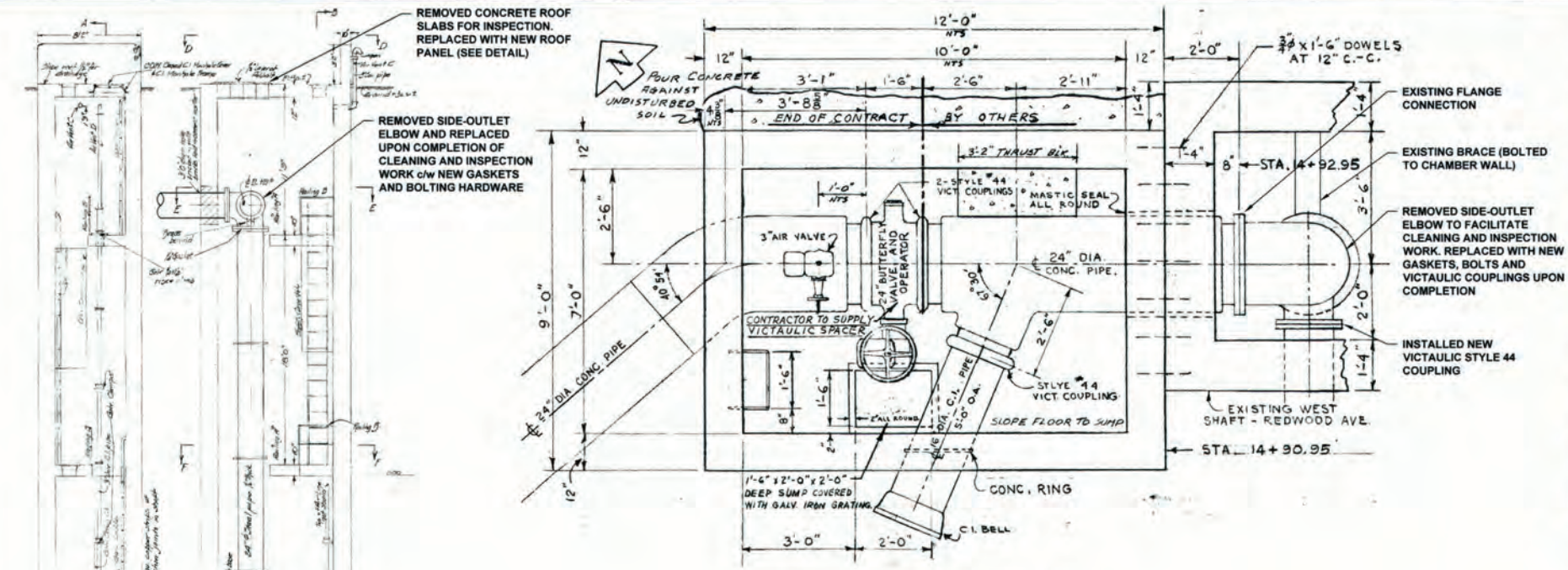
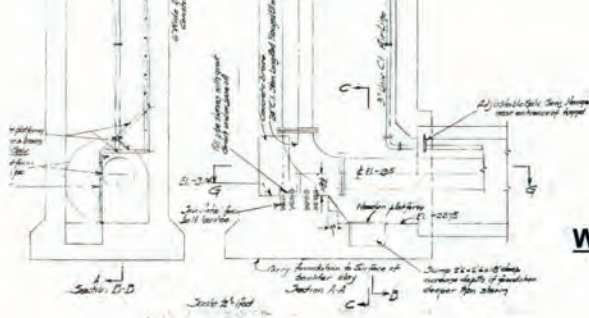


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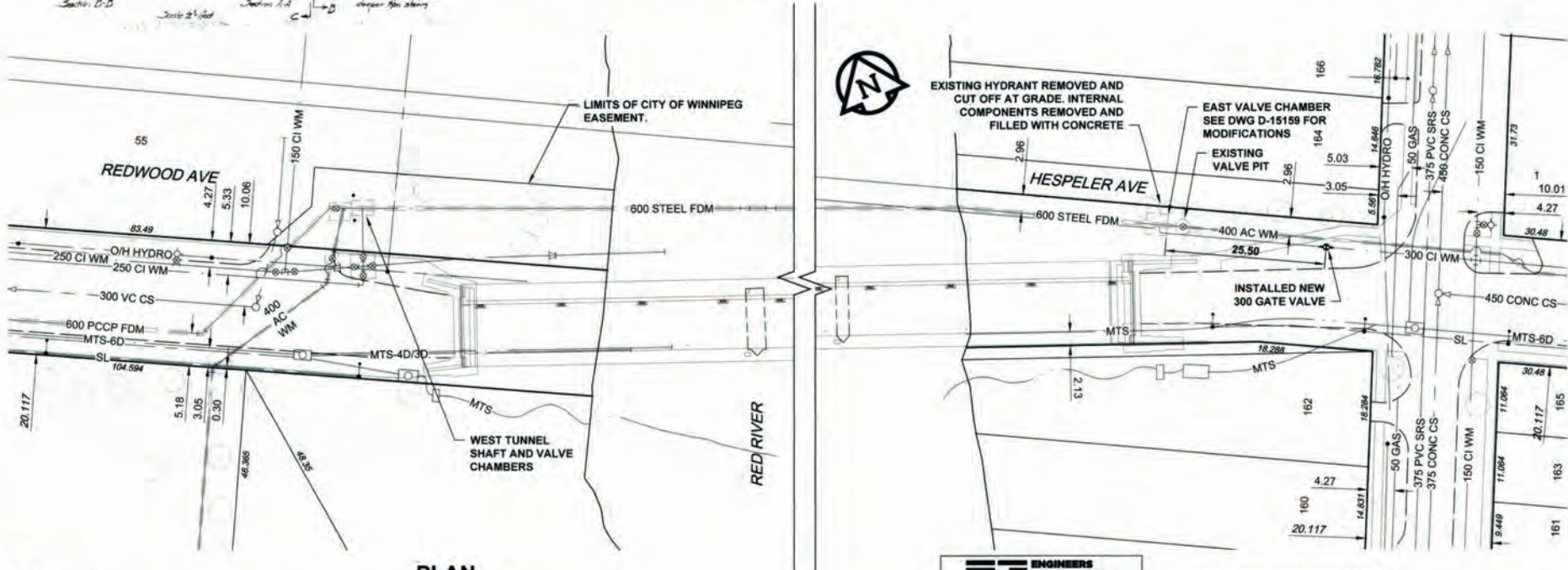
WEST CHAMBER PLAN
Scale 1:25



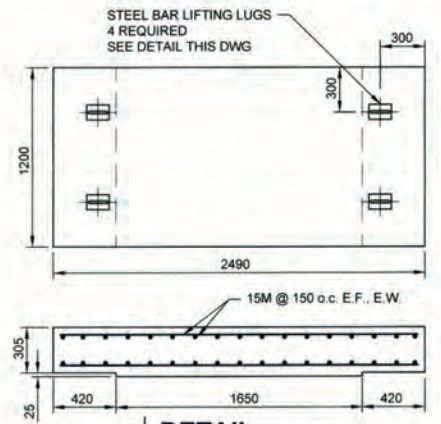
WEST CHAMBER SECTION
Scale 1:75



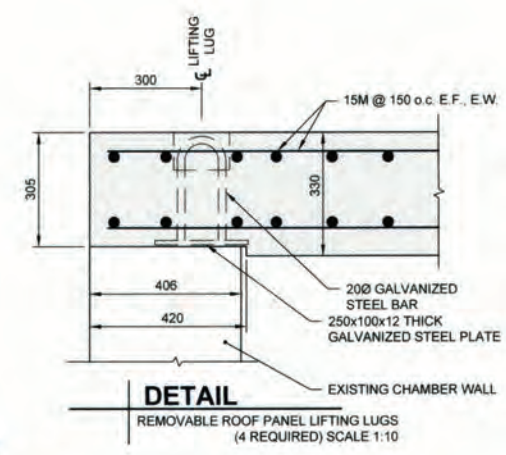
SITE PLAN
Scale 1:1500
0 37.5 75 m



PLAN
Scale 1:500
0 12.5 25 m



DETAIL
REMOVABLE CONCRETE ROOF PANEL PLAN & SECTION
SCALE 1:25



DETAIL
REMOVABLE ROOF PANEL LIFTING LUGS (4 REQUIRED) SCALE 1:10



KEY PLAN

NOTES:
SEE NEXT SHEET, DWG D-15159 FOR SEQUENCE OF WORK, CONSTRUCTION NOTES & MATERIAL LIST

ENGINEERS GEOSCIENTISTS MANITOBA
Certificate of Authorization
AECOM Canada Ltd.
No. 4671 Date: 2/2/20

CONSTRUCTION COMPLETION DATE:
NOVEMBER 8, 2019

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

VALVES ARE COUNTER-CLOCKWISE TO CLOSE (RED OPERATING NUT)

RECORD DRAWING

BID OPPORTUNITY NO. 492-2018

150 WM	WATERMAIN	150 WM	○	CURB STOP	+	150 WM	WATERMAIN	150 WM	+	HYDRANT	+
○	HYDRANT	+	+	REDUCER	+	+	HYDRANT	+	+	VALVE	+
○	VALVE	+	+	COUPLING	+	+	VALVE	+	+	LAND DRAINAGE SEWER	+
300 LDS	LAND DRAINAGE SEWER	300 LDS	+	ANODE	+	300 LDS	LAND DRAINAGE SEWER	300 LDS	+	WASTE WATER SEWER	+
250 WWS	WASTE WATER SEWER	250 WWS	+	HYDRO	+	250 WWS	WASTE WATER SEWER	250 WWS	+	MANHOLE	○
○	MANHOLE	○	○	MTS	○	○	MANHOLE	○	○	CATCH BASIN	○
○	CATCH BASIN	○	○	GAS	○	○	CATCH BASIN	○	○	CURB INLET	○
○	CURB INLET	○	○	TESTHOLE	○	○	CURB INLET	○	○	CULVERT	○
○	CULVERT	○	○	LAMP STANDARD	○	○	CULVERT	○	○	PIPE ABANDONMENTS	○
○	PIPE ABANDONMENTS	○	○	TREE	○	○	PIPE ABANDONMENTS	○	○	SURVEY BAR	○
○	SURVEY BAR	○	○			○	SURVEY BAR	○	○		
○	EXISTING	○	○	EXISTING	○	○	EXISTING	○	○	NEW	○
○	LEGEND - PLAN	○	○	LEGEND - PLAN	○	○	LEGEND - PROFILE	○	○	NEW	○

LOCATION APPROVED
UNDERGROUND STRUCTURES

SUPR LIG 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.

