

Standard M.H. Steps at 18" oc.

5' x 5' M.H. Steps at 18" oc.

3' x 3' Hole for Electric Conduit

3' x 3' Hole for Electric Conduit

3' x 3' Hole for Electric Conduit

Shows for 16" x 16" Pipe, to be set as directed by Engineer

Frame openings with 8" L having 1 1/2" x L welded on to support grating

Frame openings with 6" L with 1 1/2" x L welded on to support grating

Frame openings with 6" L with 1 1/2" x L welded on to support grating

MOTOR ROOM FLOOR SECTION B-B

PUMP CHAMBER FLOOR SECTION A-A

SECTION C-C

SECTION D-D

SECTION E-E

This Chamber to be completed after installation of Control Gate and Compressor Drive Shaft by Contractor

MATERIAL
 2-16" Standard Bends
 1-16" B.S. C.I. Pipe 12' long
 1-16" B.S. C.I. Pipe 6' long
 All Joints to be Hydraulic
 To be supplied & installed by Contractor

12" Standard Pipe Sleeve with 2" x 12" Flap on Outside Face. For Elev. See Drwg. No. 207

12" Std. Pipe Sleeve For Elev. See Drwg. No. 207

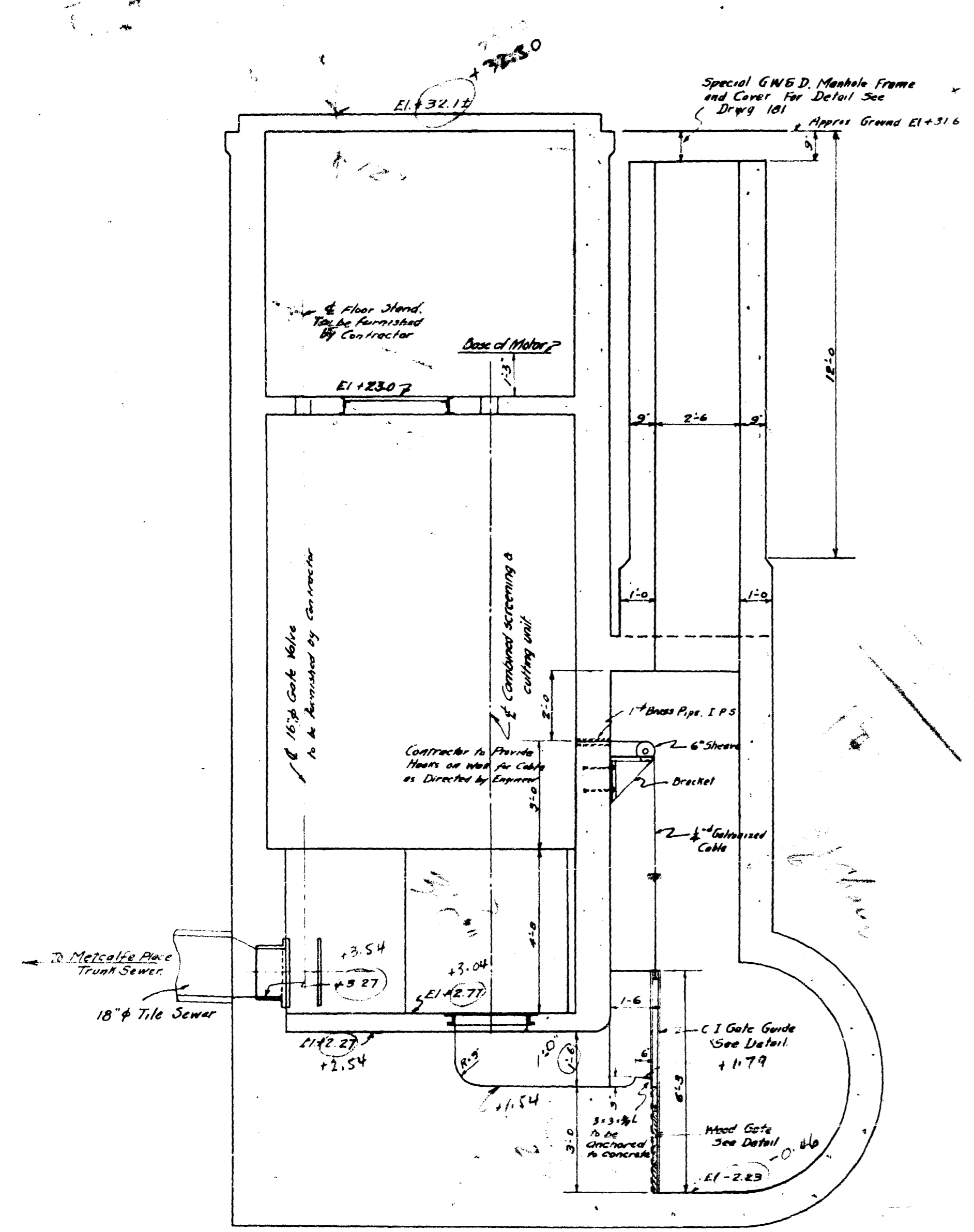
NOTE:-
 Material to be supplied and installed by Contractor where shown or listed as directed by Engineer.
 Ladders: Sides 7/8" x 5/8" Flat, 6" apart. Rungs 3/4" at 18" oc.

Gratings to support 200 lbs per sq ft live load
 Eye-balls (2) 3/4" Galvanized, with 1/4" Washers.
 Waterpipe connection, 1 piece 3/4" (1.25) 1/2" long brass pipe, threaded ends
 Reinforcing Steel: Sizes and spacing to be given later by Engineer.
 Reference: For Sections not shown on this sheet see Drwg. No. 207
 For Details of Superstructure see Drwg. No. 210
 For Details of Structure, Solid Cover & M.H. Frames see Drwg. No. 211

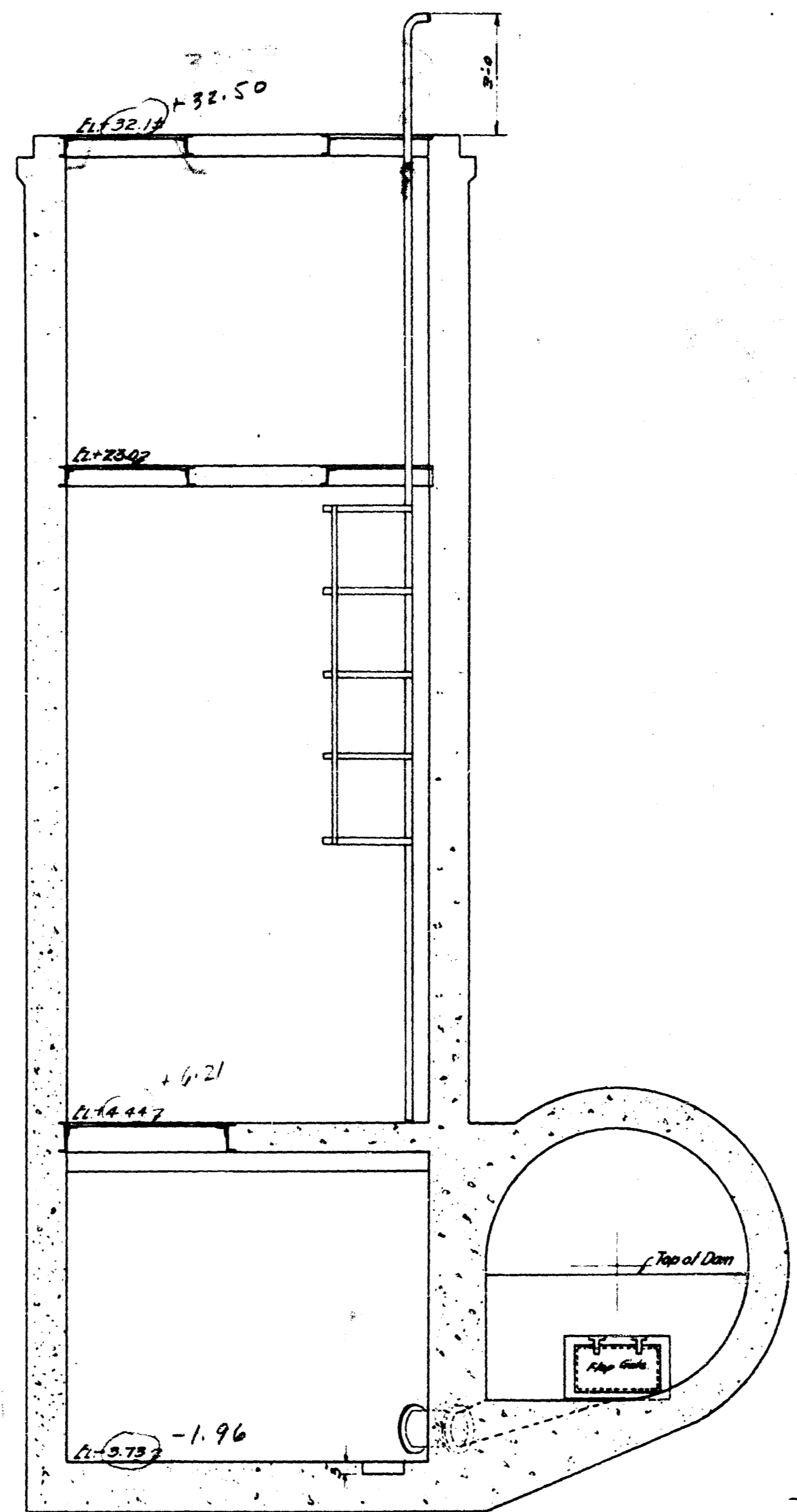
Trawl Chamber Floors.
 Sections not to exact scale.
 1-16" Gate Valve and Floor Stand
 1-16" Wall Casting for Gate Valve.
 All pipe sleeves as shown on drawings.
 Wood Step Gate Frame and appurtenances.
 Ejector Connection, 1-1/2" brass pipe, 3 PS, 21' long, threaded one end and Control Mechanism Pipe 1-1/2" brass pipe 1 PS, 21' long, threaded one end and 1-C.I. Flap Gate as shown on Drwg. 207

APPROVED
 W. B. LeA
 Consulting Engineer

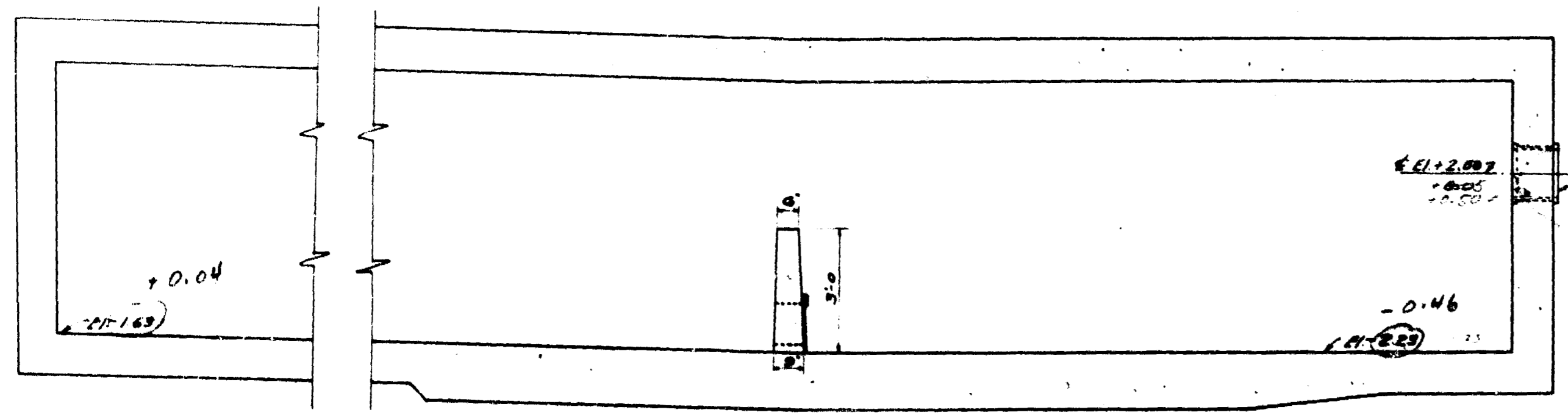
GREATER WINNIPEG SANITARY DISTRICT			
W. B. LeA Consulting Engineer	APPROVED	DATE	TITLE MOTOR ROOM FLOOR PUMP CHAMBER FLOOR SECTION No. 14
W. P. BOBSON, Asst. Engr. NELSON BARRITT J. W. BATHURST, C. & LAMON.	<i>[Signature]</i>		SCALE: 1/8" = 1'-0" DRAWN BY: J. W. BATHURST CHECKED BY: C. & LAMON APPROVED BY: W. B. LeA SUPERVISOR: W. P. BOBSON
W. D. BARR, Engr. 111 B.G.A. 454			PLAN No. 206 DRAWING No. 48



