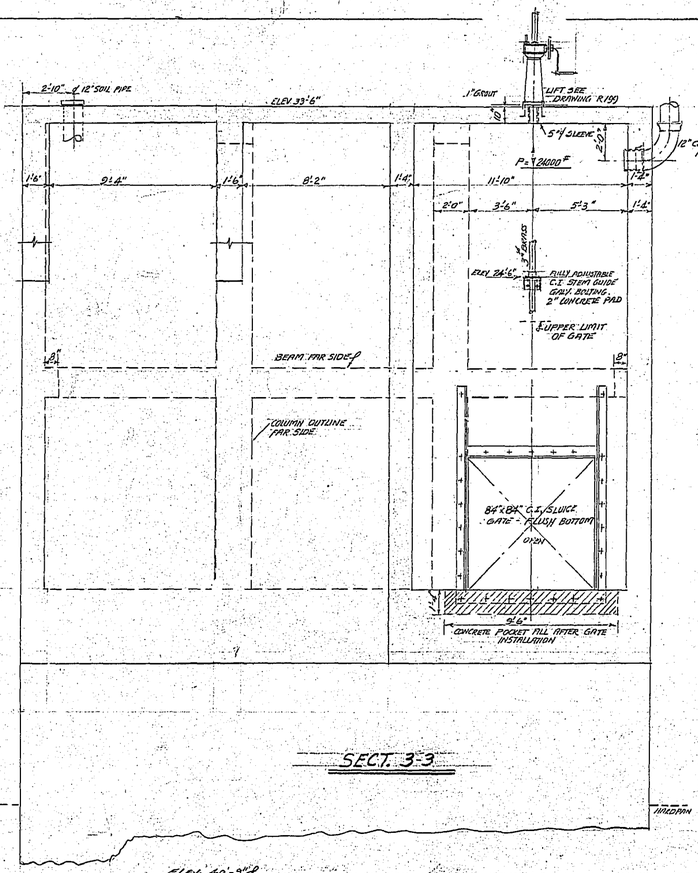
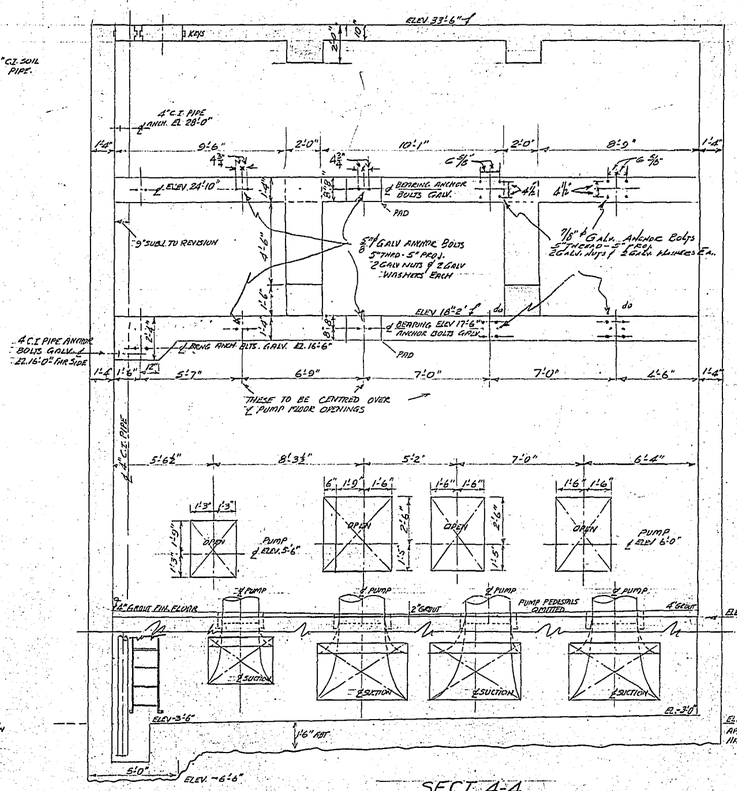
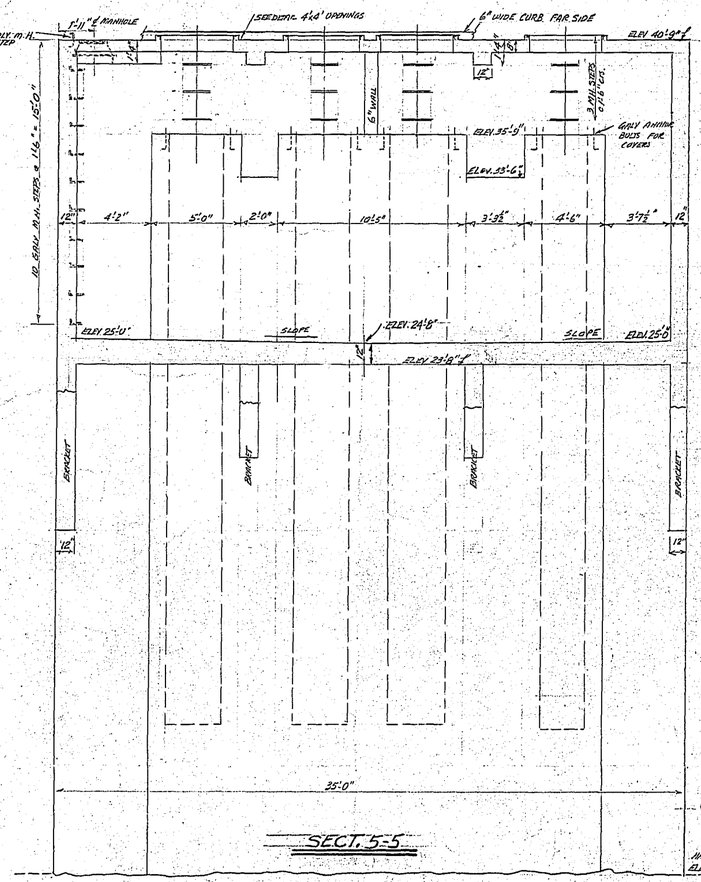


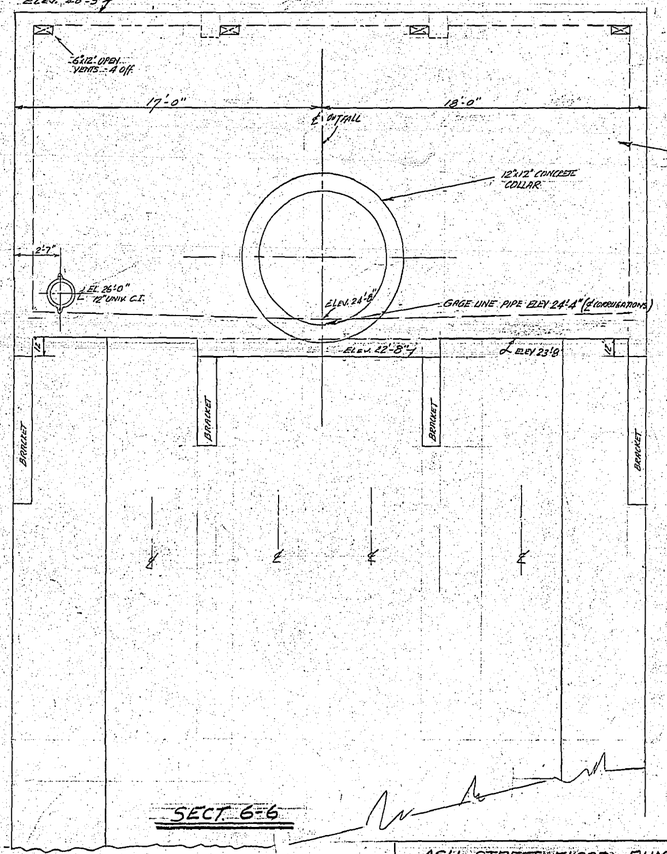
SECT. 3-3



SECT. 4-4



SECT. 5-5



SECT. 6-6

FOR LOCATION OF SECTIONS SEE DWNG R 199.

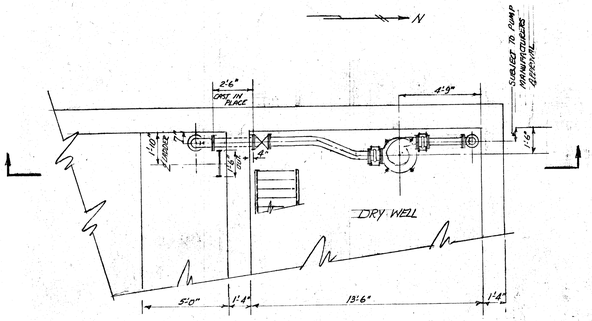
No.	Date	Revisions	By	
2	12/11/58	Anchor Bolts Sec. 4-4 - Move Outfall Sect. 6-6	HCH	SJB
1	10/1/58	Geodetical Revisions	HCH	SJB