1	ISSUED FOR RECORD	19/11/28	KLC
0	ISSUED FOR CONSTRUCTION	18/06/01	KLC
NO	REVISIONS	YYMMDD	BY

AECOM

DESIGNED BY: NJK
DRAWN BY: KLC

CHECKED BY: [Signature]
APPROVED BY: [Signature]

HOR SCALE: AS NOTED
VERT SCALE: N/A

RELEASED FOR CONSTRUCTION
DATE:

PROFESSIONAL'S SEAL

PROVINCE OF MANITOBA
AID BRAUN
Member 24453
REGISTERED PROFESSIONAL ENGINEER

CONSULTANT DRAWING NO.
60549028-SHT-30-0000-C-1001

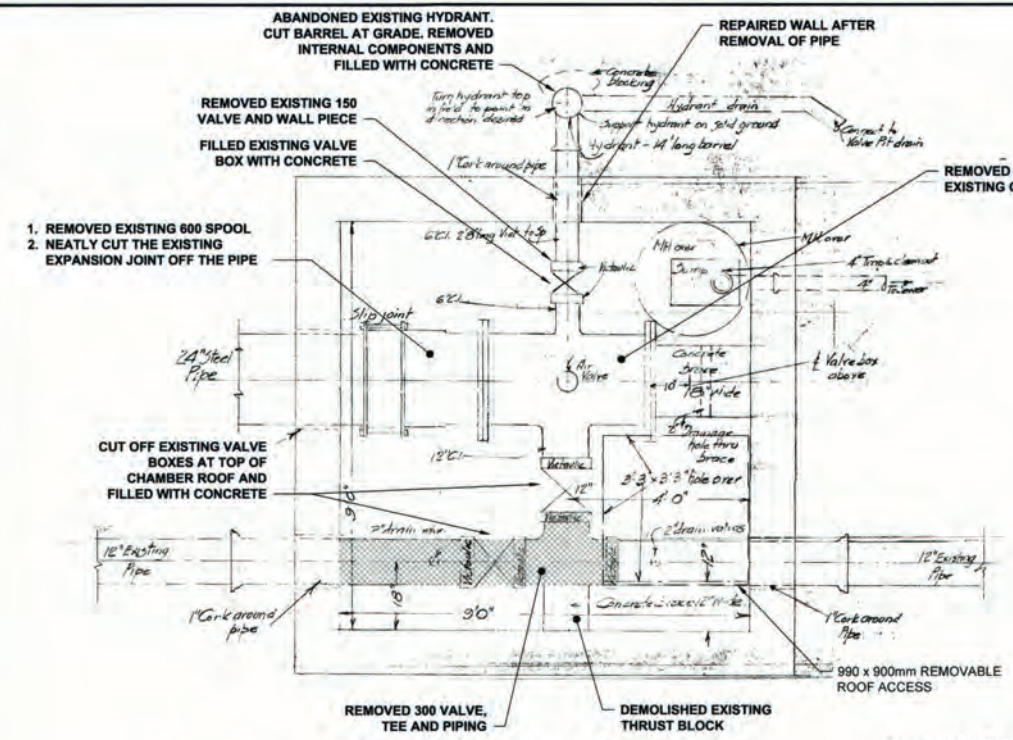
THE CITY OF WINNIPEG WATER AND WASTE DEPARTMENT

PROVISION OF PIPELINE ACCESS MODIFICATIONS, CLEANING AND SUPPORT SERVICES FOR RIVER CROSSING INSPECTIONS - PHASE TWO

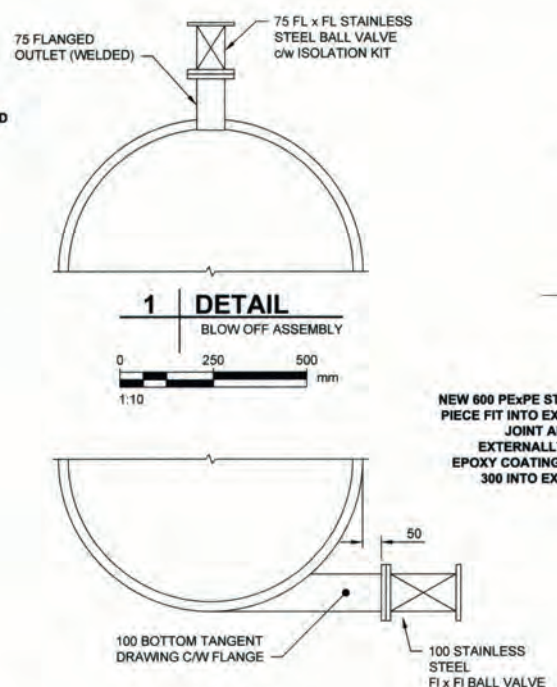
SITE 1
KILDONAN - REDWOOD FEEDER MAIN - WEST CHAMBER

SHEET 2 OF 8
CITY DRAWING NUMBER
D-15158
REV 1

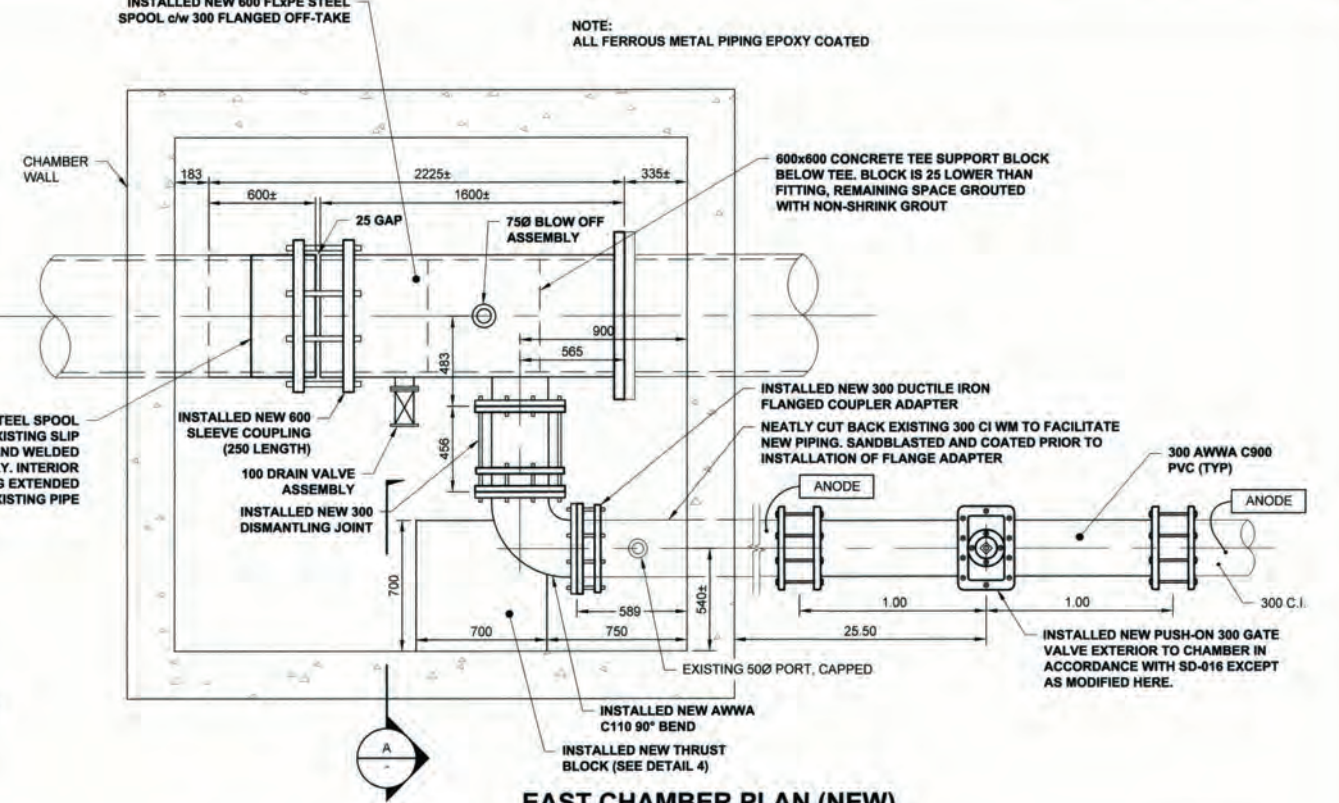
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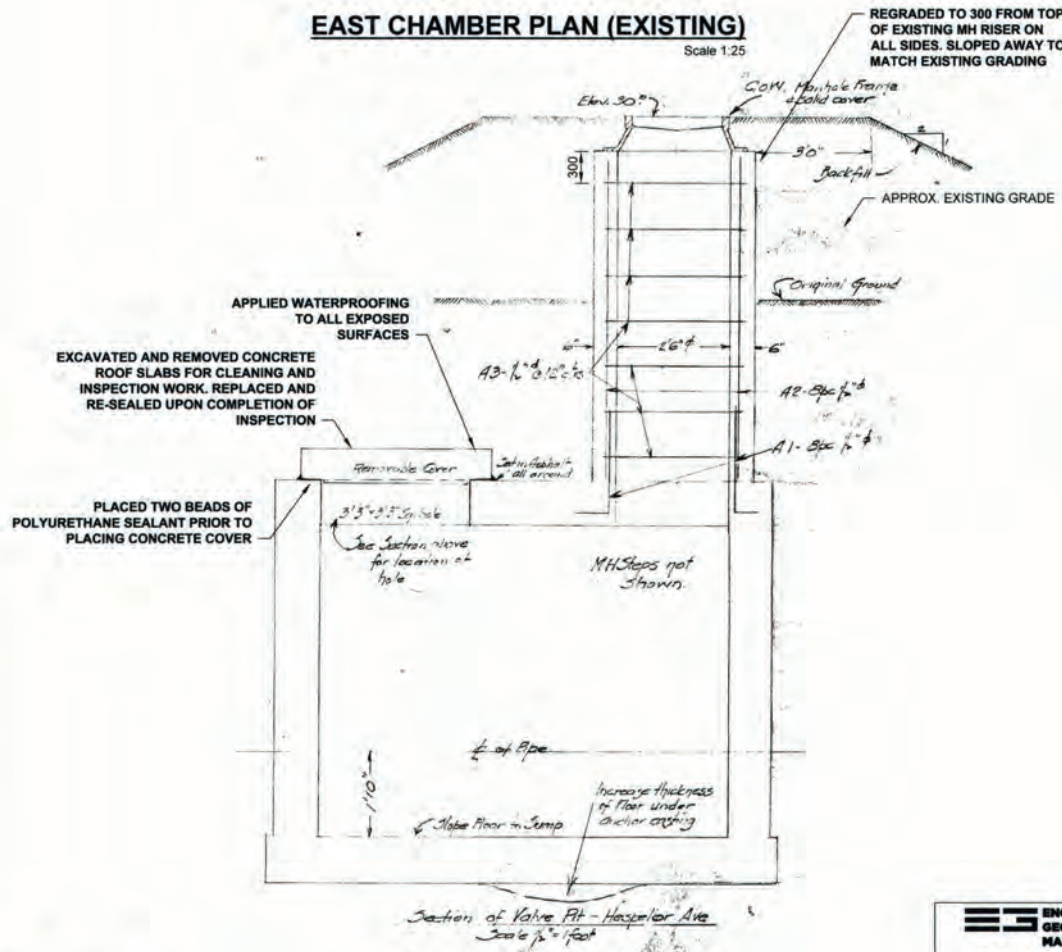
EAST CHAMBER PLAN (EXISTING)
Scale 1:25



