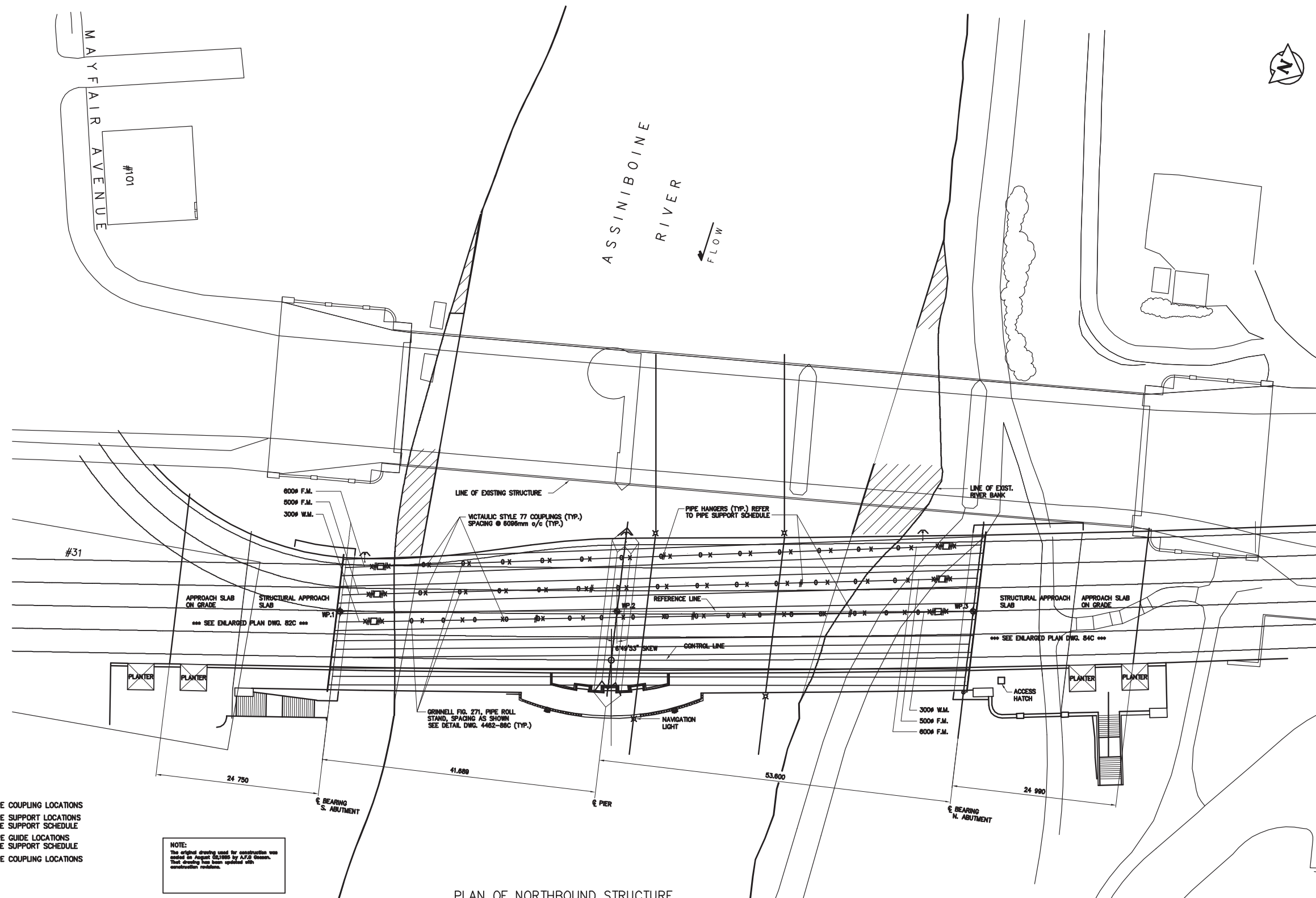


PLOT SCALE: 1:300

KCS FILE NO. G:\94-183-03\AS-CONSTRUCTED\418303-1M.dwg



**LEGEND**

- X INDICATES PIPE COUPLING LOCATIONS
- O INDICATES PIPE SUPPORT LOCATIONS REFER TO PIPE SUPPORT SCHEDULE
- # INDICATES PIPE GUIDE LOCATIONS REFER TO PIPE SUPPORT SCHEDULE
- INDICATES PIPE COUPLING LOCATIONS

**NOTE:**  
The original drawing used for construction was copied as project dictated by A.F.G. Gossen. That drawing has been updated with construction revisions.

**PIPE SUPPORT SCHEDULE**

PIPE SIZE	PIPE HANGERS AND ROLLERS	PIPE GUIDES	PIPE COUPLINGS
300mm	4.8M SPACING 1 PER SPOOL MIN.	WITHIN 4 PIPE DIA. OF EXPANSION JOINT 30M SPACING ON PIPE LINE MAX.	VICTAULIC STYLE 07 ON ELBOWS, STYLE 77 ELSEWHERE
500mm	6.0M SPACING 1 PER SPOOL MIN.	WITHIN 4 PIPE DIA. OF EXPANSION JOINT 45M SPACING ON PIPE LINE MAX.	VICTAULIC STYLE 07 ON ELBOWS, STYLE 77 ELSEWHERE
600mm	6.0M SPACING 1 PER SPOOL MIN.	WITHIN 4 PIPE DIA. OF EXPANSION JOINT 54M SPACING ON PIPE LINE MAX.	VICTAULIC STYLE 07 ON ELBOWS, STYLE 77 ELSEWHERE

**AS-CONSTRUCTED**

METRIC  
WHOLE NUMBERS INDICATE MILLIMETRES  
DECIMALIZED NUMBERS INDICATE METRES

**KGS GROUP CONSULTING ENGINEERS & PROJECT MANAGERS**  
WINNIPEG THUNDER BAY

**LOCATIONS APPROVED UNDERGROUND STRUCTURES**

SUPV U/D 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

NO.	REVISIONS	DATE	BY

**DS-Lea Consultants Ltd.**  
Consulting Engineers - Planners - Transportation Consultants  
Suite 111-93 Lombard Avenue Winnipeg, Manitoba R2S 3B1  
Phone (204) 943-9776 Facsimile (204) 943-9448

DESIGNED BY: RBB  
DRAWN BY: VJH  
CHECKED BY: AFG  
APPROVED BY: [Signature]  
AUTHORIZED BY: [Signature]  
DATE: JUNE 1995

HOR. SCALE: 1:300  
VERTICAL SCALE: [Blank]

ENGINEER'S SEAL  
PROVINCE OF MANITOBA  
**A.F.G. GOSSEN**  
REGISTERED PROFESSIONAL ENGINEER

**THE CITY OF WINNIPEG**  
WORKS AND OPERATIONS DIVISION  
STREETS AND TRANSPORTATION DEPARTMENT

MAIN STREET AND NORWOOD BRIDGES PROJECT  
MAIN STREET BRIDGE  
NORTHBOUND STRUCTURE

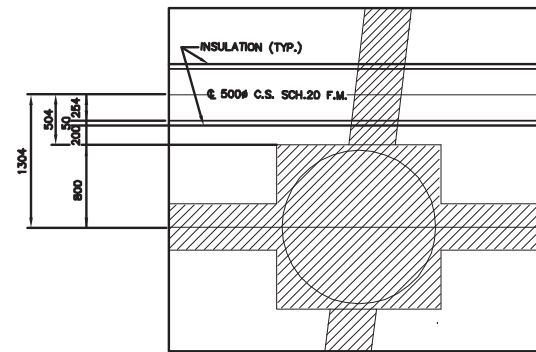
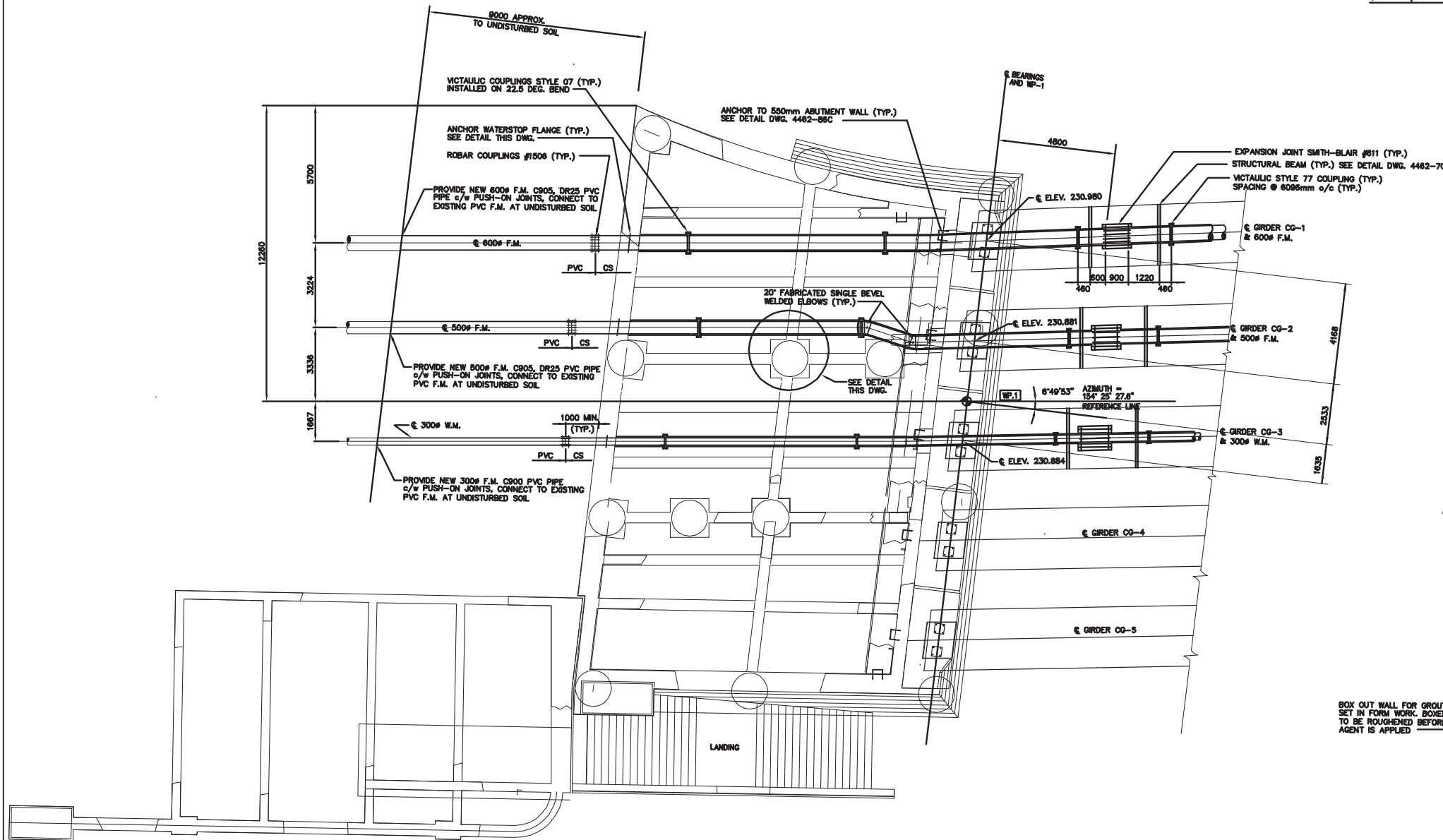
CITY DRAWING NUMBER: B104-95-81C  
SHEET 81 OF 121

CONSULTANT DRAWING NO. 4462-81C

CONCRETE GIRDER GENERAL ARRANGEMENT PLAN OF FORCEMAINS AND WATERMAINS

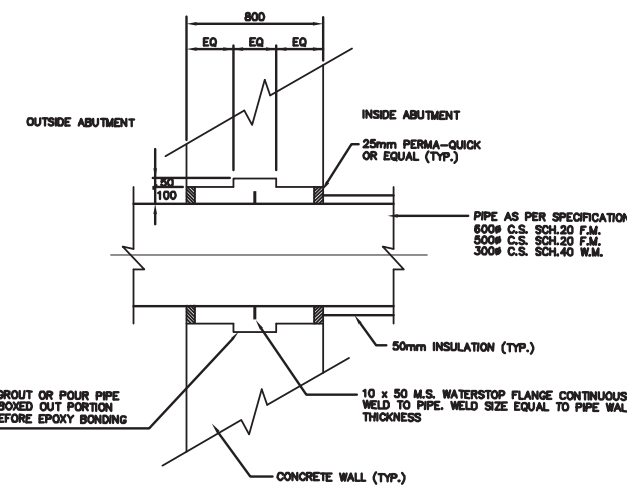
05788

**HALF SIZE REDUCTION**



DETAIL OF 500Ø PIPE (TYP.)

N.T.S.



ANCHOR WATERSTOP FLANGE DETAIL

N.T.S.

PLAN OF SOUTH ABUTMENT BELOW SLAB  
1:100

**NOTE:**  
The original drawing used for construction was issued on August 02, 1995 by A.F.G. Gossen. That drawing has been updated with construction revisions.

**AS-CONSTRUCTED**

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

**KGS CONSULTING ENGINEERS & PROJECT MANAGERS**  
GROUP WINNIPEG THUNDER BAY

**LOCATIONS APPROVED UNDERGROUND STRUCTURES**

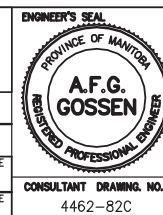
SUPPLY U/G STRUCTURES COMMITTEE	DATE

**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 DISTANCE AND EXACT LOCATION OF ALL UTILITIES. SERVICES MUST BE OBTAINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION.

NO.	REVISIONS	DATE	BY

**DS-Lea Consultants Ltd.**  
Consulting Engineers - Planners - Transportation Consultants  
Suite 111-93 Lombard Avenue Winnipeg, Manitoba R3B 3B1  
Phone (204) 943-3178 Facsimile (204) 943-4848

DESIGNED BY	RBB	CHECKED BY	AFG
DRAWN BY	VJH	APPROVED BY	
HOR. SCALE	1:100	AUTHORIZED BY	
VERTICAL		G.R. SMITH / SENIOR BRIDGE ENGINEER	
DATE	JUNE 1995	ACCEPTED BY	
		B. EBENSPINGER / BRIDGE ENGINEER	



**THE CITY OF WINNIPEG**  
WORKS AND OPERATIONS DIVISION  
STREETS AND TRANSPORTATION DEPARTMENT

MAIN STREET AND NORWOOD BRIDGES PROJECT  
MAIN STREET BRIDGE  
NORTHBOUND STRUCTURE

CONCRETE GIRDER SOUTH ABUTMENT PLAN

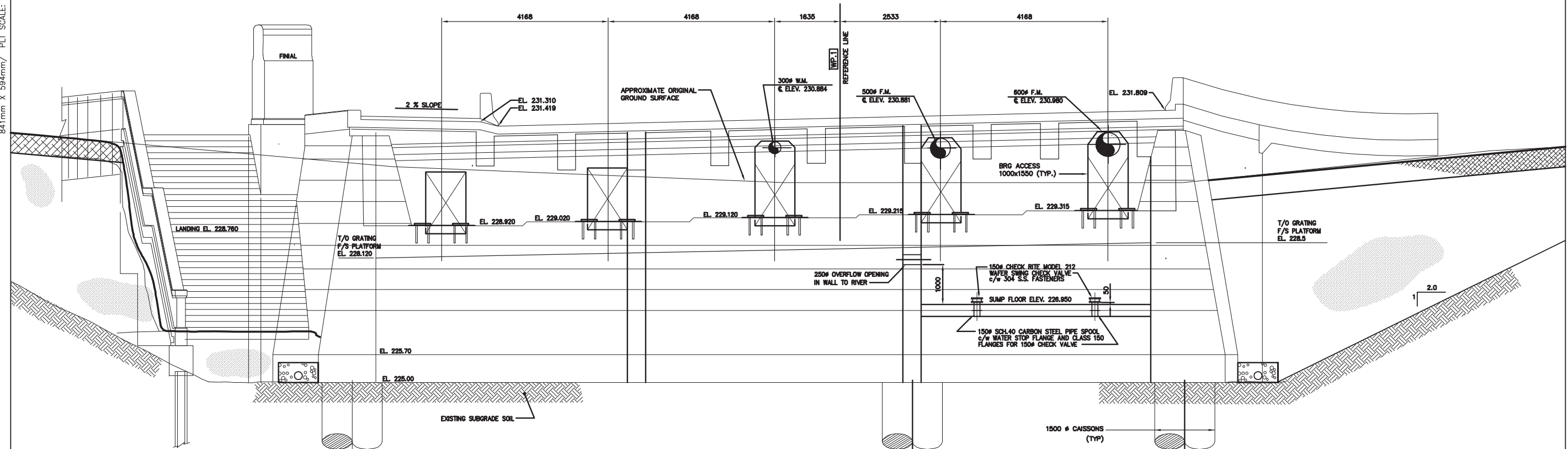
CITY DRAWING NUMBER  
B104-95-82C  
SHEET 82 OF 121

05789

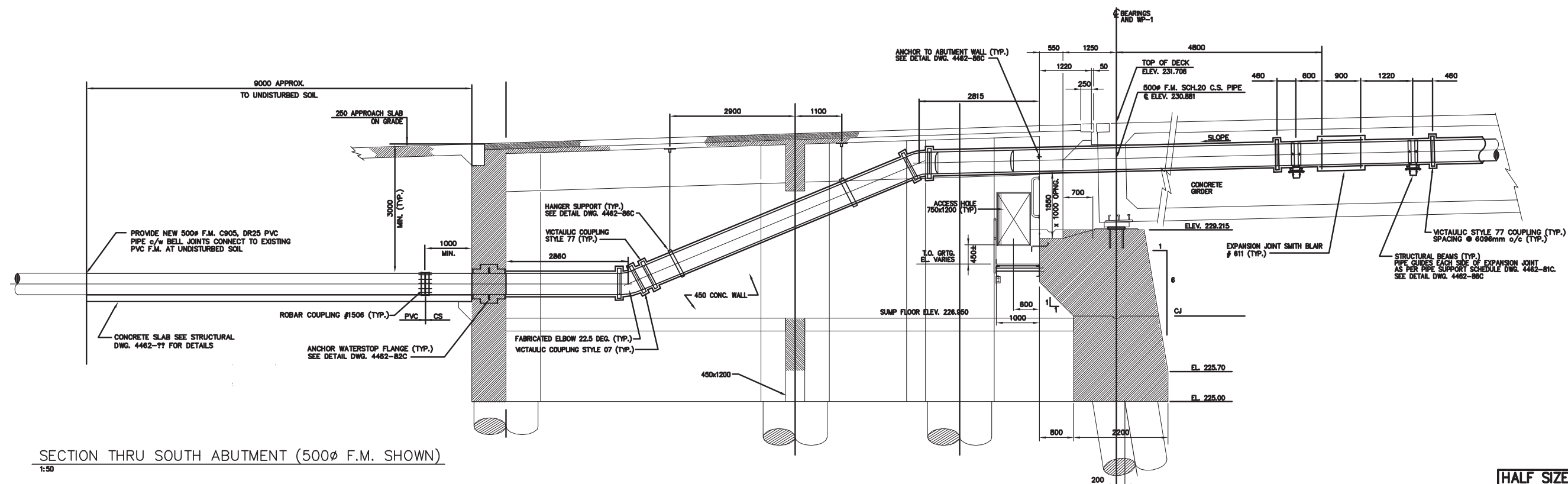
**HALF SIZE REDUCTION**

841mm X 594mm/ PLT SCALE: 1:50

KGS FILE NO. C:\94-183-03\AS-CONSTRUCTED\418303-3M.dwg



ELEVATION OF SOUTH ABUTMENT  
1:50



SECTION THRU SOUTH ABUTMENT (500# F.M. SHOWN)  
1:50

HALF SIZE REDUCTION

NOTE:  
The original drawing used for construction was sealed on August 02, 1995 by A.F.G. Gossen. That drawing has been updated with construction revisions.

METRIC  
WHOLE NUMBERS INDICATE MILLIMETRES  
DECIMALIZED NUMBERS INDICATE METRES

**KGS CONSULTING ENGINEERS & PROJECT MANAGERS**  
WINNIPEG THUNDER BAY

AS-CONSTRUCTED

LOCATIONS APPROVED UNDERGROUND STRUCTURES

SUPV U/D STRUCTURES COMMITTEE	DATE

NOTE:  
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NO.	REVISIONS	DATE	BY

**DS-Lea Consultants Ltd.**  
Consulting Engineers · Planners · Transportation Consultants  
Suite 111-93 Lombard Avenue Winnipeg, Manitoba R3B 3B1  
Phone [ 204 ] 943-3178 Facsimile [ 204 ] 943-4948

DESIGNED BY	RBB	CHECKED BY	AFG
DRAWN BY	VJH	APPROVED BY	
HOR. SCALE	1:50	AUTHORIZED BY	DATE
VERTICAL		G.R. SMITH / SENIOR BRIDGE ENGINEER	DATE
		ACCEPTED BY	DATE
		B. EBENSPANER / BRIDGE ENGINEER	

JUNE 1995

ENGINEER'S SEAL  
PROVINCE OF MANITOBA  
**A.F.G. GOSSSEN**  
REGISTERED PROFESSIONAL ENGINEER

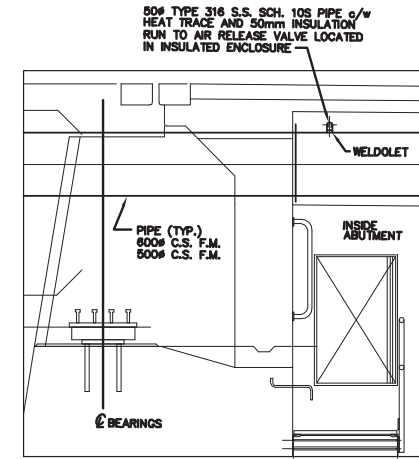
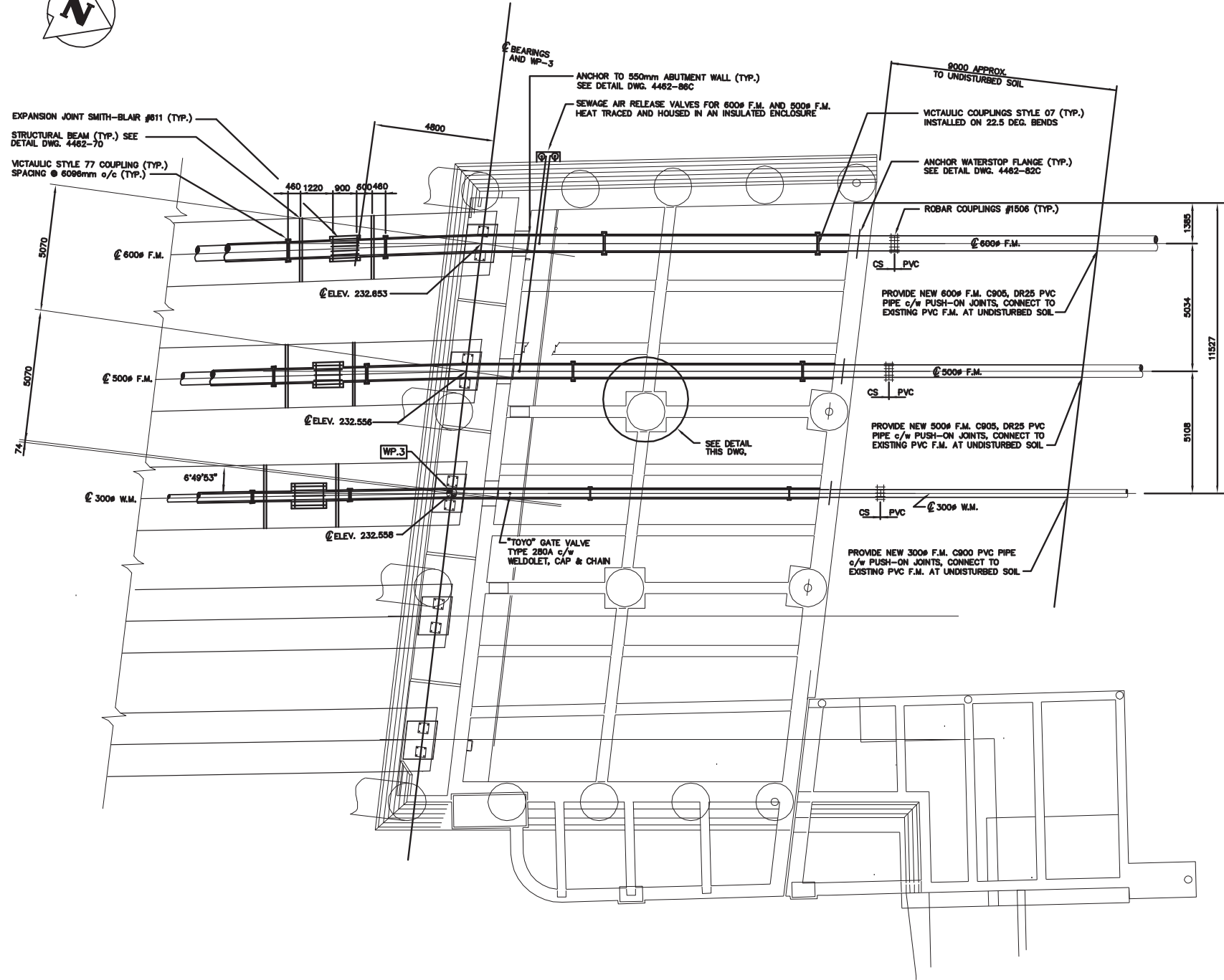
**THE CITY OF WINNIPEG**  
WORKS AND OPERATIONS DIVISION  
STREETS AND TRANSPORTATION DEPARTMENT

MAIN STREET AND NORWOOD BRIDGES PROJECT  
MAIN STREET BRIDGE  
NORTHBOUND STRUCTURE

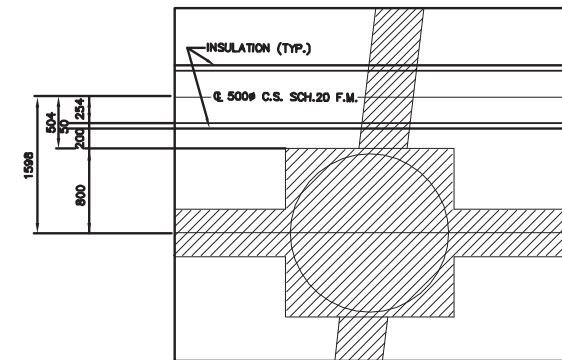
CONCRETE GIRDER SOUTH ABUTMENT  
ELEVATION AND SECTION

CITY DRAWING NUMBER  
B104-95-83C  
SHEET 83 OF 121

05790



DETAIL OF AIR RELEASE PIPING  
N.T.S.



DETAIL OF 500# PIPE (TYP.)  
N.T.S.

**NOTE:**  
The original drawing used for construction was sealed on August 02, 1995 by A.F.G. Gossen. That drawing has been updated with construction revisions.

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

**AS-CONSTRUCTED**

**KGS CONSULTING ENGINEERS & PROJECT MANAGERS**  
WINNIPEG THUNDER BAY

LOCATIONS APPROVED UNDERGROUND STRUCTURES		B.M. ELEV. -
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.		

NO.	REVISIONS	DATE	BY
D	AS-CONSTRUCTED - FROM INFORMATION SUPPLIED	12/97	JWB
C	REVISED PIPING LAYOUT	08/96	AS
B	ISSUED FOR CONSTRUCTION	08/96	JWB
A	ISSUED FOR TENDER	06/96	JWB

**DS-Lea Consultants Ltd.**  
Consulting Engineers - Planners - Transportation Consultants  
Suite 111-93 Lombard Avenue Winnipeg, Manitoba R3B 3B1  
Phone [204] 943-3178 Facsimile [204] 943-4948

DESIGNED BY: RBB  
DRAWN BY: VJH  
HOR. SCALE: 1:100  
VERTICAL SCALE: 1:100  
DATE: JUNE 1996

**ENGINEER'S SEAL**  
PROVINCE OF MANITOBA  
**A.F.G. GOSSEN**  
REGISTERED PROFESSIONAL ENGINEER  
CONSULTANT DRAWING NO. 4462-84C

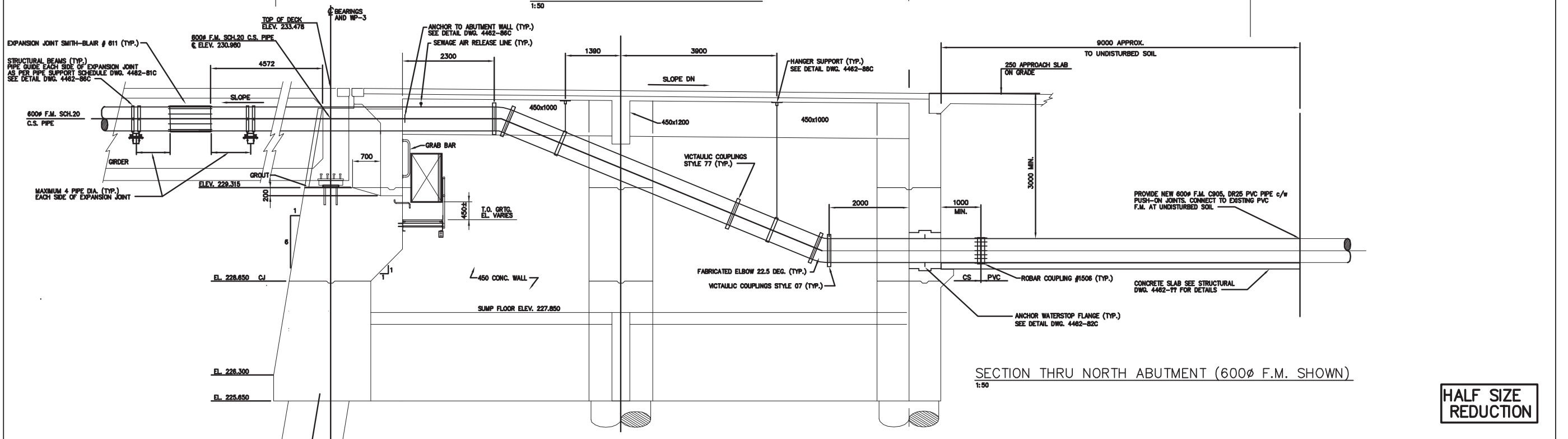
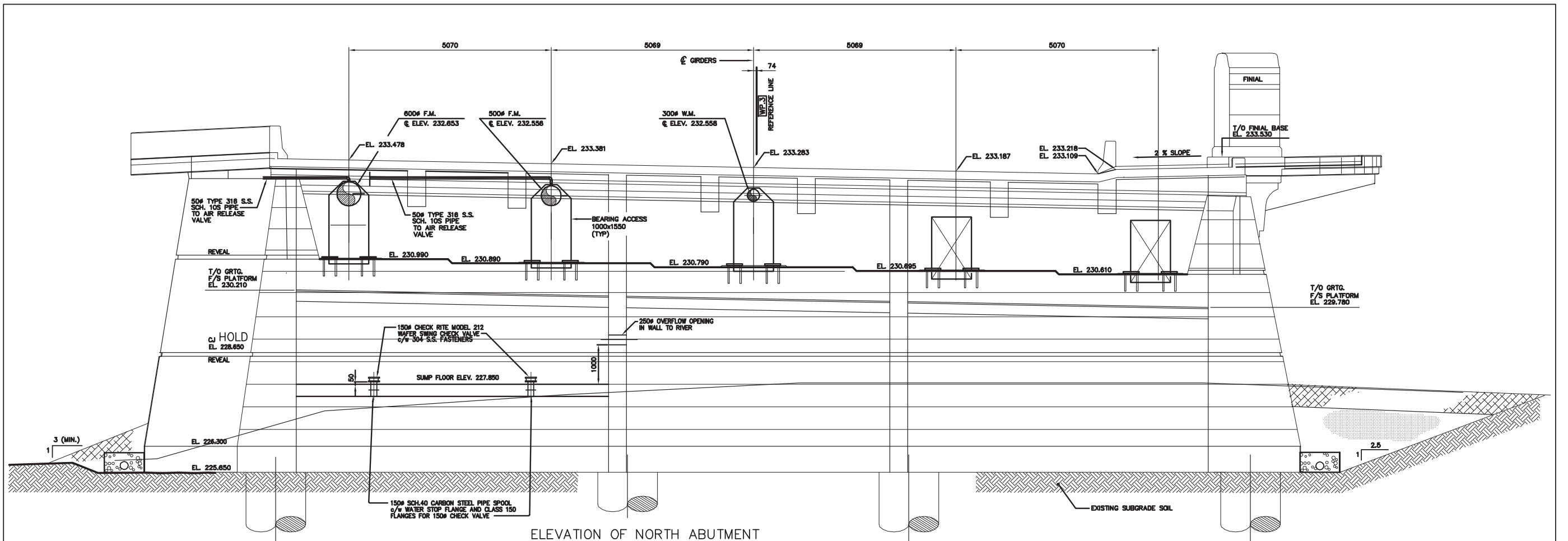
**THE CITY OF WINNIPEG**  
WORKS AND OPERATIONS DIVISION  
STREETS AND TRANSPORTATION DEPARTMENT

MAIN STREET AND NORWOOD BRIDGES PROJECT  
MAIN STREET BRIDGE  
NORTHBOUND STRUCTURE

CONCRETE GIRDER NORTH ABUTMENT PLAN

CITY DRAWING NUMBER: B104-95-84C  
SHEET 84 OF 121  
05791

**HALF SIZE REDUCTION**



**NOTE:**  
The original drawing used for construction was sealed on August 02, 1995 by A.F.G. Gossen. That drawing has been updated with construction revisions.

