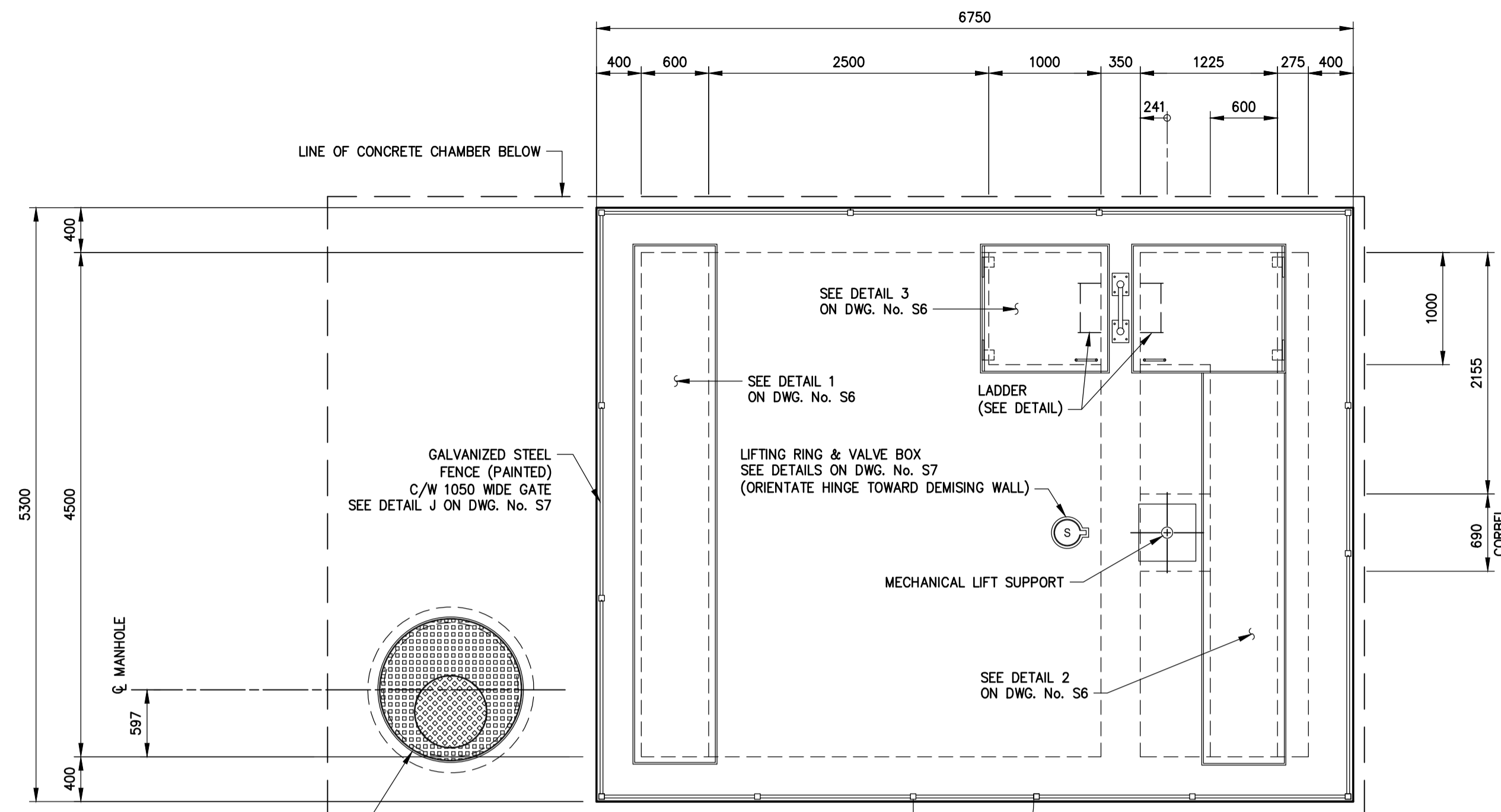
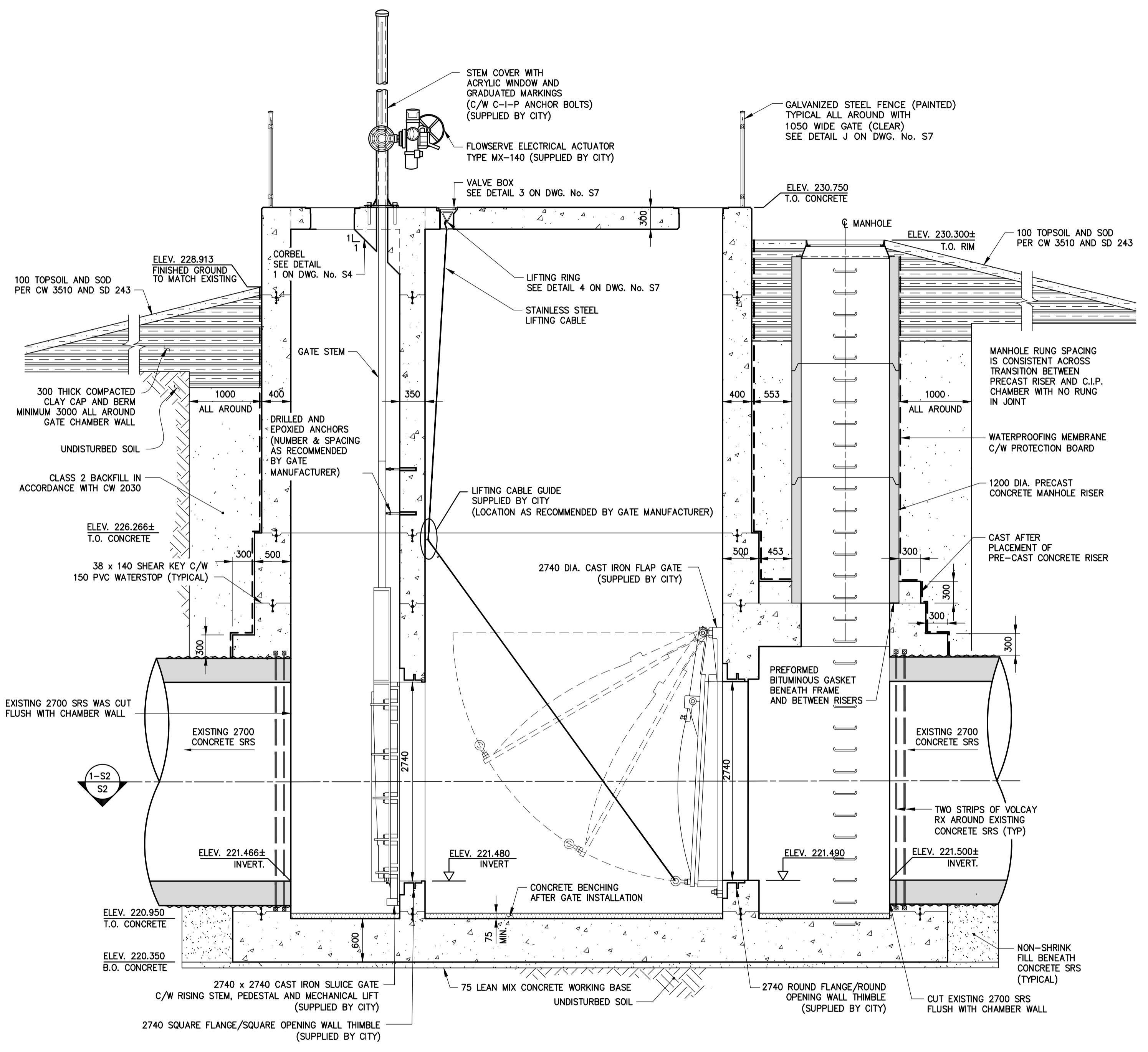


## **APPENDIX A**

# **3D ISOMETRIC PLAN DRAWINGS FOR PUMP STATIONS AND CHAMBER AS-BUILT DRAWINGS**

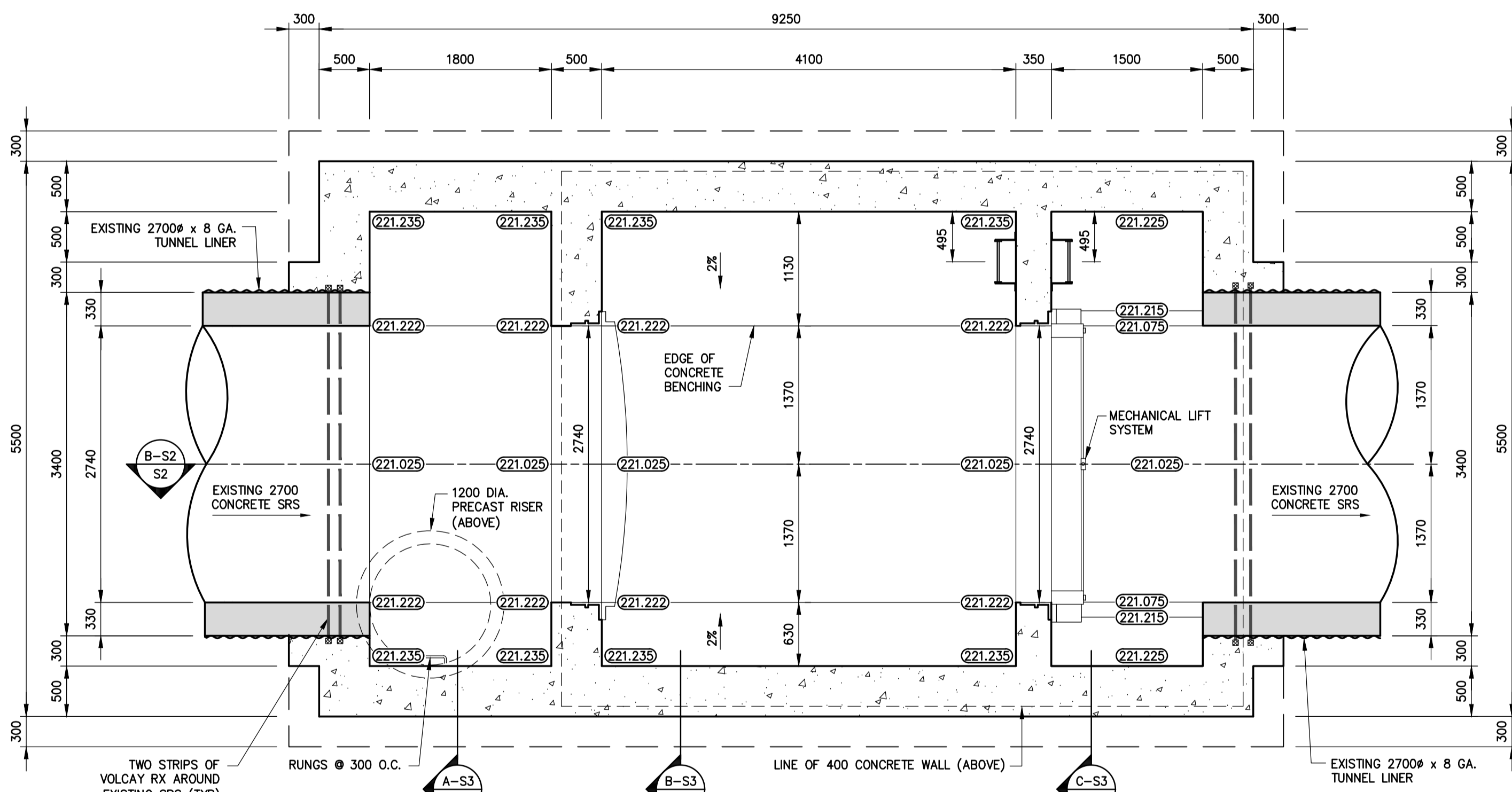


**ROOF PLAN**  
1:40



**SECTION A-S2**  
1:40

**SECTION B-S2**  
1:40



**SECTION B-S2**  
1:40

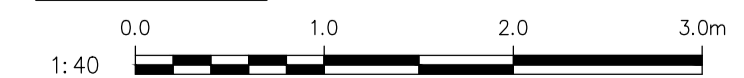
**MATERIALS LIST**

ITEM	DESCRIPTION	MAKE	MODEL
①	CAST IRON FLAP GATE	FV-AC	108 FLAP VALVE AND WALL THIMBLE, F SECTION (E62918)
②	CAST IRON SLUICE GATE	108 x 108	SLUICE GATE AND WALL THIMBLE, F SECTION (E57871)
③	MANHOLE RIM AND COVER	TF-48	
④	ELECTRICAL ACTUATOR	FLOWSERVE	MX-140

