

## **Appendix C**

### **Proposed Chamber Modifications and Work Plans**



# Site 1 - St. James Interceptor 500 & 600 mm Inspections

## Required Work:

- .1 Abandon existing 300 mm pipe
- .2 Complete cleaning operation
- .3 Install temporary flow-through by-pass plugs
- .4 Complete inspection operations
- .5 Remove temporary plugs and restore flow

Close Sluice Gate within Weir Chamber Prior to Installation of Bypass Plugs

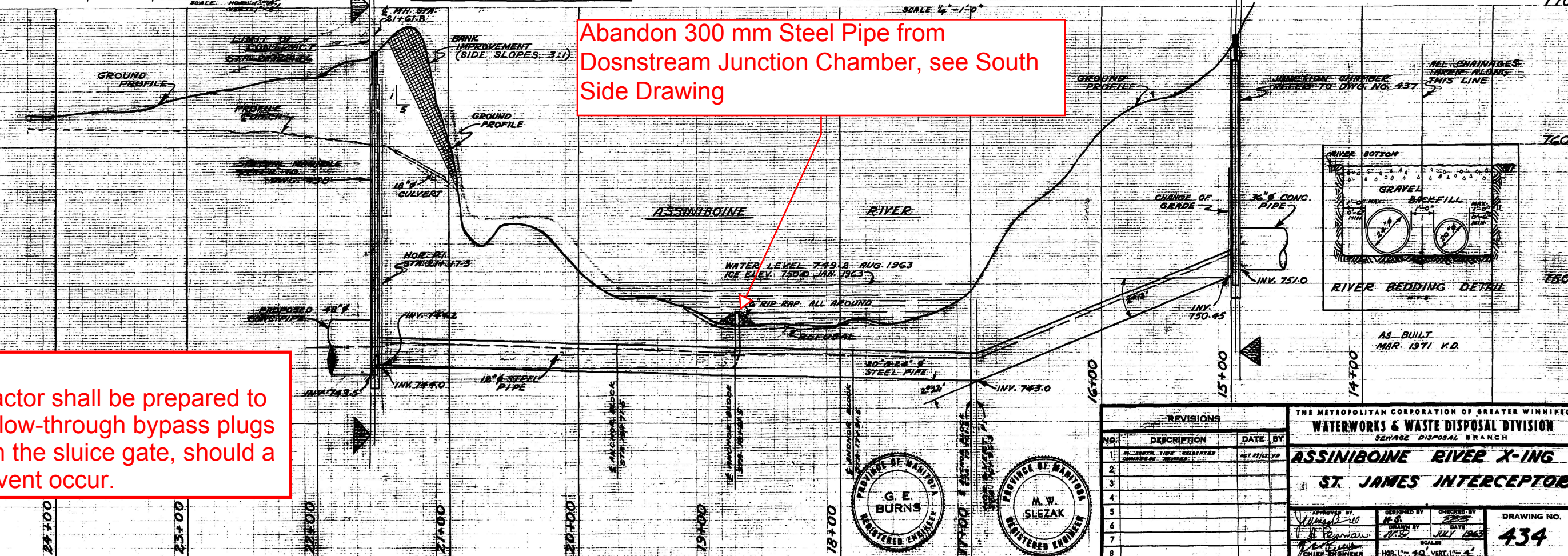
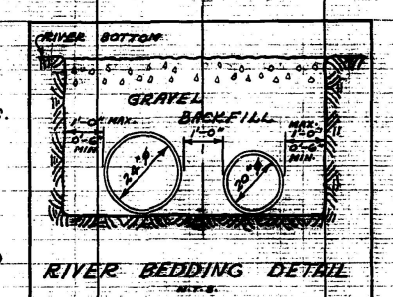
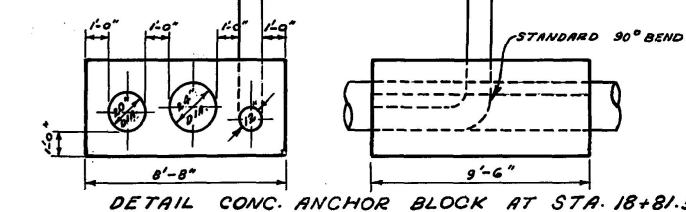
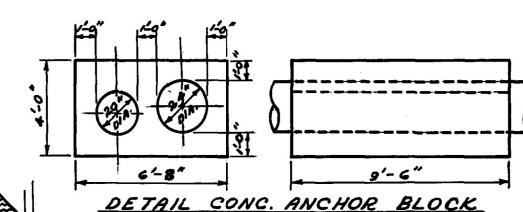
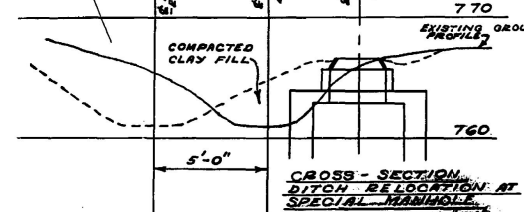
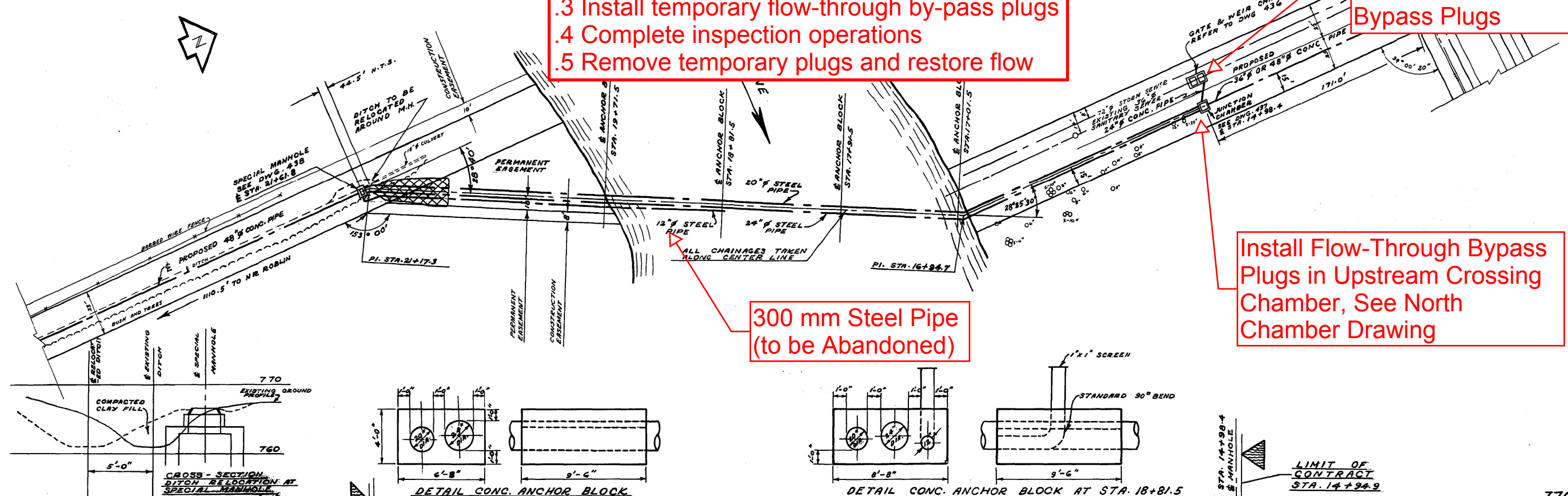
Install Flow-Through Bypass Plugs in Upstream Crossing Chamber, See North Chamber Drawing

300 mm Steel Pipe (to be Abandoned)

Abandon 300 mm Steel Pipe from Downstream Junction Chamber, see South Side Drawing

## Notes:

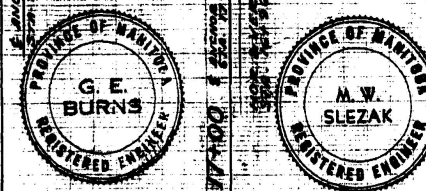
- .1 Contractor shall be prepared to remove flow-through bypass plugs and open the sluice gate, should a rainfall event occur.



REVISIONS		
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THE METROPOLITAN CORPORATION OF GREATER WINNIPEG			
WATERWORKS & WASTE DISPOSAL DIVISION			
SEWER DISPOSAL BRANCH			
ASSINIBOINE RIVER X-ING			
ST. JAMES INTERCEPTOR			
APPROVED BY	DESIGNED BY	CHECKED BY	DRAWING NO.
<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	434
SCALE		DATE	
HOR. 1" = 40'		JULY 1963	
VERT. 1" = 4'			





# Site 1 - St. James Interceptor - North Side

## 500 & 600 mm Inspections

### Bypass Plug Installation Procedure:

- .1 Close sluice gate in weir chamber.
- .2 Install tether lines for all plugs.
- .3 Pull flow-through bypass plugs complete with discharge hose into upstream junction chamber pipes and inflate (to be done with live flow). Allow discharge hose to dump into junction chamber.
- .4 Install plugs into upstream sewer manholes pipes and inflate (max 45 minutes)
- .6 Install bypass piping and tee in junction chamber.
- .7 Deflate upstream sewer plugs and remove from pipe
- .8 Removal procedure opposite of installation without installation of upstream plugs

.1 Install 600 mm flow-through plug with 375 mm bypass  
 .2 Recess plug into pipe to reduce curvature of bypass piping

.1 Insert bypass piping min 1.2 m into siphon pipe (the bypass into the 500 mm siphon shown)  
 .2 If required, use sandbags to prevent backflow into chamber

.1 Install 375 mm Bypass Piping c/w 375 mm Tee  
 .2 Route piping out of way during inspection of 500 mm pipe

.1 Install 900 mm flow-through plug with a 375 mm bypass  
 .2 Recess plug into pipe to reduce curvature of bypass piping

Install Temporary 900 mm Inflatable Plug For Installation of Bypass Piping (Max 45 minutes)

Install 600 mm flow-through bypass plug

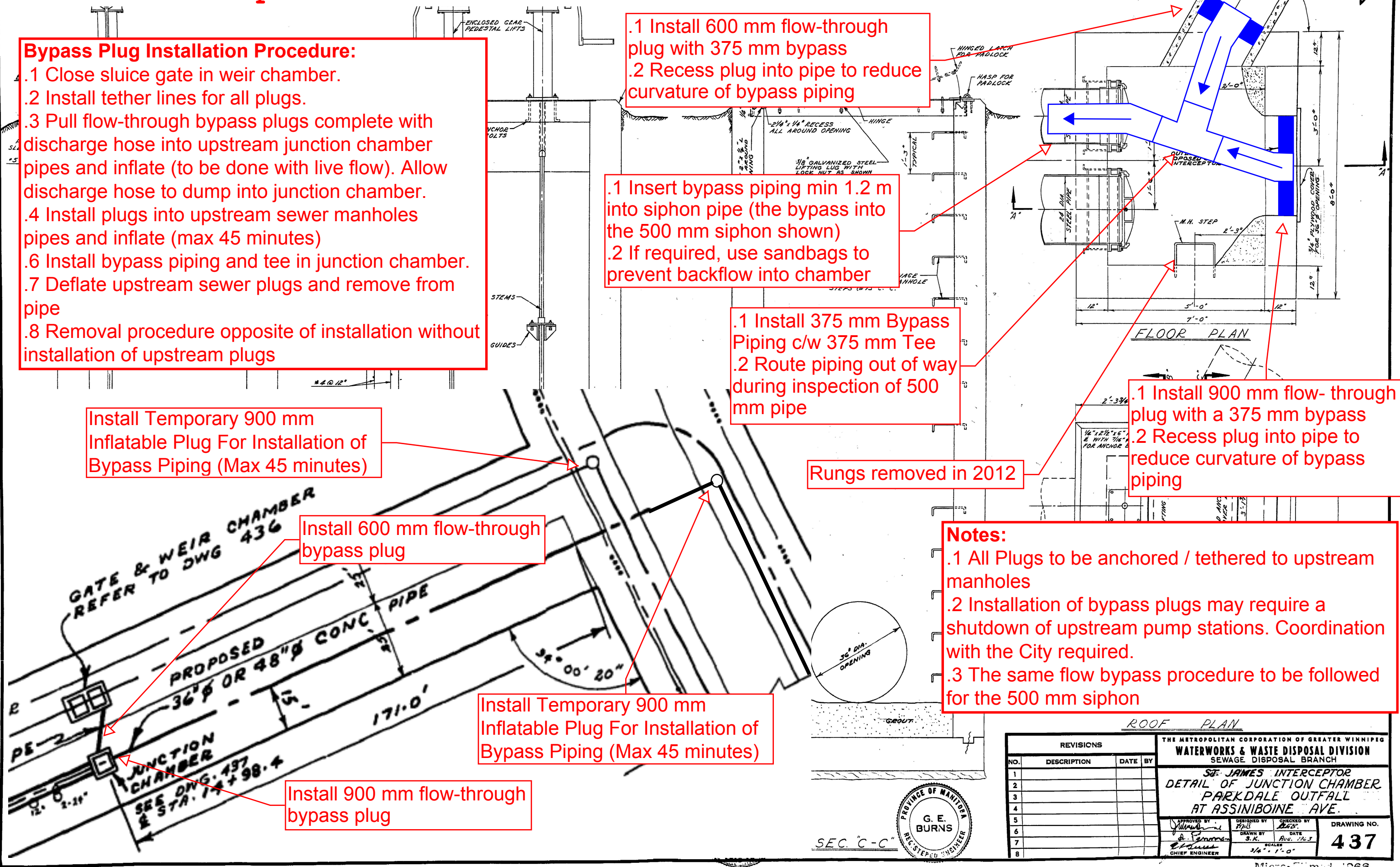
Install Temporary 900 mm Inflatable Plug For Installation of Bypass Piping (Max 45 minutes)