**AS-CONSTRUCTED**

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

**KGS CONSULTING ENGINEERS & PROJECT MANAGERS**  
WINNIPEG THUNDER BAY

LOCATIONS APPROVED UNDERGROUND STRUCTURES		B.M. ELEV.
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 COORDINATION OF EXISTANCE AND EXACT LOCATION OF ALL SERVICES MUST BE OBTAINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION		
B	AS-CONSTRUCTED - FROM INFORMATION	
A	ISSUED FOR TENDER	12/97 JWB
NO.	REVISIONS	06/95 JWB
	DATE BY	

**DS-Lea Consultants Ltd.**  
Consulting Engineers - Planners - Transportation Consultants  
Suite 111-93 Lombard Avenue Winnipeg, Manitoba R3B 3B1  
Phone [204] 943-3178 Facsimile [204] 943-4948

DESIGNED BY: RBB  
DRAWN BY: VJH  
HOR. SCALE: 1:50  
VERTICAL: 1:50  
DATE: JUNE 1995

CHECKED BY: AFG  
APPROVED BY:  
AUTHORIZED BY: DATE  
G.R. SMITH / SENIOR BRIDGE ENGINEER  
ACCEPTED BY: DATE  
B. EBENSFANGER / BRIDGE ENGINEER



**THE CITY OF WINNIPEG**  
WORKS AND OPERATIONS DIVISION  
STREETS AND TRANSPORTATION DEPARTMENT

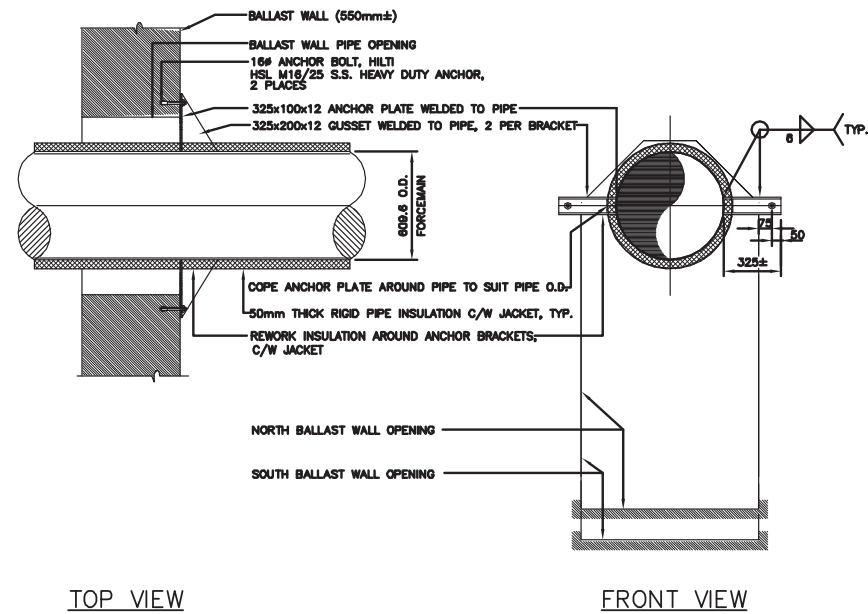
MAIN STREET AND NORWOOD BRIDGES PROJECT  
MAIN STREET BRIDGE  
NORTHBOUND STRUCTURE

CONCRETE GIRDER NORTH ABUTMENT  
ELEVATION AND SECTION

CITY DRAWING NUMBER: B104-95-85C  
SHEET: 85 OF 121

CONSULTANT DRAWING NO.: 4462-85C

05792

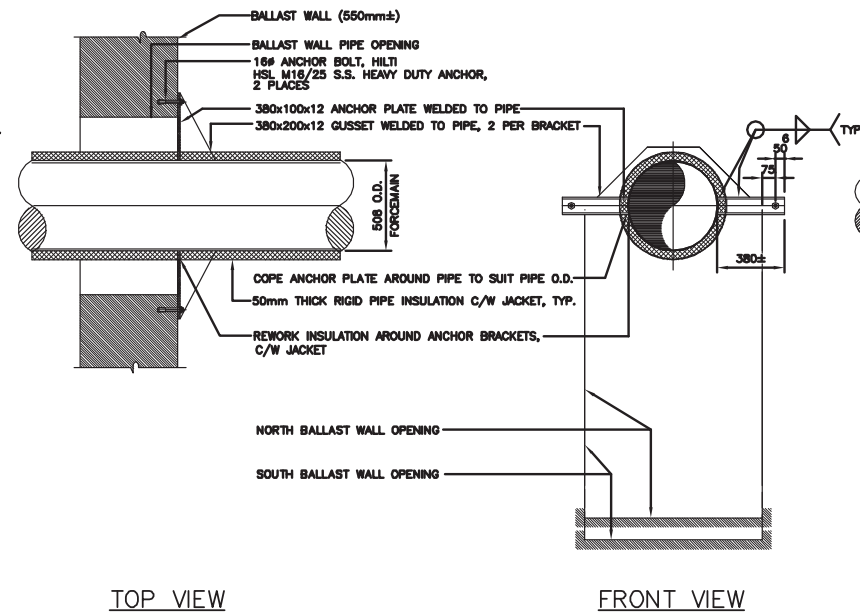


TOP VIEW

FRONT VIEW

600Ø PIPE THRUST RESTRAINT BRACKET DETAIL, (x2)

1:20

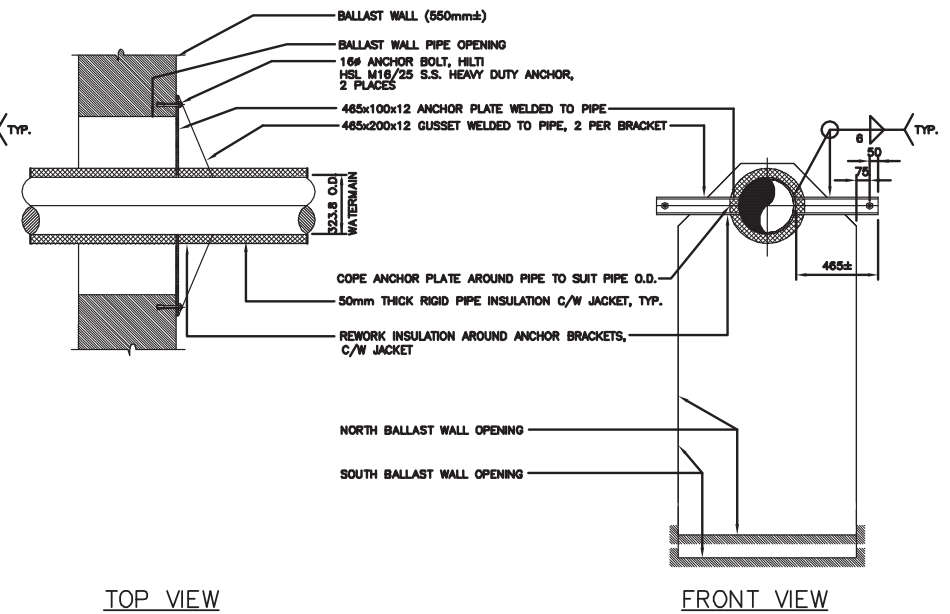


TOP VIEW

FRONT VIEW

500Ø PIPE THRUST RESTRAINT BRACKET DETAIL, (x2)

1:20

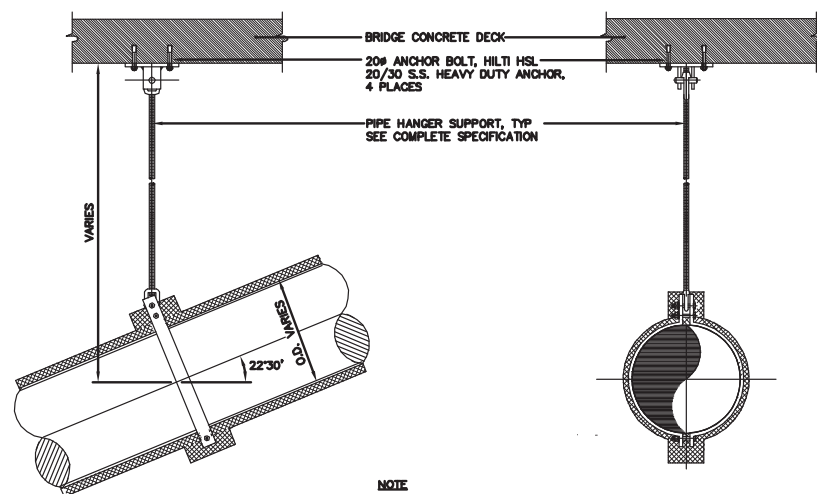


TOP VIEW

FRONT VIEW

300Ø PIPE THRUST RESTRAINT BRACKET DETAIL, (x2)

1:20



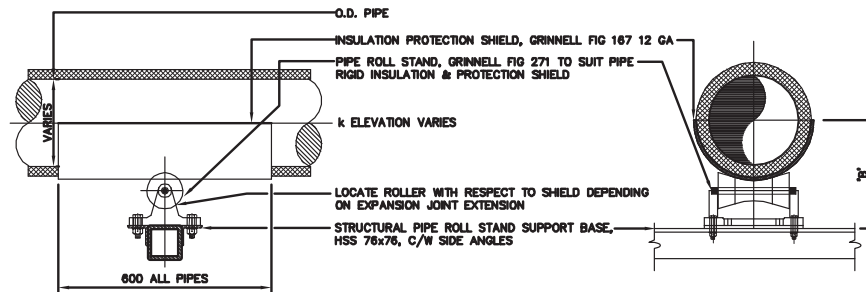
NOTE  
CONTRACTOR TO LOCATE REBAR PRIOR TO DRILLING FOR ANCHOR BOLTS INSTALLATION.

- PIPE HANGER SUPPORT
- CONCRETE CLEVIS PLATE, GRINNELL FIG. 49 SIZE TO SUIT ROD Ø
  - WELDLESS EYE NUT, GRINNELL FIG. 290 TO SUIT ROD Ø (2 REQ'D. EACH SUPPORT)
  - 1/2" HANGER ROD, GRINNELL FIG. 146 304 S.S.
  - DOUBLE BOLT PIPE CLAMP, GRINNELL FIG. 295 TO SUIT PIPE O.D.

PIPE O.D.	'A'
323.8	22
508	32
609.6	32

PIPE HANGER SUPPORT (TYP.)

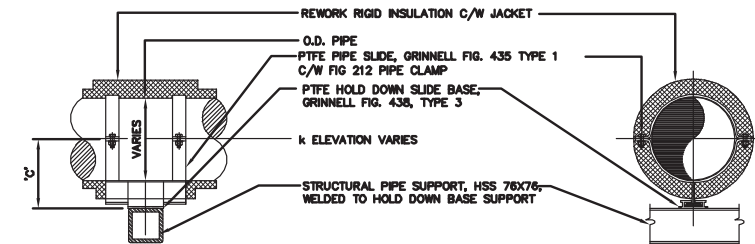
1:20



PIPE O.D.	INSULATION SHIELD	PIPE ROLL STAND	'B'
323.8	GRINNELL FIG. 167-18C	GRINNELL FIG. 271 FOR 425 O.D. PIPE	349
508	GRINNELL FIG. 167-25C	GRINNELL FIG. 271 FOR 610 O.D. PIPE	453
609.6	GRINNELL FIG. 167-28C	GRINNELL FIG. 271 FOR 710 O.D. PIPE	582

PIPE ROLL STAND SUPPORT (TYP.)

N.T.S.



PIPE O.D.	PIPE SLIDE	HOLD DOWN BASE	'C'
323.8	GRINNELL FIG. 435 TYPE 1, FOR PIPE SIZE 250Ø-350Ø	GRINNELL FIG. 436, TYPE 3 SIZE B	129
508	GRINNELL FIG. 435 TYPE 1, FOR PIPE SIZE 400Ø-750Ø	GRINNELL FIG. 436, TYPE 3 SIZE B	131
609.6	GRINNELL FIG. 435 TYPE 1, FOR PIPE SIZE 400Ø-750Ø	GRINNELL FIG. 436, TYPE 3 SIZE B	131

PIPE GUIDE SUPPORT (TYP.)

1:20

NOTE:  
The original drawing used for construction was revised on August 02, 1999 by A.F.G. Gosson. That drawing has been updated with construction revisions.

HALF SIZE REDUCTION

AS-CONSTRUCTED

METRIC  
WHOLE NUMBERS INDICATE MILLIMETRES  
DECIMALIZED NUMBERS INDICATE METRES

**KGS CONSULTING ENGINEERS & PROJECT MANAGERS**  
WINNIPEG THUNDER BAY

LOCATIONS APPROVED UNDERGROUND STRUCTURES	B.M. ELEV.	DATE	BY
SUPV U/C STRUCTURES COMMITTEE			
NOTE: LOCATION OF UNDERGROUND STRUCTURES AS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE BUT NO GUARANTEE IS GIVEN THAT THE GIVEN LOCATIONS ARE EXACT COINCIDENCE OF EXISTENCE AND EXACT LOCATION OF ALL SERVICES MUST BE OBTAINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION			
B AS-CONSTRUCTED - FROM INFORMATION		12/97	JMB
A ISSUED FOR TENDER		06/95	JMB
NO. REVISIONS		DATE	BY

**DS-Lea Consultants Ltd.**  
Consulting Engineers - Planners - Transportation Consultants  
Suite 111-93 Lombard Avenue Winnipeg, Manitoba R3B 3B1  
Phone (204) 943-3178 Facsimile (204) 943-4948

DESIGNED BY RBB CHECKED BY AFG  
DRAWN BY AS APPROVED BY  
AUTHORIZED BY DATE  
G.R. SMITH / SENIOR BRIDGE ENGINEER  
ACCEPTED BY DATE  
B. EBENSPANER / BRIDGE ENGINEER

HOR. SCALE 1:20  
VERTICAL  
DATE JUNE 1995

ENGINEER'S SEAL  
PROVINCE OF MANITOBA  
**A.F.G. GOSSEN**  
REGISTERED PROFESSIONAL ENGINEER  
CONSULTANT DRAWING NO. 4462-86C

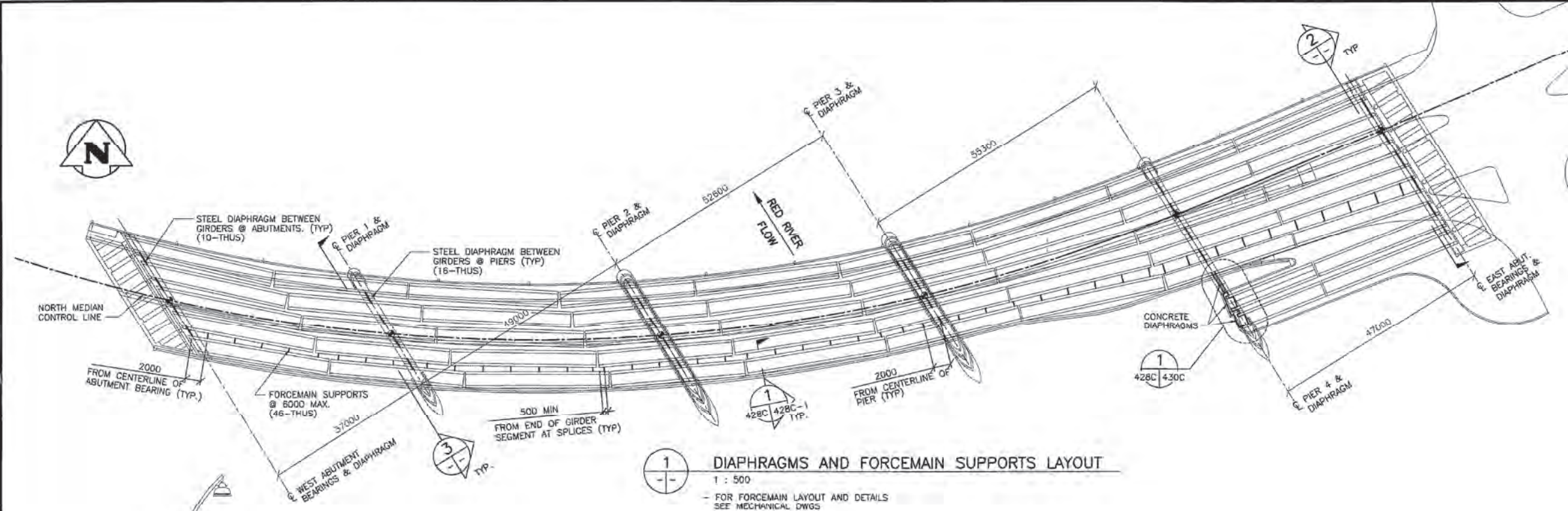
**THE CITY OF WINNIPEG**  
WORKS AND OPERATIONS DIVISION  
STREETS AND TRANSPORTATION DEPARTMENT

MAIN STREET AND NORWOOD BRIDGES PROJECT  
MAIN STREET BRIDGE  
NORTHBOUND STRUCTURE

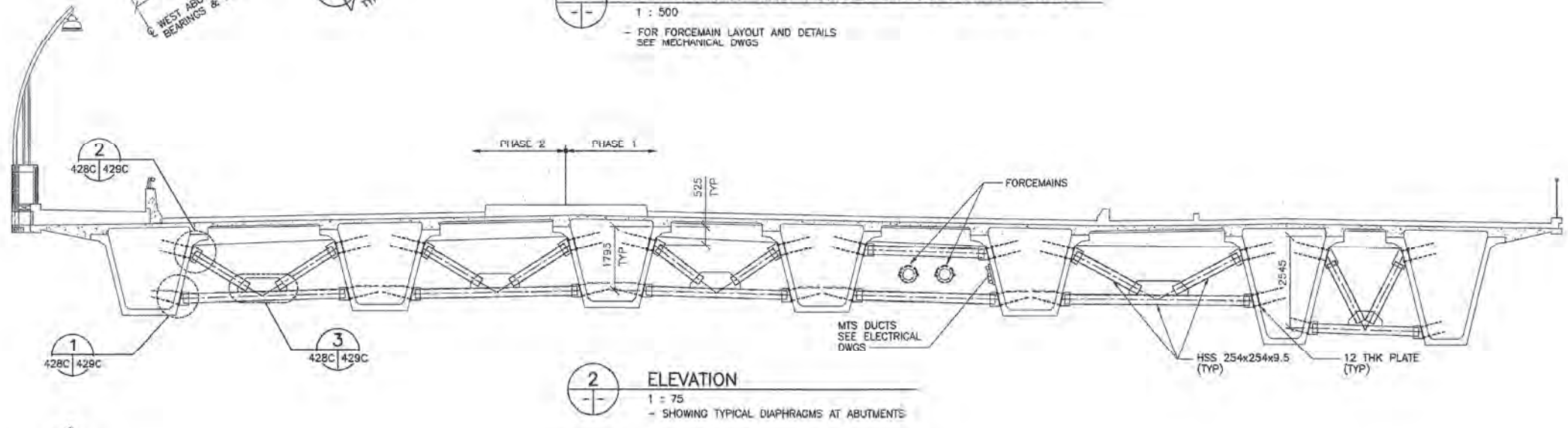
CITY DRAWING NUMBER B104-95-86C  
SHEET 86 OF 121

CONCRETE GIRDER PIPE DETAILS

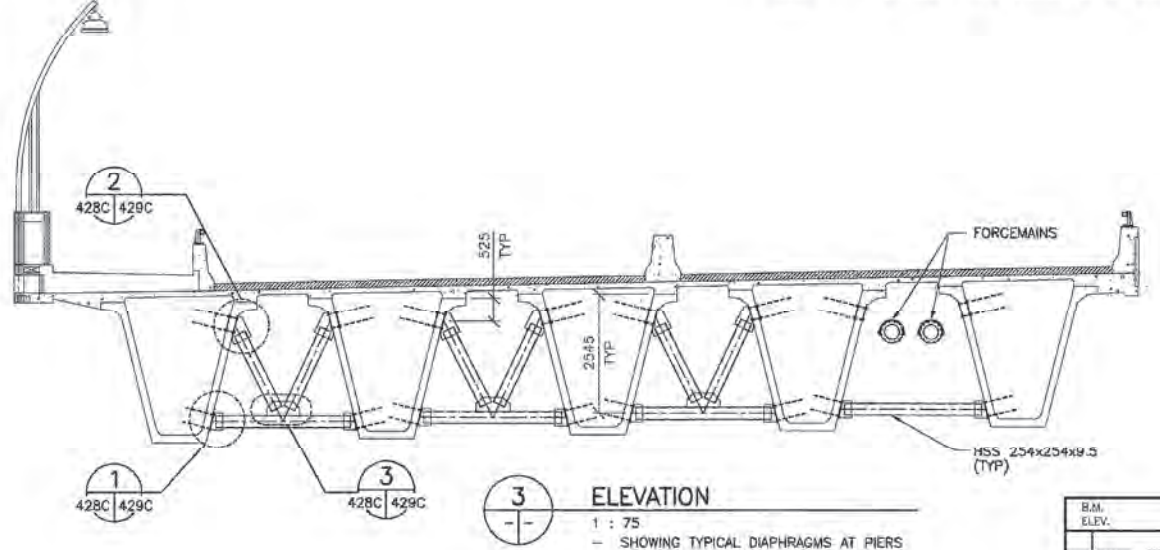
05793



**1**  
DIAPHRAGMS AND FORCEMAIN SUPPORTS LAYOUT  
1 : 500  
- FOR FORCEMAIN LAYOUT AND DETAILS  
SEE MECHANICAL DWGS



**2**  
ELEVATION  
1 : 75  
- SHOWING TYPICAL DIAPHRAGMS AT ABUTMENTS

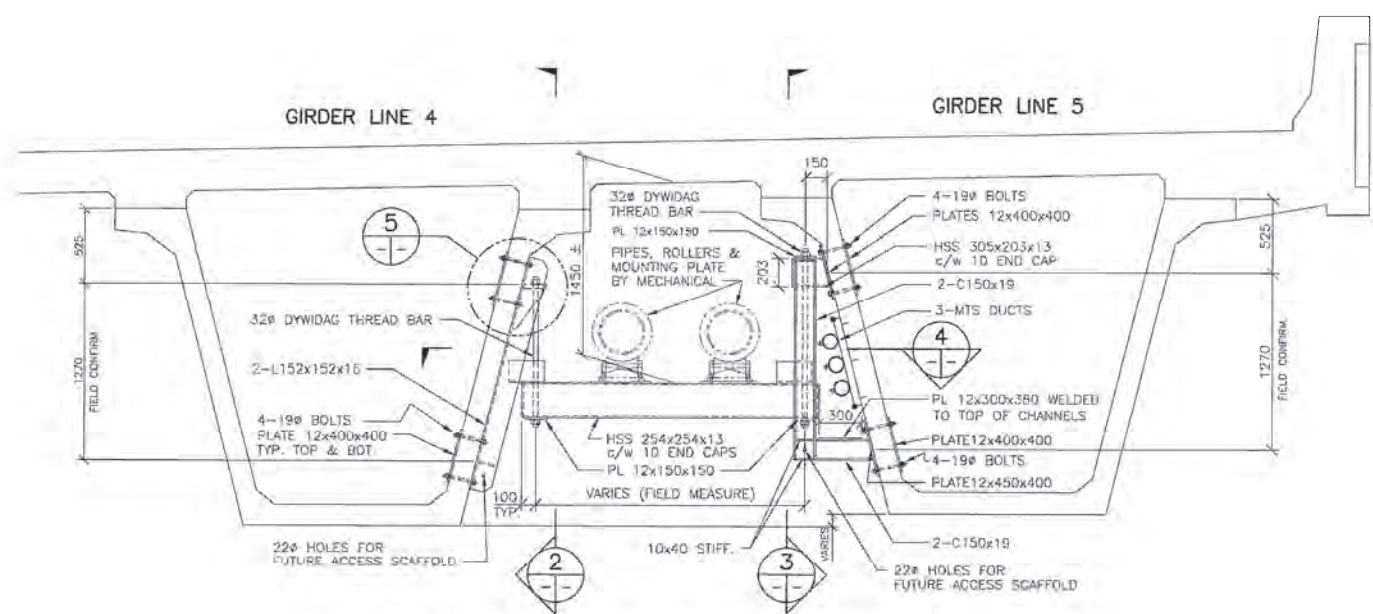


**3**  
ELEVATION  
1 : 75  
- SHOWING TYPICAL DIAPHRAGMS AT PIERS

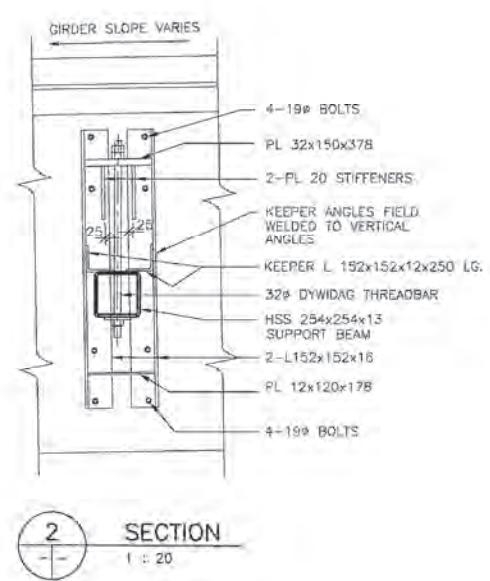


**RECORD DRAWING**  
DATE 05.01.20 BY W.P.S.  
REVIEWED BY P.S.

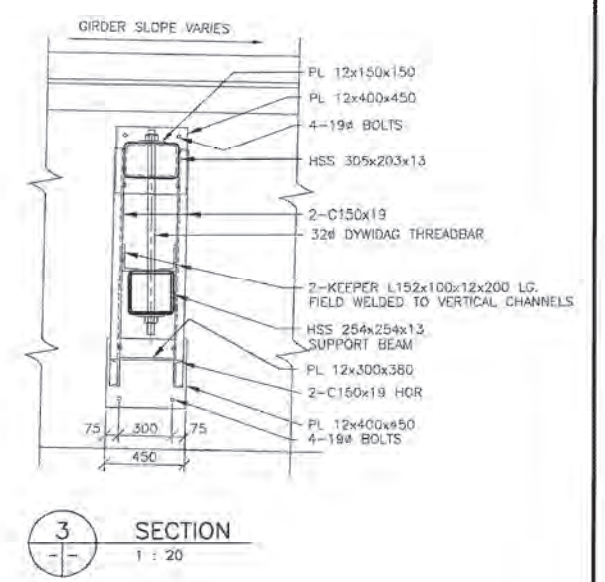
<b>WARDROP</b> Engineering Inc. DESIGNED BY D.N.B./B.C. CHECKED BY D.N.B. DRAWN BY A.K. APPROVED BY R.V.G. LABOR SCALE: AS NOTED VERTICAL: AS NOTED ACCEPTED BY: B. EBENSPANGER, P. ENG. (01.04.24) DATE 01.04.30		ORIGINAL DRAWING REVISION "0" SEALED BY D.N. BURMEY 01.04.24 CONSULTANT DRAWING NO. 990007-08-00	<b>THE CITY OF WINNIPEG</b> PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION <b>PROVENCHER PAIRED BRIDGES PROJECT</b> VEHICULAR BRIDGE CONCRETE GIRDER ALTERNATIVE GIRDER DIAPHRAGMS AND FORCEMAIN SUPPORTS - PLAN AND SECTIONS	CITY DRAWING NUMBER B110-01-077C SHEET OF <b>428C</b>
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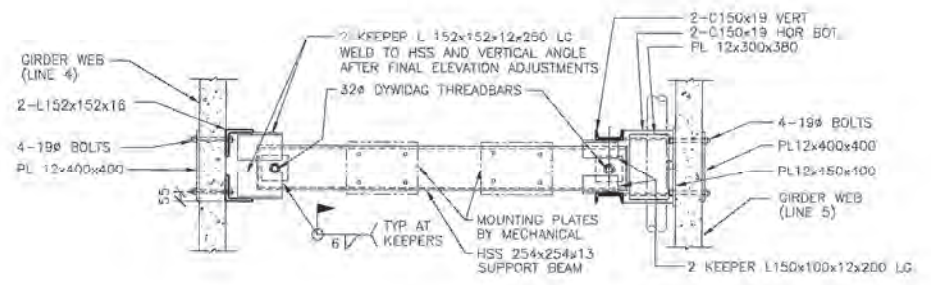
1 ELEVATION - TYPICAL FORCEMAIN SUPPORT  
248C 248C-1 1 : 25



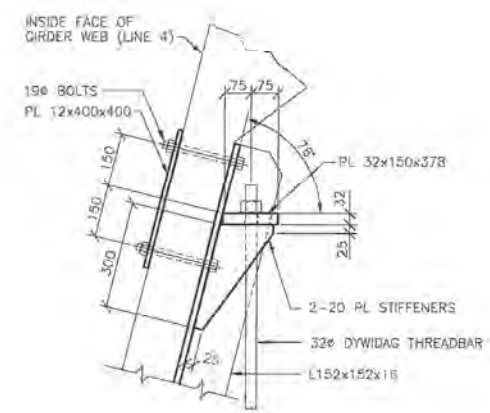
2 SECTION  
1 : 20



3 SECTION  
1 : 20



4 PLAN/SECTION  
1 : 20



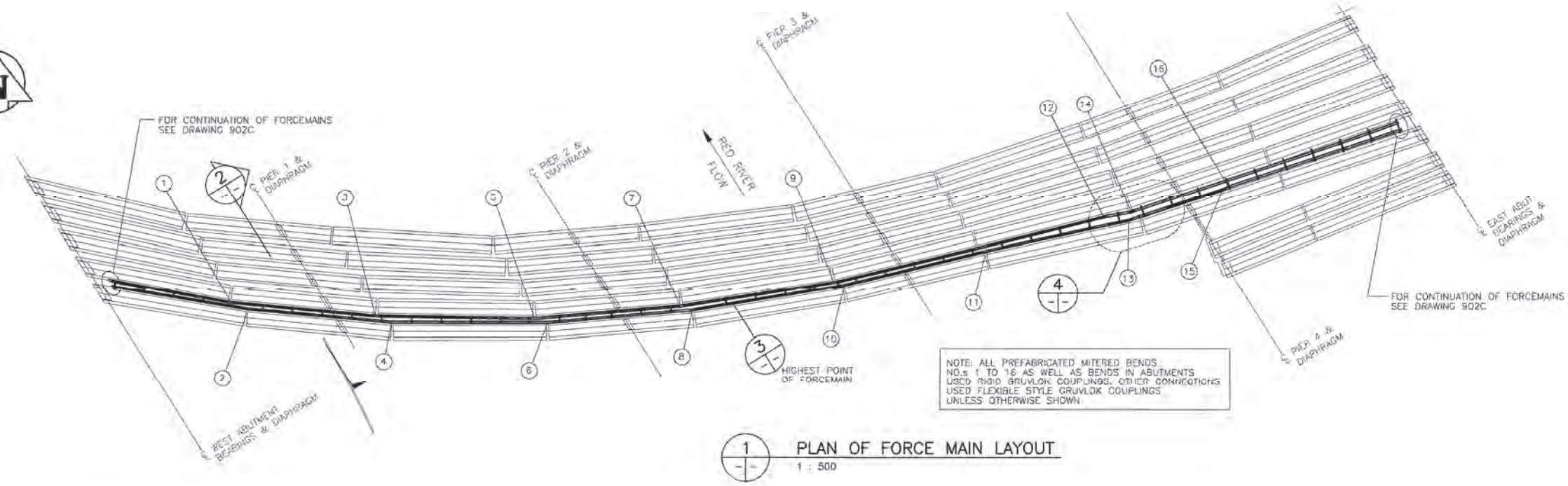
5 DETAIL  
1 : 10

- GENERAL NOTES
- DISTANCE AND RELATIVE ELEVATION BETWEEN GIRDER LINES 4 AND 5 VARIES OVER THE LENGTH OF THE BRIDGE. CONTRACTOR SHALL FIELD CONFIRM ALL DIMENSIONS AND ELEVATIONS.
  - ALL STEEL SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
  - MINIMUM WELD SHALL BE 8mm FILLET.