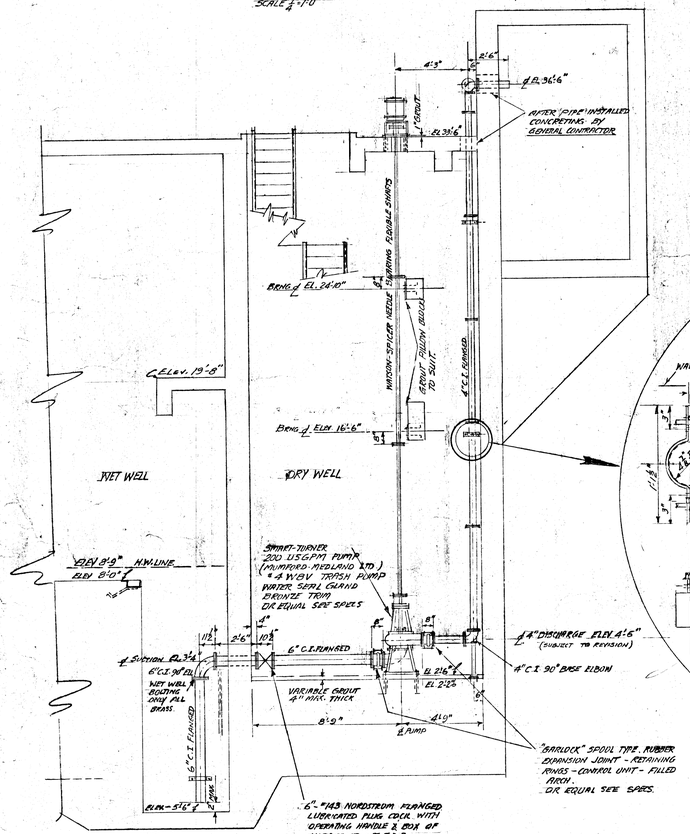
ASH STREET FLOOD PUMPING STATION
SECTIONS

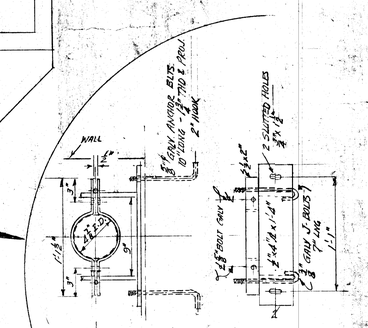
CITY OF WINNIPEG
ENGINEERING DEPARTMENT
W. D. HURST, CITY ENGINEER
A. J. S. TAUNTON, DEPUTY CITY ENGINEER

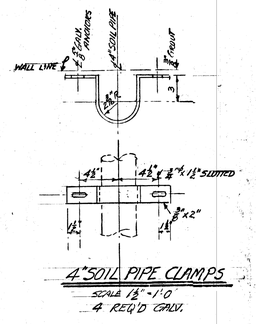
DRAWN BY SJB DATE APRIL 5 1957
TRACED BY
CHECKED BY
APPROVED

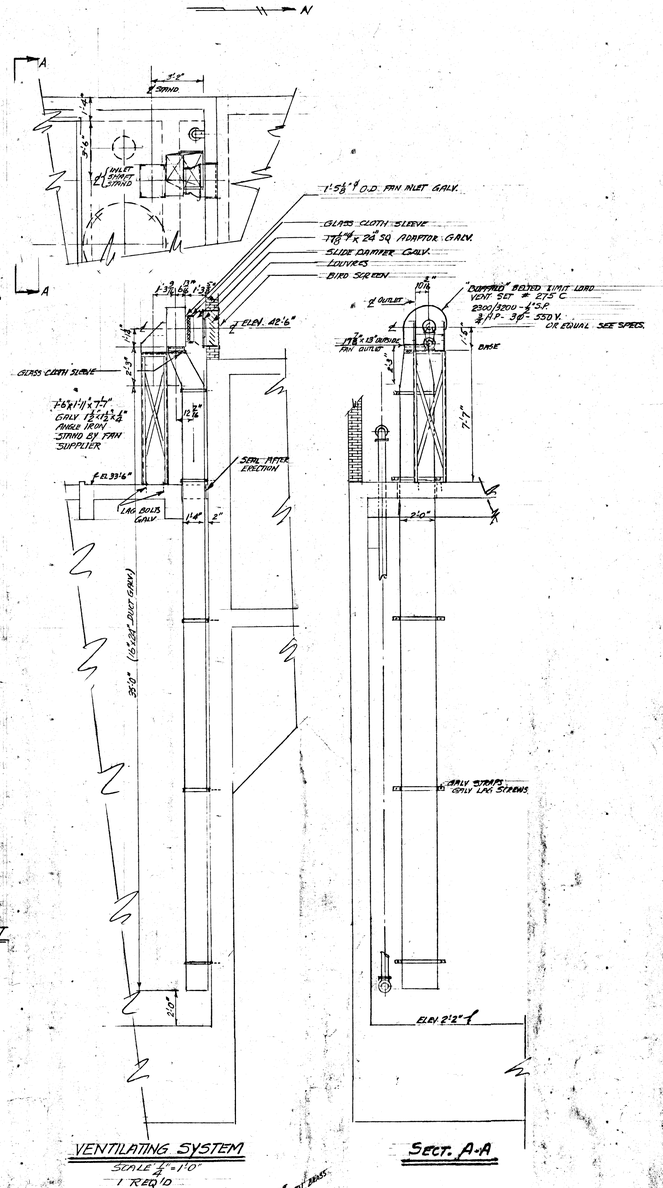
SCALE 1" = 1'-0"
DRAWING NO. R-200

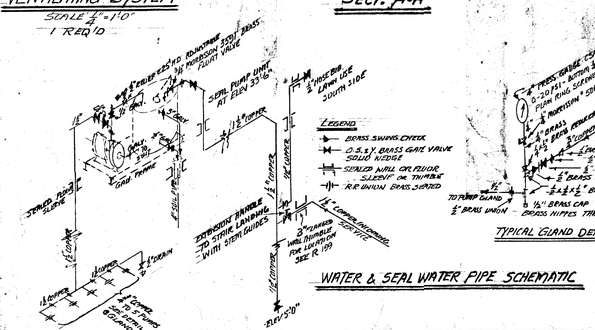












PLAN

SCALE ¼" = 1'0"

ELEVATION

200 U.S.G.P.M. PUMP

1-REQ'D

SCALE ¼" = 1'-0"

NOTE

ELEVATION OF PUMP BASE AND PUMP SUCTION SUBJECT TO REVISION PLUS OR MINUS 6 INCHES

4" SOIL PIPE CLAMPS

SCALE 1½" = 1'-0"

4 REQ'D GALV.

PLAN

VENTILATING SYSTEM

SCALE ¼" = 1'0"

1 REQ'D

SECT. A-A

PLAN

SUMP PUMP

SCALE ¼" = 1'0"

1 - REQUIRED

TOP PLATE DETAIL

1-REQ'D-GALV.

LEVEL INDICATOR ASSEMBLY

1-REQ'D ALL GALV EXCEPT AS INDICATED

SCALE ½" = 1'0"

12" SOIL PIPE STAND

SCALE ½" = 1'0"

12" SOIL PIPE BRACKET & CLAMP

SCALE ½" = 1'0"

1-REQ'D ALL WELDED GALVANIZED

WATER & SEAL WATER PIPE SCHEMATIC

TYPICAL GLAND DETAIL

TYPICAL PUMP DISCH. GAGE PIPING

5 PUMPS REQUIRED

No.	Date	Revisions		
1	17/2/58	GENERAL REVISIONS	H.C.H.	SJB

ASH STREET FLOOD PUMPING STATION
VENTILATING SYSTEM - LEVEL INDICATOR
SUMP PUMP - 200 U.S.G.P.M. PUMP - SEAL PUMP

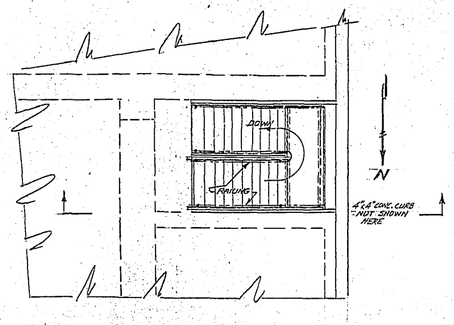
CITY OF WINNIPEG
ENGINEERING DEPARTMENT
W. D. HURST, CITY ENGINEER
A. J. S. TAUNTON, DEPUTY CITY ENGINEER

DRAWN BY SJB DATE MAR. 15, 1957
TRACED BY
CHECKED BY
APPROVED

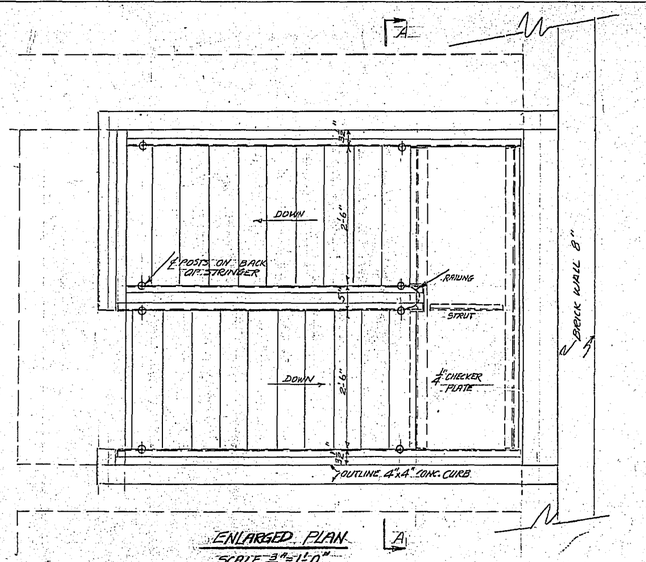
SCALE ¼" & 1½" = 1'-0"