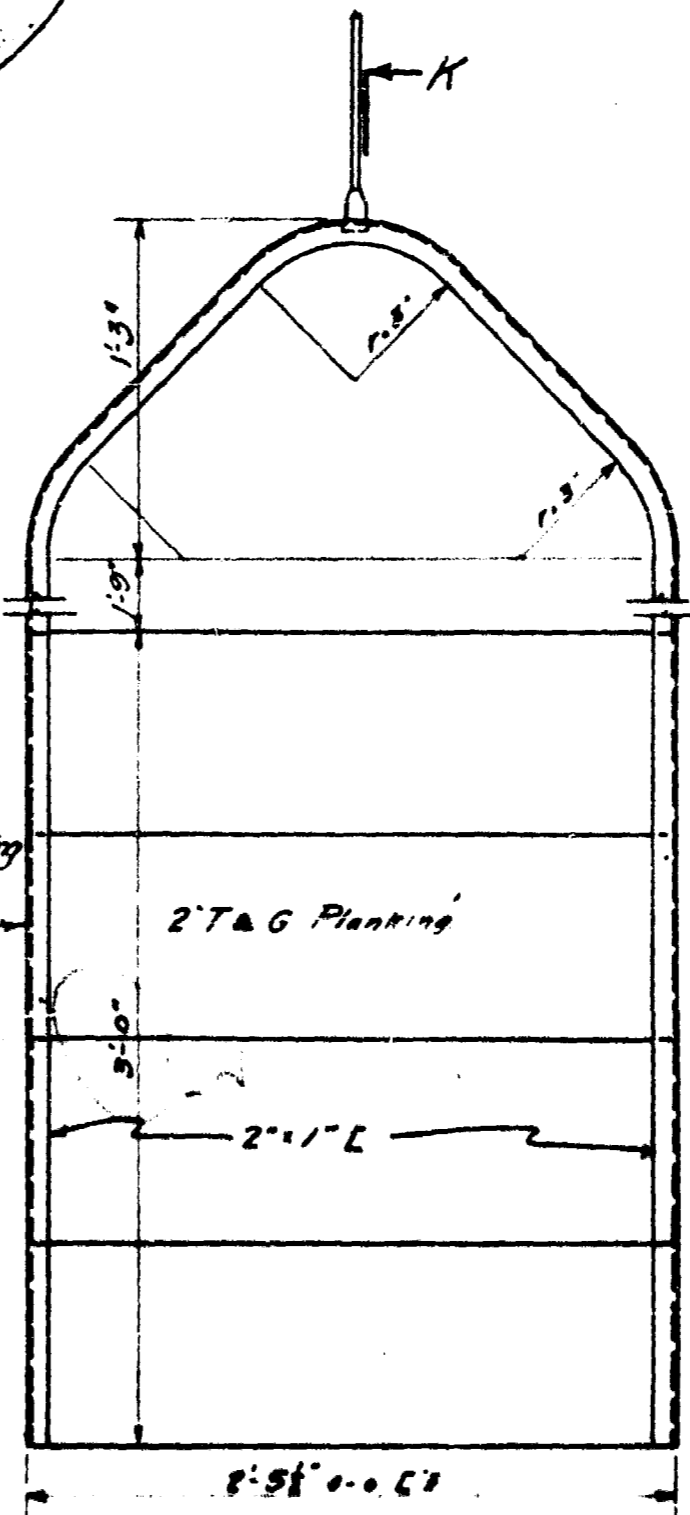
SEC. G-G



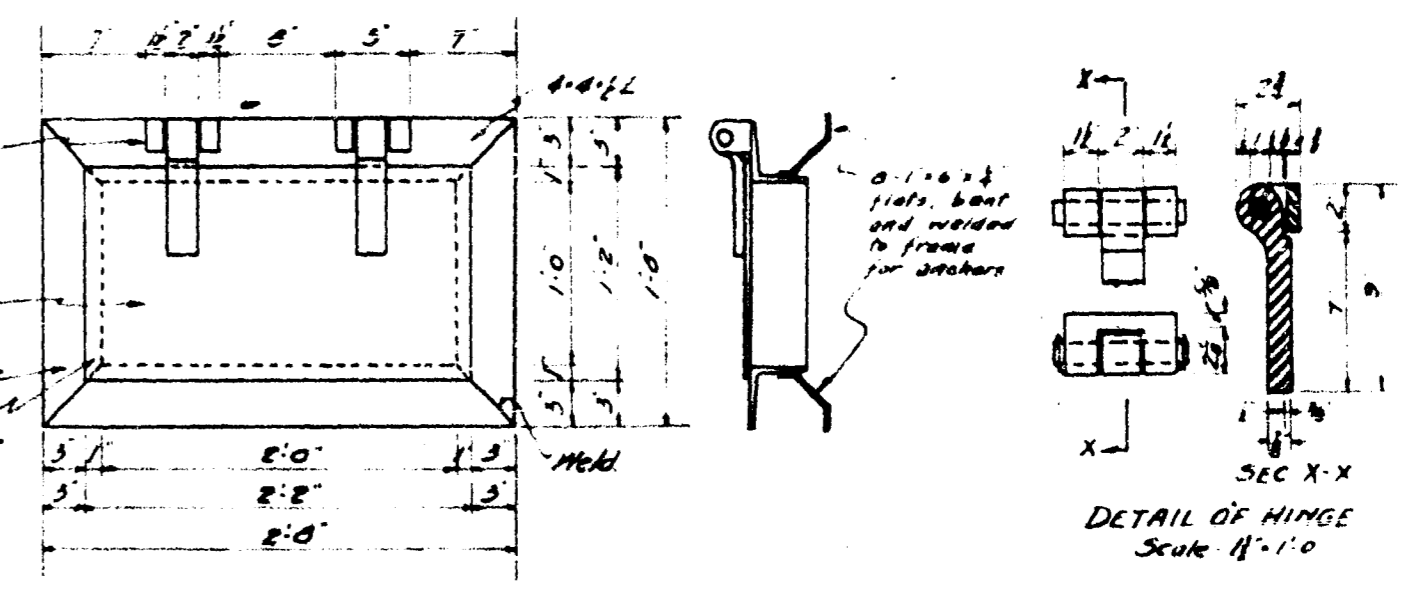
SEC. H-H



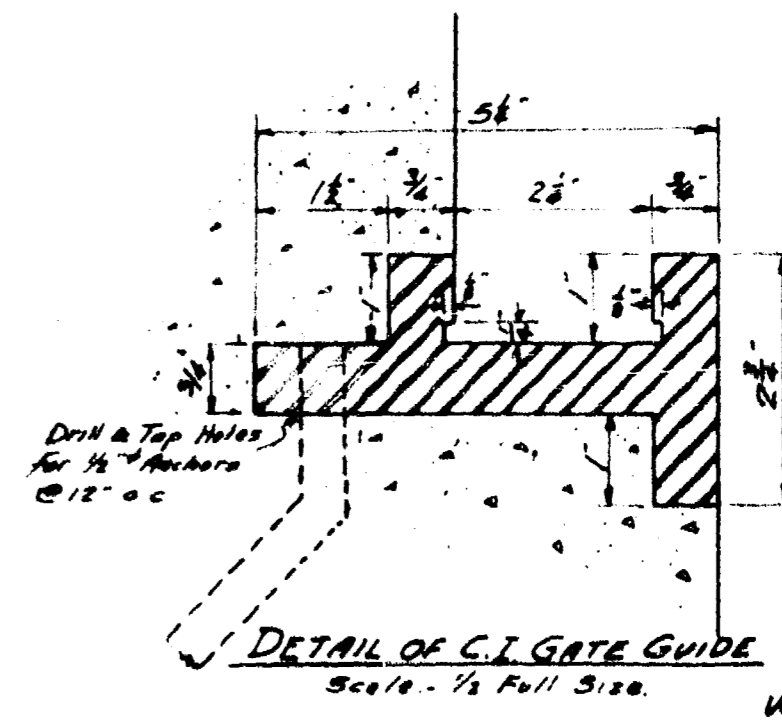
SEC. F-F



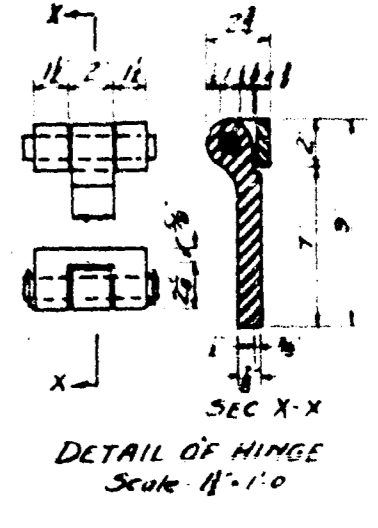
ELEVATION
DETAIL OF WOOD STOP GATE
Scale 1/4" = 1'-0"



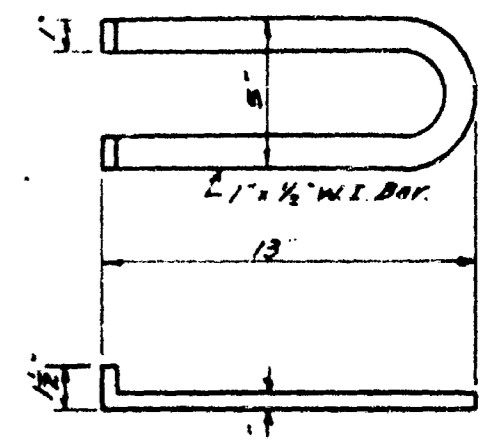
DETAIL OF FLAP GATE FOR SUMP
Scale 1/4" = 1'-0"



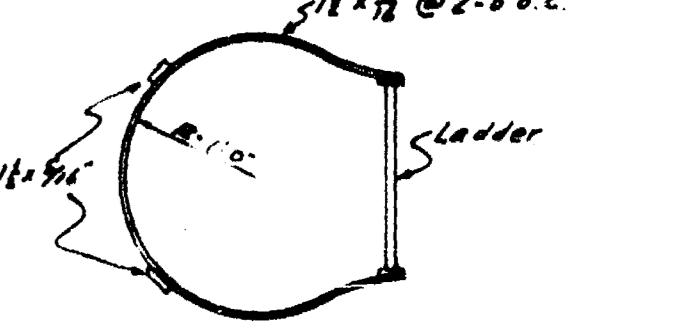
DETAIL OF C.I. GATE GUIDE
Scale - 1/2 Full Size



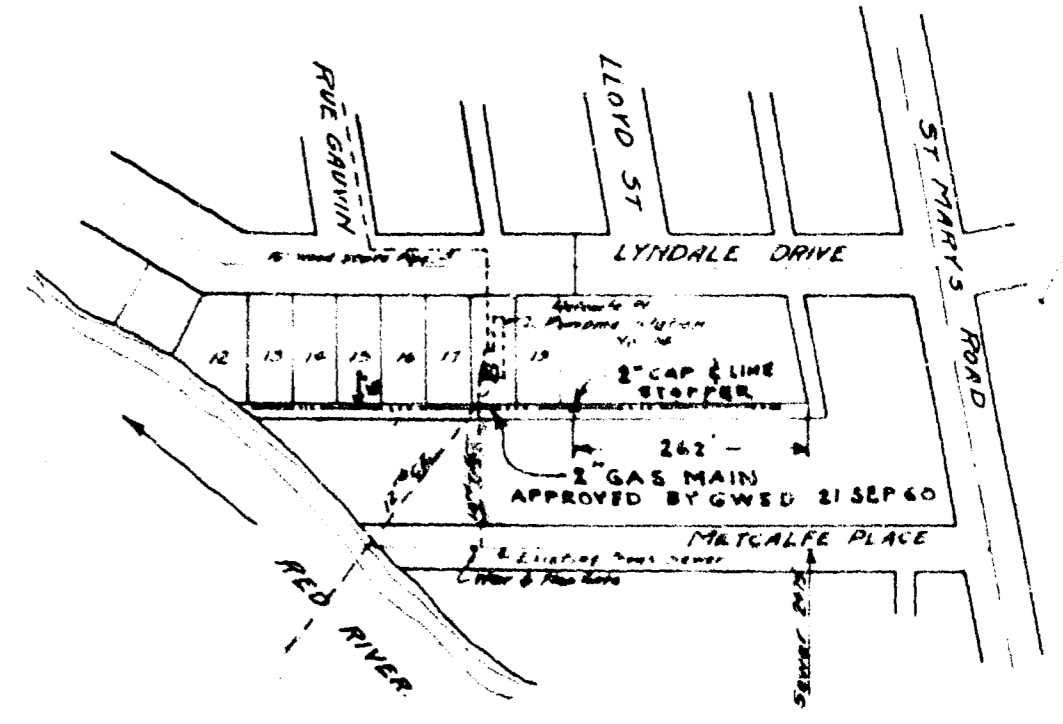
DETAIL OF HINGE
Scale 1/4" = 1'-0"



SEWER MANHOLE STEP



DETAIL OF SAFETY GUARD ON LADDER INTO MOTOR CHAMBER.

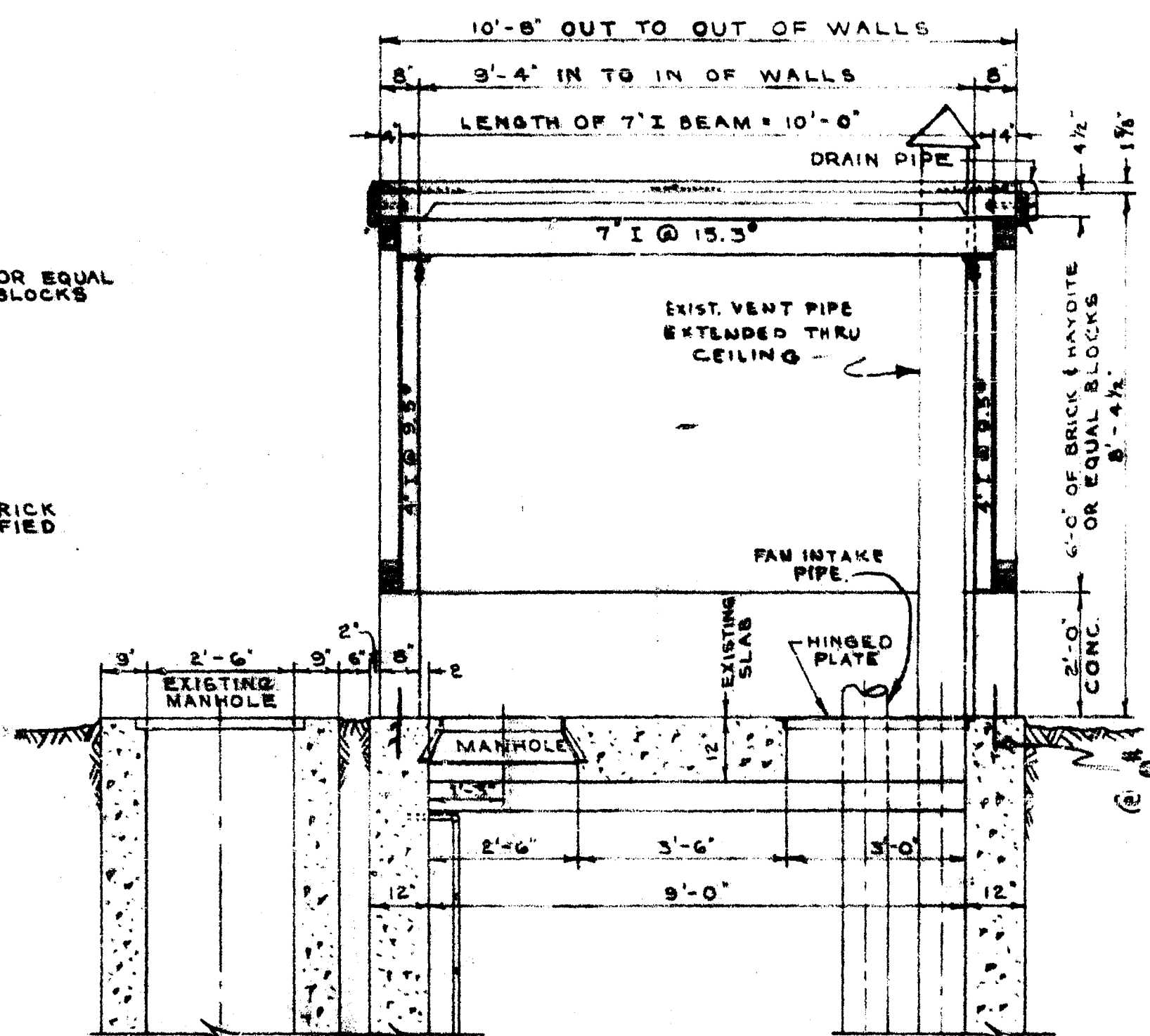
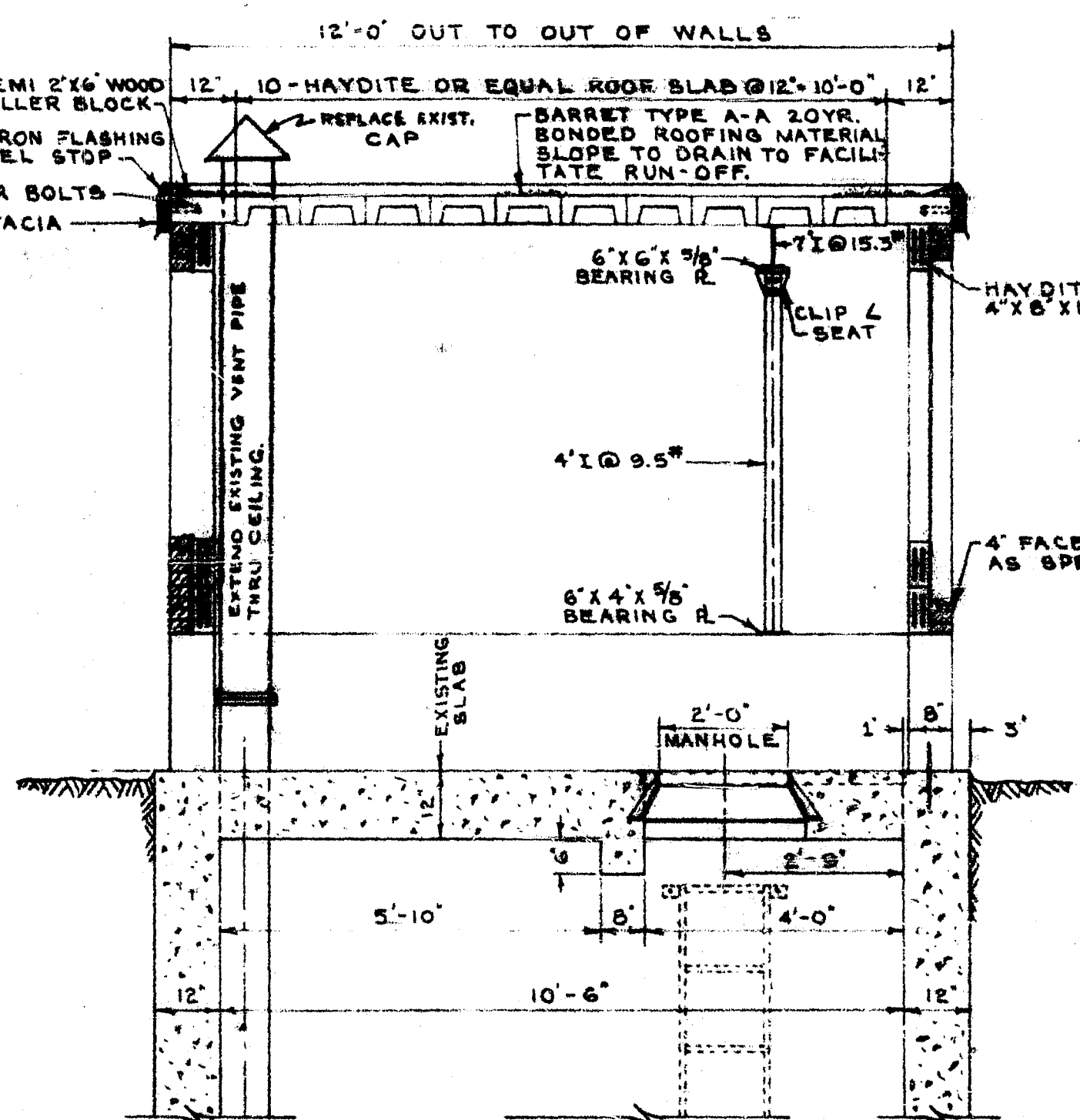
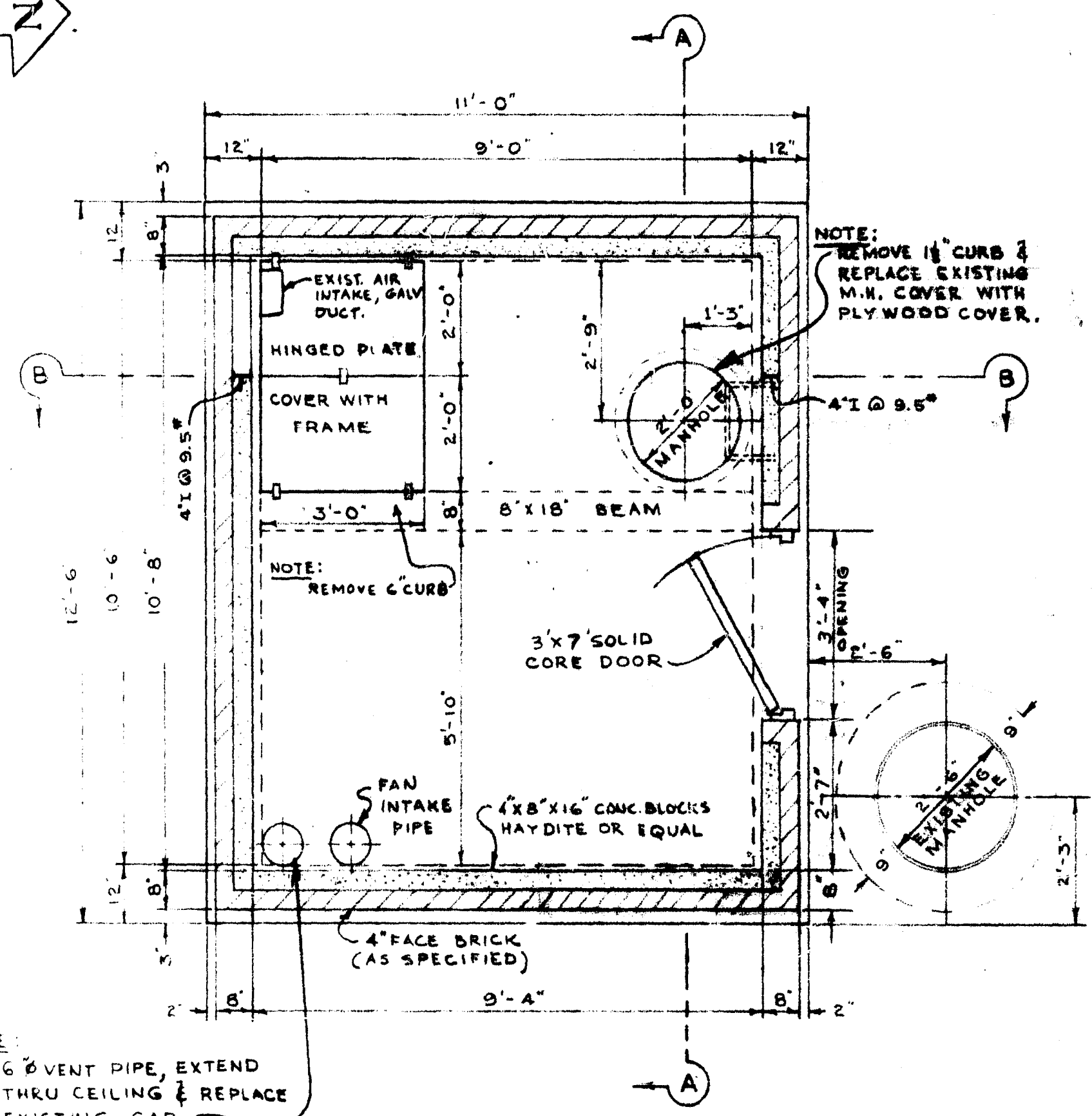