Install 900 mm flow-through bypass plug

Rungs removed in 2012

**Notes:**

- .1 All Plugs to be anchored / tethered to upstream manholes
- .2 Installation of bypass plugs may require a shutdown of upstream pump stations. Coordination with the City required.
- .3 The same flow bypass procedure to be followed for the 500 mm siphon



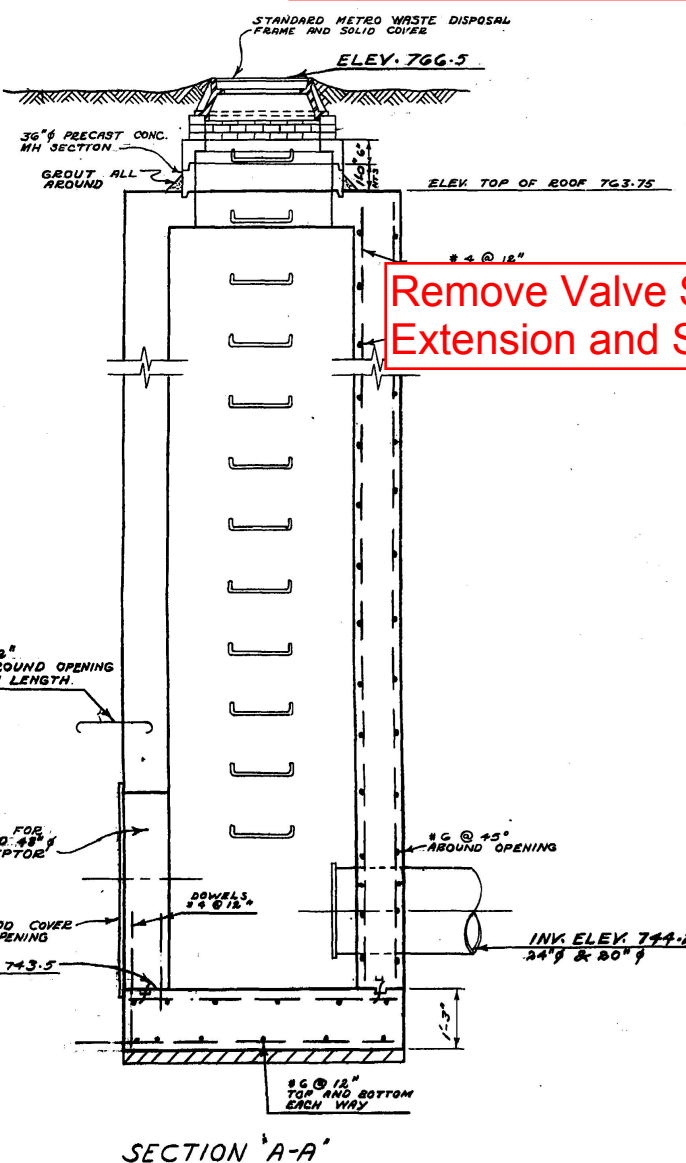
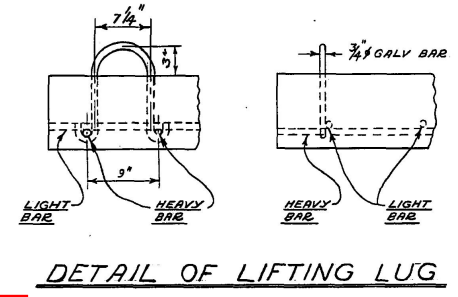
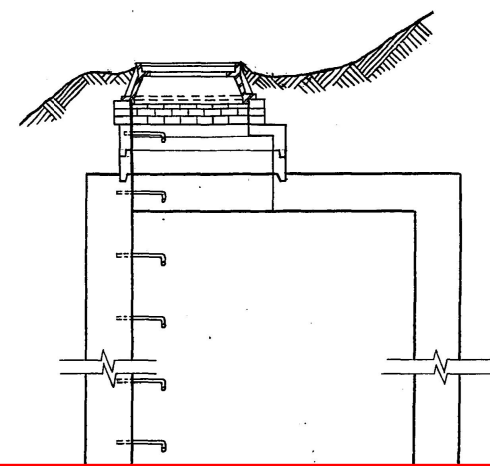
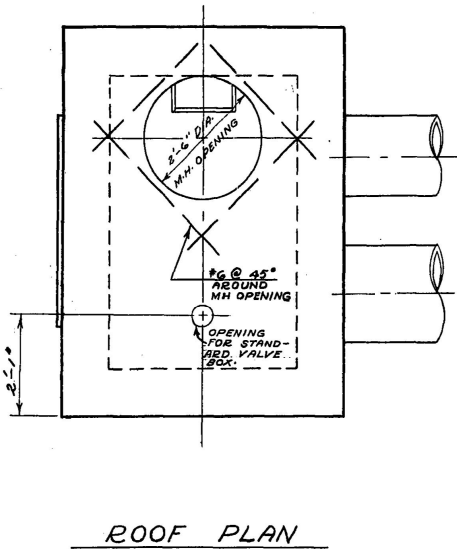
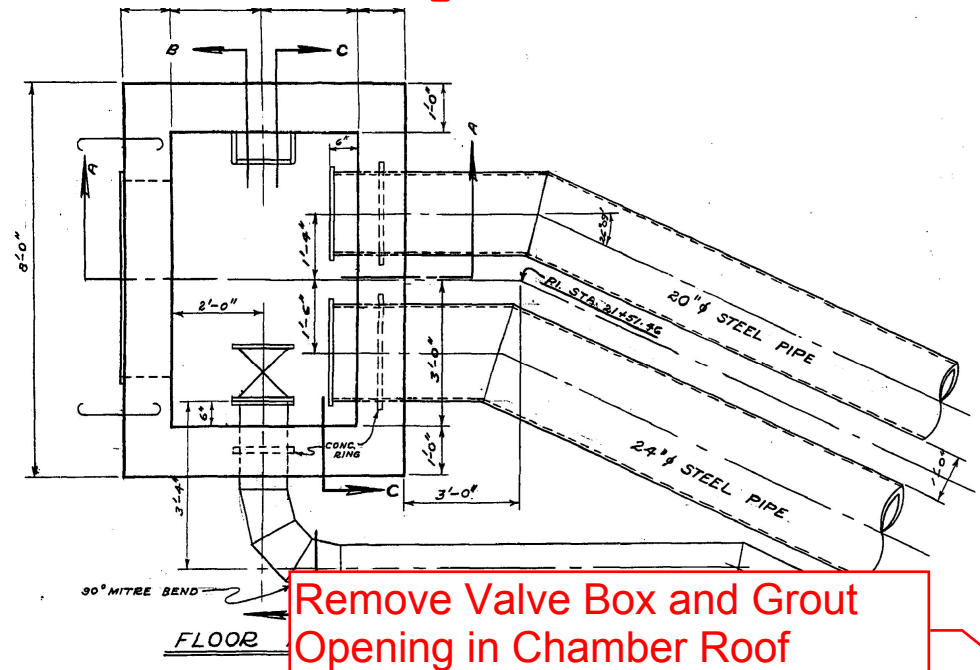
REVISIONS				THE METROPOLITAN CORPORATION OF GREATER WINNIPEG	
NO.	DESCRIPTION	DATE	BY	WATERWORKS & WASTE DISPOSAL DIVISION SEWAGE DISPOSAL BRANCH	
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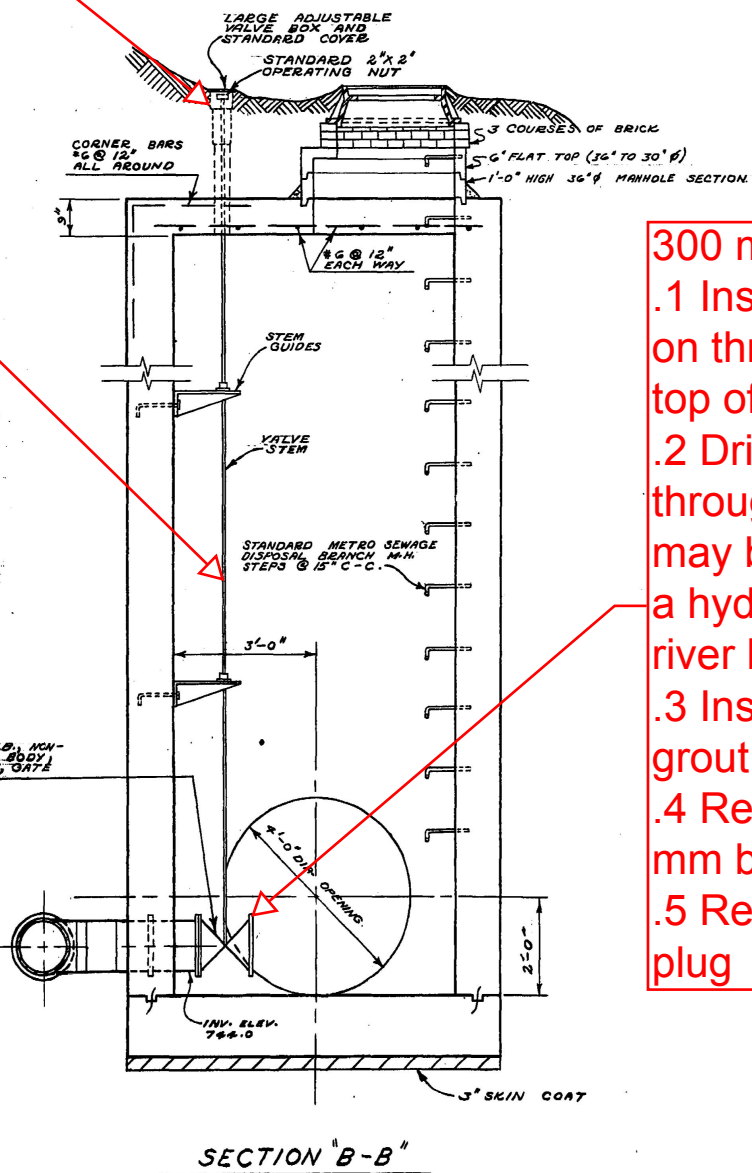
APPROVED BY <i>[Signature]</i> CHIEF ENGINEER	DESIGNED BY <i>[Signature]</i>	CHECKED BY <i>[Signature]</i>	DRAWING NO. <b>437</b>
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# Site 1 - St. James Interceptor - South Side 500 & 600 mm Inspections



Remove Valve Stem Extension and Supports



**300 mm Pipe Abandonment :**

- 1 Install 50 mm tapping saddle or weld on thread-o-let, and 50 mm ball valve on top of steel pipe
- 2 Drill minimum 38 mm hole in pipe through ball valve. Close valve (The pipe may be open to the river and exposed to a hydrostatic head equal to that of the river level)
- 3 Install grouting tube. Pump minimum grout into line (Est 5 m<sup>3</sup>). Allow to set
- 4 Remove 300 mm valve and install 300 mm blind flange
- 5 Remove ball valve and install 50 mm plug

TEL CONTRACTOR TO SUPPLY 1-20" AND 1-24" END FLANGES FOR STEEL PIPE.