DRAWING NO. R 201

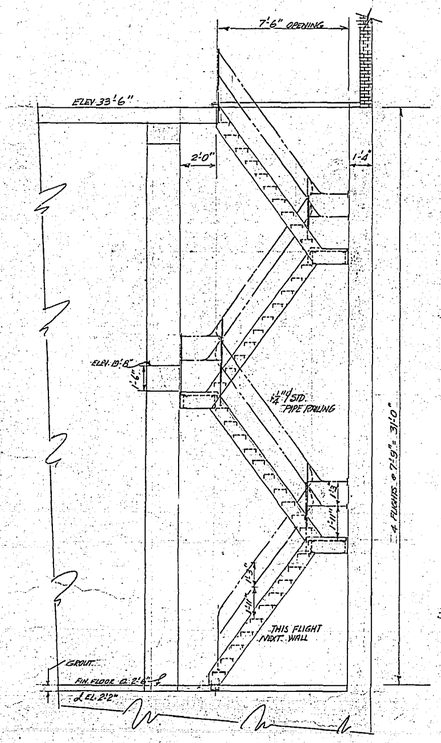
Dale #FP 10224



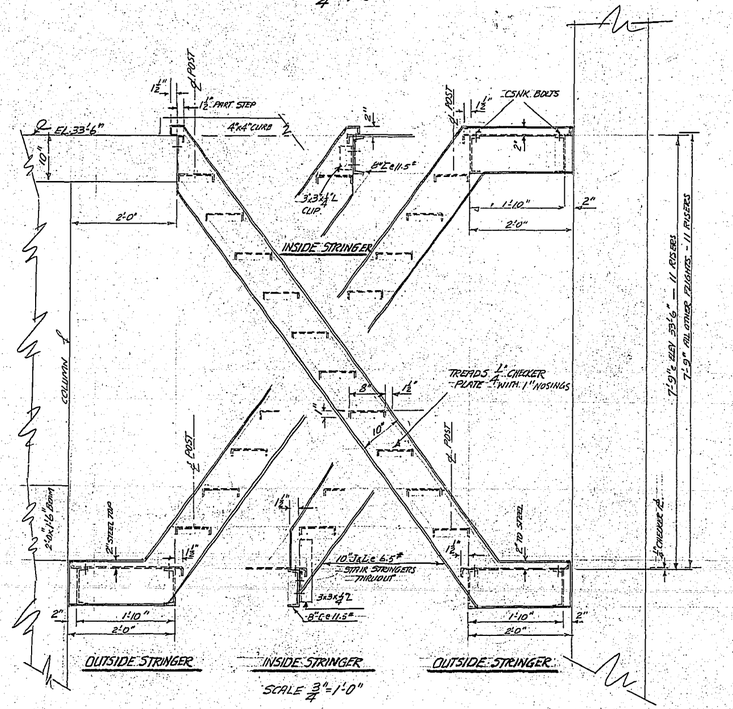
PLAN
SCALE $\frac{1}{4}$"=1'-0"



ENLARGED PLAN
SCALE $\frac{3}{4}$"=1'-0"

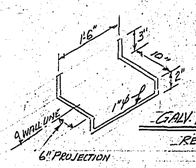


ELEVATION

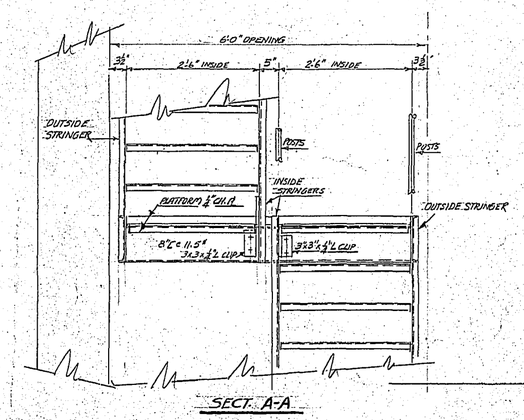


SCALE $\frac{3}{4}$"=1'-0"

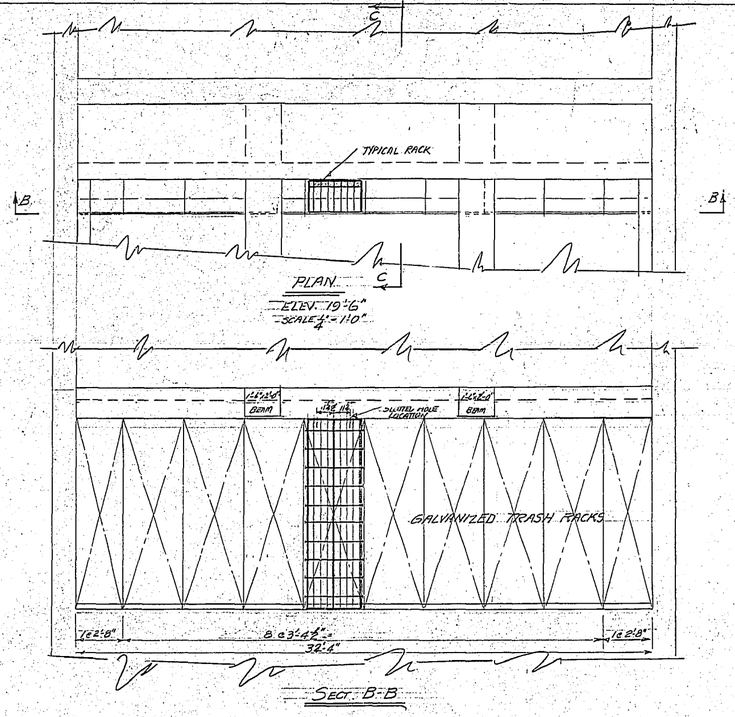
GALVANIZED STAIRS
1 = REQUIRED



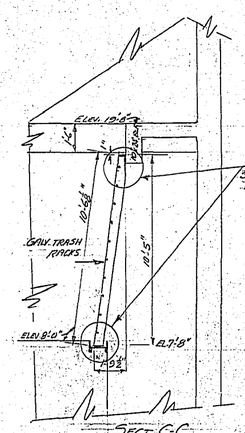
GALV. MANHOLE STEPS
REQ'D - 26



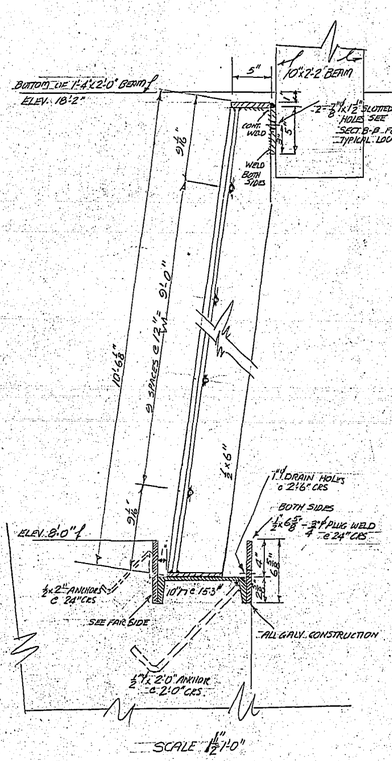
SECT. A-A



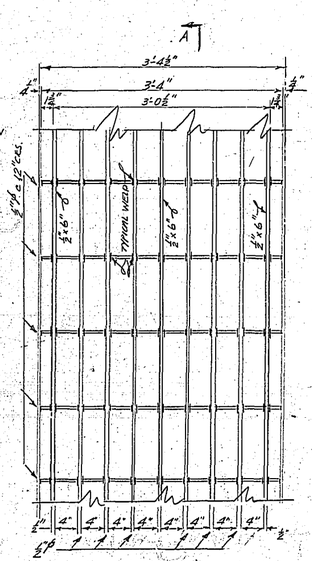
SECT. B-B



SECT. C-C

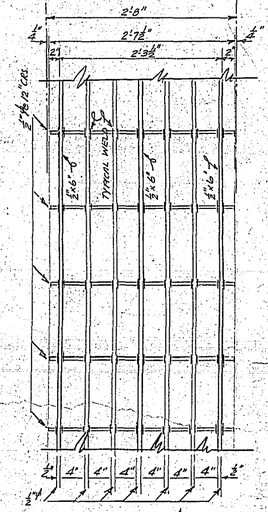


SCALE 1"=1'-0"



TRASH RACK
ALL GALV.
8 - REQ'D
SCALE 1"=1'-0"

SECT. A-A



TRASH RACK
ALL GALV.
2 - REQ'D
SCALE 1"=1'-0"

GALVANIZED TRASH RACKS

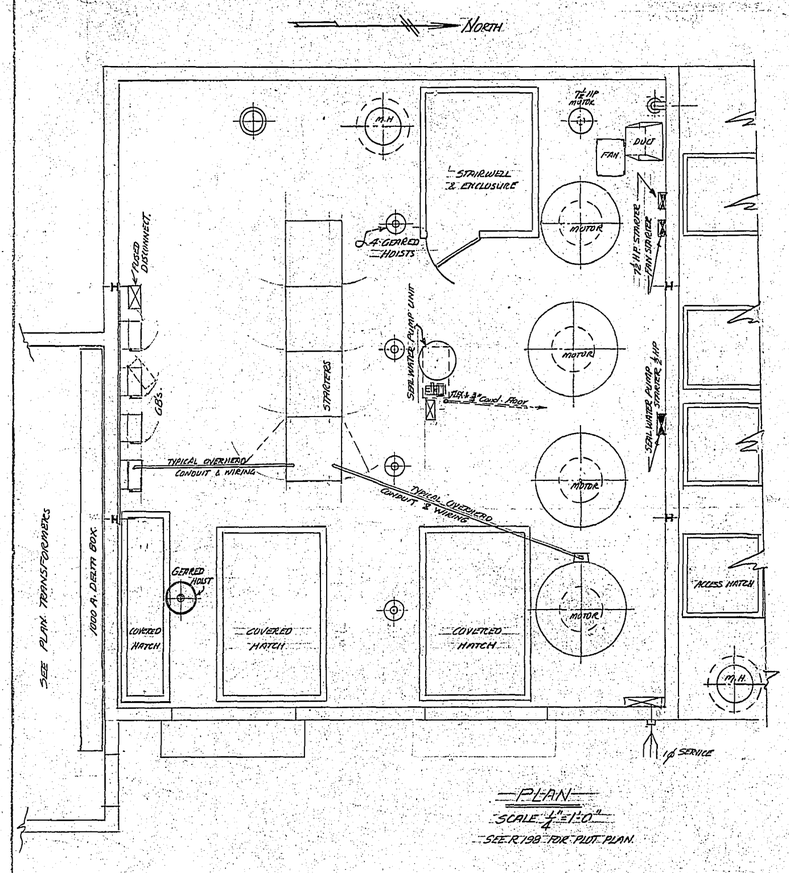
No.	Date	Revisions	By
1	12/4/58	General Revisions	H.G.H.