LOCATION PLAN
Scale 1" = 200'

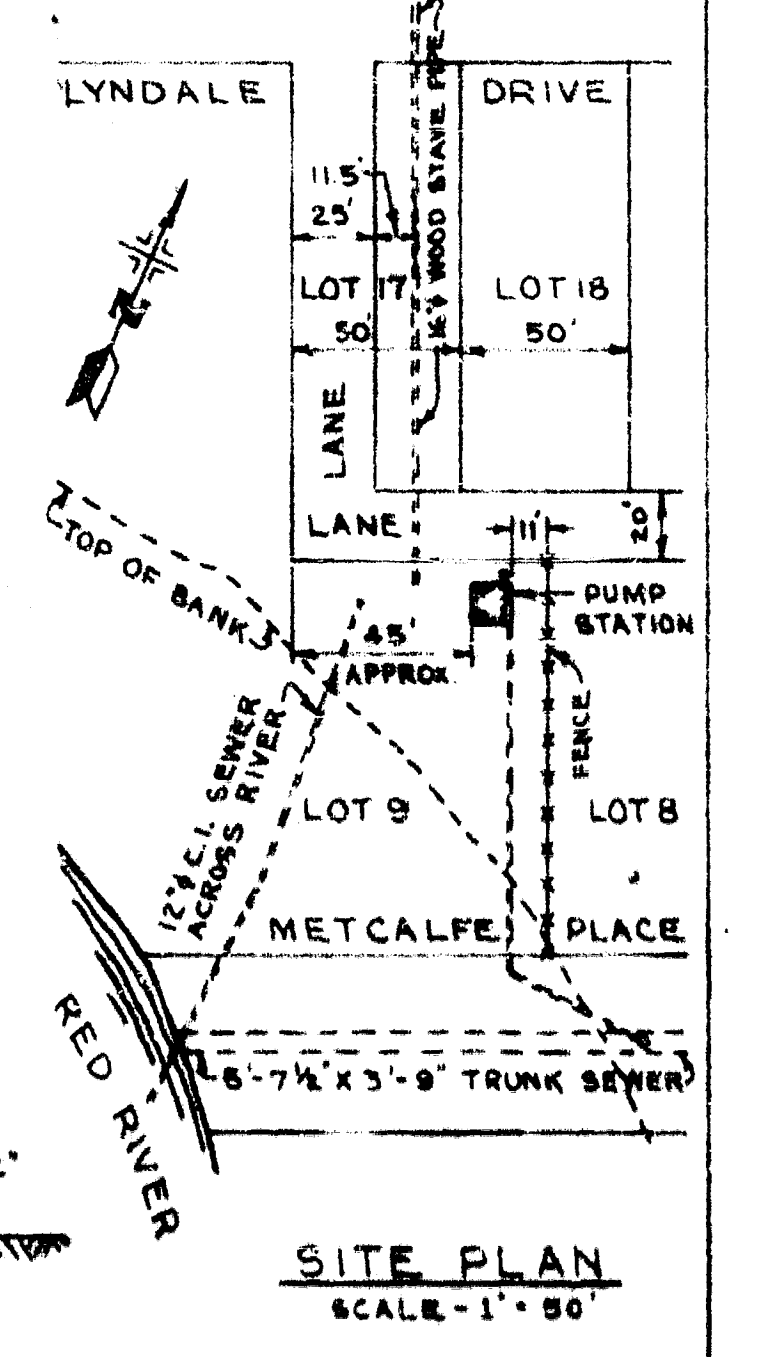
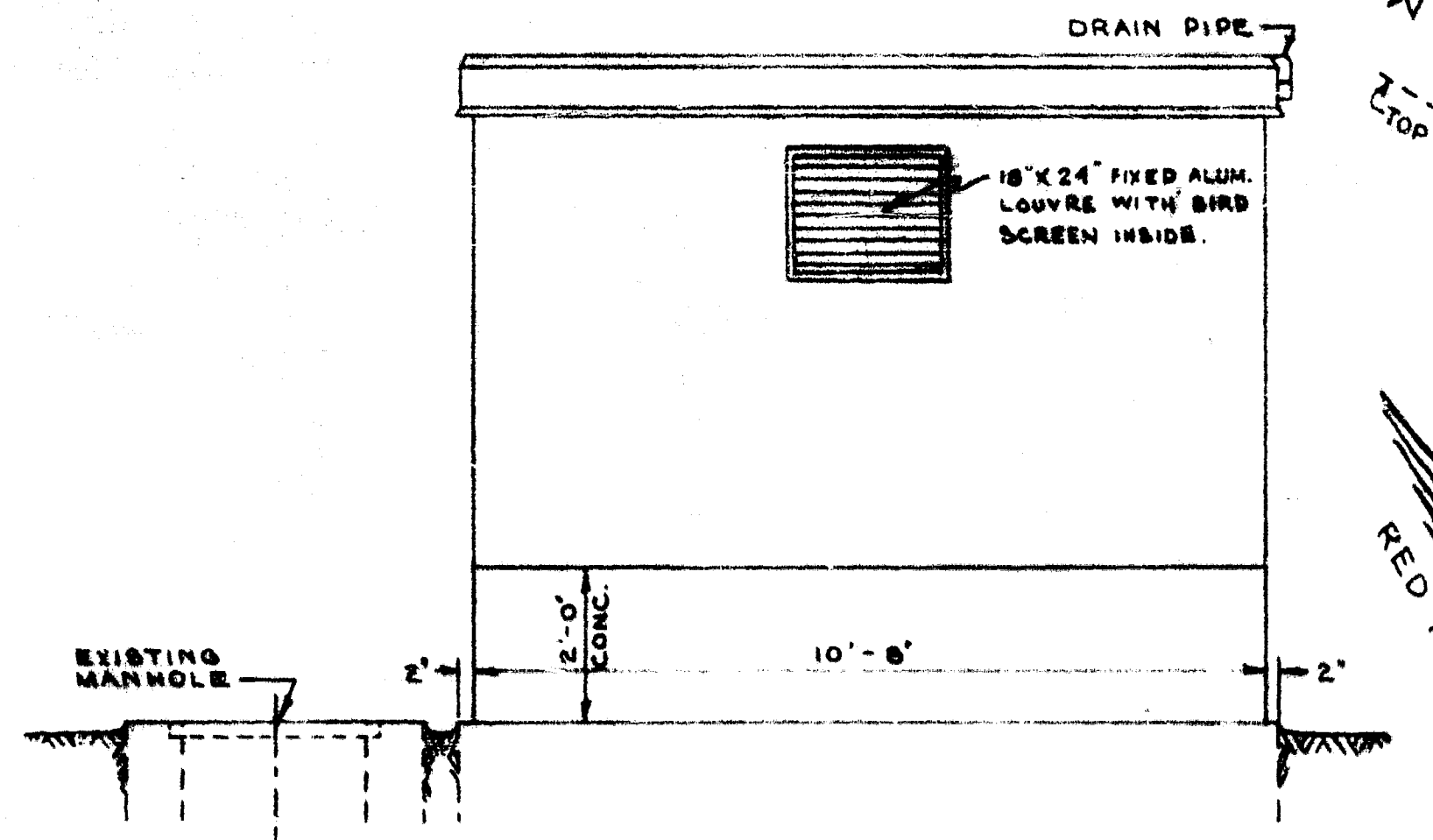
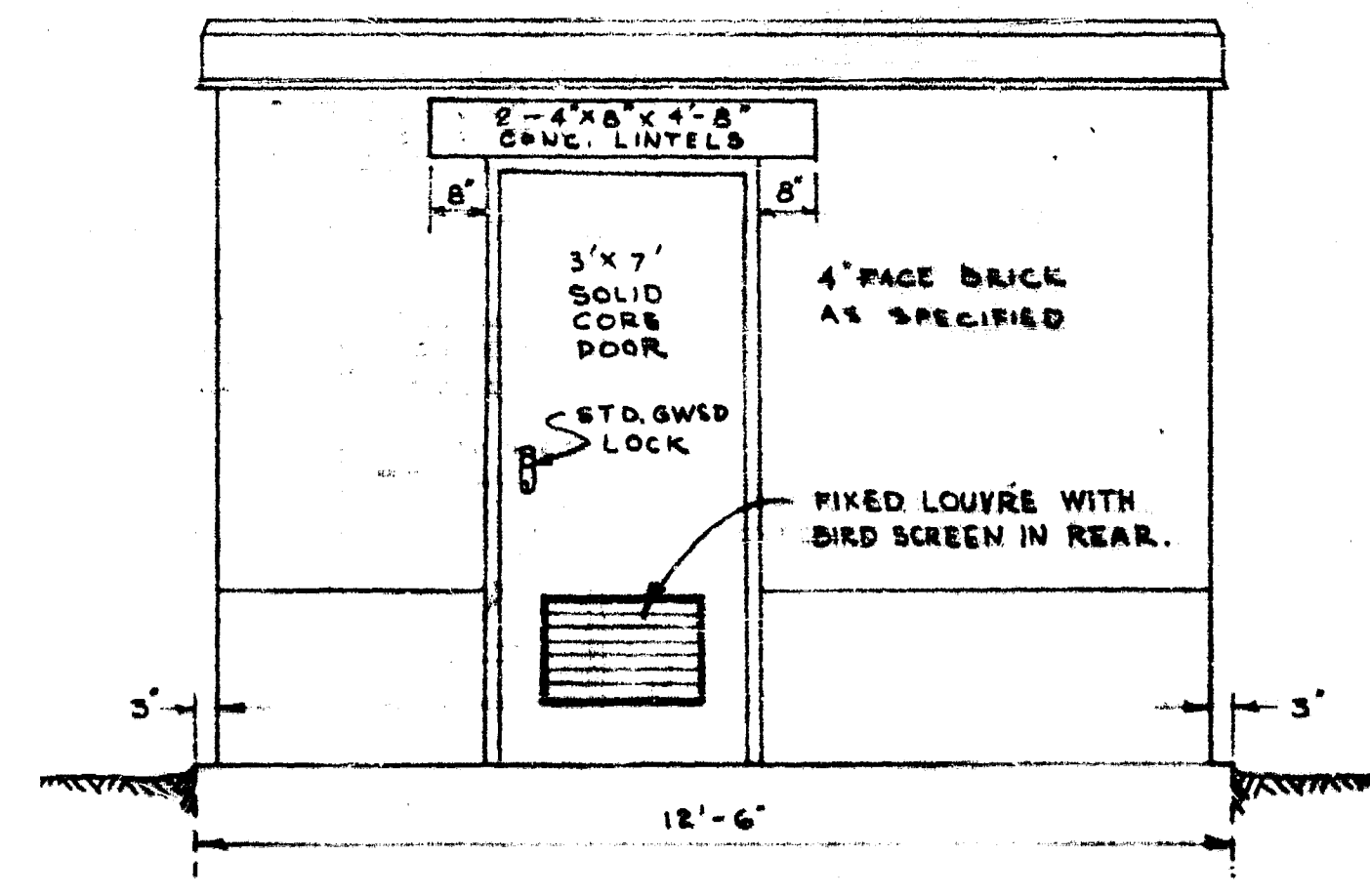
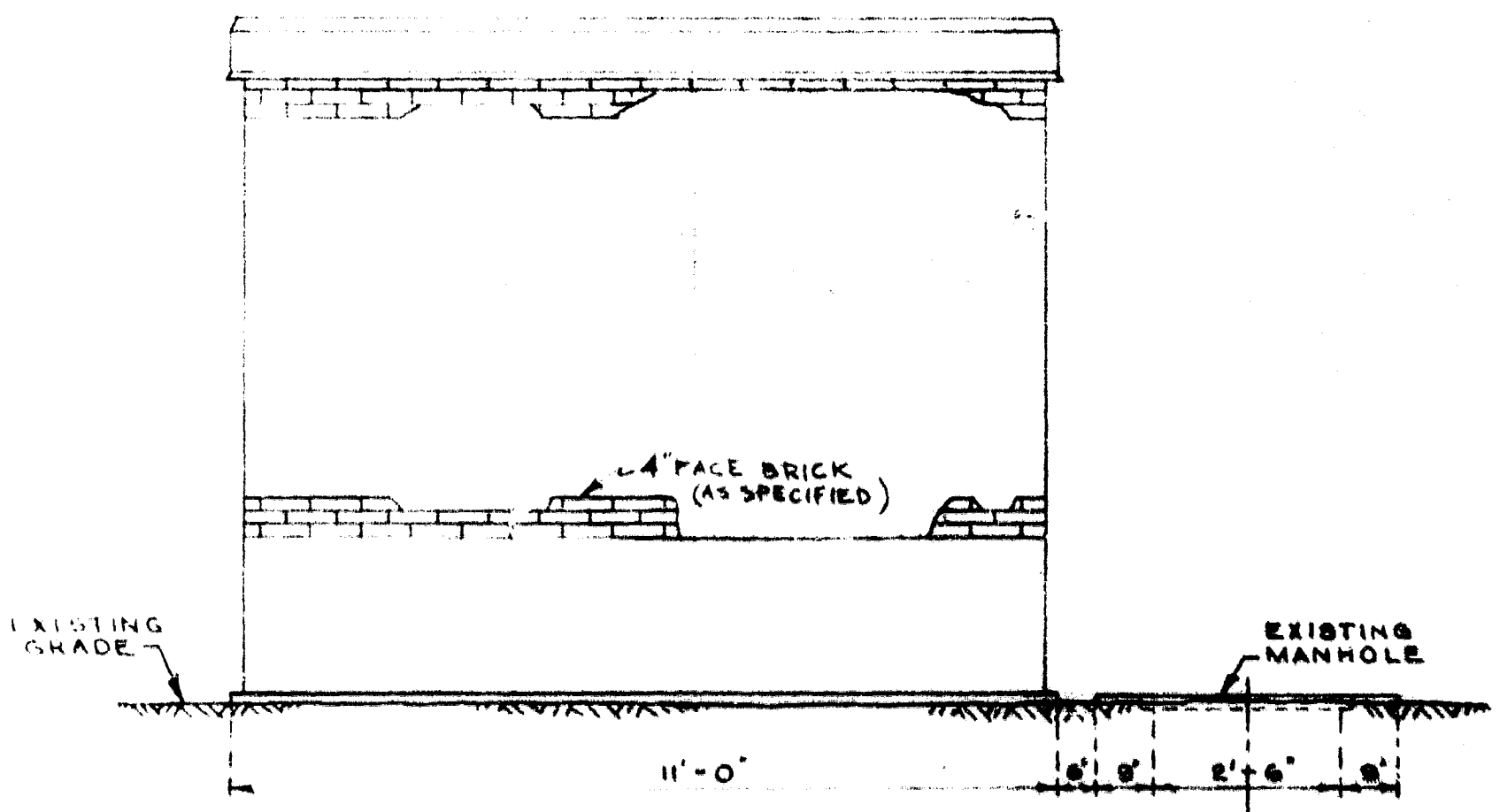
GREATER WINNIPEG SANITARY DISTRICT			
W. S. LEA Consulting Engineer	APPROVED	DATE	TITLE MATCHLES PLACE LAMPING STATION No 14 Sheet 1 of 2
W. F. BRIDGES MECHANICAL ENGINEER	Checked By	DATE	Scale 3/16" = 1'-0" (Actual Size Feb 6, 1937)
J. W. BAYLHURST C. E. LANTIER	Checked By	DATE	Drawn By No. 207 District No. 49
W. D. BURN, District Engineer	Approved in	DATE	APPROVED IN