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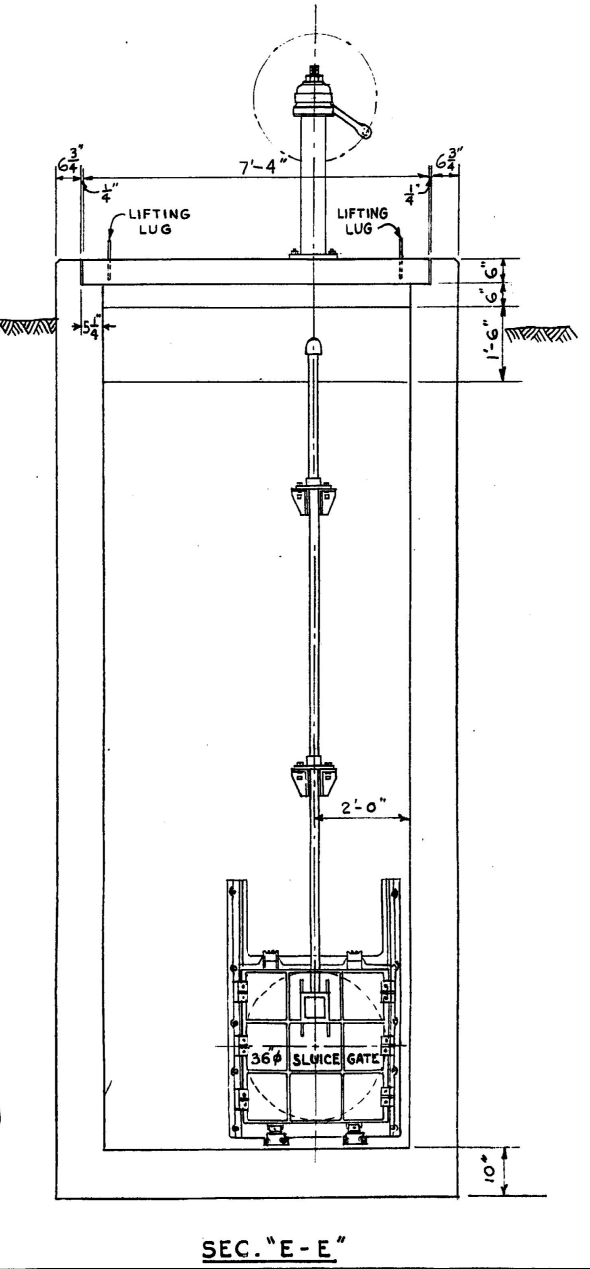
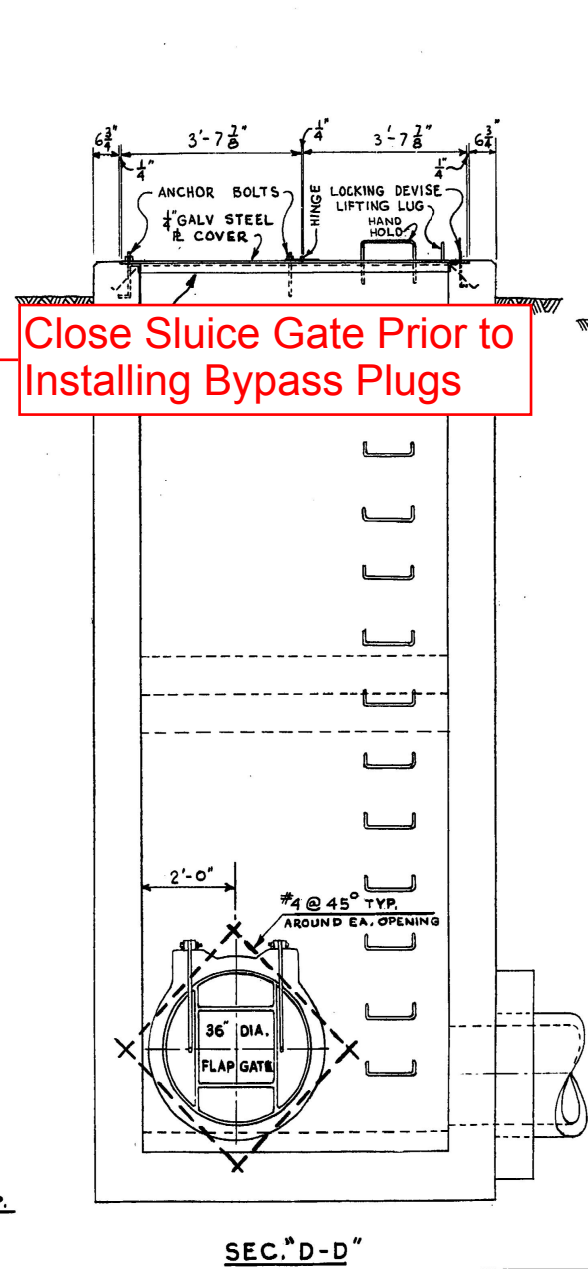
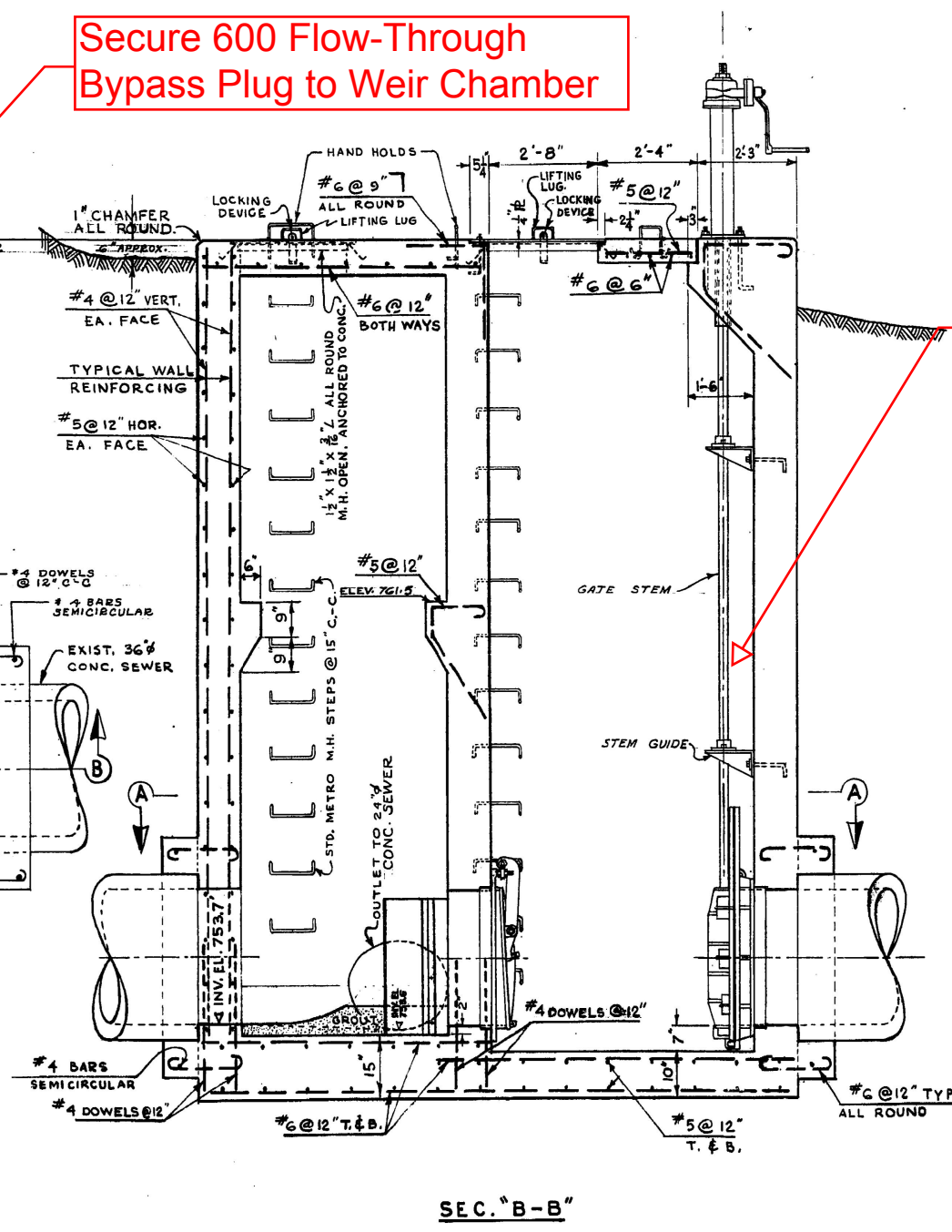
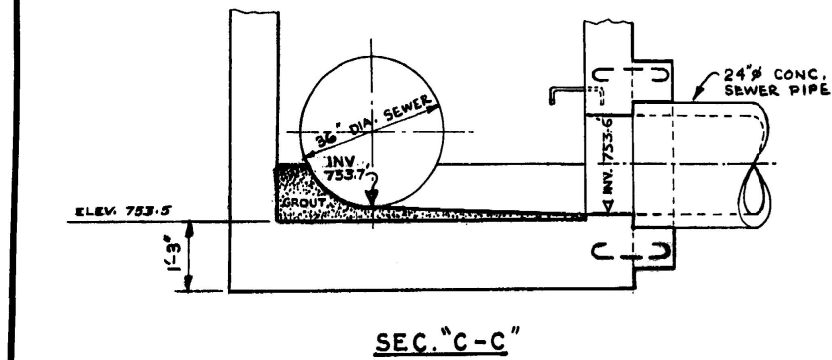
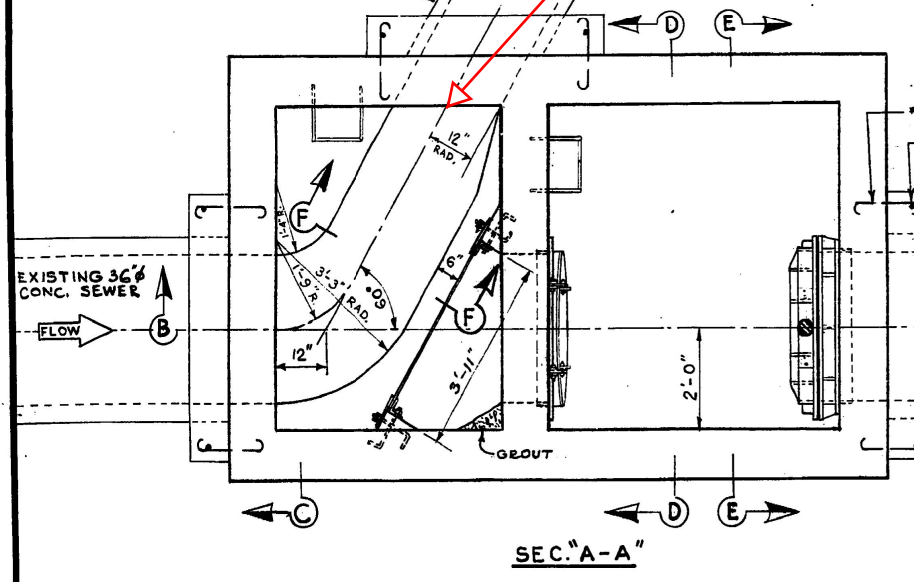
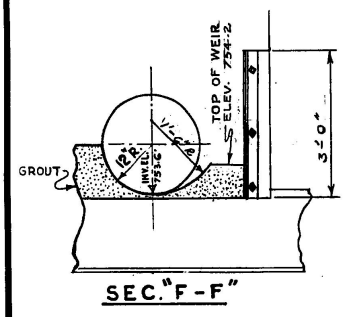
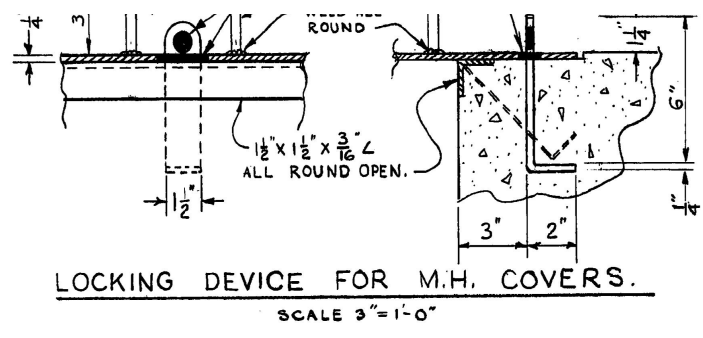
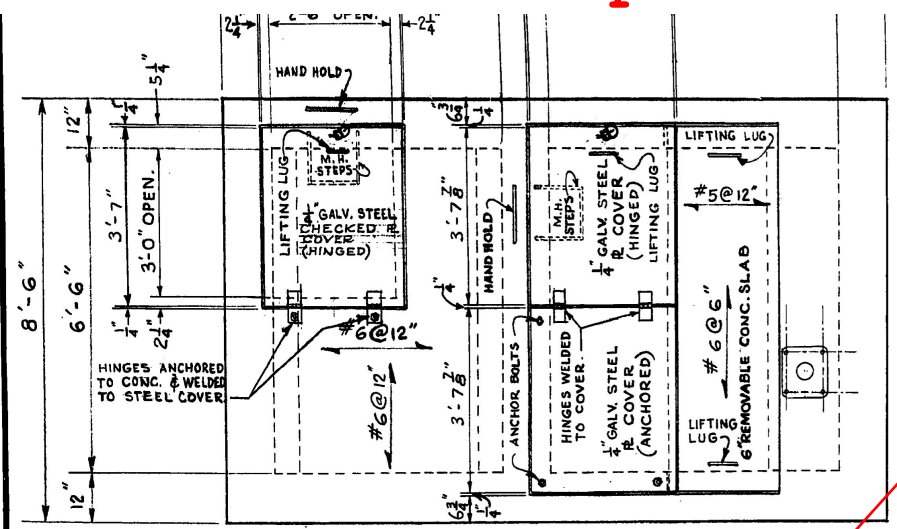
THE METROPOLITAN CORPORATION OF GREATER WINNIPEG WATERWORKS & WASTE DISPOSAL DIVISION SEWAGE DISPOSAL BRANCH			
<b>ST. JAMES INTERCEPTOR SPECIAL MANHOLE ASSINIBOINE RIVER CROSSING</b>			
APPROVED BY <i>[Signature]</i> CHIEF ENGINEER	DESIGNED BY M.S. V.D.	CHECKED BY DATE JUNE 1963	DRAWING NO. <b>438</b>
SCALE 1/2" = 1'-0"			



# Site 1 - St. James Interceptor - Weir Chamber

## 500 & 600 mm Inspections

**NOTE:**  
 ① ALL INVERTS AND ELEVATIONS TO BE CHECKED PRIOR TO CONSTRUCTION.  
 ② SEE DRAWING 438 FOR LIFTING LUG DETAIL.