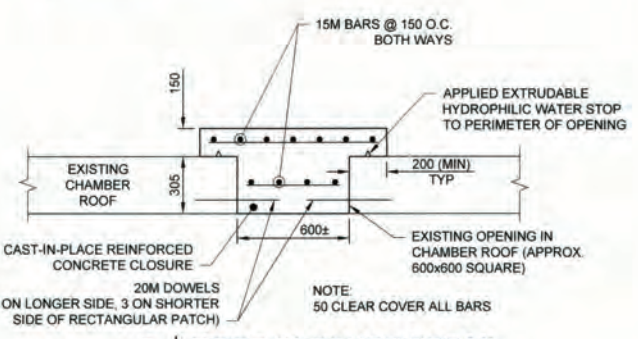
1 | DETAIL
BLOW OFF ASSEMBLY
Scale 1:10



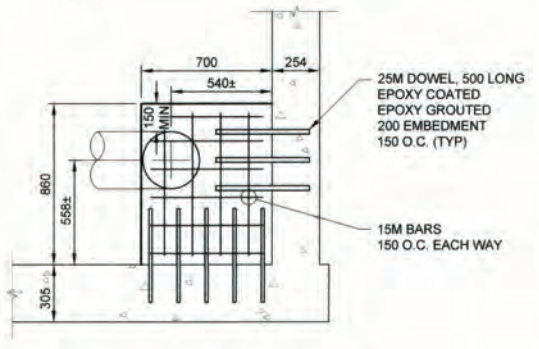
EAST CHAMBER PLAN (NEW)
Scale 1:20



EAST CHAMBER SECTION
Scale 1:25



3 | ROOF CLOSURE DETAIL
Scale 1:20



4 | THRUST BLOCK DETAIL
SECTION A
SCALE 1:20

MATERIAL LIST	MANUFACTURER	MATERIAL SPECIFICATION	SPECIAL FEATURES
600 STEEL SPOOL PIECE	ABCO	ASTM A53, AWWA C200 FIELD WELDED TO AWWA C206-17 INT/EXT EPOXY COATED TO AWWA C210-15	
600 STEEL SLEEVE COUPLING	ROBAR INDUSTRIES LTD	ASTM A36 End rings: ASTM A576, Grade 1020 / A36 NRB gaskets: ASTM D2000, NSF 61 Approved Fasteners: AWWA C111 Coatings: Fusion bonded epoxy coated per AWWA C-213, NSF 61 Approved	
600 STEEL FL-PE SPOOL PIECE	ABCO	ASTM A53, AWWA C200 75 mm flanged outlet - ASTM A105 (flanges to ANSI B16.5) 100 mm flanged off-take - ASTM A105 (flanges to ANSI B16.5) 300 mm flanged off-take - ASTM A105 (flanges to AWWA C207-18) Interior and exterior of spool piece epoxy coated to AWWA C210-15	
300 DUCTILE IRON DISMANTLING JOINT	ROBAR INDUSTRIES LTD	AWWA C219 Flanged body: ASTM A536-05 65-45-12 End ring: ASTM A536 60-40-18 Gasket: SBR per ASTM D2000 Tie rods: ASTM A193 B8M Class 2	"BLUE BRUTE" DR-18
300 90-DEGREE CAST IRON ELBOW	METALFIT INC	Coating: fusion bonded epoxy per AWWA C213, NSF 61 Approved ANSI/AWWA C110/A21 10	
300 DUCTILE IRON FLANGE COUPLER ADAPTER	ROBAR INDUSTRIES LTD	ASTM A536 Grade 65-45-12, AWWA C219 End ring: Cast ductile iron per ASTM A536 Grade 65-45-12 Coating: fusion bonded epoxy per AWWA C213, NSF 61 Approved	RESILIENT WEDGE GATE VALVE CW TO OPEN (RED TOP) 24 LB ZINC ANODE FBE COATED D.I. SLEEVE & END RINGS TYPE 30455 NUTS, BOLTS, WASHERS AND DI-ELECTRIC WASHERS CASING MARKED "TITAN" & "VB4" LID MARKED "TITAN" & "W"
PVC PIPE (300)	IPEX INC	AWWA C900 CSA B137.3 AWWA C509 MODEL A-2360-40	PVC DR-18
300 GATE VALVE	MUELLER		
ANODES - ZINC	BREN TECHNOLOGIES INC	ASTM B418	
300 IRON COUPLING	ROMAC INDUSTRIES INC	ASTM A 536 GRADE 65-45-12 AWWA C219, AWWA C213 MODEL "MACRO"	
VALVE BOX UPPER CASING	TITAN FOUNDRY LTD.	C.I. - ASTM A-48 CLASS 30B CONFORMS TO AP-001 CONFORMS TO AP-002	
VALVE STEM EXTENSION	TITAN FOUNDRY LTD.		
VALVE BOX LOWER CASING	IPEX INC	AWWA C900 CSA B137.3 CONFORMS TO AP-001 ANSI B16.34 CLASS 150 ANSI B16.34 CLASS 150	
100 STAINLESS STEEL BALL VALVE	M.A. STEWART & SONS LTD		
75 STAINLESS STEEL BALL VALVE	M.A. STEWART & SONS LTD		
CONTRACTOR:	J-CON CIVIL LTD		
CONSTRUCTION PERIOD:	SEPT. 14, 2018 to NOV. 8, 2019		

**ENGINEERS
GEOSCIENTISTS
MANITOBA**
Certificate of Authorization
AECOM Canada Ltd.
No. 4671 Date: Jan 8/20

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

EXISTING	LEGEND - PLAN	NEW	EXISTING	LEGEND - PLAN	NEW	EXISTING	LEGEND - PROFILE	NEW
○	HYDRANT	◆	○	HYDRANT	+	○	HYDRANT	+
⊙	VALVE	⊙	⊙	VALVE	⊙	⊙	VALVE	⊙
300 LDS	LAND DRAINAGE SEWER	300 LDS	300 LDS	LAND DRAINAGE SEWER	300 LDS	300 LDS	LAND DRAINAGE SEWER	300 LDS
250 WWS	WASTE WATER SEWER	250 WWS	250 WWS	WASTE WATER SEWER	250 WWS	250 WWS	WASTE WATER SEWER	250 WWS
○	MANHOLE	●	○	MANHOLE	●	○	MANHOLE	●
△	CATCH BASIN	▲	△	CATCH BASIN	▲	△	CATCH BASIN	▲
□	CURB INLET	■	□	CURB INLET	■	□	CURB INLET	■
▭	CULVERT	▭	▭	CULVERT	▭	▭	CULVERT	▭
—	PIPE ABANDONMENTS	—	—	PIPE ABANDONMENTS	—	—	PIPE ABANDONMENTS	—
+	SURVEY BAR	+	+	SURVEY BAR	+	+	SURVEY BAR	+
—	CURB STOP	—	—	CURB STOP	—	—	CURB STOP	—
—	REDUCER	—	—	REDUCER	—	—	REDUCER	—
—	COUPLING	—	—	COUPLING	—	—	COUPLING	—
—	ANODE	—	—	ANODE	—	—	ANODE	—
—	HYDRO	—	—	HYDRO	—	—	HYDRO	—
—	MTS	—	—	MTS	—	—	MTS	—
—	GAS	—	—	GAS	—	—	GAS	—
—	TESTHOLE	—	—	TESTHOLE	—	—	TESTHOLE	—
—	LAMP STANDARD	—	—	LAMP STANDARD	—	—	LAMP STANDARD	—
—	TREE	—	—	TREE	—	—	TREE	—