ASH STREET FLOOD PUMPING STATION
GALVANIZED STAIRS & TRASH RACKS - MISC. STL.

CITY OF WINNIPEG
ENGINEERING DEPARTMENT
W. D. HURST, CITY ENGINEER
A. J. S. TAUNTON, DEPUTY CITY ENGINEER

DRAWN BY S.I.B. DATE APRIL 6 1957
TRACED BY
CHECKED BY
APPROVED

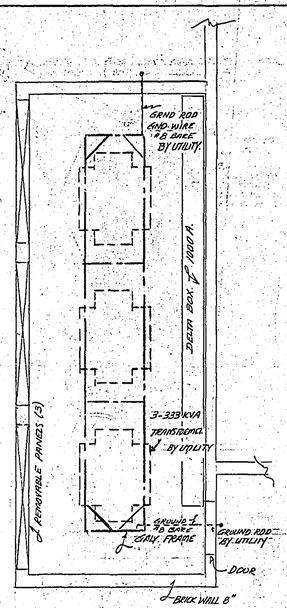
SCALE 1"=1'-0"
DRAWING NO. A-202



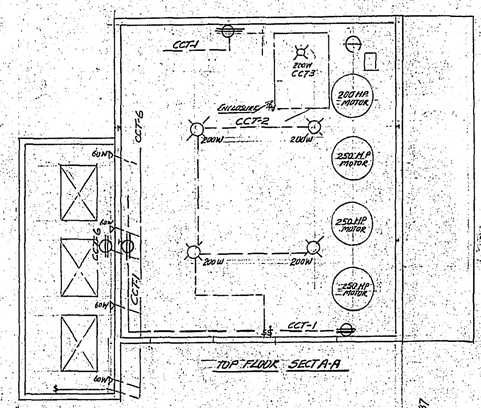
PLAN

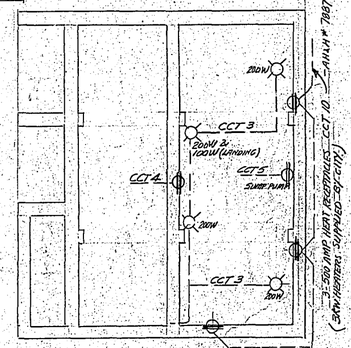
SCALE 1/4"=1'-0"

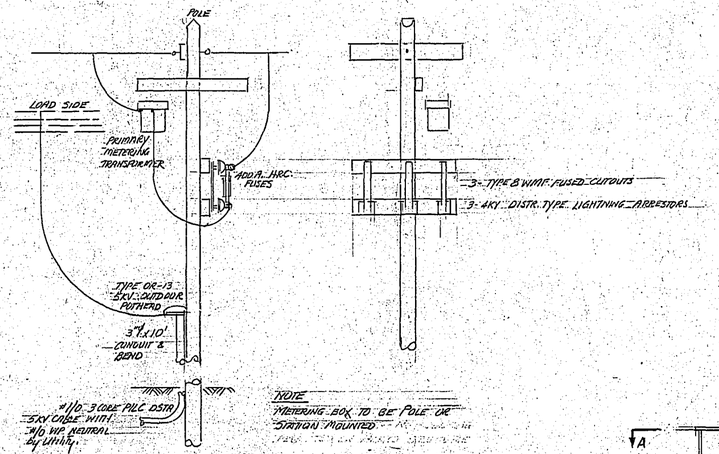
SEE R 198 FOR PILOT PLAN.



POWER 550 V. - 3ϕ - 60 CY.			
NUMBER	H.P.	SERVICE	TOTAL
3	250	PUMPS	750
1	200	PUMP	200
1	75	200 USGPM PUMP	75
1	3	SEAL WATER PUMP	3
1	¾	VENT. FAN	¾
7			958 ¾



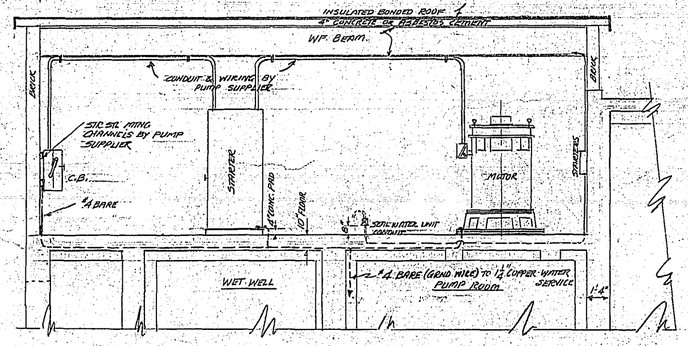


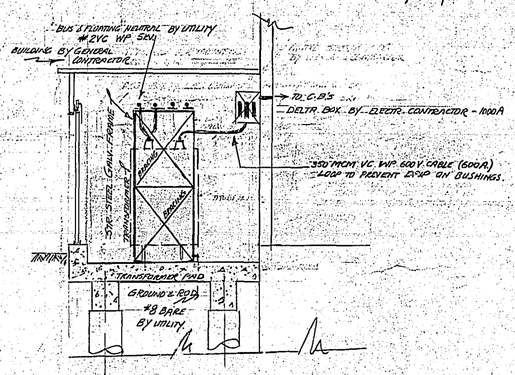


NOTE

METERING BOX TO BE POLE OR STATION MOUNTED

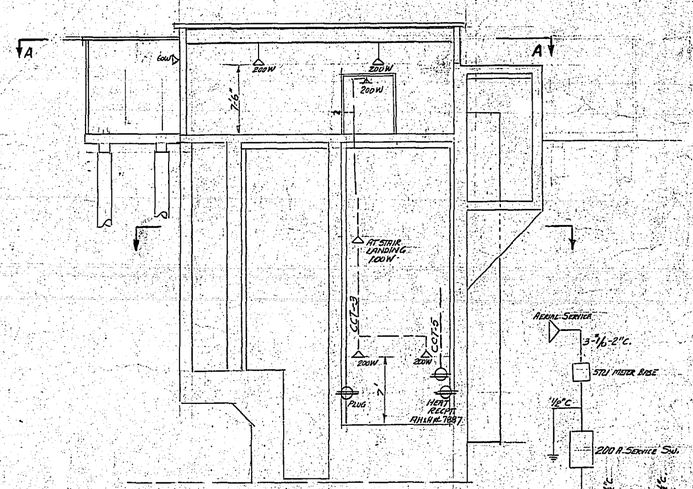
PRIMARY DIP & NEUTRAL INCL. METERING BY UTILITY

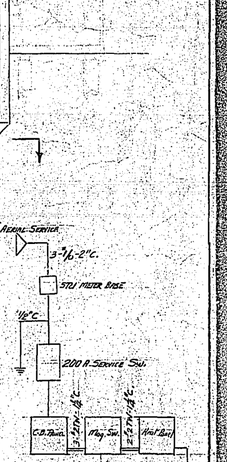




NOTE

ALL WEATHERPROOF CONSTRUCTION & WIRING INSIDE TRANSFORMER ENCLOSURE.





WIRING SCHEDULE - 550 V. - 3ϕ - 60 CY.

RUN	CABLE	CONDUIT	SUPPLY & INSTAL BY
250 HP - STARTER - C.B.	3-350 MCM TYPE RH	3"	PUMP SUPPLIER
175 H.P. - STARTER - C.B.	3-300 MCM TYPE RH	2½"	do do
MISC. MOTORS - STARTERS - DISC. SWITCH	3/14 RH	¾"	do do
250 HP MOTOR C.B. - DELTA BOX	3-3/0	PYROTENAX	ELECTR. CONTRACTOR
175 HP MOTOR C.B. - DELTA BOX	3-2/0	PYROTENAX	do do
FUSED DISCONNECT - DELTA BOX	3/0	PYROTENAX	do do

NOTE

WIRING IS BASED UPON ESTIMATED H.P. REQUIREMENTS & WILL BE SUBJECT TO REVISION WHEN PUMP REQUIREMENTS ARE FINALIZED.

WIRING DIAGRAMMATIC ONLY - KEEP RUNS PARALLEL AND PERPENDICULAR TO WALLS.