Secure 600 Flow-Through Bypass Plug to Weir Chamber

Close Sluice Gate Prior to Installing Bypass Plugs

REVISIONS				THE METROPOLITAN CORPORATION OF GREATER WINNIPEG	
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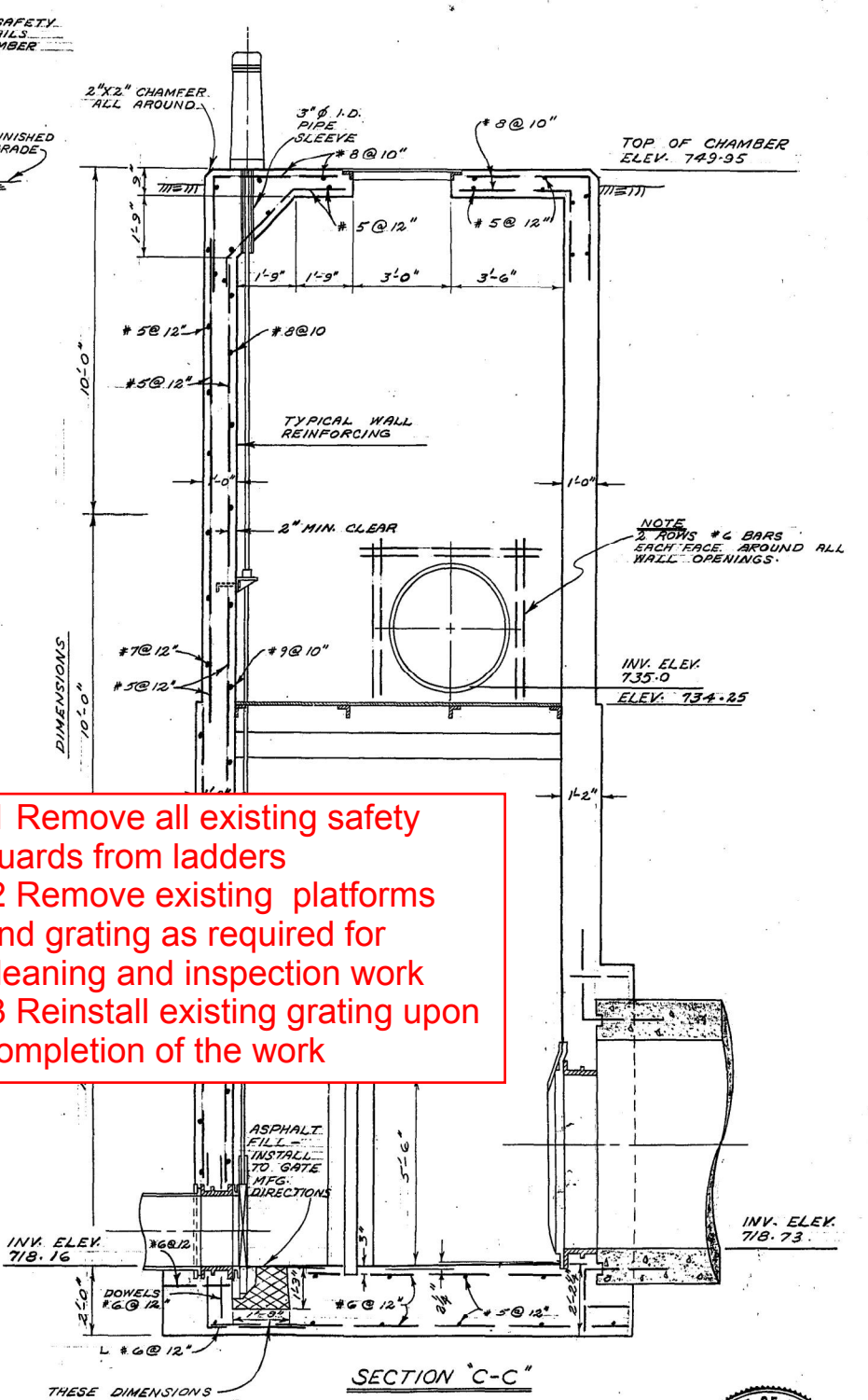
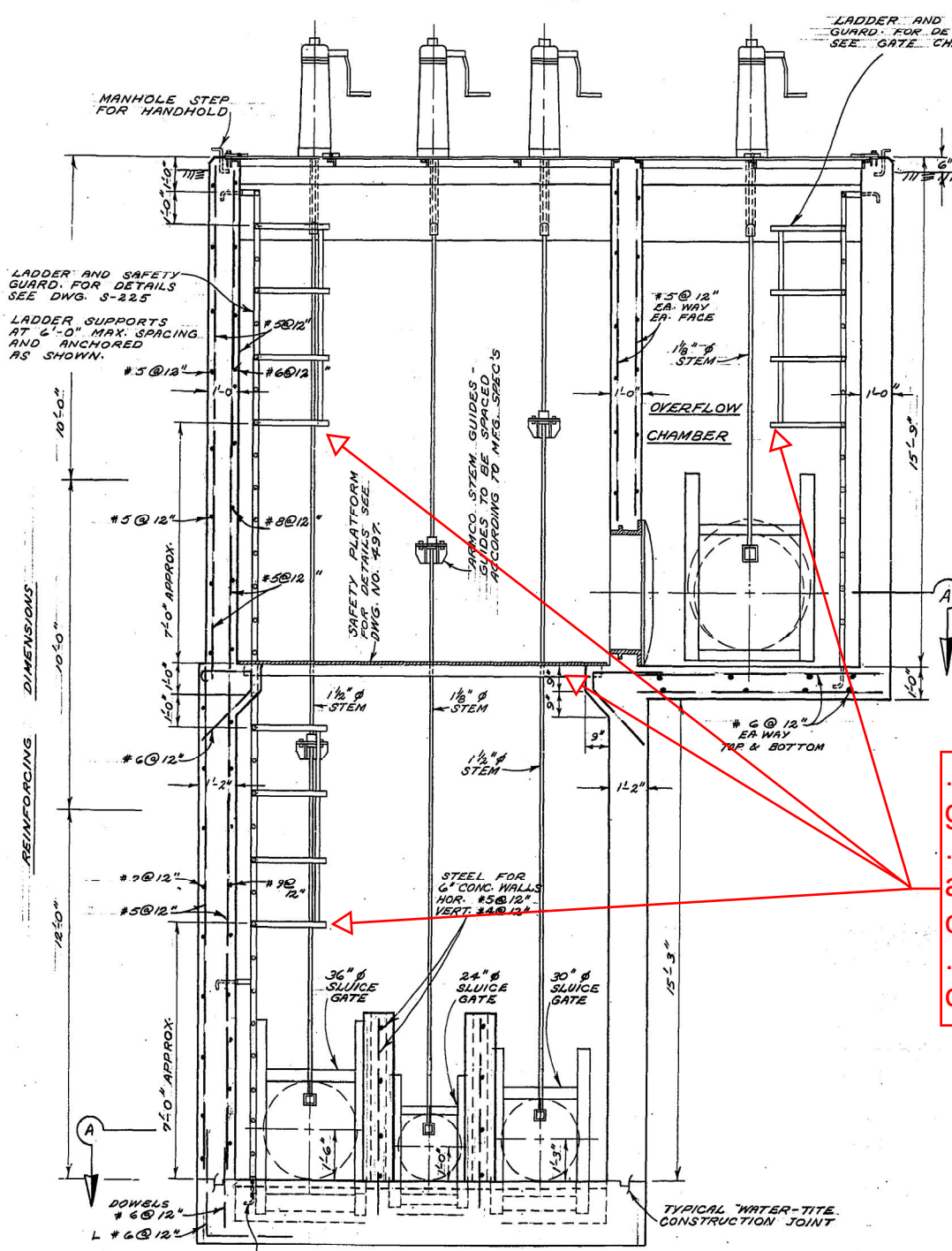
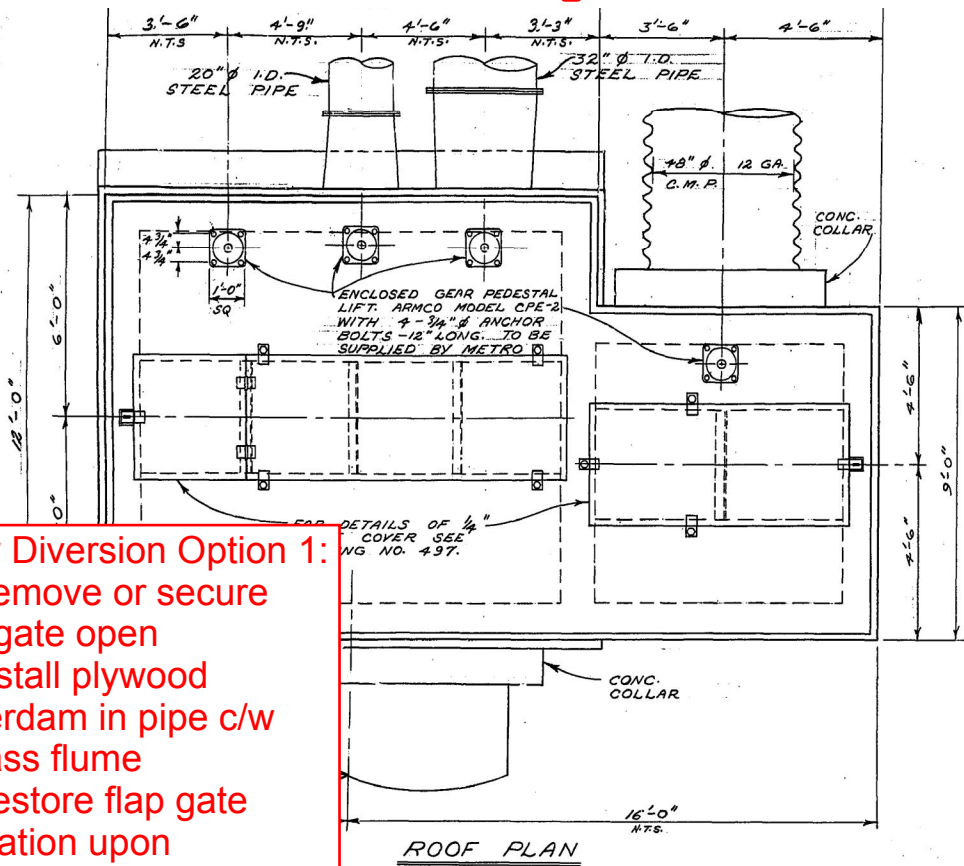
  

APPROVED BY <i>[Signature]</i> CHIEF ENGINEER	DESIGNED BY <i>[Signature]</i>	CHECKED BY <i>[Signature]</i>	DATE APR 1963	DRAWING NO. <b>436</b>
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# Site 2a & 2b - Northeast Interceptor Siphon - East Side