**ELEVATION LEGEND**

XXXXX TOP OF CONCRETE BENCHING ELEVATION

**SCALE LEGEND**



**METRIC**  
WHOLE NUMBERS INDICATE MILLIMETRES  
DECIMALIZED NUMBERS INDICATE METRES



No.	REVISIONS	DATE	BY	DATE	DATE
2	REVISED TO RECORD DRAWING	17.04.10	EH		
1	ISSUED FOR TENDER	13.11.12	MM		
				13.11.12	13.11.12

DESIGNED BY	CHECKED BY
MM	WC
DRAWN BY	APPROVED BY
KDB	EH
HOR. SCALE	RELEASED FOR CONSTRUCTION
AS NOTED	
VERT. SCALE	
AS NOTED	

ENGINEER'S SEAL  
ORIGINAL SEALED AND SIGNED BY:  
**M.H.A. MADY**  
13.11.12

**THE CITY OF WINNIPEG**  
WATER AND WASTE DEPARTMENT  
Winnipeg

OUTFALL GATE CHAMBER UPGRADES  
**McDERMOT AVENUE**  
SRS OUTFALL GATE CHAMBER  
CONCRETE DETAILS (SHEET 1 OF 2)

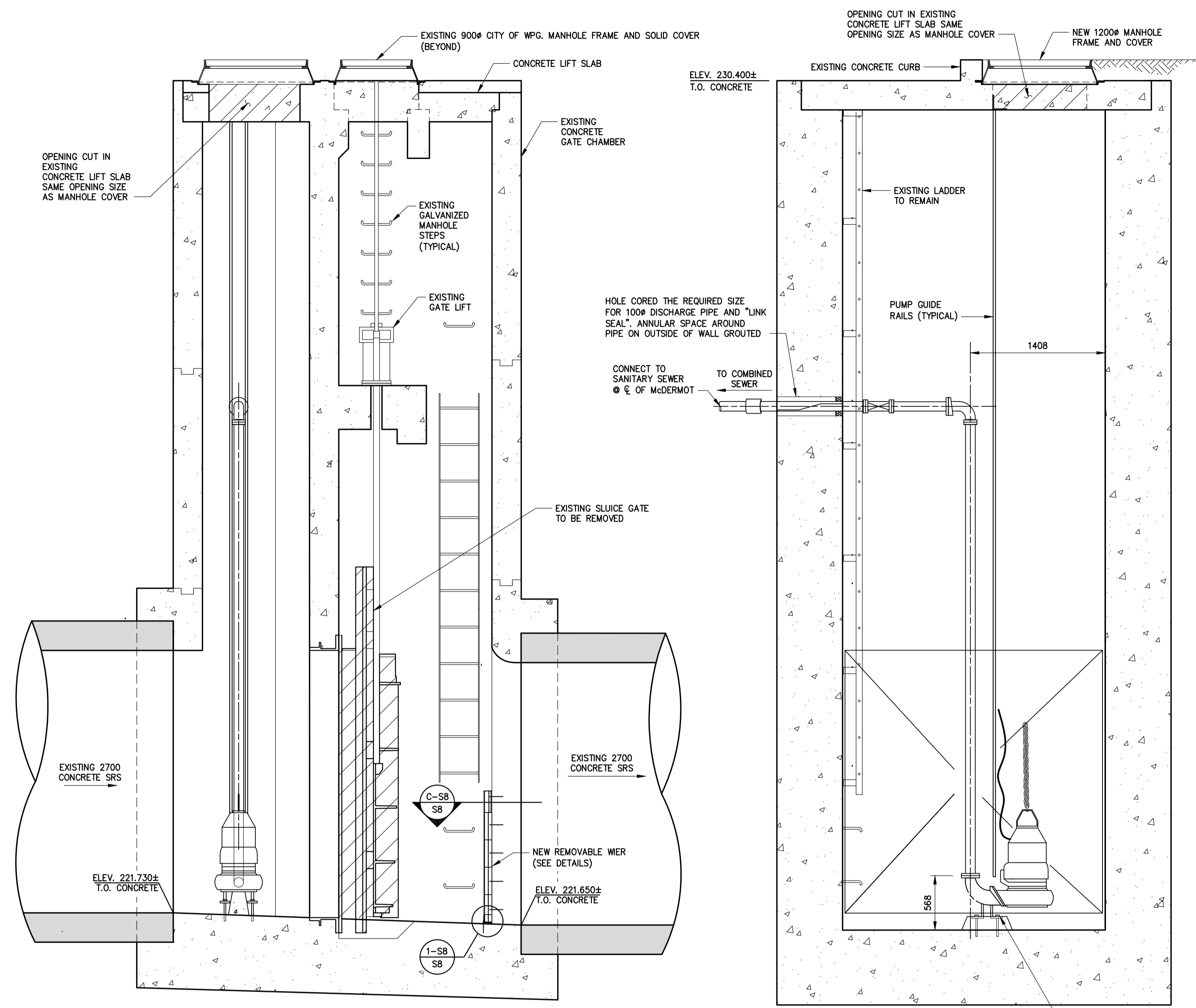
CONSULTANT DRAWING No.: 5513108-S2  
SHEET 3 OF 24  
CITY DRAWING No.: LD-7248

BID OPPORTUNITY: 912-2013  
PLOT DATE: 19.11.22

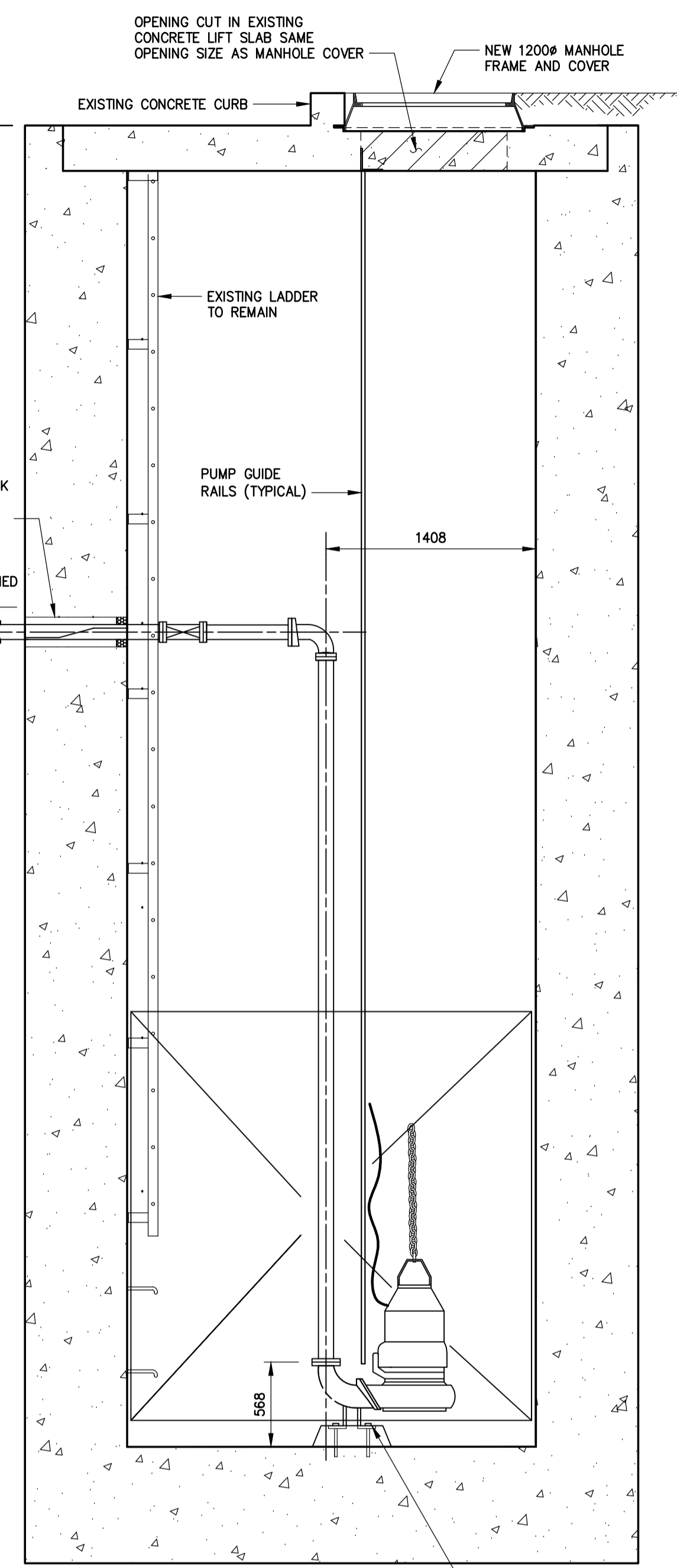
CONTRACTOR: NELSON RIVER CONSTRUCTION INC.  
CONSTRUCTION COMPLETION DATE: 2015.05.15

Plotted: November 27, 2015, 11:05:29 AM, I:\s\Drawings\City\Kestrel\Drawings\MM\Drawings\Submissions\2017104\_10\_00\_CoW\_as\_constructed\FINAL\AutoCAD\LD-7248.dwg | Layout: S2 Concrete Details (Sheet 1 of 2) | File: P:\5513108-S2\5513108-S2.dwg