**RECORD DRAWING**  
DATE 05.01.20 BY W.P.S.  
REVIEWED BY P.S.

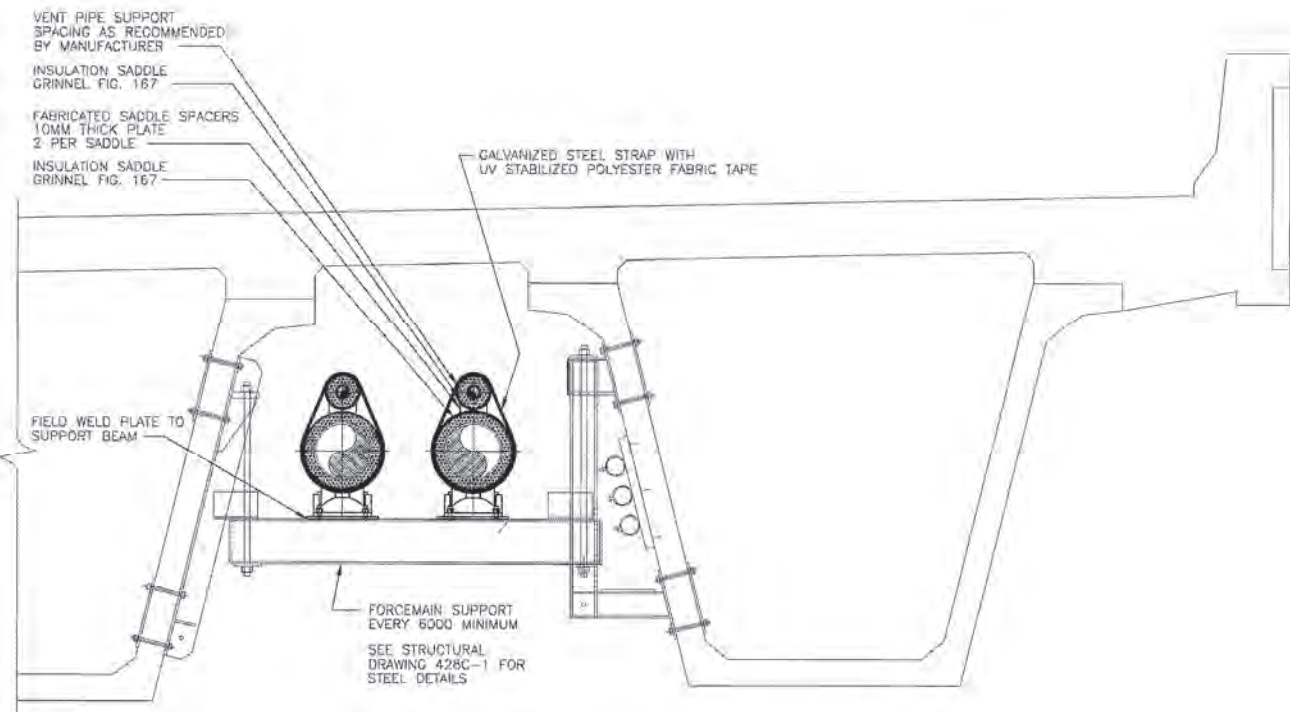
B.M. ELEV.		F.B.		<b>WARDROP</b>   Engineering Inc.		<b>THE CITY OF WINNIPEG</b> PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION	
DESIGNED BY D.N.B.		CHECKED BY		DRAWN BY P.S.		CITY DRAWING NUMBER	
DRAWN BY P.S.		APPROVED BY		HDR. SCALE: AS NOTED		B110-01-144C	
1 RECORD DRAWING 05.01.20 P.S.		DATE		VERTICAL		SHEET OF	
0 ISSUED WITH P.C.N. 18 02.03.01 D.N.B.		DATE		ACCEPTED BY DATE		REVISOR'S NAME, TITLE, BRIDGE DESIGN AND PROJECTS ENGINEER	
NO. REVISIONS		DATE		DATE 02.03.01		CONSULTANT DRAWING NO. 990007-08-00	
						REVISED FORCEMAIN SUPPORTS TYPICAL ELEVATION, SECTIONS AND DETAILS	
						428C-1	



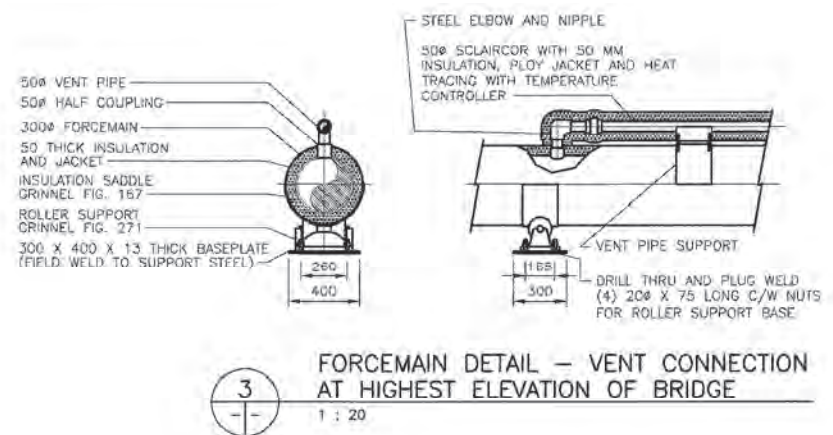


NO.	ANGLE IN DEGREES
1.	5.1°
2.	4.1°
3.	4.5°
4.	4.3°
5.	5.8°
6.	4.9°
7.	4°
8.	4.6°
9.	4.8°
10.	4.8°
11.	1.3°
12.	3.5°
13.	6.3°
14.	8.1°
15.	7.7°
16.	7.9°

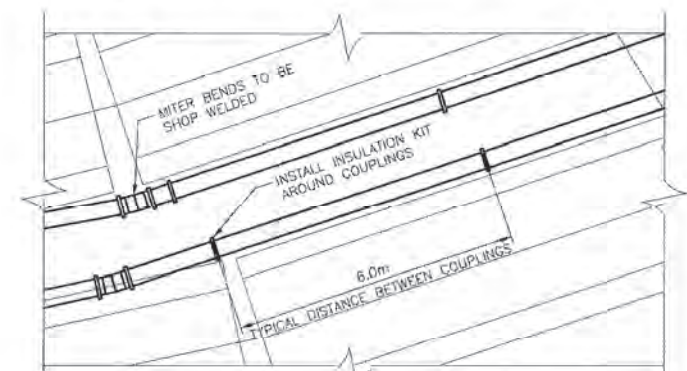
1 PLAN OF FORCE MAIN LAYOUT  
1 : 500



2 FORCEMAINS SUPPORTS AND VENT PIPING SUPPORT LOOKING EAST  
1 : 20

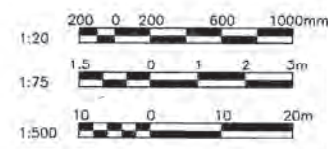


3 FORCEMAIN DETAIL - VENT CONNECTION AT HIGHEST ELEVATION OF BRIDGE  
1 : 20

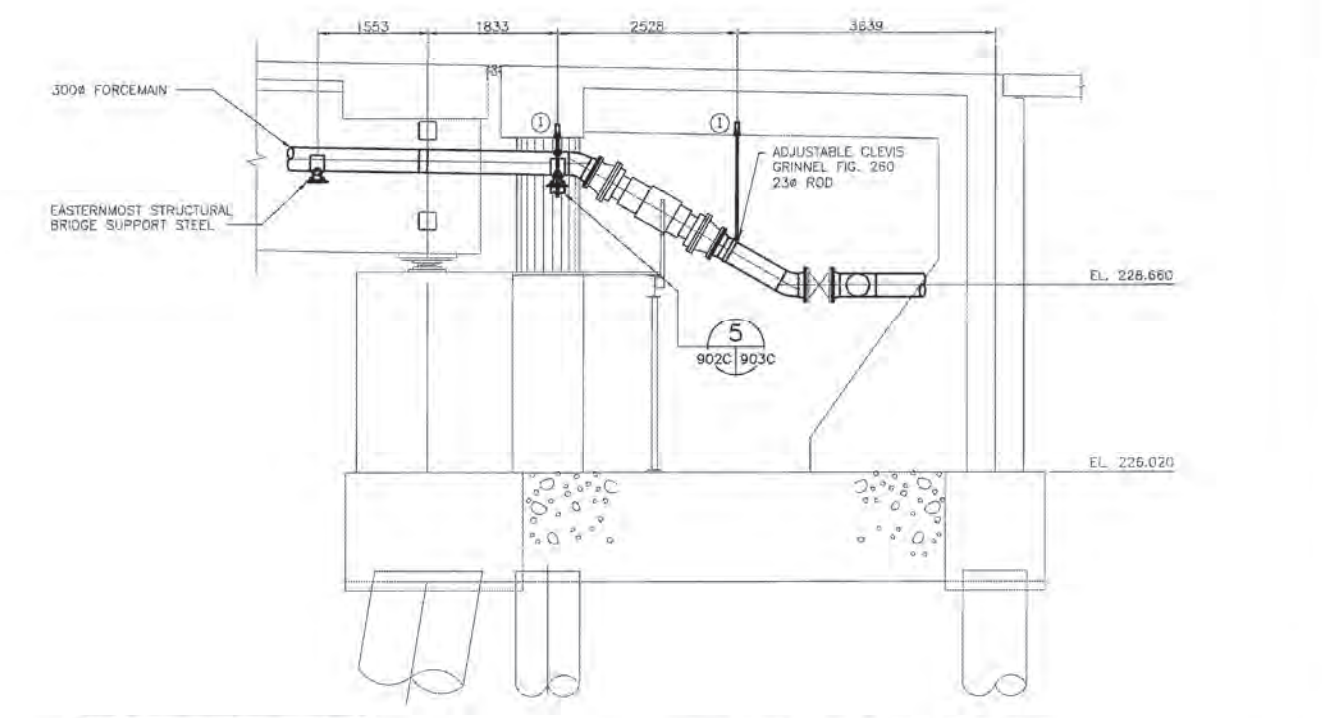
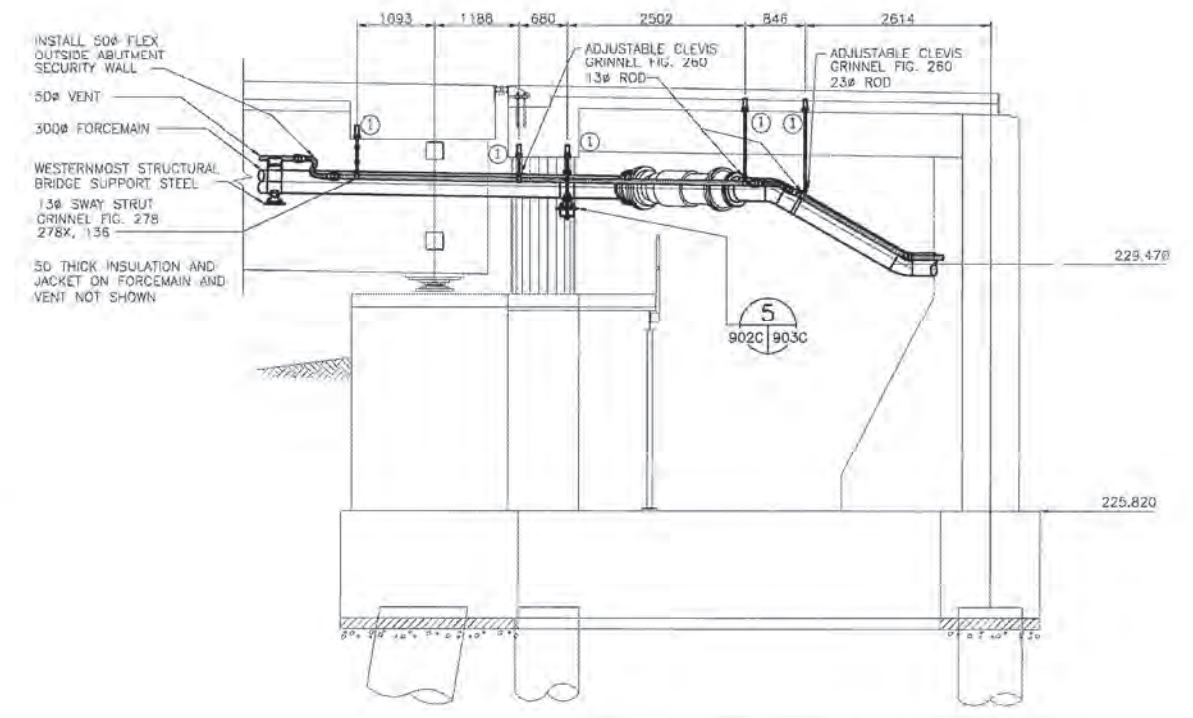
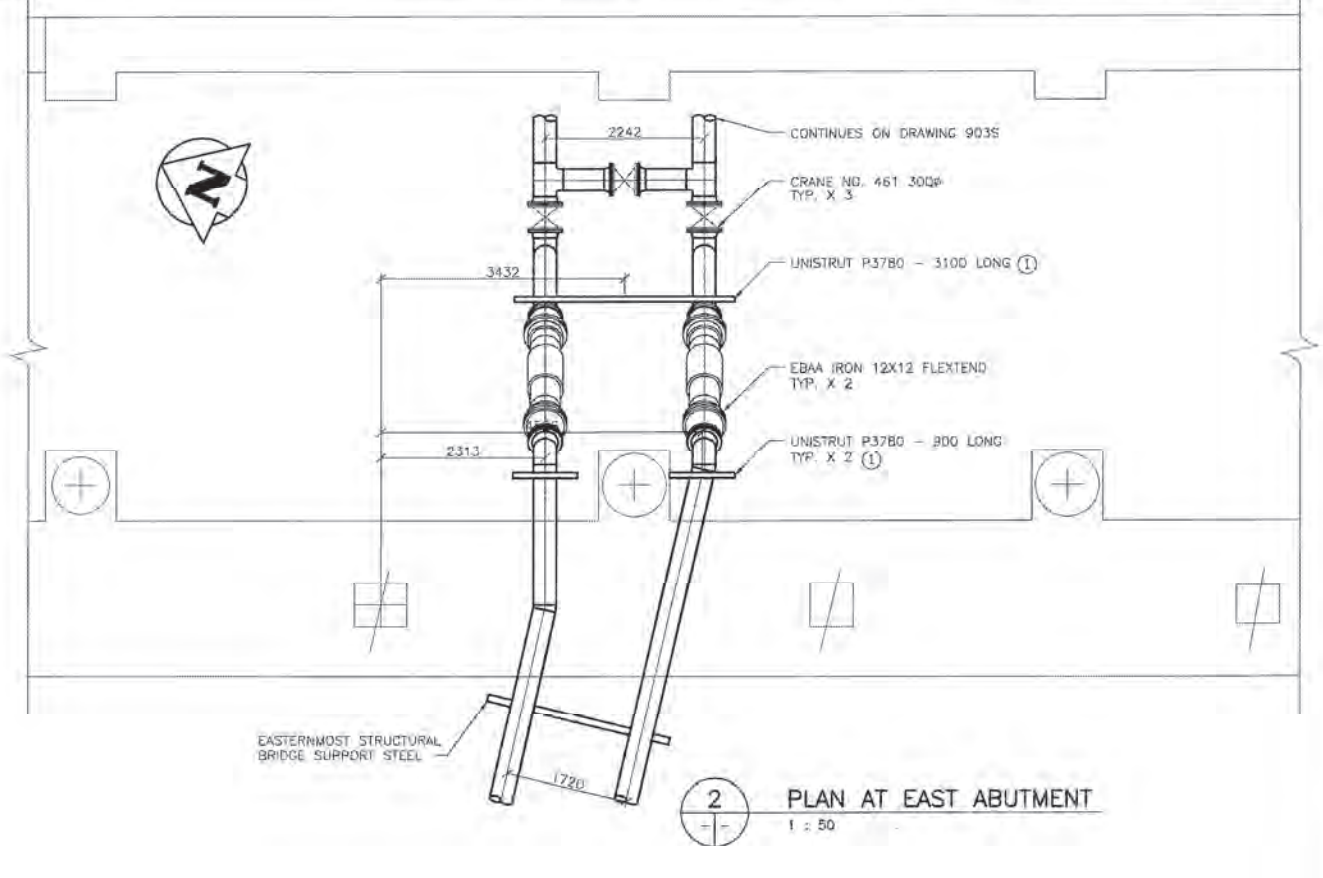
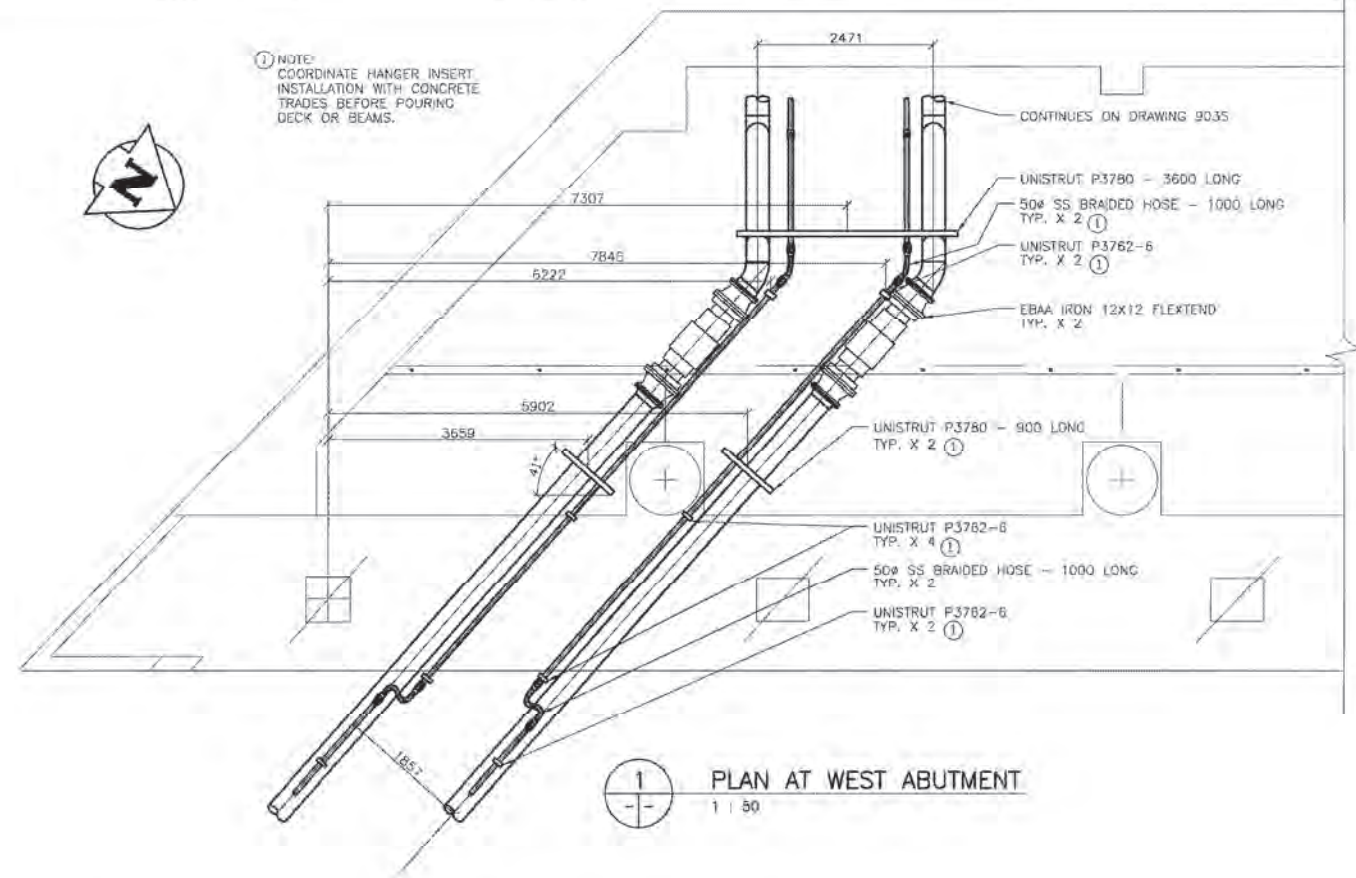


4 MITERED BEND AND COUPLING SPACING DETAIL  
1 : 75

**RECORD DRAWING**  
DATE 05.01.20 BY W.P.S.  
REVIEWED BY P.S.



<b>WARDROP Engineering Inc.</b> DESIGNED BY M.B. CHECKED BY M.B. DRAWN BY M.B. APPROVED BY R.v.G.		ORIGINAL DRAWING REVISION "0" SEALED BY M. BINA 01.04.25 CONSULTANT DRAWING NO. 990007-08-01	<b>THE CITY OF WINNIPEG</b> PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION CITY DRAWING NUMBER B110-01-124C SHEET OF
2 RECORD DRAWING 05.01.20 P.S. 1 ISSUED FOR CONSTRUCTION 01.07.05 R.v.G. 0 ISSUED FOR TENDER 01.04.30 M.B.		HOR. SCALE: AS NOTED VERTICAL: AS NOTED DATE 01.04.30	PROVENCER PAIRED BRIDGES PROJECT VEHICULAR BRIDGE CONCRETE GIRDER ALTERNATIVE FORCEMAIN AND VENT PIPING PLAN AND DETAILS <b>901C</b>

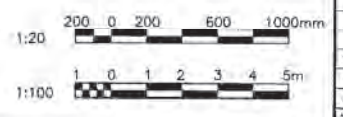
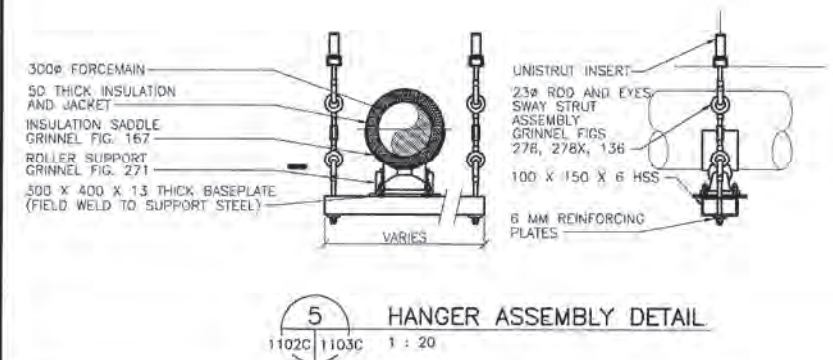
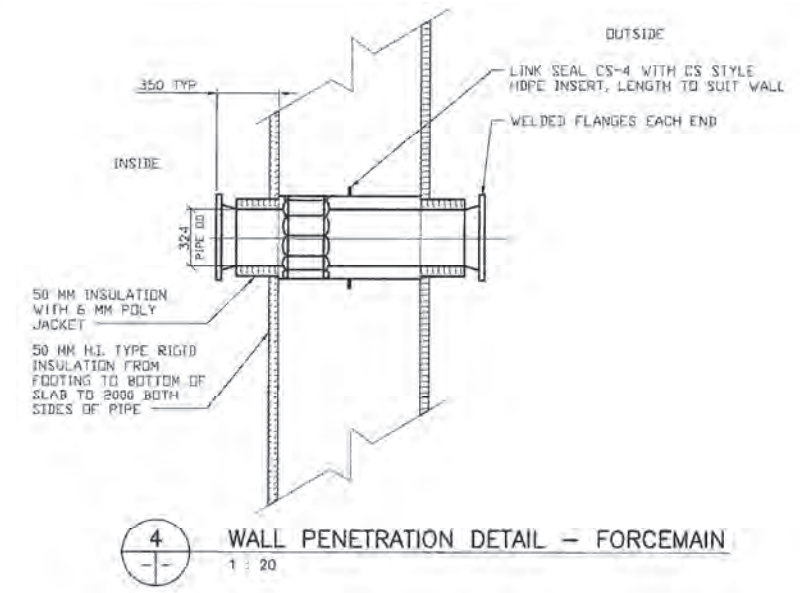
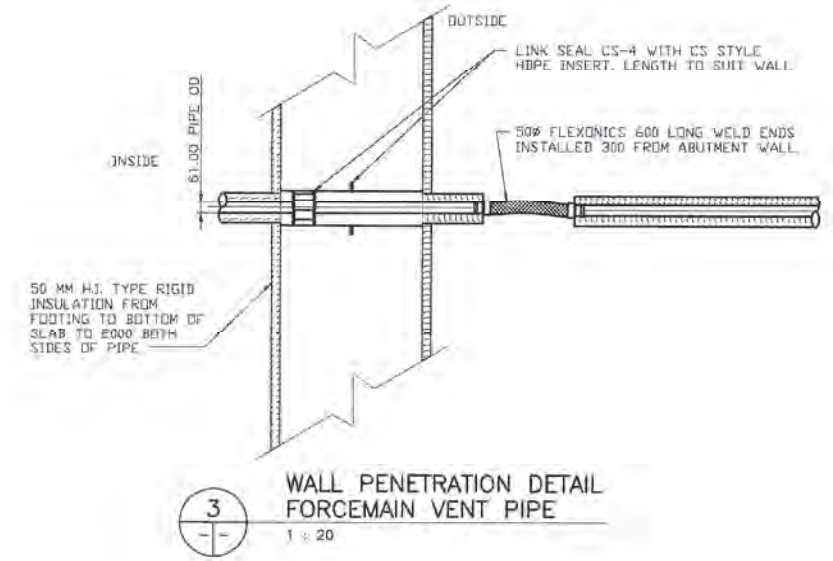
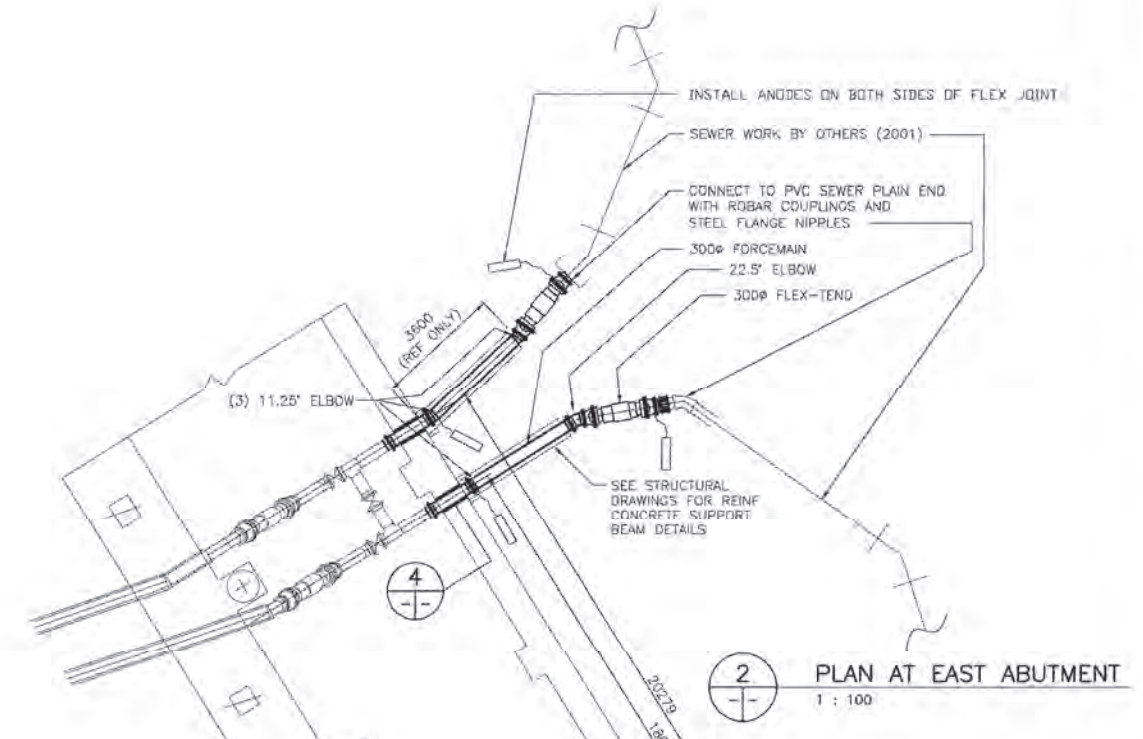
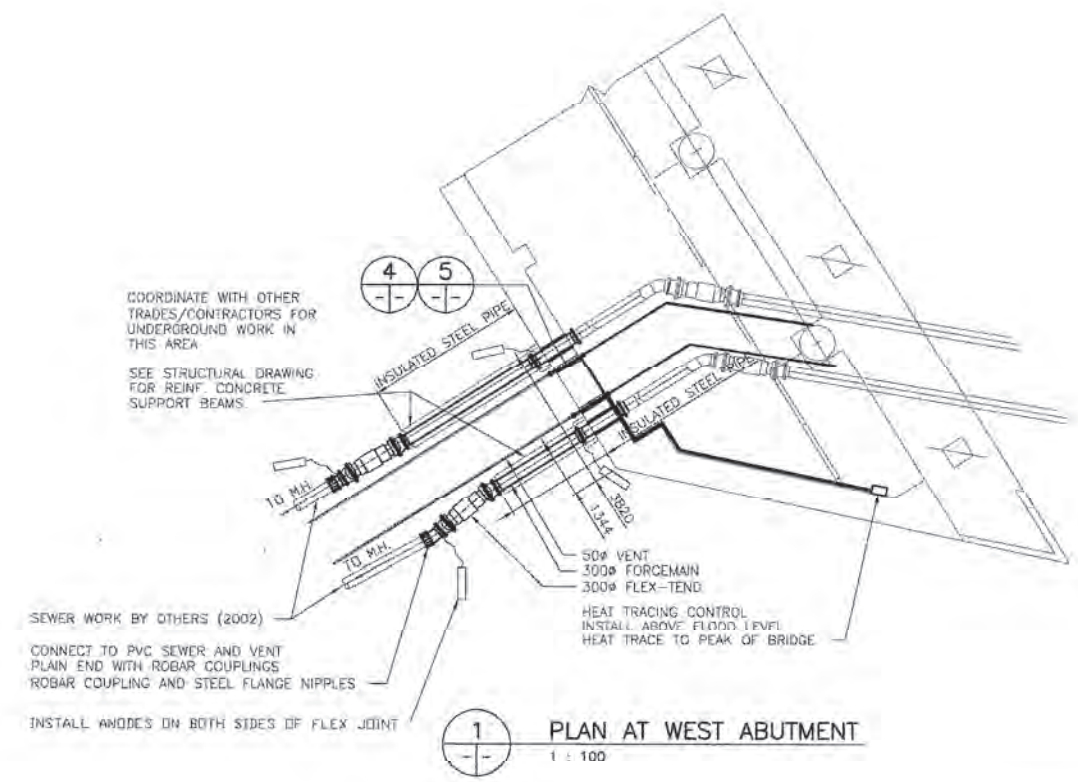


