



THE CITY OF WINNIPEG

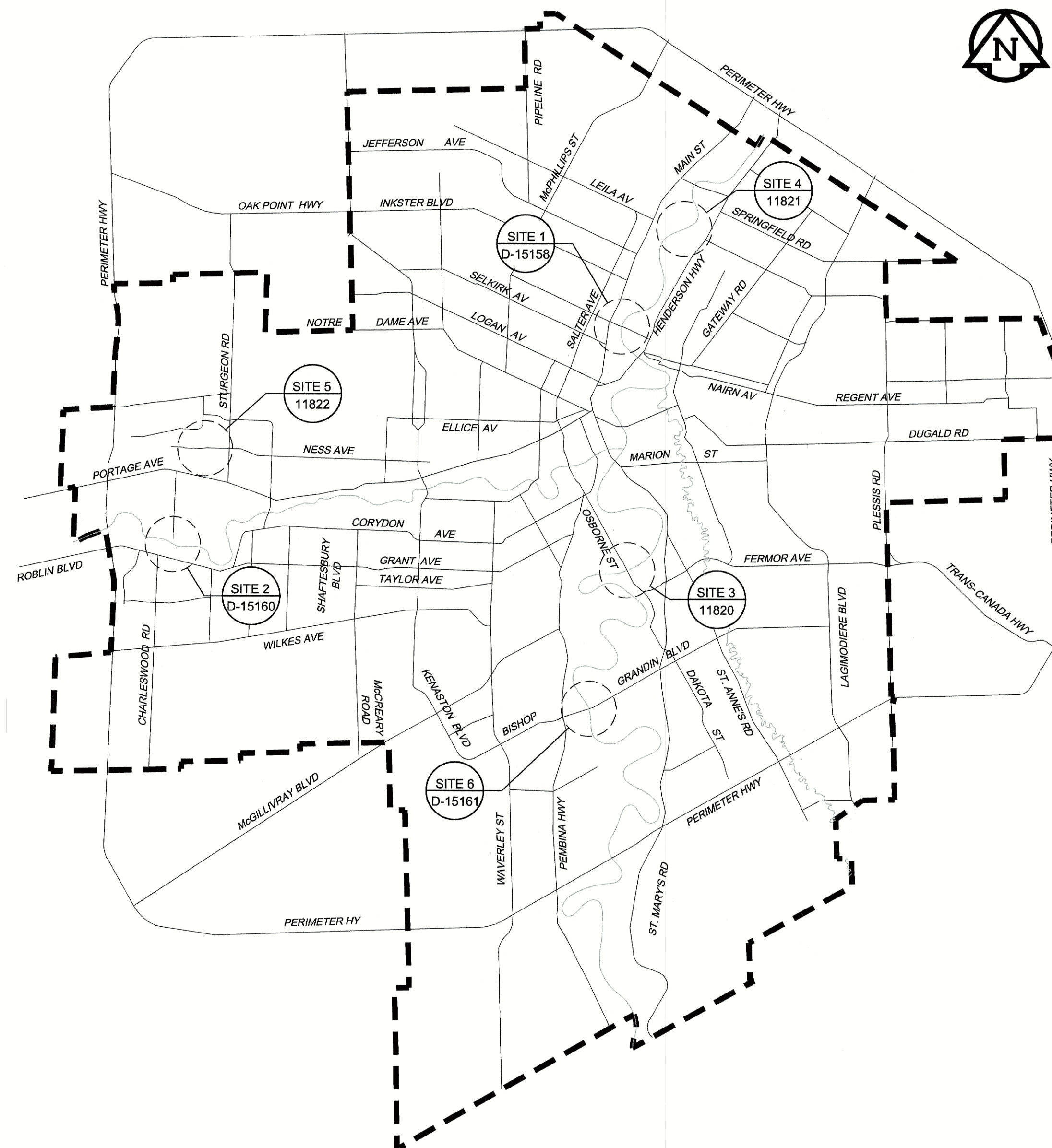
WATER AND WASTE DEPARTMENT

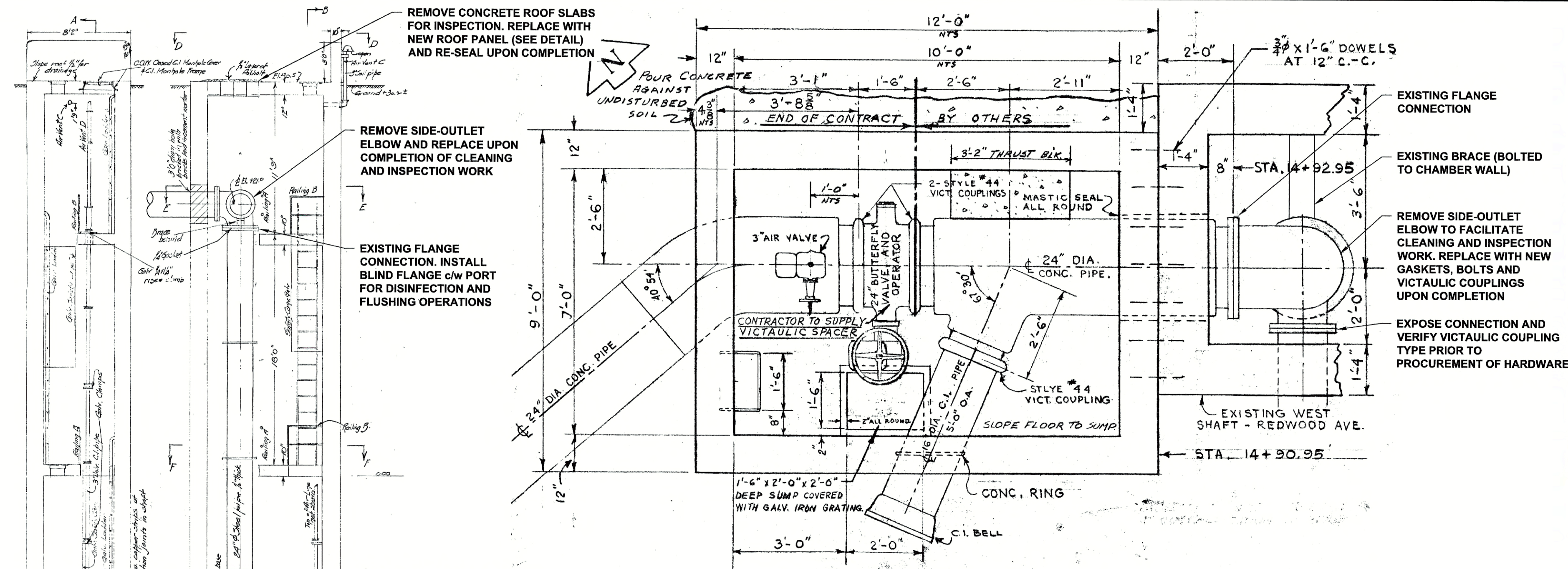
PROVISION OF PIPELINE ACCESS MODIFICATIONS, CLEANING AND SUPPORT SERVICES FOR RIVER CROSSING INSPECTIONS - PHASE TWO

BID OPPORTUNITY NO. 492-2018

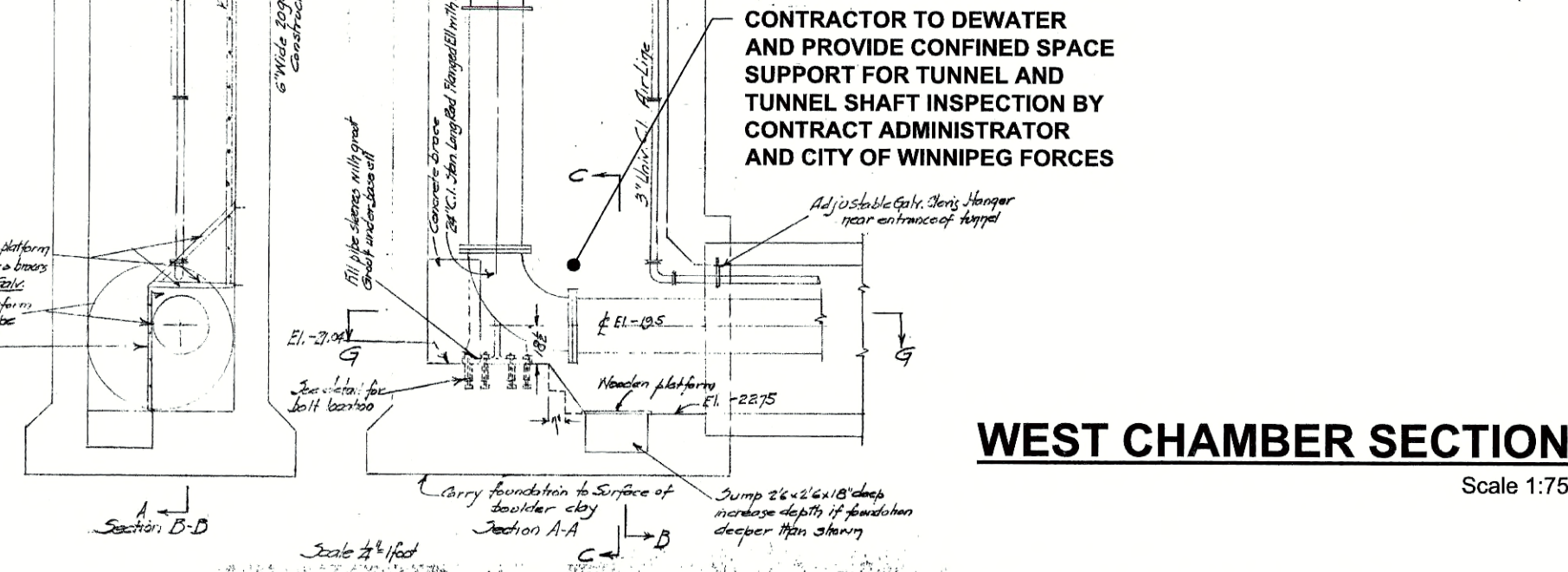
LIST OF PROJECT DRAWINGS

CITY DRAWING No.	CONSULTANT DRAWING No.	DESCRIPTION
D-15157	G-0001	COVER SHEET
D-15158	C-1001	SITE 1 - KILDONAN - REDWOOD FEEDER MAIN - WEST CHAMBER
D-15159	C-1001	SITE 1 - KILDONAN - REDWOOD FEEDER MAIN - EAST CHAMBER
D-15160	C-1002	SITE 2 - CHARLESWOOD - ASSINIBOIA FEEDER MAIN
11820	C-1003	SITE 3 - ST. VITAL BRIDGE FORCE MAIN
11821	C-1004	SITE 4 - NEWTON AVENUE FORCE MAIN
11822	C-1005	SITE 5 - HERITAGE PARK FORCE MAIN
D-15161	C-1006	SITE 6 - FORT GARRY - ST. VITAL FEEDER MAIN