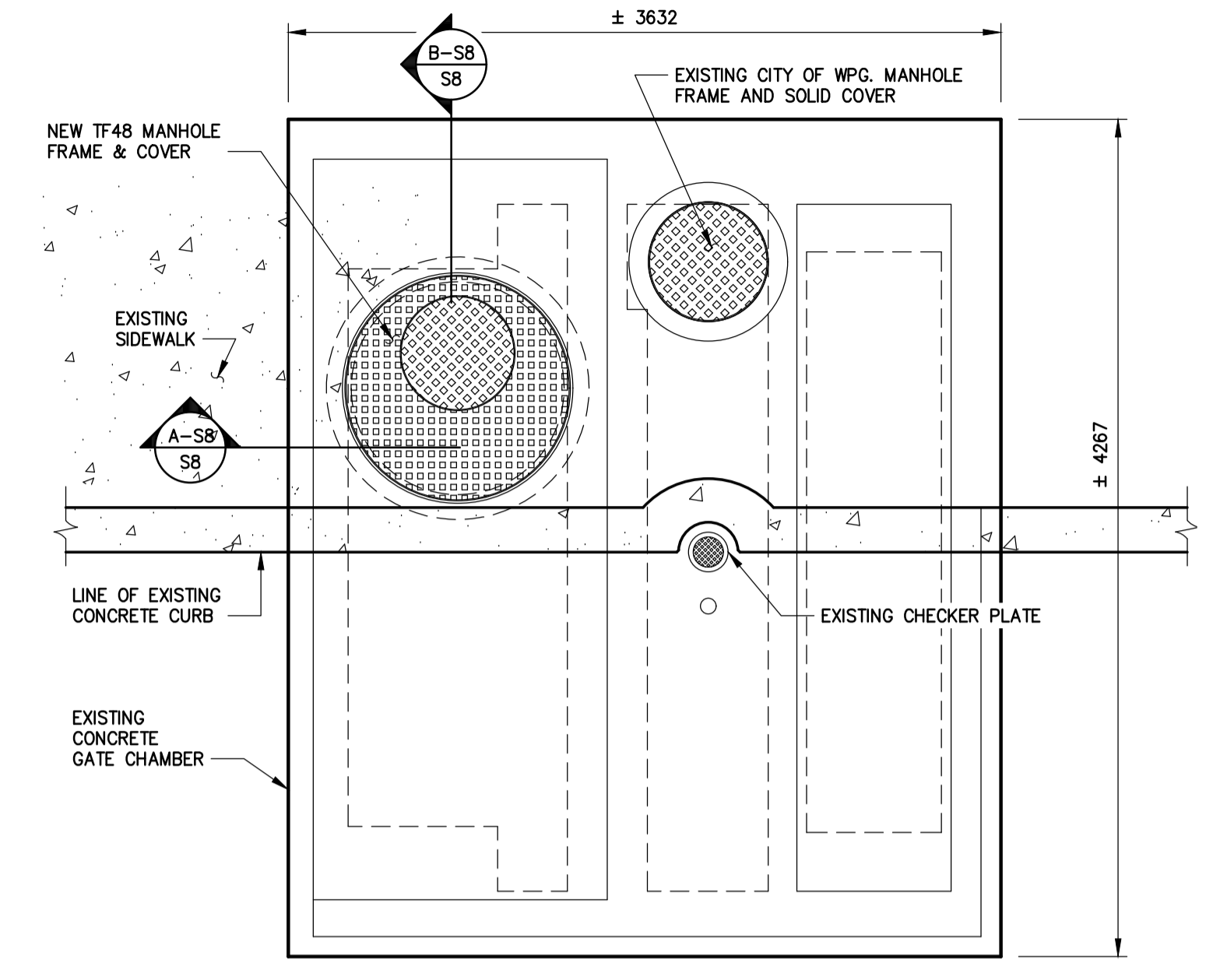




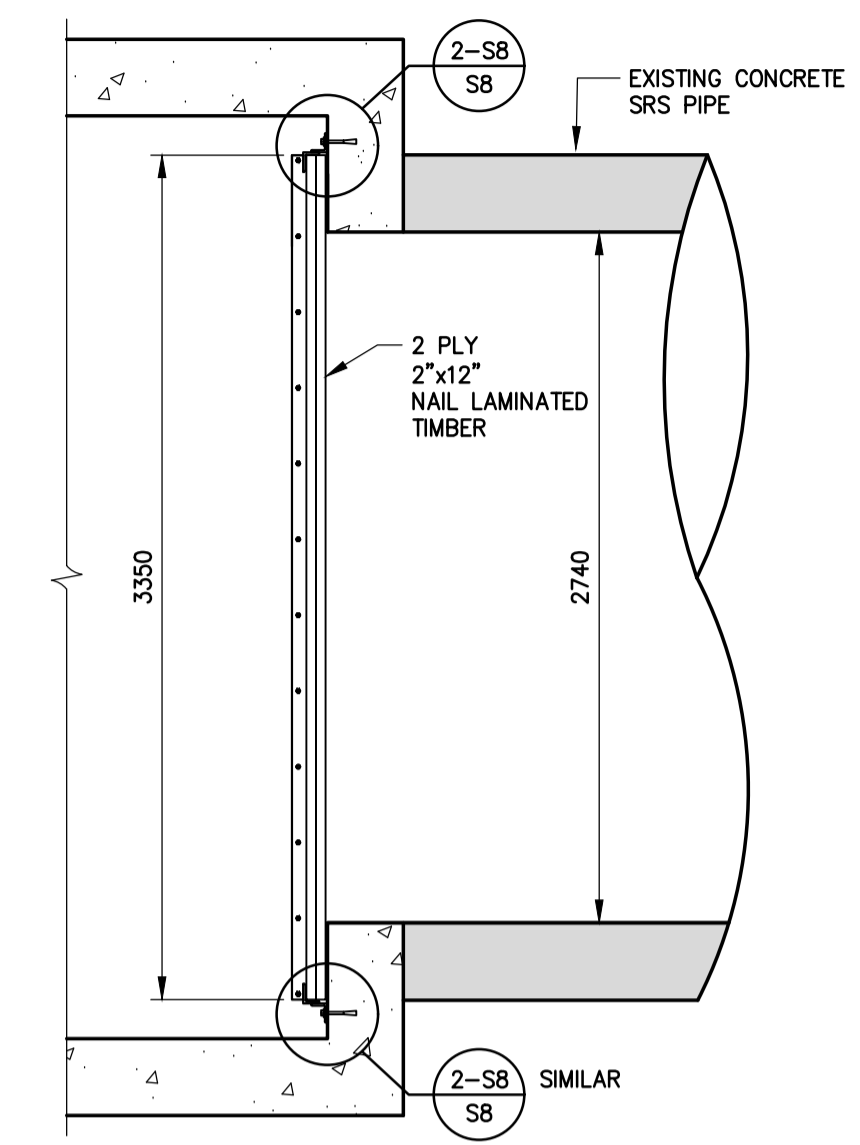
SECTION A-SB  
1:30



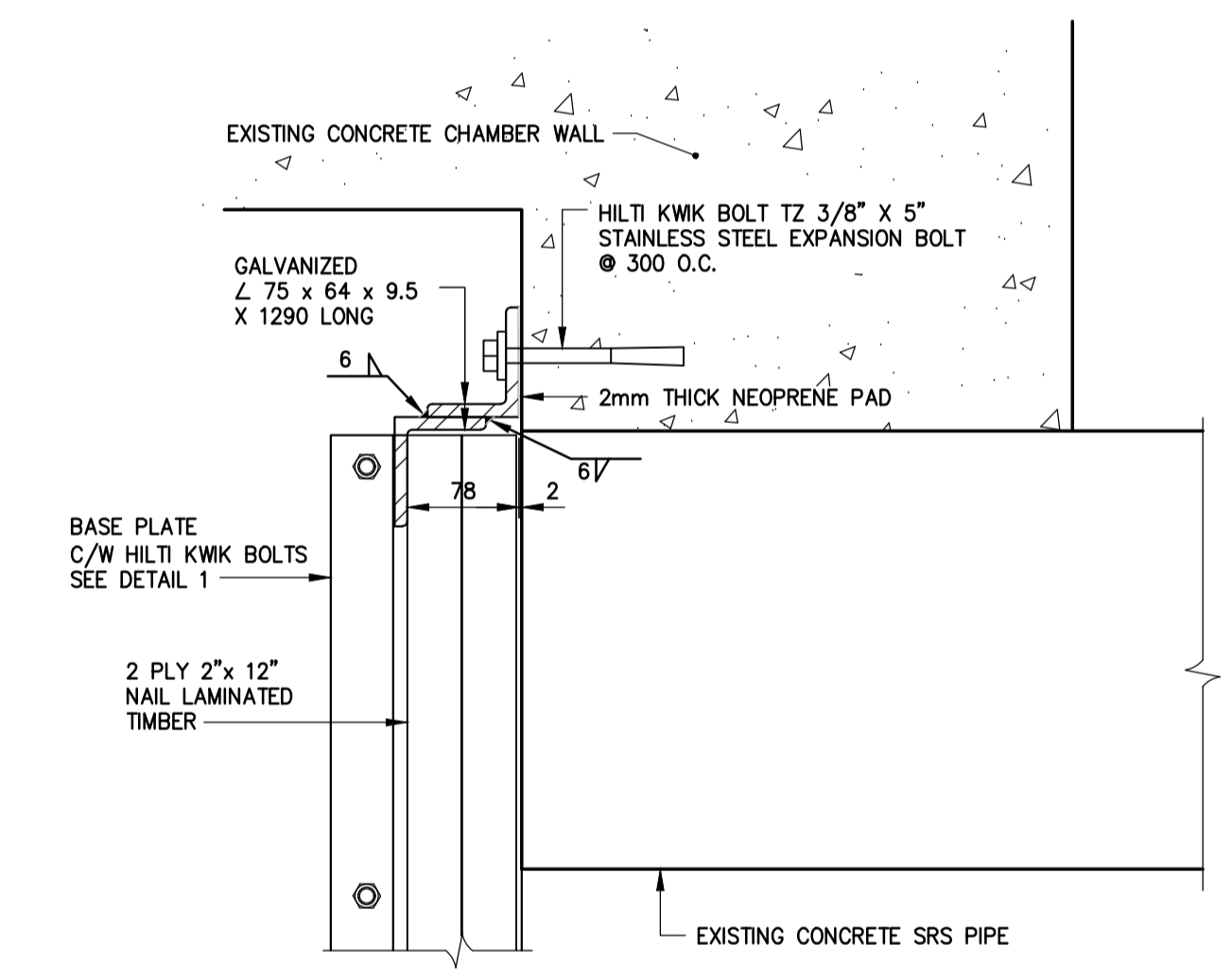
SECTION B-SB  
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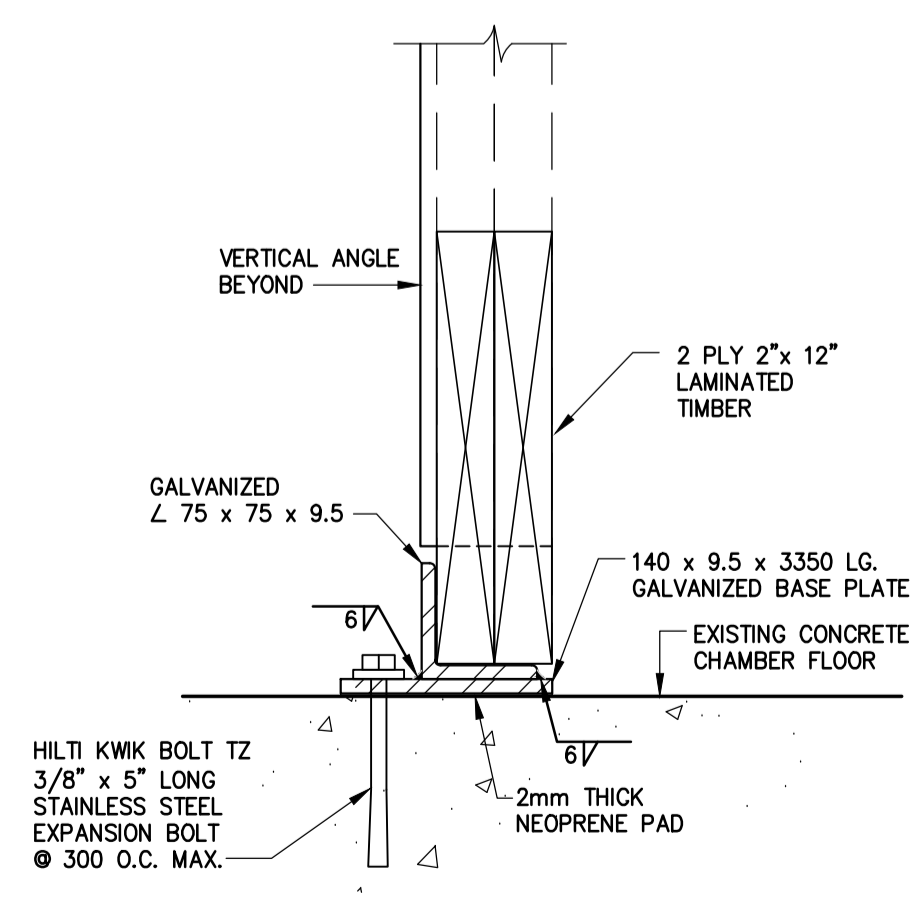
EXISTING ROOF PLAN  
1:30



SECTION C-SB  
1:30



CONNECTION DETAIL 2-SB  
1:5



WEIR BASE CONNECTION DETAIL 1-SB  
1:5

MATERIALS LIST

ITEM	DESCRIPTION	ENDS	LENGTH	QUANTITY
1	FLOWSERVE MODEL 4MSX9A, 10 HP SUBMERSIBLE PUMPS C/W BASE ELBOW	FL		1
2	LIFTING CHAIN	-		1
3	POWER CABLE	-	AS REQUIRED	1
4	PUMP GUIDE RAILS	-	AS REQUIRED	2
5	100# CL 52 DUCTILE IRON OR SCH 80 STEEL PIPE	FL x PE	AS REQUIRED	1
6	100# CL 90' STD RAD ELBOW	FL x FL	AS REQUIRED	1
7	100# CL 52 DUCTILE IRON OR SCH 80 STEEL PIPE	FL x FL	AS REQUIRED	1
8	100# CI WEDGE GATE VALVE. BRONZE TRIM, OUTSIDE SCREW & YOKE RISING STEM & HANDWHEEL	FL x FL		1
9	100# CL 52 DUCTILE IRON OR SCH 80 STEEL PIPE	FL x FL	AS REQUIRED	1
10	100 x 150# REDUCER COUPLING	-		1
11	150# SCH 80 PVC PIPE	-	AS REQUIRED	1

NOTES:

- ALLOWABLE SHUT DOWN TIME: 4.0 HOURS (APPROXIMATE).
- EXISTING SLUICE GATE REMOVED.
- MECHANICAL AND ELECTRICAL WORK INSTALLED AS INDICATED AND ACCORDING TO MANUFACTURER'S SPECIFICATION.
- EXCAVATIONS BACKFILLED WITH CLASS 3 OR 5 BACKFILL IN ACCORDANCE WITH C/W 2030 AND SD-002.
- GASKETS: FULL FACED, 3 THICK RED RUBBER.