**RECORD DRAWING**  
DATE 05.01.20 BY W.P.S.  
REVIEWED BY P.S.



EM. ELEV.	FIG.	<b>WARDROP</b> Engineering Inc.		ORIGINAL DRAWING REVISION "0" SEALED BY M. BIMA 01.04.25	<b>THE CITY OF WINNIPEG</b> PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION	CITY DRAWING NUMBER <b>B110-01-125C</b>
DESIGNED BY M.B.	CHECKED BY M.B.	DRAWN BY M.B.	APPROVED BY R.v.g.	CONSULTANT DRAWING NO. 990007-08-01		PROVENCHE PAIRED BRIDGES PROJECT VEHICULAR BRIDGE CONCRETE GIRDER ALTERNATIVE FORCEMAIN AND VENT PIPING ABUTMENTS PLANS AND ELEVATIONS
2 RECORD DRAWING	05.01.20	P.S.	DATE 01.04.30	ACCEPTED BY DATE ORIGINAL DRAWING SIGNED BY R. SOROKOWSKI (01.04.25)		
1 ISSUED FOR CONSTRUCTION	01.07.05	R.v.c.	DATE 01.04.30	VERTICAL: AS NOTED		
0 ISSUED FOR TENDER		M.B.	DATE 01.04.30	NO. REVISIONS		

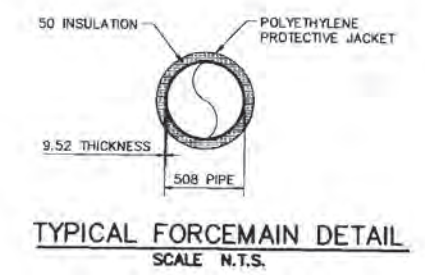
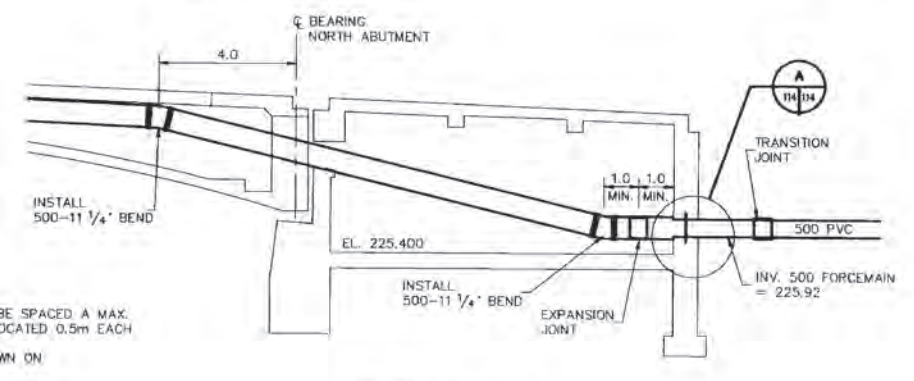
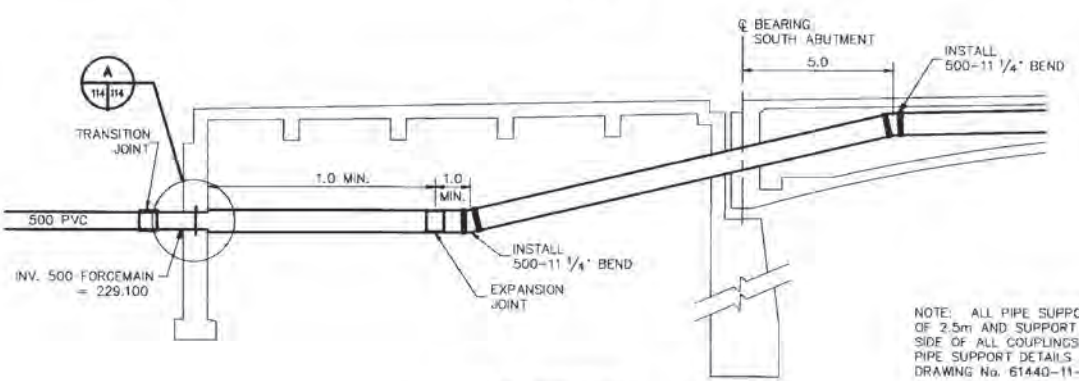
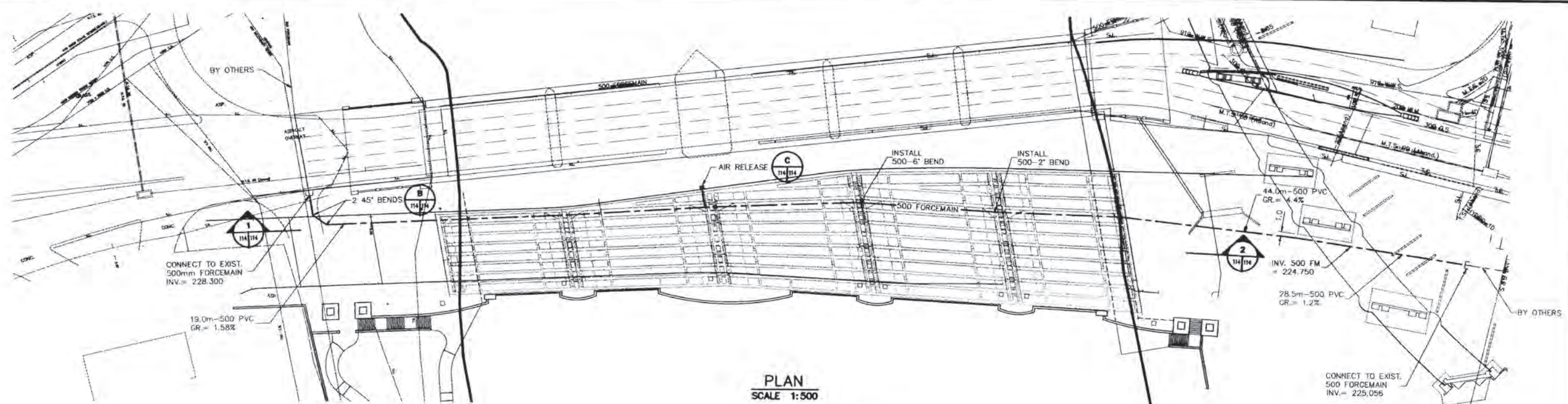
CITY DRAWING NUMBER 5798



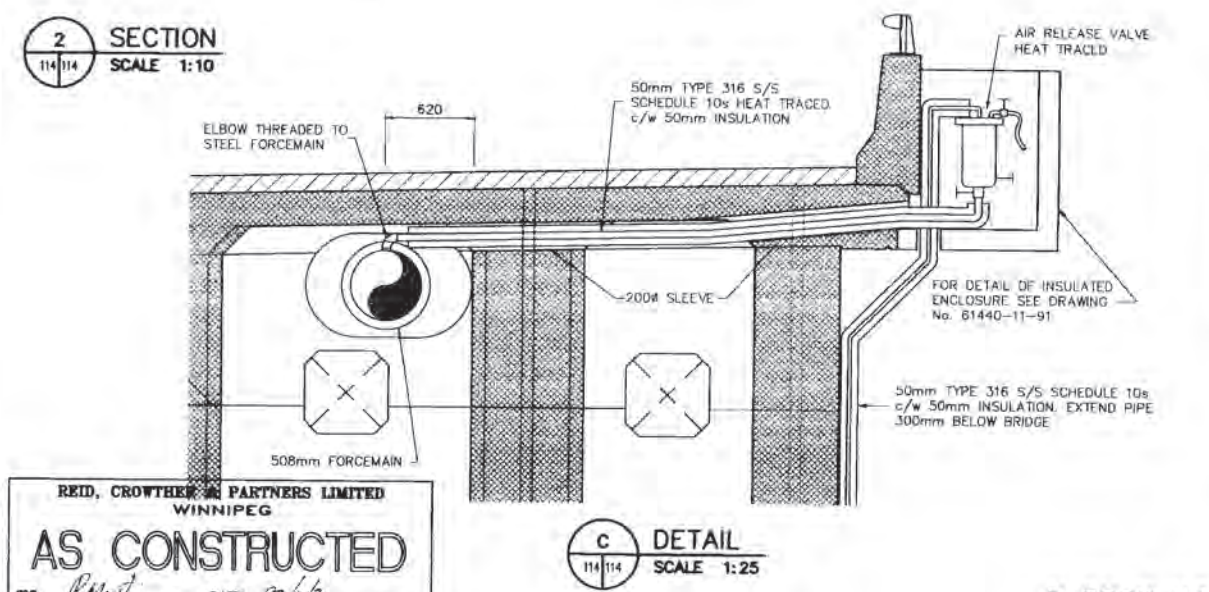
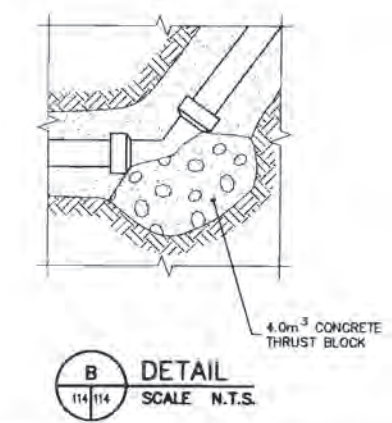
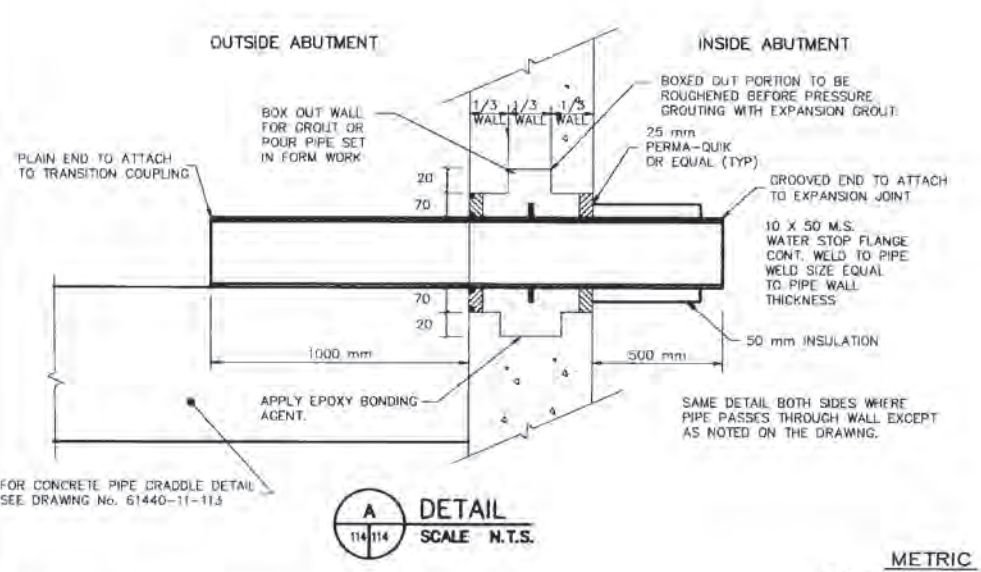
**RECORD DRAWING**  
DATE 05.01.20 BY W.P.S.  
REVIEWED BY P.S.

<b>WARDROP</b> Engineering Inc.		ORIGINAL DRAWING REVISION "0" SEALED BY M. BIMA 01.04.25		<b>THE CITY OF WINNIPEG</b> PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION	
DESIGNED BY M.B. CHECKED BY M.B.	DRAWN BY M.B. APPROVED BY R.v.G.	HOR SCALE: AS NOTED VERTICAL: ORIGINAL DRAWING SIGNED BY R. SOROKOWSKI (01.04.25)		CITY DRAWING NUMBER B110-01-126C SHEET OF	
NO. REVISIONS DATE BY DATE		CONSULTANT DRAWING NO. 990007-05-01		PROVENCER PAIRED BRIDGES PROJECT VEHICULAR BRIDGE CONCRETE GIRDER ALTERNATIVE FORCEMAIN AND VENT PIPING ABUTMENT PLAN AND DETAILS 903C	

CITY DRAWING NUMBER 5799

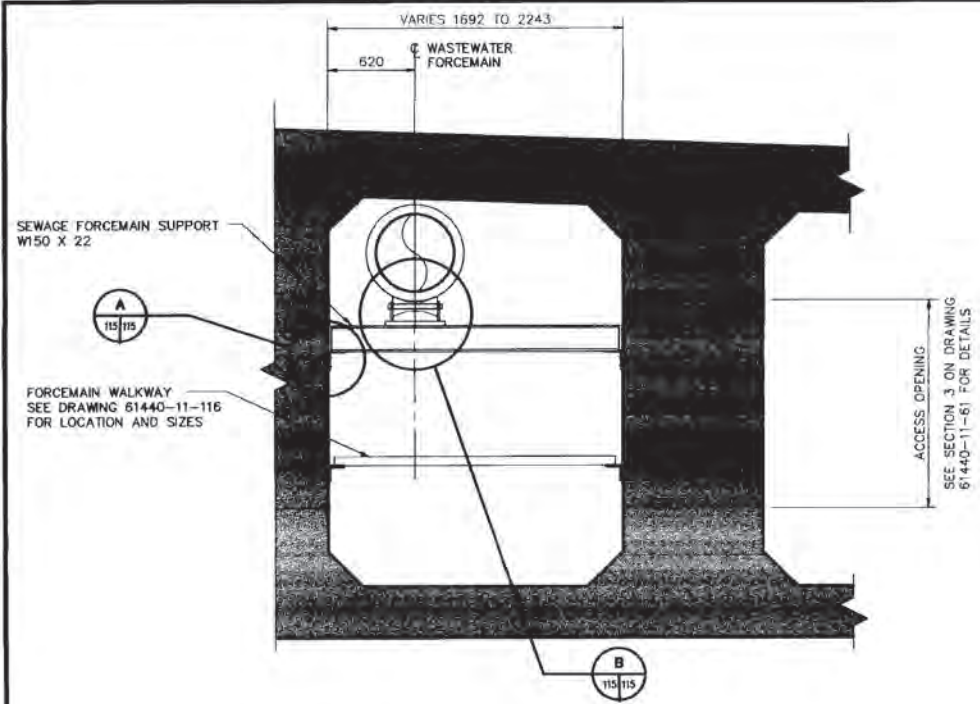


NOTE: ALL PIPE SUPPORTS TO BE SPACED A MAX. OF 2.5m AND SUPPORT TO BE LOCATED 0.5m EACH SIDE OF ALL COUPLINGS. PIPE SUPPORT DETAILS ARE SHOWN ON DRAWING No. 61440-11-115

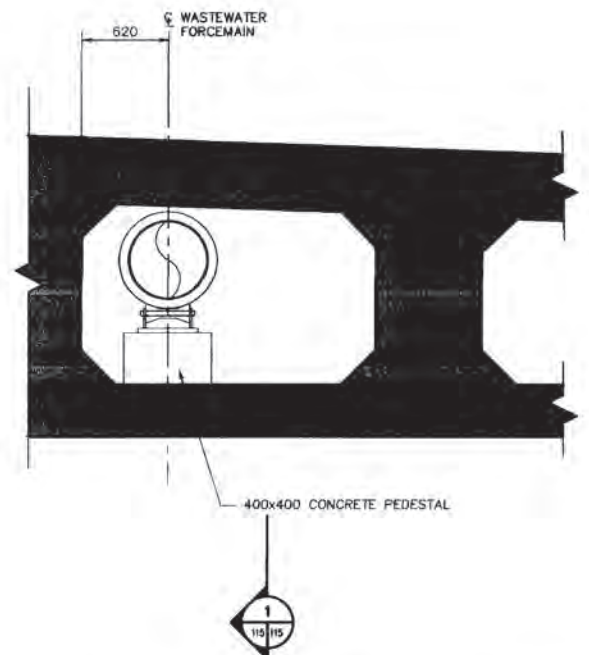


REID, CROWTHER & PARTNERS LIMITED  
WINNIPEG  
AS CONSTRUCTED  
SIC: *R. G. Miller* DATE: *27/10/95*

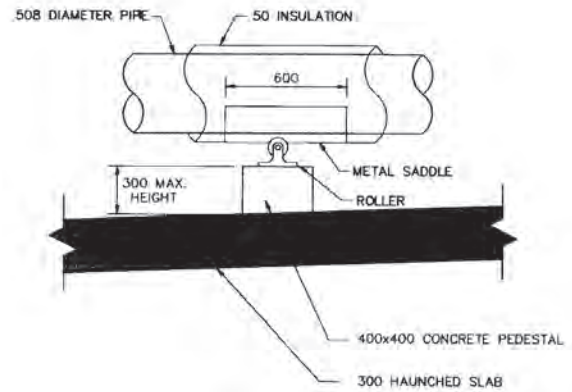
<b>LOCATION APPROVED UNDERGROUND STRUCTURES</b> SUPV. U/G STRUCTURES: _____ DATE: _____ COMMITTEE: _____		<b>REID, CROWTHER &amp; PARTNERS LIMITED</b> <b>WINNIPEG</b> <b>AS CONSTRUCTED</b> SIG: <i>R. G. Miller</i> DATE: <i>27/10/95</i>		ENGINEER'S SEAL <b>PROVIDE BY WINNIPEG</b> <b>SIGNED BY K.G. MILLER</b> <b>95/03/15</b> <b>REGISTERED PROFESSIONAL ENGINEER</b>		<b>THE CITY OF WINNIPEG</b> <b>WORKS AND OPERATIONS DIVISION</b> <b>STREETS AND TRANSPORTATION DEPARTMENT</b> <b>MAIN STREET AND NORWOOD BRIDGES PROJECT</b> <b>NORWOOD BRIDGE - NORTHBOUND</b>		QTY DRAWING NUMBER 9103-95-119 SHEET 114 OF 126
<b>NOTE:</b> 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. _____ AS CONSTRUCTED 10/10/97 KAA ISSUED AS PER ADDENDUM No. 104/20/95 DU NO. REVISIONS _____ DATE _____ BY _____		DESIGNED BY: GDL CHECKED BY: _____ DRAWN BY: GAM, GDL APPROVED BY: _____ HOR. SCALE: AS NOTED VERTICAL: AS NOTED DATE: 03/15/95		AUTHORIZED BY: _____ DATE: _____ C.E. SMITH / SENIOR BRIDGE ENGINEER ACCEPTED BY: _____ DATE: _____ S. BUCHANAN / BRIDGE ENGINEER		CONSULTANT DRAWING NO. 61440-11-114
<b>METRIC</b> WHOLE NUMBERS INDICATE MILLIMETRES DECIMALIZED NUMBERS INDICATE METRES							FORCEMAIN LAYOUT AND DETAILS. REV. B	



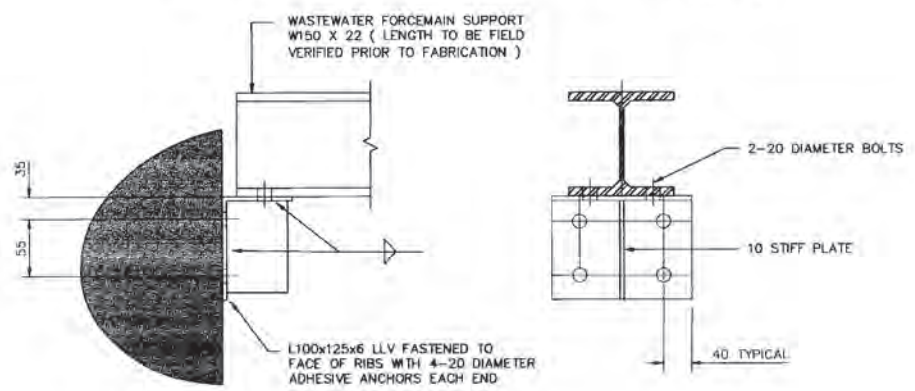
**FORCEMAIN SUPPORT AT UNRESTRICTED AREAS**  
SCALE 1:20



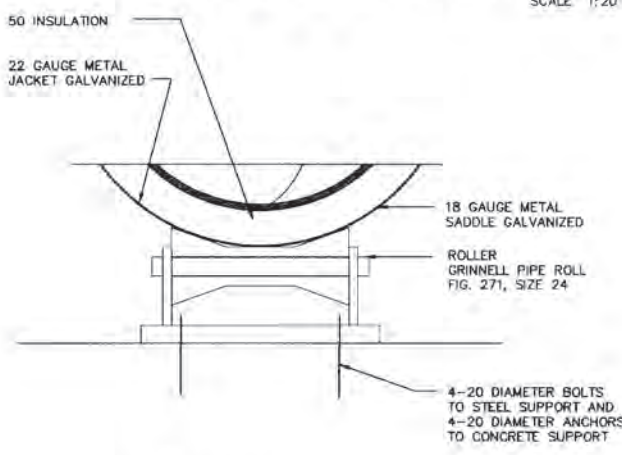
**FORCEMAIN SUPPORT AT RESTRICTED AREAS**  
SCALE 1:20



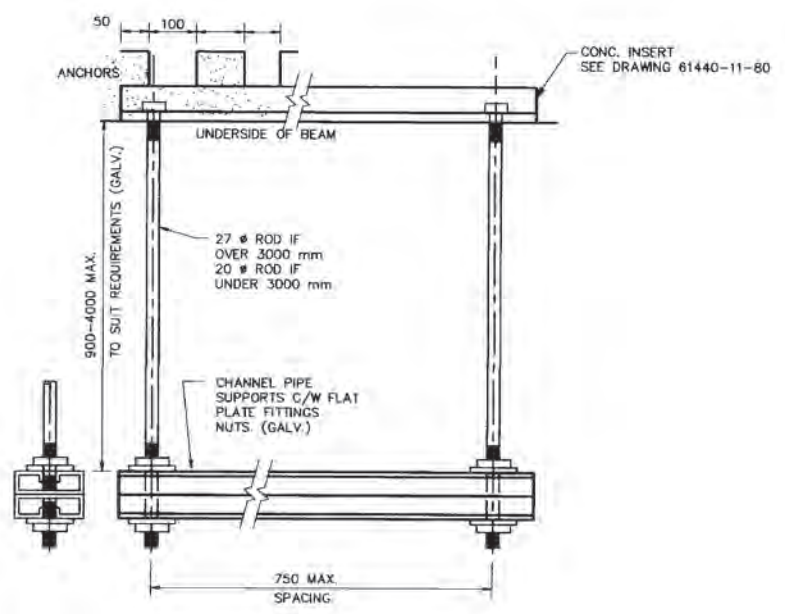
**SECTION 1-1**  
SCALE 1:20



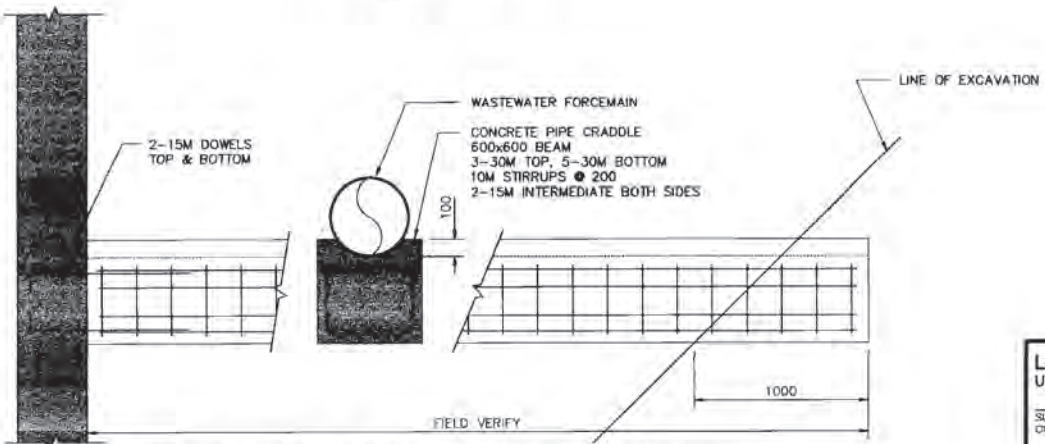
**A DETAIL**  
SCALE 1:5



**B DETAIL**  
SCALE 1:5



**FORCEMAIN SUPPORT AT INTERIOR OF ABUTMENTS**  
SCALE NTS

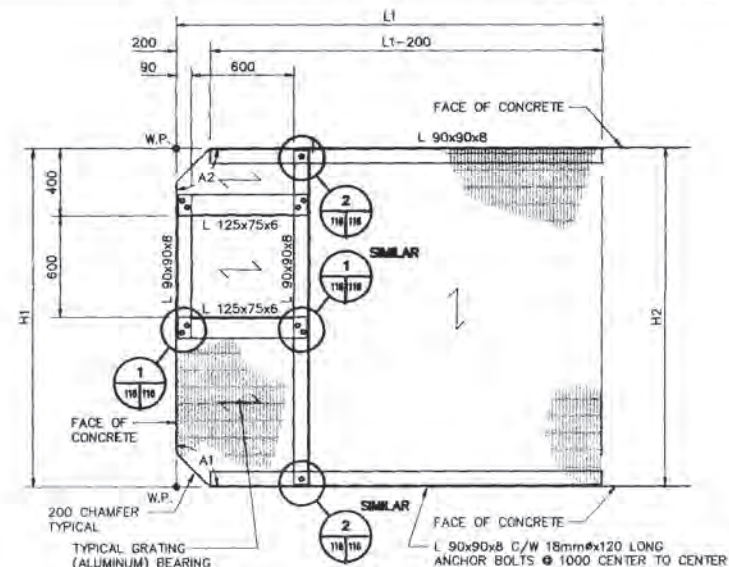


**FORCEMAIN SUPPORT AT EXTERIOR OF ABUTMENTS**  
SCALE NTS

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

**REID, CROWTHER & PARTNERS LIMITED**  
WINNIPEG  
**AS CONSTRUCTED**  
SIG: [Signature] DATE: 27/09/20

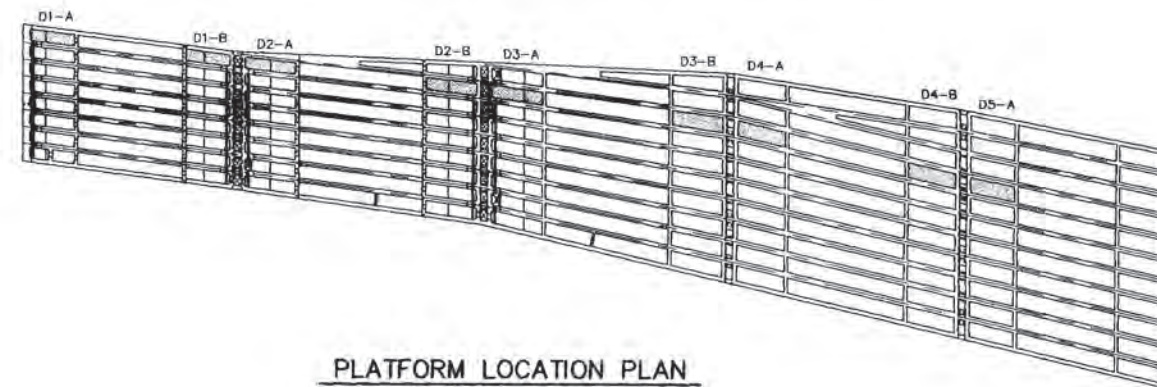
<b>LOCATION APPROVED UNDERGROUND STRUCTURES</b>		<b>REID CROWTHER</b>		<b>THE CITY OF WINNIPEG</b> WORKS AND OPERATIONS DIVISION STREETS AND TRANSPORTATION DEPARTMENT	
SUPV. U/G STRUCTURES:	DATE:	DESIGNED BY:	CHECKED BY:	ENGINEER'S SEAL	<b>MAIN STREET AND NORWOOD BRIDGES PROJECT</b> NORWOOD BRIDGE - NORTHBOUND CITY DRAWING NUMBER: B103-95-120 SHEET: 115 OF 126
COMMITTEE:		DRAWN BY: GAM	APPROVED BY:		
<b>NOTE:</b> 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.		AS CONSTRUCTED 10/10/97 KAA REFERENCE DRAWING NOTE RE- 06/29/95 TP USED FOR "UNRESTRICTED AREA" NO. REVISIONS DATE BY	HOR. SCALE: AS NOTED VERTICAL: AS NOTED AUTHORIZED BY: G.A. SMITH / SENIOR BRIDGE ENGINEER ACCEPTED BY: [Signature] CONSULTANT DRAWING NO. 61440-11-115	CONSULTANT DRAWING NO. 61440-11-115 FORCEMAIN SUPPORT DETAILS REV. B	



**MK. S105-A  
PLATFORM PLAN**

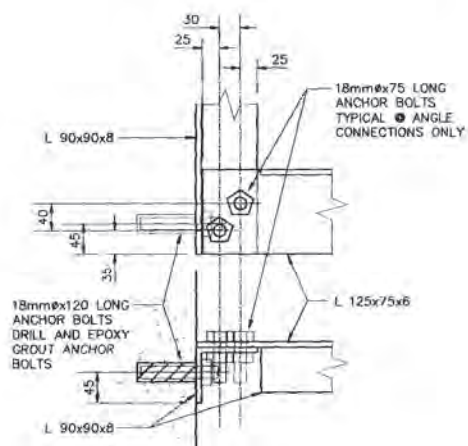
NOTE: - RUN GRATING OVER BOLTS.  
- TRIM GRATING BARS TO SUITE BOLTS.