WEST CHAMBER PLAN Scale 1:25

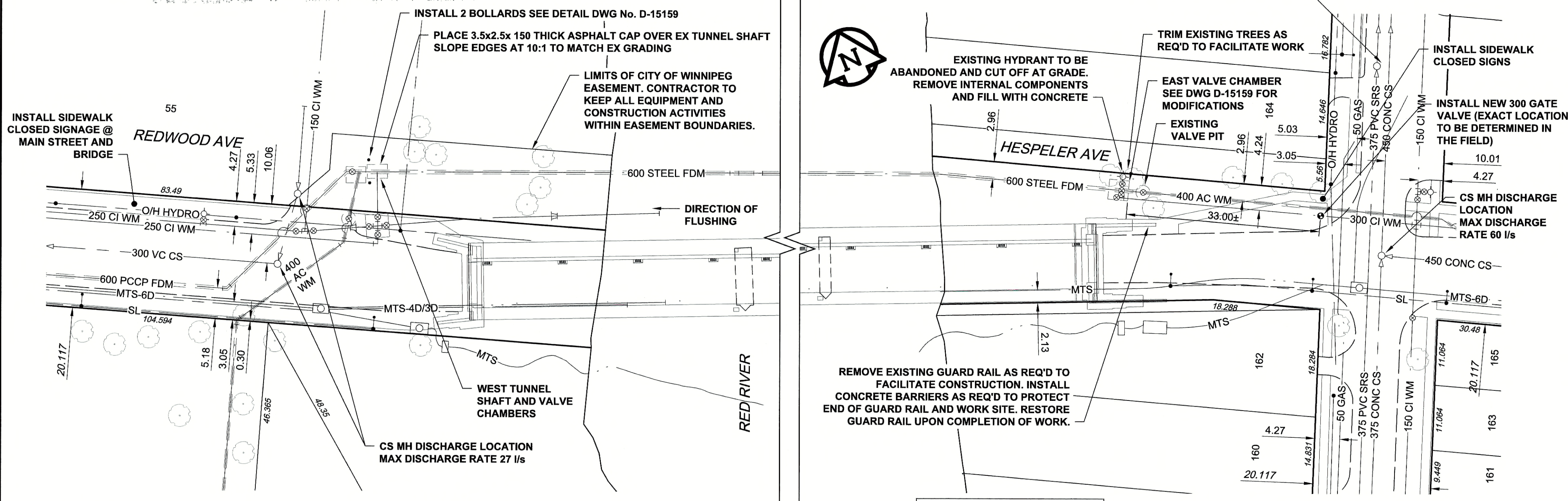


WEST CHAMBER SECTION Scale 1:75



SITE PLAN

Scale 1:1500
0 37.5 75 m



PLAN

Scale 1:500
0 12.5 25 m

NOTES:
SEE NEXT SHEET, DWG D-15159 FOR SEQUENCE OF WORK AND CONSTRUCTION NOTES



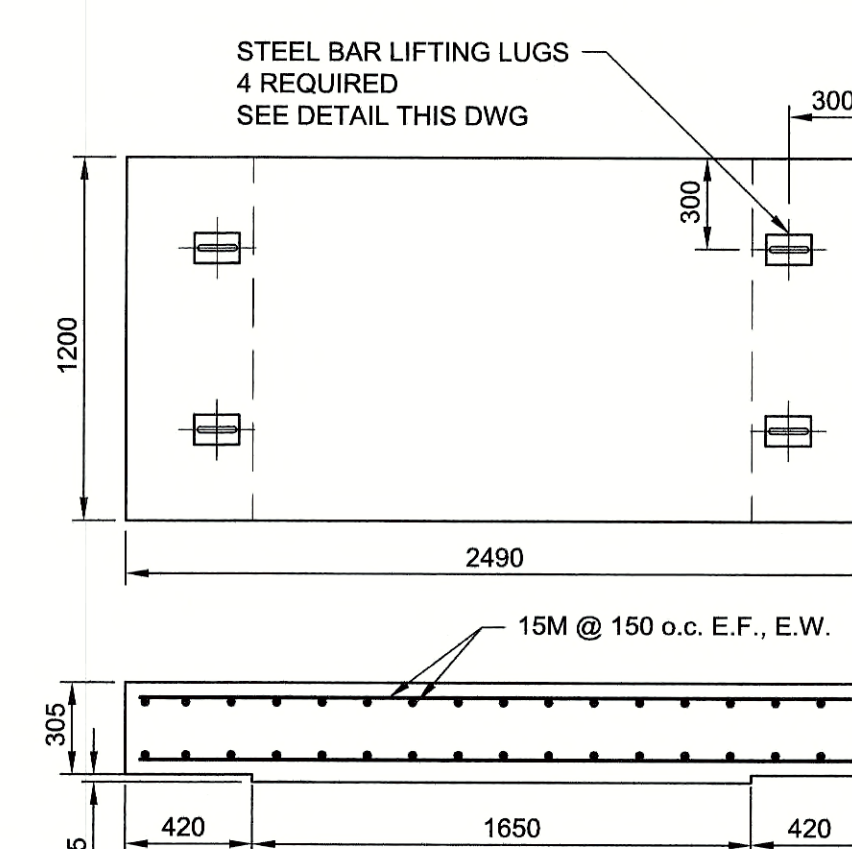
Certificate of Authorization

AECOM Canada Ltd.

No. 4671 Date: June 4/16

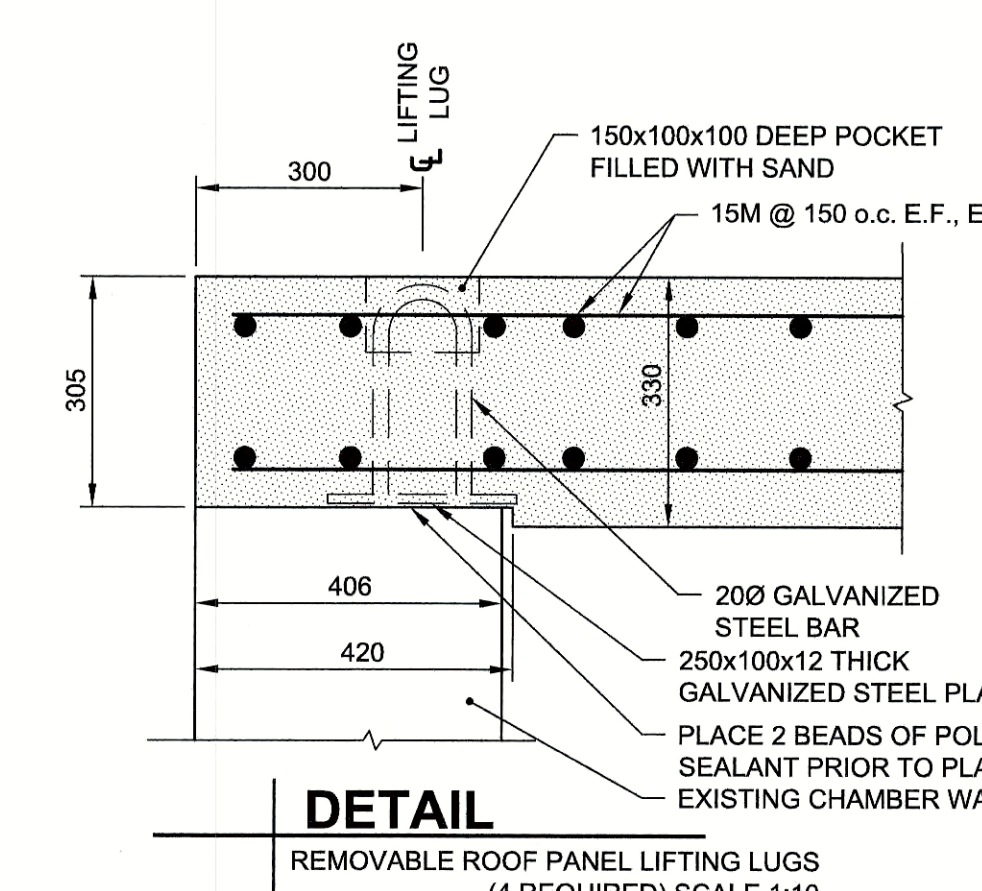
METRIC

WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES



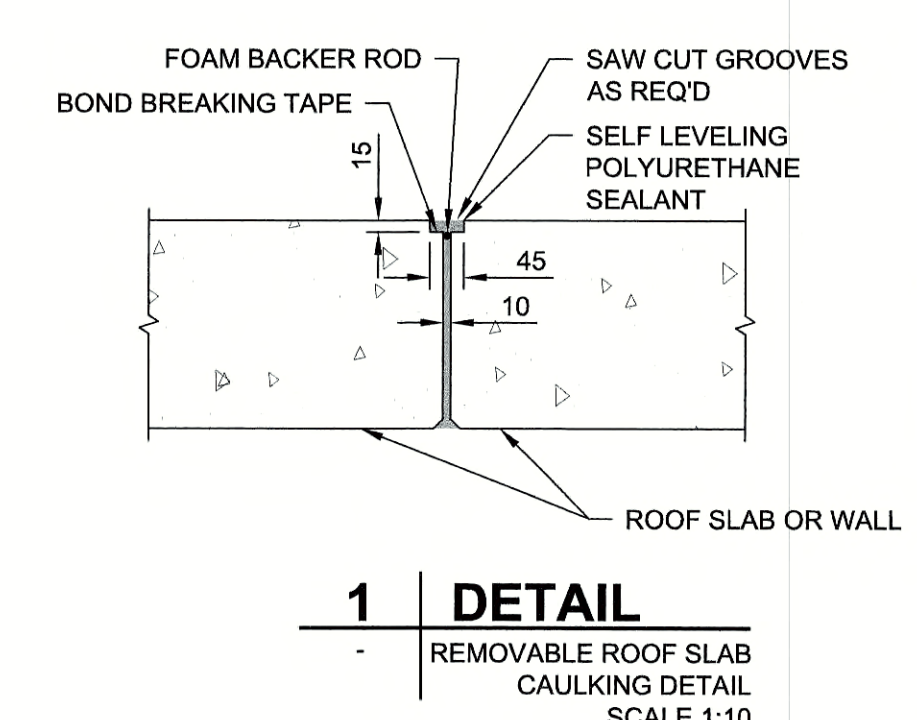
DETAIL

REMOVABLE CONCRETE ROOF PANEL PLAN & SECTION SCALE 1:25



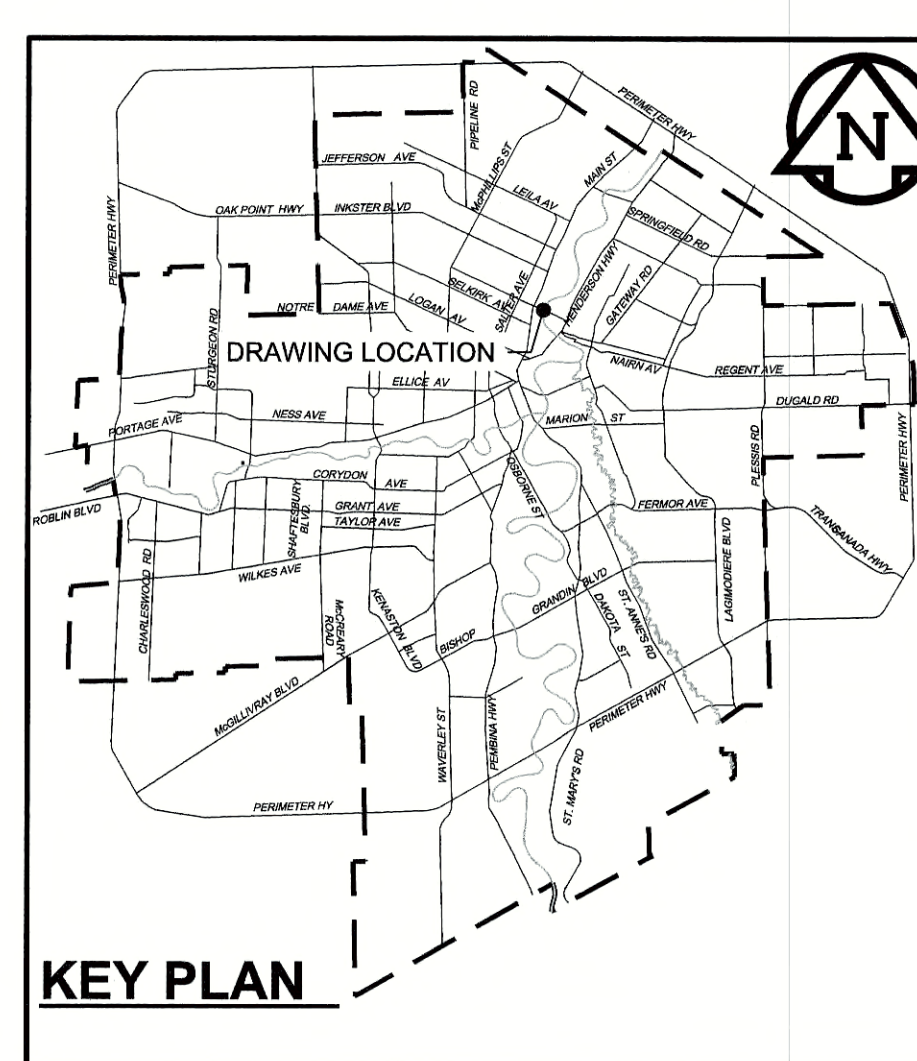
DETAIL

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



DETAIL

REMOVABLE ROOF SLAB CAULKING DETAIL SCALE 1:10



KEY PLAN

150 WM	WATERMAIN	150 WM	○	CURB STOP	150 WM	WATERMAIN	150 WM
○	HYDRANT	+	+	REDUCER	+	HYDRANT	+
○	VALVE	+	+	COUPLING	+	VALVE	+
300 LDS	LAND DRAINAGE SEWER	300 LDS	+	ANODE	+	LAND DRAINAGE SEWER	300 LDS
250 WWS	WASTE WATER SEWER	250 WWS	+	HYDRO	+	WASTE WATER SEWER	250 WWS
○	MANHOLE	●	○	MTS	○	PAVEMENT CROWN	○
□	CATCH BASIN	■	○	GAS	○	N/W PROPERTY LINE	○
△	CURB INLET	▲	○	TESTHOLE	○	S/E PROPERTY LINE	○
▭	CULVERT	▭	○	LAMP STANDARD	○	N/W GUTTER	○
+	PIPE ABANDONMENTS	+	○	TREE	○	S/E GUTTER	○
+	SURVEY BAR	+	○				
EXISTING	LEGEND - PLAN	NEW	EXISTING	LEGEND - PROFILE	NEW		

LOCATION APPROVED UNDERGROUND STRUCTURES

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.