## 800 & 500 mm Inspection

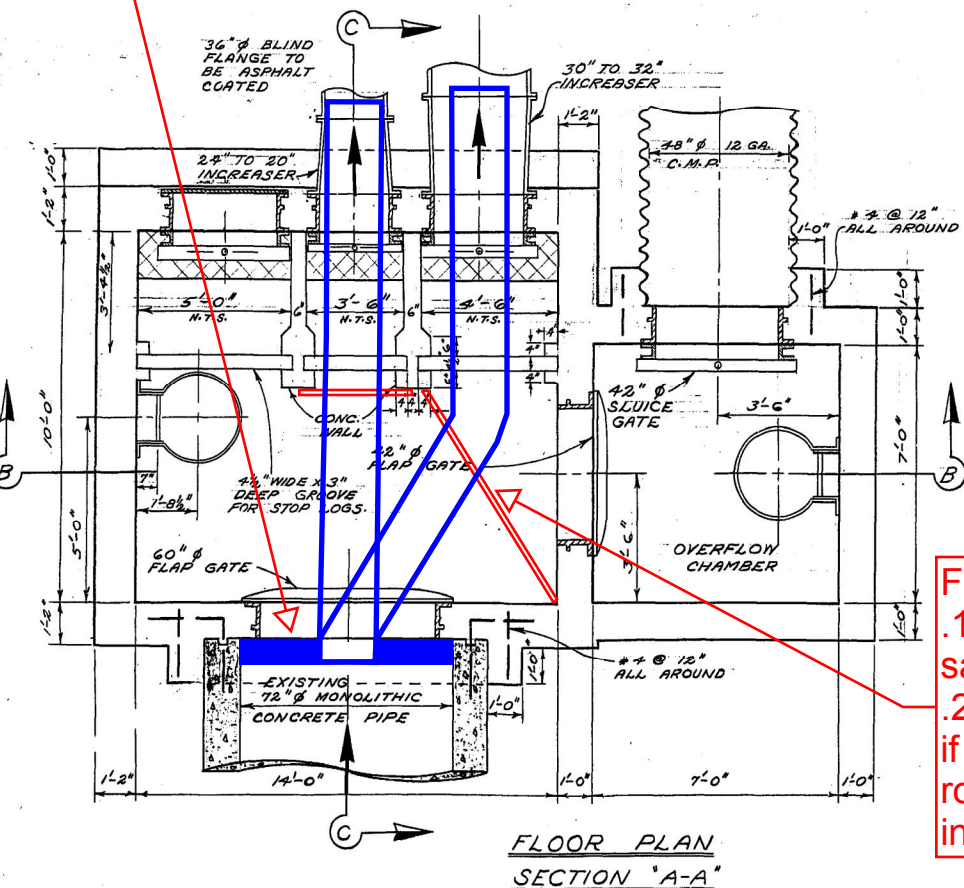


**Flow Diversion Option 1:**

- 1 Remove or secure flap gate open
- 2 Install plywood cofferdam in pipe c/w bypass flume
- 3 Restore flap gate operation upon completion of work

**Flow Diversion Option 2:**

- 1 Remove all existing safety guards from ladders
- 2 Remove existing platforms and grating as required for cleaning and inspection work
- 3 Reinstall existing grating upon completion of the work



**Flow Diversion Option 2:**

- 1 Install plywood and sandbag flow diversions
- 2 Stoplogs may be used if there is adequate room to launch inspection tools

SURVEYED & PLAN CHECKED BY: APPROVED AS BUILT BY: DATE: MAR 1978

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

SEWAGE DISPOSAL DEPT.  
 NORTH-EAST INTERCEPTOR RIVER CROSSING  
 SIPHON INLET CHAMBER

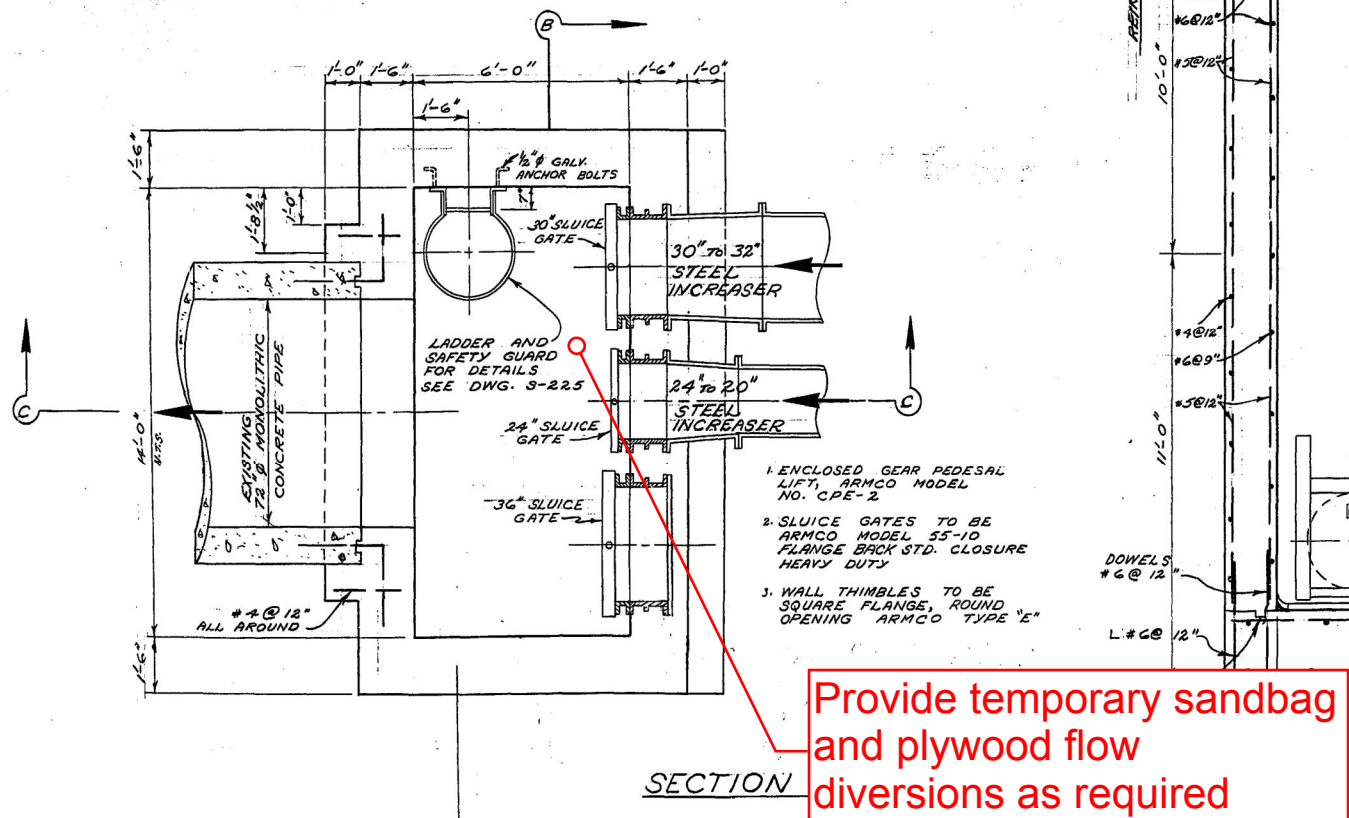
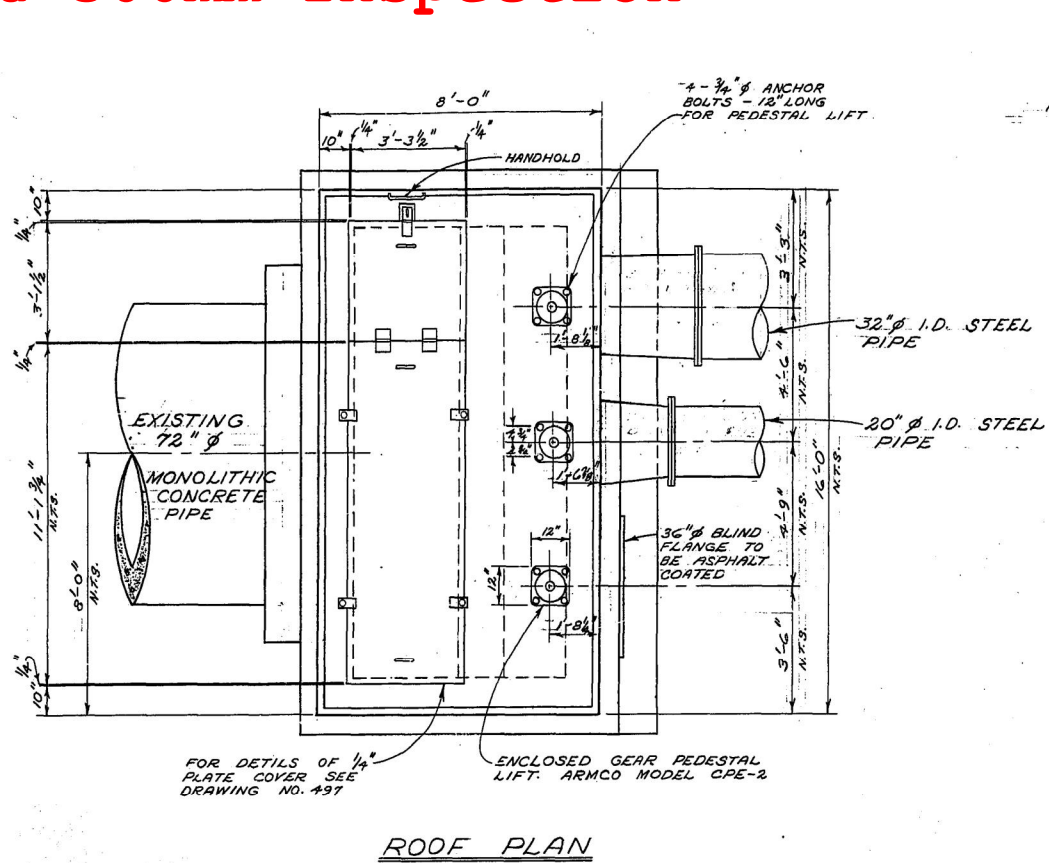


SCALE: 3/8" = 1'-0"  
 DRAWING NO. 495

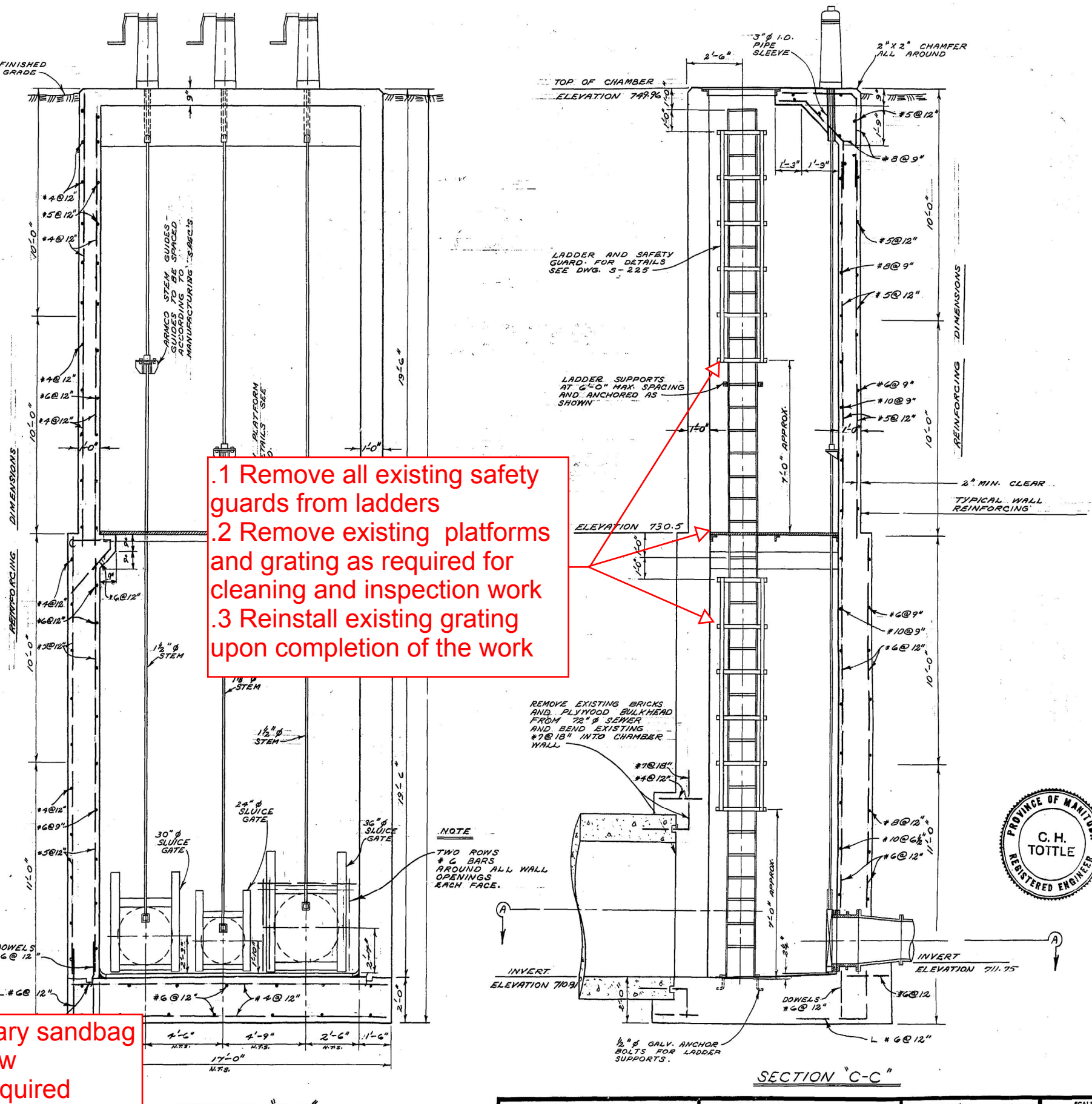


# Site 2a & 2b - Northeast Interceptor Siphon - West Side

## 800mm & 500mm Inspection



Provide temporary sandbag and plywood flow diversions as required



1 Remove all existing safety guards from ladders  
 2 Remove existing platforms and grating as required for cleaning and inspection work  
 3 Reinstall existing grating upon completion of the work