PLATFORM SCHEDULE					
LOCATION	L1	H1	H2	A1	A2
D1-A	1008	1685	1685	97°25'19"	82°35'35"
D1-B	4730	1692	1692	82°34'41"	97°24'25"
D2-A	5173	1699	1715	96°45'0"	83°38'2"
D2-B	5434	1821	1801	83°21'20"	96°27'50"
D3-A	5702	1832	1899	98°37'16"	82°3'30"
D3-B	5620	2175	2241	81°26'59"	97°52'14"
D4-A	6188	2244	2240	103°36'7"	76°21'40"
D4-B	5710	2222	2226	76°23'53"	103°38'20"
D5-A	4384	2228	2246	101°59'9"	78°15'33"

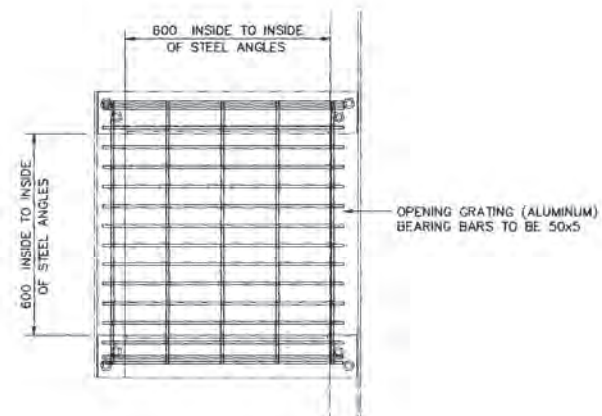


**PLATFORM LOCATION PLAN**

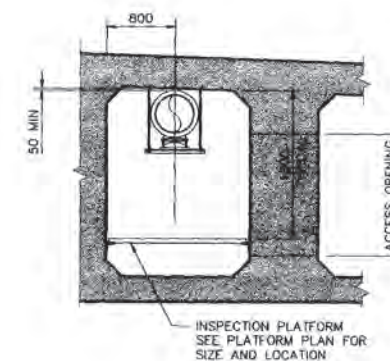
NOTE: FOR SIZE OF MEMBERS  
SEE PLATFORM SCHEDULE



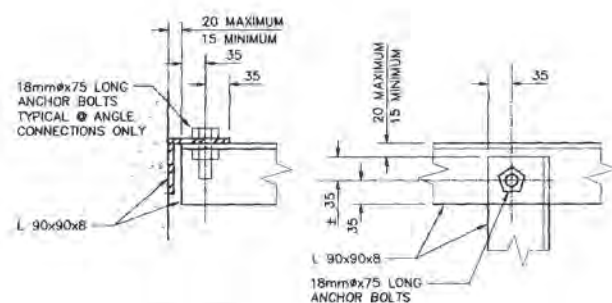
**1 DETAIL  
SCALE 1:10**



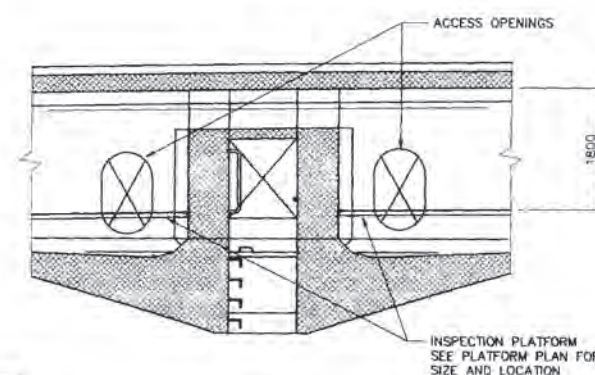
**GRATING & HATCH OPENING**



**MK. S105-B  
PLATFORM ELEVATION**



**2 DETAIL  
SCALE 1:10**



**MK. S105-C  
PLATFORM ELEVATION**

REID, CROWTHER & PARTNERS LIMITED  
WINNIPEG  
**AS CONSTRUCTED**  
SIG: [Signature] DATE: 97/10/20

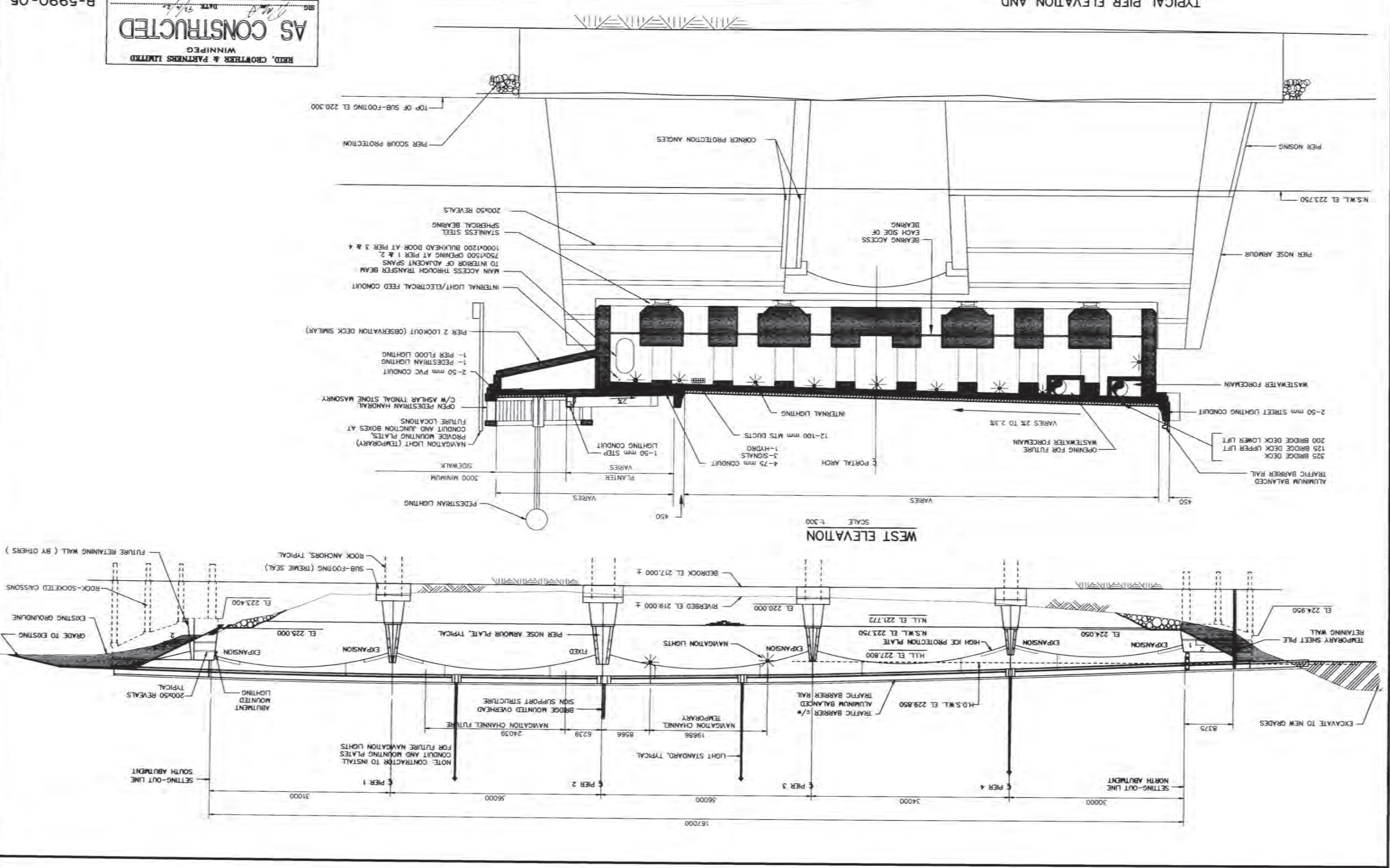
B-5990-116

<b>LOCATION APPROVED UNDERGROUND STRUCTURES</b> 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>B.M. ELEV.</b> <table border="1"> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </table>										<b>Reid Crowther</b> Reid Crowther & Partners Ltd. Engineers Planners Scientists DESIGNED BY: _____ DRAWN BY: TLK HOR. SCALE: AS NOTED VERTICAL: AS NOTED DATE: 03/15/95		ENGINEER'S SEAL  CONSULTANT DRAWING NO. 61440-11-116		<b>THE CITY OF WINNIPEG</b> WORKS AND OPERATIONS DIVISION STREETS AND TRANSPORTATION DEPARTMENT MAIN STREET AND NORWOOD BRIDGES PROJECT NORWOOD BRIDGE - NORTHBOUND FORCEMAIN WALKWAY DETAILS		CITY DRAWING NUMBER B103-95-121 SHEET 116 OF 126 REV. B	

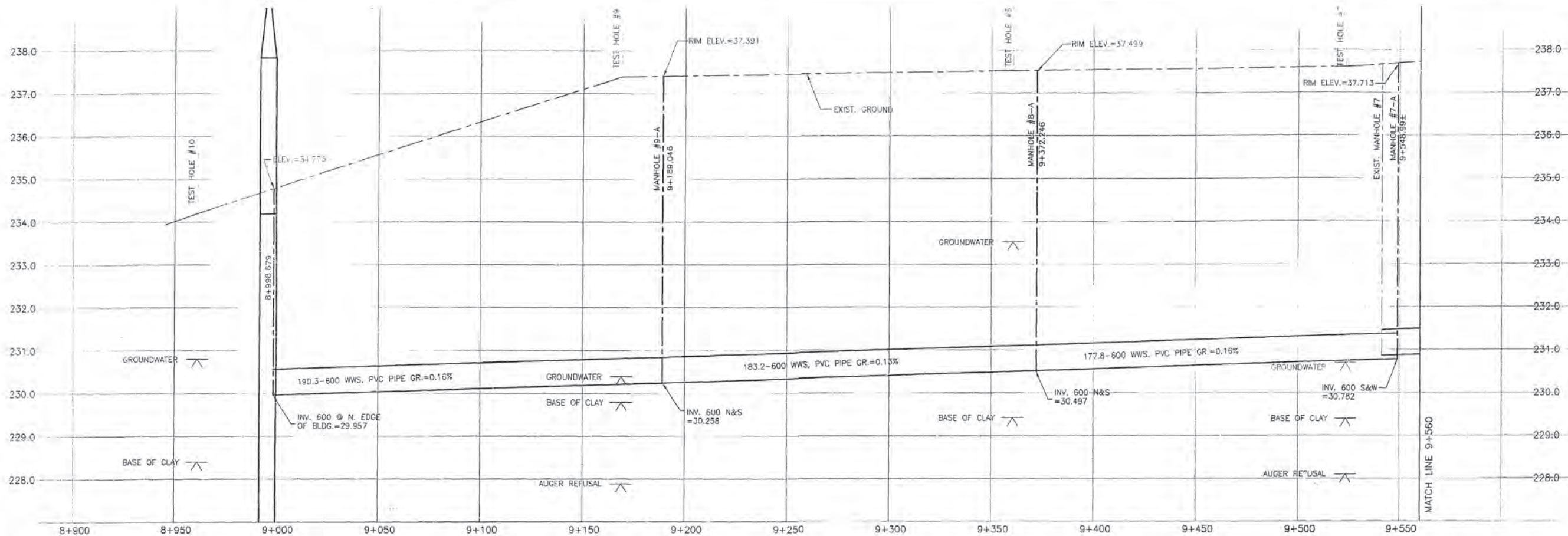


<b>THE CITY OF WINNIPEG</b> WORKS AND OPERATIONS DIVISION STREETS AND TRANSPORTATION DEPARTMENT CITY DRAWING NUMBER: 8103-95-10 SHEET 5 OF 126		GENERAL ARRANGEMENT OF PROPOSED WORKS WEST ELEVATION AND TYPICAL SECTION AT PIER		REV. A	
<b>REID, CROWTHER &amp; PARTNERS LIMITED</b> WINNIPEG AS CONSTRUCTED DATE: 03/15/95		CONSULTANT DRAWING NO. 61440-11-05 ENGINEER'S SEAL: <b>WEBSTER</b> ORIGINAL B SIGNED B DATE 95/03/15		NO. REVISIONS AS CONSTRUCTED DATE BY 15/06/97 KAM DATE BY 03/15/95 DATE BY	
MAIN STREET AND NORWOOD BRIDGES PROJECT NORWOOD BRIDGE - NORTHBOUND		DESIGNED BY: GJM APPROVED BY: GJM AUTHORIZED BY: DATE		LOCATION APPROVED U/3 STRUCTURES COMMITTEE DATE NOTE: LOCATION OF UNDERGROUND STRUCTURES AS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE AND NO GUARANTEE IS GIVEN THAT ALL EXISTING UTILITIES ARE SHOWN OR THAT THE EXISTING UTILITIES ARE EXACT LOCATION OF ALL SERVICES MUST BE DETERMINED FROM THE INNOVATION UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION.	

TYPICAL PIER ELEVATION AND  
 CROSS-SECTION OF SUPERSTRUCTURE  
 SCALE 1:150

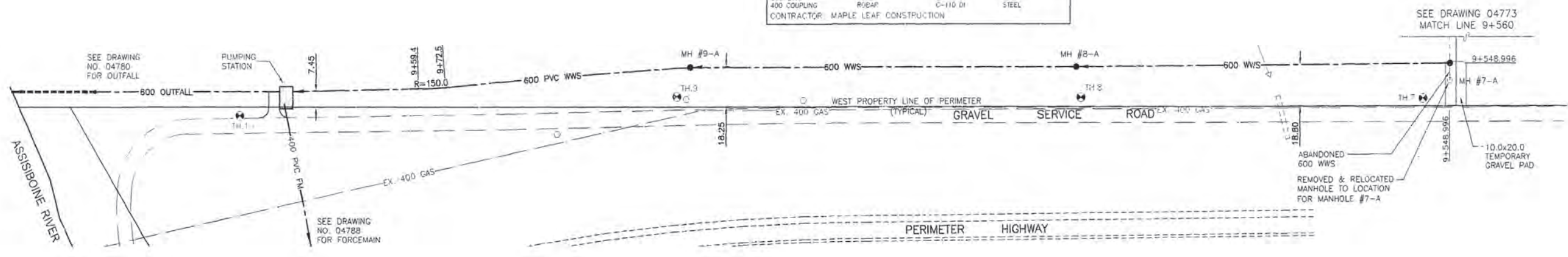






**MATERIAL LIST**

WASTE WATER SEWER	MANUFACTURER	SPECIFICATION	SPECIAL FEATURES
MANHOLE BASES	LAFARGE	ASTM C78	REINF. CONC.
MANHOLE RISERS	LAFARGE	ASTM C78	REINF. CONC.
FRAMES AND COVERS	TITAN FOUNDRY	CW 2131/CW 3205	CI
600 SEWER	IPEX	ASTM F759	PVC
600 OUTFALL SEWER	LAFARGE	ASTM C78	REINF. CONC.
400 FORCEMAIN PIPE	IPEX CENTURION	ASTM C-900	PVC
550 ENCASMENT PIPE	CCIF (OAKVILLE, ONT.)	8.74mm THICK	STEEL
400 ENCASMENT PIPE (RIVER CROSSING)	CCIF	9.53mm THICK	STEEL (DEV-TAR COATING)
600 CSP	ARMCO	2mm THICK	GALVANIZED METAL
600 SLIP JOINT	ARMCO		GALVANIZED METAL
400-45° BEND	GRINNELL	AWWA C-110	CI
400-22.5° BEND	IPEX	ASTM-C900	PVC
400 GATE VALVE	CLOW	AWWA C-509	PVC
400-300 REDUCER	STAR	C-110	PVC
400-11.25° BEND	STAR	C-110	PVC
COUPLING	FORD	C-110 DI	STEEL
400 COUPLING	ROEAP	C-110 DI	STEEL
CONTRACTOR	MAPLE LEAF CONSTRUCTION		



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

**NOTE:**  
CHAINAGE IS CALCULATED ALONG  
CENTERLINE OF 600 WASTEWATER SEWER

82471-S.E. Cor. Portage Ave. & Comp  
Manitou Rd., Tdlt. on top of 0.05 m dia  
+ 2.4 m iron pipe, 6.9 m N of S.L.  
Portage Ave. & 3 m W of E.L. Comp.  
Manitou Rd.

**REVISED AS CONSTRUCTED**  
By V.M. (DATE 2001/04/04)  
(CHECKED BY) R.M.

**CONSTRUCTION COMPLETION DATE - AUGUST 2001**

EXISTING	LEGEND-PLAN	PROPOSED	EXISTING	LEGEND-PLAN	PROPOSED	EXISTING	LEGEND-PROFILE	PROPOSED
150 MM	WATERMAIN	150 MM	HYDRO	M.T.S.		150 MM	WATERMAIN	
300 LOC	HYDRANT	300 LOC	CONCRETE			300 LOC	HYDRANT, VALVE	
300 WWS	VALVE	300 WWS	ASPHALT			300 WWS	LAND DRAINAGE SEWER	
750 WWS	LAND DRAINAGE SEWER	750 WWS	SIDEWALK			750 WWS	WASTE WATER SEWER	
	WASTE WATER SEWER		PROPERTY LINE				Q PROFILE	
	MANHOLE		SUPVEY BAR				NORTH OR WEST GUTTER	
	CATCH BASIN		DITCH				SOUTH OR EAST GUTTER	
	CURB INLET		ELEVATION				NORTH OR WEST R	
	JUNCTION		TEST HOLE				SOUTH OR EAST R	
	VALVEPT						NORTH OR WEST DITCH	
	I.A.						SOUTH OR EAST DITCH	

**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 RELEVANT UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION.

Stantec Consulting Ltd.  
905 Waverley Street, Winnipeg, Manitoba  
Tel: 204-489-5900 Fax: 204-453-9012

DESIGNED BY: C.L.D.	CHECKED BY: P.S.
DRAWN BY: K.R.	APPROVED BY: D.S.
HORIZ. SCALE: 1:1000	RELEASED FOR CONSTRUCTION: DATE
VERTICAL SCALE: 1:50	

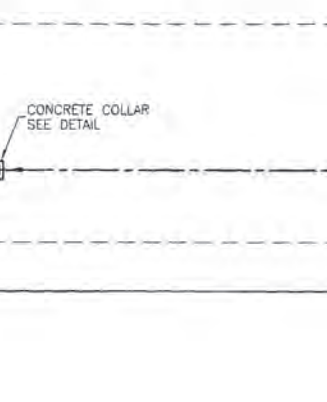
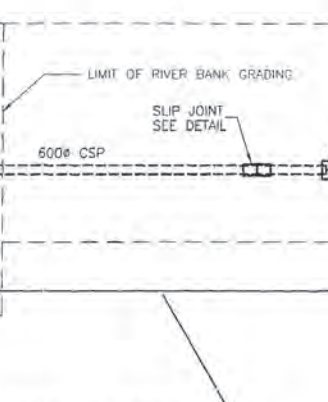
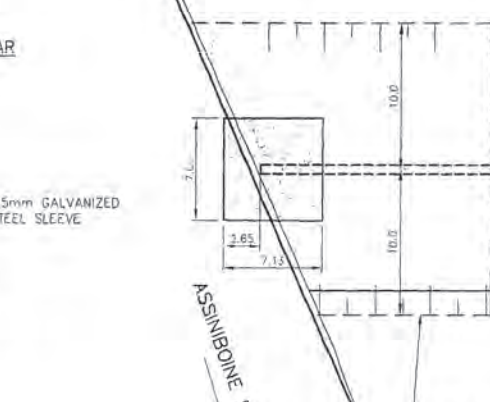
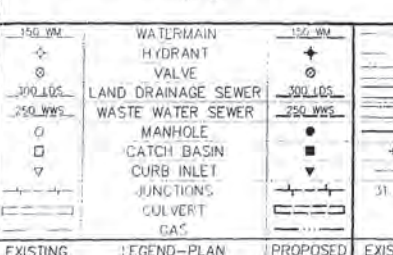
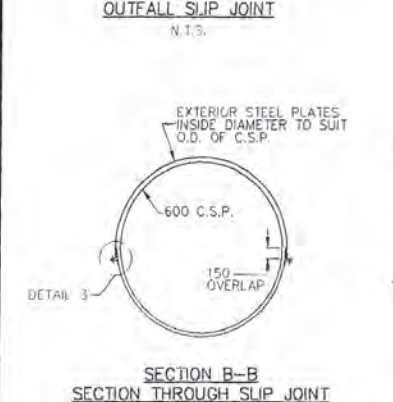
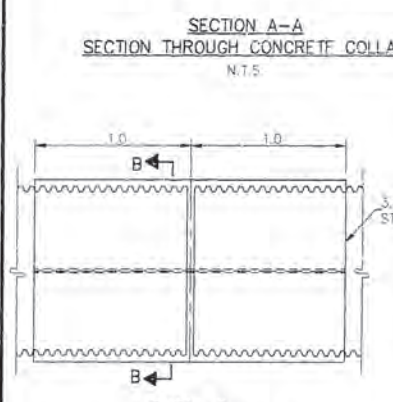
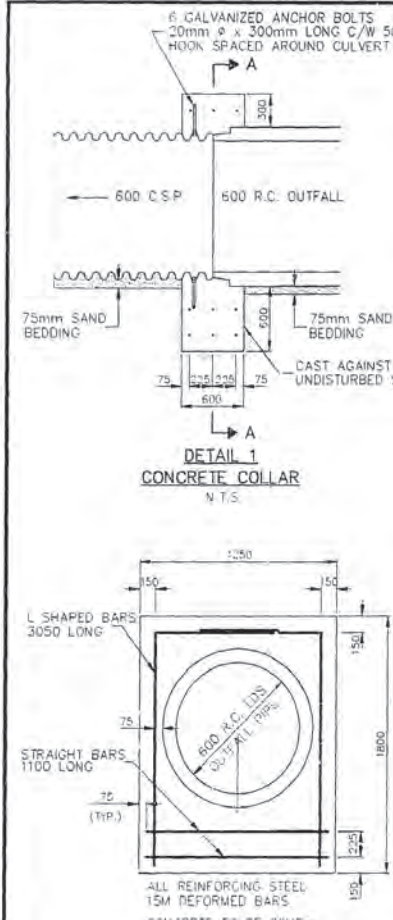
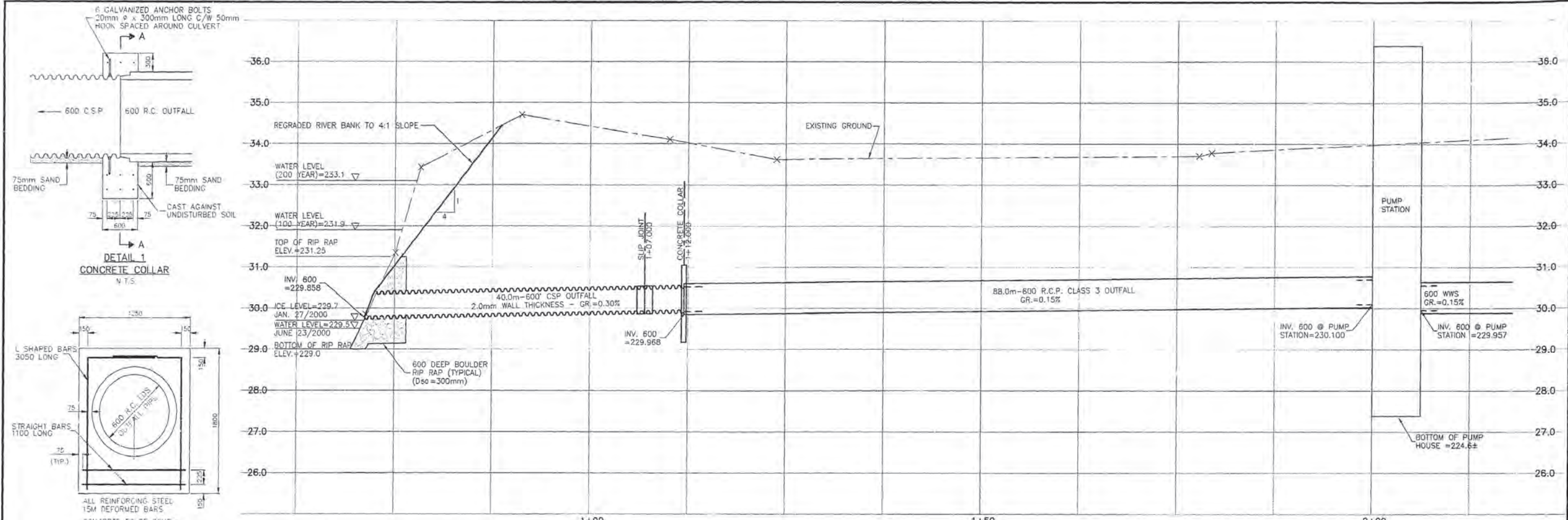
ENGINEER'S SEAL  
PROVINCE OF MANITOBA  
10/25/00  
C.L. DYCK  
REGISTERED PROFESSIONAL ENGINEER  
CONSULTANT DRAWING NO. PW-83-549

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

PERIMETER WEST FORCEMAIN AND WASTE WATER PUMP STATION  
600 WASTEWATER SEWER INSTALLATION  
PHASE 2  
PUMPING STATION TO STA. 9+560 NORTH

1:11 DRAWING NUMBER 04779  
SHEET 1 OF 24

1:100 Scale, 10/25/00 - Reviser: V.M. (DATE 2001/04/04) (CHECKED BY) R.M.  
 200-09-0833M, By: rmm



MATERIAL LIST			
WASTE WATER SEWER	MANUFACTURER	SPECIFICATION	SPECIAL FEATURES
MANHOLE BASES	LAFARGE	ASTM C78	REIN. CONC.
MANHOLE RISERS	LAFARGE	ASTM C78	REIN. CONC.
FRAMES AND COVERS	TITAN FOUNDRY	CW 2131/CW 3205	C.I.
600 SEWER	IPEX	ASTM F769	PVC
600 OUTFALL SEWER	LAFARGE	ASTM C78	REIN. CONC.
400 FORCEMAIN PIPE	IPEX GENTURION	ASTM C-900	PVC
550 ENCASMENT PIPE	CCIF (DARVILLE, ONT.)	2.74mm THICK	STEEL (DCEV-TAR COATING)
400 ENCASMENT PIPE (RIVER CROSSING)	CCIF	3.53mm THICK	STEEL (DCEV-TAR COATING)
600 C.S.P.	ARMCO	2mm THICK	GALVANIZED METAL
600 SLIP JOINT	ARMCO		GALVANIZED METAL
400-45° BEND	SPRINELL	AHWA C-110	C.I.
400-22.5° BEND	IPEX	ASTM-C900	PVC
400 GATE VALVE	CLOW	AHWA C-509	PVC
400-300 REDUCER	STAR	C-110	PVC
400-11.25° BEND	STAR	C-110	PVC
COUPLING	FORD		PVC
400 COUPLING	ROBAR	C-110 DI	STEEL

CONTRACTOR: MAPLE LEAF CONSTRUCTION

NOTE: CHAINAGE IS CALCULATED ALONG CENTERLINE OF 600 WWS OUTFALL

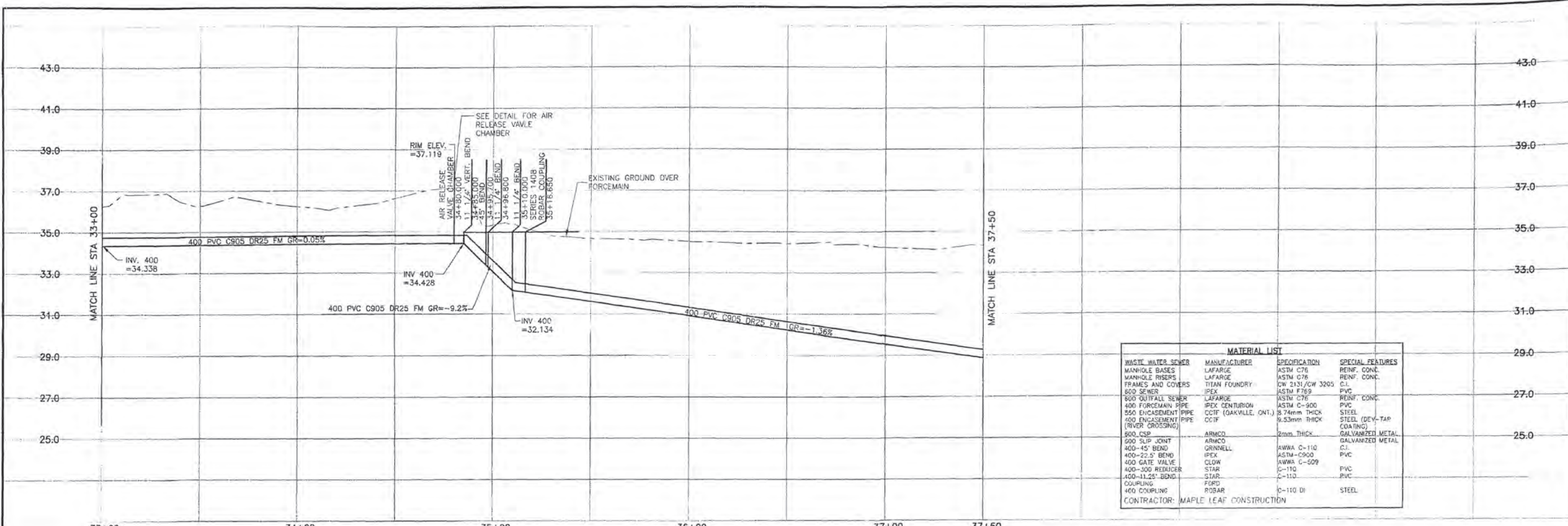


**METRIC**  
WHOLE NUMBERS INDICATE MILLIMETRES  
DECIMALIZED NUMBERS INDICATE METRES

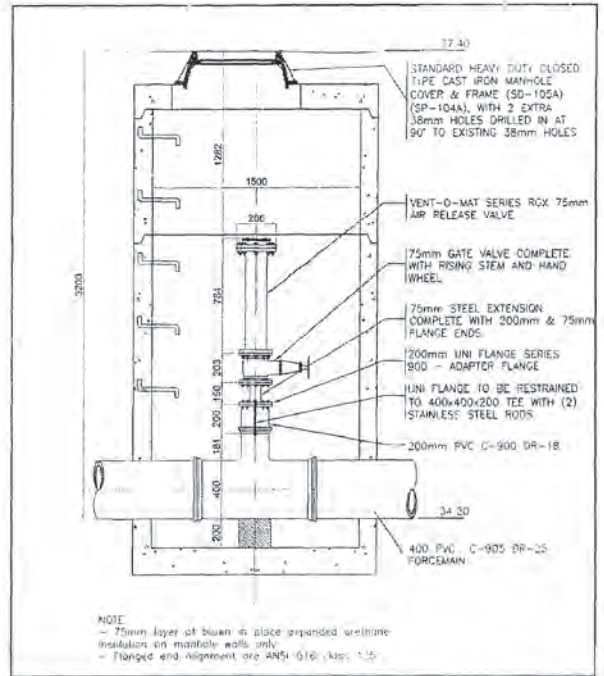
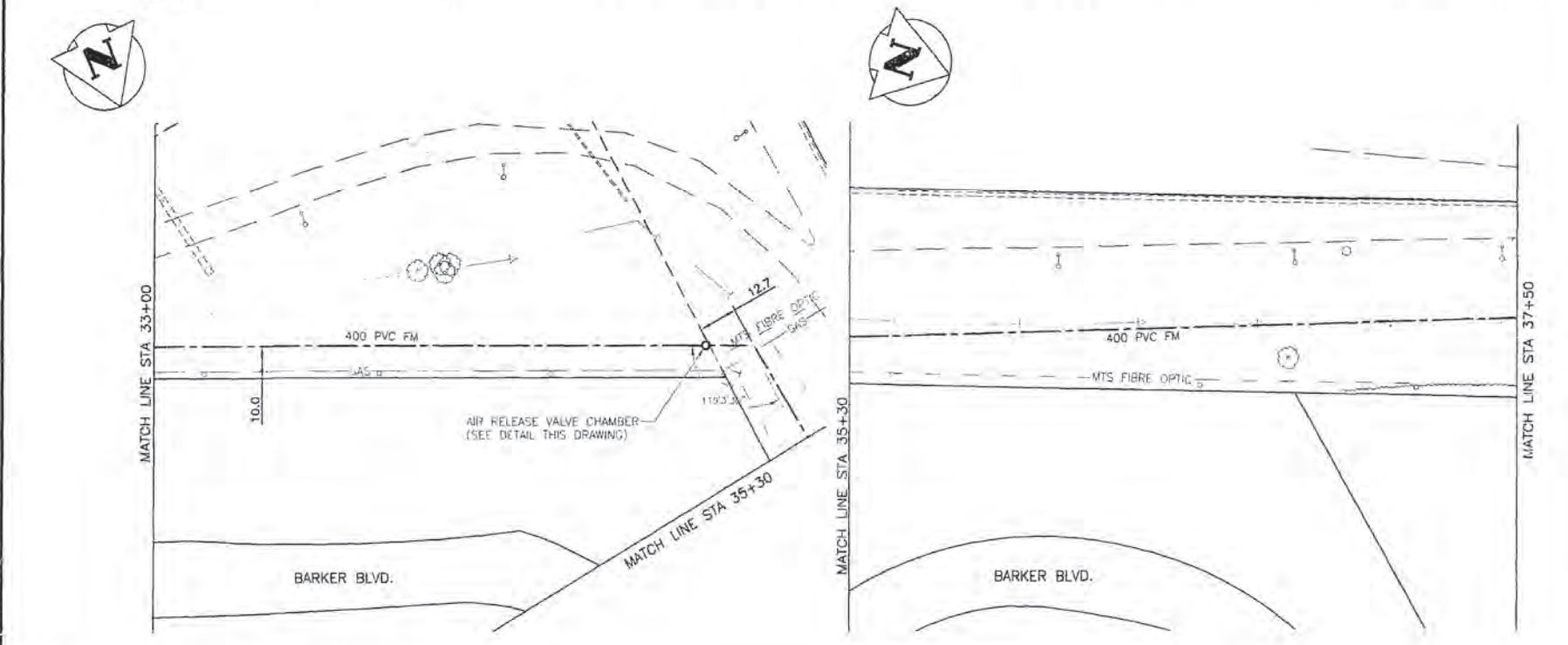
REVISED AS CONSTRUCTED  
BY: V.M. DATE: 2001/04/04  
CHECKED BY: R.M.