SINGLE PHASE PANEL

CCT. No.	DESCRIPTION	C.B.
1	PLUGS TOP FLOOR	15 A.
2	4-200 W. LIGHTS TOP FLOOR	15 A.
3	9-200 W + 1-100 W. LIGHTS PUMP ROOM	15 A.
4	PLUG PUMP ROOM FLOOR	15 A.
5	PLUG SUMP PUMP, PUMP ROOM FLOOR	15 A.
6	4-100 W. ELEC. SUB-STN. LIGHTS	15 A.
7	SPARE	
8	SPARE	
9	SPARE	
10	HEAT RECEPTACLES (3) (1-PHASE)	30 AMP.
	TOTAL	180 A.

NO.	DATE	DESCRIPTION	BY
1	10/13/57	TRANSFORMER ENCLOSURE RELOCATED TO SOUTH OF BUILDING	S.J.B.

ASH STREET FLOOD PUMPING STATION

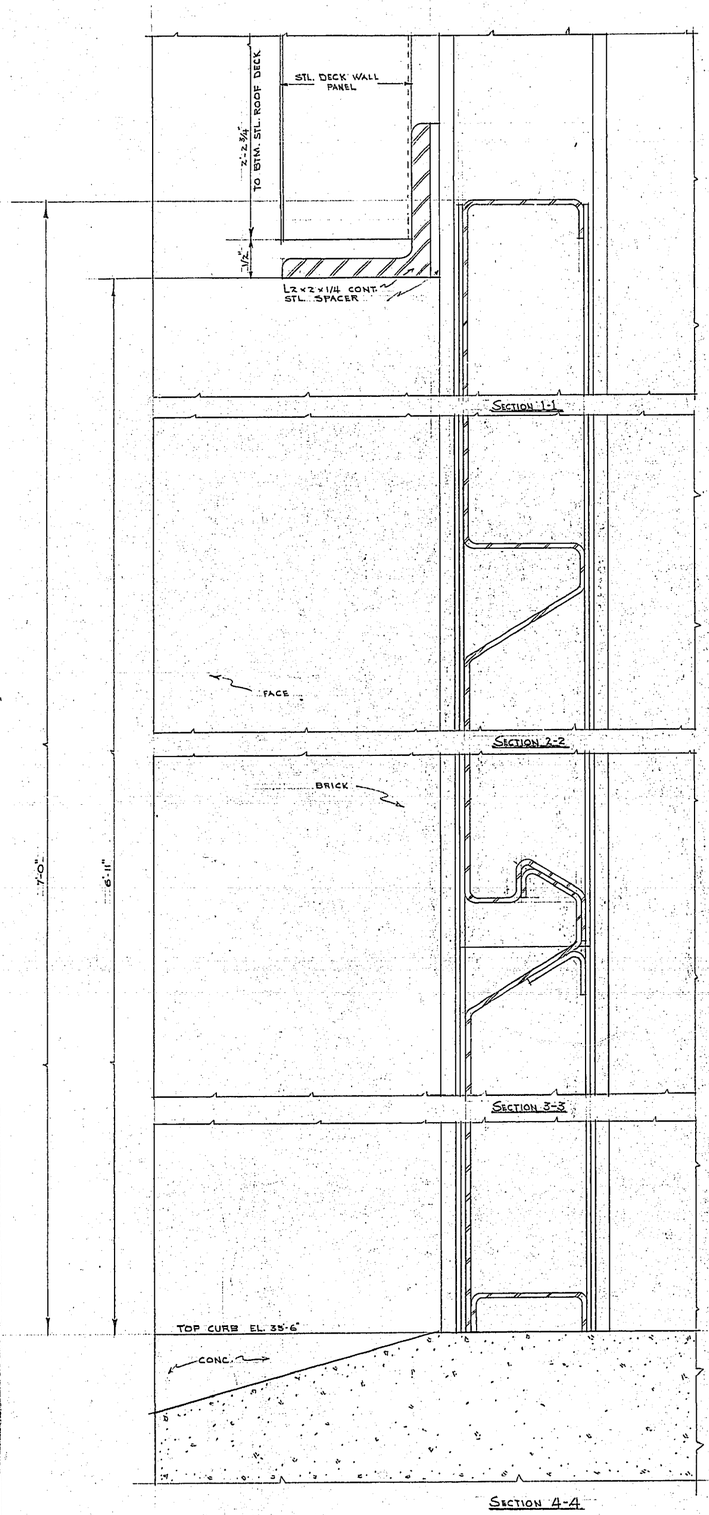
ELECTRICAL

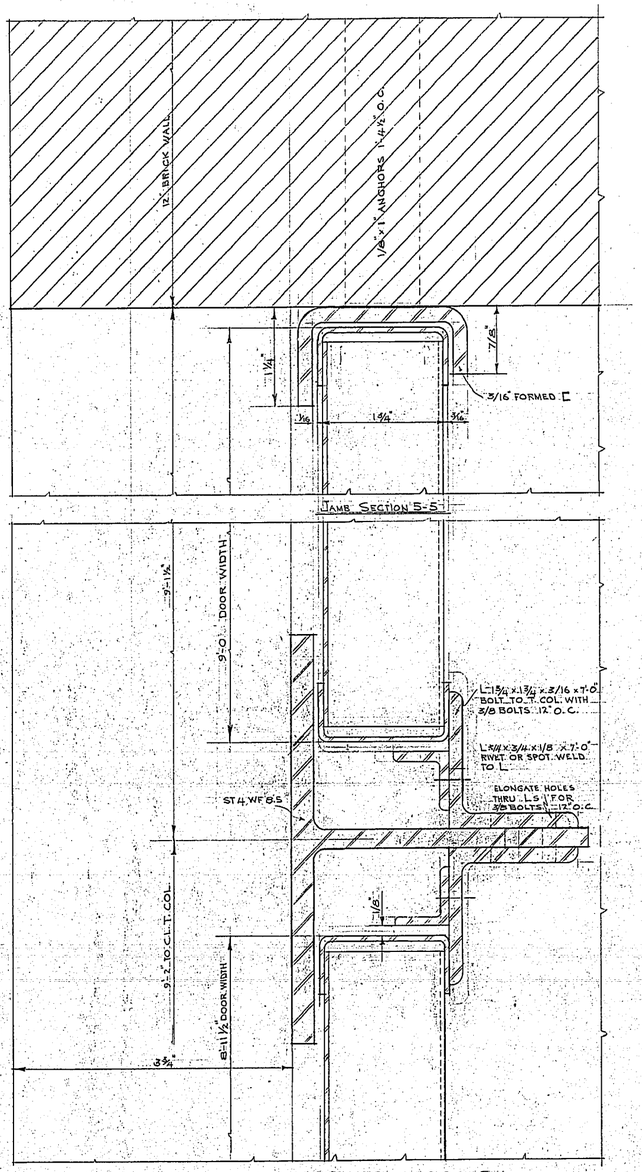
CITY OF WINNIPEG
ENGINEERING DEPARTMENT
W. D. HURST, CITY ENGINEER
A. J. S. TAUNTON, DEPUTY CITY ENGINEER

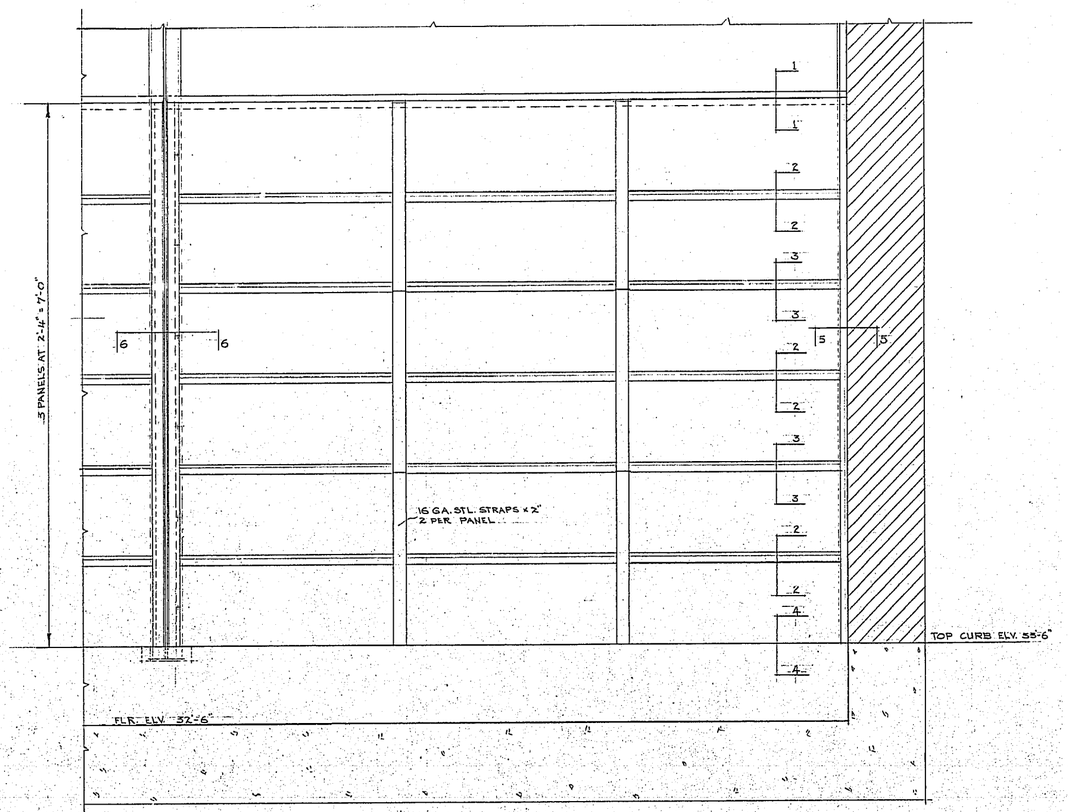
DRAWN BY S.J.B. DATE MARCH 20/57
TRACED BY
CHECKED BY
APPROVED

SCALE 1/4" = 1'-0"