SURVEYED & PLAN CHECKED BY: [Signature]  
 APPROVED AS BUILT BY: [Signature] MAR 1972

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

SEWER DISPOSAL DEPT.  
 NORTH-EAST INTERCEPTOR RIVER CROSSING  
 SIPHON OUTLET CHAMBER

DES. DATE: [Signature] CH'D. DATE: [Signature]  
 ENR. DATE: [Signature]  
 DRAWING NO. 496

# Site 3a - Newton Avenue Forcemain Crossing - East Side

.1 Remove existing knife gate valve and spool piece to facilitate launching of cleaning and inspection tools  
 .2 Install new 350 mm stainless steel knife gate valve and 350 mm DI spool piece (FixVic) once inspection work is complete

Install new 350 mm stainless steel knife gate valve

Reinstall existing spool

Install new 350 x 300 mm FixFI concentric reducer

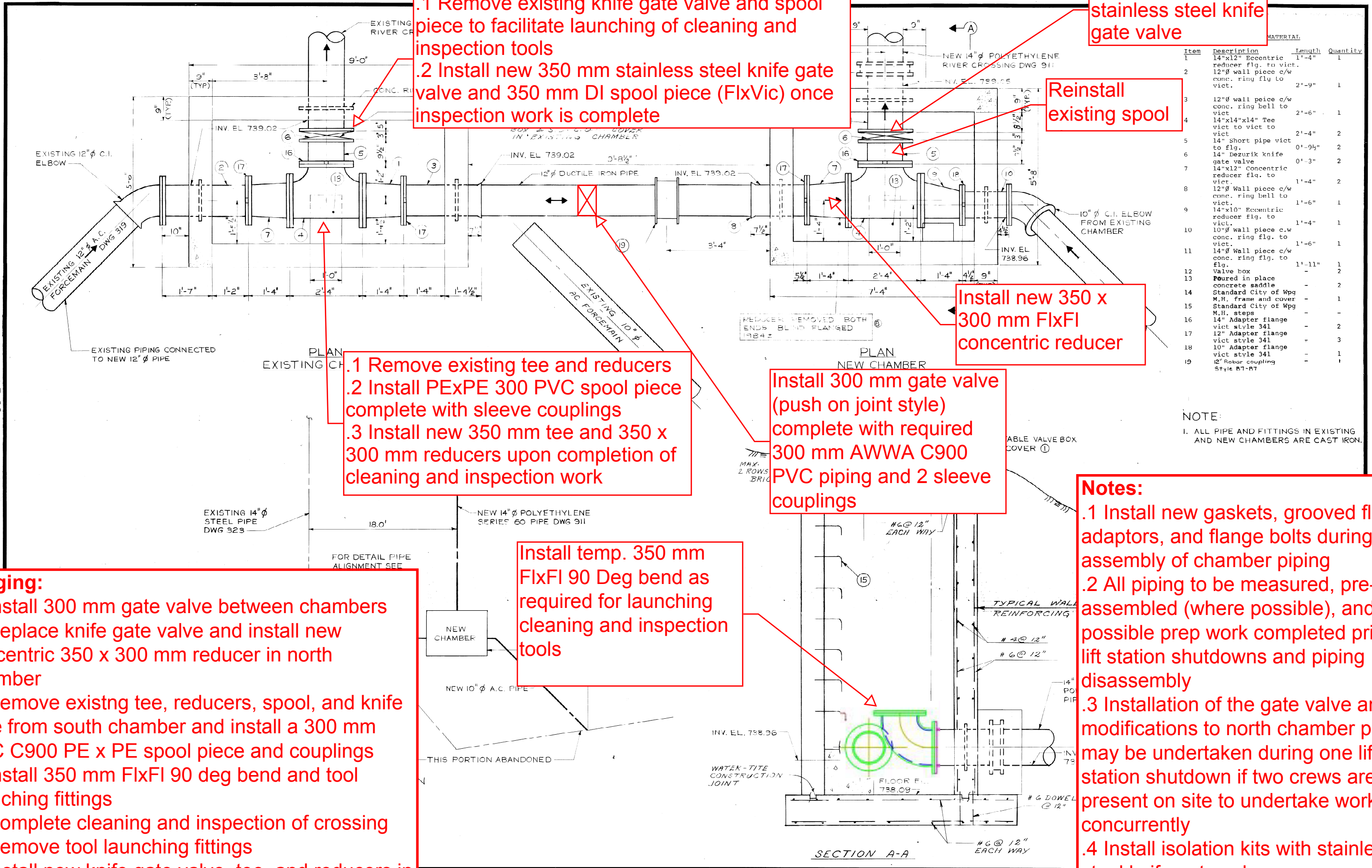
Install 300 mm gate valve (push on joint style) complete with required 300 mm AWWA C900 PVC piping and 2 sleeve couplings

.1 Remove existing tee and reducers  
 .2 Install PEXPE 300 PVC spool piece complete with sleeve couplings  
 .3 Install new 350 mm tee and 350 x 300 mm reducers upon completion of cleaning and inspection work

Install temp. 350 mm FixFI 90 Deg bend as required for launching cleaning and inspection tools

**Staging:**  
 .1 Install 300 mm gate valve between chambers  
 .2 Replace knife gate valve and install new concentric 350 x 300 mm reducer in north chamber  
 .3 Remove existing tee, reducers, spool, and knife gate from south chamber and install a 300 mm PVC C900 PE x PE spool piece and couplings  
 .4 Install 350 mm FixFI 90 deg bend and tool launching fittings  
 .5 Complete cleaning and inspection of crossing  
 .6 Remove tool launching fittings  
 .7 Install new knife gate valve, tee, and reducers in south chamber

**Notes:**  
 .1 Install new gaskets, grooved flange adaptors, and flange bolts during re-assembly of chamber piping  
 .2 All piping to be measured, pre-assembled (where possible), and all possible prep work completed prior to lift station shutdowns and piping disassembly  
 .3 Installation of the gate valve and modifications to north chamber piping may be undertaken during one lift station shutdown if two crews are present on site to undertake work concurrently  
 .4 Install isolation kits with stainless steel knife gate valves

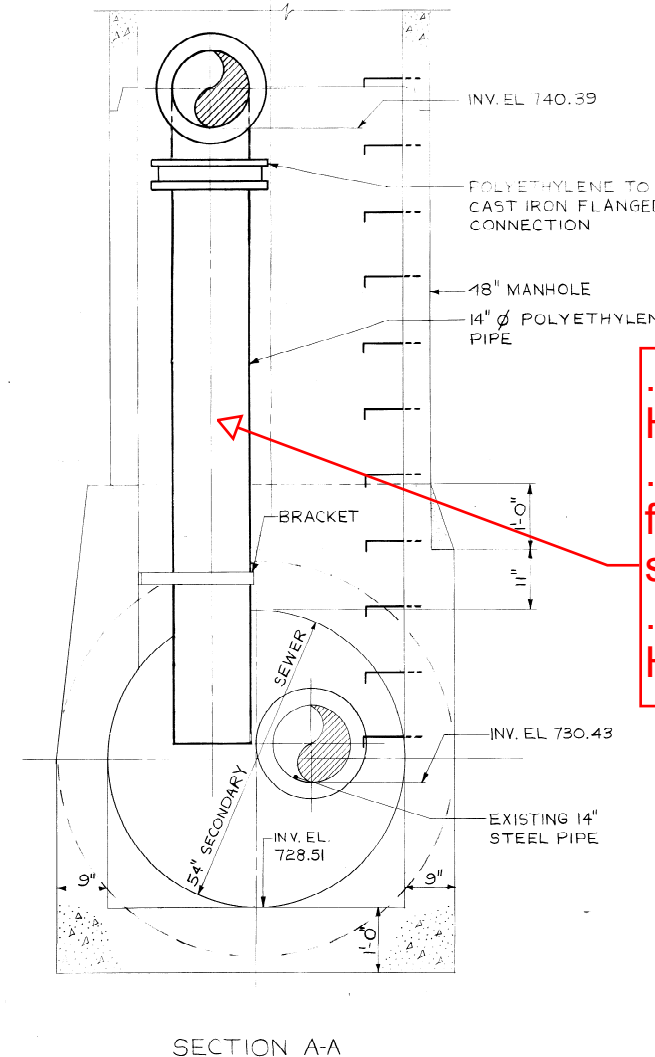
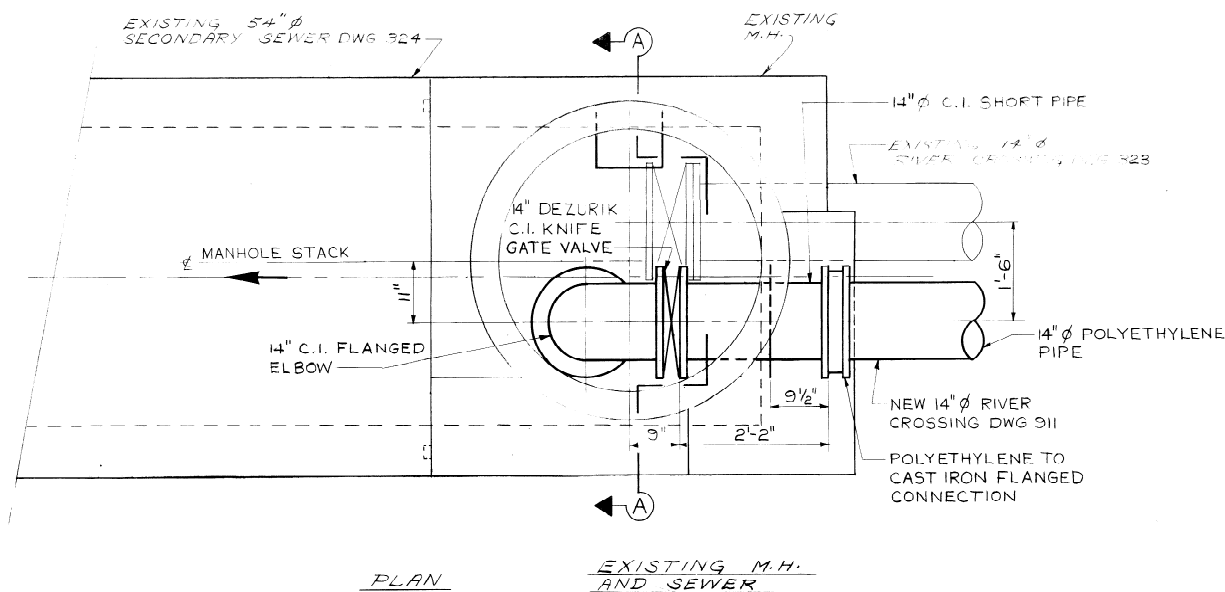


Item	Description	Length	Quantity
1	14"x12" Eccentric reducer flg. to vict.	1'-4"	1
2	12" wall piece c/w conc. ring flg to vict.	2'-9"	1
3	12" wall piece c/w conc. ring bell to vict.	2'-6"	1
4	14"x14"x14" Tee vict to vict	2'-4"	2
5	14" Short pipe vict to flg.	0'-9 1/2"	2
6	14" Dezurik knife gate valve	0'-3"	2
7	14"x12" Concentric reducer flg. to vict.	1'-4"	2
8	12" Wall piece c/w conc. ring bell to vict.	1'-6"	1
9	14"x10" Eccentric reducer flg. to vict.	1'-4"	1
10	10" wall piece c.w conc. ring flg. to vict.	1'-6"	1
11	14" Wall piece c/w conc. ring flg. to vict.	1'-11"	1
12	Valve box	-	2
13	Poured in place concrete saddle	-	2
14	Standard City of Wpg M.H. frame and cover	-	1
15	Standard City of Wpg M.H. steps	-	-
16	14" Adapter flange vict style 341	-	2
17	12" Adapter flange vict style 341	-	3
18	10" Adapter flange vict style 341	-	1
19	12" Rebar coupling Style B7-B7	-	1

NOTE:  
 1. ALL PIPE AND FITTINGS IN EXISTING AND NEW CHAMBERS ARE CAST IRON.