0	ISSUED FOR CONSTRUCTION	18/06/01	KLC
NO.	REVISIONS	YYMMDD	BY

AECOM		DESIGNED BY NJK		CHECKED BY	
DRAWN BY KLC		APPROVED BY		RELEASED FOR CONSTRUCTION	
HOR. SCALE AS NOTED		VERT. SCALE N/A		DATE	

PROFESSIONAL'S SEAL

 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

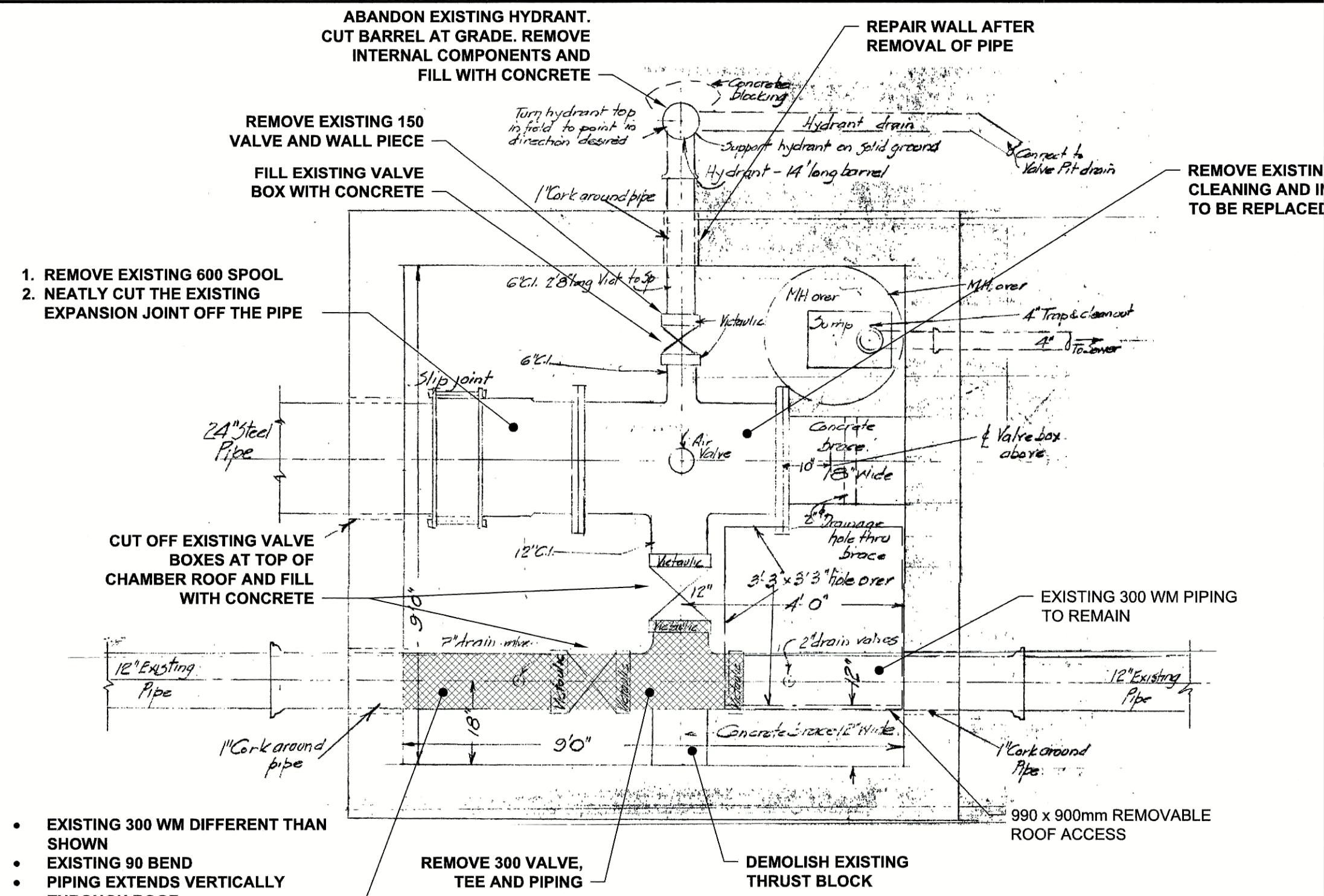
SHEET 1 OF 7
CITY DRAWING NUMBER
REV 0

D-15158

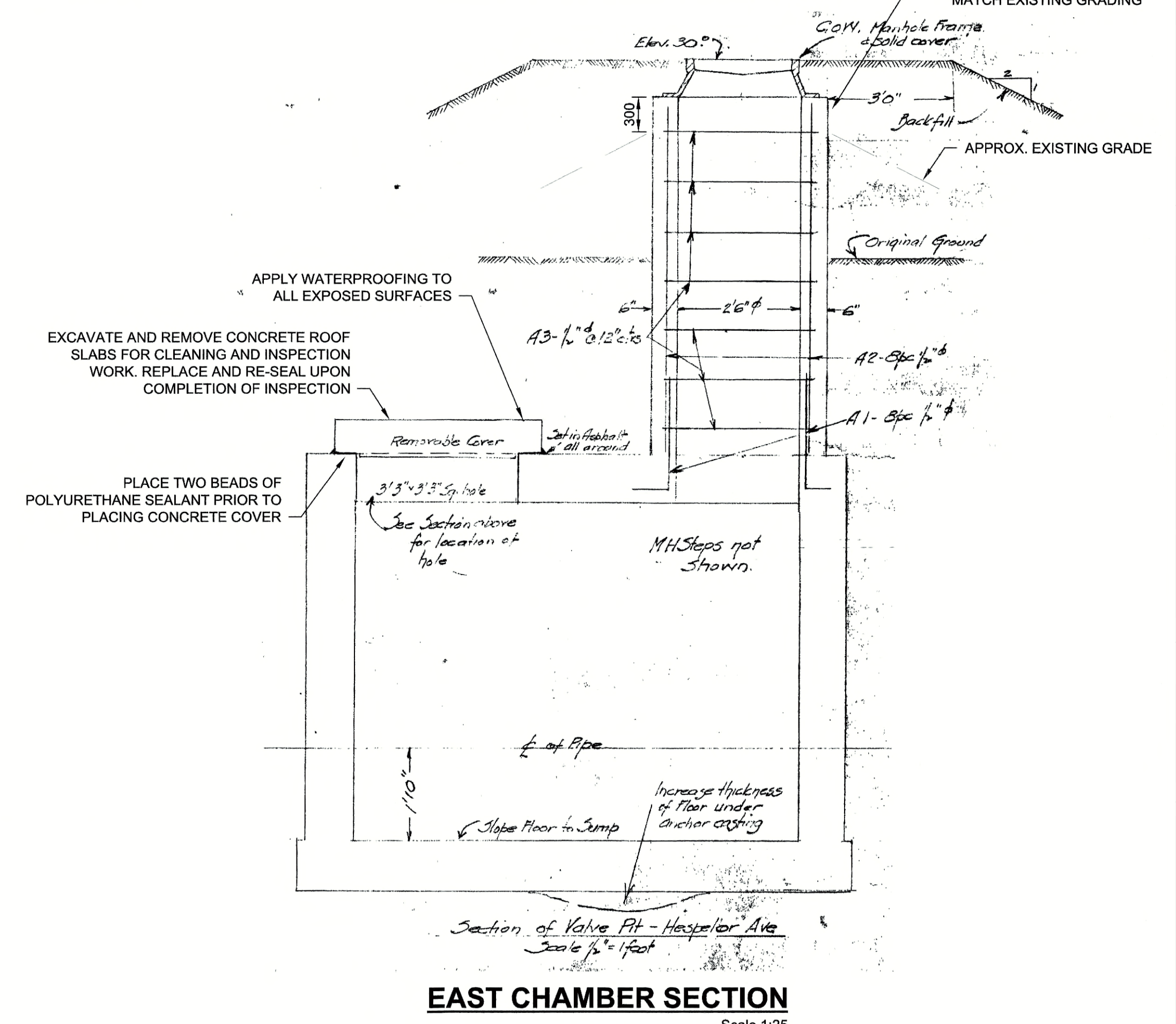
SITE 1
KILDONAN - REDWOOD FEEDER MAIN - WEST CHAMBER

BID OPPORTUNITY NO. 492-2018

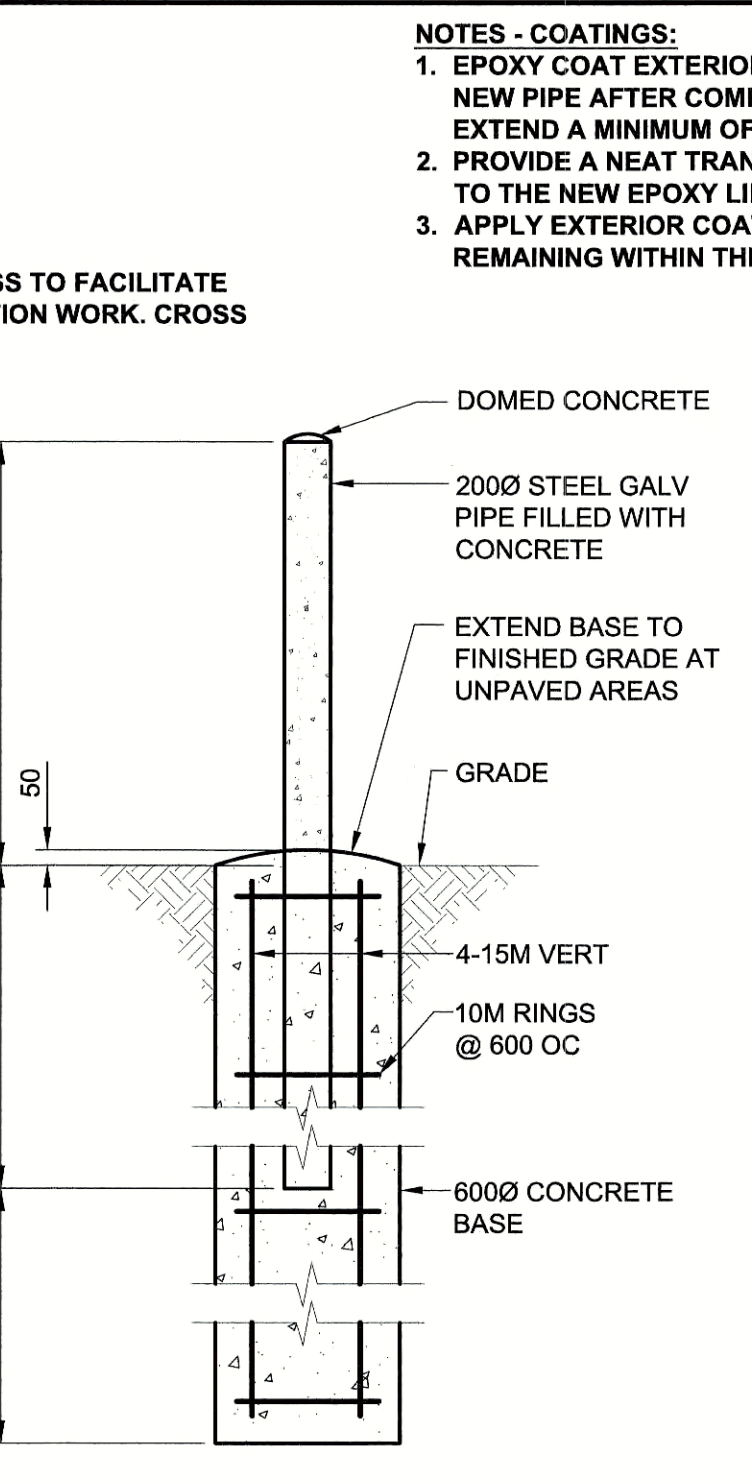