DRAWING NO. R 204







INTERIOR ELEVATION OF WEST DOOR 1" = 1'-0"

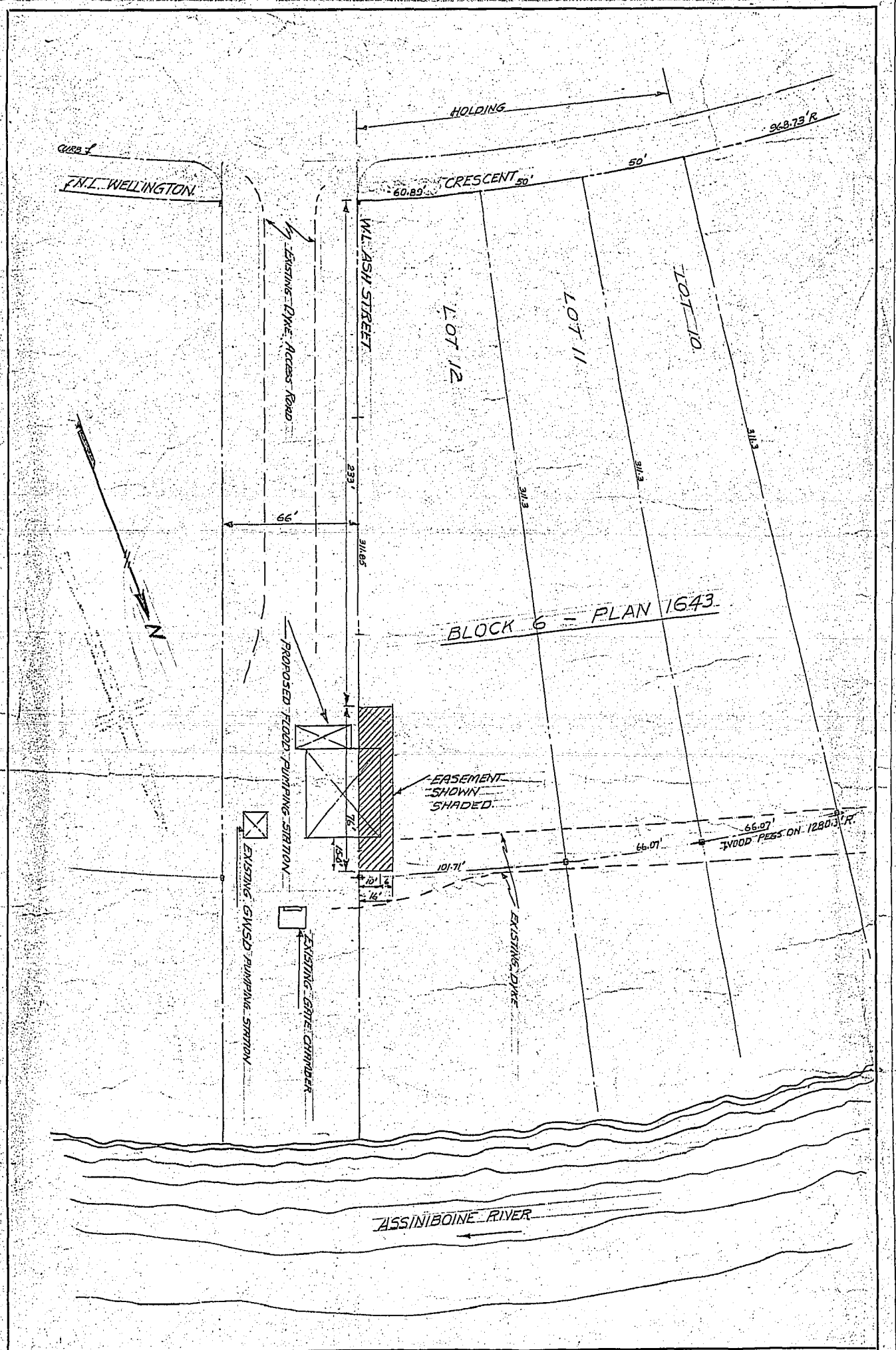
NOTE:
2 DOORS REQ'D. WIDTH 9'-0 1/8"
" 8'-11 3/4"
MATERIAL 16 GA. STL.

ASH STREET FLOOD PUMPING STATION
SUPERSTRUCTURE
TRANSFORMER DOOR DETAILS

CITY OF WINNIPEG
ENGINEERING DEPARTMENT
W. D. HURST, CITY ENGINEER
A. J. S. TAUNTON, DEPUTY CITY ENGINEER

DRAWN BY J.D.W. DATE MAR. 58
TRACED BY
CHECKED BY
APPROVED

SCALE FULL NOTED
DRAWING NO. R.213

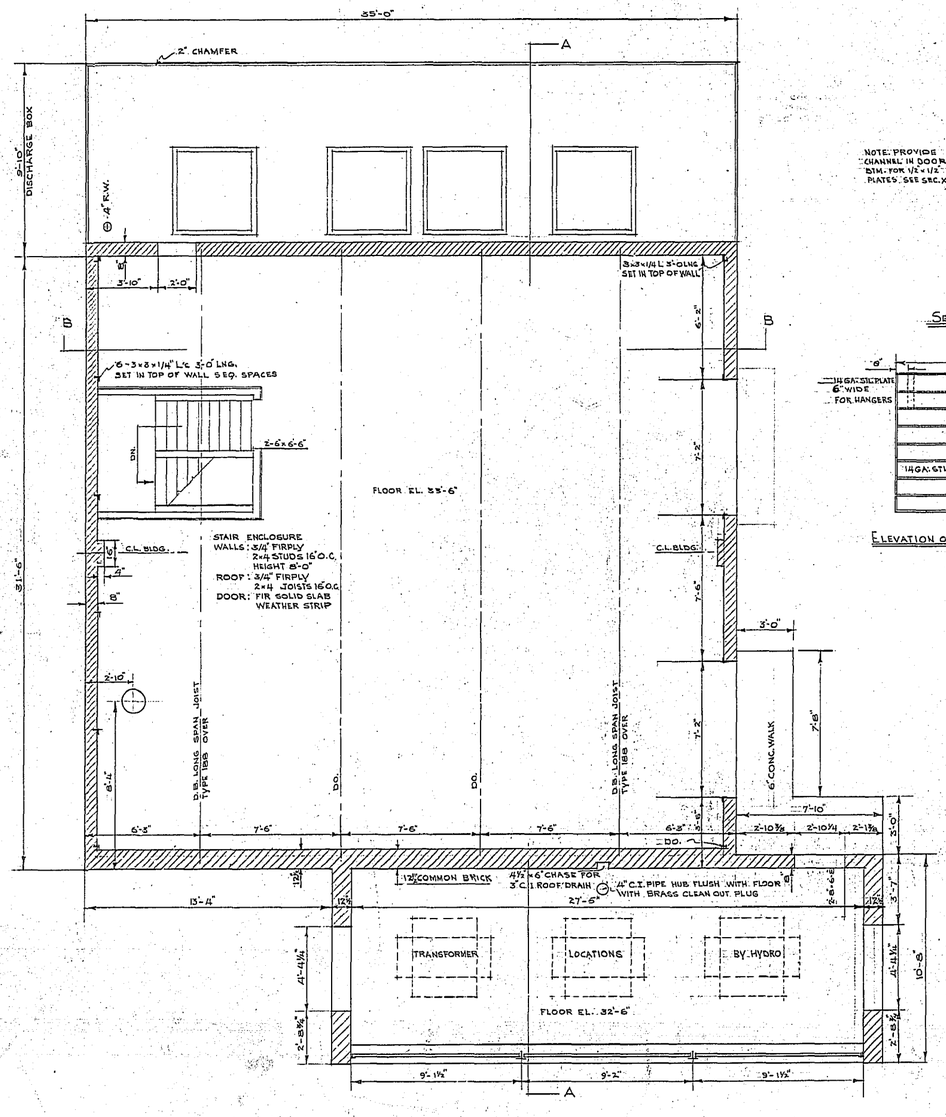


TITLE — SITE PLAN & EASEMENT PROPOSED FLOOD PUMPING STATION — ASH STREET

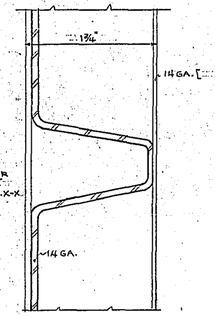
CITY OF WINNIPEG
ENGINEERING DEPT.
W. D. HURST, CITY ENGINEER
A. J. S. TAUNTON, DEPUTY CITY ENGINEER