LOCATION APPROVED
UNDERGROUND STRUCTURES
SUPR. U/G STRUCTURES DATE COMMITTEE
NOTE:
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NO.	ISSUED FOR RECORD	19/11/28	KLC
0	ISSUED FOR CONSTRUCTION	18/06/01	KLC
NO.	REVISIONS	YYMMDD	BY

DESIGNED BY	NJK	CHECKED BY	[Signature]
DRAWN BY	KLC	APPROVED BY	[Signature]
HOR. SCALE	AS NOTED	RELEASED FOR CONSTRUCTION	
VERT. SCALE	N/A		

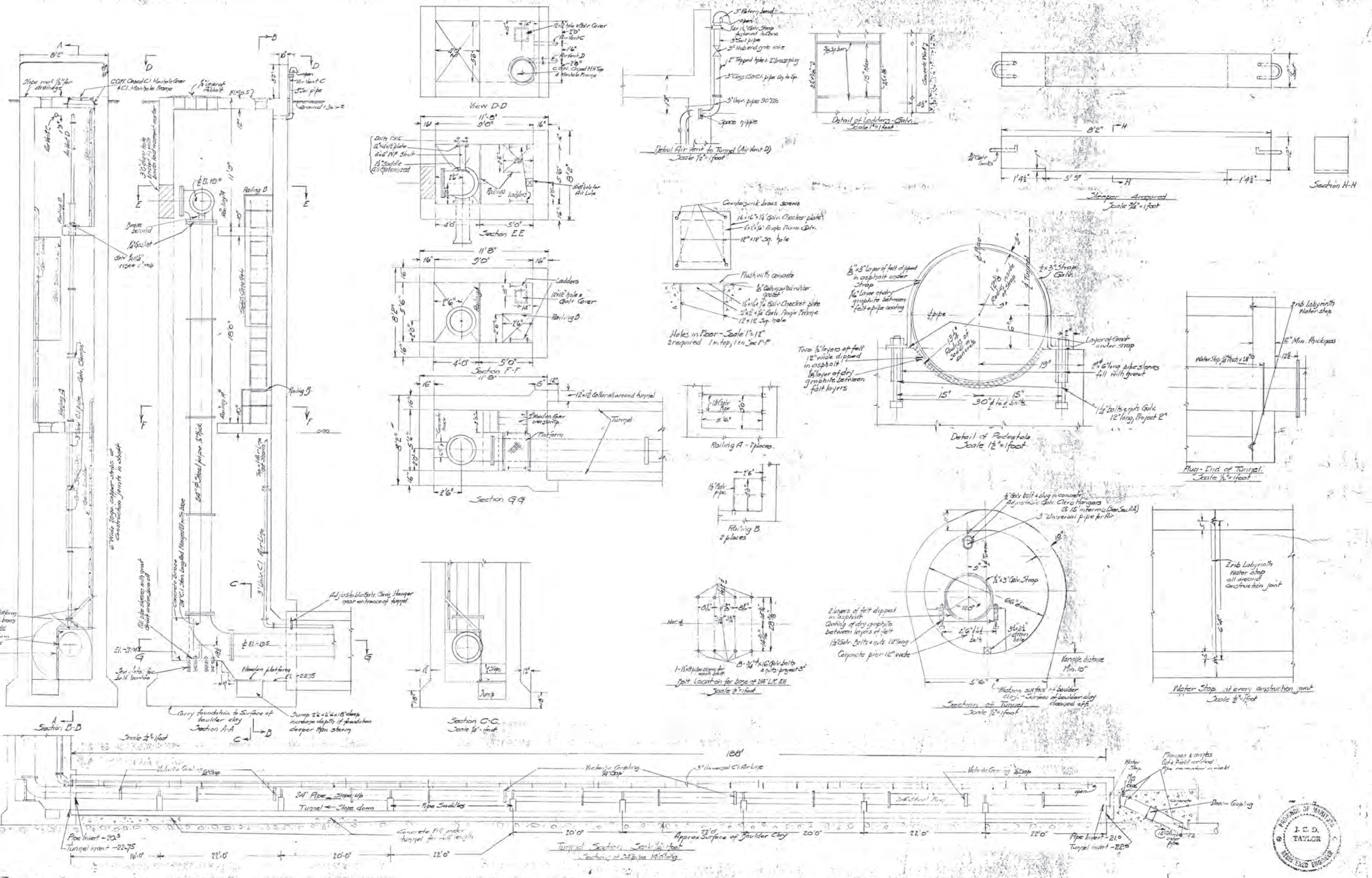
PROFESSIONAL'S SEAL
A.D. BRAUN
REGISTERED PROFESSIONAL
CONSULTANT DRAWING NO.
60549028-SHT-30-0000-C-1001

THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
PROVISION OF PIPELINE ACCESS MODIFICATIONS,
CLEANING AND SUPPORT SERVICES FOR
RIVER CROSSING INSPECTIONS - PHASE TWO
SHEET 3 OF 8
CITY DRAWING NUMBER
D-15159
REV 1
KILDONAN - REDWOOD
FEEDER MAIN - EAST CHAMBER

RECORD DRAWING

CONSTRUCTION COMPLETION DATE:
NOVEMBER 8, 2019

BID OPPORTUNITY NO. 492-2018

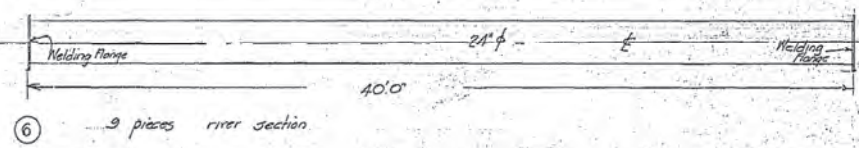
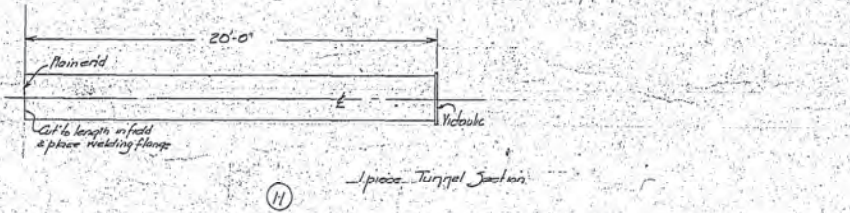
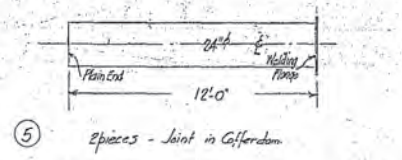
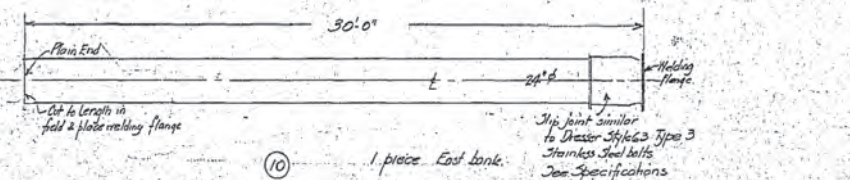
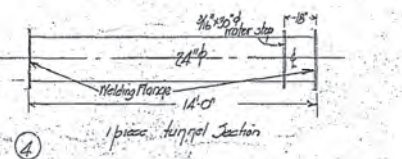
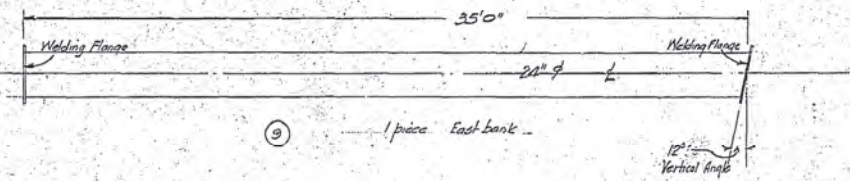
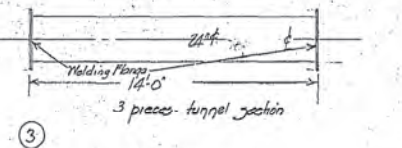
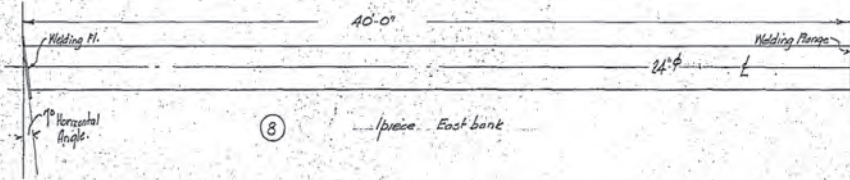
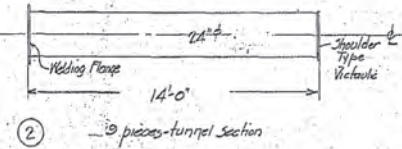
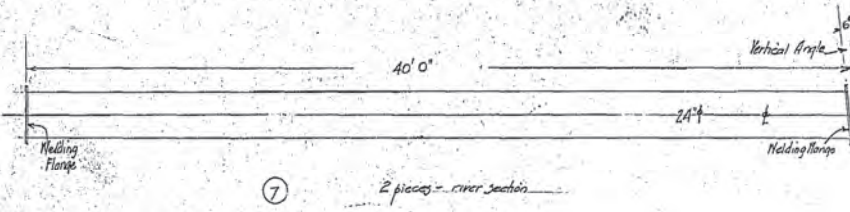
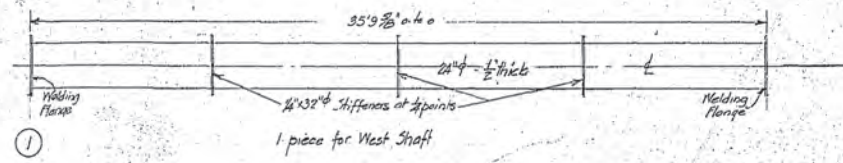