# Site 3a - Newton Avenue Forcemain Crossing - West Side



- .1 Remove and salvage existing flanged HDPE discharge pipe
- .2 Install semi-rigid discharge hose with flanged end and route to other side of sandbag cofferdam
- .3 Once inspection is complete install new HDPE discharge pipe

Route Discharge Hose Over Cofferdam

Construct Sandbag Cofferdam

Remove Existing Gate Valve and Extension Shaft

NO.	DESCRIPTION	DATE	BY
4	REVISED TO AS BUILT	AUG 24/77	BB
3	1/8" RUBBER GASKET	OCT 6/77	BB
2	FILLER PLATE DIMENSION CHANGE	OCT 17/77	BB
1	SERIES 80 CHANGED TO 60	OCT 4/77	BB

**REVISIONS**

**The City of Winnipeg**  
Waterworks, Waste and Disposal Division

ENGINEERING BRANCH  
WASTE DISPOSAL

NEWTON RIVER X-ING  
NEWTON AVE. & SCOTIA ST.  
CONNECTION DETAILS  
TO 54"  $\phi$  SECONDARY

DESIGNED BY B BRICK	DRAWN BY V.D.
CHECKED BY <i>[Signature]</i>	DATE JUNE 1977
APPROVED BY <i>[Signature]</i>	
SCALE 3/4" = 1'-0"	DRAWING NO. 9/2

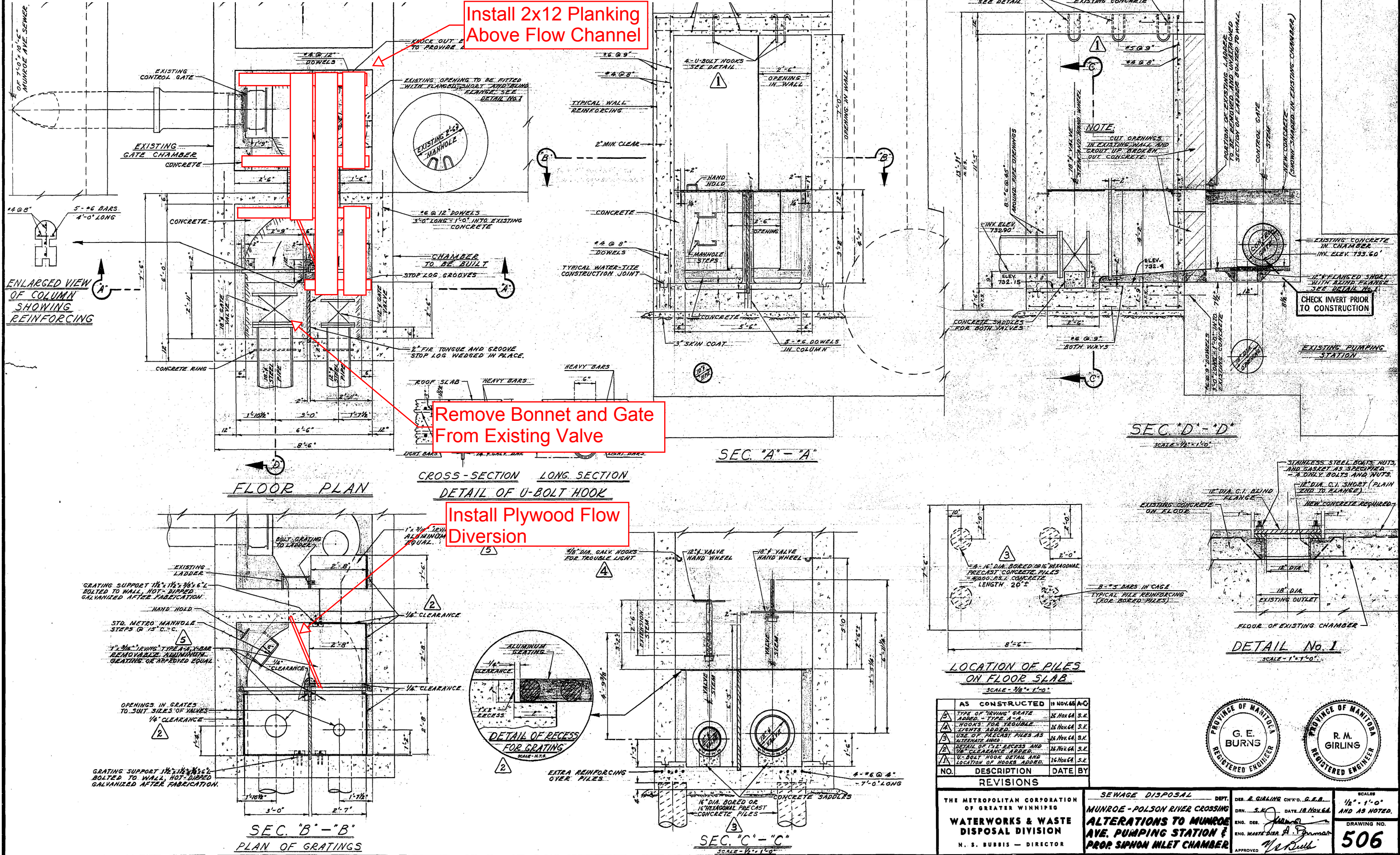
file # MS10642





# Site 6a - Munroe-Polson Siphon - East Side

## 450 mm Inspection



Install 2x12 Planking Above Flow Channel

Remove Bonnet and Gate From Existing Valve

Install Plywood Flow Diversion

ENLARGED VIEW OF COLUMN SHOWING REINFORCING

FLOOR PLAN

CROSS-SECTION LONG SECTION  
DETAIL OF U-BOLT HOOK

SEC. "A" - "A"

SEC. "D" - "D"

SEC. "B" - "B"  
PLAN OF GRATINGS

SEC. "C" - "C"

LOCATION OF PILES ON FLOOR SLAB

DETAIL No. 1

NO.	DESCRIPTION	DATE	BY
AS CONSTRUCTED		18 NOV. 66	A.G.
1	TYPE OF IRVING'S GRATE ADDED - TYPE A-A	24 NOV. 66	S.K.
2	HOOKS FOR TROUBLE LIGHTS ADDED	24 NOV. 66	S.K.
3	USE OF PRECAST PILES AS ALTERNATE PILES	24 NOV. 66	S.K.
4	DETAIL OF 1/2" RECESS AND 3/8" CLEARANCE ADDED	24 NOV. 66	S.K.
5	U-BOLT HOOK DETAIL AND LOCATION OF HOOKS ADDED	26 NOV. 66	S.K.

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

SEWAGE DISPOSAL  
MUNROE - POLSON RIVER CROSSING  
ALTERATIONS TO MUNROE AVE. PUMPING STATION & PROP. SIPHON INLET CHAMBER  
DEPT. DES. R. GIRLING CH'VD. G.E.B.  
DRN. S.K. DATE 18 NOV. 66  
ENG. DES. [Signature]  
ENG. WASTE DATA [Signature]



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1/2" = 1'-0"  
AND AS NOTED.  
DRAWING NO.  
**506**