MISCELLANEOUS METALS AND ACCESSORIES

- STEEL SECTIONS AND PLATES: TO CAN/CSA G40.20/G40.21, GRADE 300 W, EXCEPT W, HP AND HSS SECTIONS, WHICH SHALL BE GRADE 350 W.
- WELDING MATERIALS: TO CSA W59.
- ANCHOR BOLTS AND FASTENERS: ASTM A276, TYPE 316 STAINLESS STEEL, OF AMPLE SECTION TO SAFELY WITHSTAND THE FORCES CREATED BY OPERATION OF THE EQUIPMENT OR THE LOAD TO WHICH THEY ARE SUBJECTED.
- ALL EXPOSED OR PARTIALLY EXPOSED MISCELLANEOUS METAL WORKS, INCLUDING NAILS, BOLTS, NUTS AND WASHERS ARE HOT DIP GALVANIZED. GALVANIZING CONFORMS TO CSA G164 MINIMUM COATING OF 600G/M2.
- WHERE GALVANIZING WAS DAMAGED, REPAIRED WITH TWO COATS OF A ONE COMPOUND ZINC-RICH COATING CONTAINING 96% NON-TOXIC ELECTROLYTIC ZINC POWDER (PURE TO 99.995%) AND NON-TOXIC SOLVENT.

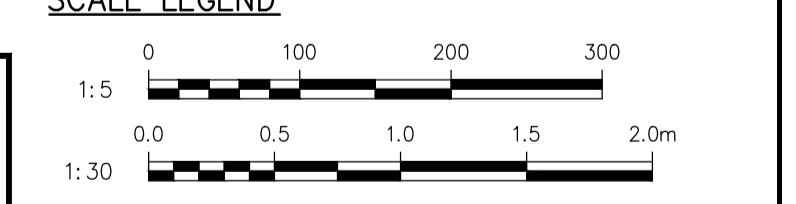
WOOD

- ALL LUMBER CONFORMS TO LATEST NLGA STANDARD GRADING RULES FOR CANADIAN LUMBER.
- ALL LUMBER IS PRESSURE TREATED D FIR-L NO. 1 OR 2 GRADE WITH PRESERVATIVE IN ACCORDANCE WITH CSA 080 AND CSA 080.3.
- ALL HARDWARE INCLUDING NAILS, BOLTS, WASHERS, AND PLATES ARE HOT DIP GALVANIZED.
- CUTTING, FRAMING AND BORING OF TREATED TIMBER DONE BY THE SUPPLIER BEFORE TREATMENT, HOWEVER FIELD CUTTING, FITTING AND MATCHING MAY HAVE BEEN REQUIRED AS INDICATED ON THE PLANS. THE CONTRACTOR MADE THE NECESSARY CUTS AND HOLES, IN A TRUE AND WORKMANLIKE MANNER.
- THE CONTRACTOR APPLIED A HEAVY COAT OF TIMBER PRESERVATIVE TO ALL AREAS WHERE THE SEAL OF TREATMENT HAD BEEN REMOVED IN THE PROCESS OF FIELD CUTTING AND FRAMING CONFORMING TO CSA-080 WOOD PRESERVATION AND CSA-080.2 PRESERVATIVE TREATMENT OF LUMBER, BRIDGE TIES, AND MINE TIES BY PRESSURE PROCESS.

NAILS

- NAILING REQUIREMENTS IN ACCORDANCE WITH THE LATEST EDITION OF CSA 086.
- HOT DIPPED GALVANIZED FRAMING NAILS WITH MINIMUM NAIL LENGTH OF TWICE THE PLANK THICKNESS AND SPACED AT 250 mm IN AN ALTERNATING PATTERN FROM EACH SIDE OF TIMBER. NAILS SHALL BE 25 mm FROM EDGE OF TIMBER AND HAVE A MAXIMUM END DISTANCE OF 100 mm.

SCALE LEGEND



**APGN**  
Certificate of Authorization  
MMM Group Limited  
No. 4531

CONTRACTOR: NELSON RIVER CONSTRUCTION INC.  
CONSTRUCTION COMPLETION DATE: 2015.05.15

DESIGNED BY: EH		CHECKED BY: WC	
DRAWN BY: KDB		APPROVED BY:	
HOR. SCALE: AS NOTED		RELEASED FOR CONSTRUCTION:	
VERT. SCALE: AS NOTED			
2	REVISED TO RECORD DRAWING	17.10.04	BB
1	ISSUED FOR TENDER	13.11.12	MM
No.	REVISIONS	DATE	BY
		13.11.12	
		13.11.12	

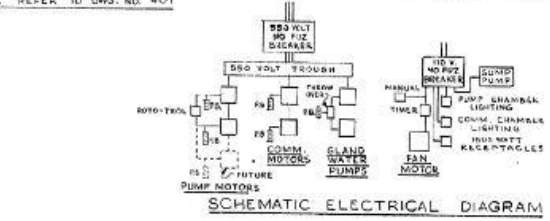
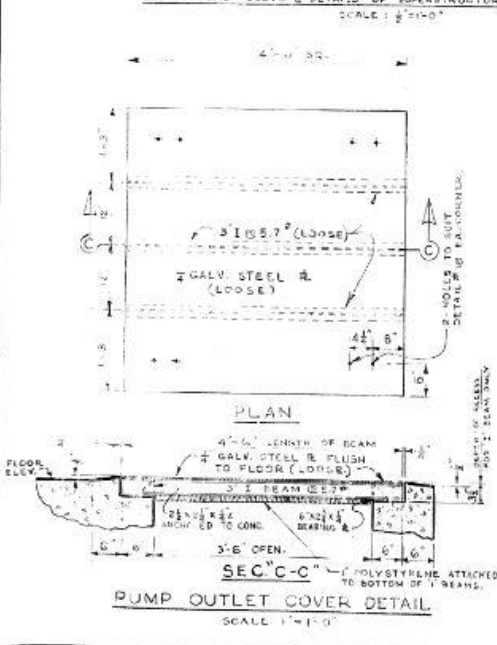
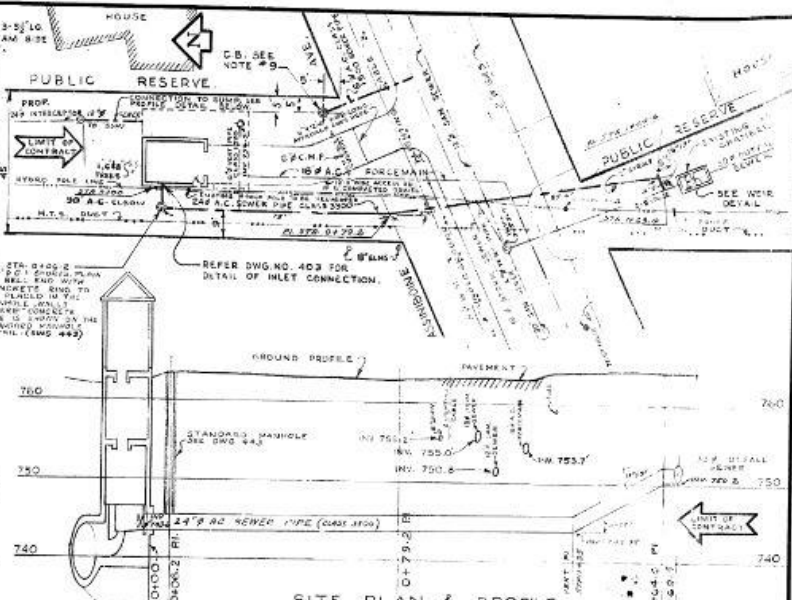
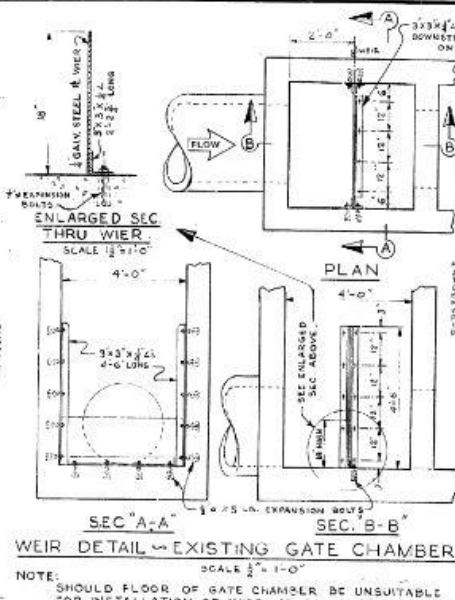
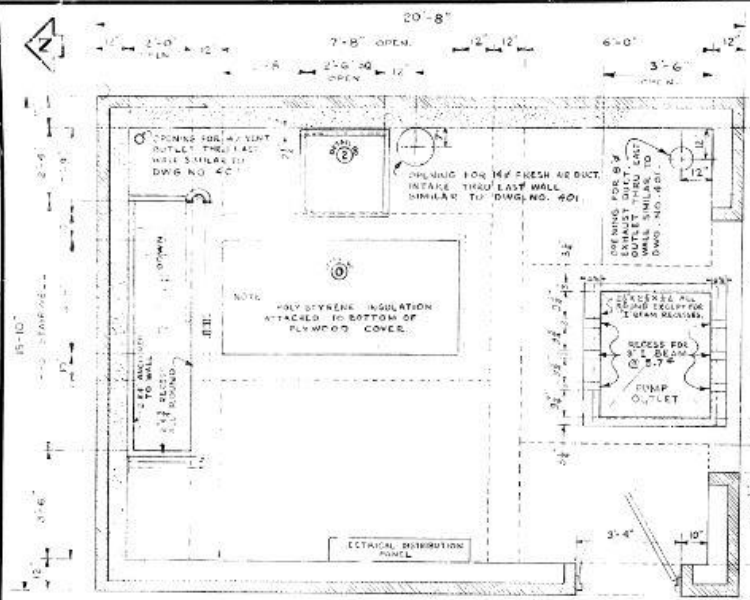
ENGINEER'S SEAL  
ORIGINAL SEALED AND SIGNED BY: M.H.A. MADY  
13.11.12  
BID OPPORTUNITY: 912-2013  
PLOT DATE: 19.11.22

**THE CITY OF WINNIPEG**  
WATER AND WASTE DEPARTMENT  
Winnipeg

OUTFALL GATE CHAMBER UPGRADES  
McDERMOT AVENUE  
SRS OUTFALL GATE CHAMBER  
EXISTING CHAMBER UPGRADES

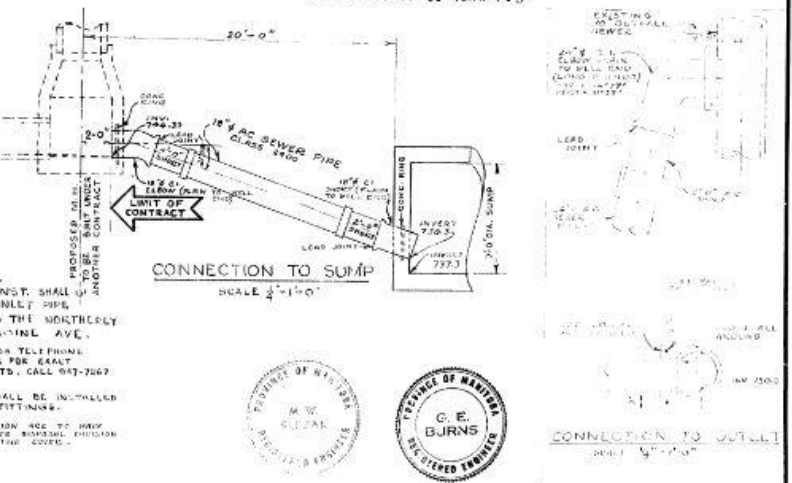
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SHEET 9 OF 24  
CITY DRAWING No.: LD-7254

Project: November 07 09:10 AM 15:44:47 AM I: List: Sheet: 01: McDermot Avenue Chamber Upgrades  
 File: P:\5513108-5815-199-95013108 - McDermot Ave. Outfall Chamber Upgrades\MMM Drawings\submissions\20170410\_to\_cow\_as\_constructed\FINAL\AutoCAD\LD-7254.dwg | Layout: S8 Existing Chamber Upgrades