Water Main Crossing of Red River
Redwood Avenue
West Shaft & Tunnel

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

DRAWN BY: [Signature] DATE: August 1913
CHECKED BY: [Signature]
APPROVED: [Signature]

Scale 1/4" = 1' foot
DRAWING NO. 12531

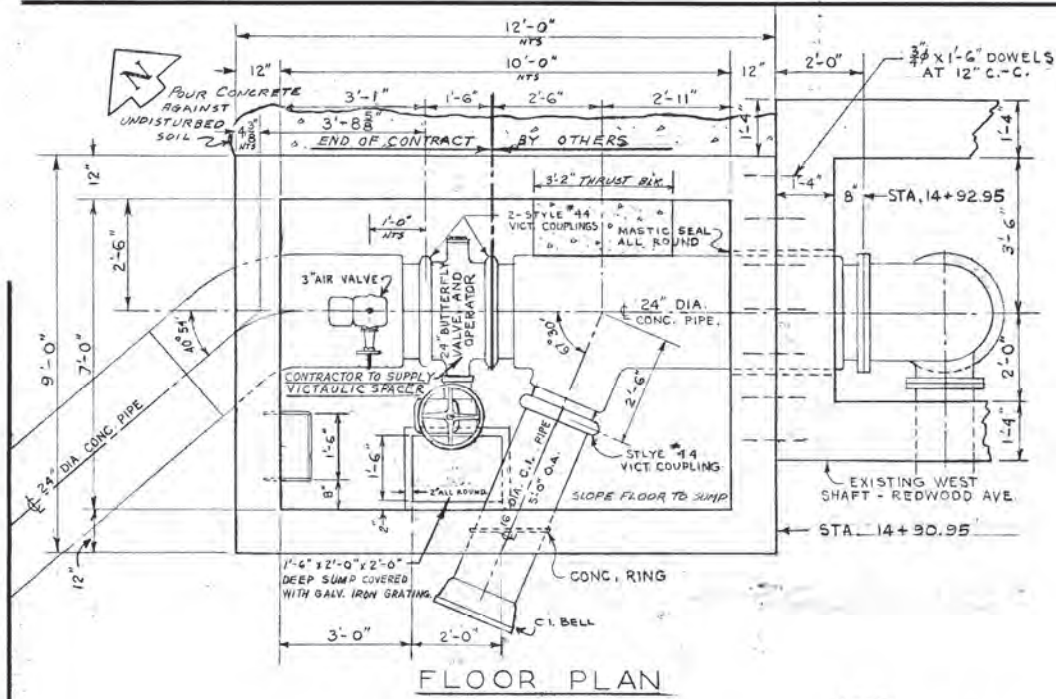


Pipes - Steel pipe not less than 0.3125 inches thick, except piece ① which is spiral welded not less than 0.5 inches thick. See specifications.
 Pipe coating - see specifications.
 4. Square welding flanges 2a.

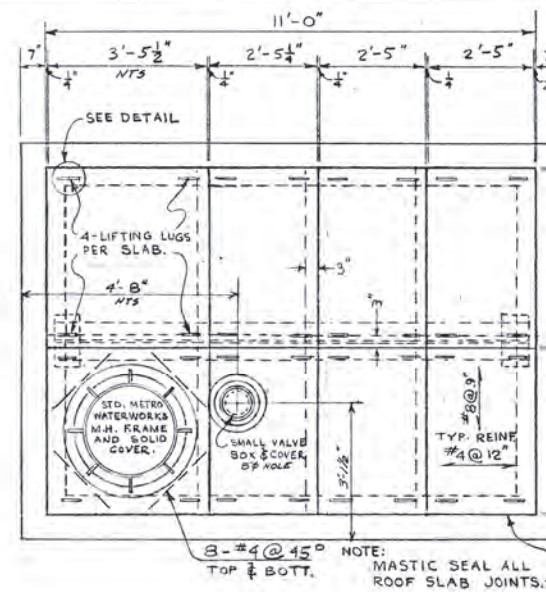


Water Main Crossing of Red River
 Redwood Avenue
 Steel Pipe Details

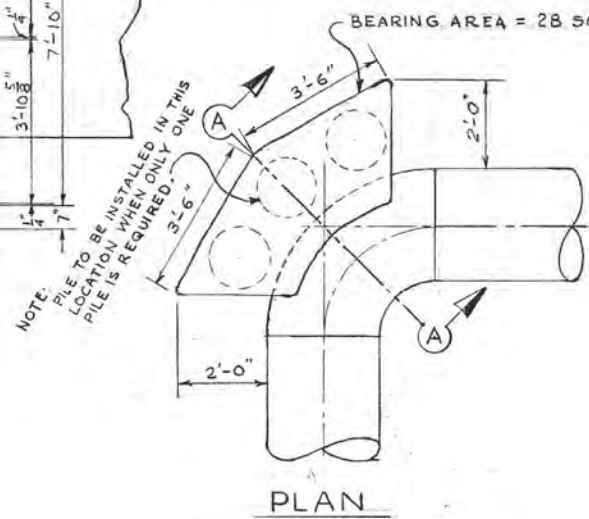
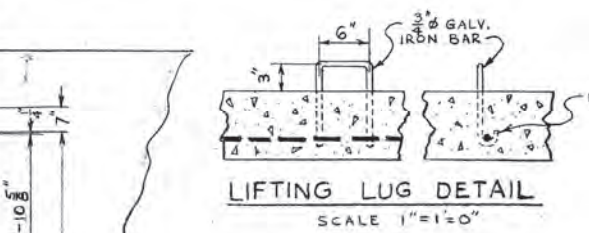
CITY OF WINNIPEG		DATE July 22, 1954	SCALE 1/4" = 1'-0"
ENGINEERING DEPARTMENT		DRAWN BY	
W. D. HURST, CITY ENGINEER		CHECKED BY	
A. S. S. TAUNTON, DEPUTY CITY ENGINEER		APPROVED	DRAWING NO. 12530