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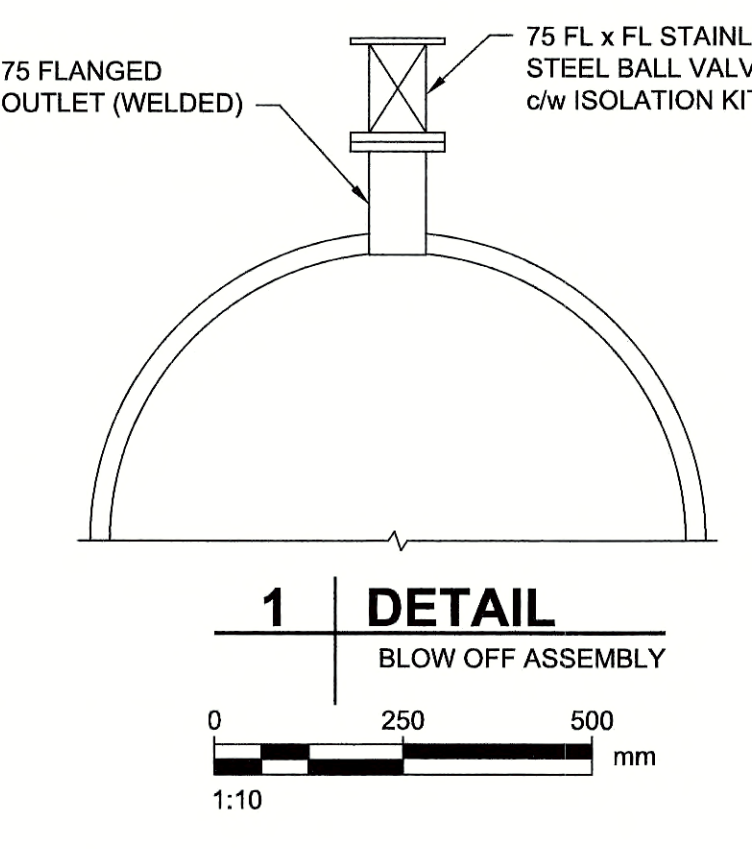
EAST CHAMBER PLAN (EXISTING)
Scale 1:25



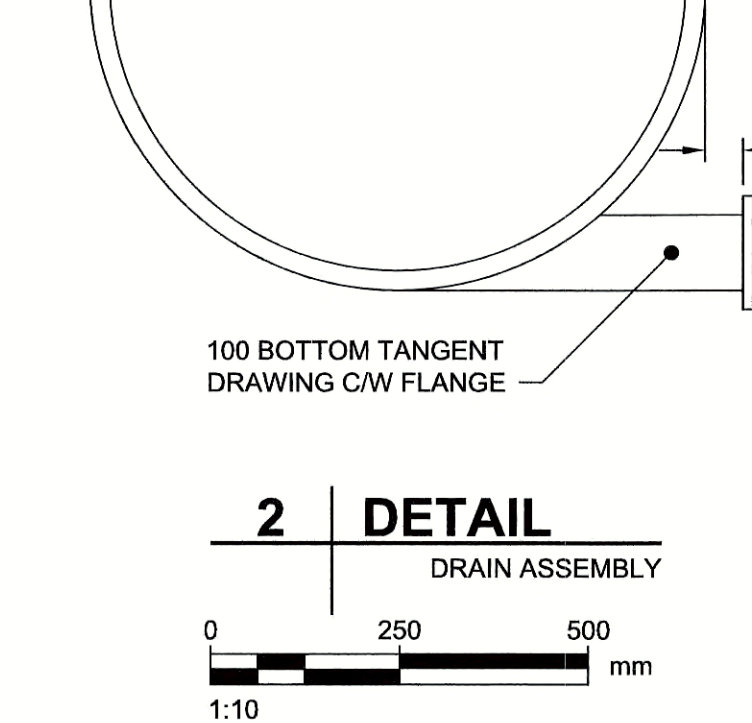
EAST CHAMBER SECTION
Scale 1:25



5 DETAIL
TYPICAL BOLLARD
SCALE 1:25

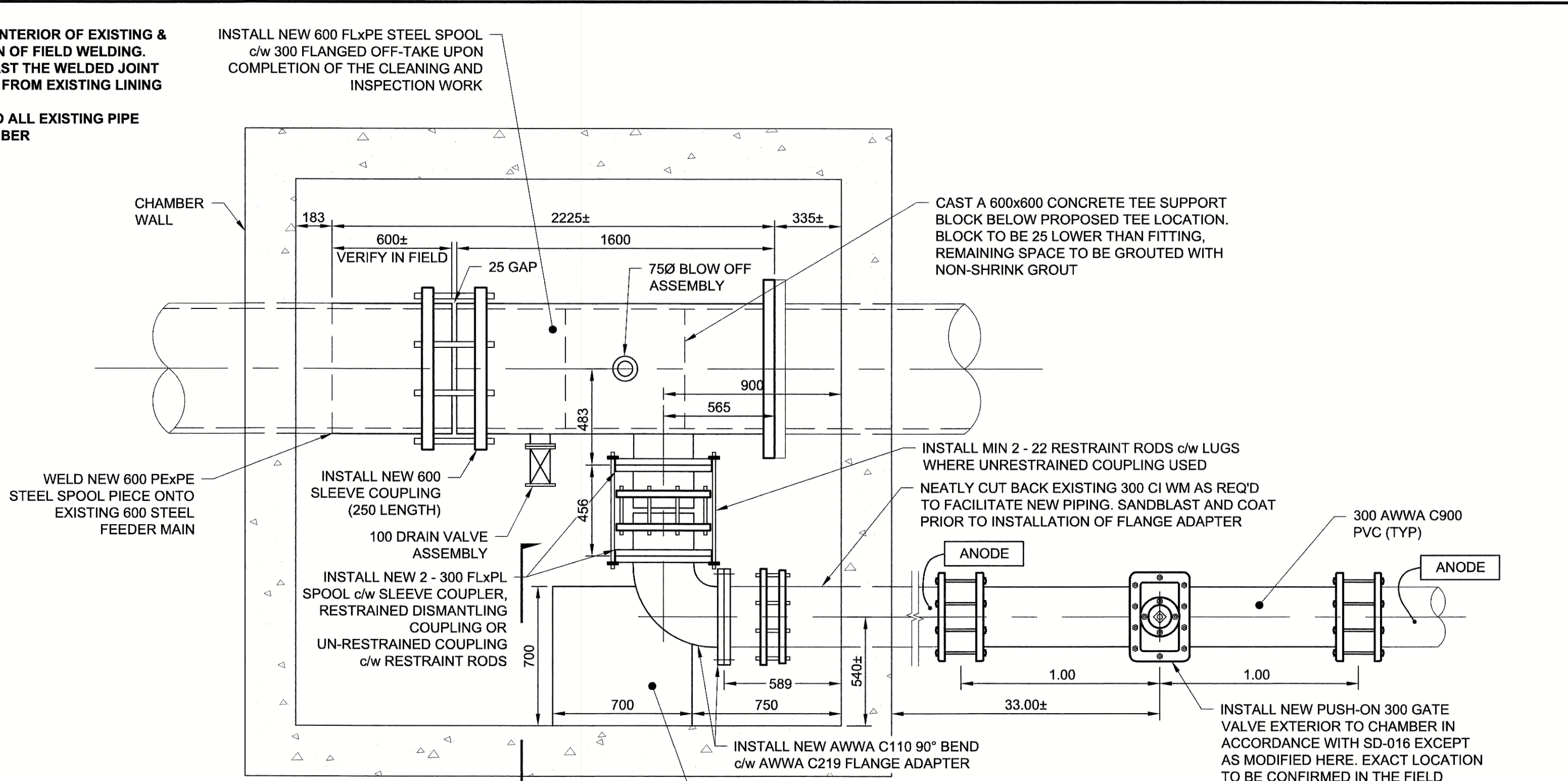


1 DETAIL
BLOW OFF ASSEMBLY
Scale 1:10



2 DETAIL
DRAIN ASSEMBLY
Scale 1:10

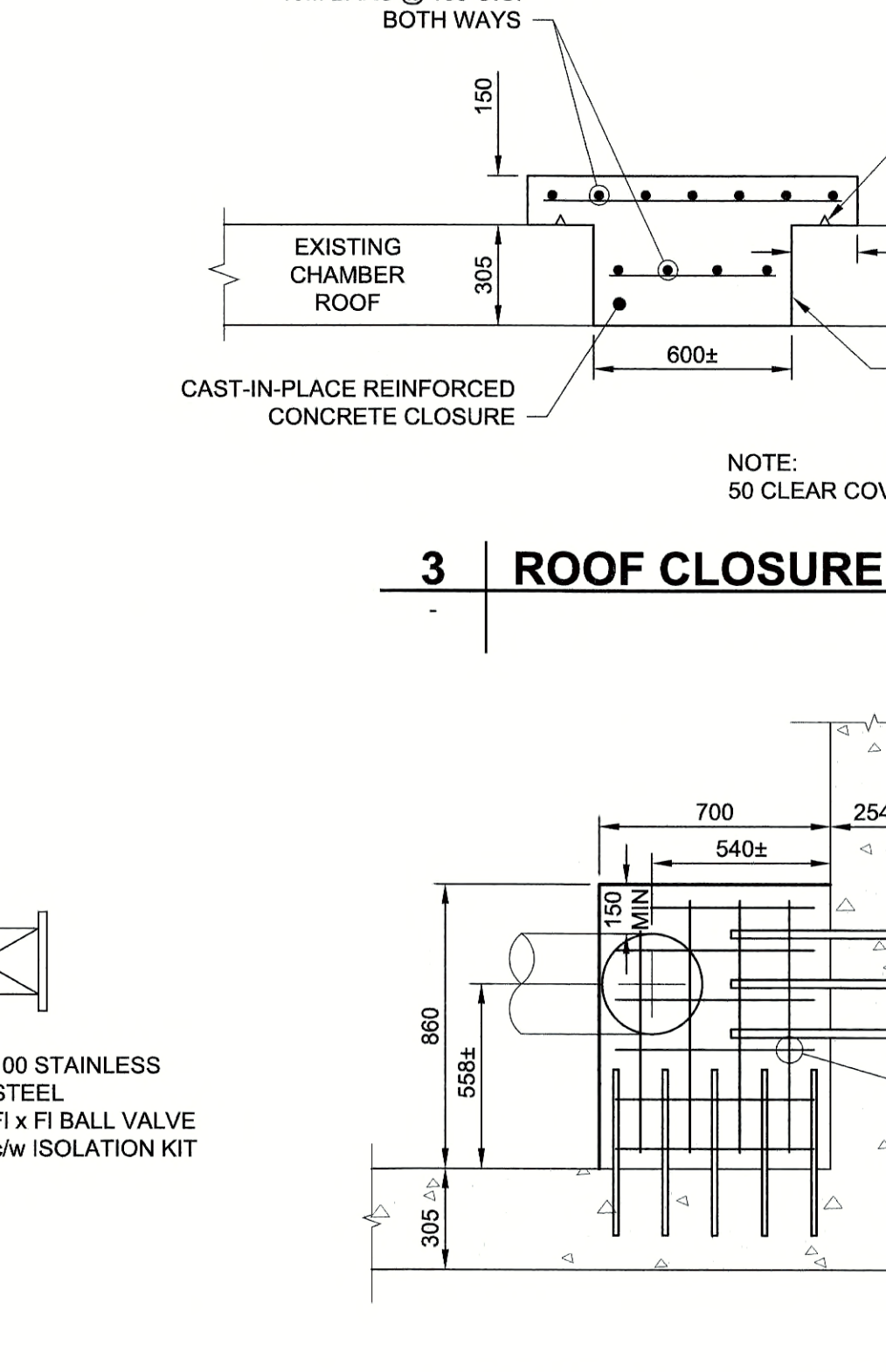
METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMAL NUMBERS INDICATE METRES