DRAWN BY S.J.B. DATE 5/14/57
TRACED BY
CHECKED BY T.H.C.
APPROVED

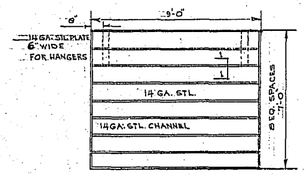
SCALE 1" = 40'
DRAWING No. R 210



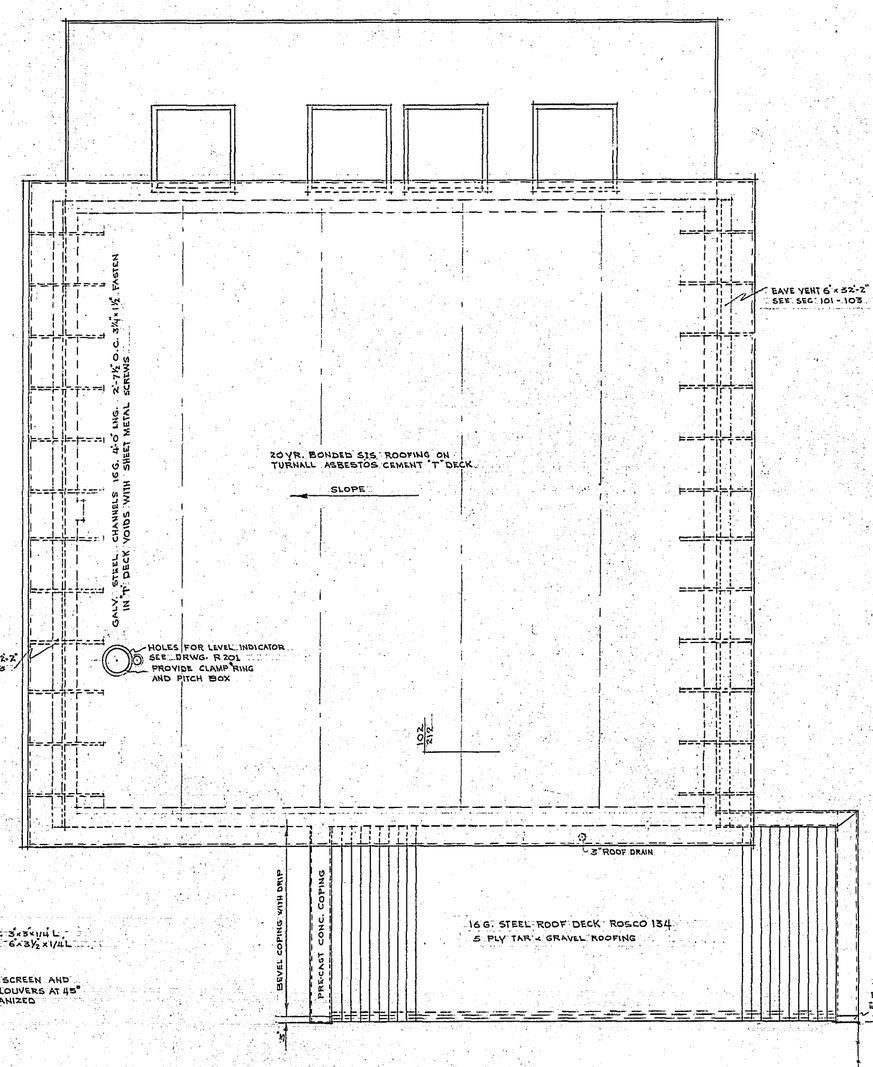
FLOOR PLAN 1/4"=1'-0"



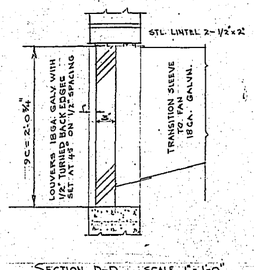
SECTION 1-1 THRU DOOR FULL SCALE



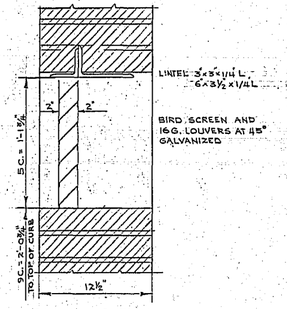
ELEVATION OF SOUTH DOORS 1/4"=1'-0"
3 REQD.



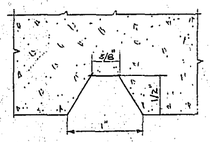
ROOF PLAN 1/4"=1'-0"



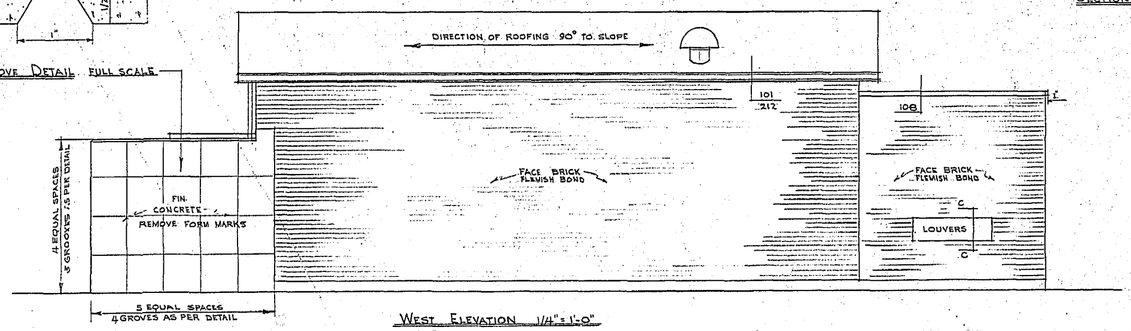
SECTION D-D SCALE 1"=1'-0"



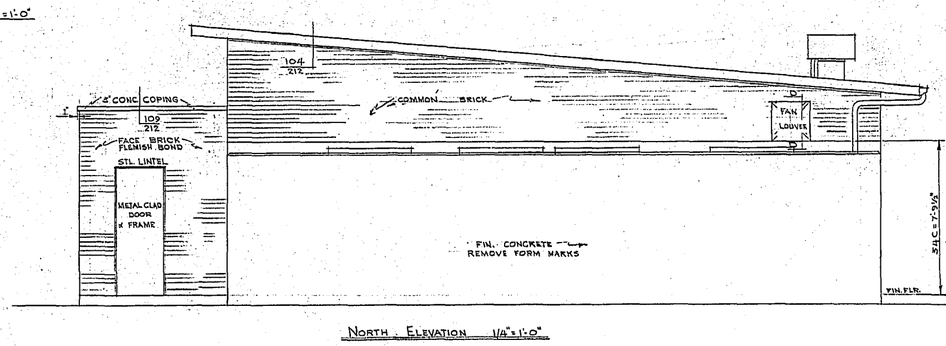
SECTION C-C 1½"=1'-0"



GROOVE DETAIL FULL SCALE



WEST ELEVATION 1/4"=1'-0"



NORTH ELEVATION 1/4"=1'-0"

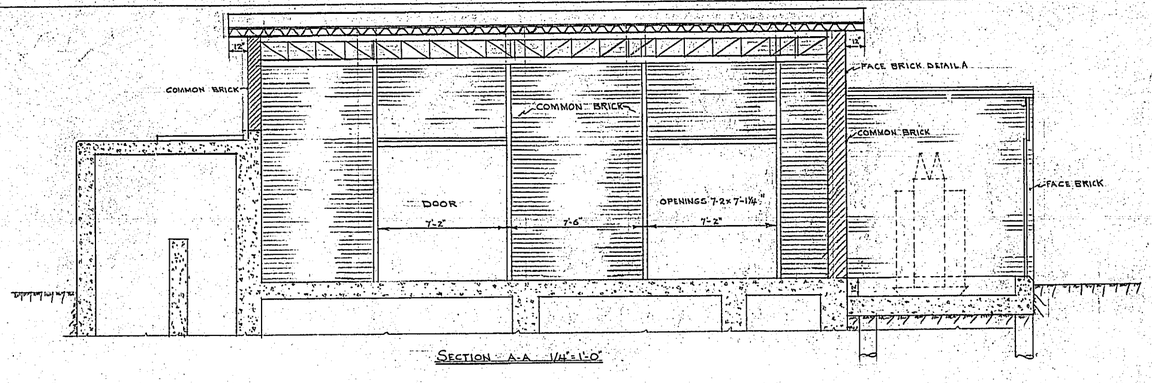
PROVINCE OF MANITOBA
ANTON EDVIN BREIVIK
REGISTERED ARCHITECT

ASH STREET FLOOD PUMPING STATION
SUPERSTRUCTURE
FLOOR & ROOF PLANS —— ELEVATIONS

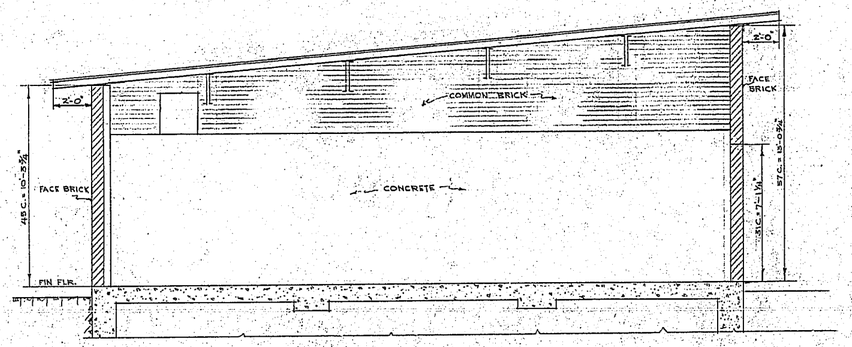
CITY OF WINNIPEG
ENGINEERING DEPARTMENT
W. S. HURST, CITY ENGINEER
A. J. E. TAUNTON, DEPUTY CITY ENGINEER

DRAWN BY	J.D.W.	DATE	OCT. 57
TRACED BY			
CHECKED BY			
APPROVED			

SCALE AS NOTED
DRAWING NO. R 211



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

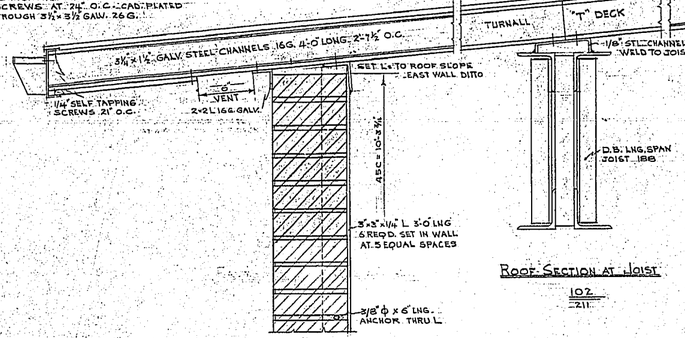


SECTION B-B 1/4"=1'-0"

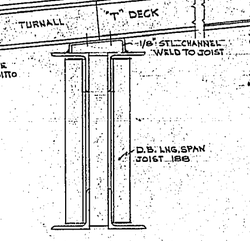
FLEMISH BOND
PROJECT HEADERS ½" FROM WALL EXPOSED PORTION OF SOUTH WALL ONLY

DETAIL A N.T.S.