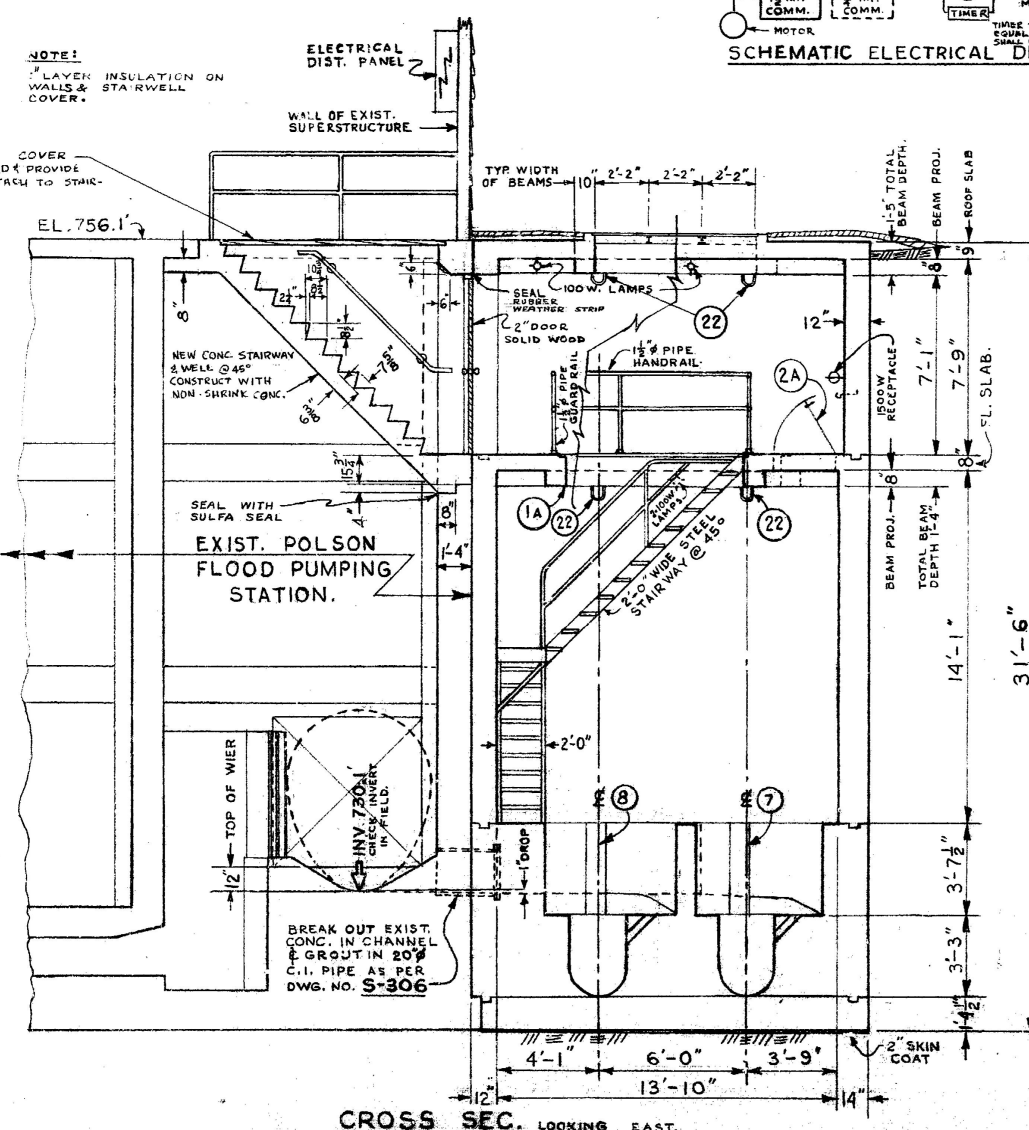
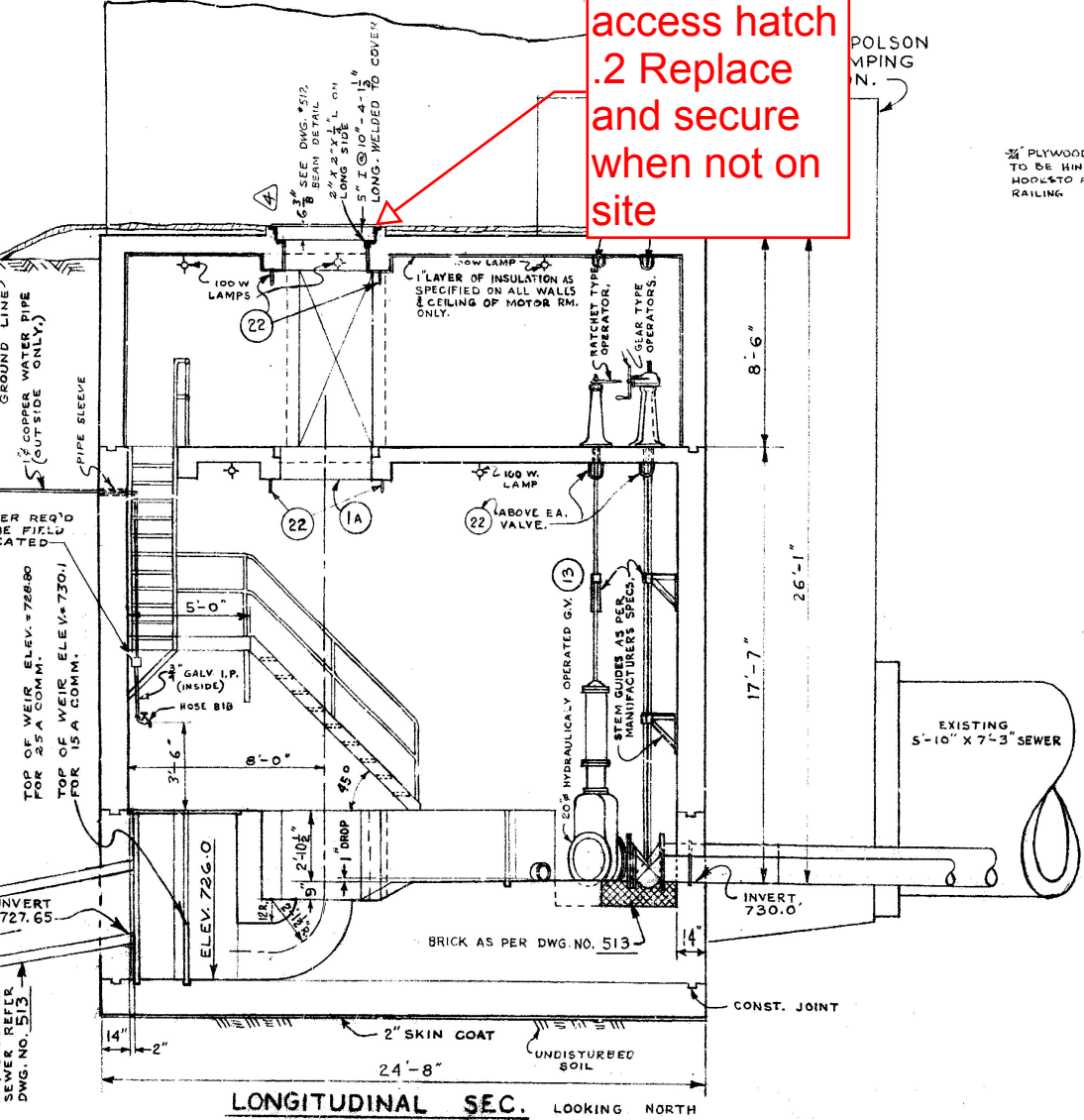
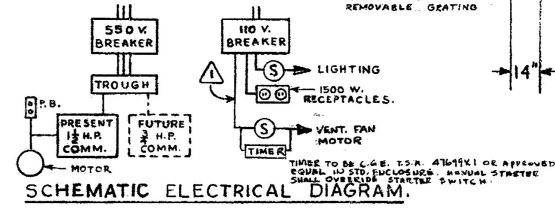
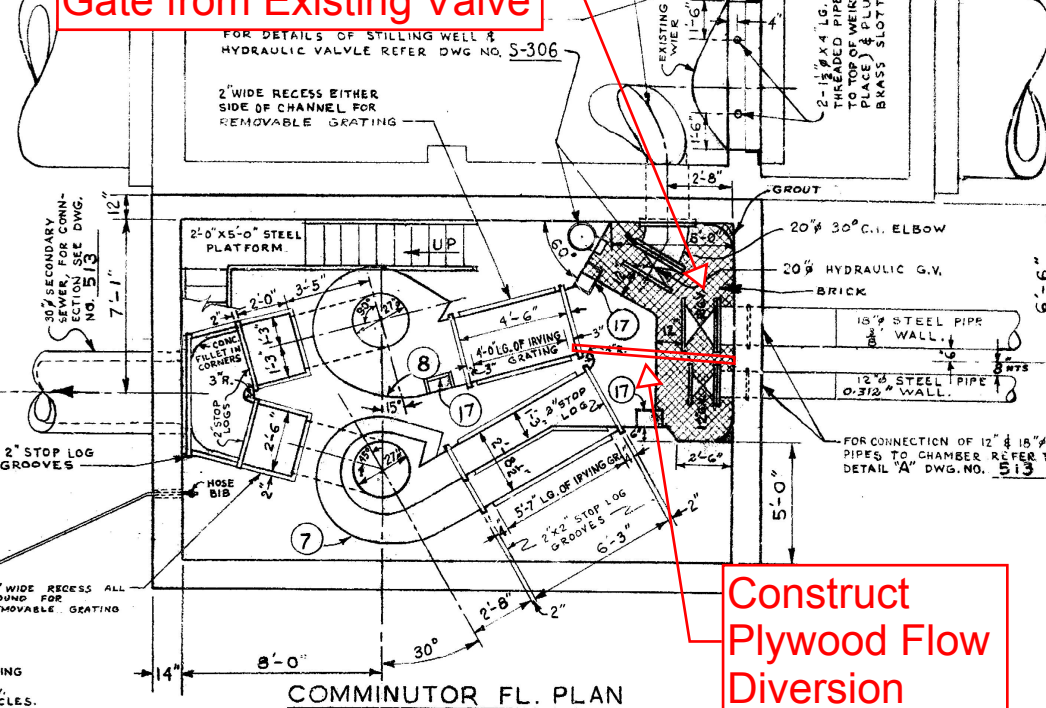
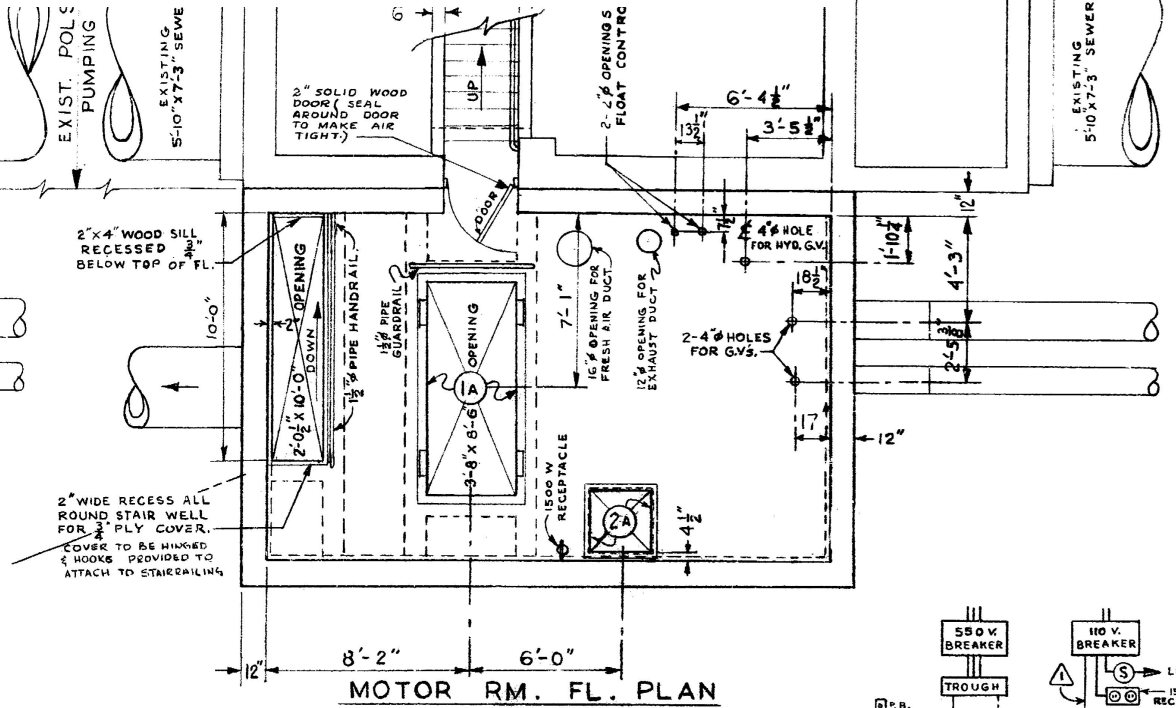
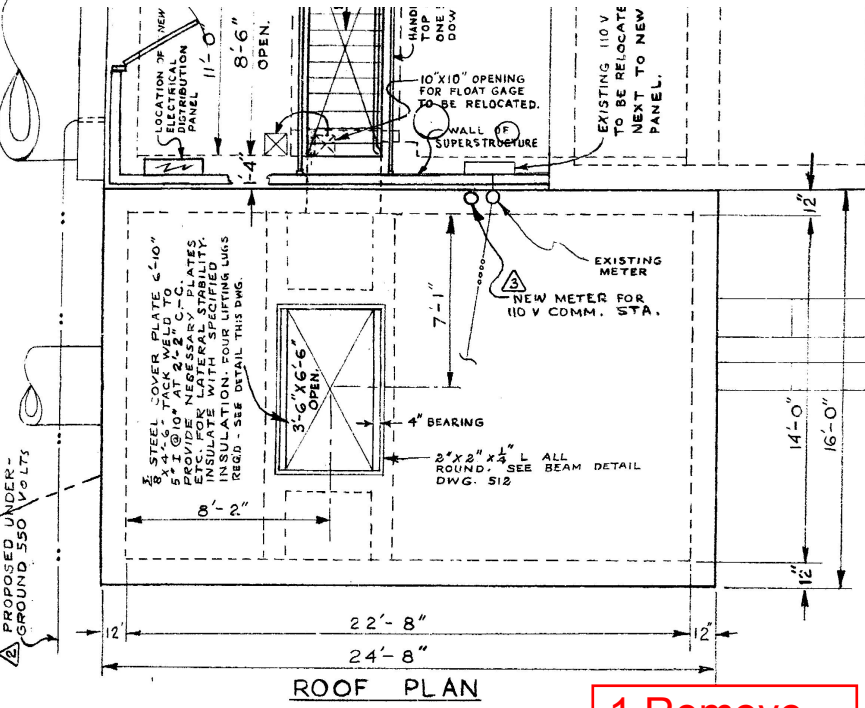
# Site 6a - Munroe-Polson Siphon - West Side

## 450 mm Inspection

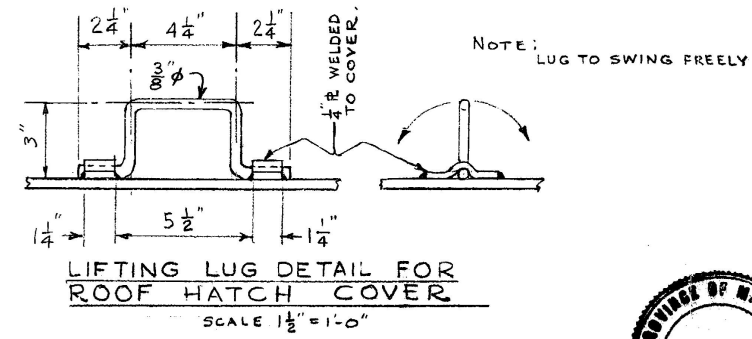
Remove Bonnet and Gate from Existing Valve

Construct Plywood Flow Diversion

1 Remove access hatch  
2 Replace and secure when not on site



- NOTES**
- 1 GRATING TO BE IRVING TYPE A A X-BAR OR APPROVED EQUAL, HOT DIP GALV. AFTER FABRICATION.
  - 2 STOP LOGS TO BE 2" FIR TONGUE & GROOVE WEDGED IN PLACE.
  - 3 ALL ANCHOR BOLTS NOT IN CONTACT WITH SEWAGE TO BE HOT DIPPED GALV.
  - 4 ALL ANCHOR BOLTS IN CONTACT WITH SEWAGE TO BE CADMIUM PLATED.
  - 5 THE CONTRACTOR IS TO ENSURE AN AIRTIGHT SEAL FOR ALL OPENINGS TO THE OUTSIDE ATMOSPHERE, THIS INCLUDES THE ROOF HATCH AND ENTRANCE DOOR BETWEEN THE FLOOD PUMPING STATION AND THE NEW COMMUNUTOR STRUCTURE.
  - 6 HATCH COVER IN ROOF TO BE PAINTED LAMP POST GREEN.
  - 7 THE CONTRACTOR IS TO FIELD CHECK ALL INVERTS PRIOR TO CONSTRUCTION.
  - 8 ALL EXPOSED MISC. METAL WORK TO BE HOT DIP GALV. AFTER FABRICATION.
  - 9 GALV. PIPE SLEEVES REQ'D FOR 1" WATER SERVICE. SEAL EA. FACE WITH SULFA SEAL OR APPROVED EQUAL.
  - 10 STAIR NOSINGS TO BE EDGED 1/8" RADIUS.
  - 11 STAIR WELL COVERS TO BE 3/4" PLYWOOD WITH 2"x4" FRAME REINFORCING & PROVIDED WITH LIFTING LUGS.



NO.	DESCRIPTION	DATE	BY
1	REVISIONS		

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

SEWAGE DISPOSAL DEPT.  
**POLSON COMMUNUTOR STA CONSTRUCTION DETAILS**

DES. R. GIRLING  
DRN. H. BUXMAN  
ENG. DES. [Signature]  
ENG. WASTE DISP. [Signature]

DATE 28 DEC. 64

APPROVED [Signature]



SCALES  
1" = 1'-0"  
DRAWING NO.  
**511**