NOTES: May 15, 1937. This is the Contract Drawg. For construction Drawg. see Drawg. No. 207A. See

APPROVED
W.S. LEA
Consulting Engineer

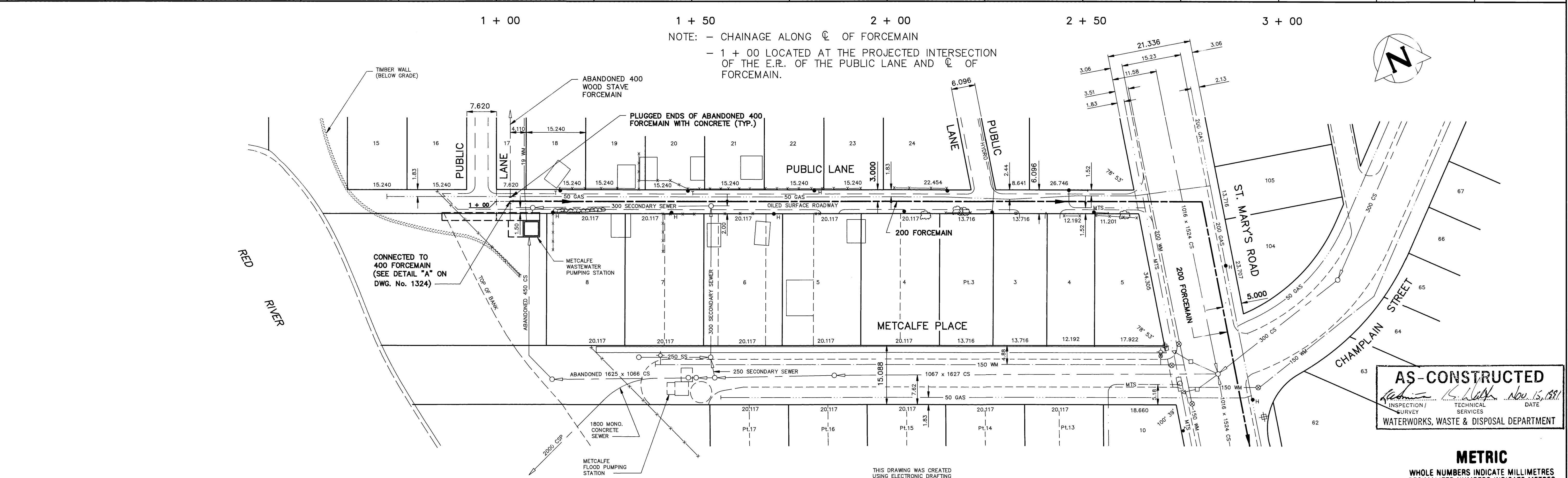
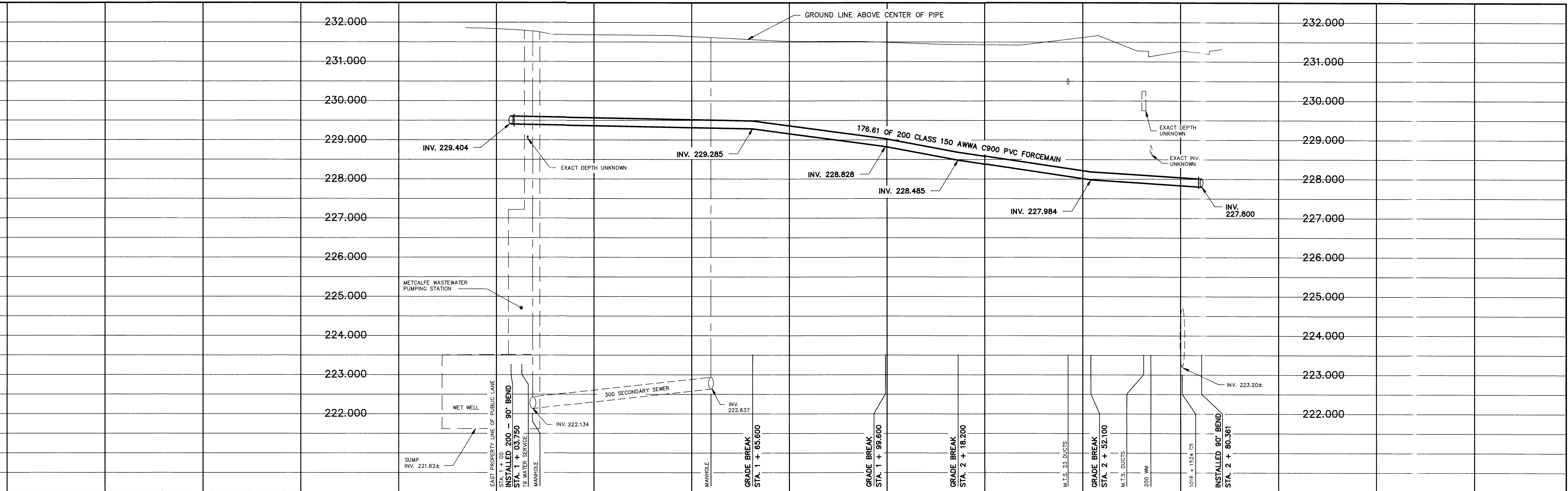


6 DOWELS - 18" LONG
@ 24" C.-C. ALL ROUND.



NOTE:
REPLACE EXISTING M.H. COVER WITH 2" PLYWOOD COVER AS NOTED.

REVISIONS			GREATER WINNIPEG SANITARY DISTRICT SECONDARY SEWERS	
NO.	DESCRIPTION	DATE BY	APPROVED BY	DRAWING NO.
			TITLE: SUPERSTRUCTURE METCALFE PLACE PUMPING STATION	
<small>APPROVED BY</small> <small>DATE</small>		<small>DESIGNED BY</small> <small>DATE</small>		<small>DRAWING NO.</small> 354
<small>SCALE</small> 1/2" INCH = 1' FOOT		<small>CHECKED BY</small> <small>DATE</small>		



AS-CONSTRUCTED
 Inspection by: *[Signature]* Nov. 15, 1991
 Technical Services
 WATERWORKS, WASTE & DISPOSAL DEPARTMENT

METRIC
 WHOLE NUMBERS INDICATE MILLIMETRES
 DECIMALIZED NUMBERS INDICATE METRES

200 WM	WATERMAIN	200 WM	HYDRO	150 WM	WATERMAIN	150 WM
⊕	HYDRANT	⊕	MTS	⊕	HYDRANT	⊕
⊗	VALVE	⊗	50 GAS	⊗	VALVE	⊗
---	FORCEMAIN	---	PROPERTY LINE	---	FORCEMAIN	---
---	SECONDARY SEWER	---	SURVEY BAR	---	SECONDARY SEWER	---
---	COMBINED SEWER	---	FENCE	---	GROUND LINE	---
○	MANHOLE	○	POLE - HYDRO, MTS	○	BEND	○
□	CATCH BASIN	□	TRAFFIC SIGNAL			
▽	CURB INLET	▽	CORP. STOP			
---	EDGE OF CURB	---	LIGHT STANDARD			
---	EDGE OF LANE	---	TREE			
---	EXISTING	---	PROPOSED	---	EXISTING	---
---	LEGEND-PLAN	---	LEGEND-PLAN	---	LEGEND-PROFILE	---

LOCATION APPROVED
 UNDERGROUND STRUCTURES
 SUPV. U/G STRUCTURES COMMITTEE DATE
 NOTE:
 LOCATION OF UNDERGROUND STRUCTURES AS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE BUT NO GUARANTEE IS GIVEN THAT ALL EXISTING UTILITIES ARE SHOWN OR THAT THE GIVEN LOCATIONS ARE EXACT. CONFIRMATION OF EXISTENCE AND EXACT LOCATION OF ALL SERVICES MUST BE OBTAINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION.

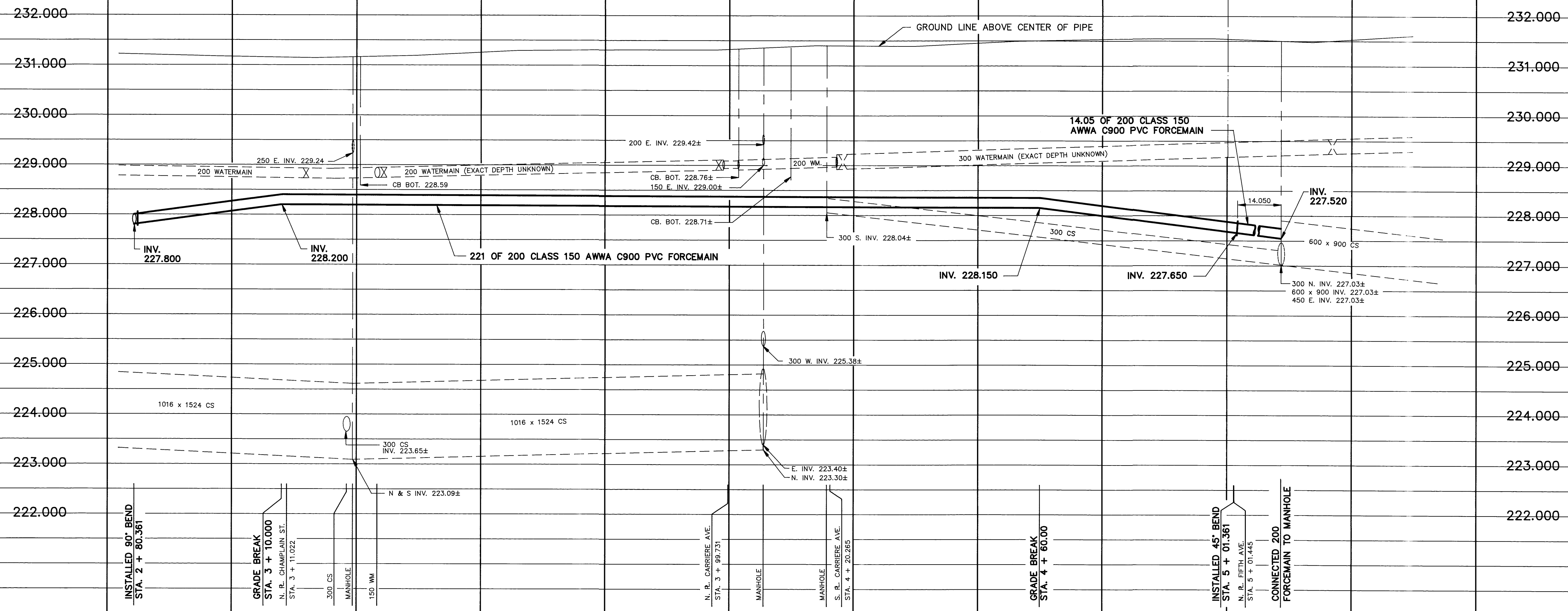
B.M. ELEV. 54 - 001 231.117
 FIELD BOOK: # 615
 DESIGNED BY TJW
 DRAWN BY REF
 HOR. SCALE 1 : 500
 VERTICAL 1 : 50
 1 REVISED TO AS-BUILT 91.10.02 TM
 NO. REVISIONS DATE BY

WORKS & OPERATIONS DIVISION
 WATERWORKS, WASTE & DISPOSAL DEPARTMENT
 ENGINEER'S SEAL
 R. A. SOROKOWSKI
 REGISTERED PROFESSIONAL ENGINEER
 CHECKED BY JE / KD
 APPROVED BY *[Signature]*
 RELEASED FOR CONSTRUCTION
 DATE AUGUST 16, 1990

THE CITY OF WINNIPEG
 WORKS AND OPERATIONS DIVISION
 WATERWORKS WASTE AND DISPOSAL DEPARTMENT
 RELOCATION OF THE METCALFE WASTEWATER PUMPING STATION FORCEMAIN (ALONG PUBLIC LANE NORTH OF METCALFE PLACE)
 CITY DRAWING NUMBER SHEET 1 OF 3
1322
 CONSULTANT DRAWING NO.
 PLOT DATE: 1991 11 06

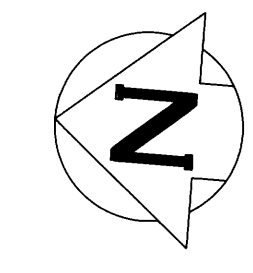
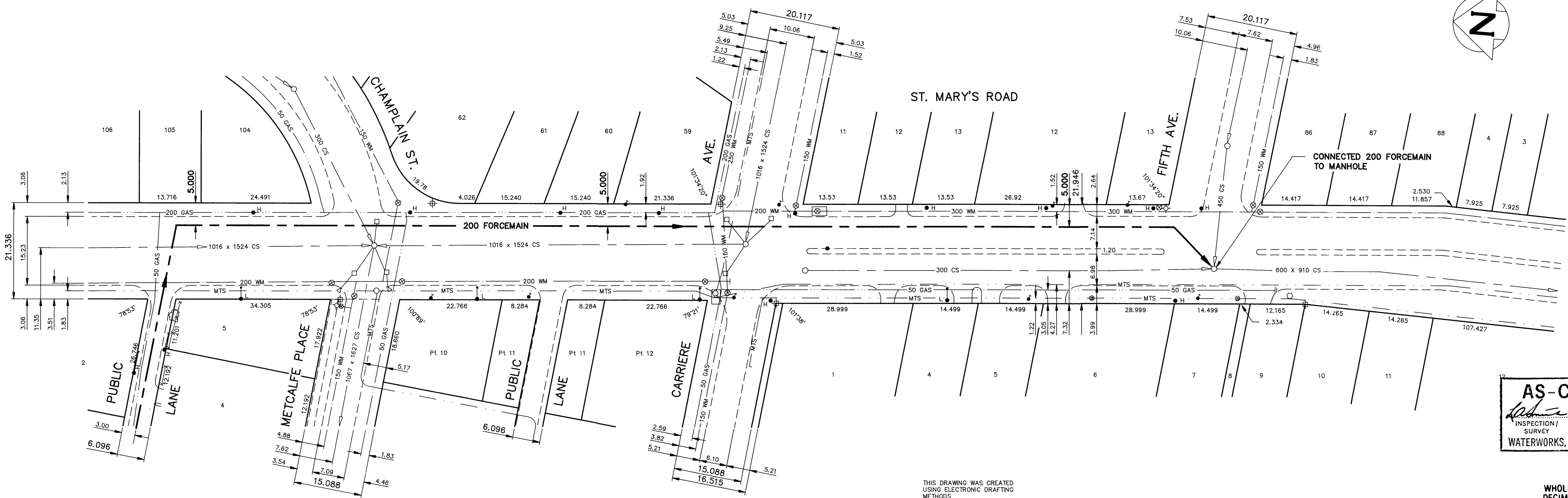
1322

file # FM1012



2 + 50 3 + 00 3 + 50 4 + 00 4 + 50 5 + 00 5 + 50

NOTE: - CHAINAGE ALONG \varnothing OF FORCEMAIN



AS-CONSTRUCTED
 Inspection / Technical Survey Services
 WATERWORKS, WASTE & DISPOSAL DEPARTMENT

METRIC
 WHOLE NUMBERS INDICATE MILLIMETRES
 DECIMALIZED NUMBERS INDICATE METRES

200 WM	WATERMAIN	200 WM	HYDRO	200 WM	WATERMAIN	150 WM
+	HYDRANT	+	MTS	+	HYDRANT	+
o	VALVE	o	CONCRETE	o	VALVE	o
---	FORCEMAIN	---	PROPERTY LINE	---	FORCEMAIN	---
---	SECONDARY SEWER	---	SURVEY BAR	---	COMBINED SEWER	---
375 CS	COMBINED SEWER	375 CS	FENCE	300 CS	GROUND LINE	300 CS
o	MANHOLE	o	POLE - HYDRO, MTS	o	BEND	o
□	CATCH BASIN	□	TRAFFIC SIGNAL	□		□
∇	CURB INLET	∇	CORP. STOP	∇		∇
---	EDGE OF CURB	---	LIGHT STANDARD	---		---
50 GAS	GAS	50 GAS	TREE	50 GAS		50 GAS
---	LEGEND-PLAN	---	LEGEND-PLAN	---	LEGEND-PROFILE	---
EXISTING		PROPOSED	EXISTING	PROPOSED		PROPOSED

LOCATION APPROVED
 UNDERGROUND STRUCTURES

SUPV. U/G STRUCTURES COMMITTEE DATE

NOTE:
 LOCATION OF UNDERGROUND STRUCTURES AS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE BUT NO GUARANTEE IS GIVEN THAT ALL EXISTING UTILITIES ARE SHOWN OR THAT THE GIVEN LOCATIONS ARE EXACT. CONFIRMATION OF EXISTENCE AND EXACT LOCATION OF ALL SERVICES MUST BE OBTAINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION.