CONSTRUCTION COMPLETION DATE - AUGUST 2001

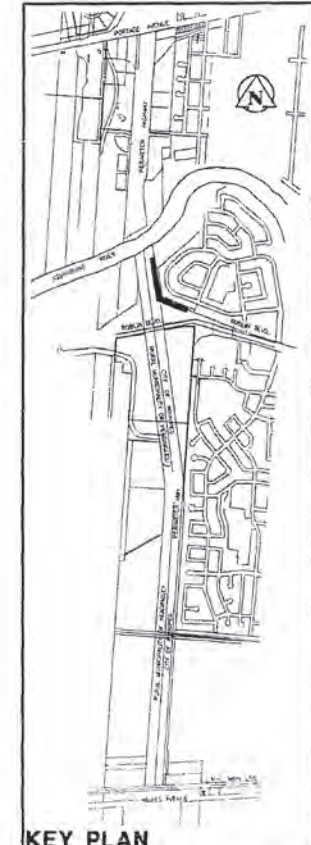
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EXISTING	LEGEND-PLAN	PROPOSED	EXISTING	LEGEND-PLAN	PROPOSED	EXISTING	LEGEND-PROFILE	PROPOSED																																																																																																																								
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MATERIAL LIST			
WASTE WATER SEWER	MANUFACTURER	SPECIFICATION	SPECIAL FEATURES
MANHOLE BASES	LAFARGE	ASTM C78	REINF. CONC.
MANHOLE RISERS	LAFARGE	ASTM C78	REINF. CONC.
FRAMES AND COVERS	TITAN FOUNDRY	QW 2131/CW 3205	C.I.
800 SEWER	IPEX	ASTM F769	PVC
800 OUTFALL SEWER	LAFARGE	ASTM C78	REINF. CONC.
400 FORCEMAIN PIPE	IPEX CENTURION	ASTM C-900	PVC
550 ENCASUREMENT PIPE	CCIF (OAKVILLE, ONT.)	3.74mm THICK	STEEL
400 ENCASUREMENT PIPE	CCIF	9.53mm THICK	STEEL (DEV-TAP COATING)
800 CSP	ARMCO	2mm THICK	GALVANIZED METAL
500 SLIP JOINT	ARMCO		GALVANIZED METAL
400-45' BEND	GRINNELL	AWWA C-110	C.I.
400-22.5' BEND	IPEX	ASTM-C900	PVC
400 GATE VALVE	CLOW	AWWA C-509	PVC
400-300 REDUCER	STAR	C-110	PVC
400-11.25' BEND	STAR	C-110	PVC
COUPLING	FORD	C-110 DI	STEEL
400 COUPLING	ROBAR		
CONTRACTOR: MAPLE LEAF CONSTRUCTION			



AIR RELEASE VALVE CHAMBER AT STATION 34+80.0



REVISED AS CONSTRUCTED  
 BY: V.M. DATE: 2001/04/04  
 CHECKED BY: R.M.

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

NOTE:  
 CHAINAGES CALCULATED ALONG  
 CENTERLINE OF 400 PVC FM

NOTE:  
 ALL 400 FM BENDS RESTRAINED USING  
 A SERIES 1300 UNI-FLANGE BLOCK  
 BUSTER RESTRAINT DEVICE AND A  
 THRUST BLOCK (SD-004,SD-005)

Boundary Mark  
 B1RG28 - Perimeter Hwy. (P.T.H. 100) &  
 Robin Blvd. Interchange; Toll, on top of N  
 span (sidewalk) of overpass at interchange,  
 6.3m W. & 0.9m Nly. of N.E. Conc. edge of  
 sidewalk on overpass.

CONSTRUCTION COMPLETION DATE - AUGUST 2001

EXISTING	LEGEND-PLAN	PROPOSED	EXISTING	LEGEND-PLAN	PROPOSED	EXISTING	LEGEND-PROFILE	PROPOSED
150 W.W.	WATERMAIN	150 W.W.	HYDRO			150 W.W.	WATERMAIN	150 W.W.
100 H.S.	HYDRANT	100 H.S.	M.T.S.			100 H.S.	HYDRANT, VALVE	100 H.S.
300 L.S.	VALVE	300 L.S.	CONCRETE			300 L.S.	LAND DRAINAGE SEWER	300 L.S.
300 L.S.	LAND DRAINAGE SEWER	300 L.S.	ASPHALT			250 W.W.	WASTE WATER SEWER	250 W.W.
250 W.W.	WASTE WATER SEWER	250 W.W.	SIDEWALK			250 W.W.	PROFILE	250 W.W.
MANHOLE			PROPERTY LINE			□	NORTH OR WEST GUTTER	
CATCH BASIN			SURVEY BAR			□	SOUTH OR EAST GUTTER	
CURB INLET			DITCH			○	NORTH OR WEST R	
JUNCTIONS			ELEVATION			○	SOUTH OR EAST R	
CULVERT						△	NORTH OR WEST DITCH	
GAS						▽	SOUTH OR EAST DITCH	

LOCATION APPROVED UNDERGROUND STRUCTURES	DATE
DATE	BY
2	REVISED AS CONSTRUCTED
1	ADDED WATER & WASTE COMMENTS
NO	REVISIONS

**Stantec Consulting Ltd.**  
 905 Waverley Street, Winnipeg, Manitoba  
 Tel: 204-489-5900 F: 204-483-9031

DESIGNED BY: C.D. CHECKED BY: P.J.S.  
 DRAWN BY: T.G. APPROVED BY: D.M.

DATE: 00.03.06

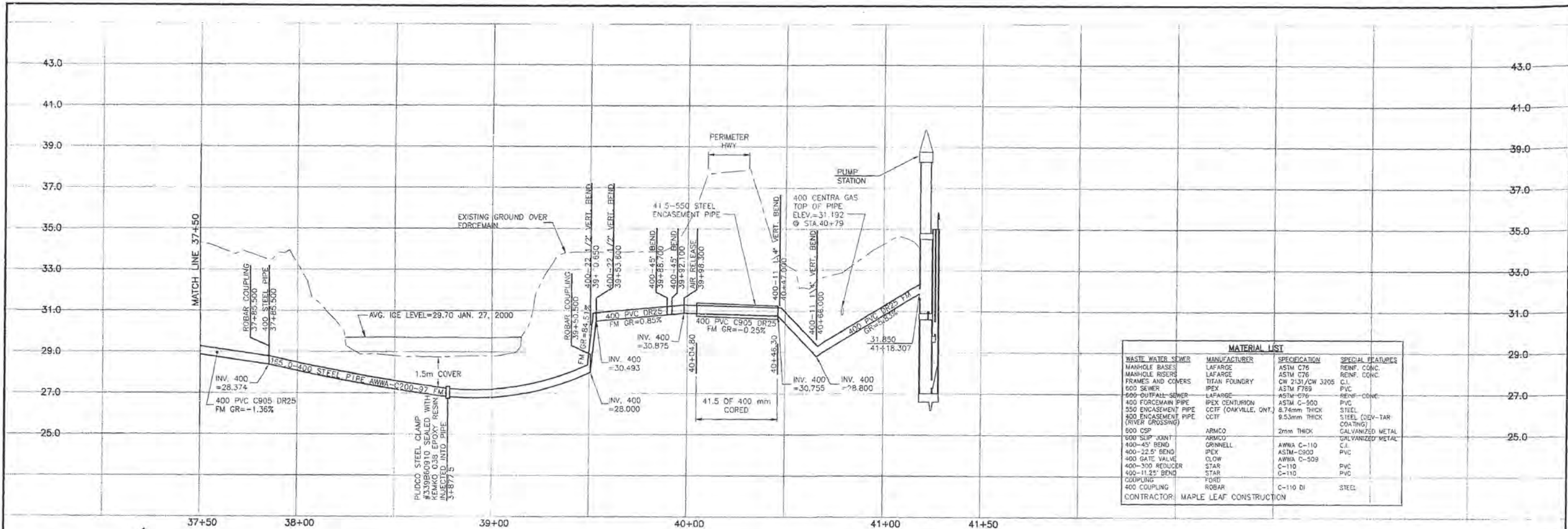
PROVINCE OF MANITOBA  
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 C.L. DYCK  
 PW-91-549

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

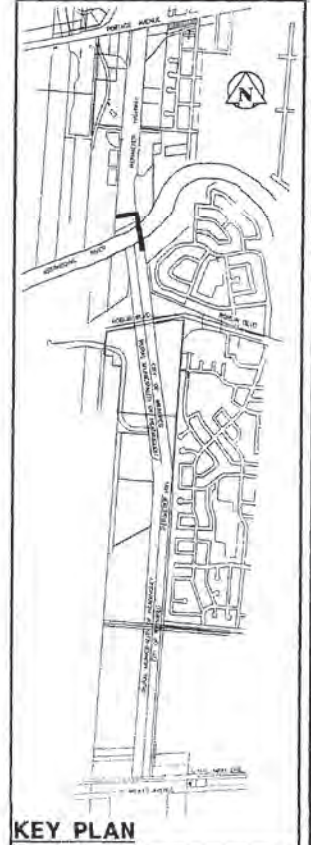
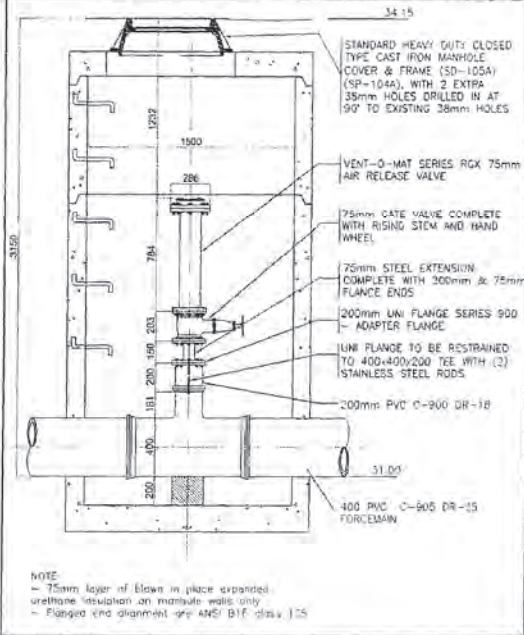
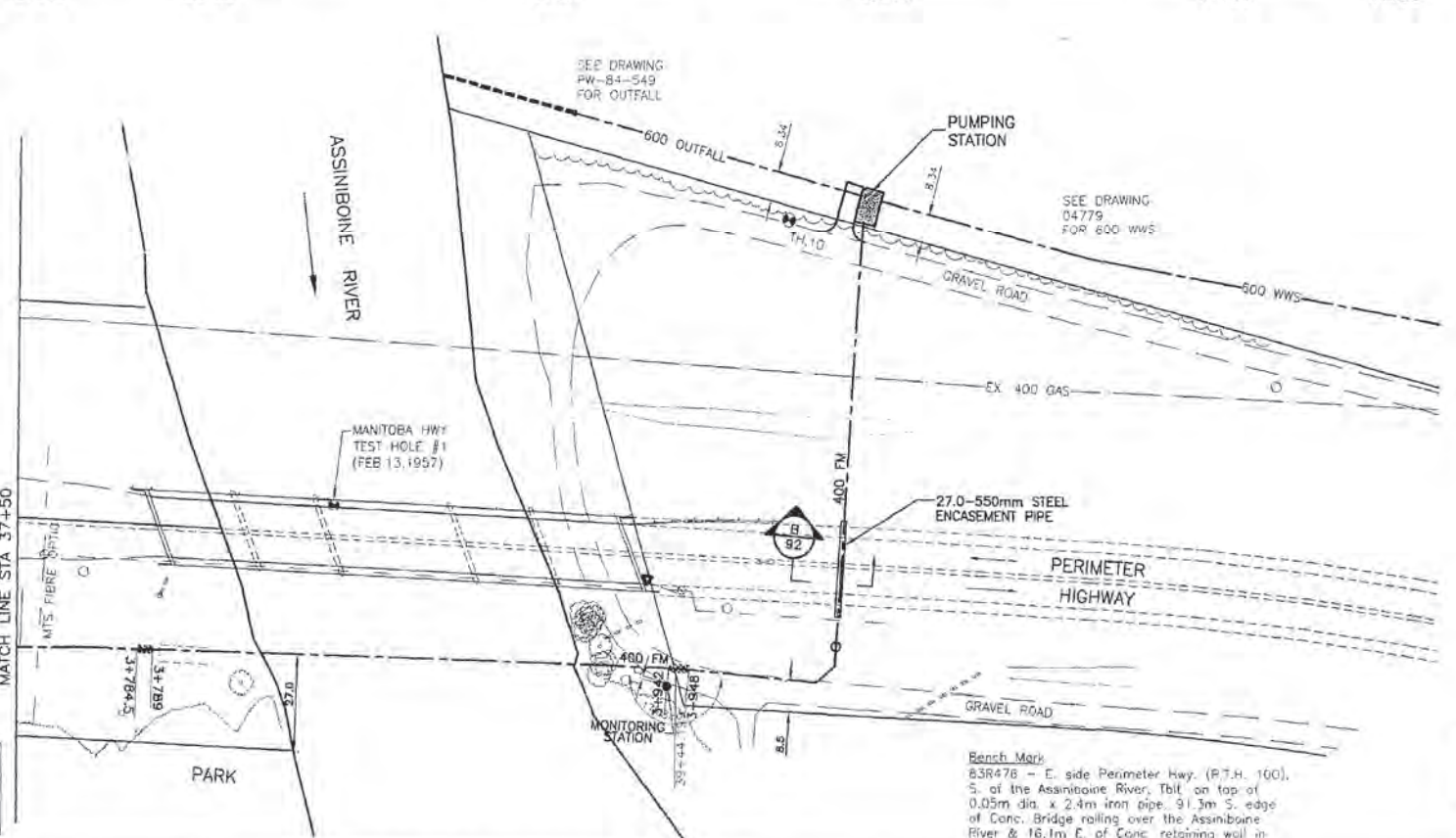
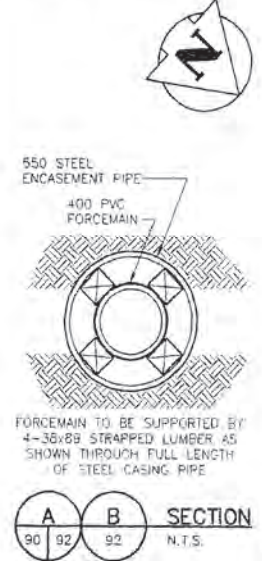
PERIMETER WEST FORCEMAIN  
 WASTE WATER SEWER AND PUMP STATION

400 FORCEMAIN  
 PHASE 2  
 STA 33+00 TO STA 37+50

9 24



MATERIAL LIST			
WASTE WATER SEWER	MANUFACTURER	SPECIFICATION	SPECIAL FEATURES
MANHOLE BASES	LAFARGE	ASTM C76	REINF. CONC.
MANHOLE RISERS	LAFARGE	ASTM C76	REINF. CONC.
FRAMES AND COVERS	TITAN FOUNDRY	CW 2131/CW 3205	C.I.
600 SEWER	IPEX	ASTM F759	PVC
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400 FORCEMAIN PIPE	IPEX CENTURION	ASTM C-900	PVC
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400 COUPLING	ROBAR	C-110 DI	STEEL
CONTRACTOR: MAPLE LEAF CONSTRUCTION			



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

REVISED AS CONSTRUCTED  
BY: V.M. DATE: 2001/04/04  
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NOTE:  
ALL 400 FM BENDS RESTRAINED USING A SERIES 1300 UNI-FLANGE BLOCK BUSTER RESTRAINT DEVICE AND A THRUST BLOCK (SD-004,SD-005)

NOTE:  
CHAINAGES CALCULATED ALONG CENTERLINE OF 400 PVC FM

CONSTRUCTION COMPLETION DATE - AUGUST 2001

EXISTING	LEGEND-PLAN	PROPOSED	EXISTING	LEGEND-PLAN	PROPOSED	EXISTING	LEGEND-PROFILE	PROPOSED
150 MM	WATERMAIN	150 MM	HYDRANT	M.T.S.		150 MM	WATERMAIN	150 MM
300 LBS	LAND DRAINAGE SEWER	300 LBS	VALVE	CONCRETE		300 LBS	HYDRANT, VALVE	300 LBS
250 WWS	WASTE WATER SEWER	250 WWS		ASPHALT		250 WWS	LAND DRAINAGE SEWER	250 WWS
	MANHOLE			SIDEWALK			WASTE WATER SEWER	
	CATCH BASIN			PROPERTY LINE			Q PROFILE	
	CURB INLET			SURVEY BAR			NORTH OR WEST GUTTER	
	JUNCTIONS			DITCH			SOUTH OR EAST GUTTER	
	CULVERT			ELEVATION			NORTH OR WEST R	
	GAS						SOUTH OR EAST R	
							NORTH OR WEST DITCH	
							SOUTH OR EAST DITCH	

LOCATION APPROVED UNDERGROUND STRUCTURES

DATE COMMITTEE

NOTE:  
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B.M. 48-025  
ELEV. 237.037m

**Stantec Consulting Ltd.**  
905 Waverley Street, Winnipeg, Manitoba  
Tel: 204-489-5800 Fax: 204-453-9013

DESIGNED BY: C.D. CHECKED BY: F.J.S.  
DRAWN BY: T.G. APPROVED BY: D.M.  
HORIZ. SCALE: 1:1000  
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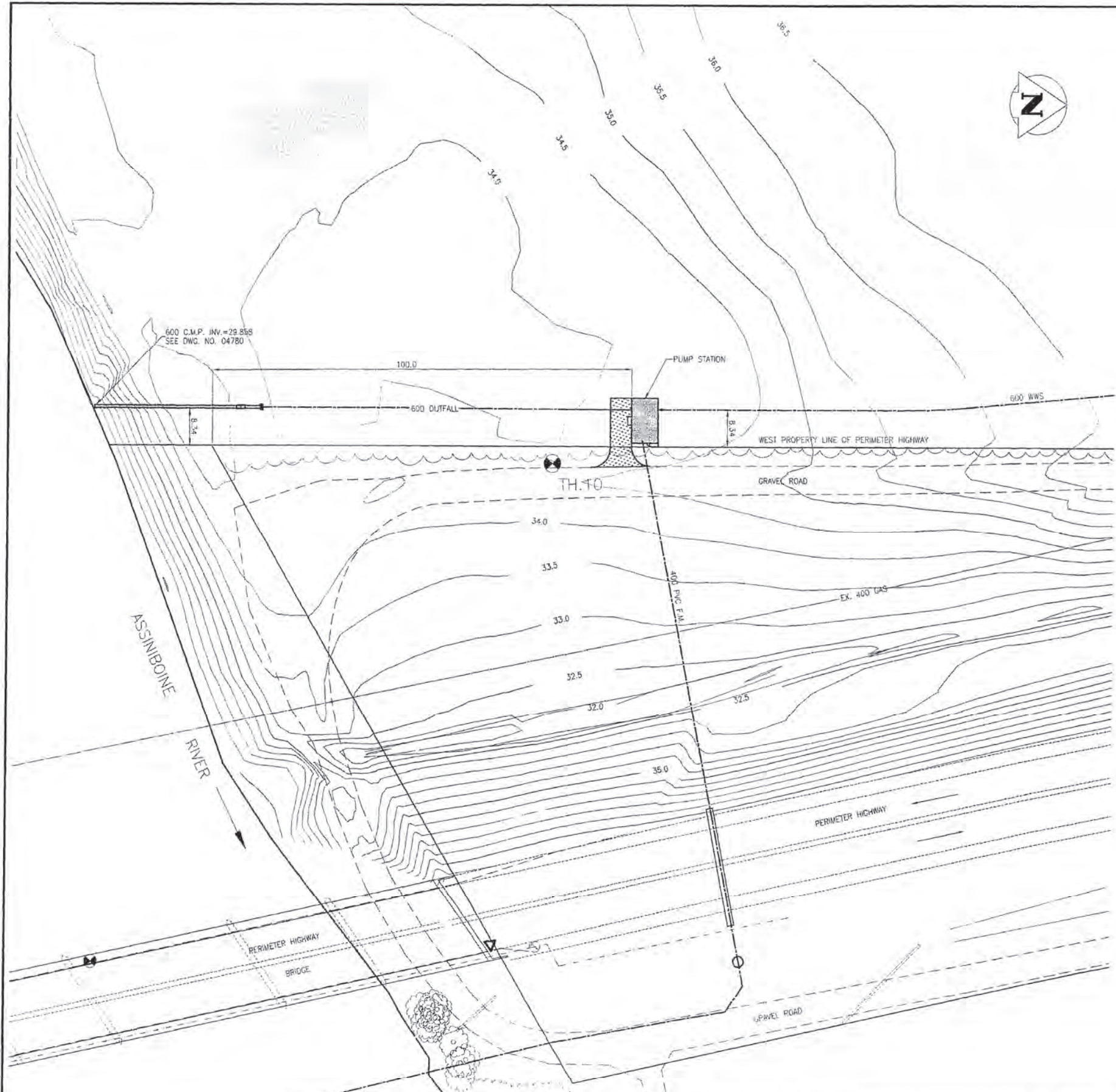
PROVINCE OF MANITOBA  
REGISTERED PROFESSIONAL ENGINEER  
C.L. DYCK  
CONSULTANT DRAWING NO. PW-92-549

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

PERIMETER WEST FORCEMAIN  
WASTE WATER SEWER AND PUMP STATION  
400 FORCEMAIN AND PUMP STATION  
PHASE 2  
STA 37+50 TO STA 41+50

DRAWING NUMBER: 04788  
10 OF 24

A:\0600\1805350 - Perimeter West 400 ForceMain\Project\04788.dwg  
 04/04/01 10:30 AM By: v.m.



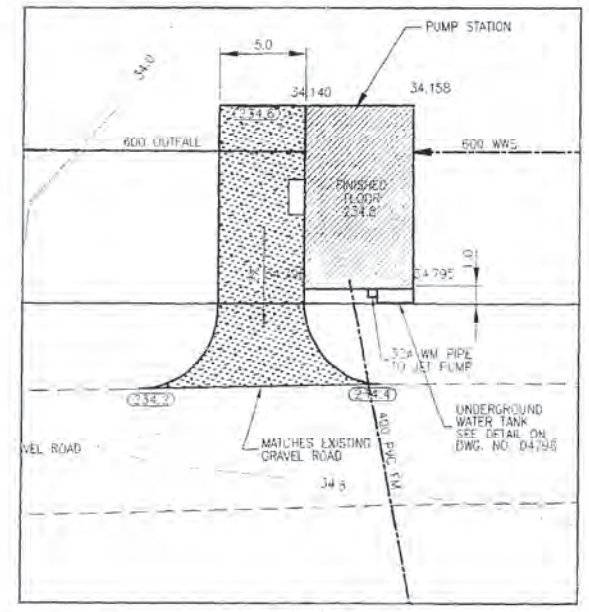
Testhole No. TH10

Depth (m)	Symbol	Testhole Log	Elevation (m)	Other Tests
0		Ground Surface	234.2	
		FILL - grass covered clay	233.743	
1		CLAY		Water Level 99/05/13 ▽ -UFVS=123kPa -DFVS=29kPa
2		-very stiff to stiff, black, some roots		
3		-brown below 1.2m, trace silt and gypsum		
4		-sand layers below 2.4m, slight seepage		
5		-grey at 4.9m		
6		-firm to soft below 5m	228.409	
		GLACIAL TILL		
7		-very soft, clayey, grey, wet		
8		-medium dense at 6.1m, silty, sandy, gravelly		
9		-abundant gravel, some cobbles below 7.6m		
10		-red, medium dense to dense below 10.1m, some gravel	223.532	
11		-seepage		

End testhole at 10.7m from grade.

**NOTES**

- 1) Testhole open to 7.9m from grade upon completion of drilling.
- 2) Ground water level at 3.4m from grade upon completion of drilling.



SITE PLAN  
SCALE: 1:500

CONSTRUCTION COMPLETION DATE - AUGUST 2001

REVISED AS CONSTRUCTED  
BY: R.P. DATE: 24/08/2000  
CHECKED BY: R.M.

METRIC  
WHOLE NUMBERS INDICATE MILLIMETRES  
DECIMALIZED NUMBERS INDICATE METRES

LOCATION APPROVED UNDERGROUND STRUCTURES

SUPV. U/G STRUCTURES COMMITTEE	DATE	B.M. ELEV.

NOTE:  
REVISIONS 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.

**Stantec Consulting Ltd.**  
905 Waverley Street, Winnipeg, Manitoba  
Tel: 204-480-5900 Fax: 204-453-9011

DESIGNED BY: T.T.	CHECKED BY: J.T.
DRAWN BY: R.M.	APPROVED BY: D.G.M.
HOR. SCALE: AS SHOWN	RELEASED FOR CONSTRUCTION
VERTICAL:	DATE:

CONSULTANT DRAWING NO. PW-93-549

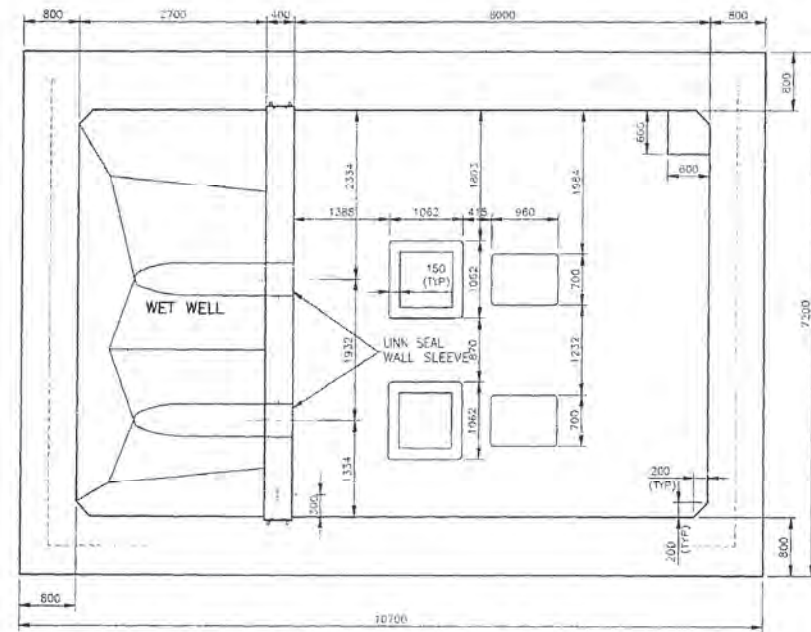
**THE CITY OF WINNIPEG**  
WATER AND WASTE DEPARTMENT

PERIMETER WEST FORCEMAIN  
WASTEWATER SEWER AND PUMP STATION  
WASTE WATER PUMP STATION  
PHASE 2  
SITE PLAN

CONSULTANT DRAWING NO. PW-93-549

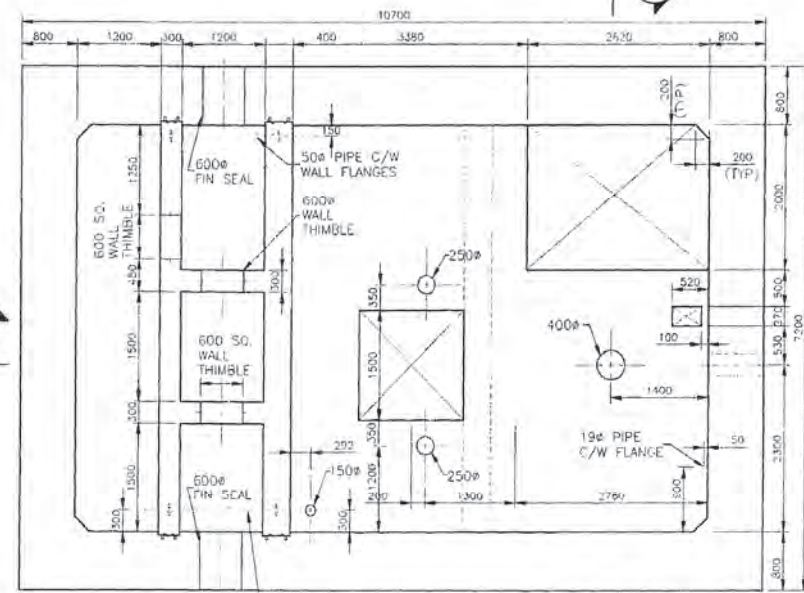
UTL DRAWING NUMBER: 04789  
SHEET 11 OF 24

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JUL 2001 10:00 AM  
JUL 2001 10:00 AM

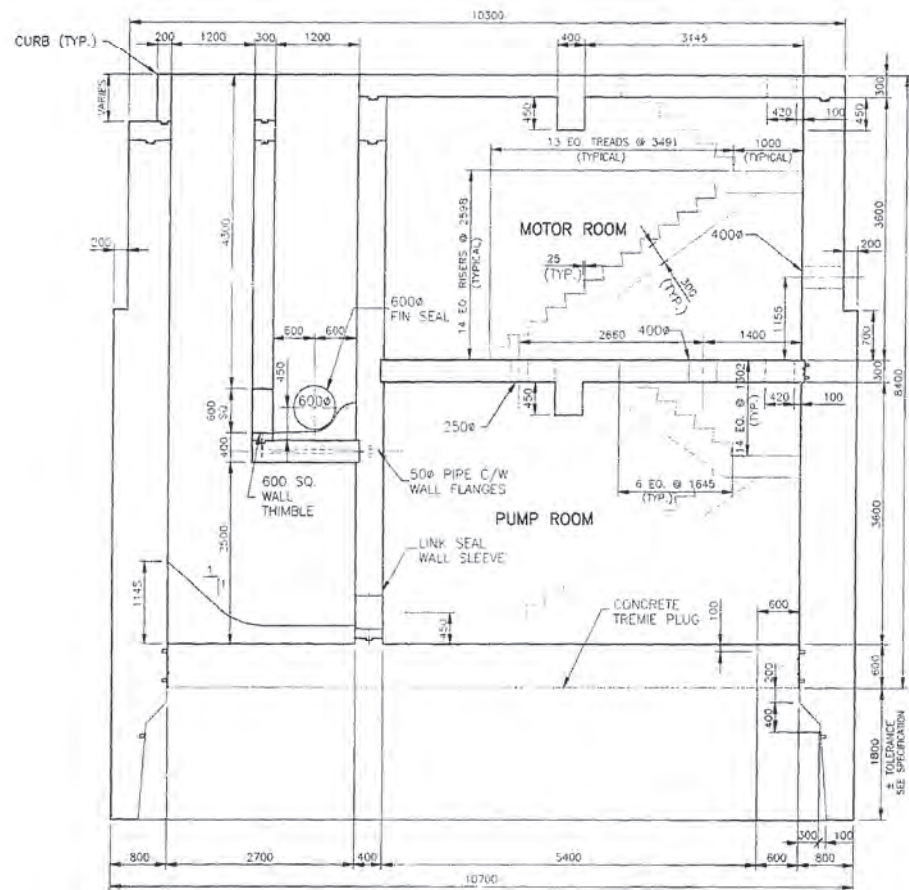


**WET WELL/DRY WELL FLOOR PLAN**  
SCALE: 1:50

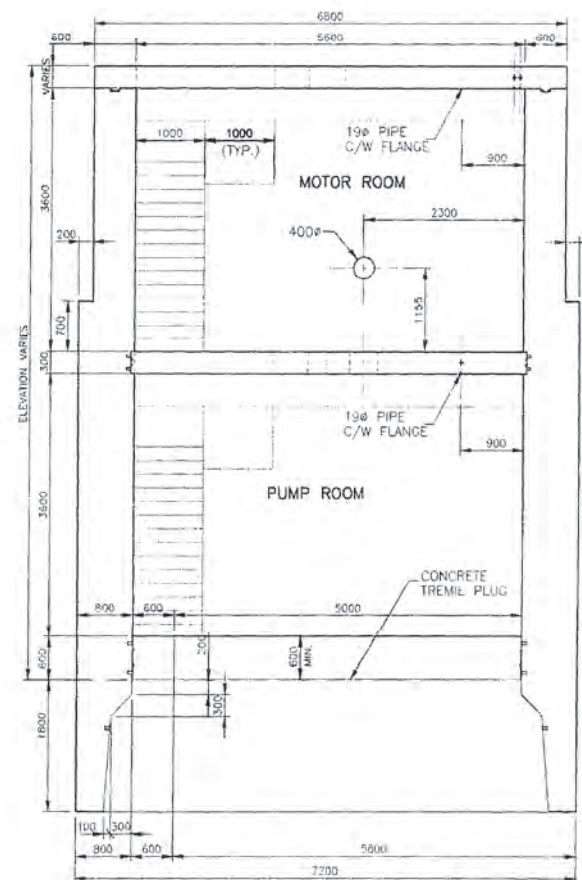
NOTE:  
CONCRETE STAIRS AND  
LANDING NOT SHOWN ON  
PLANS FOR CLARITY.  
REFER TO SECTIONS



**MOTOR ROOM FLOOR PLAN**  
SCALE: 1:50



**SECTION A**  
SCALE: 1:50



**SECTION B**  
SCALE: 1:50

REVISED AS CONSTRUCTED  
BY: P.P. DATE: 24/08/2001  
CHECKED BY: P.M.