EAST CHAMBER PLAN (PROPOSED)
Scale 1:20



3 DETAIL
ROOF CLOSURE DETAIL
Scale 1:20



4 DETAIL
THRUST BLOCK DETAIL
SECTION A
SCALE 1:20

NOTES:
SEQUENCE OF WORK:

1. EXPOSE CONNECTIONS FOR SIDE OUTLET ELBOW (WEST CHAMBER) AND VERIFY VICTAULIC COUPLING TYPE AND SIZE PRIOR TO PROCUREMENT OF MATERIALS.
2. ISOLATE 300 WM PIPE (BY CITY)
3. INSTALL NEW PUSH-ON 300 GATE VALVE EXTERIOR TO CHAMBER.
4. CLOSE NEW GATE VALVE & RESTORE WM SERVICE (BY CITY).
5. EXCAVATE TO TOP OF (EAST) CHAMBER & INSTALL SHORING AS NEEDED.
6. REMOVE CONCRETE ROOF PANELS TO GAIN ACCESS TO EACH CHAMBER.
7. ISOLATE 600 FM CROSSING PIPE (BY CITY).
8. REMOVE SIDE OUTLET ELBOW (WEST CHAMBER) TO PROVIDE ACCESS FOR CLEANING AND INSPECTION.
9. DISASSEMBLE DUCTILE IRON CROSS (EAST CHAMBER) AND EXISTING 600mm SPOOL PIECE. REMOVE FROM CHAMBER.
10. REMOVE NECESSARY 300 WM PIPING & FITTINGS (EAST CHAMBER).
11. REMOVE AND ABANDON FIRE HYDRANT AND RELATED PIPING (EAST CHAMBER).
12. NEATLY CUT EXISTING EXPANSION JOINT (EAST CHAMBER) OFF THE PIPE AND VERIFY LENGTH OF NEW SPOOL PIECE, WELD & COAT NEW SPOOL PIECE.
13. PERFORM CLEANING AND FACILITATE INSPECTION (BY OTHERS) OF FEEDER MAIN CROSSING.
14. INSTALL NEW CHAMBER PIPING (EAST CHAMBER) AS INDICATED ON THE DRAWINGS.
15. COMPLETE DISINFECTION OF THE FEEDER MAIN.
16. PERFORM LOW PRESSURE LEAKAGE TEST.
17. REINSTALL SIDE OUTLET ELBOW (WEST CHAMBER), USING NEW BOLTS, GASKETS, AND VICTAULIC COUPLER.
18. REINSTALL CHAMBER ROOF PANELS AND RE-SEAL ALL JOINTS.
19. BACKFILL AND RESTORE SITES.

CONSTRUCTION NOTES:

1. HAVE NEW GASKETS FOR ALL FLANGED AND VICTAULIC CONNECTIONS ON HAND PRIOR TO DISASSEMBLY OF ANY CHAMBER PIPING.
2. ALL PIPING SHALL BE MEASURED, PRE-ASSEMBLED (WHERE POSSIBLE), AND ALL POSSIBLE PREP WORK COMPLETED PRIOR TO DISASSEMBLY OF CHAMBER PIPING.
3. INSTALL NEW GASKETS, FLANGE BOLTS AND VICTAULIC COUPLINGS DURING RE-ASSEMBLY OF CHAMBER PIPING.
4. ENSURE PIPELINE IS NOT DEWATERED DURING CLEANING AND INSPECTION WORK.
5. NO DRAIN VALVE PRESENT ON EXISTING CROSSING. CONTRACTOR TO DRAIN PIPE VIA EXISTING BLOW OFF VALVES AND DISASSEMBLY OF FITTINGS WITHIN THE EAST CHAMBER
6. RESTORE BOULEVARDS, SIDEWALKS & ROADWAYS DAMAGED DURING CONSTRUCTION.



BID OPPORTUNITY NO. 492-2018

AECOM REVIEW DRAFT CHK

150 WM	WATERMAIN	150 WM	150 WM	CURB STOP	150 WM	WATERMAIN	150 WM
+	HYDRANT	+	+	REDUCER	+	HYDRANT	+
+	VALVE	+	+	COUPLING	+	VALVE	+
+	300 LDS	+	+	ANODE	+	LAND DRAINAGE SEWER	+
+	250 WWS	+	+	HYDRO	+	WASTE WATER SEWER	+
○	MANHOLE	○	○	MTS	○	PAVEMENT CROWN	○
□	CATCH BASIN	□	□	GAS	□	N/W PROPERTY LINE	□
△	CURB INLET	△	△	TESTHOLE	△	S/E PROPERTY LINE	△
▬▬▬	CULVERT	▬▬▬	▬▬▬	LAMP STANDARD	▬▬▬	N/W GUTTER	▬▬▬
+	PIPE ABANDONMENTS	+	+	TREE	+	S/E GUTTER	+
+	SURVEY BAR	+	+		+		+
+	EXISTING	+	+		+		+
○	LEGEND - PLAN	○	○		○		○
+	NEW	+	+		+		+
○	LEGEND - PROFILE	○	○		○		○
+	NEW	+	+		+		+

LOCATION APPROVED
UNDERGROUND STRUCTURES

SUPR. U/G STRUCTURES DATE COMMITTEE

NOTE:
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NO.	ISSUED FOR CONSTRUCTION	18/06/01	KLC
0	ISSUED FOR CONSTRUCTION	18/06/01	KLC
	NO. REVISIONS	YY/MM/DD	BY

AECOM

DESIGNED BY: NJK
CHECKED BY: [Signature]
DRAWN BY: KLC
APPROVED BY: [Signature]
HOR. SCALE: AS NOTED
VERT. SCALE: N/A
RELEASED FOR CONSTRUCTION
Amal K. Khan
DATE: June 4, 2018