B.M. ELEV. 54 - 001 231.117 FIELD BOOK: # 615

DESIGNED BY TJW CHECKED BY JE / KD
 DRAWN BY REF APPROVED BY [Signature]
 HOR. SCALE 1 : 500 RELEASED FOR CONSTRUCTION [Signature]
 VERTICAL SCALE 1 : 50 DATE AUGUST 16, 1990

1 REVISED TO AS-BUILT 91.10.02 TM
 NO. REVISIONS DATE BY

WORKS & OPERATIONS DIVISION
 WATERWORKS, WASTE & DISPOSAL DEPARTMENT

ENGINEER'S SEAL
 PROVINCE OF MANITOBA
 R. A. SOROKOWSKI
 REGISTERED PROFESSIONAL ENGINEER

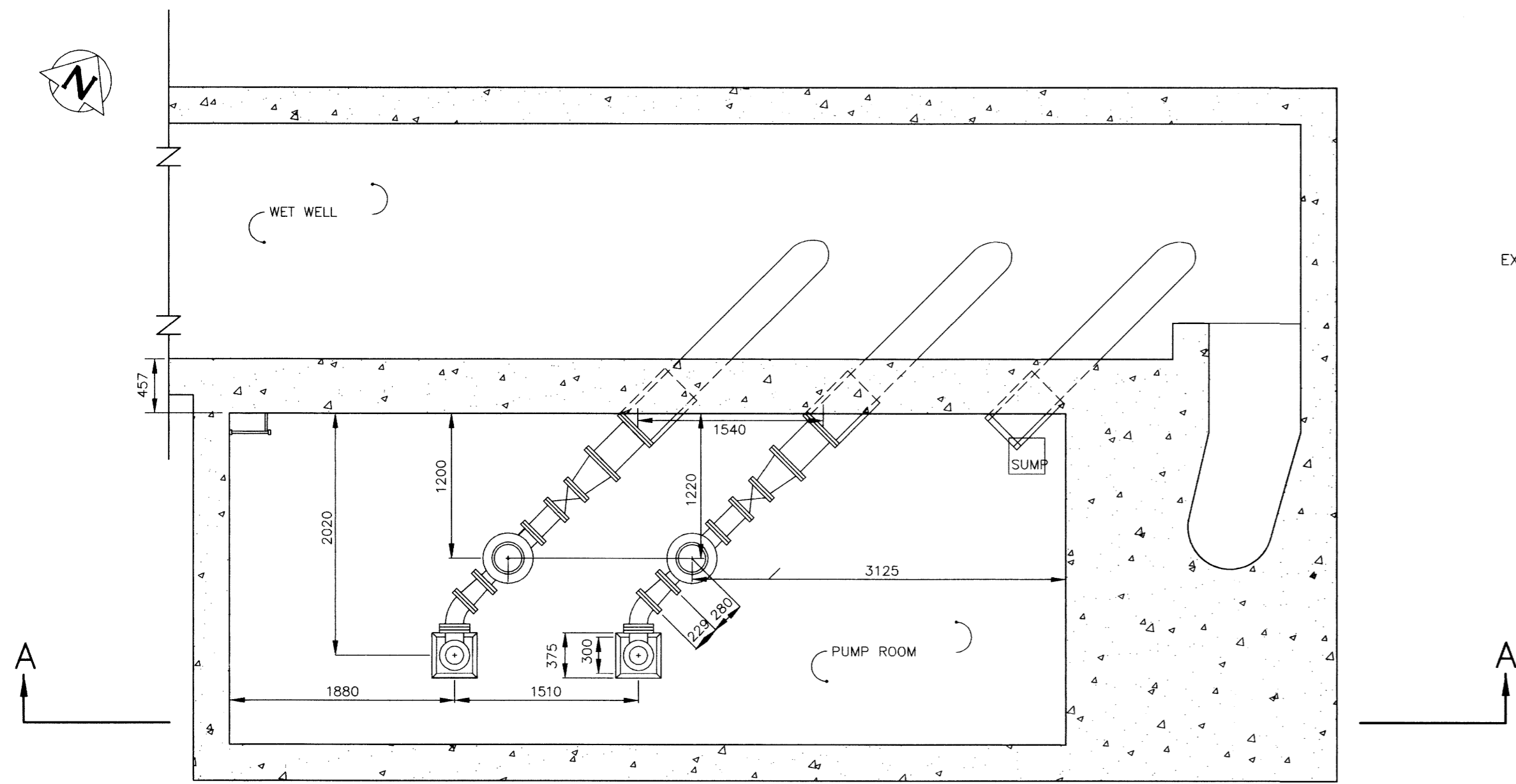
CONSULTANT DRAWING NO.

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

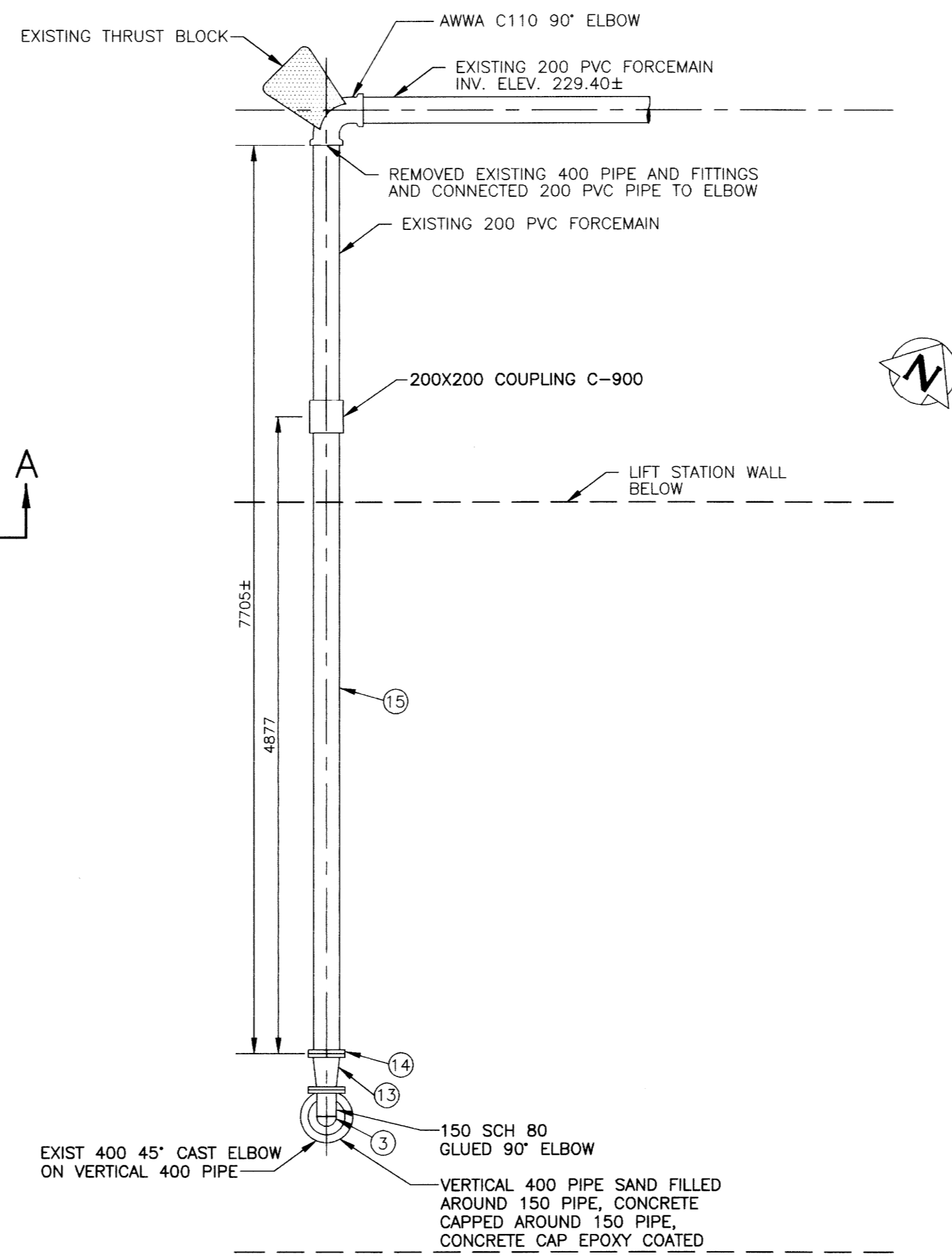
RELOCATION OF THE METCALFE WASTEWATER PUMPING STATION FORCEMAIN TO FIFTH AVENUE (ALONG ST. MARY'S ROAD)

CITY DRAWING NUMBER SHEET 2 OF 3 **1323**

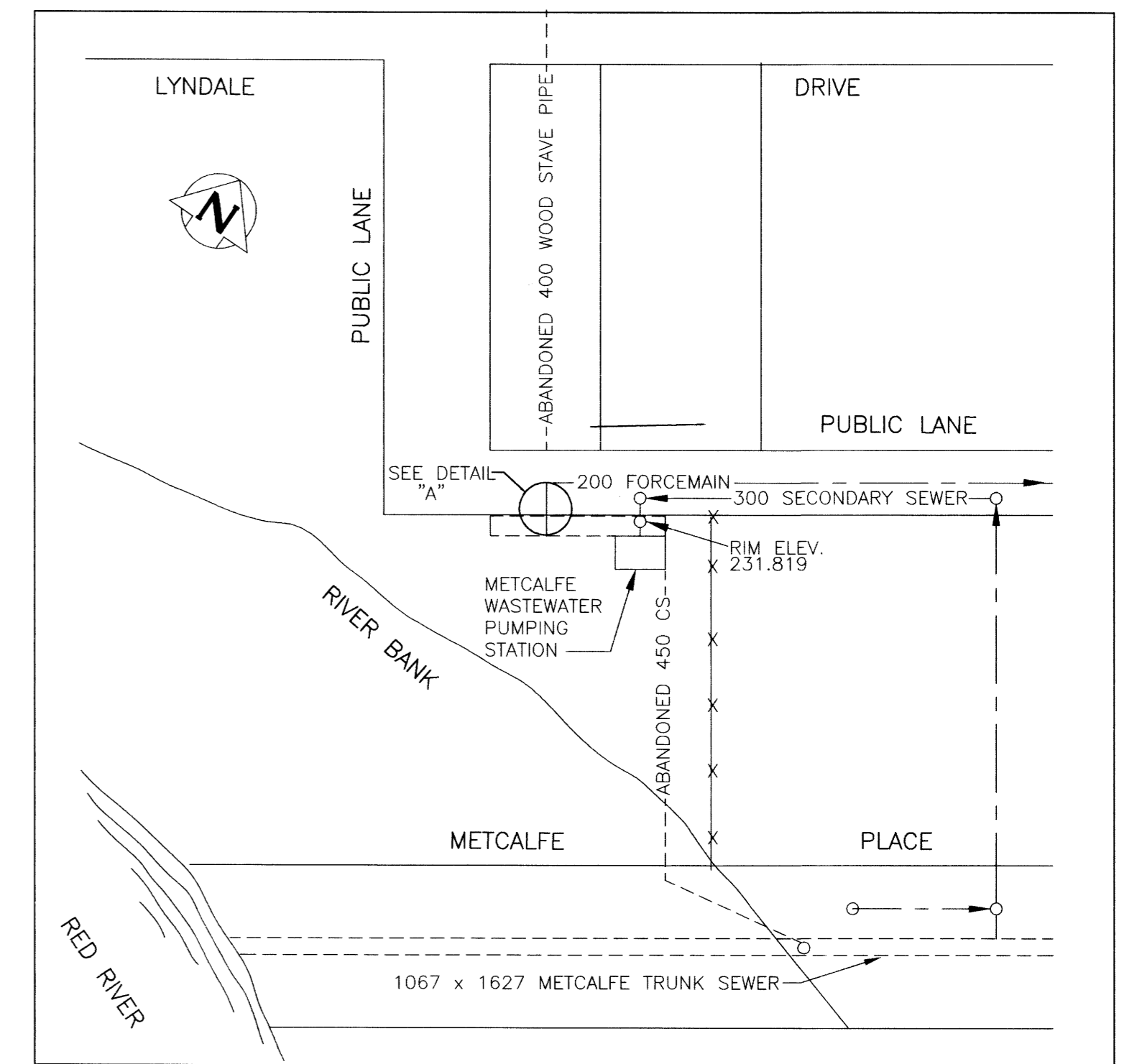
Plot # FMA1014 PLOT DATE: 1991 11 06



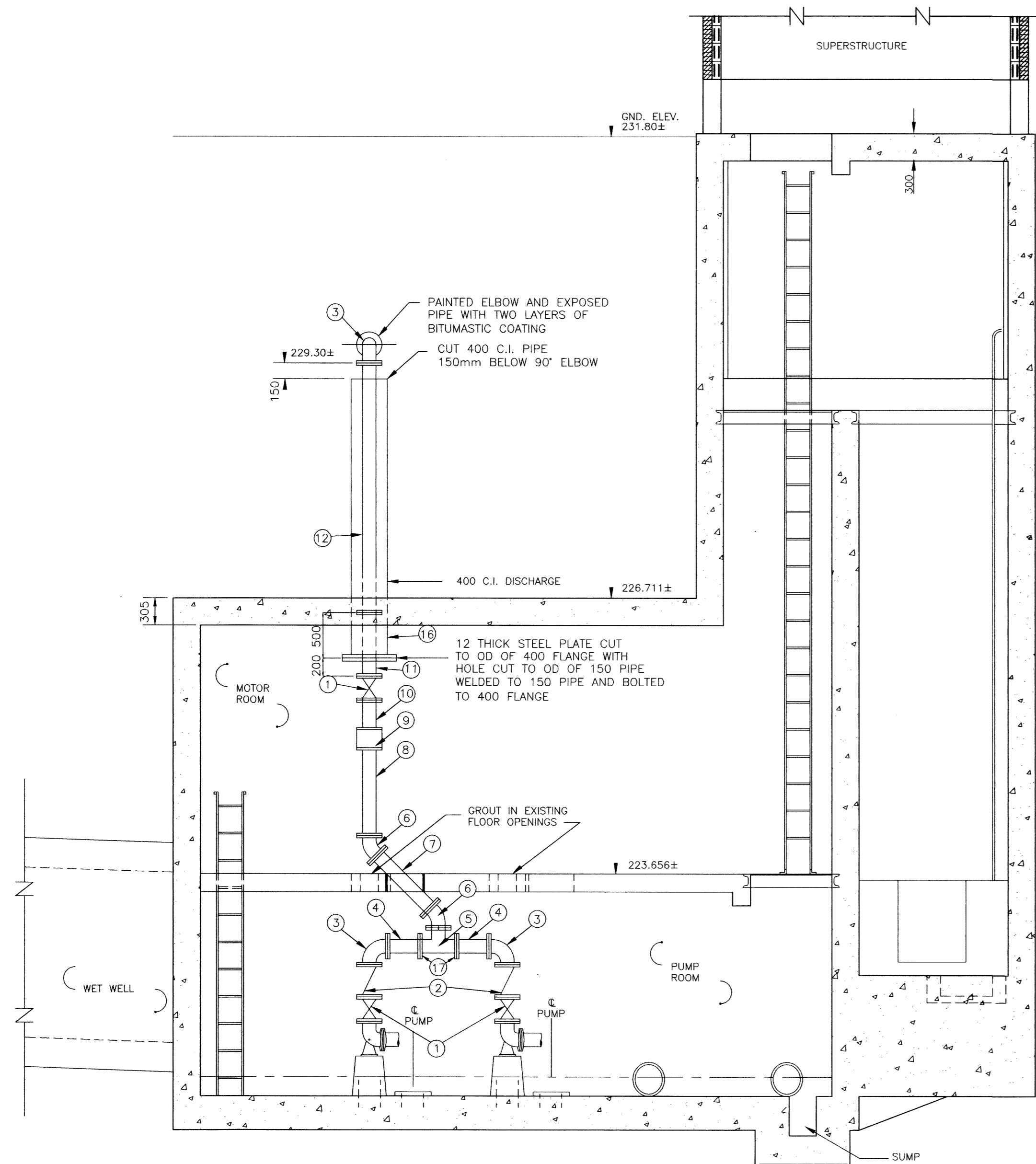
PLAN VIEW - PUMP ROOM
SCALE 1:40



PLAN VIEW DETAIL "A" - ELEV 229.600
SCALE 1:40



SITE PLAN
SCALE 1:500



SECTION A - A
SCALE 1:40

LIST OF MATERIALS				
ITEM	DESCRIPTION	ENDS	LENGTH	QUANTITY
1	150 GATE VALVE	FLANGED	-	3
2	150 CHECK VALVE	FLANGED	-	2
3	150 90° ELBOW	FLANGED	-	3
4	150 FILLER PIPE	FLANGED	±356.5	2
5	150X150X150 TEE	FLANGED	-	1
6	150 45° BEND	FLANGED	-	2
7	150 FILLER PIPE	FLANGED	±824	1
8	150 FILLER PIPE	FLANGED	±970.5	1
9	150 POLYSONIC FLOW METER	FLANGED	-	1
10	150 FILLER PIPE FLANGED X PLAIN	FLANGED	±325	1
11	150 FILLER PIPE	FLANGED	±700	1
12	150 FILLER PIPE	FLANGED	±2752	1
13	150-200 INCREASER	FLANGED	-	1
14	200 UNI-FLANGE OR APPROVED EQUAL	FLANGED	-	1
15	200 CLASS 150 AWWA C900 PVC PIPE	FLANGED	±7705	1
16	400 C.I. PIPE EXISTING	FLANGED	-	1
17	150 UNI FLANGE OR APPROVED EQUAL	FLANGED	-	2

- NOTES
- LENGTHS SHOWN FOR PIPING ARE FACE TO FACE AND DO NOT INCLUDE GASKET THICKNESS.
 - GASKETS SHALL BE 3 mm THICK, FULL FACED, CLOTH INSERTED RUBBER.
 - LENGTHS SHOWN AS ± SHALL BE FIELD MEASURED BEFORE BEING CUT AND INSTALLED.
 - ALL FASTENERS TO BE TYPE 316 STAINLESS STEEL.
 - CONTRACTOR TO REMOVE EXISTING PIPING AND SUPPLY ALL NEW MATERIALS EXCEPT WHERE SHOWN AS EXISTING.
 - ALL PIPE TO BE CLASS 52 DUCTILE IRON OR SCHEDULE 40 STEEL.
 - ALL FLANGED FITTINGS SHALL CONFORM TO AWWA C110.
 - ALL FLANGES SHALL BE WELDED INSIDE AND OUT IN ACCORDANCE WITH AWWA C 207.
 - ALL ANCHOR BOLTS TO BE KWIK BOLT STUD ANCHOR OR APPROVED EQUAL.