- NOTES**
- FIELD CHECK ALL ELEVATIONS & INVERTS PRIOR TO CONST.
  - HOT GALV. ALL MISC. IRON & STEEL WORK.
  - THE CONTRACTOR SHALL NOTIFY MANITOBA HRS&O 24 HOURS PRIOR TO EXCAVATION.
  - THE CONTRACTOR SHALL TAKE CARE NOT TO DISTURB OR DESTROY ANY SURVEY MARKS IN THE VICINITY OF THE WORK. MARKS WHICH MUST BE MOVED WILL BE RESET AT THE CONTRACTOR'S EXPENSE.
  - CONCRETE APPROACH & GRAVELED DRIVEWAY TO BE CONSTRUCTED TO THE SATISFACTION OF THE ENGINEER.
  - THE CONTRACTOR IS REQUIRED TO PRE-REMOVE EXISTING TREES (HILLS, SPECIFIED OTHERWISE BY THE ENGINEER).
  - LOCATE FAN DIRECTLY ABOVE DRAINING FOR FRESH AIR DUCT PER PLAN ABOVE, WALL MOUNTED SIMILAR TO THAT SHOWN ON DWG. NO. 401. FAN & MOTOR TO BE ALPHA #BT 5000 (2.641 R.P.M. OR APPROVED EQUAL).
  - THE CONTRACTOR SHALL BE RESPONSIBLE TO ACQUAINT HIMSELF WITH EXISTING SURROUNDINGS PRIOR TO CONSTRUCTION & TO RESTORE SAME UPON COMPLETION OF CONTRACT.
  - THE CONTRACTOR SHALL PROVIDE A 20" PRECAST C.B. W/IRE INDICATED ON SITE PLAN, TO BE SET ON A FLOOR SLAB 2'-6" TO 3' THICK, WITH "A" REIN. BARS @ 12" EA. WAY. PROVIDE HINGED C.A. HOOD FOR 8" OUTLET ON INSIDE OF C.B. USE STD. METRO SEWAGE DISPOSAL BRANCH MANHOLE FRAME & COVER. C.B. TO HAVE GRATED INLETS IN PRECAST BACKSILL. STD. M.H. STEPS @ 15" O.C., ANY TO BE REPT. CONNECT TO 18" STORM SEWER IN AINSLIE/AVE.
  - CONTRACTOR WILL GRADE AREA SO THAT SURFACE RUN-OFF WILL DRAIN TO CATCH BASIN.

- NOTES CONT'D**
- THE HOLE & TUNNEL METHOD OF CONST. SHALL BE USED IN INSTALLING THE 24" INLET PIPE FROM THE 30" OUTFALL SEWER TO THE NORTHERLY EDGE OF THE PAVEMENT ON AINSLIE/AVE.
  - THE CONTRACTOR SHALL NOTIFY THE MANITOBA TELEPHONE SYSTEMS BURIED PLANT PROTECTION SERVICE FOR EXACT LOCATION OF UNDERGROUND CABLES & DUCTS, CALL 947-7667 24 HRS. PRIOR TO EXCAVATION.
  - A SHORT LENGTH OF PIPE (4' OR LESS) SHALL BE INSTALLED ADJACENT TO ALL C.I. PIPE ON RIGID FITTINGS.
  - ALL MIN. HOLE UNCONSTRUCTED AT THIS LOCATION ARE TO HAVE SINKED SPORES. THE STANDARD METRO PROBE MANUAL POSITION 14" TO 17" IS TO BE USED WITHOUT END HILLS IN THE COVER.

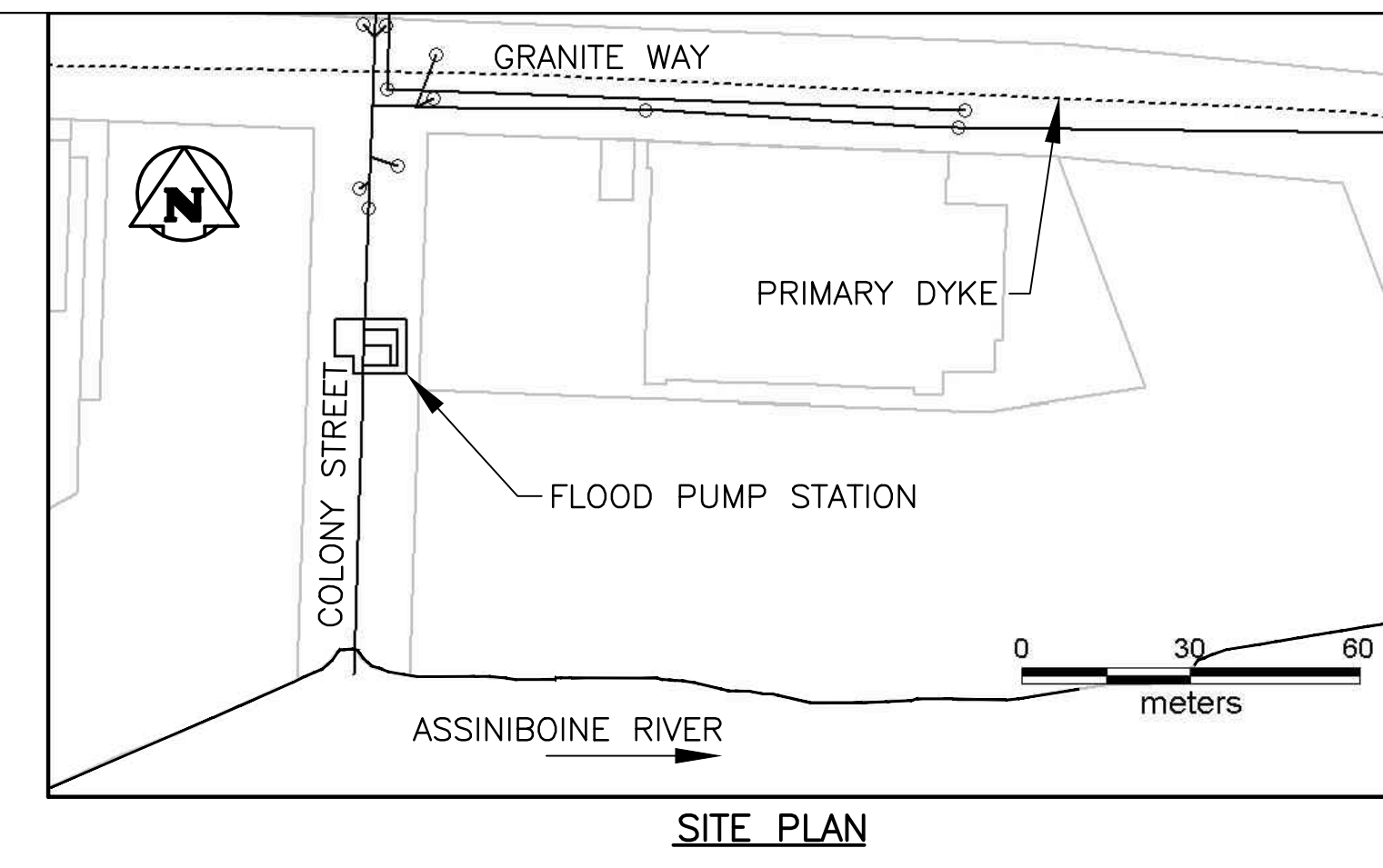
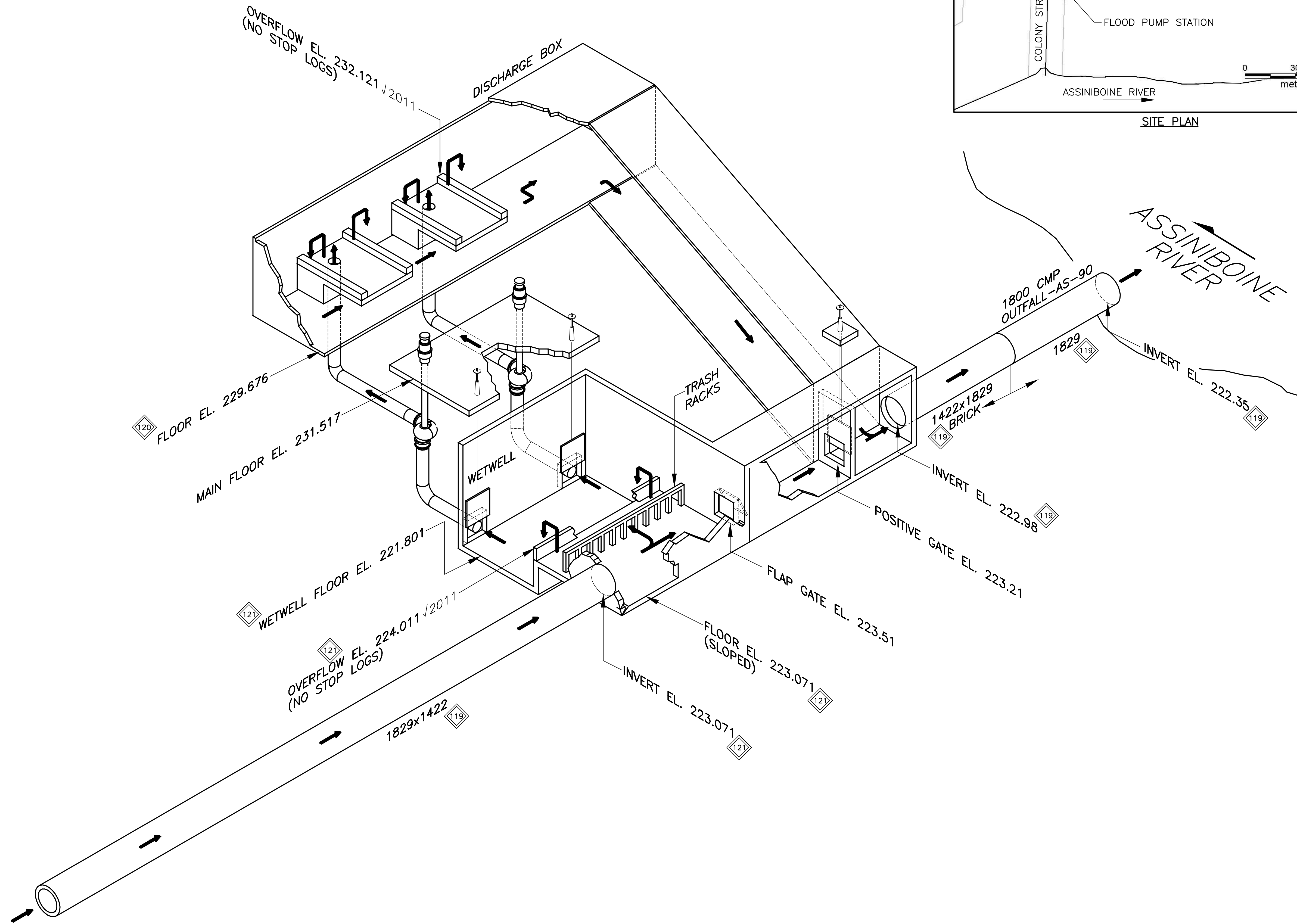


REVISIONS			THE METROPOLITAN CORPORATION OF GREATER WINNIPEG WATERWORKS & WASTE DISPOSAL DIVISION SEWAGE DISPOSAL BRANCH	
NO.	DESCRIPTION	DATE	BY	DATE
1				
2				
3				
4				
5				
6				
7				
8				

ST. JAMES INTERCEPTOR AINSLEE COMM. & PUMPING STA. SUPERSTRUCTURE & MISC. DETAILS		DRAWING NO. <b>403-B</b>
DESIGNED BY M. W. GLENN	CHECKED BY M. W. GLENN	DATE MAY 68
APPROVED BY G. E. BURNS		DATE MAY 68

FILE No.: P:/PROJECTS/2012/12-0194-005/MECH/DWGS/FPS Isometrics - Rev. 2011/Colony-M009-Rev.2.dwg



**LOCATION**

- AREA NORTH
- SECTOR 35
- ADDRESS \_\_\_\_\_

**KEY ELEVATIONS**

- JAMES ST. 25.8 FT = 7.864m
- LOW BASEMENT . . . . . 228.6
- MAXIMUM ACTIVATION . . . . . 227.99
- ACTUAL ACTIVATION
  - JAMES . . . . . 5.49
  - SITE RIVER . . . . . 227.64
- PUMP START/STOP 1 . . . . . 224.63/224.18
- 2 . . . . . 224.79/224.33
- HIGH ALARM . . . . .

**NOTES**

1. SOURCE OF DATA SHOWN CAN BE TRACED BY REFERRING TO THE BASELINE DATA SPREADSHEETS. FOR SPECIFIC CROSS REFERENCES ON THE DRAWING (IE 73), REFER TO THE FPS BASELINE SPREADSHEET-SUPERSCRIP CROSS-REFERENCE SHEET.