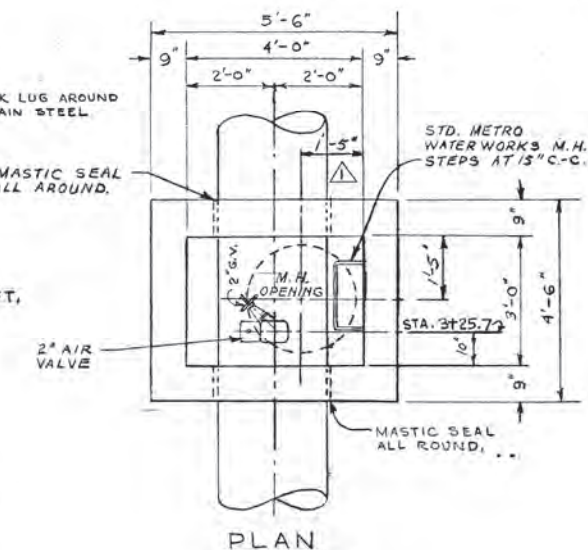
FLOOR PLAN



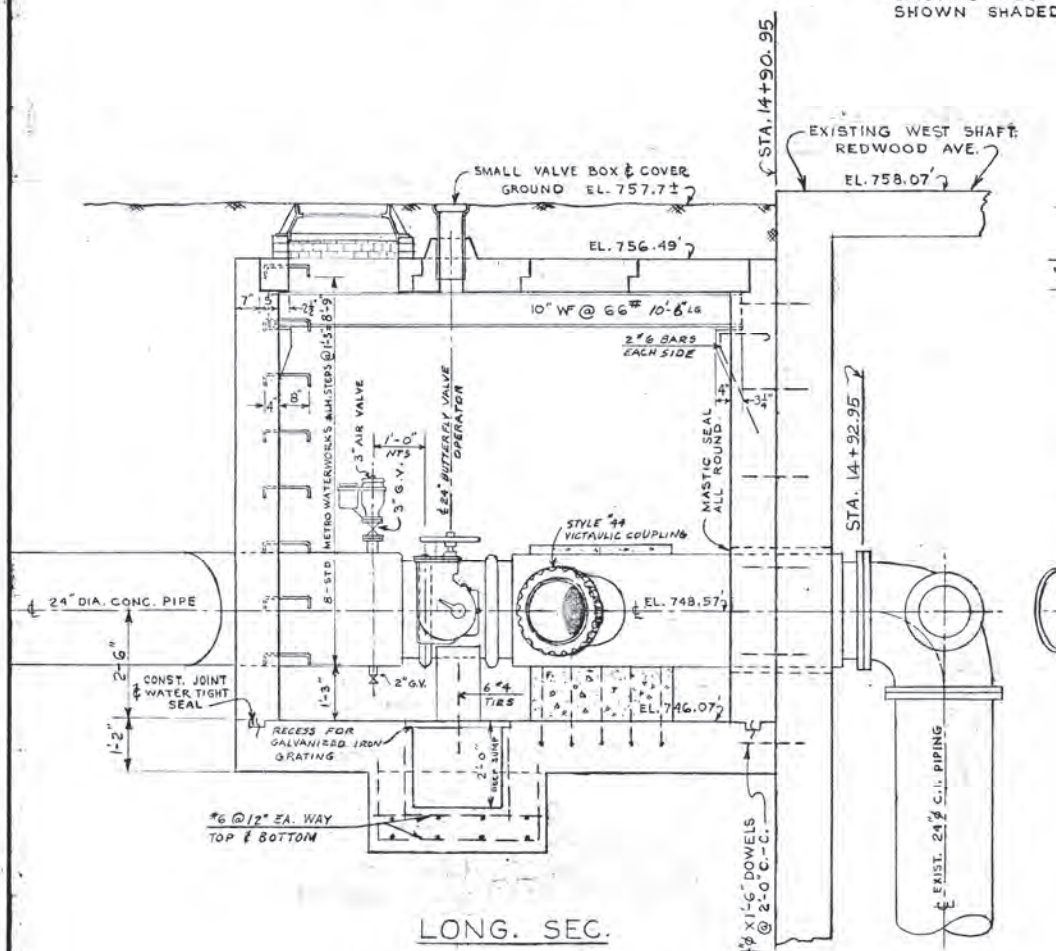
ROOF PLAN



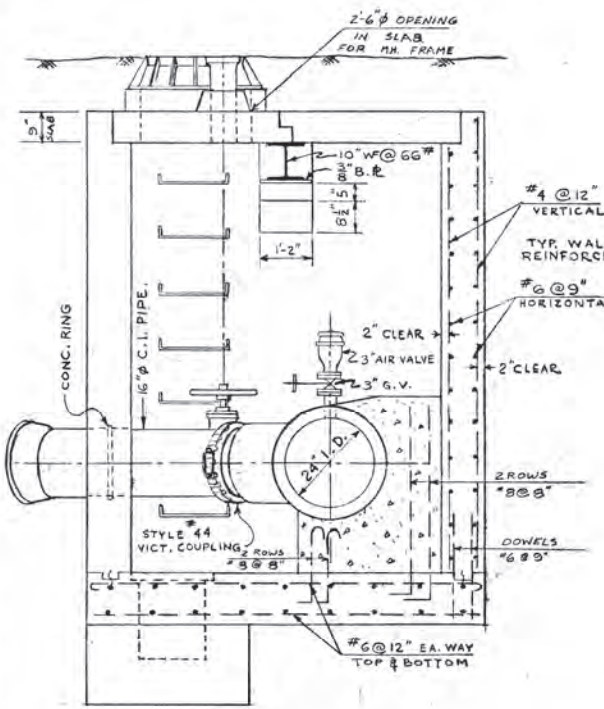
SEC. A-A
TYP. THRUST BLOCK
DETAIL



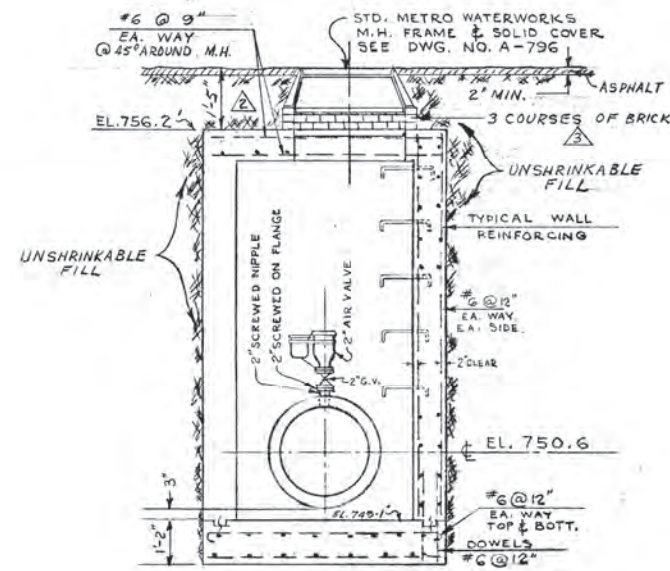
PLAN



LONG. SEC.



X-SEC.



X-SEC.
AIR VALVE CHAMBER
AT REDWOOD AVE & CHARLES ST.
STA. 3+48.70

VALVE CHAMBER
AT REDWOOD AVE & RED RIVER
STA. 14+90.95

REVISIONS				THE METROPOLITAN CORPORATION OF GREATER WINNIPEG WATERWORKS BRANCH	
NO.	DESCRIPTION	DATE	BY	DESIGNED BY	CHECKED BY
1	DIMENSIONS TO LOCATE M.H. OF AIR VALVE CHAMBER CHANGED TO 1'-5" CLEARANCE TO TOP OF COVER	3 MAR. 01 S.K.		J.M. MACBRIDE	
2	SPICKS ADDED TO M.H. ENTRANCE	3 MAR. 01 S.K.		J.M. MACBRIDE	
3	UNSHRINKABLE FILL NOTED ADDED	1 FEB. 61		J.M. MACBRIDE	
4	TITLE CHANGED	23.05.19 K.T.		H. BUXMAN	24 FEB 61

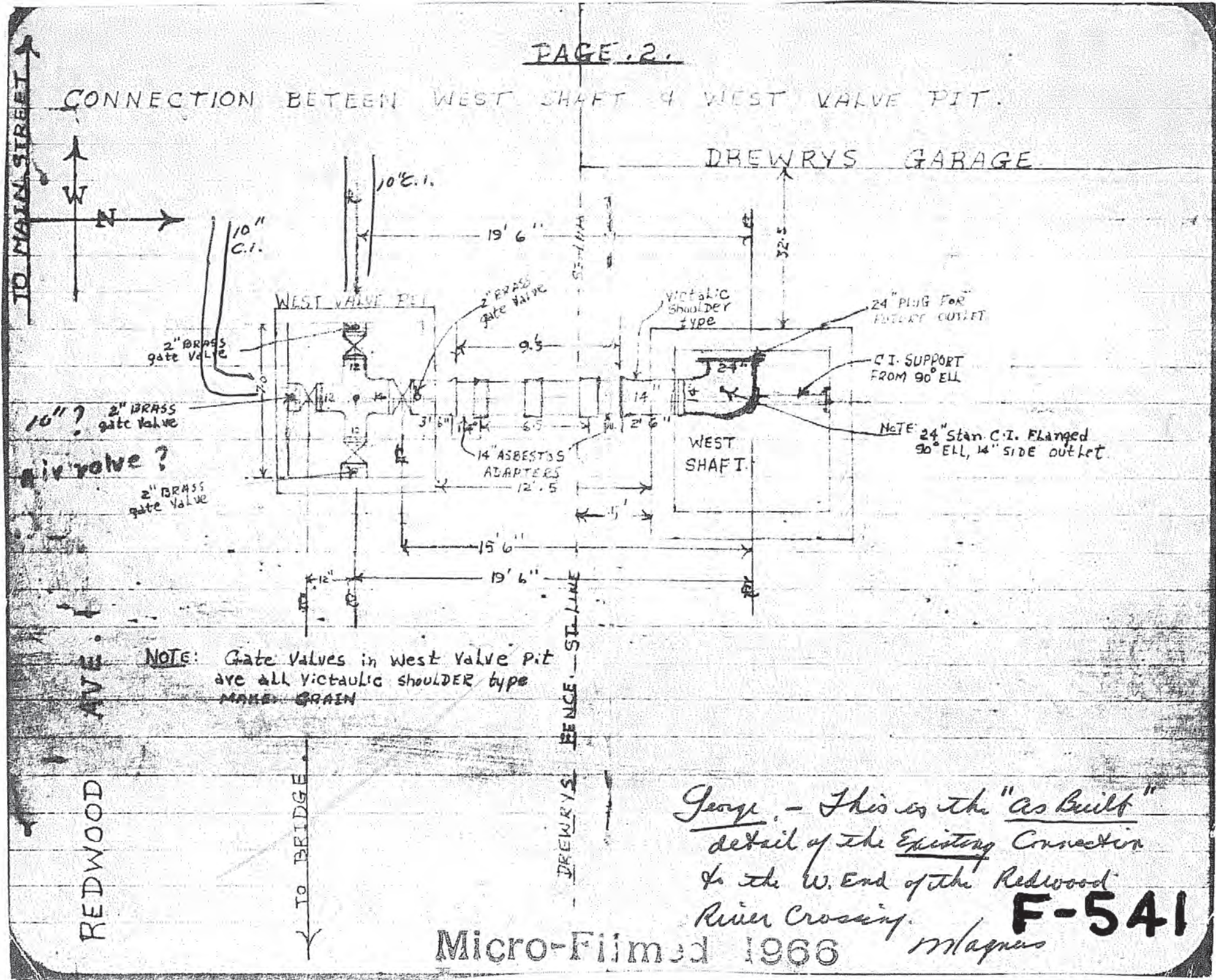


APPROVED BY: *[Signature]* CHIEF ENGINEER
 DESIGNED BY: J.M. MACBRIDE
 CHECKED BY: H. BUXMAN
 DATE: 24 FEB 61
 SCALES: 1/2"=1'-0" AS NOTED
 DRAWING NO. **D-885**

D-0885

REVISED AS BUILT
 FEB. 1, 1962

CONNECTION BETWEEN WEST SHAFT & WEST VALVE PIT.