AS-CONSTRUCTED

Robina *K. Valter* 99.07.22
 CONTRACT ADMINISTRATION DRAFTING & GRAPHIC SERVICES DATE
 WATER AND WASTE DEPARTMENT

METRIC
 WHOLE NUMBERS INDICATE MILLIMETRES
 DECIMALIZED NUMBERS INDICATE METRES

B.M. ELEV.					
CITY OF WINNIPEG WATER AND WASTE ENGINEERING DIVISION			ENGINEER'S SEAL 		
DESIGNED BY	TW	CHECKED BY	TW/JE		
DRAWN BY	EN/MTS/WKT	APPROVED BY			
2) FORCEMAIN ALTERATIONS AS-BUILT & TITLE CHANGED	09-98 WKT	HOR. SCALE	AS SHOWN	ORIGINALLY SIGNED BY: R.A.SOROKOWSKI P.ENG	
1) AS-CONSTRUCTED	08-93 MBD	VERTICAL		AUTOCAD R13 FILENAME: 1339.DWG PLOT DATE: SEPT. 4, 1998	
NO. REVISIONS	DATE	BY	DATE	1992 09 15	

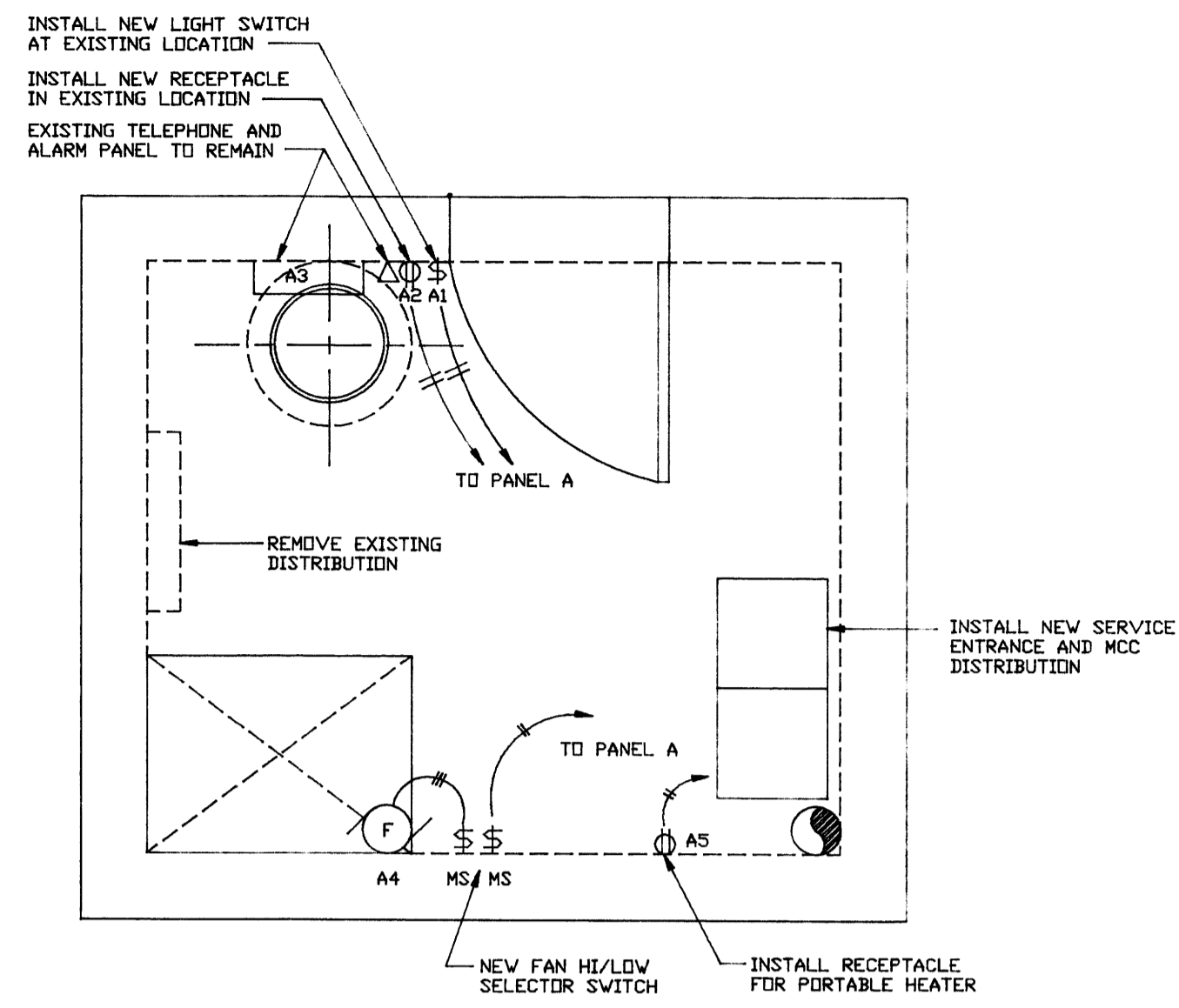
THE CITY OF WINNIPEG
 WATER AND WASTE DEPARTMENT

METCALFE WASTEWATER PUMPING STATION UPGRADING

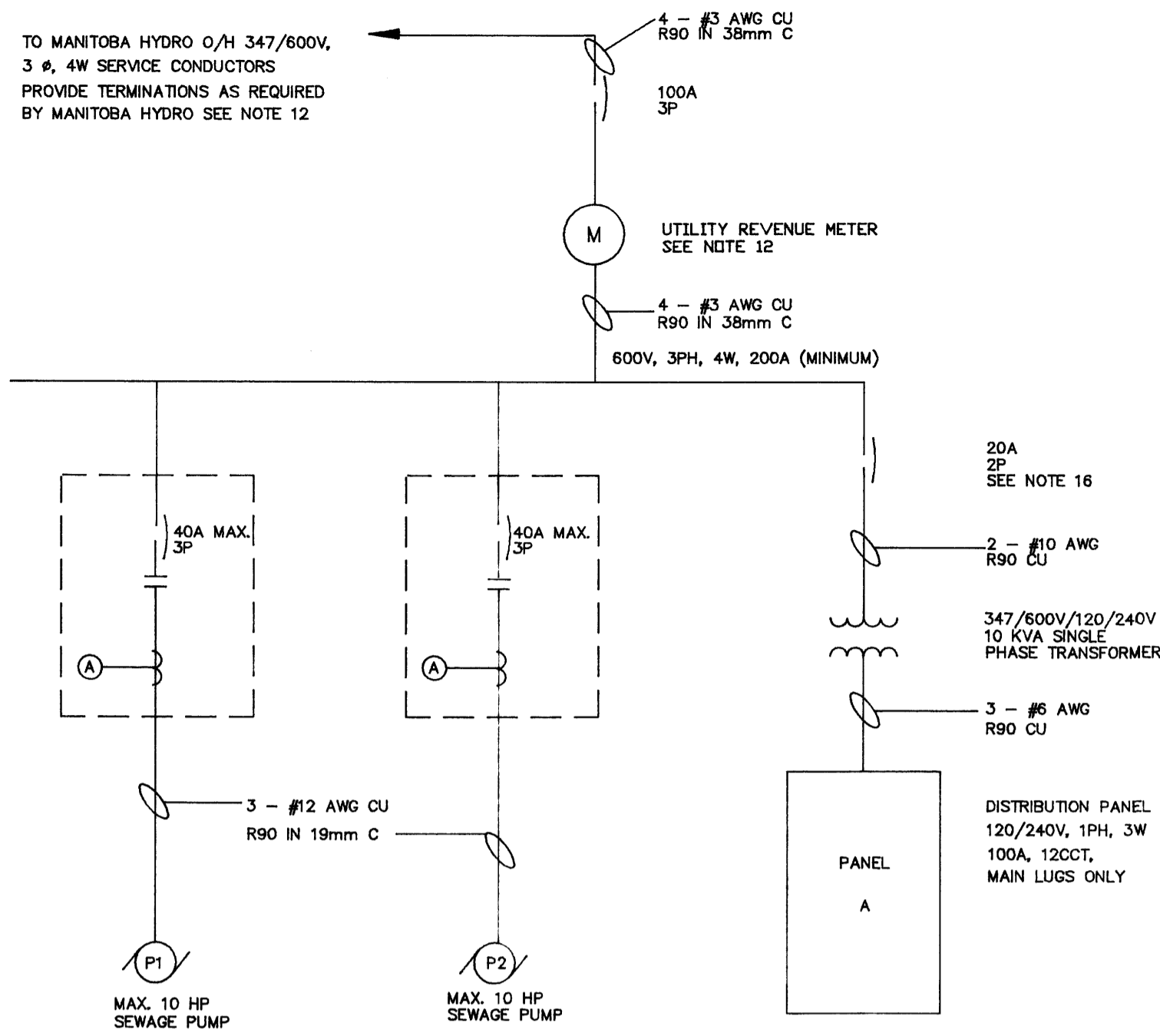
PLAN, SECTIONS, AND FORCEMAIN ALTERATIONS

SHEET 1 OF 1
 CITY DRAWING NUMBER
1339

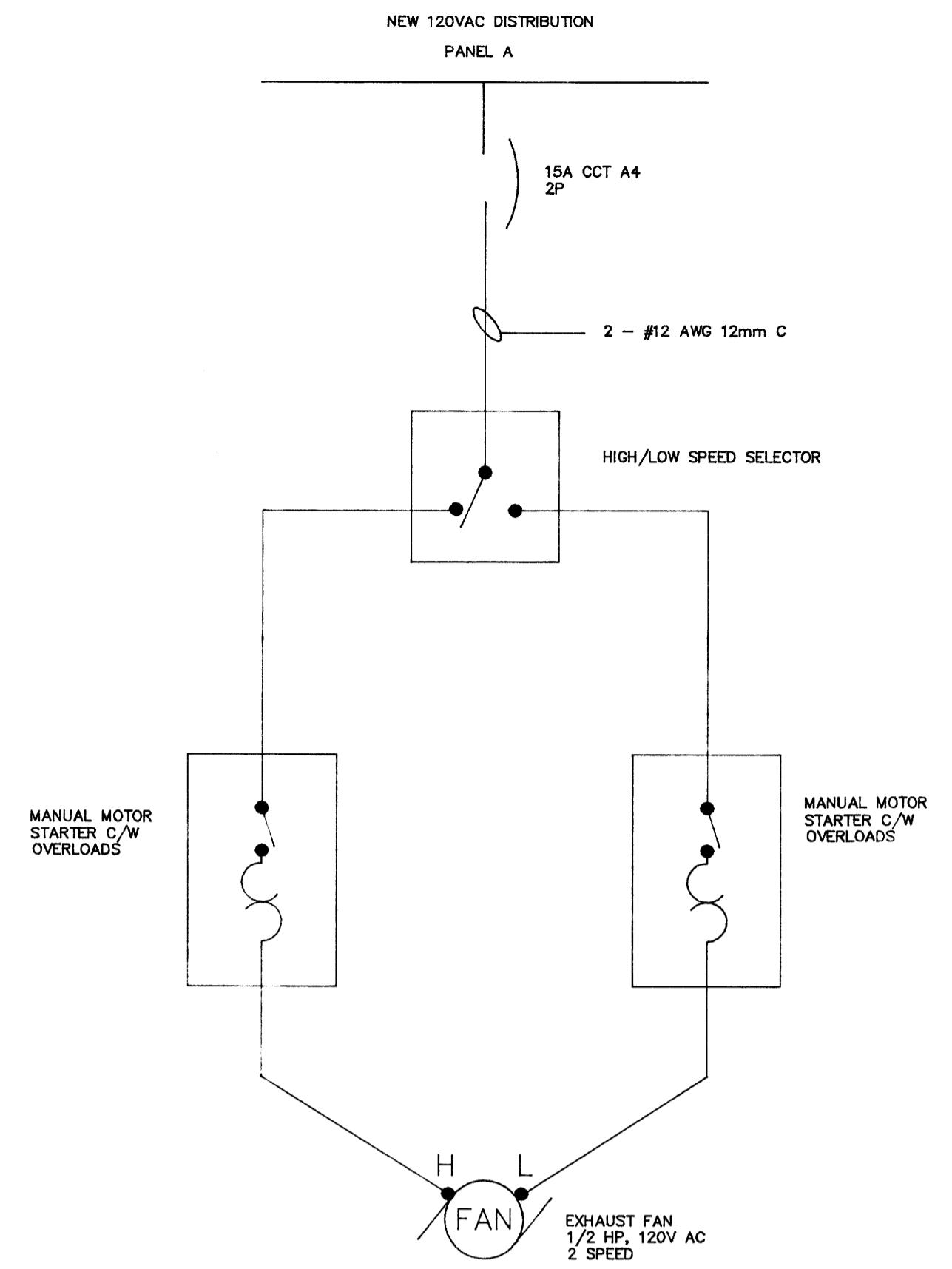
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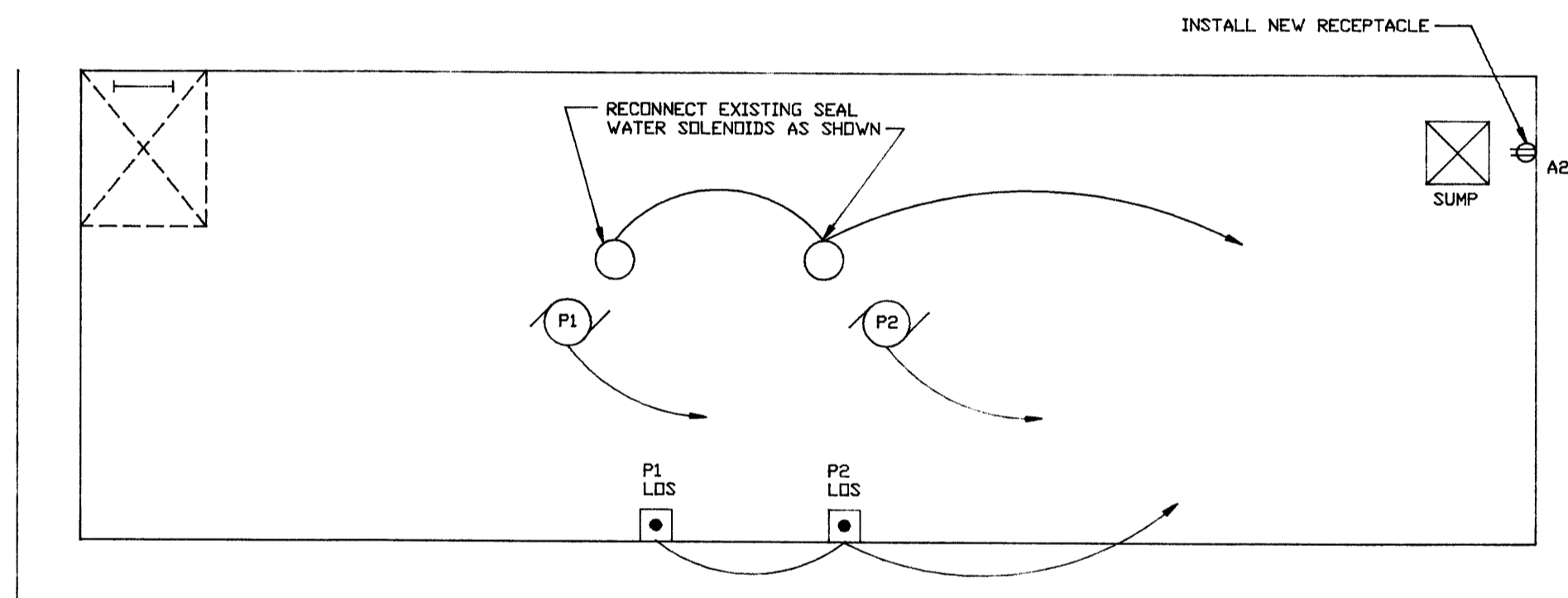
MAIN FLOOR PLAN (SEE NOTE 13)
SCALE 1/30



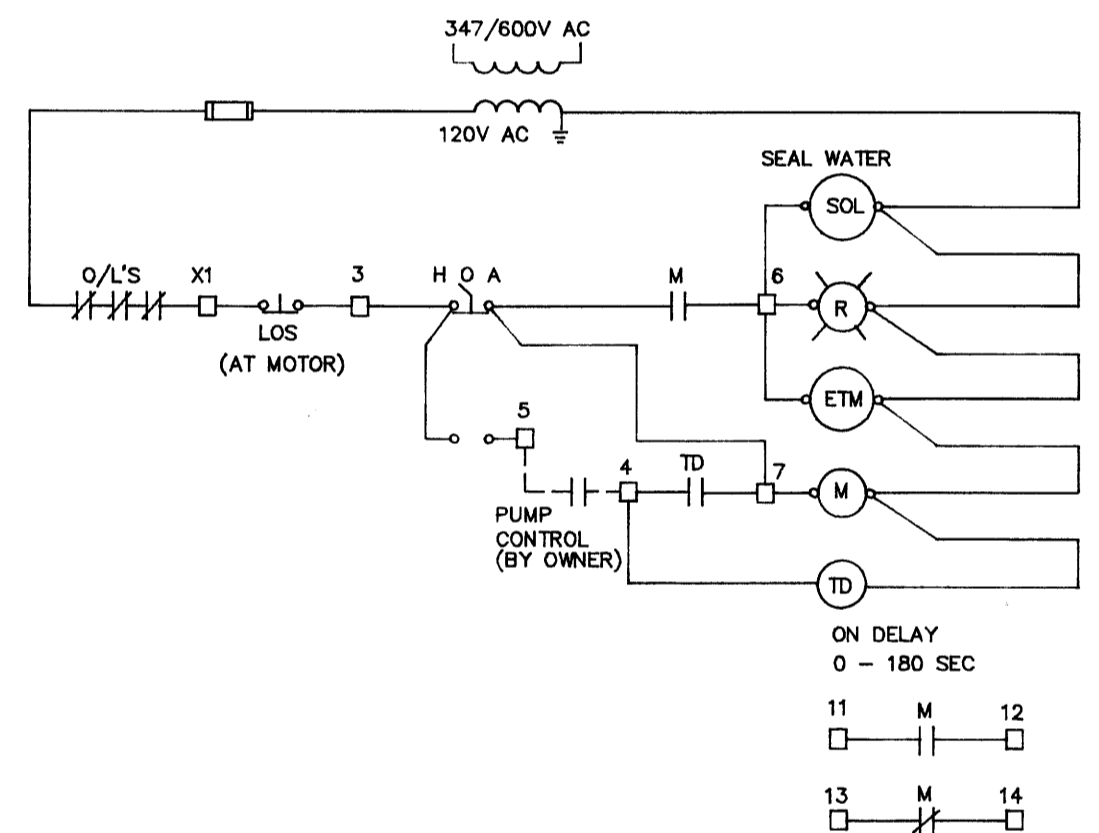
SINGLE LINE DIAGRAM
N.T.S.