**PUMP INFORMATION**

PUMP REF No.	HP	CAPACITY (CMS)
100	225	
101	175	
TOTAL		2.34

2011 - INDICATES FIELD CONFIRMED

NO.	D / M / Y	DESCRIPTION	BY
2	30/04/13	UPDATED	RED
1	10/03/05	UPDATED	RED

**THE CITY OF WINNIPEG**  
WATER AND WASTE DEPARTMENT

**FLOOD ACTIVITY / EMERGENCY MANUAL**

TITLE: COLONY FPS ISOMETRIC

JOB No. 020-08-09-09-00    DATE: MAR. 19, 2003

SCALE: N.T.S.    DWG. No. 00-107-10-M9

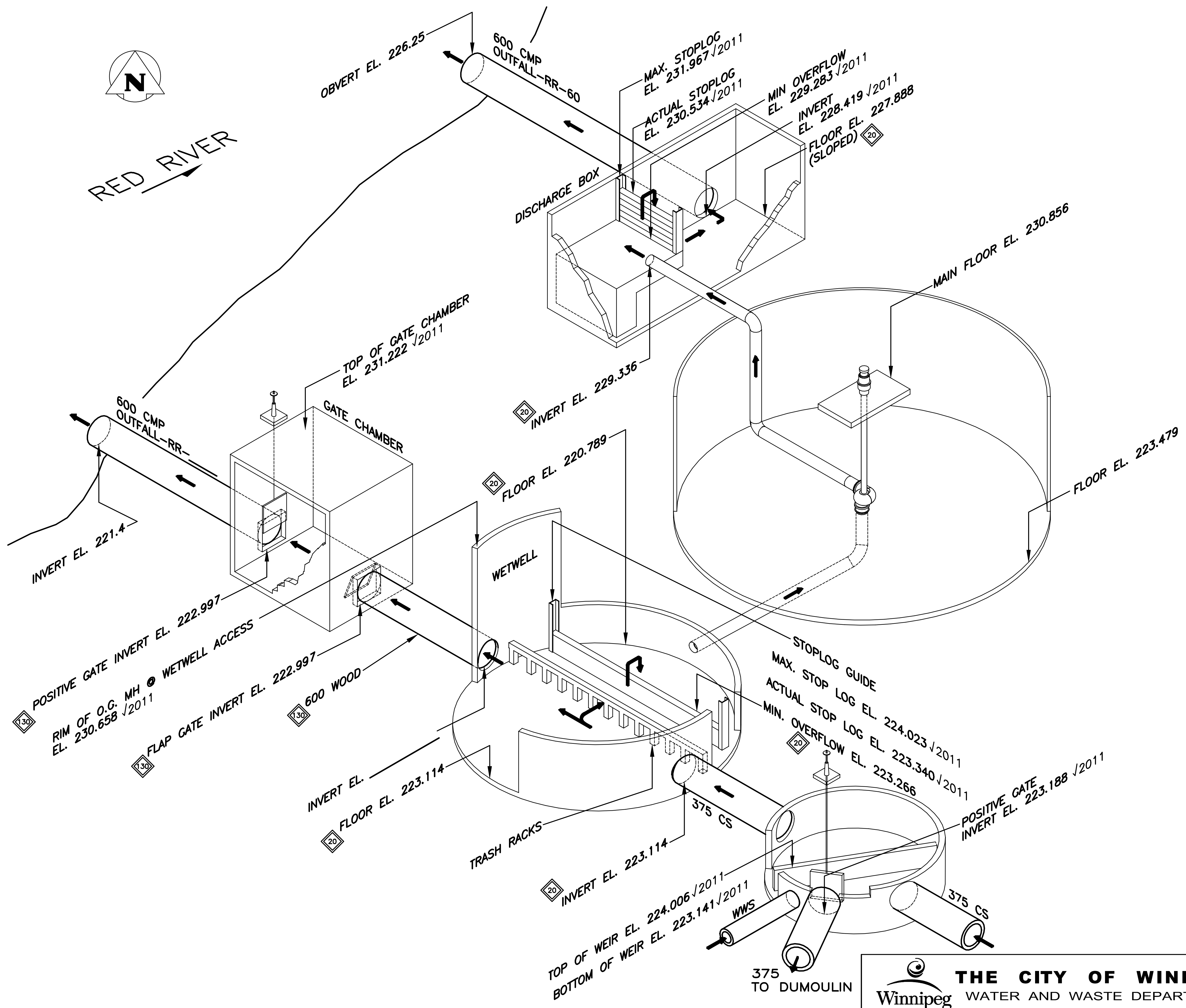
CHECKED: HSW/RED







FILE No.: P:/PROJECTS/2012/12-0194-005/MECH/DWGS/FPS Isometrics - Rev. 2011/Laverendrye-M019-Rev.4.dwg



**LOCATION**

- AREA EAST
- SECTOR 81
- ADDRESS \_\_\_\_\_

**KEY ELEVATIONS**

- JAMES ST. 25.8 FT = 7.864m
- LOW BASEMENT ..... 227.38
- MAXIMUM ACTIVATION ..... 226.77
- ACTUAL ACTIVATION
  - JAMES ..... 3.35
  - SITE RIVER ..... 225.24
- PUMP START/STOP 1 ..... 224.27/223.63
- HIGH ALARM .....

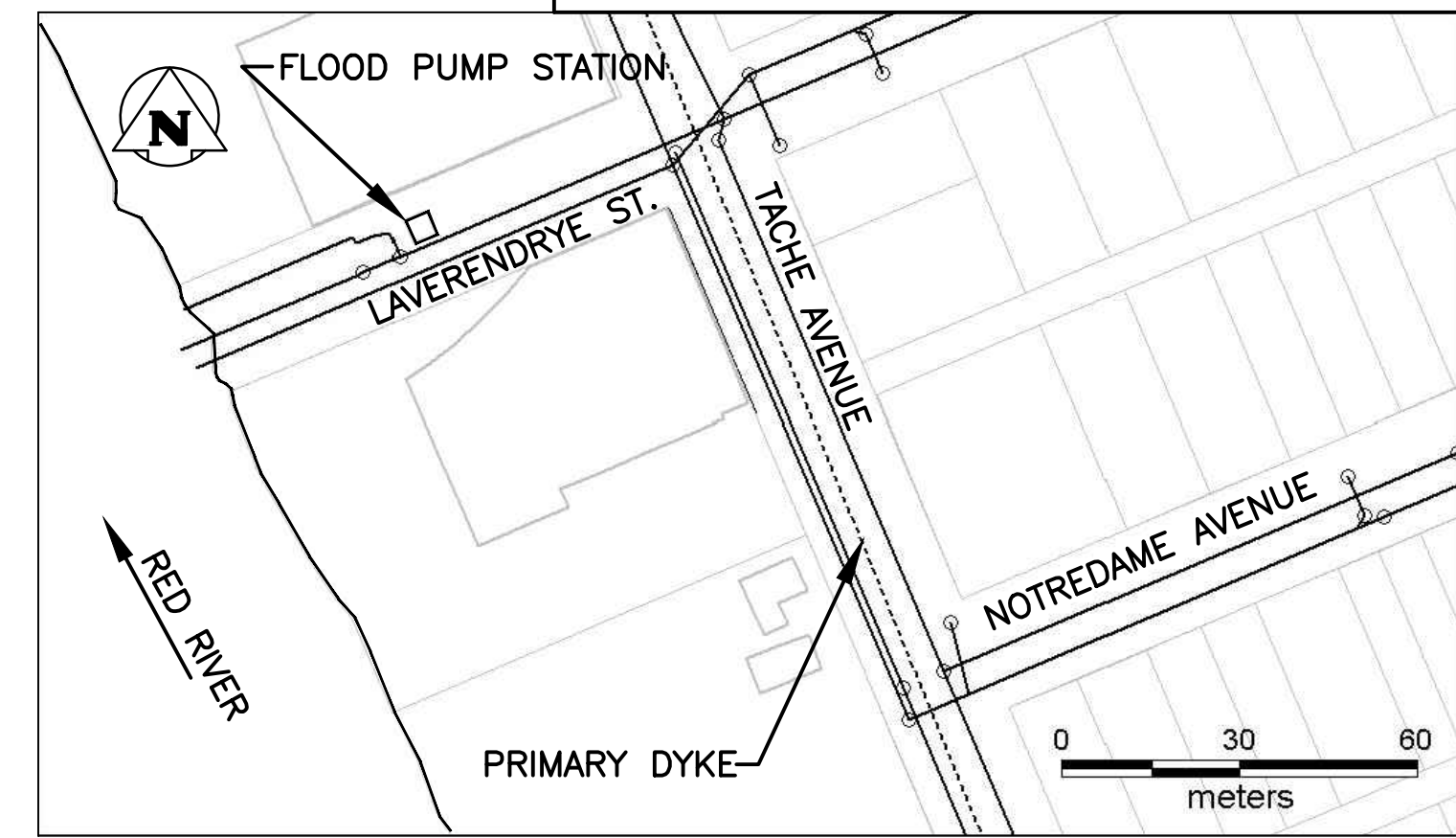
**NOTES**

1. SOURCE OF DATA SHOWN CAN BE TRACED BY REFERRING TO THE BASELINE DATA SPREADSHEETS. FOR SPECIFIC CROSS REFERENCES ON THE DRAWING (IE  $\diamond$  72), REFER TO THE FPS BASELINE DATA SPREADSHEET-SUPERSCRIPT CROSS-REFERENCE SHEET.