PROFESSIONAL'S SEAL

PROVINCE OF MANITOBA
REGISTERED PROFESSIONAL ENGINEER
BRAIN
Member
24452

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

THE CITY OF WINNIPEG
Winnipeg
WATER AND WASTE DEPARTMENT

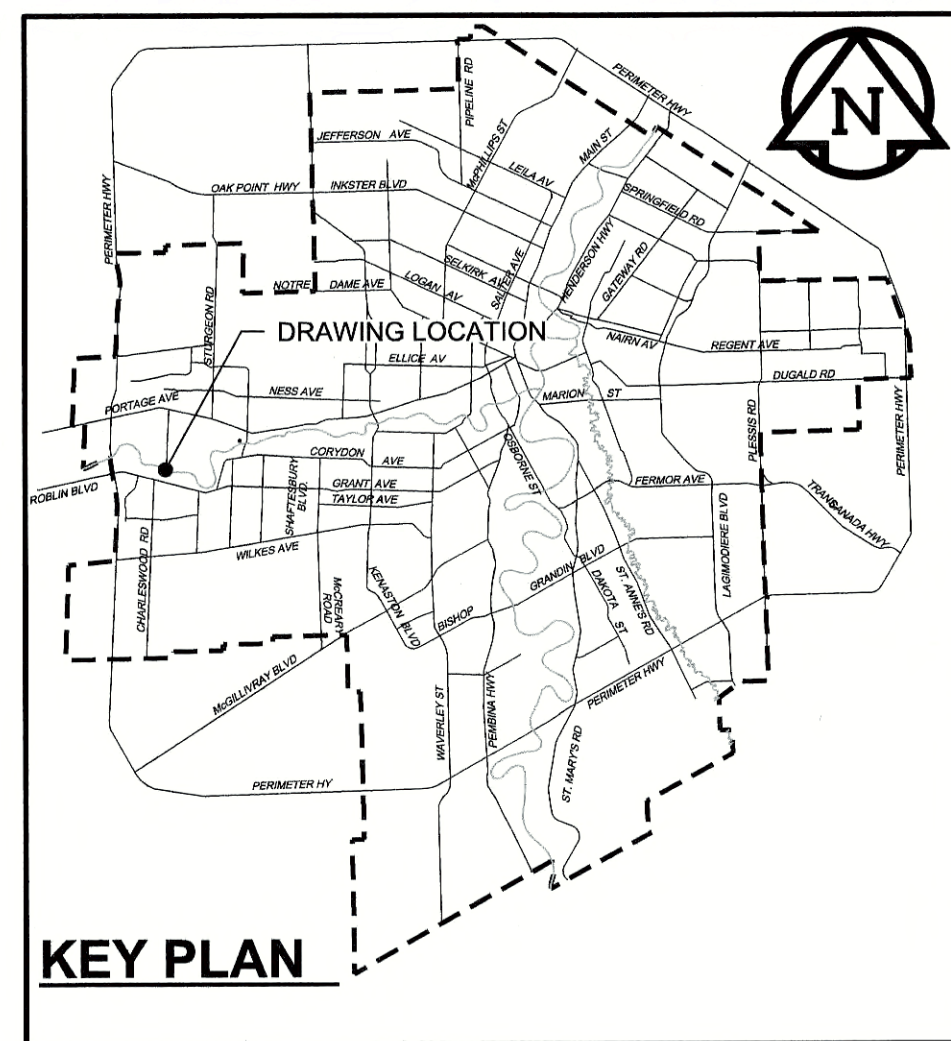
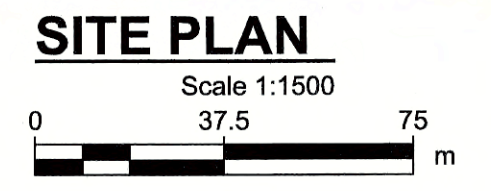
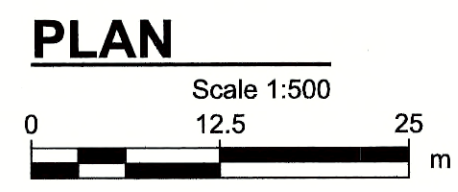
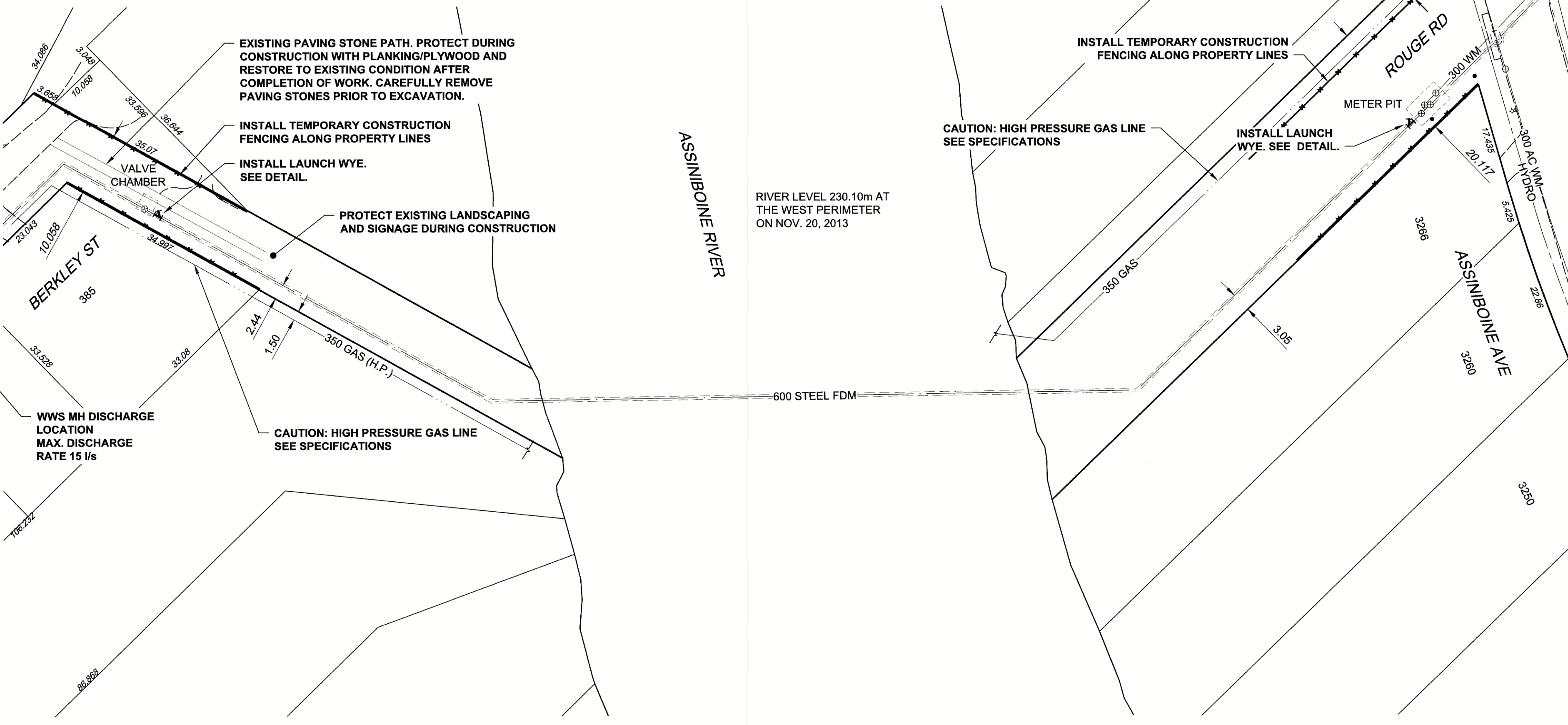
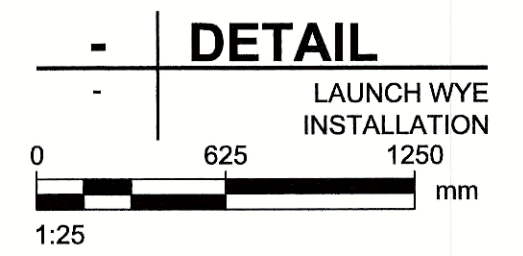
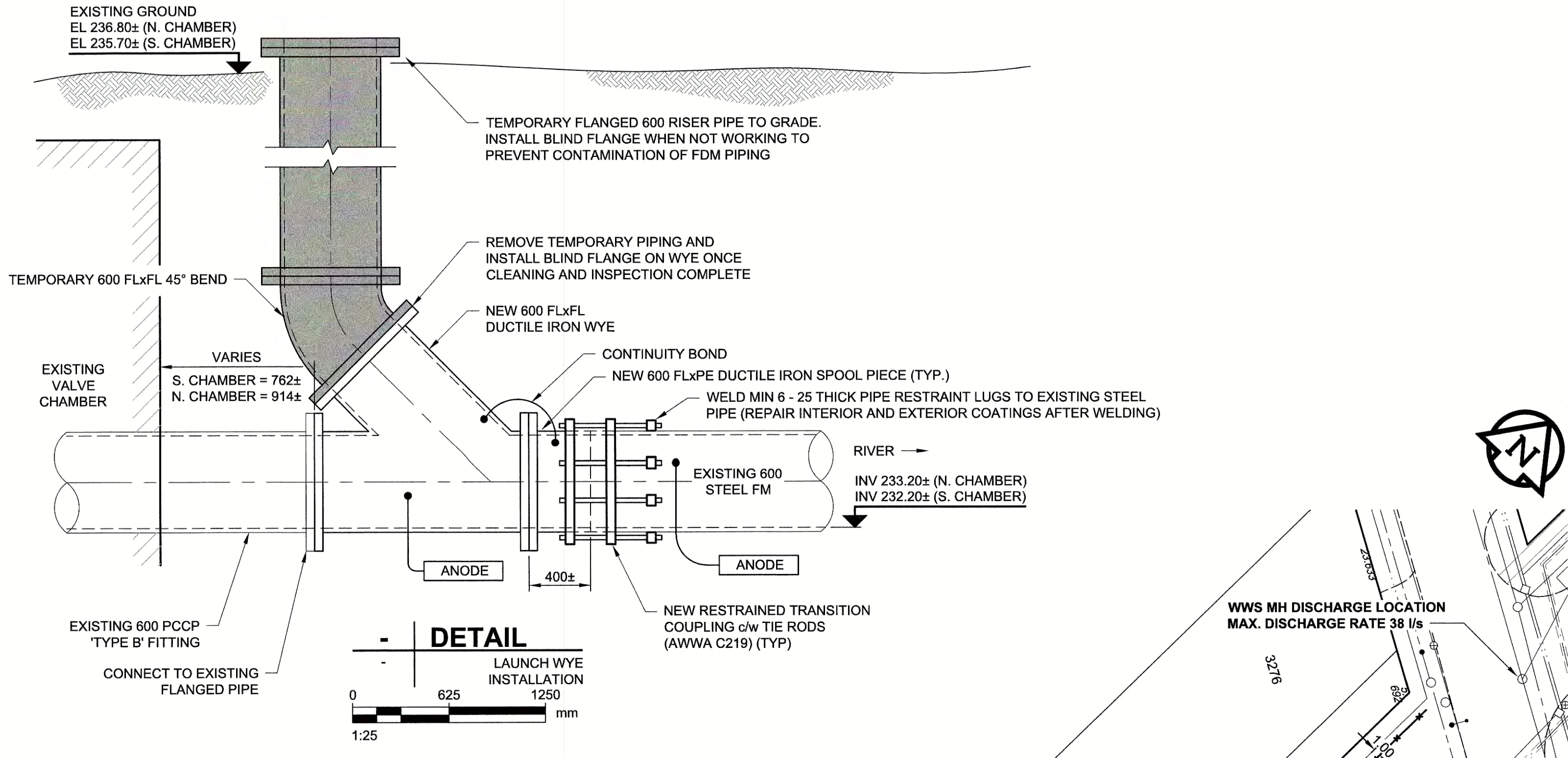
PROVISION OF PIPELINE ACCESS MODIFICATIONS, CLEANING AND SUPPORT SERVICES FOR RIVER CROSSING INSPECTIONS - PHASE TWO

SHEET 2 OF 7
CITY DRAWING NUMBER
D-15159
REV 0

SITE 1
KILDONAN - REDWOOD
FEEDER MAIN - EAST CHAMBER

D SIZE 22" x 34" (559mm x 864mm)

NOTE:
CITY TO ISOLATE FEEDER MAIN ONE VALVE BACK FROM CROSSING TO REDUCE THRUST FORCES ON CHAMBER. CONFIRM ISOLATION PRIOR TO EXCAVATION AND THROUGHOUT WORK.



NOTES:

- SEQUENCE OF WORK:**
1. LOCATE PIPE, CONFIRM MATERIAL AND OUTSIDE DIAMETER.
 2. ISOLATE CROSSING PIPE (BY CITY).
 3. INSTALL 600 FLANGED DUCTILE IRON WYE (SEE DETAIL THIS DRAWING).
 4. INSTALL TEMPORARY BEND AND PIPE TO ALLOW FOR LAUNCH OF CLEANING PIGS AND INSPECTION TOOLS.
 5. COMPLETE CLEANING AND FACILITATE INSPECTION (BY OTHERS) OF FEEDER MAIN CROSSING.
 6. COMPLETE DISINFECTION OF FEEDER MAIN.
 7. COMPLETE LOW PRESSURE LEAKAGE TEST.
 8. REMOVE TEMPORARY PIPING AND INSTALL BLIND FLANGE ON WYE.
 9. BACKFILL & RESTORE SITE.
- CONSTRUCTION NOTES:**
1. SEE DRAWING FOR CLEANING AND FLUSHING WATER DISCHARGE MANHOLE LOCATIONS.
 2. ENSURE PIPELINE IS NOT DEWATERED DURING CLEANING AND INSPECTION WORK.
 3. RESTORE BOULEVARDS, SIDEWALKS AND ROADWAYS DAMAGED DURING CONSTRUCTION.

WARNING
IF POWER EQUIPMENT OR EXPLOSIVES ARE TO BE USED FOR EXCAVATION ON THIS PROJECT, THE CONTRACTOR MUST:
1) NOTIFY THE GAS COMPANY OF THE PROPOSED LOCATION OF EXCAVATION.
2) TAKE PRECAUTION TO AVOID DAMAGE TO GAS COMPANY INSTALLATIONS.
SEE PROVINCIAL REGULATION 140/92 FOR DETAILS

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

AECOM
Certificate of Authorization
AECOM Canada Ltd.
No. 4671 Date: June 4/18

BID OPPORTUNITY NO. 492-2018

AECOM REVIEW DRFT CHK

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

LOCATION APPROVED
UNDERGROUND STRUCTURES

SUPR. U/G STRUCTURES DATE COMMITTEE

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NO.	REVISIONS	YYMMDD	BY

AECOM

DESIGNED BY: NJK
CHECKED BY: [Signature]
DRAWN BY: KLC
APPROVED BY: [Signature]
HOR. SCALE: AS NOTED
VERT. SCALE: N/A
DATE: June 4, 2018

PROFESSIONAL'S SEAL
A.D. BRAUN
Member
24459
REGISTERED PROFESSIONAL ENGINEER

CONSULTANT DRAWING NO.
60549028-SHT-30-0000-C-1002

THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT

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

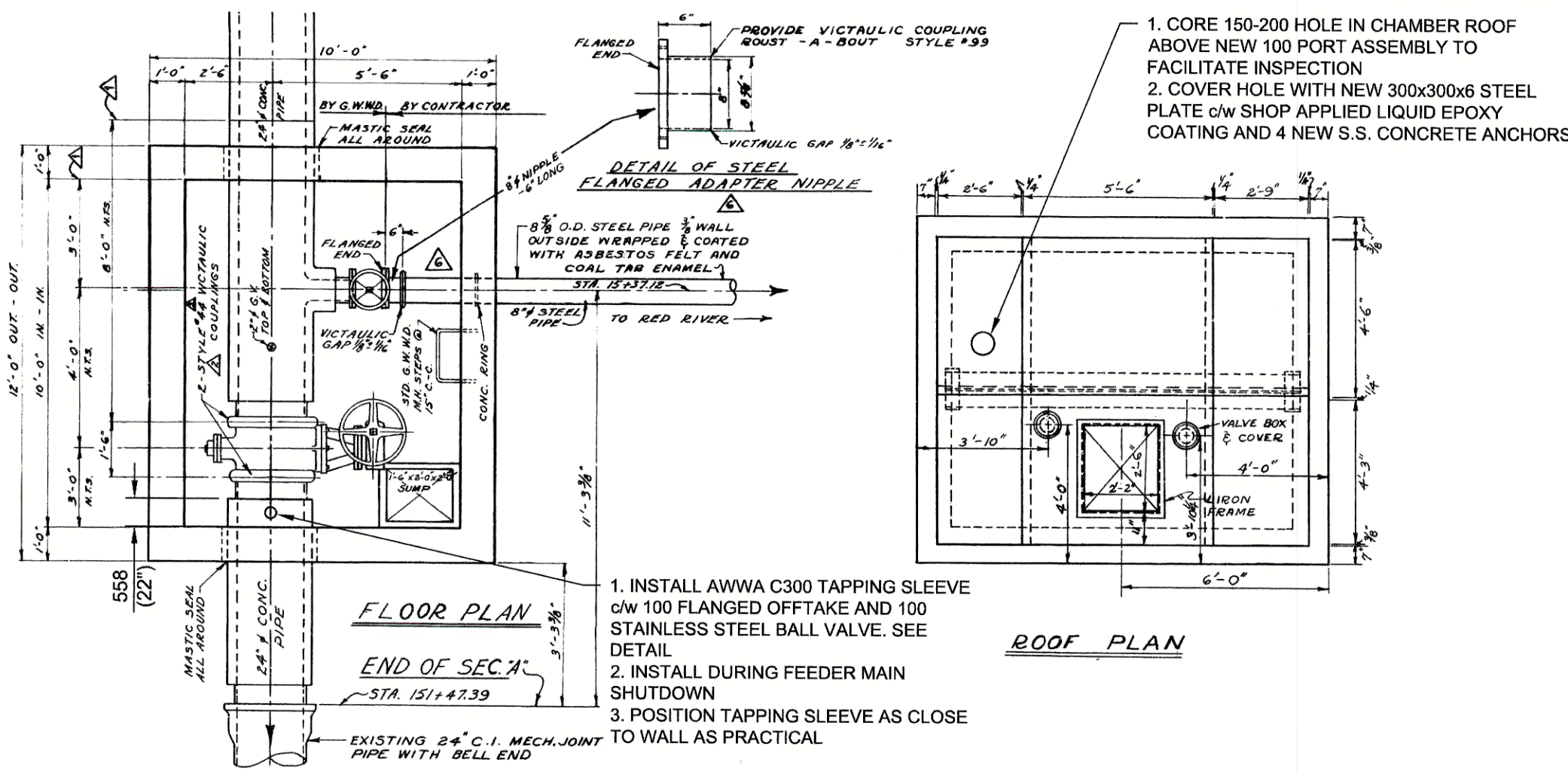
SITE 2
CHARLESWOOD - ASSINIBOIA
FEEDER MAIN