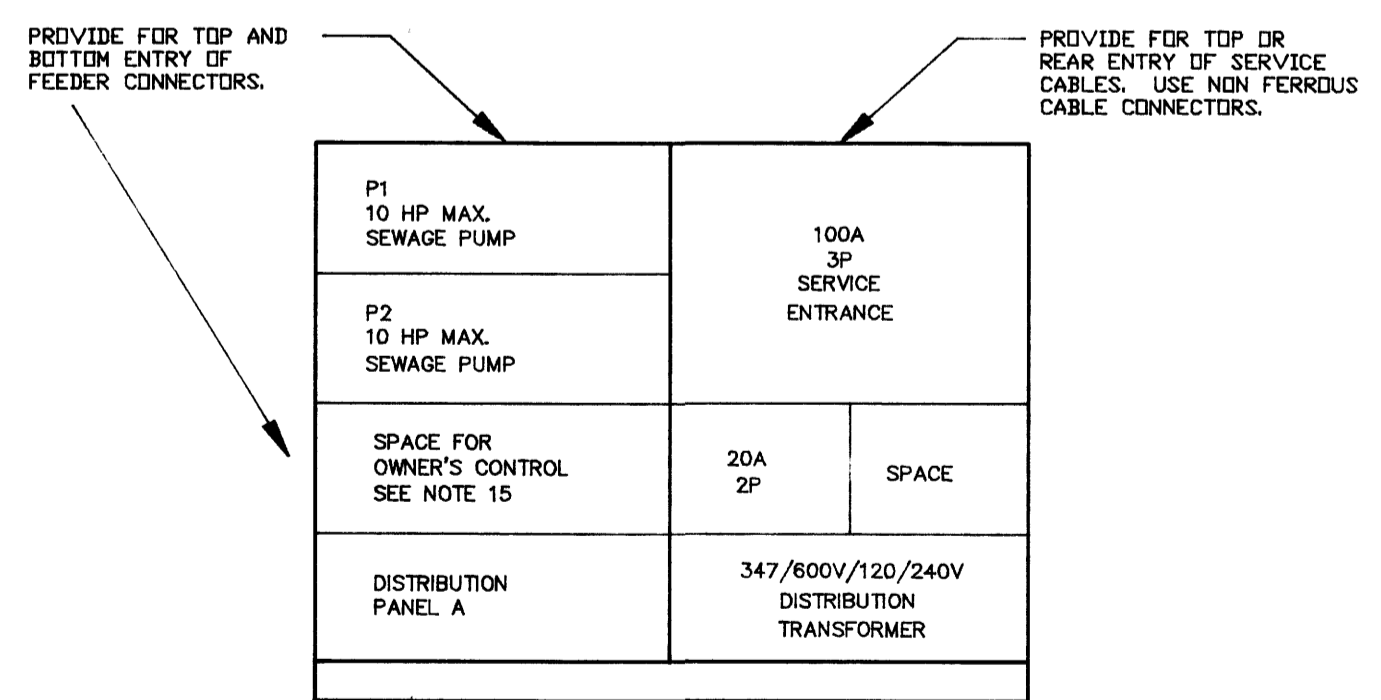
EXHAUST FAN WIRING
N.T.S.



PUMP ROOM FLOOR PLAN (SEE NOTE 13)
SCALE 1/30



SEWAGE PUMP CONTROL CIRCUIT



SERVICE ENTRANCE/MCC LAYOUT

DISTRIBUTION PANEL A 120/240V, 1PH, 3W, 100A MAIN LUGS					
CCT. NO.	DESCRIPTION	TRIP AMPS	TRIP AMPS	DESCRIPTION	CCT. NO.
1	LIGHTS	15A	15A	RECEPTACLES	2
3	ALARM PANEL	15A	15A	EXHAUST FAN	4
5	PORTABLE HEATER RECEPTACLE	15A	15A	LOWER LEVEL LIGHTS	6
7	SPARE	15A	15A	SEAL WATER SOLENOID	8
9	SPARE	15A	15A	SPARE	10
11	SPARE	15A	15A	SPARE	12

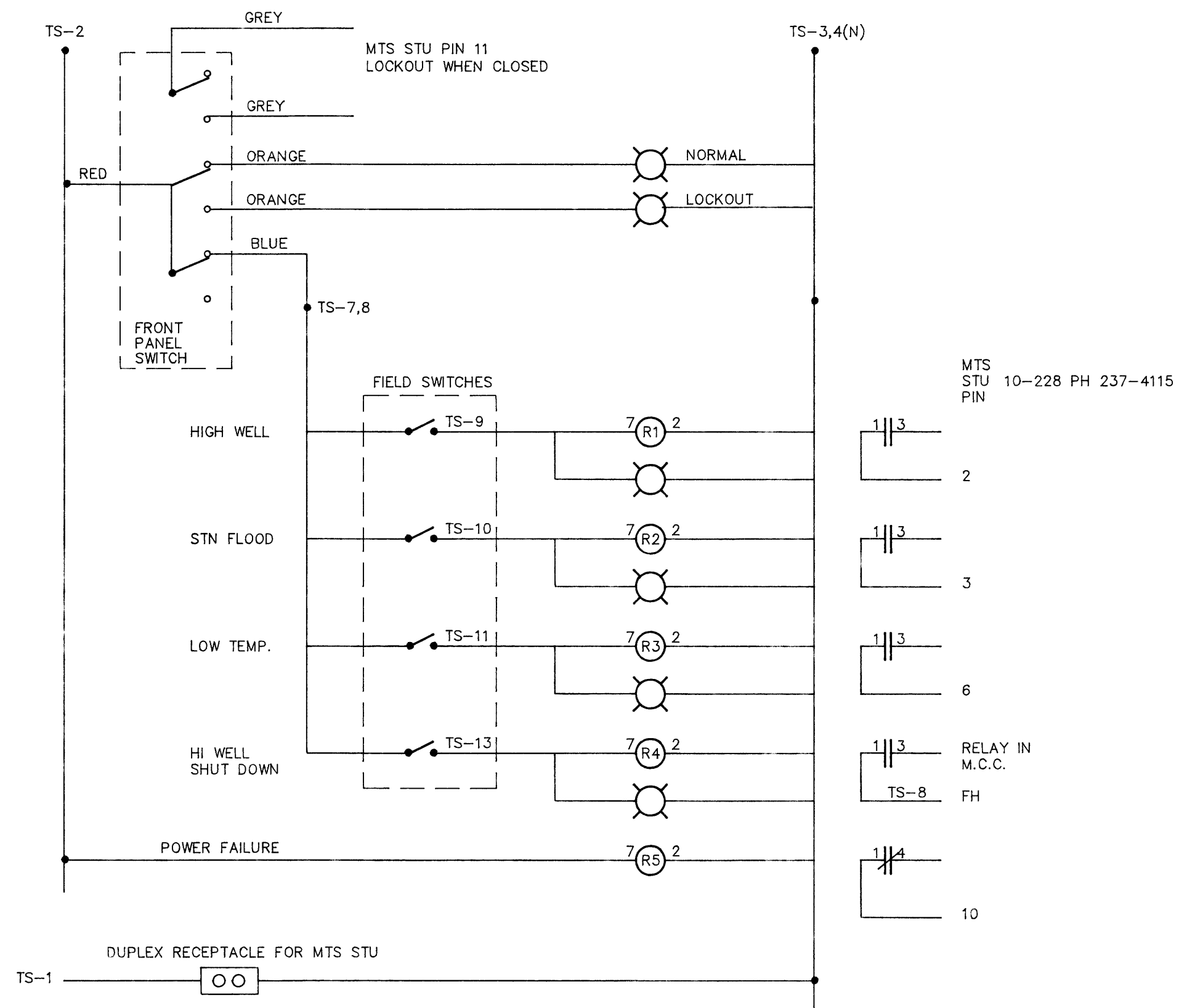
PANEL SCHEDULE

LEGEND	
SYMBOL	DESCRIPTION
	INCANDESCENT FIXTURE
	SINGLE POLE SWITCH
	MOTOR
	DUPLEX RECEPTACLE
	PUSHBUTTON (LOS)
	WIRING RUN - 2 WIRES IN CONDUIT SURFACE MOUNTED

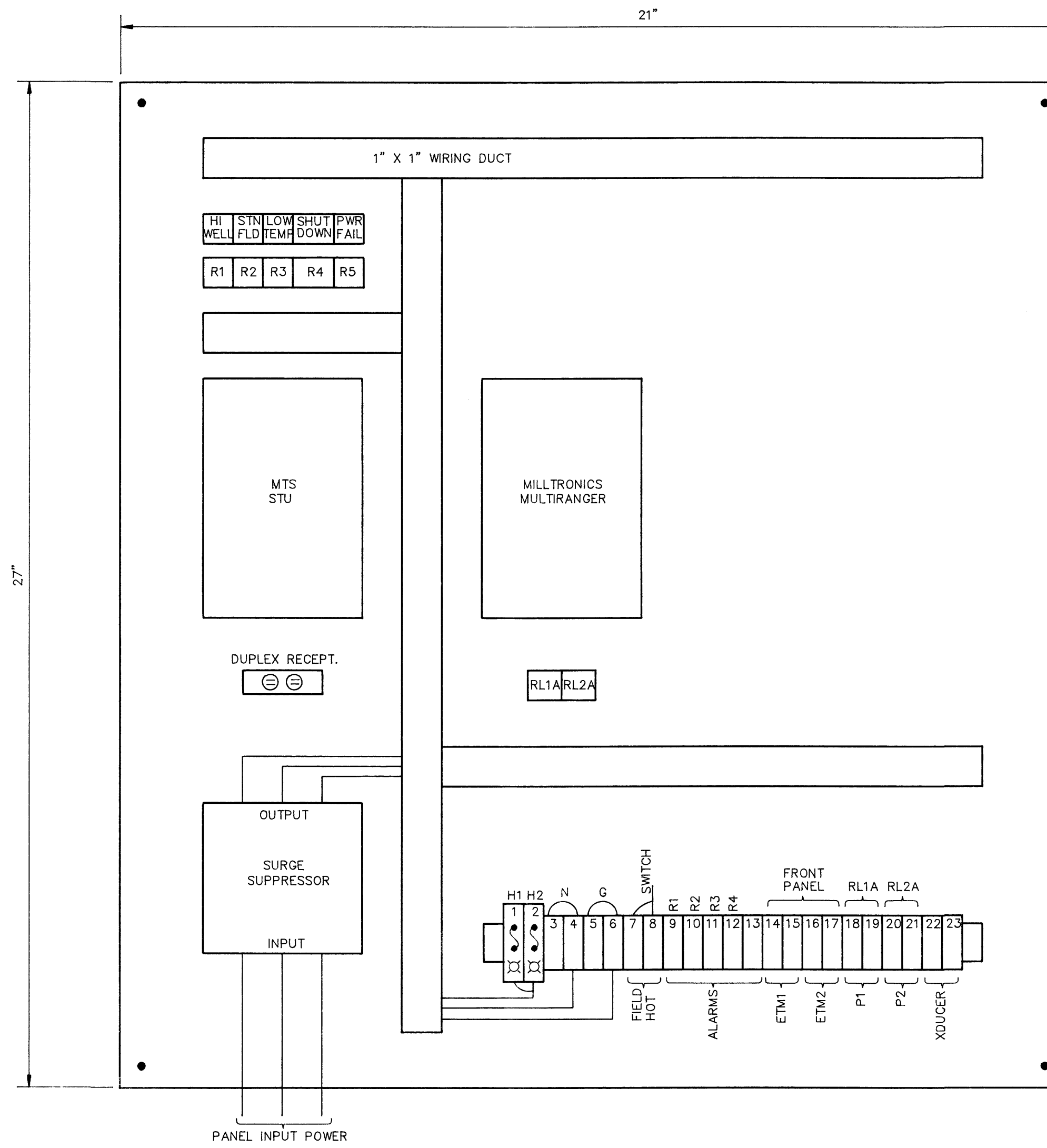
- Notes:** K.JDSK.JFDS.KJH
- ALL NEW EQUIPMENT TO BE IDENTIFIED WITH LAMICOID NAME PLATES.
 - ARRANGE AND PAY FOR ALL PERMITS AND FEES REQUIRED FOR THIS PORTION OF THE WORK INCLUDING ALL INSPECTIONS BY LOCAL AUTHORITY.
 - PROVIDE GROUND SYSTEM TO MEET OEC REQUIREMENTS. GROUND TO SUPPLY SIDE OF WATER SERVICE OR PROVIDE GROUND GRID UTILIZING 3/4" X 10' COPPER CLAD STEEL GROUND ROD. USE NEW INSULATED GROUND CONDUCTOR.
 - ALL EQUIPMENT USED SHALL HAVE CSA APPROVAL OR HAVE APPROVAL FROM LOCAL AUTHORITY.
 - ALL WIRING SHALL BE COPPER. REFER TO SPECIFICATION.
 - ALL EQUIPMENT REMOVED IS TO BE TURNED OVER TO OWNER.
 - COORDINATE ALL WORK WITH OTHER TRADES. CONFIRM ALL EQUIPMENT SIZES AND LOCATIONS PRIOR TO START OF WORK.
 - SEAL ALL CONDUITS LEAVING MCC TO AVOID MOISTURE MIGRATION INTO MCC.
 - REFER TO ARCHITECTURAL DRAWING AND/OR VISIT SITE TO CONFIRM ALL DIMENSIONS & SITE CONDITION. DO NOT SCALE THESE DRAWINGS.
 - CABLE CONNECTIONS TO MOTORS TO USE WATER TIGHT FITTINGS.
 - PROVIDE NEW WIRE AND CONDUIT CONNECTION TO NEW MOTORS. FINAL MOTOR CONNECTION TO BE VIA "GAB TREE" MOUNT LOCK OFF STOP (LOS) PUSHBUTTONS ON WALL ADJACENT TO MOTORS AS SHOWN.
 - COORDINATE INSTALLATION OF SERVICE WITH MANITOBA HYDRO. CONFIRM REQUIREMENTS AND LOCATION FOR SERVICE CONDUCTOR TERMINATIONS AND REVENUE METER. EXISTING DISTRIBUTION IS TO BE REMOVED.
 - EXISTING EQUIPMENT NOT SHOWN IS TO REMAIN AS IS. PROVIDE ELECTRICAL CONNECTIONS AS REQUIRED TO NEW DISTRIBUTION TO PROPERLY POWER THIS EQUIPMENT.
 - EXISTING TELEPHONE SERVICE IS TO BE RECONNECTED TO EXISTING TELEPHONE AND ALARM PANEL. PROVIDE NEW ENTRY INTO STATION AND NECESSARY TERMINATION EQUIPMENT. SEAL ALL CONDUIT ENTRIES INTO BUILDING. ARRANGE AND COORDINATE SERVICE MODIFICATIONS WITH MTS.
 - PUMP CONTROL SYSTEM FOR PUMPS P1 AND P2 IS TO BE SUPPLIED AND INSTALLED BY OWNER. CONTRACTOR TO PROVIDE SPACE AS SHOWN IN MCC FOR MOUNTING OF AUTO ALTERNATOR AND CONTROL CONNECTIONS BY OWNER.
 - SINGLE PHASE DISTRIBUTION CONNECTION BY CONTRACTOR TO ENSURE THAT PROPER PHASE WIRES ARE UTILIZED. MANITOBA HYDRO SERVICE UTILIZES A WYE ARRANGEMENT. MEASURE PHASE CONDUCTOR VOLTAGES TO CONFIRM PROPER CONNECTION AND DEMONSTRATE TO OWNER PRIOR TO BEING ENERGIZED.
 - MAINTAIN PUMP STATION OPERATION DURING CONSTRUCTION. COORDINATE WITH OWNER.