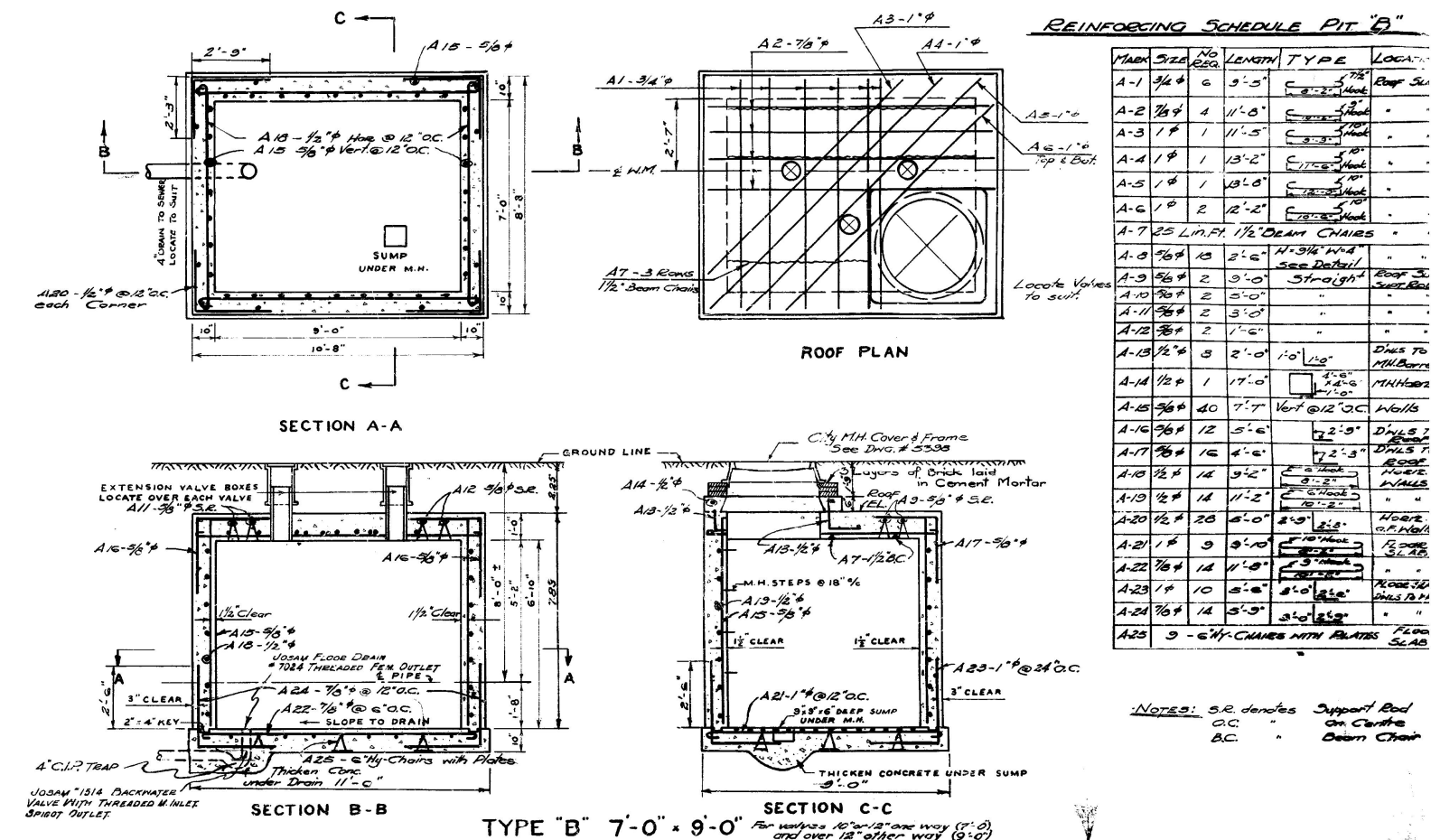
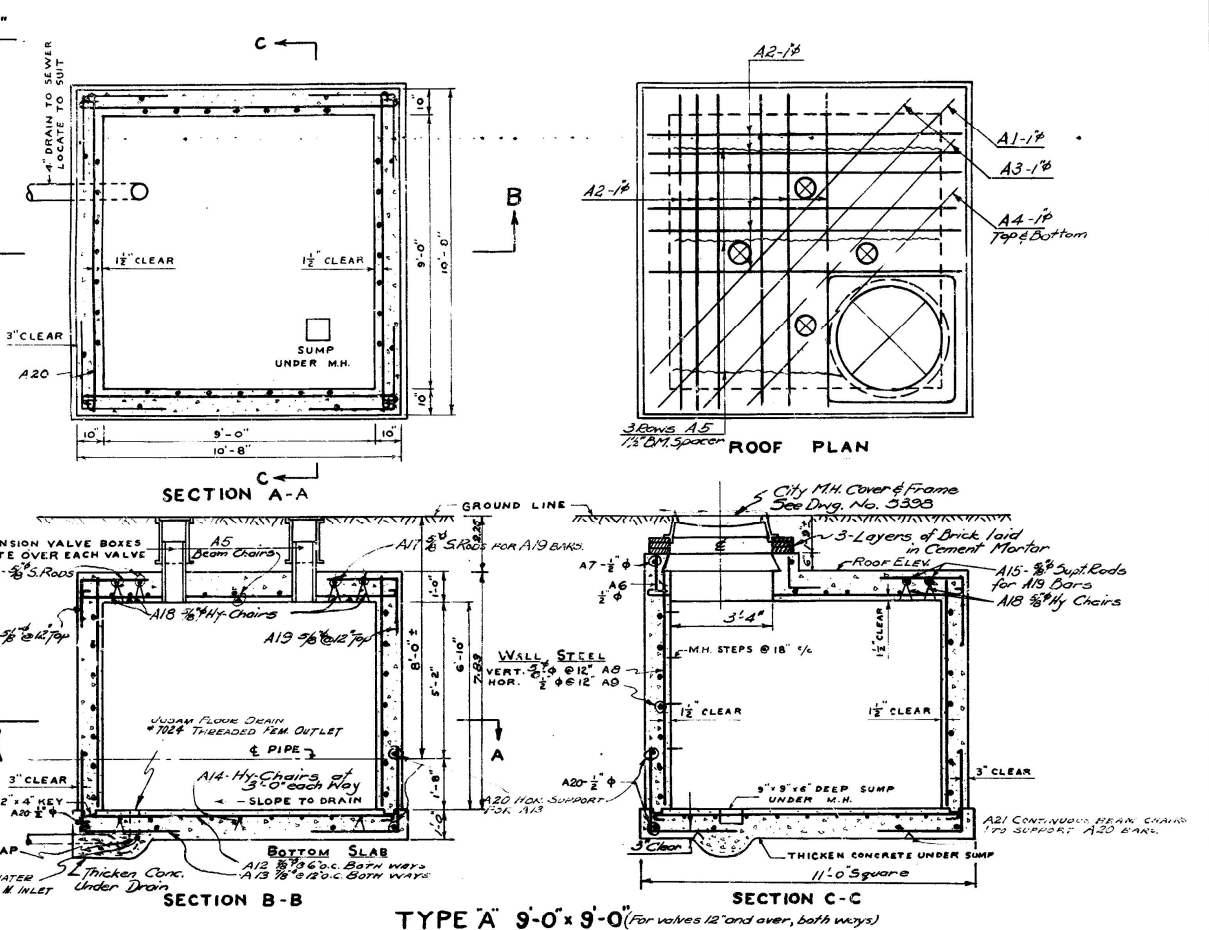


NOTE: Gate valves in West Valve Pit are all Victaulic shoulder type MAKE GRAIN

George - This is the "as built" detail of the Existing Connection to the W. End of the Redwood River Crossing. F-541 Magnus