SHEET 3 OF 7
CITY DRAWING NUMBER
D-15160
REV 0

D SIZE 22" x 34" (559mm x 864mm)

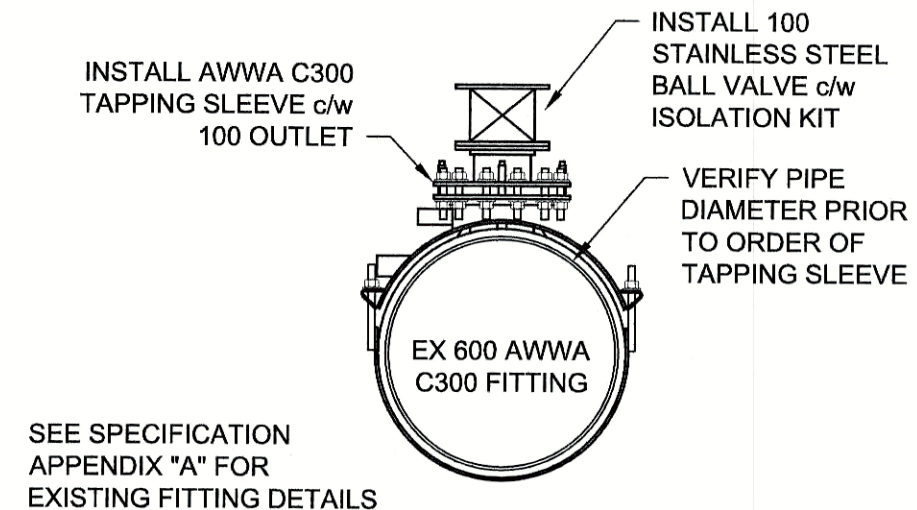
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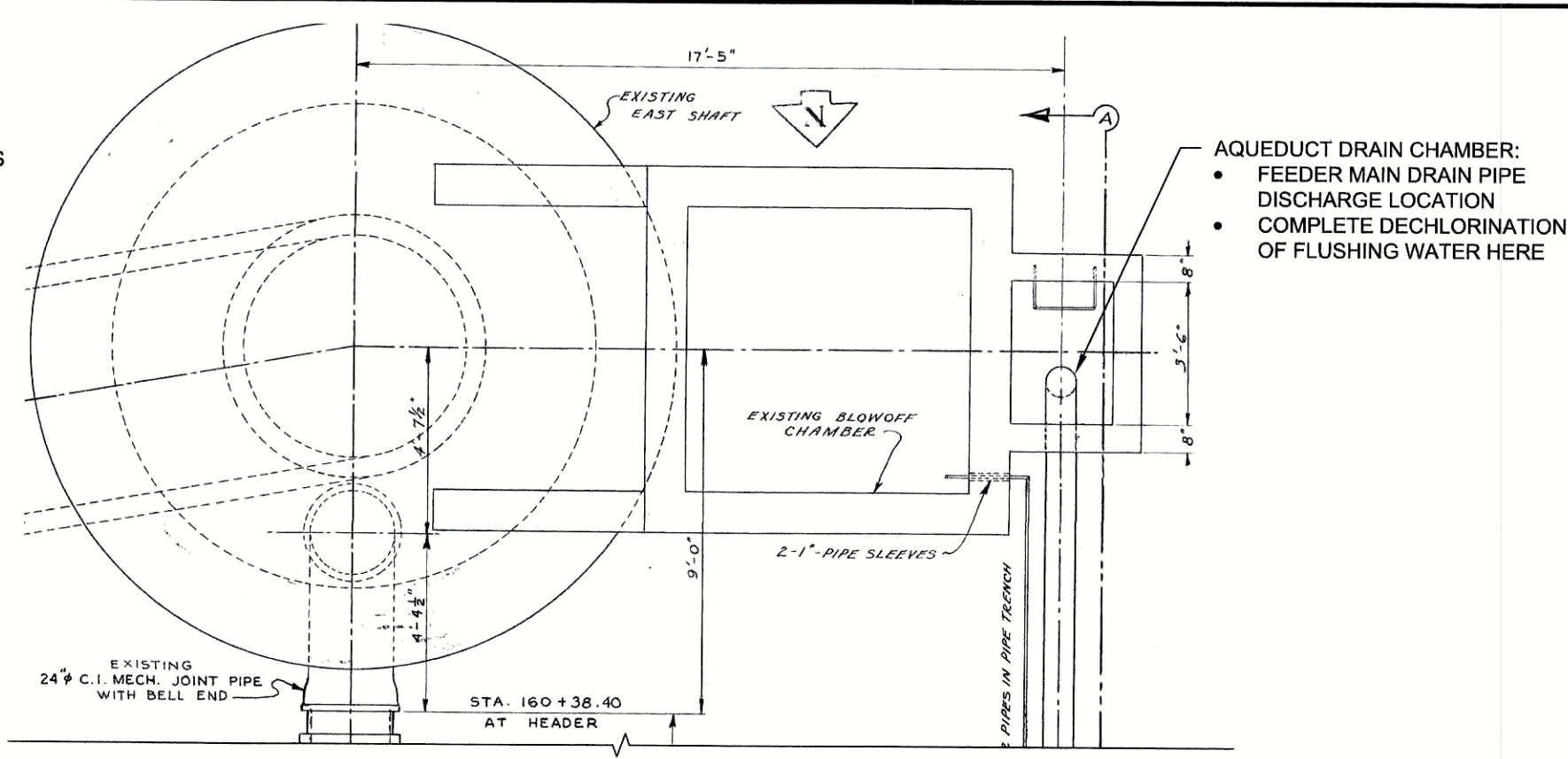


WEST CHAMBER
Scale N.T.S.

- REQUIRED WORK:**
1. PREP 800 PIPE FOR INSTALLATION OF TAPPING SLEEVE
 2. REMOVE FEEDER MAIN FROM SERVICE (BY CITY)
 3. DRAIN FDM SUFFICIENTLY TO ALLOW FOR INSTALLATION OF TAPPING SLEEVE (BY CITY)
 4. INSTALL TAPPING SLEEVE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION
 5. INSTALL 100 STAINLESS STEEL BALL VALVE
 6. CORE HOLE IN ROOF TO FACILITATE INSPECTION
 7. UNDERTAKE INSPECTIONS (BY OTHERS)
 8. INSTALL COVER PLATE ON CHAMBER ROOF



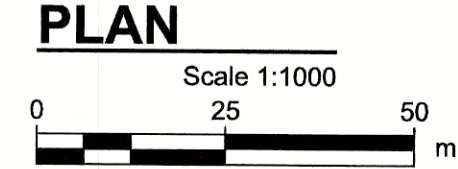
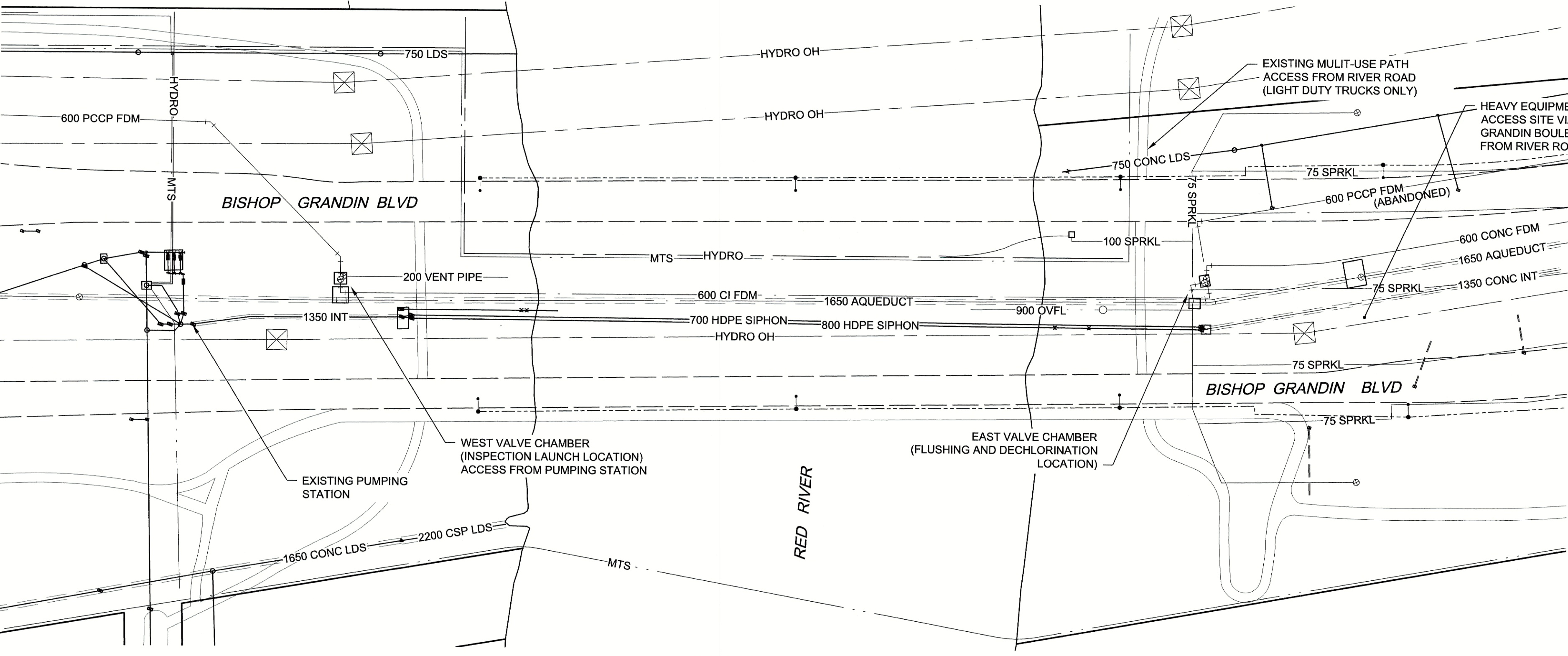
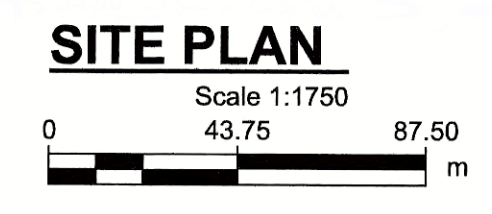
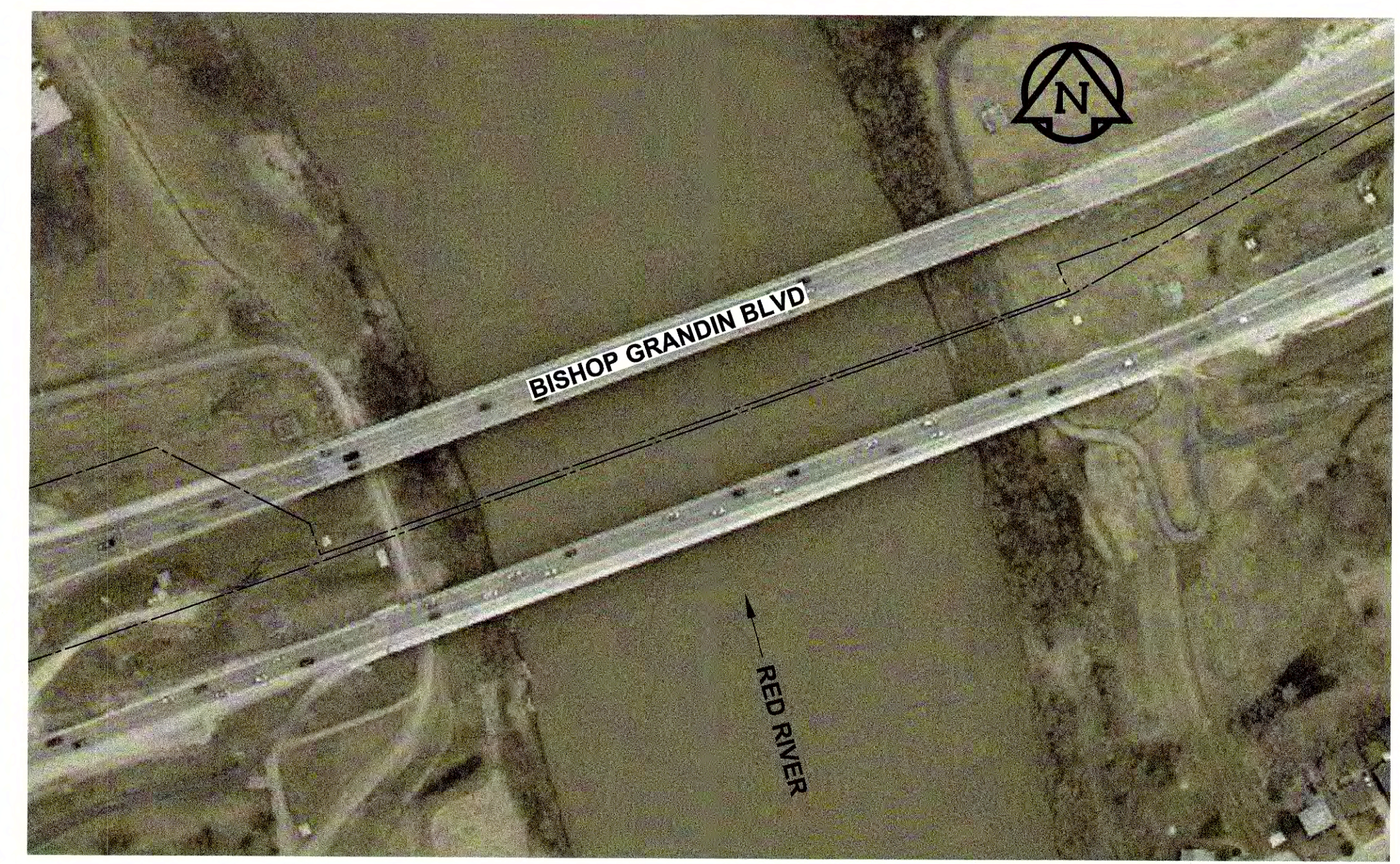
NEW 100Ø BLOW OFF VALVE DETAIL
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Scale: N.T.S.