**METRIC**  
WHOLE NUMBERS INDICATE MILLIMETERS  
DECIMALIZED NUMBERS INDICATE METRES

LOCATION APPROVED  
UNDERGROUND STRUCTURES

SUPV. U/G STRUCTURES DATE COMMITTEE

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 EXACT LOCATIONS ARE EXACT. CONFIRMATION OF EXISTENCE AND EXACT LOCATION OF ALL SERVICES MUST BE OBTAINED FROM THE RELEVANT UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION.

NO.	REVISIONS	DATE	BY
1	REVISED AS CONSTRUCTED	24/08/01	P.P.

**Stantec Consulting Ltd.**  
905 Waverley Street, Winnipeg, Manitoba  
Tel 204-489-5900 Fax 204-453-9011

DESIGNED BY: W.S.	CHECKED BY: W.S.
DRAWN BY: R.M.	APPROVED BY: D.G.M.
HOR SCALE: 1:50	RELEASED FOR CONSTRUCTION
VERTICAL:	DATE: JULY 24, 2000

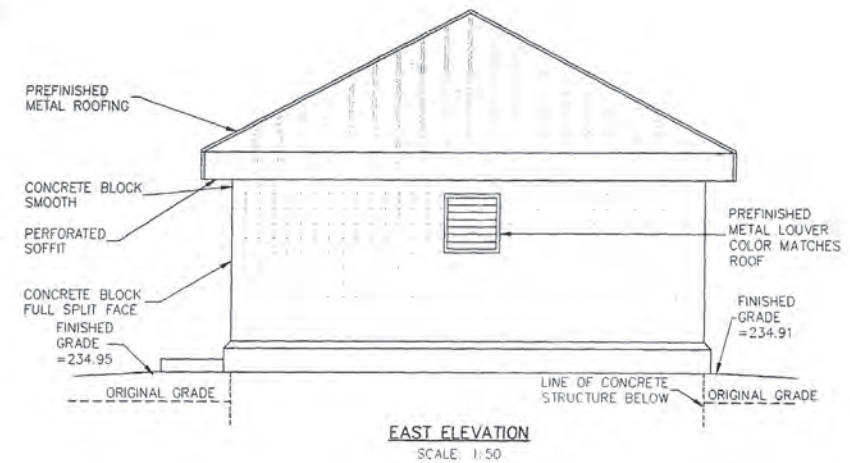
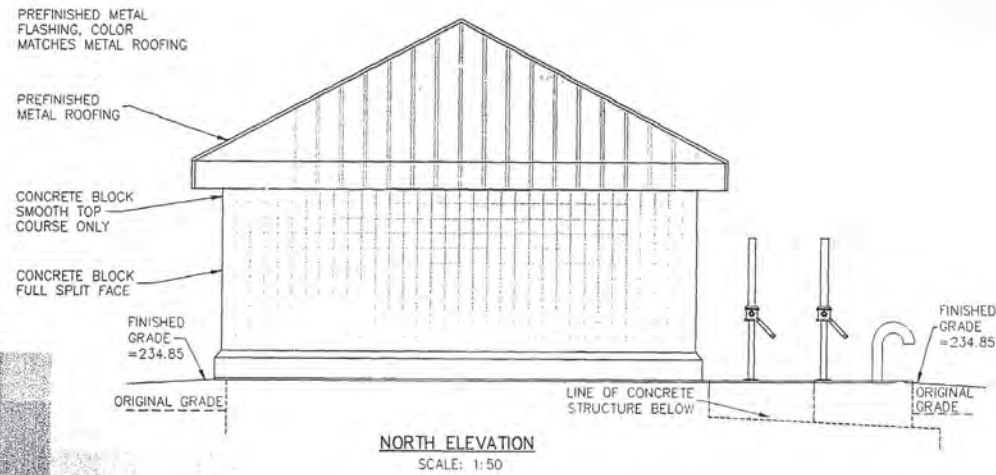
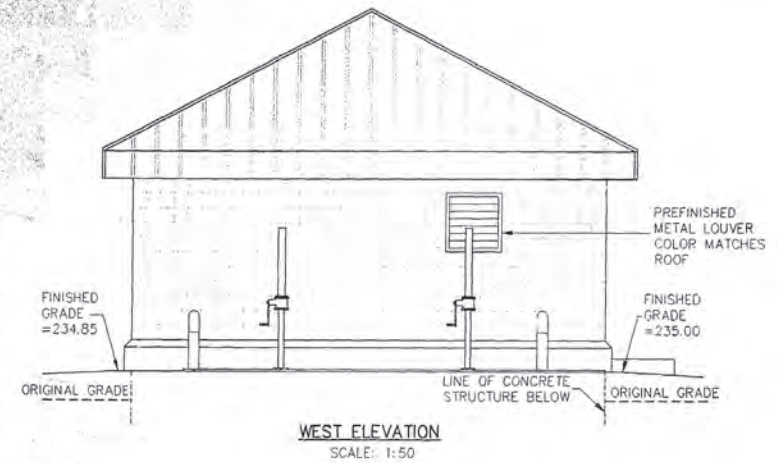
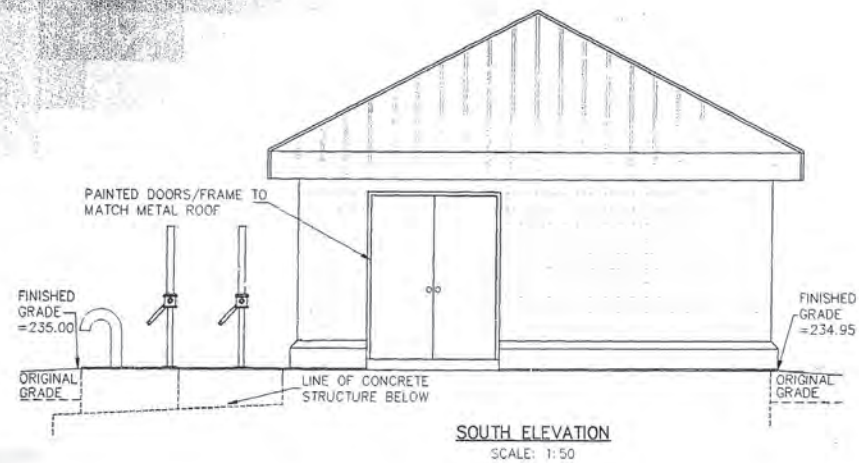
PROVINCE OF MANITOBA  
ORIGINAL STAMPED BY  
W.A. SCHOENFELD  
P. ENG.  
20.07.00  
CONSULTANT DRAWING NO.  
PW-94-549

CONSTRUCTION COMPLETION DATE - AUGUST 2001

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

PERIMETER WEST FORCEMAIN  
WASTE WATER SEWER AND PUMP STATION  
PHASE 2  
WASTE WATER PUMP STATION  
CONCRETE PLANS AND SECTIONS  
SHEET #1

DATE DRAWING NUMBER	04790
SHEET	12 OF 24



**METRIC**

WHOLE NUMBERS INDICATE MILLIMETRES  
DECIMALIZED NUMBERS INDICATE METRES

REVISED AS CONSTRUCTED  
BY: K.R. DATE: 24/08/2001  
CHECKED BY: R.M.

LOCATION APPROVED  
UNDERGROUND STRUCTURES

SUPV. U/G STRUCTURES DATE COMMITTEE

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.

NO.	REVISIONS	DATE	BY
1	REVISED AS CONSTRUCTED	24.08.01	K.R.

**Stantec Consulting Ltd.**  
905 Waverley Street, Winnipeg, Manitoba  
Tel 204-489-5900 | 204-453-9012

DESIGNED BY: W.S.	CHECKED BY: W.S.
DRAWN BY: R.M.	APPROVED BY: D.G.A.
HOR. SCALE: AS SHOWN	RELEASED FOR CONSTRUCTION: DATE
VERTICAL: DATE: MAY 8, 2000	



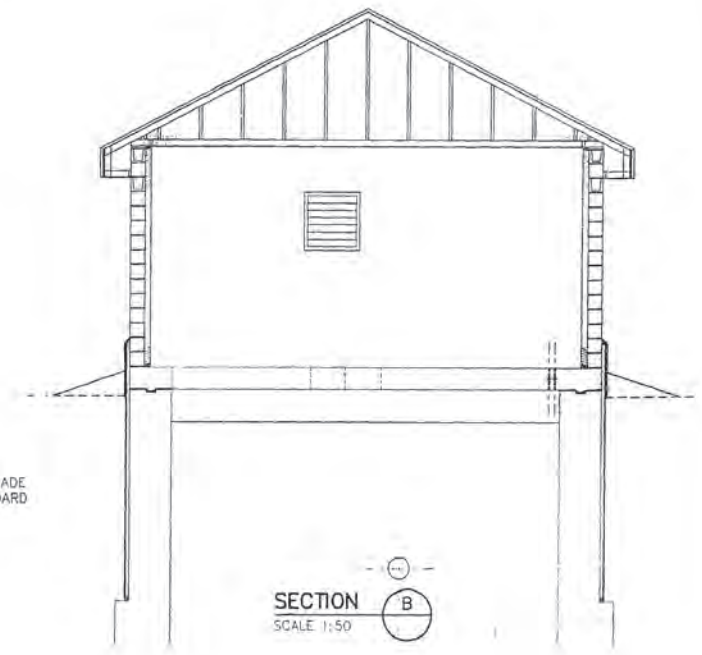
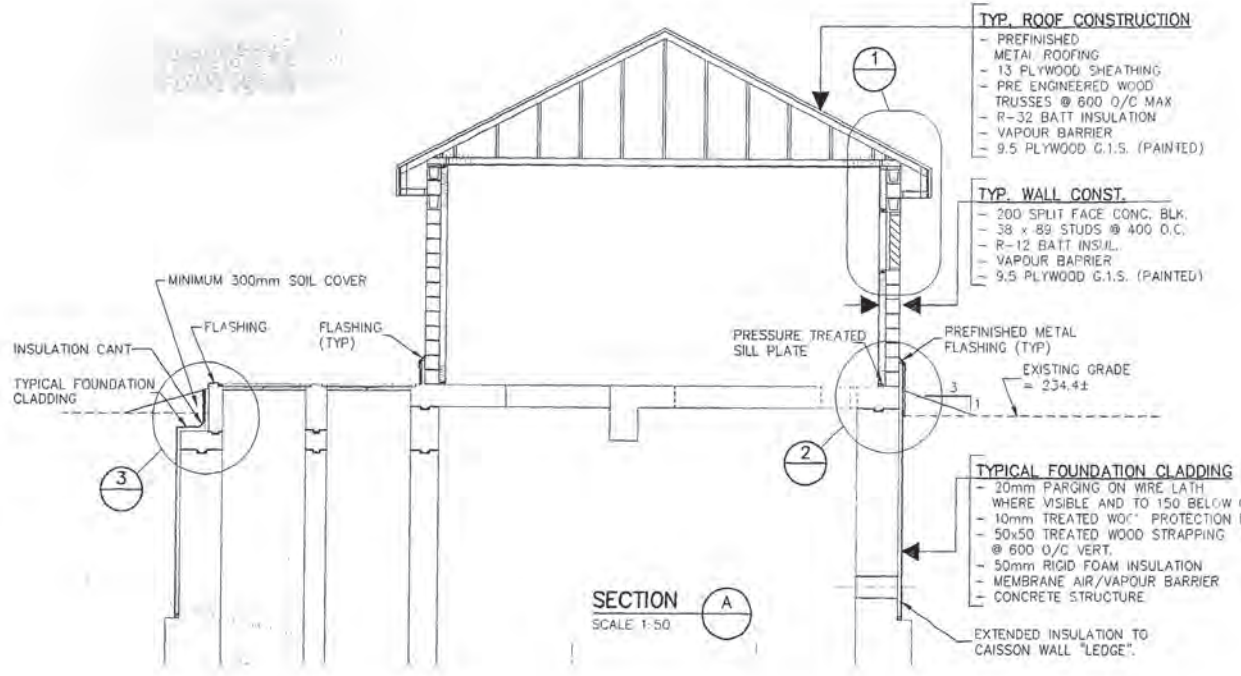
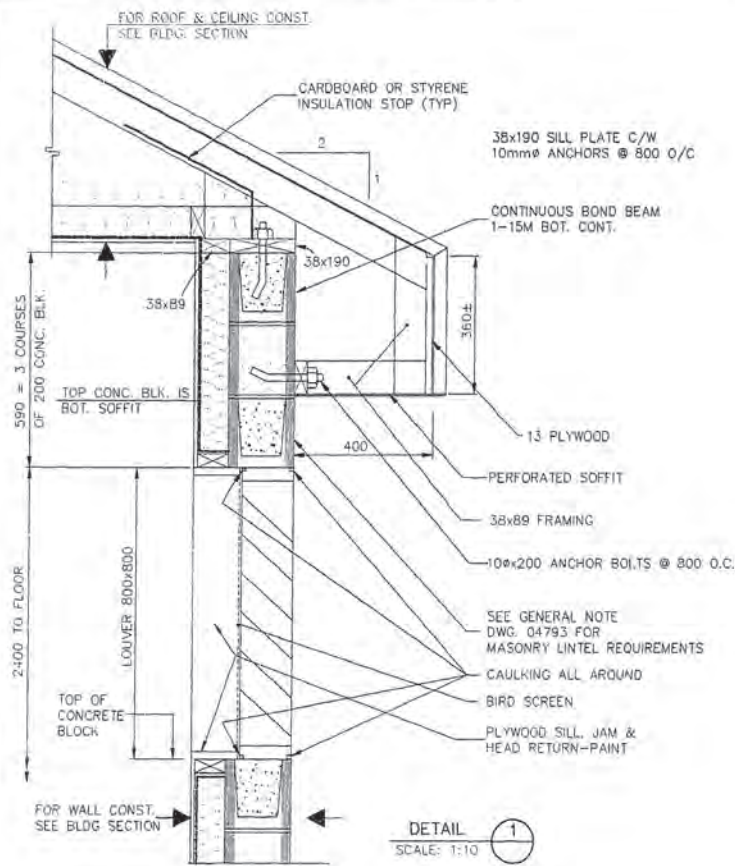
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CONSTRUCTION COMPLETION DATE - AUGUST 2001

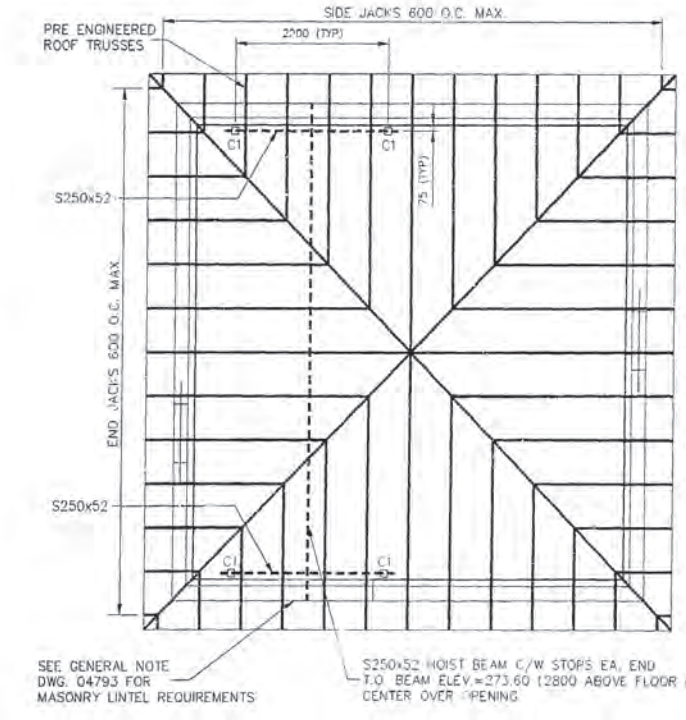
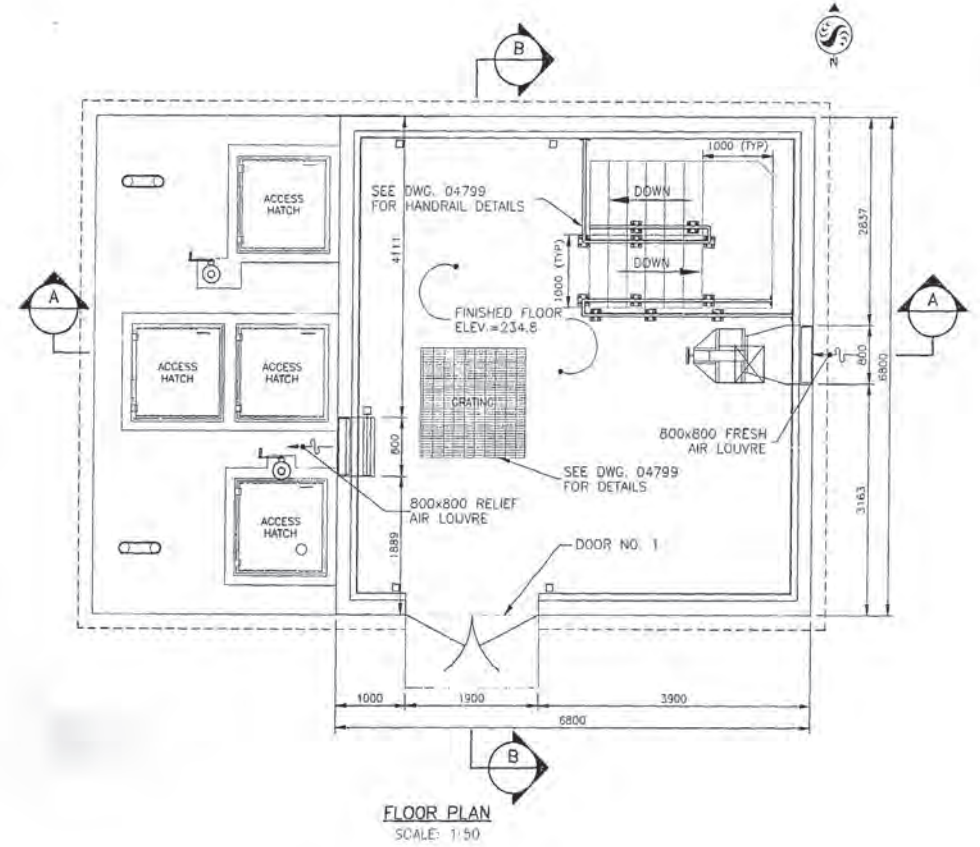
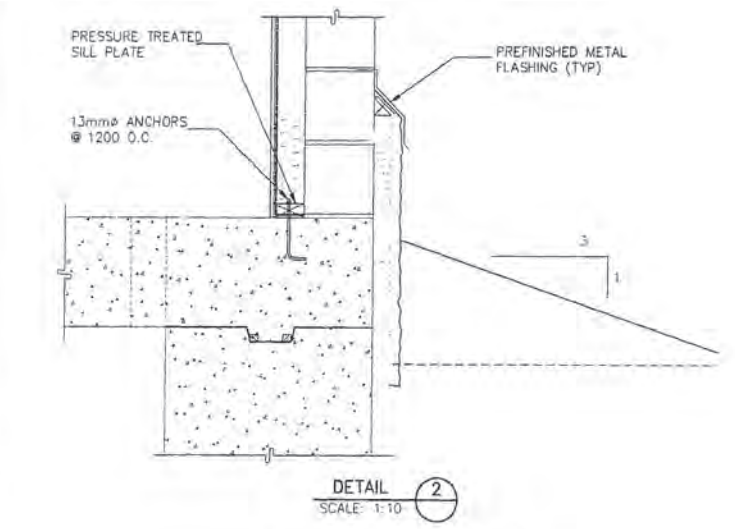
**THE CITY OF WINNIPEG**  
WATER AND WASTE DEPARTMENT

PERIMETER WEST FORCEMAIN  
WASTE WATER SEWER AND PUMP STATION  
PHASE 2  
PUMP HOUSE  
BUILDING ELEVATIONS  
AND DETAILS

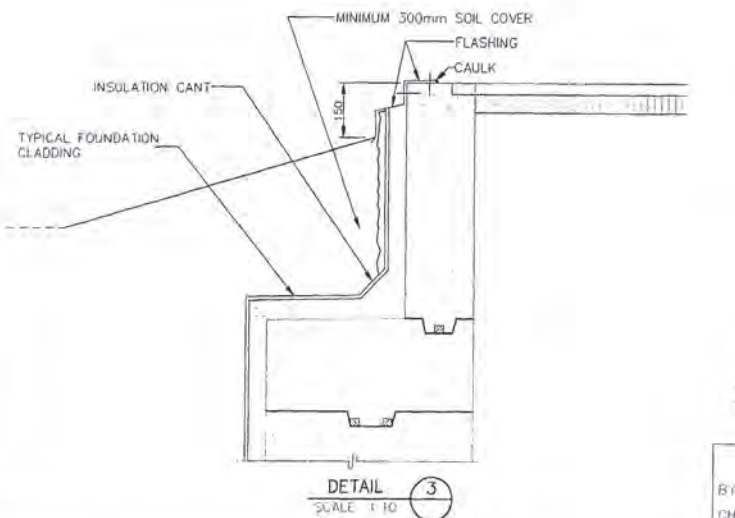
UTL DRAWING NUMBER: 04794
SHEET 16 OF 24



- TYP. ROOF CONSTRUCTION**
- PREFINISHED METAL ROOFING
  - 13 PLYWOOD SHEATHING
  - PRE ENGINEERED WOOD TRUSSES @ 600 O/C MAX
  - R-32 BATT INSULATION
  - VAPOUR BARRIER
  - 9.5 PLYWOOD G.I.S. (PAINTED)
- TYP. WALL CONST.**
- 200 SPLIT FACE CONC. BLK.
  - 38 x 89 STUDS @ 400 O.C.
  - R-12 BATT INSUL.
  - VAPOUR BARRIER
  - 9.5 PLYWOOD G.I.S. (PAINTED)
- TYPICAL FOUNDATION CLADDING**
- 20mm PARING ON WIRE LATH WHERE VISIBLE AND TO 150 BELOW GRADE
  - 10mm TREATED WOOD PROTECTION BOARD
  - 50x50 TREATED WOOD STRAPPING @ 600 O/C VERT.
  - 50mm RIGID FOAM INSULATION
  - MEMBRANE AIR/VAPOUR BARRIER
  - CONCRETE STRUCTURE



- TYPICAL COLUMN MK. C1**
- 101.6x101.6x4.77 HSS COL  
 C/W 120x225x1.6 B PLATES  
 2-20mmx450 J-BOLTS  
 U/S B. PLATE EL. 234.825  
 PROVIDED 25mm NON SHRINK GROUT BELOW BASE PLATE.  
 ALL STEEL GALVANIZED.
- PROVIDED 2-L75x75x6x300 CLIP ANGLES FROM TOP OF EACH BEAM TO SOLID BLOCKING IN STUD WALL. SECURED EA. CLIP ANGLE WITH 2-16mmØ LAG BOLTS. ALL STEEL GALVANIZED. (4 CLIPS TOTAL)
- CLIP ANGLE  
 BEAM  
 COLUMN



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

REVISED AS CONSTRUCTED  
 BY: N.R. DATE: 24/08/2000  
 CHECKED BY: R.M.