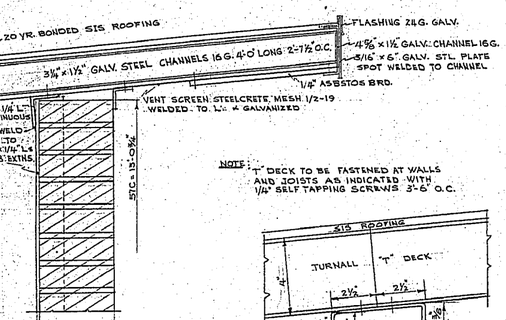
NOTE: EAVE TROUGH TO BE FASTENED AS INDICATED WITH SHEET METAL SCREWS AT 24" O.C. CAD PLATED THROUGH 3½ x 3½ GALV. 26 G.



EAVE SECTION WEST WALL
101
211

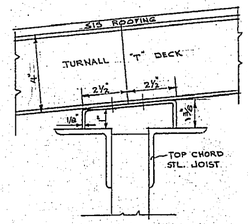


ROOF SECTION AT JOIST
102
211

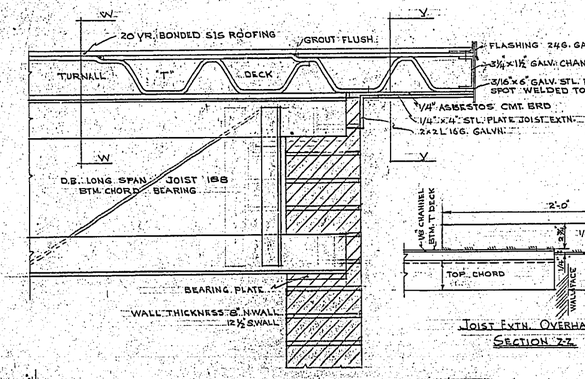


NOTE: T DECK TO BE FASTENED AT WALLS AND JOISTS AS INDICATED WITH 1/4" SELF TAPPING SCREWS 3'-6" O.C.

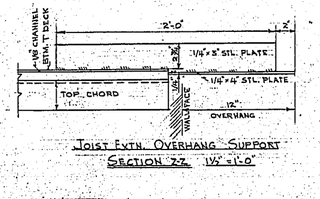
EAVE SECTION EAST WALL
103
212



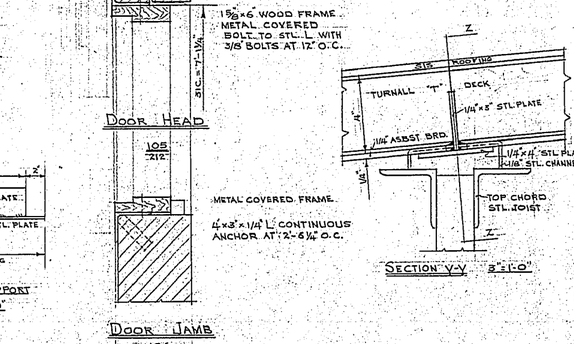
SECTION W-W 3"=1'-0"



EAVE SECTION NORTH & SOUTH WALLS
104
212 - 211

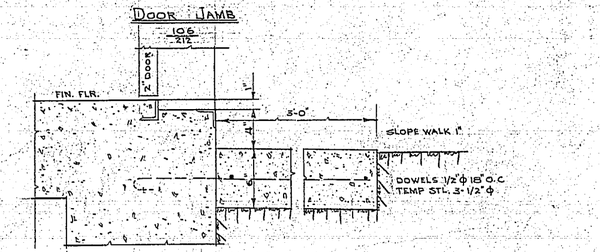


JOIST EXTN. OVERHANG SUPPORT
SECTION Z-Z 1½"=1'-0"



DOOR HEAD
105
212

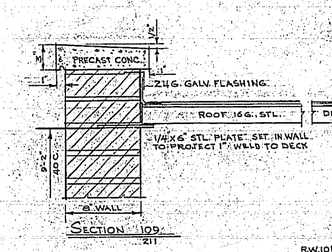
SECTION Y-Y 3"=1'-0"



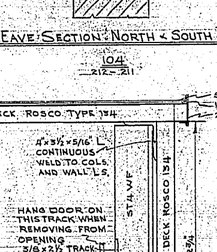
DOOR JAMB
106
212

SECTION 107
212

EAST WALL SECTION SCALE 1½"=1'-0"



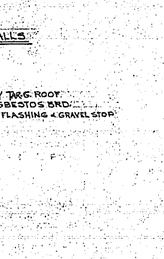
SECTION 109
211



SECTION 110

SECTION 108
212

SECTION 111
212

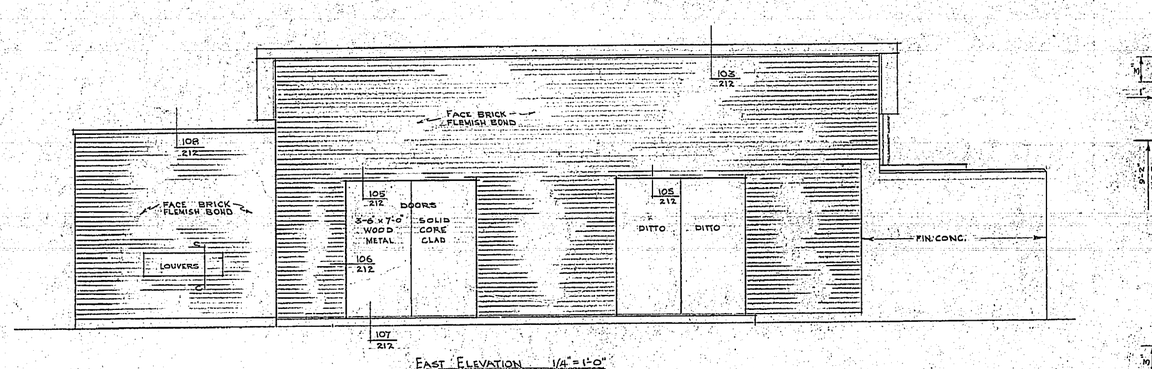


SECTION X-X

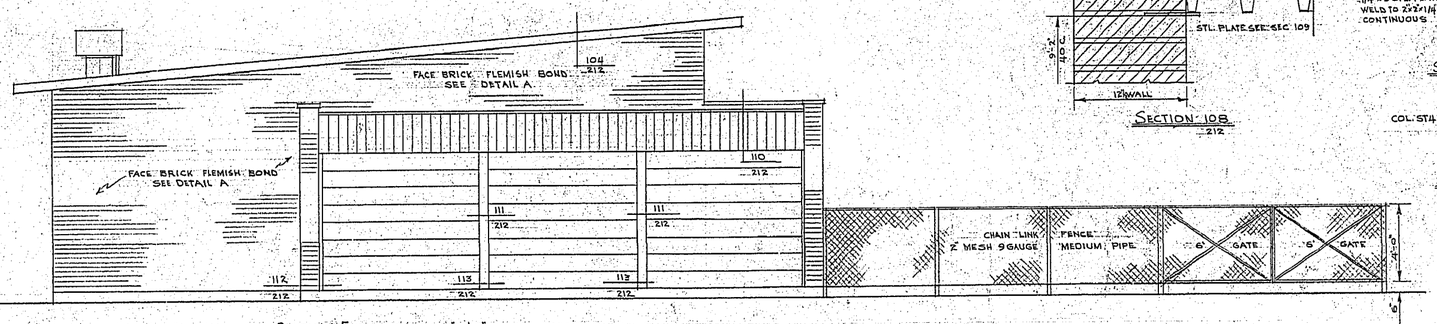
1/2"=3'-6" STL PLATES SET IN CONC. 2 PER DOOR

SECTION 112
212

SECTION 113
212



EAST ELEVATION 1/4"=1'-0"



SOUTH ELEVATION 1/4"=1'-0"

ASH STREET FLOOD PUMPING STATION
SUPERSTRUCTURE
ELEVATIONS — DETAILS — SECTIONS

CITY OF WINNIPEG
ENGINEERING DEPARTMENT
W. D. HURST, CITY ENGINEER
A. J. S. TAUNTON, DEPUTY CITY ENGINEER

DRAWN BY T.D.W. DATE OCT. 57
TRACED BY
CHECKED BY
APPROVED

SCALE 1½"=1'-0" AS NOTED
DRAWING NO. R 212