**PUMP INFORMATION**

PUMP REF No.	HP	CAPACITY	
		NO STOPLOGS (CMS)	FULL STOPLOGS (CMS)
2	45	0.27	0.24

$\sqrt{}$  2011 - INDICATES FIELD CONFIRMED



**SITE PLAN**

NO.	D / M / Y	DESCRIPTION	BY
1	-/-/-	UPDATED	RED

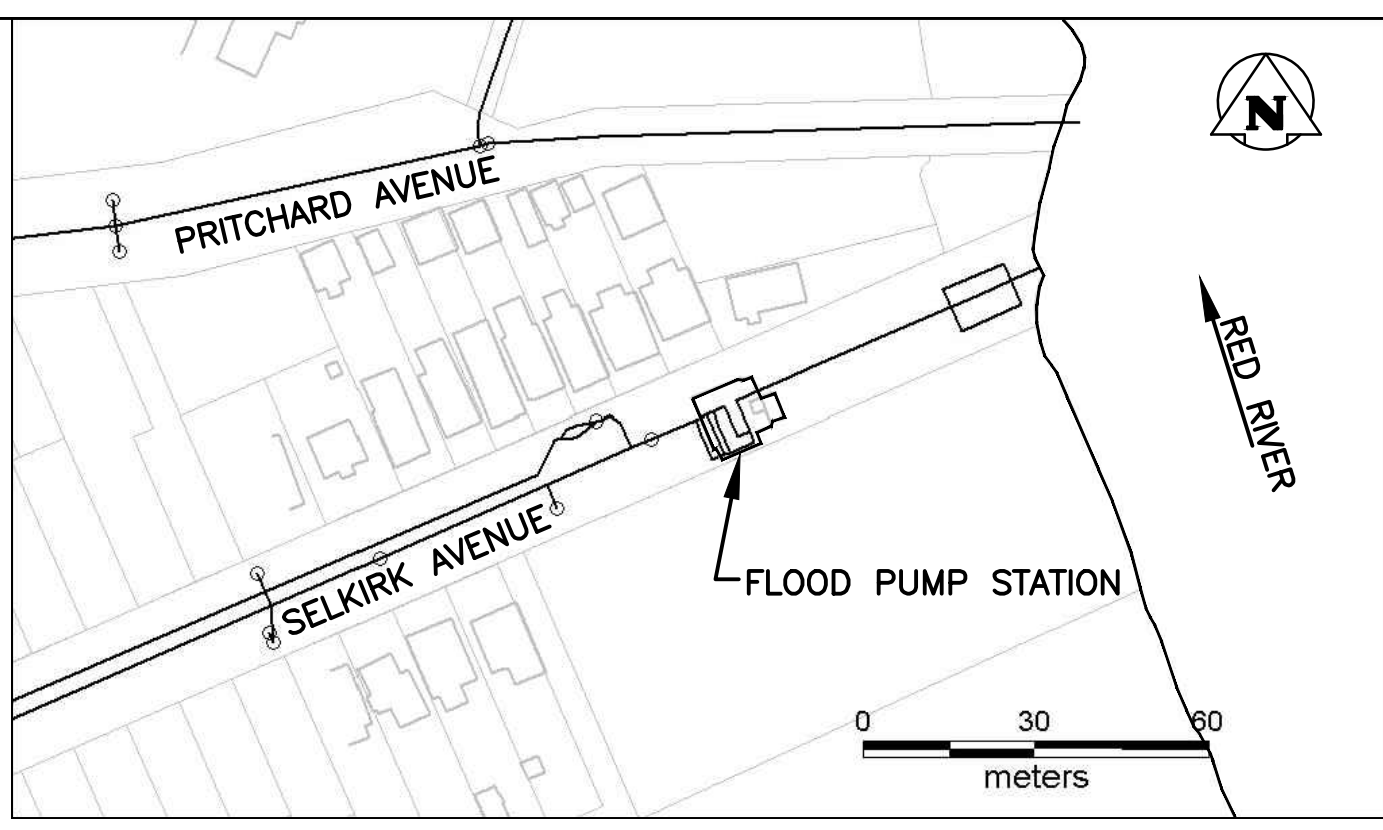
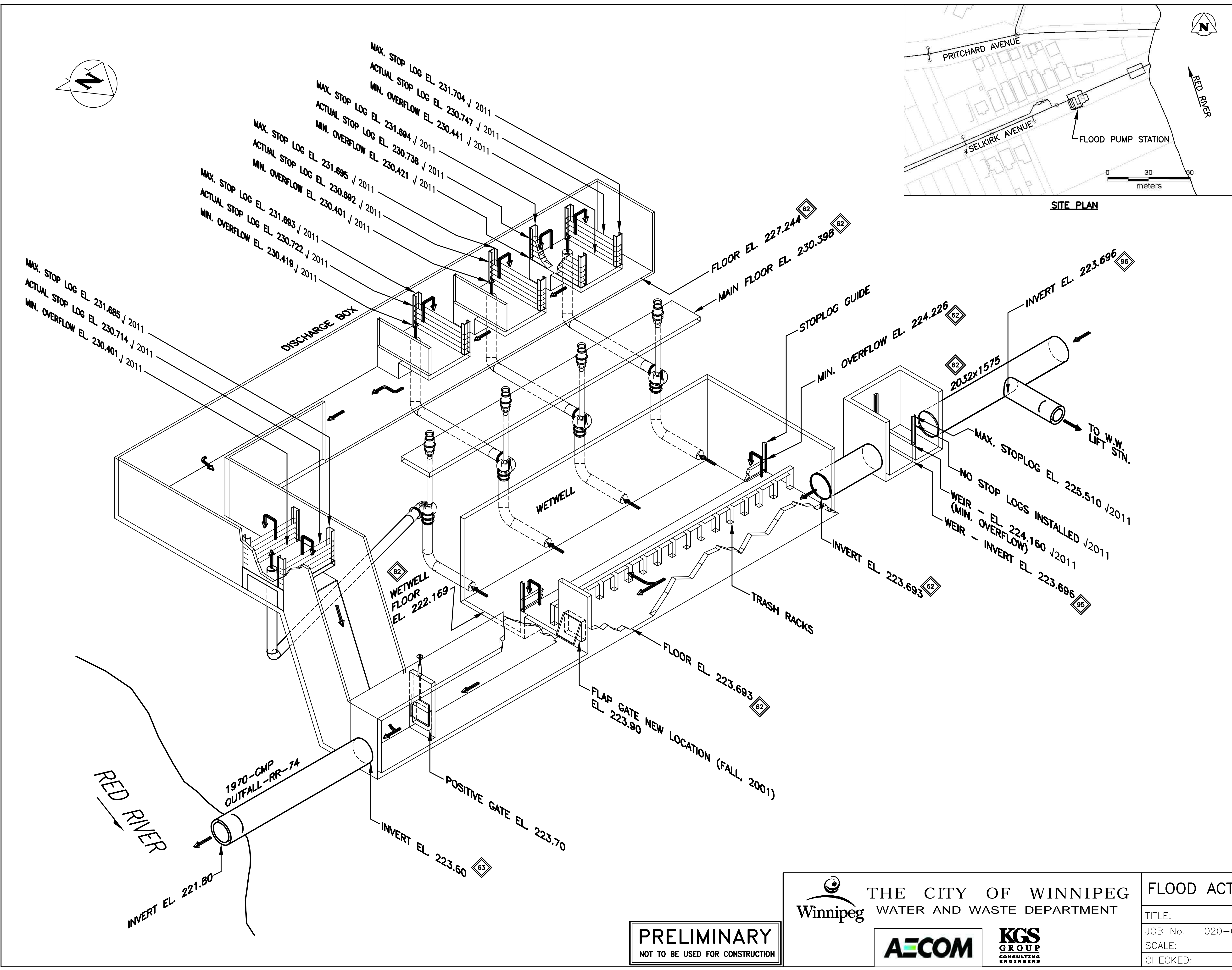
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TITLE:	LAVENDERDRYE FPS ISOMETRIC
JOB No.	020-08-09-09-00
DATE:	MAR. 19, 2003
SCALE:	N.T.S.
DWG. No.	00-107-10-M19
CHECKED:	HSW/RED

**THE CITY OF WINNIPEG**  
 WATER AND WASTE DEPARTMENT

**uma** **KGS GROUP**



P:\Projects\2015\15-0194-001\Dwg\Mech\FPS ISOMETRIC DRAWINGS - MASTER COPY\AutoCAD\_Selkirk-M029-Rev.3.dwg



**LOCATION**

- AREA NORTH
- SECTOR 14
- ADDRESS

**KEY ELEVATIONS**

- JAMES ST. 25.8 FT = 7.864m
- LOW BASEMENT . . . . . 228.9
- MAXIMUM ACTIVATION . . . . . 228.3
- ACTUAL ACTIVATION

  - JAMES . . . . . 20 Ft
  - SITE RIVER . . . . . 227.43

- PUMP START/STOP 1 . . . . . 224.44/2 . . . . . 224.75/3 . . . . . 225.05/4 . . . . . 225.20/
- HIGH ALARM . . . . .

**NOTES**

1. SOURCE OF DATA SHOWN CAN BE TRACED BY REFERRING TO THE BASELINE DATA SPREADSHEETS. FOR SPECIFIC CROSS REFERENCES ON THE DRAWING (IE  $\diamond 73$ ), REFER TO THE FPS BASELINE DATA SPREADSHEET-SUPERSCRIP CROSS-REFERENCE SHEET.

**PUMP INFORMATION**

PUMP REF No.	HP	CAPACITY	
		NO STOPLOGS (CMS)	FULL STOPLOGS (CMS)
14	75	0.63	0.52
15	75	0.64	0.52
16	175	1.57	1.40
17	175	1.583	1.40
TOTAL		4.42	3.85

✓ 2011 - INDICATES FIELD CONFIRMED

NO.	D / M / Y	DESCRIPTION	BY
3	19/05/17	UPDATED	RED
2	12/06/13	UPDATED	RED
1	10/03/05	UPDATED	RED

REVISIONS / ISSUE

**PRELIMINARY**  
NOT TO BE USED FOR CONSTRUCTION

**THE CITY OF WINNIPEG**  
WATER AND WASTE DEPARTMENT

**AECOM** **KGS GROUP**

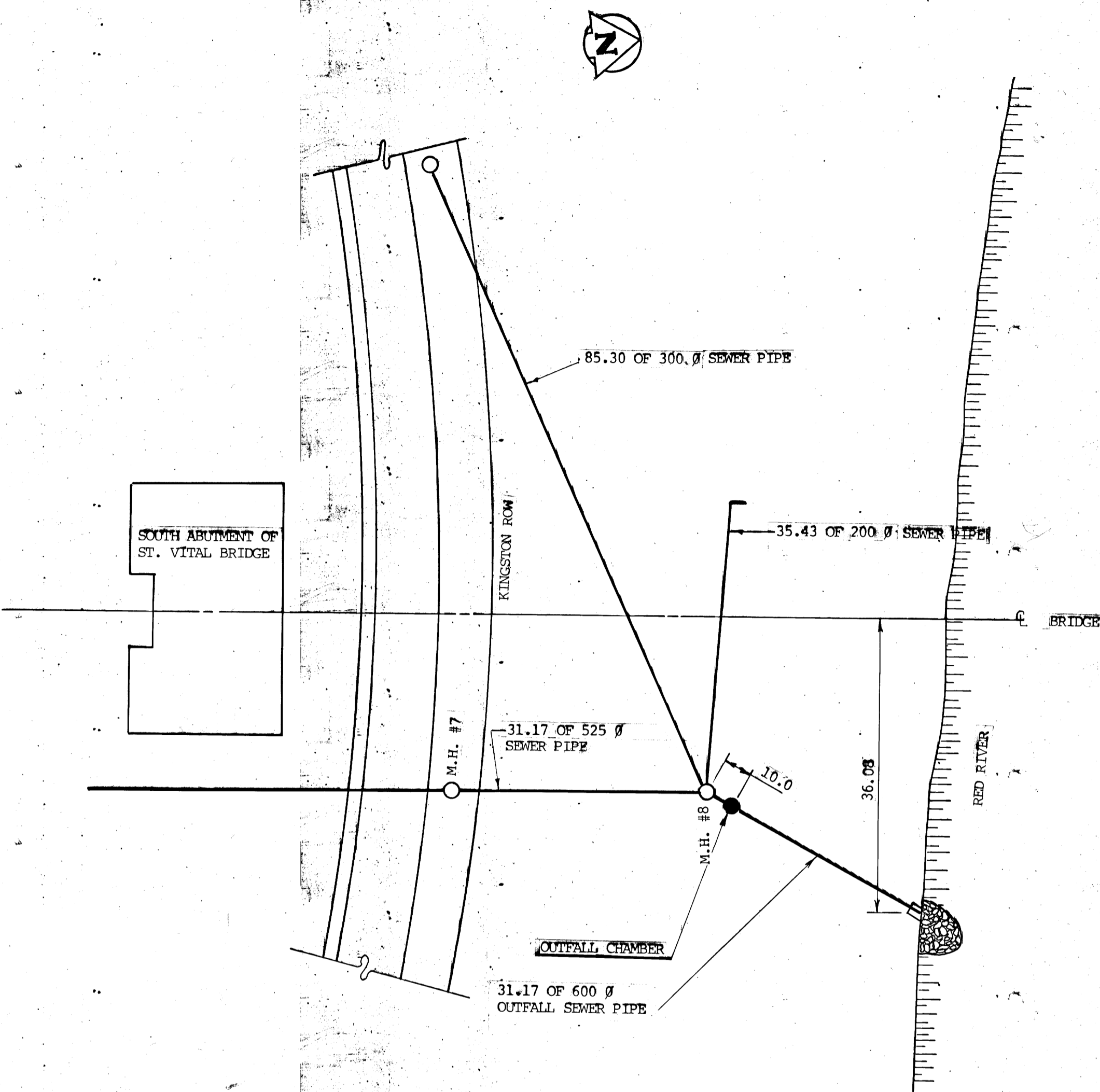
**FLOOD ACTIVITY / EMERGENCY MANUAL**

TITLE: SELKIRK FPS ISOMETRIC

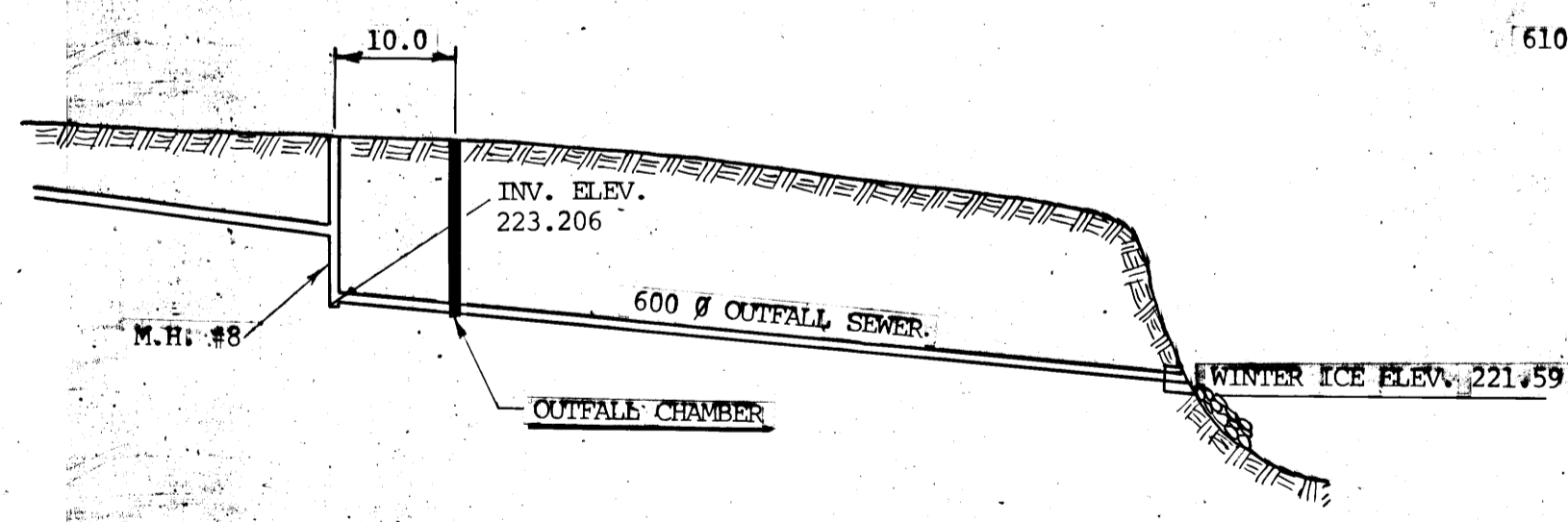
JOB No. 020-08-09-09-00 DATE: MAR. 19, 2003