LOCATION APPROVED UNDERGROUND STRUCTURES		B.M. ELEV.
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 EXACT. CONFIRMATION OF EXISTENCE AND EXACT LOCATION OF ALL SERVICES MUST BE OBTAINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION.		
DESIGNED BY: W.S.	CHECKED BY: W.S.	
DRAWN BY: R.M.	APPROVED BY: D.C.	
HOR. SCALE: AS SHOWN	RELEASED FOR CONSTRUCTION:	
VERTICAL:		
REVISED AS CONSTRUCTED	DATE: 24.08.00	K.R.
NO. REVISIONS	DATE	BY
	MAY 8, 20000	

**Stantec Consulting Ltd.**  
 905 Waverley Street, Winnipeg, Manitoba  
 Tel: 204-489-5900 Fax: 204-453-9012

DESIGNED BY: W.S. CHECKED BY: W.S.  
 DRAWN BY: R.M. APPROVED BY: D.C.  
 HOR. SCALE: AS SHOWN RELEASED FOR CONSTRUCTION:  
 VERTICAL:

CONSULTANT DRAWING NO: PW-99-549

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

PERIMETER WEST FORCEMAIN  
 WASTE WATER SEWER AND PUMP STATION  
 PHASE 2

PUMP STATION  
 BUILDING ELEVATIONS  
 AND DETAILS

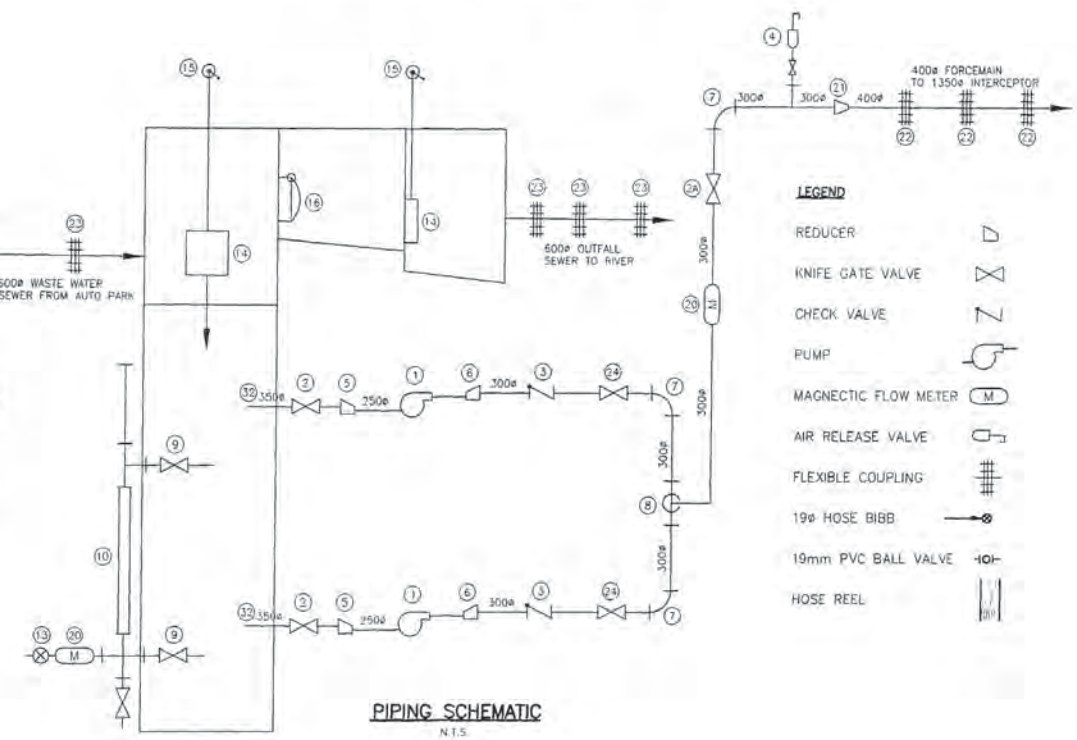
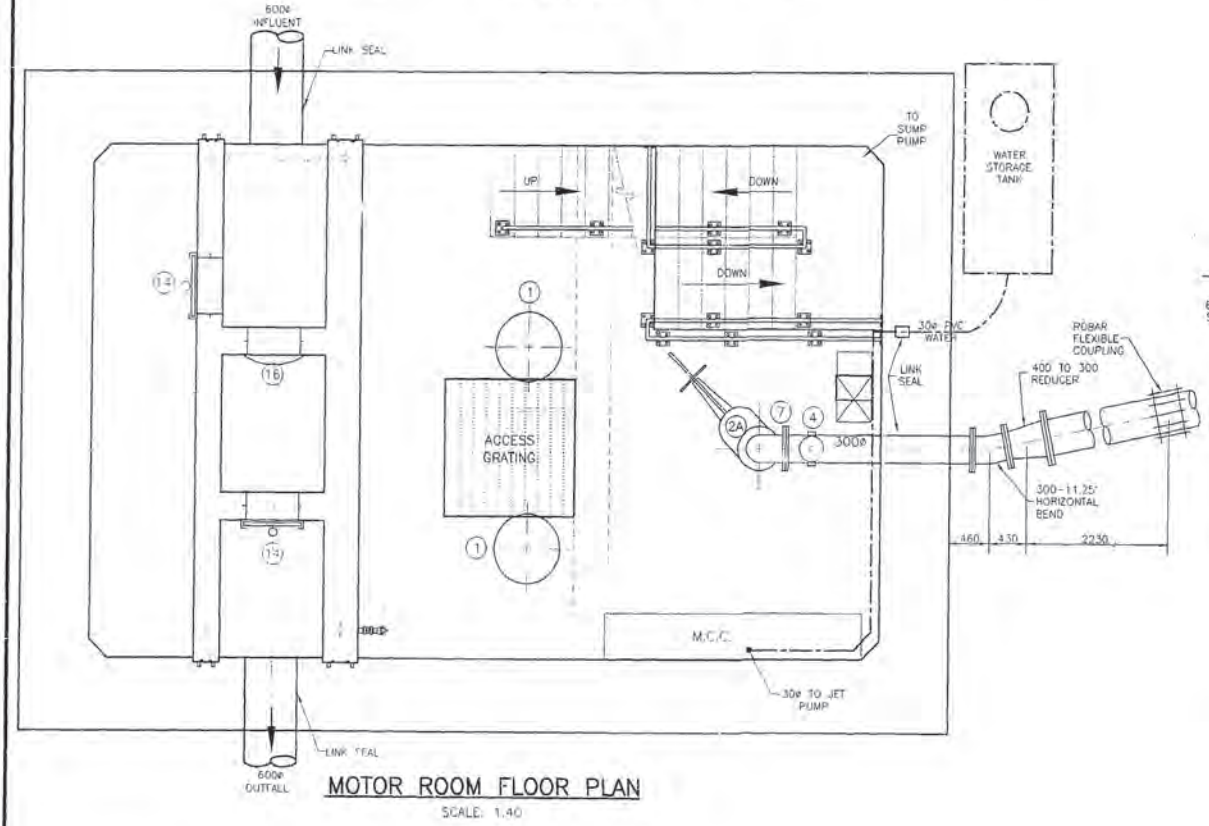
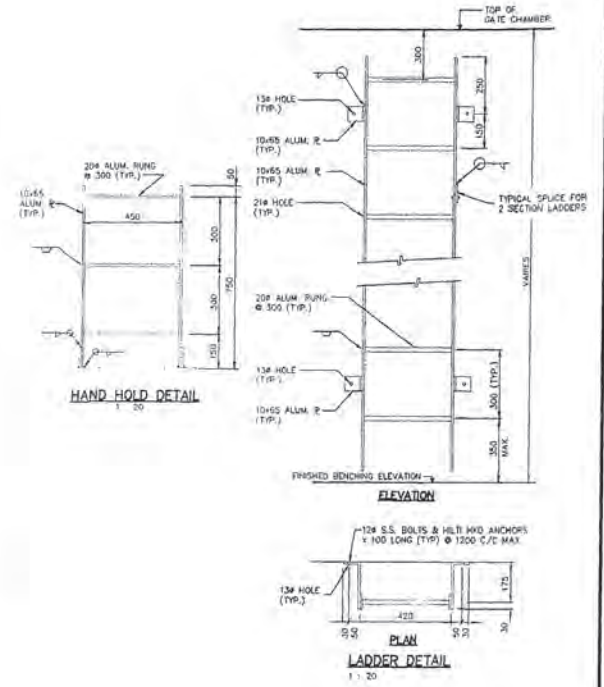
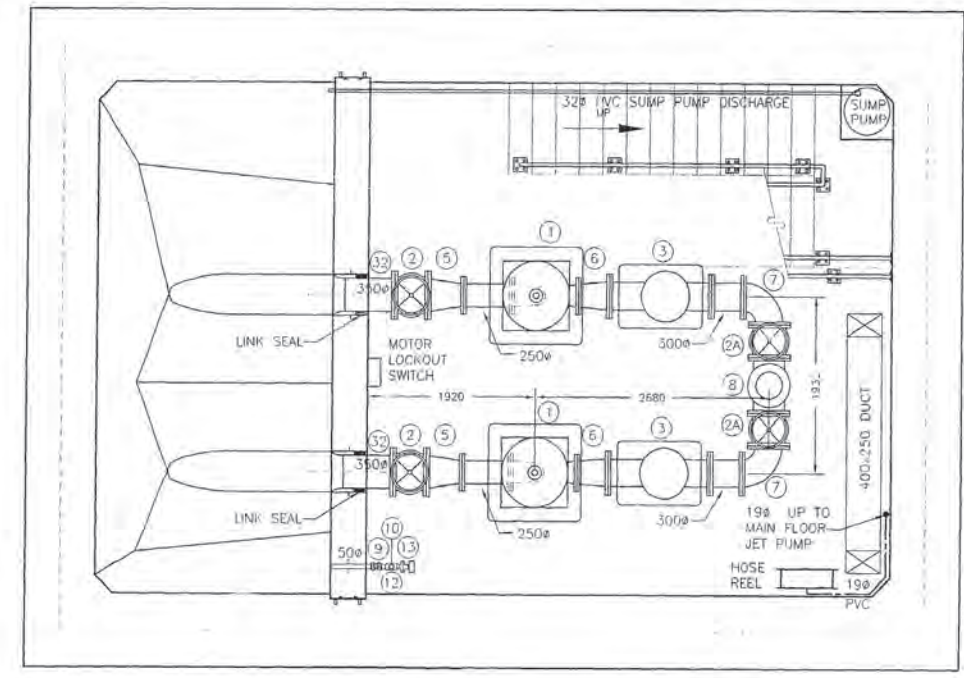
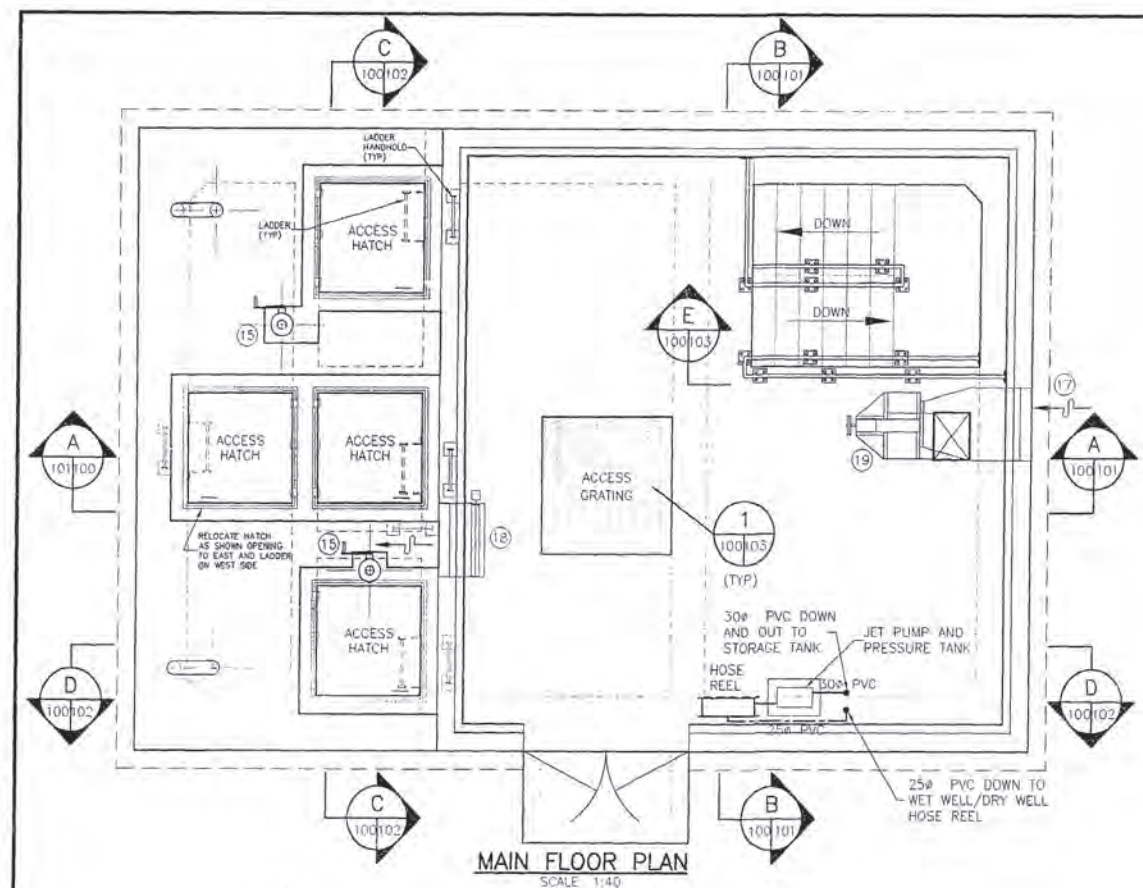
PROVINCE OF MANITOBA  
 ORIGINAL STAMPED BY  
 W.A. SCHENFELD  
 P. ENG.  
 20.07.00  
 REGISTERED PROFESSIONAL ENGINEER

CITY DRAWING NUMBER: 04795  
 SHEET: 17 OF 24

CONSTRUCTION COMPLETION DATE - AUGUST 2001

1:100-08-11 12564a By: mmm  
 1:100-08-11 12564a By: mmm



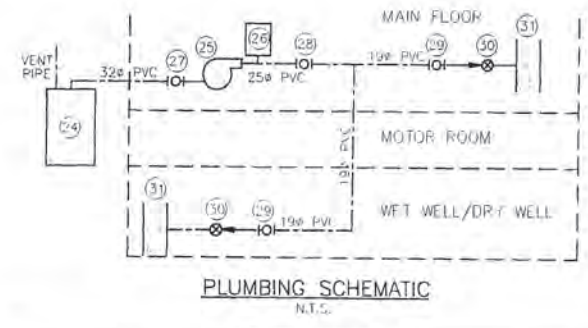


**LEGEND**

REDUCER	
KNIFE GATE VALVE	
CHECK VALVE	
PUMP	
MAGNETIC FLOW METER	
AIR RELEASE VALVE	
FLEXIBLE COUPLING	
19# HOSE BIBB	
19mm PVC BALL VALVE	
HOSE REEL	

ITEM NO.	NO.	DESCRIPTION
1.	2	125 H.P. SEWAGE PUMP
2.	2	350# GATE VALVE (RISING STEM)
2A.	3	300# GATE VALVE (RISING STEM)
3.	2	300# BALL CHECK VALVE
4.	1	AIR RELIEF VALVE
5.	2	350# TO 250# ECCENTRIC REDUCER
6.	2	300# TO 250# OR 200# ECCENTRIC REDUCER
7.	3	300#-90° BEND
8.	1	300x300x300 TEE
9.	2	50# GATE VALVE
10.	1	50# SITE GLASS
11.	1	50x50x50x50 CROSS
12.	1	50x50x50 TEE
13.	1	DP CELL
14.	2	610x610 HEAVY DUTY C.I. SLUICE GATE GEARED LIFT AND PEDESTAL
15.	2	610# FLAP GATE
16.	1	800x800 VENTILATION AIR LOUVRE
17.	1	800x800 EXHAUST AIR LOUVRE
18.	1	VENTILATION FAN
19.	1	300# FLOW METER
20.	1	400# TO 320# CONCENTRIC REDUCER
21.	1	400# FLEXEND FLEXIBLE COUPLING
22.	1	600# FLEXEND FLEXIBLE COUPLING
23.	6	UNDERGROUND WATER STORAGE TANK
24.	1	WATER PUMP - MONARCH MUS-50
25.	1	PRESSURE TANK - MONARCH JR-255
26.	1	32mm PVC BALL VALVE
27.	1	25mm PVC BALL VALVE
28.	2	19mm PVC BALL VALVE
29.	2	19mm HOSE BIBB
30.	2	HOSE REEL
31.	2	350# CL. 52 DUCTILE IRON INLET PIPE
32.	1	1 END FLANGED & 1 END PLAIN

NOTE: USE MINIFLANGE WITH DI PIPE BETWEEN FITTINGS



**METRIC**

REVISED AS CONSTRUCTED  
BY: P.R. DATE: 24/08/2001  
CHECKED BY: R.M.

NO.	REVISIONS	DATE	BY
3	REVISED AS CONSTRUCTED	24.08.01	P.R.
1	REV WET WELL SLOPES, INLET PIPE & TYPE OF COUPLINGS	01.09.21	R.M.

**Stantec Consulting Ltd.**  
905 Waverley Street, Winnipeg, Manitoba  
Tel: 204-489-9000 Fax: 204-453-9117

DESIGNED BY: T.T. CHECKED BY: T.T.  
UNAWN BY: R.M. APPROVED BY: G.M.

HOR. SCALE: AS SHOWN  
VERTICAL: RELEASED FOR CONSTRUCTION

DATE: MAY 8, 2000

**PROFESSOR OF MANITOBA**  
**D. G. MULDER**  
24.1.00  
REGISTERED ENGINEER  
PW-100-549

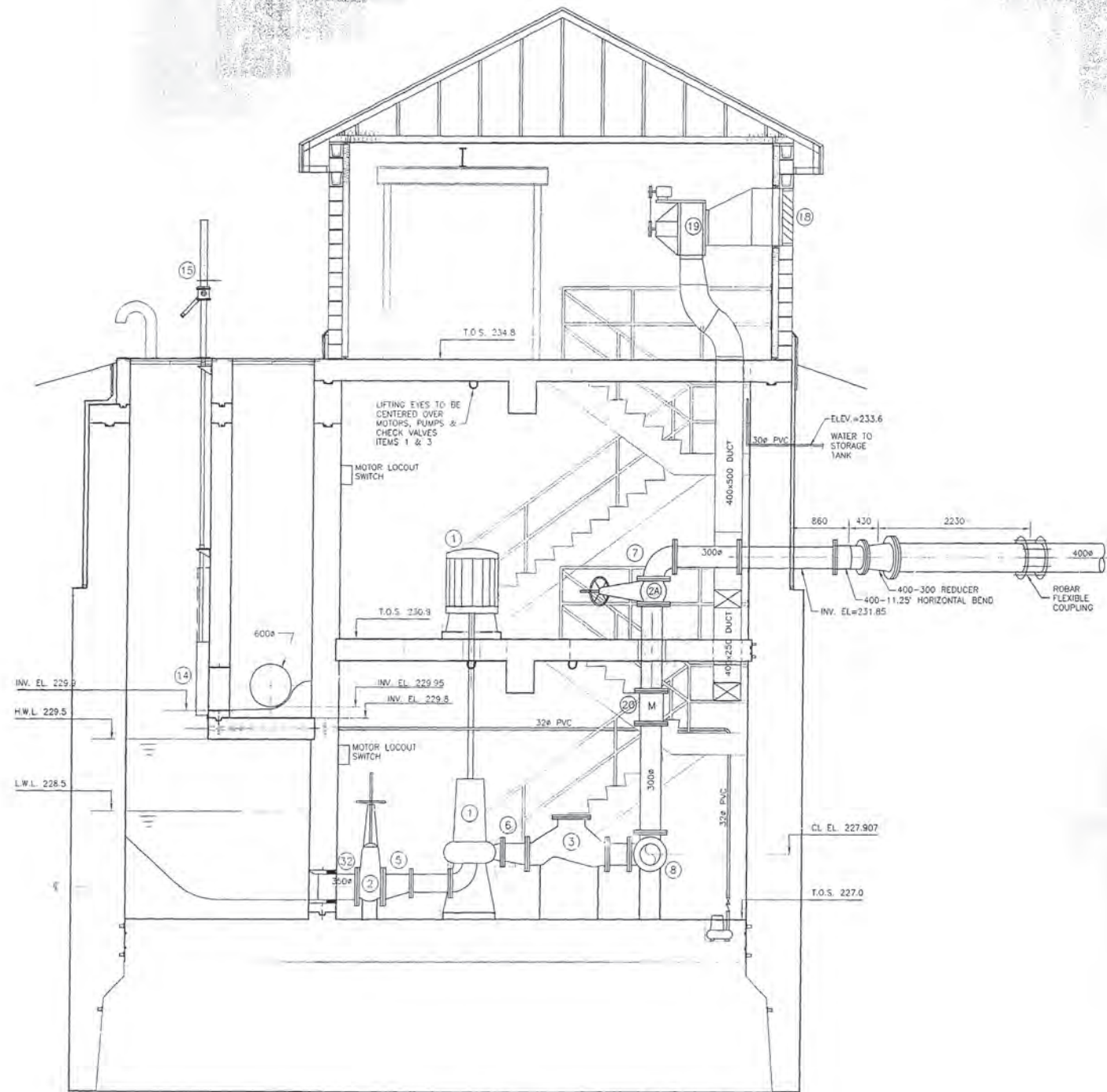
**CONSTRUCTION COMPLETION DATE - AUGUST 2001**

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

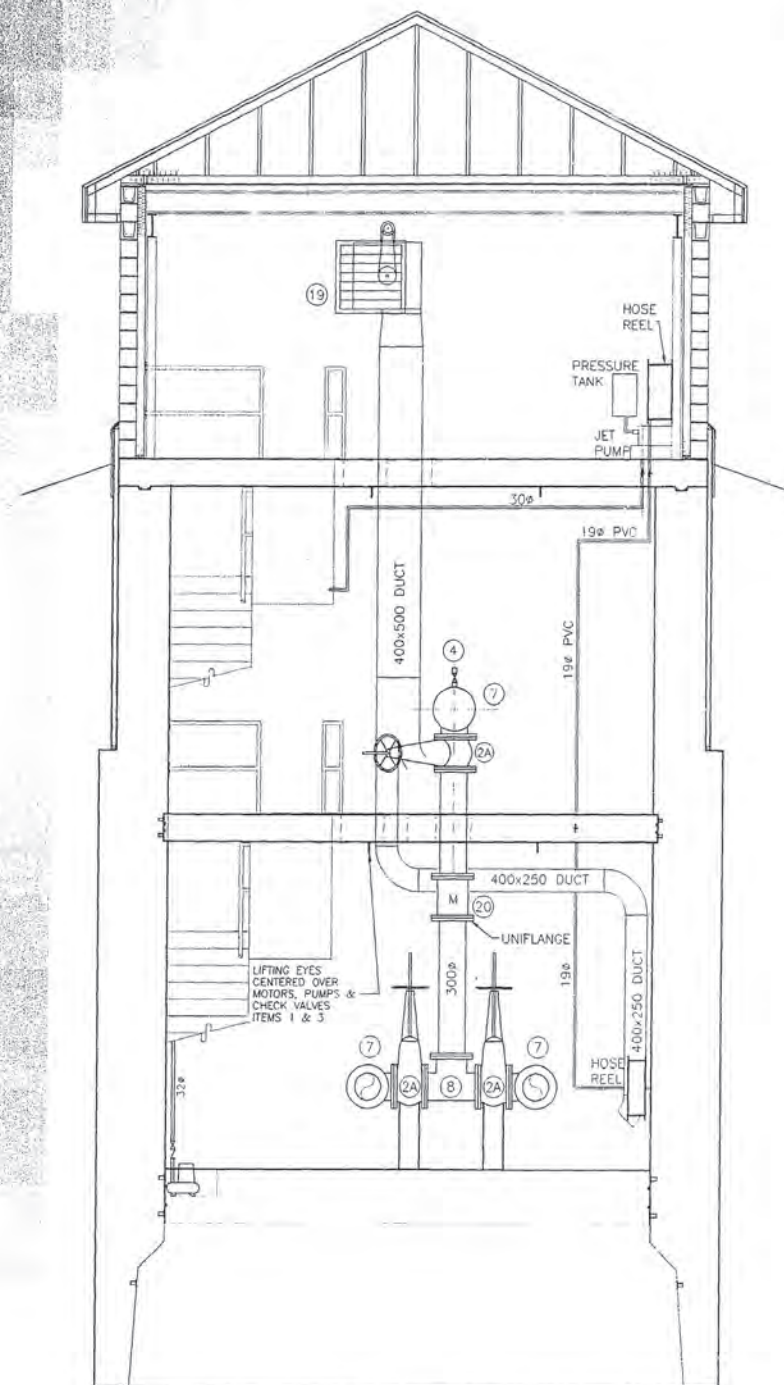
PERIMETER WEST FORCEMAIN  
WASTE WATER SEWER AND PUMP STATION  
PHASE 2  
WASTE WATER PUMP STATION  
MECHANICAL PLANS

DRAWING NUMBER: D4796  
SHEET: 18 OF 24

#11816461180253 - Perimeter and 400 W.W.S. (10/08/01) (10/08/01) B. Moore  
 2002-08-09 10:58AM



SECTION A  
SCALE 1:40



SECTION B  
SCALE 1:40

CONSTRUCTION COMPLETION DATE - AUGUST 2001

METRIC

LOCATION APPROVED UNDERGROUND STRUCTURES

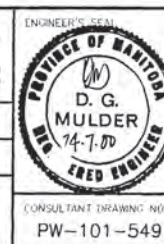
SUPV. U/G STRUCTURES DATE COMMITTEE

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. COORDINATION OF EXISTING AND EXACT LOCATION OF ALL SERVICES MUST BE OBTAINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION.

NO.	REVISIONS	DATE	BY
2	REVISED AS CONSTRUCTED	24.08.01	K.R.
1	REV. WET WELL SLOPES, INLET PIPE & TYPE OF COUPLINGS	30.09.21	R.M.

**Stantec Consulting Ltd.**  
905 Waverley Street, Winnipeg, Manitoba  
Tel 204-489-5900 Fax 204-453-1212

DESIGNED BY	T.T.	CHECKED BY	T.T.
DRAWN BY	R.M.	APPROVED BY	D.G.M.
HOR. SCALE:	AS SHOWN	RELEASED FOR CONSTRUCTION	DATE
VERTICAL SCALE:			
DATE	MAY 8, 20000		



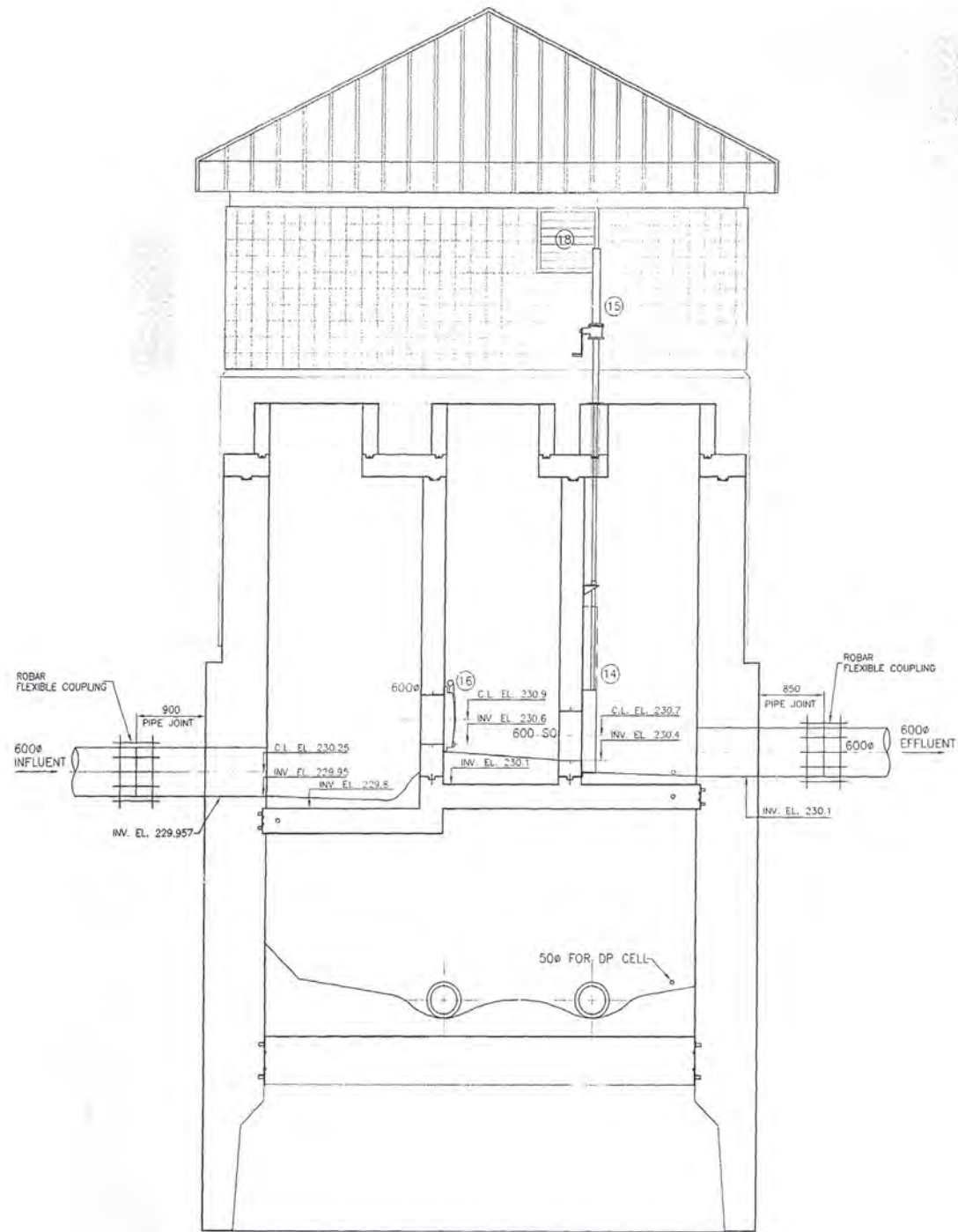
**THE CITY OF WINNIPEG**  
WATER AND WASTE DEPARTMENT

PERIMETER WEST FORCEMAIN  
WASTE WATER SEWER AND PUMP STATION  
PHASE 2  
WASTE WATER PUMP STATION  
MECHANICAL SECTIONS-1

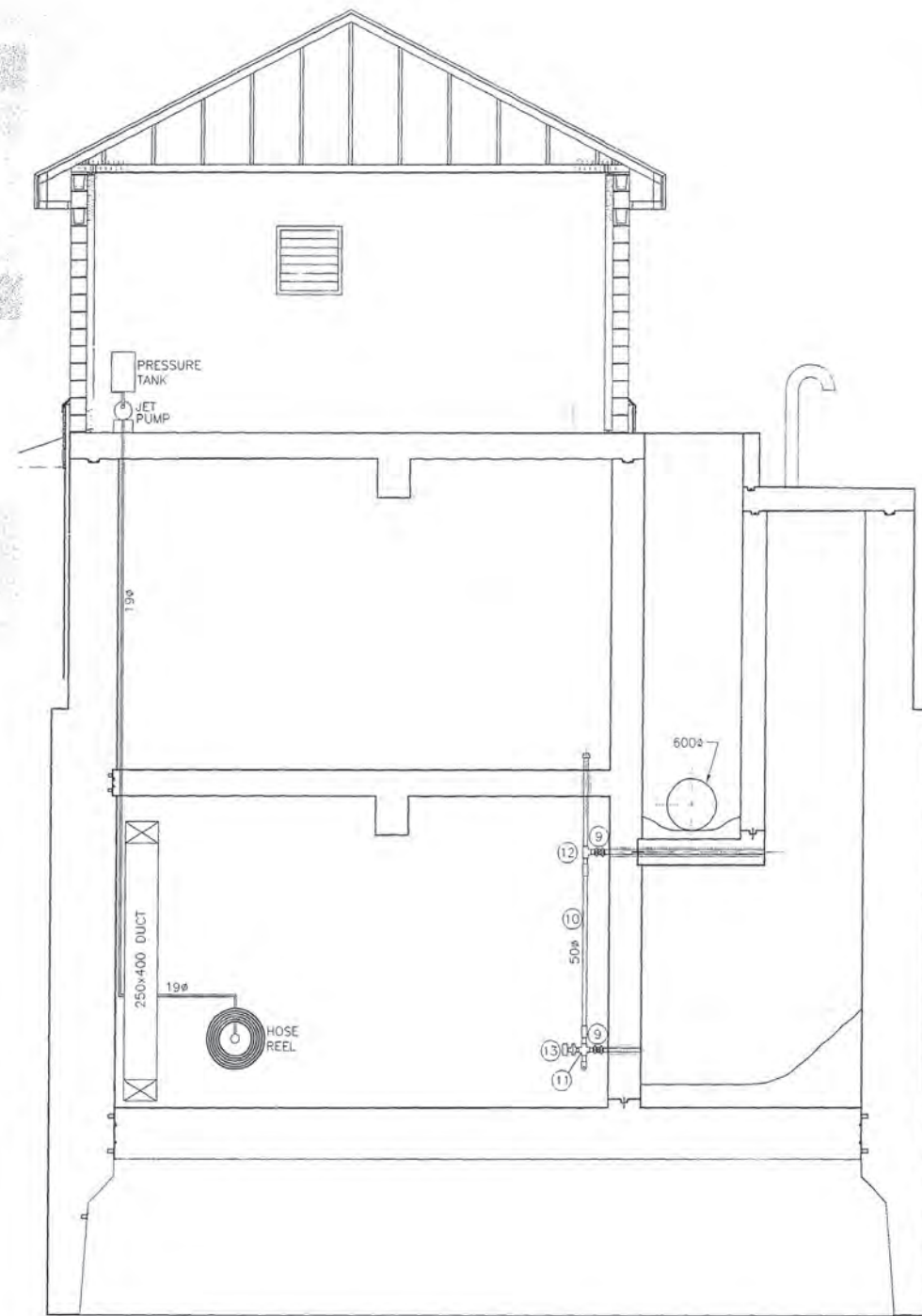
CONSULTANT DRAWING NO.  
PW-101-549

DRAWING NUMBER	04797
SHEET	19 OF 24

REVISED AS CONSTRUCTED  
BY: K.R. DATE: 24/08/2001  
CHECKED BY: R.M.



SECTION C  
SCALE 1:40



SECTION D  
SCALE 1:40

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

REVISED AS CONSTRUCTED

BY: R.R. DATE: 24/08/2001

CHECKED BY: R.M.

**LOCATION APPROVED UNDERGROUND STRUCTURES**

SUPV. U/G STRUCTURES	DATE COMMITTEE

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.

NO.	REVISIONS	DATE	BY
2	REVISED AS CONSTRUCTED	24.08.01	R.R.
1	REV. WELL SIZES & TYPE OF COUPLINGS	00.09.21	R.M.

**Stantec Consulting Ltd.**  
905 Waverley Street, Winnipeg, Manitoba  
Tel 204-489-5900 Fax 204-453-9012

DESIGNED BY: T.T. CHECKED BY: T.

DRAWN BY: R.M. APPROVED BY: D.G.M.

HOR. SCALE: AS SHOWN  
VERTICAL: AS SHOWN

RELEASED FOR CONSTRUCTION

DATE: MAY 8, 20000

ENGINEER SEAL  
**D. G. MULDER**  
REGISTERED ENGINEER

CONSULTANT DRAWING NO: PW-102-549

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

CONSTRUCTION COMPLETION DATE - AUGUST 2001

PERIMETER WEST FORCEMAIN  
WASTE WATER SEWER AND PUMP STATION  
PHASE 2

WASTE WATER PUMP STATION  
MECHANICAL SECTIONS-2

LIT'S DRAWING NUMBER: 04798  
SHEET 20 OF 24