B.M. ELEV.	ENGINEER'S SEAL	<p>THE CITY OF WINNIPEG WORKS AND OPERATIONS DIVISION WATERWORKS WASTE AND DISPOSAL DEPARTMENT</p>	CITY DRAWING NUMBER
DESIGNED BY T.W.	CHECKED BY T. WHITESIDE		SHEET 2 OF 2
DRAWN BY EN	APPROVED BY	<p>METCALFE LIFT STATION UPGRADING ELECTRICAL</p>	1340
HOR. SCALE AS SHOWN	RELEASED FOR CONSTRUCTION		CONSULTANT DRAWING NO.
NO. REVISIONS	DATE BY	DATE DECEMBER 1990	DATE

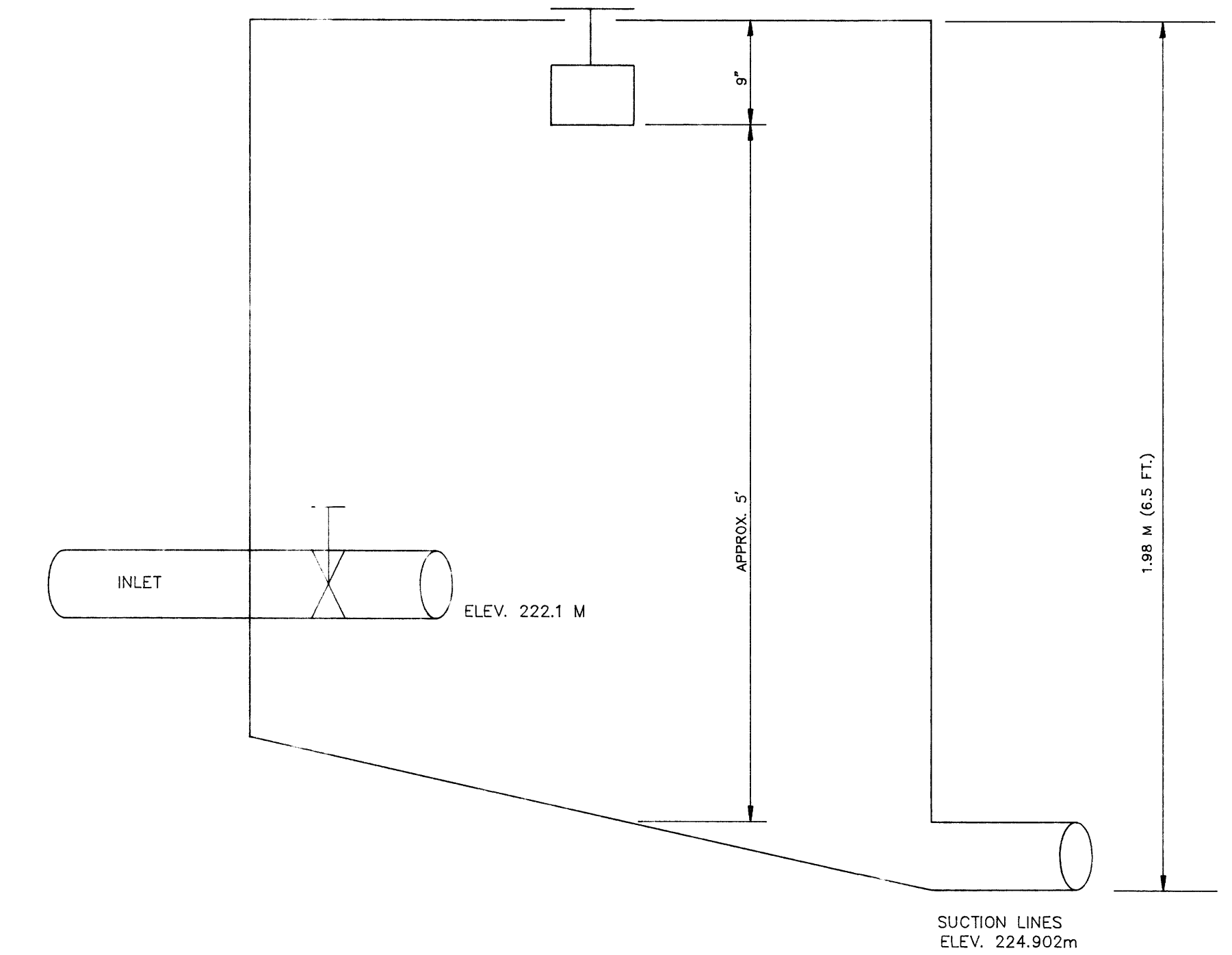
ALARM SCHEMATIC



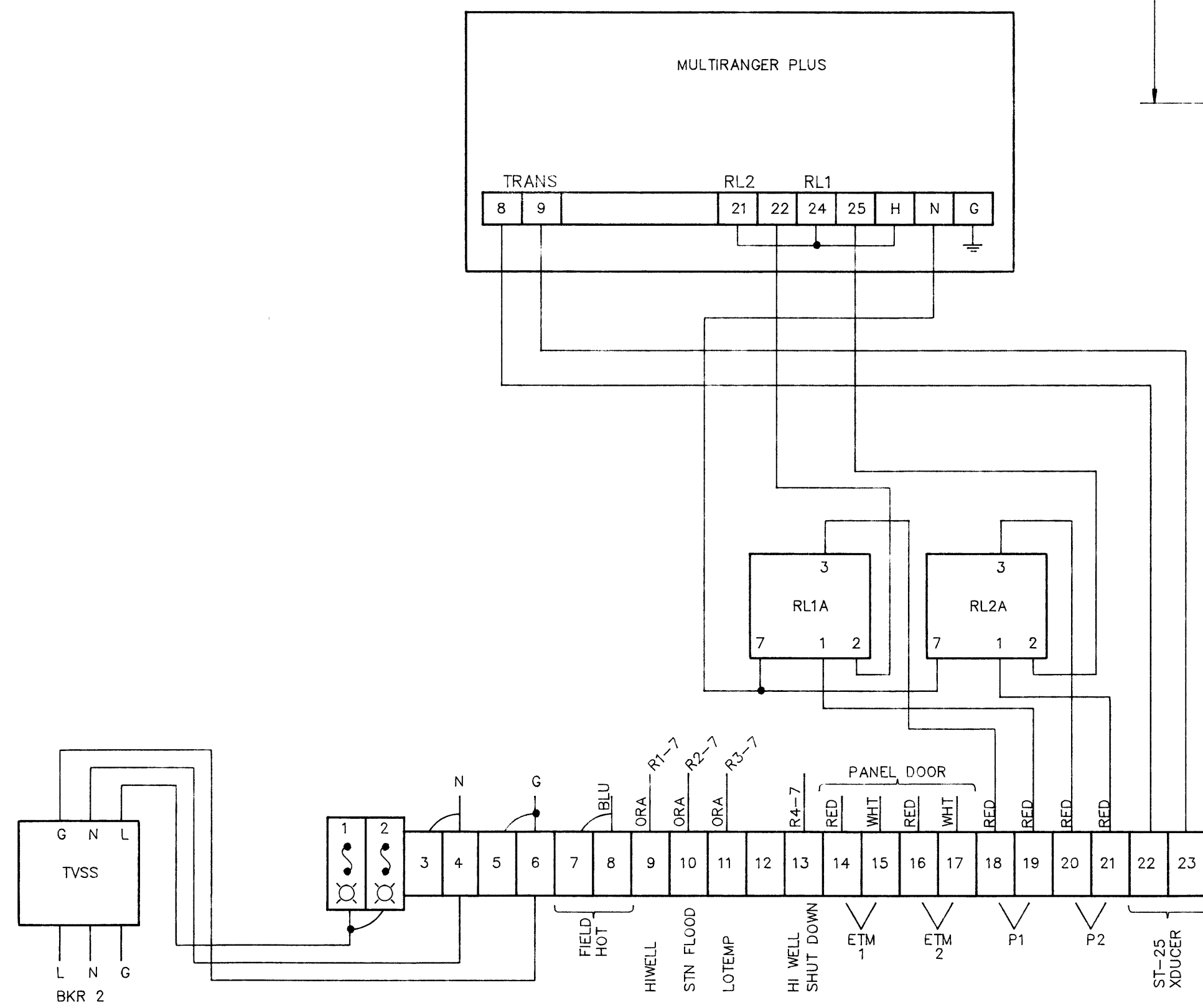
BACK PANEL LAYOUT



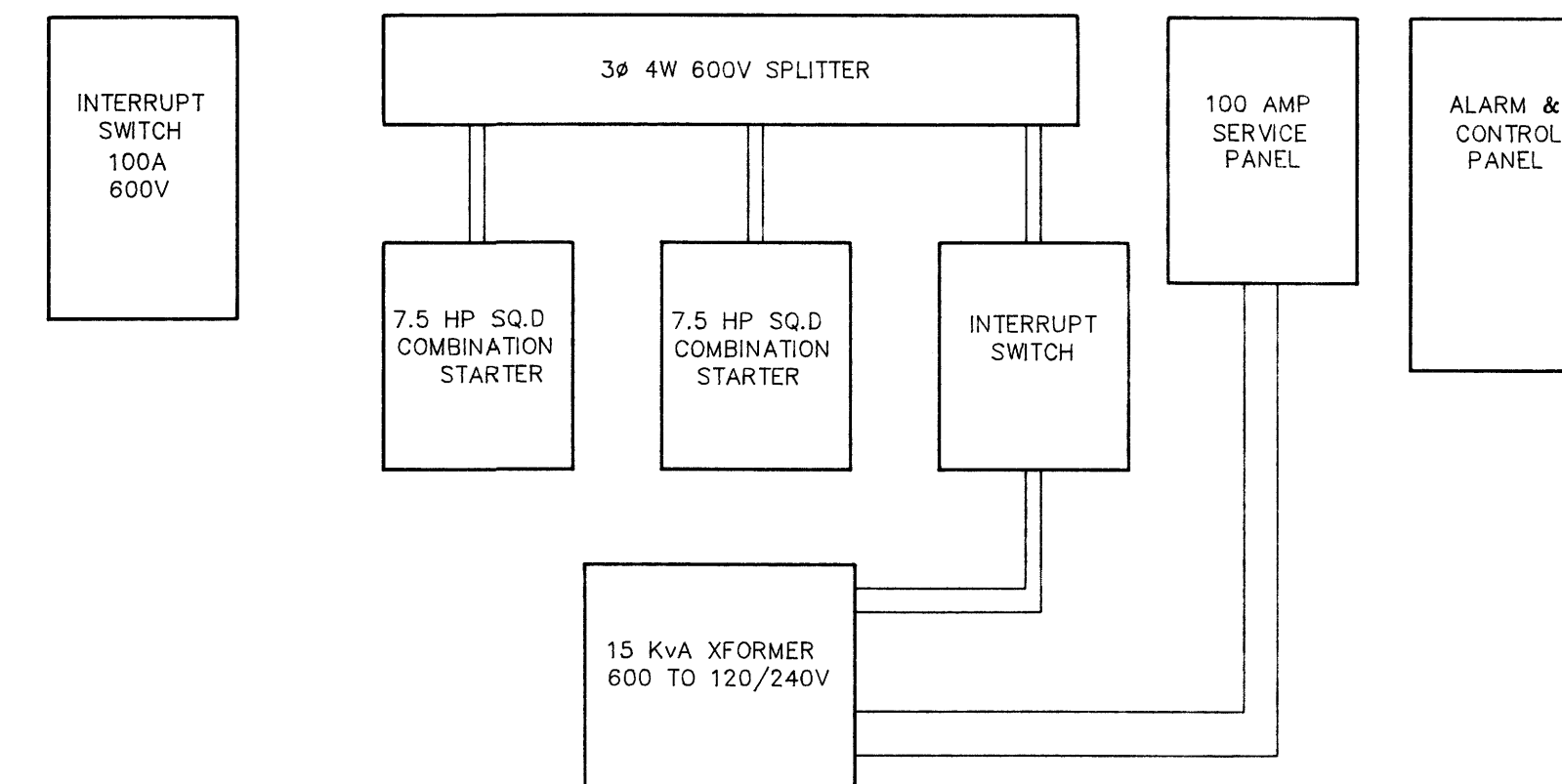
SUMP DIAGRAM



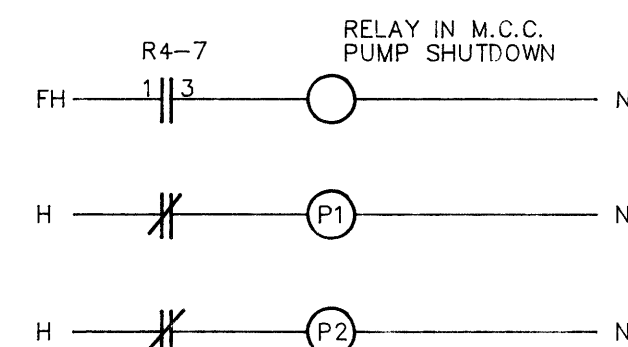
WIRING DIAGRAM



ELECTRICAL DISTRIBUTION LAYOUT



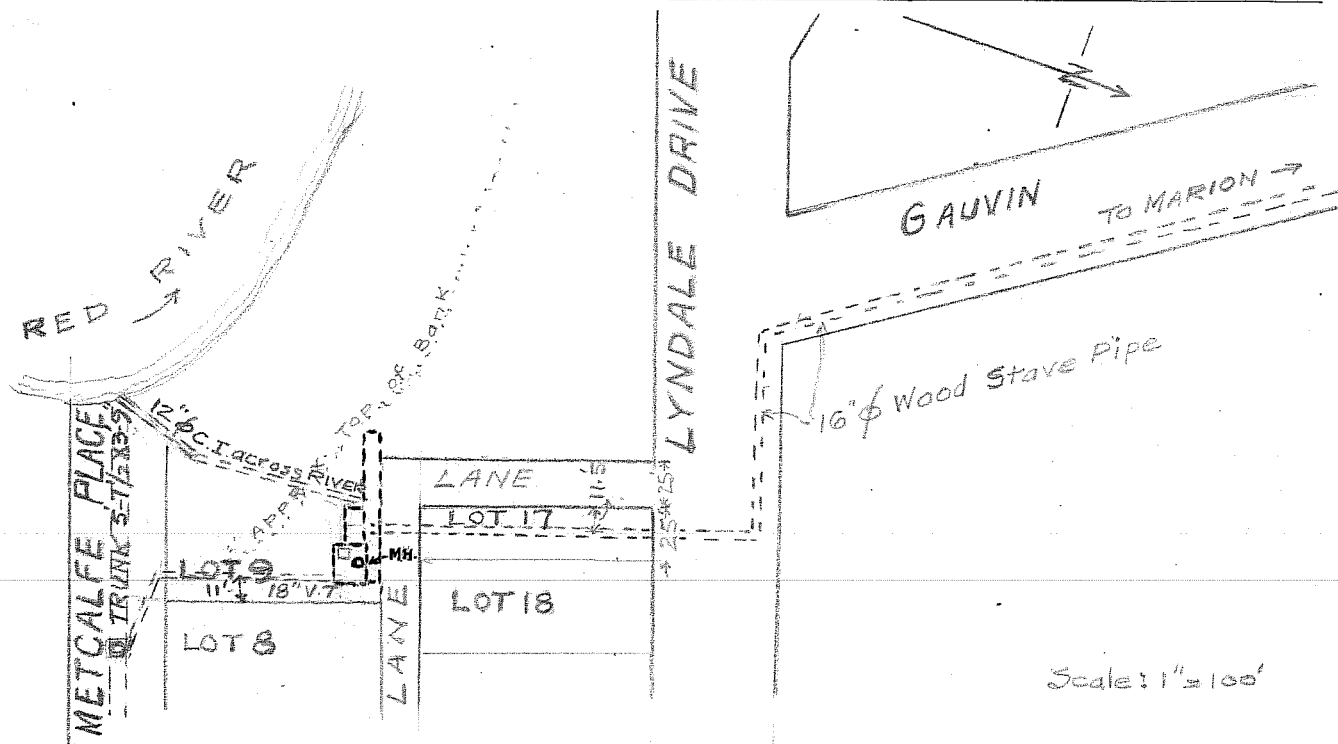
1409



B.M. ELEV.	ENGINEER'S SEAL	<p>THE CITY OF WINNIPEG WORKS AND OPERATIONS DIVISION WATERWORKS WASTE AND DISPOSAL DEPARTMENT</p>	SHEET OF
			METCALFE LIFT STATION ELECTRICAL AND CONTROL UPGRADING
DESIGNED BY M. JEGUES	CHECKED BY M. JEGUES	CONSULTANT DRAWING NO.	1409
DRAWN BY M.B. DAHL	APPROVED BY		
HOR. SCALE VERTICAL N.T.S.	RELEASED FOR CONSTRUCTION		
NO. REVISIONS	DATE BY	DATE SEPTEMBER 1992	DATE

file # SP10409 PLOT DATE SEPTEMBER 03, 1992

ADMIN CONNECTION WITH



LOCATION: UNDERGROUND ON G.W.S.D. PROPERTY. LOT 9 D.G.S. 101 ST BONIFACE PLAN 73
 ACCESS TO PUMP ROOM AND COMMINUTOR CHAMBER BY COMMON M.H.
 G.W.S.D. ALSO OWNS LOT 17 (25 FT) BLK. 56 D.G.S. 93-100 ST. BON. PLAN 385