SCALE: N.T.S. DWG. No. M029

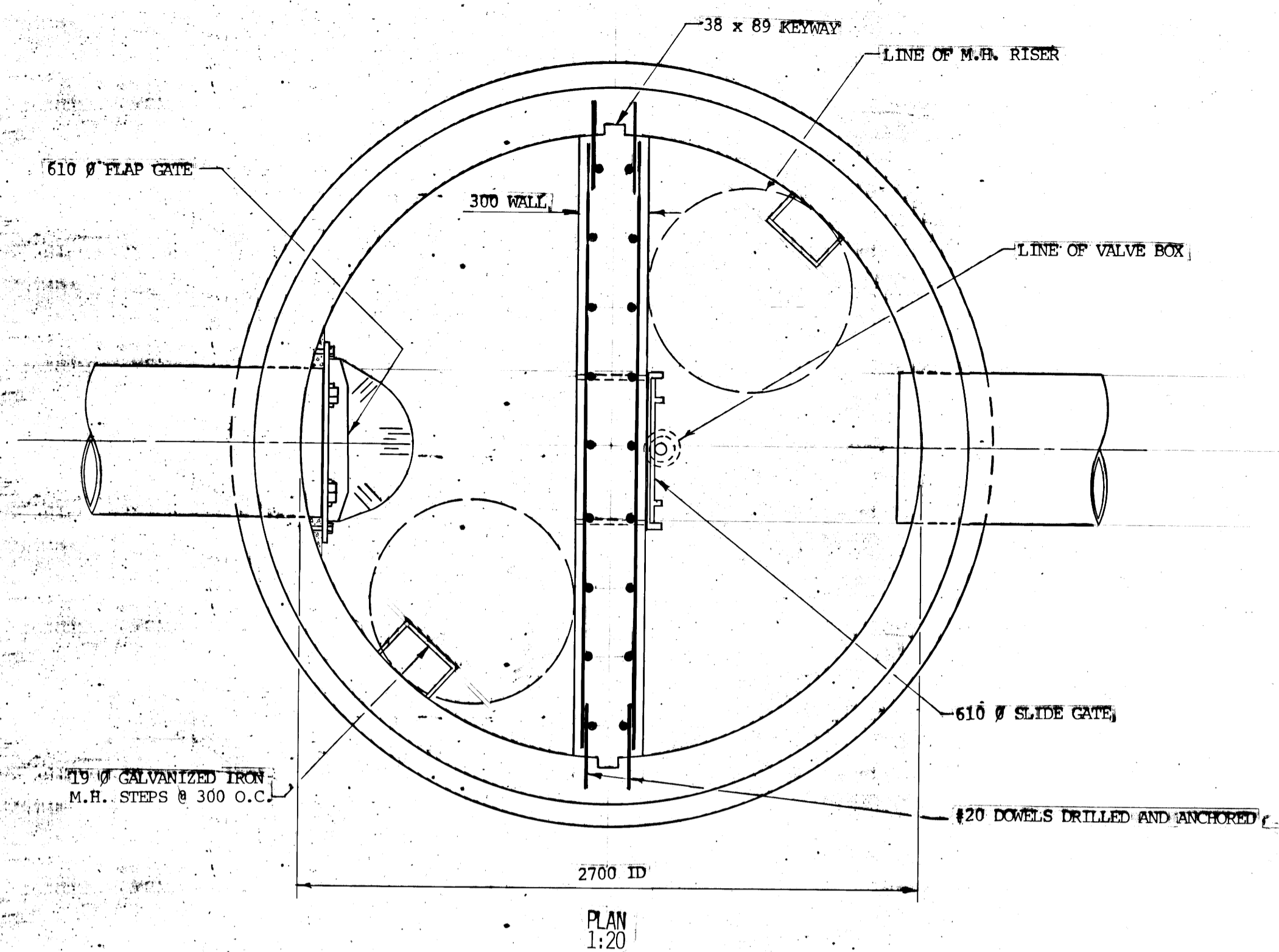
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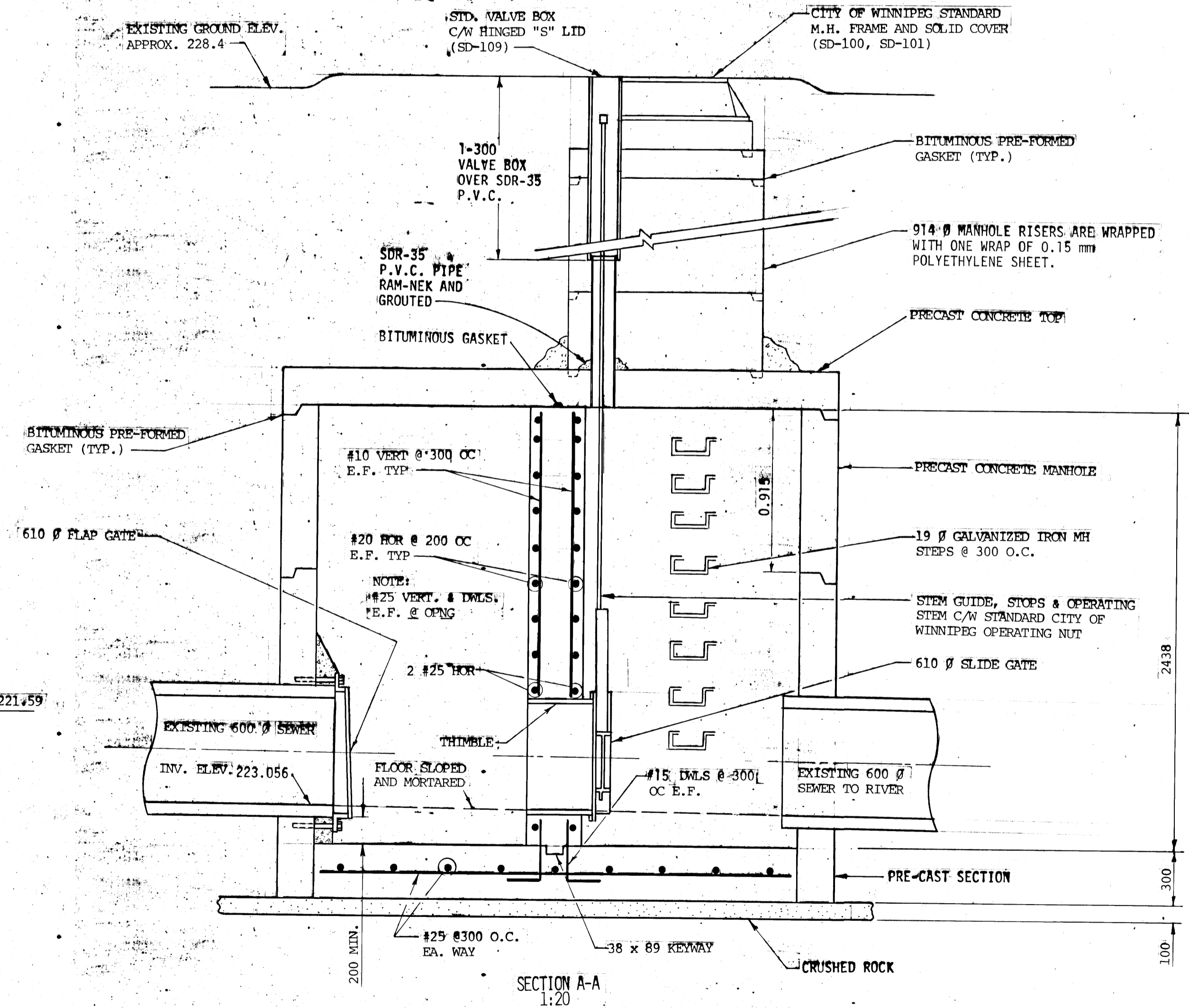
PLAN OF SOUTH ABUTMENT N.T.S.



RIVERBANK SECTION N.T.S.



PLAN 1:20



SECTION A-A 1:20

- NOTES**
- I. GENERAL
    1. ALL WORK WAS IN ACCORDANCE WITH THE STANDARD CONSTRUCTION SPECIFICATIONS OF THE CITY OF WINNIPEG DATED SEPTEMBER 1982.
  - II. EXCAVATION AND BACKFILL
    1. EXCAVATION AND BACKFILL IS IN ACCORDANCE WITH CW 2030-R2.
  - III. PRECAST CONCRETE
    1. PRECAST CONCRETE MANHOLE SECTION IS IN ACCORDANCE WITH CW 2131-R1.
    2. PRECAST CONCRETE MANHOLE SECTION IS ASTM C 76 CLASS III.
  - IV. CAST-IN-PLACE CONCRETE
    1. CAST-IN-PLACE CONCRETE IS IN ACCORDANCE WITH CW 2160-R2.
  - V. CONTROL
    1. FLAP GATE HAS FLAT BACK PLATE, BRONZE HINGE BOLTS AND HINGE BUSHINGS. (ARMCO MODEL 20C WITH LUBRITE BUSHINGS).
    2. SLIDE GATE HAS FLAT BACK PLATE, BRONZE SEAT FACINGS AND LIFT NUTS. GATE HAS NON-PROJECTING STEM EXTENSION AND APPROPRIATE LENGTH THIMBLE FOR MOUNTING. (ARMCO MODEL 20-10C).
    3. EXPANSION TYPE ANCHOR BOLTS ARE ZINC ELECTROPLATED. (HILTI KWIK BOLTS).
  - VI. GROUT
    1. GROUT IS STERNSON'S M-BED.
    2. ALL OPENINGS WERE GROUTED AFTER PIPES, CONDUITS AND GATES WERE IN PLACE.

**AS-CONSTRUCTED**  
 SURVEY ENGINEERING DATE  
 WATERWORKS, WASTE & DISPOSAL DEPARTMENT  
*AK R.P.S. July 22/85*

SEE MANUFACTURERS LAND DRAINAGE FILE NUMBERS MD 151a to MD 151e  
 -ARMCO GATE  
 -WALL THIMBLE  
 -PARTS LIST  
 -CAST STEEL OPERATING NUT

**METRIC**  
 WHOLE NUMBERS INDICATE MILLIMETRES  
 DECIMALIZED NUMBERS INDICATE METRES

NO.	REVISIONS	DATE	APP.
1	REVISED TO AS BUILT	85 06 20	RF

*R.A. [Signature]*  
 OCT 31/83  
 ENGINEER'S SEAL

B.M. 54-006 75M511 - Tblt. in S. face of E. Conc. Pier in 1st Row of Conc. Piers N. of S. end of Osborne St. Bridge over Red River, N. of Kingston Row, 5 m W. of E. end of Pier.  
 DESIGNED BY: G.N. DRAWN BY: R.F.  
 CHECKED BY: G.N. / R.A.S. DATE: OCT. 28, 1983  
 APPROVED BY: *R.M. Guley* DATE: OCT. 31, 1983

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

**ST. VITAL BRIDGE OUTFALL CHAMBER**  
 RELEASED FOR CONSTRUCTION: DATE: OCT. 31, 1983  
 SCALE: AS SHOWN DRAWING NO.: LD-651