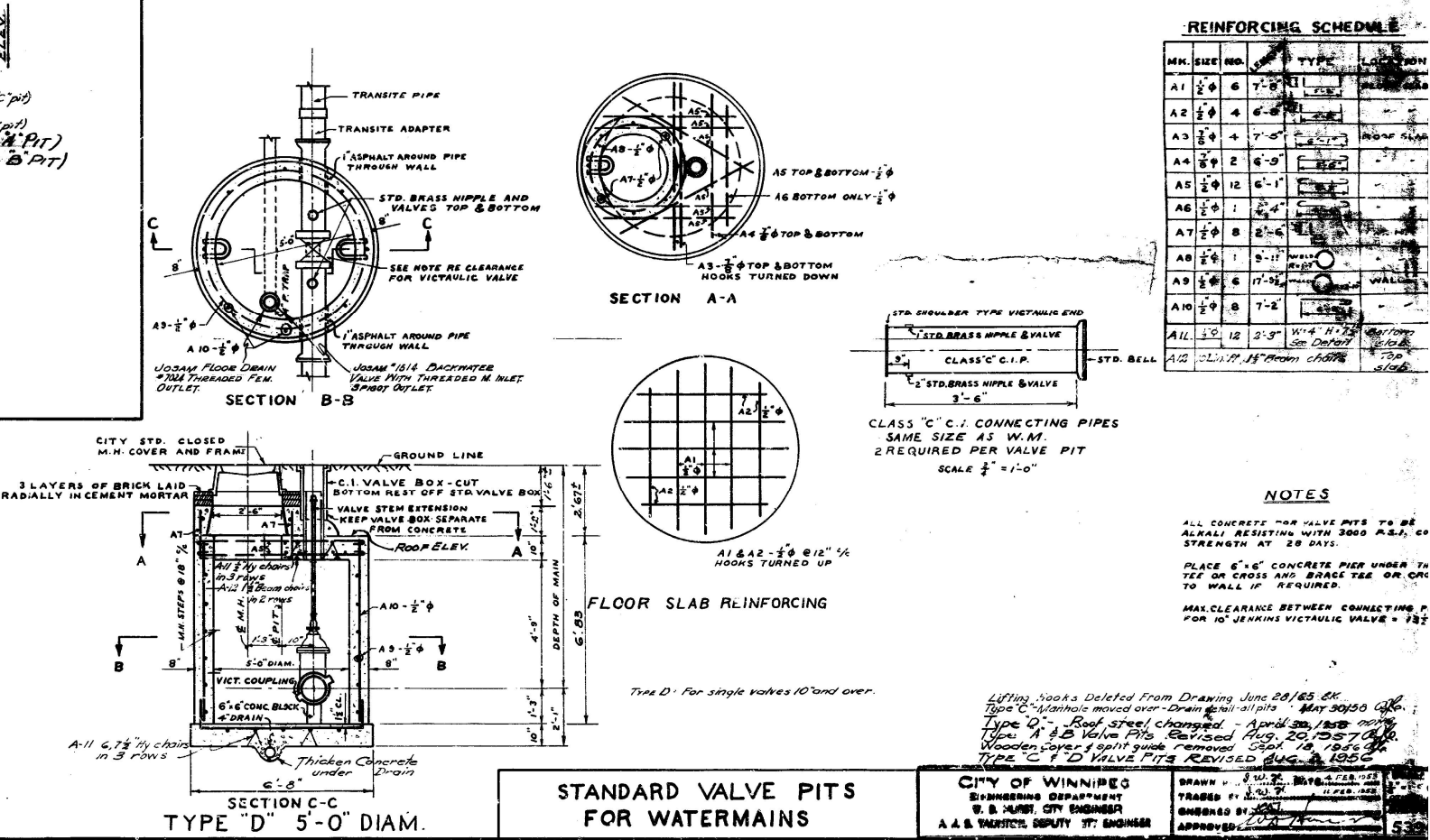
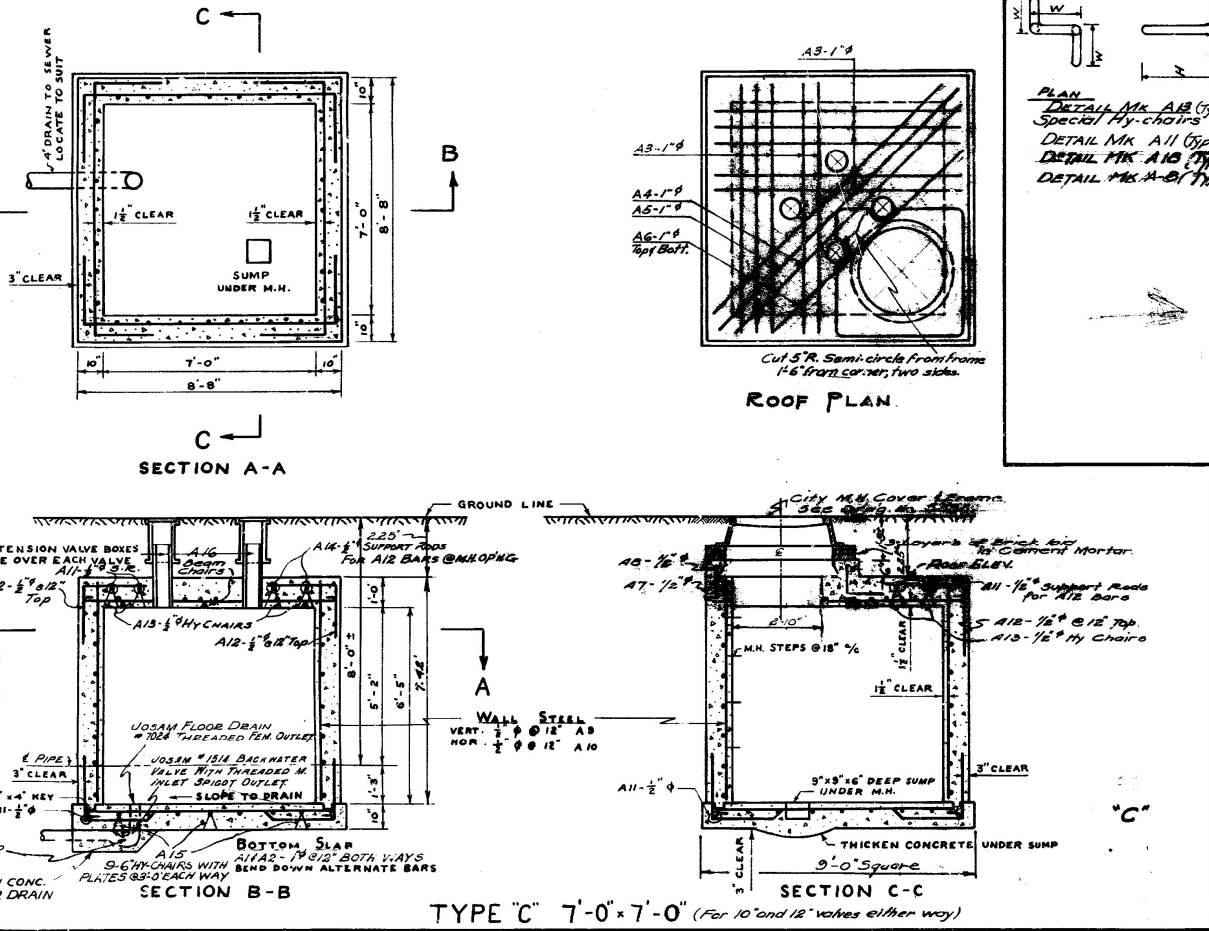
REINFORCING SCHEDULE PIT A

MK	SIZE	NO.	LENGTH	TYPE	LOCATION
A-1	1"	1	15'-0"		Roof Slab
A-2	1"	12	11'-0"		
A-3	1"	2	14'-0"		
A-4	1"	2	11'-0"		
A-5	25	Lim. Ft.	1 1/2"	Beam Chairs	
A-6	1/2"	3	2'-0"		M.H. Hole
A-7	1/2"	1	13'-0"		
A-8	3/8"	36	7'-7"	Vert. Straight	Walls
A-9	1/2"	20	11'-2"		Walls
A-10	1/2"	20	5'-6"		Walls
A-11	1/2"	3	7'-7"	Vert. Straight	Walls
A-12	1/2"	36	11'-0"		Floor Slab
A-13	1/2"	36	5'-6"		
A-14	1/2"	3	2'-3"		Floor Slab
A-15	1/2"	2	3'-0"	Straight	Supp. Rods
A-16	1/2"	2	7'-0"		
A-17	1/2"	4	3'-0"		
A-18	1/2"	13	3'-0"		Roof Slab
A-19	1/2"	30	5'-6"		Walls
A-20	1/2"	12	10'-2"	Straight	Supp. Rods
A-21				55 Continuous Beam Chairs	To Support A20 Bars



REINFORCING SCHEDULE

MK	SIZE	NO.	LENGTH	TYPE	LOCATION
A1	1"	8	10'-2"		FLOOR SLAB
A2	1"	6	12'-4"		
A3	1"	10	9'-10"		ROOF SLAB
A4	1"	2	12'-2"		
A5	1"	1	12'-10"		
A6	1"	2	10'-2"		
A7	1/2"	8	2'-0"		M.H.
A8	1/2"	1	17'-0"		
A9	1/2"	28	7'-2"		WALLS
A10	1/2"	28	12'-2"		
A11	1/2"	8	8'-2"	STR.	WALLS, ROOF & FLOOR SLAB
A12	1/2"	28	4'-0"		WALLS & TOP DOWNERS
A13	1/2"	20	2'-7"		ROOF SLAB
A14	1/2"	4	4'-0"		Roof Slab
A15	1/2"			1/2" Hy-Chairs with Plates	Floor Slab
A16	20	Lim. Ft.	1 1/2"	Beam Chairs	Roof Slab



CITY OF WINNIPEG
 ENGINEERING DEPARTMENT
 W. B. LUNDY, CITY ENGINEER
 A. A. VAUGHAN, DEPUTY CITY ENGINEER

NOTES:
 ALL CONCRETE FOR VALVE PITS TO BE ALKALI RESISTING WITH 3000 P.S.I. STRENGTH AT 28 DAYS.
 PLACE 6" CONCRETE PIER UNDER THE TEE OR CROSS AND BRACE TEE OR CRX TO WALL IF REQUIRED.
 MAX. CLEARANCE BETWEEN CONNECTING PIPES FOR 10" JENKINS VICTALIC VALVE = 7 1/2"
 Lifting Hooks Deleted From Drawing June 28/55 EK
 Type C Manhole moved over - Drain Detail - all pits May 30/50 GPO
 Type D - Roof steel changed - April 28/1958 GPO
 Type A & B Valve Pits Revised Aug. 20, 1957 GPO
 Wooden cover of split guide removed Sept. 18, 1956 GPO
 TYPE C & D VALVE PITS REVISED AUG. 1, 1956 GPO