EAST CHAMBER
Scale N.T.S.

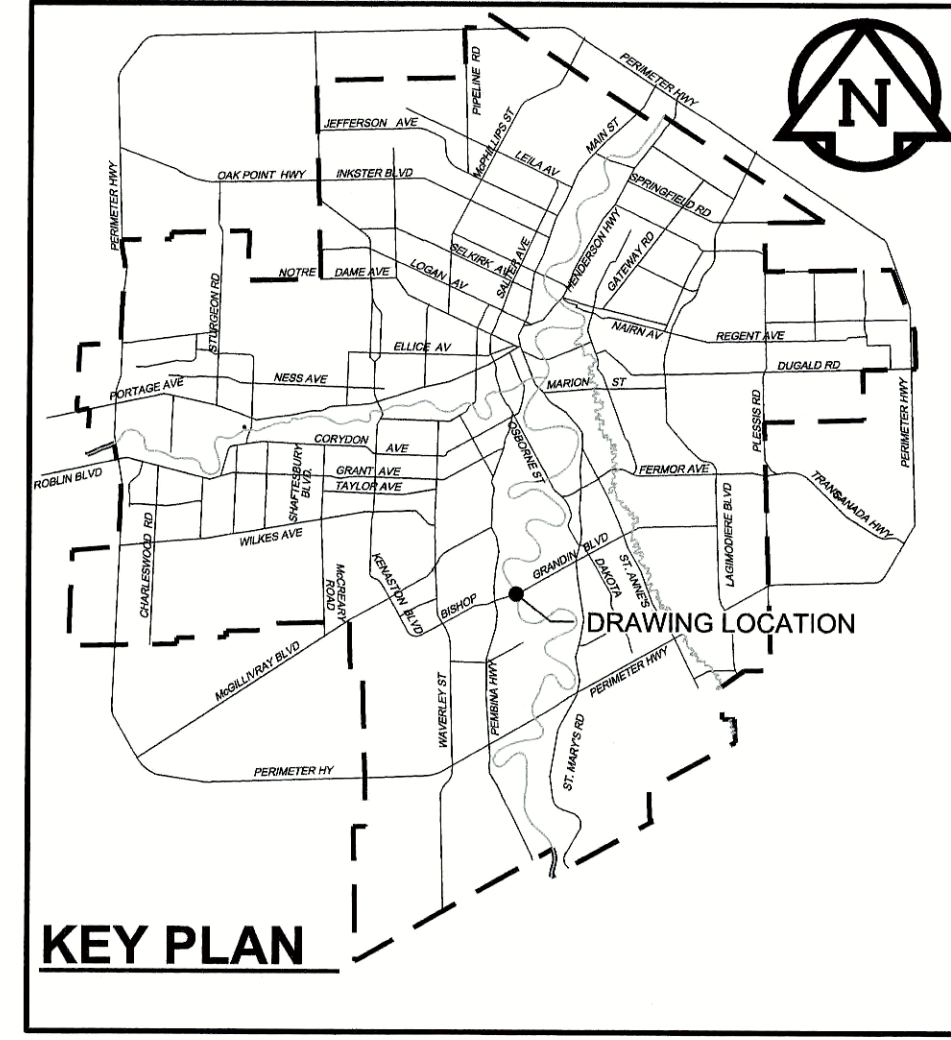
- REQUIRED WORK:**
1. REMOVE FEEDER MAIN FROM SERVICE (BY CITY)
 2. DRAIN FDM SUFFICIENTLY TO ALLOW FOR REMOVAL OF 200 GATE VALVE (BY CITY)
 3. REPLACE EXISTING 200 GATE VALVE
 4. REMOVE EXISTING 200 GATE VALVE ON DRAIN PIPING
 5. INSTALL CONNECTION TO 200 FEEDER MAIN DRAIN PIPING
 6. COMPLETE INSPECTION OPERATIONS (BY OTHERS)
 7. REMOVE 200 CONNECTION TO FEEDER MAIN DRAIN PIPING
 8. INSTALL BLIND FLANGE ON NEW 200 GATE VALVE

- NOTES:**
1. CONTRACTOR TO DECHLORINATE FLUSHING WATER DISCHARGING FROM 200 DRAIN LINE WITHIN THE AQUEDUCT DRAIN CHAMBER. FLUSHING RATES ANTICIPATED TO BE: 410 LITERS PER SECOND FOR 2 HRS (MAX)



METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

- NOTES:**
- SEQUENCE OF WORK:**
- ISOLATE CROSSING AT VALVE CHAMBERS ON EITHER SIDE OF THE CROSSING (BY CITY).
 - DRAIN PIPING TO PERMIT PIPELINE MODIFICATIONS (BY CITY).
 - COMPLETE PIPELINE MODIFICATIONS.
 - RECHARGE PIPELINE AND CHECK FOR LEAKS (BY CITY).
 - INSTALL SAHARA TOOL LAUNCHING APPARATUS (BY INSPECTION CONTRACTOR).
 - INDUCE FLOW THROUGH CROSSING (WEST TO EAST) BY OPENING THE 200 DRAIN VALVE (REPLACED AND RECONNECTED) WITHIN THE EAST VALVE CHAMBER. USE INDUCED FLOW TO PROPEL TOOL THROUGH THE CROSSING. DISCHARGED WATER MUST BE DECHLORINATED FROM WITHIN THE AQUEDUCT DRAIN CHAMBER. THE CITY TO OPERATE VALVES & MUST BE ONSITE FOR FLUSHING OPERATIONS.
 - ONCE TOOL HAS REACHED THE EAST SIDE OF THE CROSSING: REDUCE FLOWS UNTIL WATER IS CLEAR.
 - COMPLETE INSPECTION OF PIPELINE BY PULLING TOOL BACK TOWARDS THE WEST VALVE CHAMBER (BY INSPECTION CONTRACTOR).
 - ONCE THE INSPECTION IS COMPLETE: REMOVE INSPECTION LAUNCH EQUIPMENT AND CLOSE UP WEST CHAMBER.
 - REINSTATE FEEDER MAIN OPERATION (BY CITY).
 - REMOVE TEMPORARY FEEDER MAIN DRAIN CONNECTION WITHIN THE EAST CHAMBER AND INSTALL BLIND FLANGE ON NEW 200 DRAIN VALVE.
 - PERFORM LOW PRESSURE LEAKAGE TEST.
 - RESTORE BOULEVARDS, SIDEWALKS & ROADWAYS DAMAGED DURING CONSTRUCTION.



APEGM
Certificate of Authorization
AECOM Canada Ltd.
No. 4671 Date: June 4/18

BID OPPORTUNITY NO. 492-2018

150 WM	WATERMAIN	150 WM	○	CURB STOP	150 WM	WATERMAIN	150 WM
○	HYDRANT	○	+	REDUCER	○	HYDRANT	○
○	VALVE	○	+	COUPLING	○	VALVE	○
300 LDS	LAND DRAINAGE SEWER	300 LDS	+	ANODE	300 LDS	LAND DRAINAGE SEWER	300 LDS
250 WWS	WASTE WATER SEWER	250 WWS	+	HYDRO	250 WWS	WASTE WATER SEWER	250 WWS
○	MANHOLE	○	+	MTS	○	PAVEMENT CROWN	○
□	CATCH BASIN	□	+	GAS	□	N/W PROPERTY LINE	□
△	CURB INLET	△	+	TESTHOLE	△	S/E PROPERTY LINE	△
▭	CULVERT	▭	+	LAMP STANDARD	▭	N/W GUTTER	▭
—	PIPE ABANDONMENTS	—	+	TREE	—	S/E GUTTER	—
+	SURVEY BAR	+	+		+		+
EXISTING	LEGEND - PLAN	NEW	EXISTING	LEGEND - PLAN	NEW	EXISTING	LEGEND - PROFILE

LOCATION APPROVED
UNDERGROUND STRUCTURES

SUPR. LIG STRUCTURES DATE COMMITTEE

NOTE:
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0	ISSUED FOR CONSTRUCTION	18/06/01	KLC
NO.	REVISIONS	YYMMDD	BY

AECOM

DESIGNED BY: ADB
DRAWN BY: KLC

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

HOR. SCALE: AS NOTED
VERT. SCALE: N/A

RELEASED FOR CONSTRUCTION
DATE: June 4, 2018

PROFESSIONAL'S SEAL
A.D. BRAUN
Member
24459
REGISTERED PROFESSIONAL ENGINEER

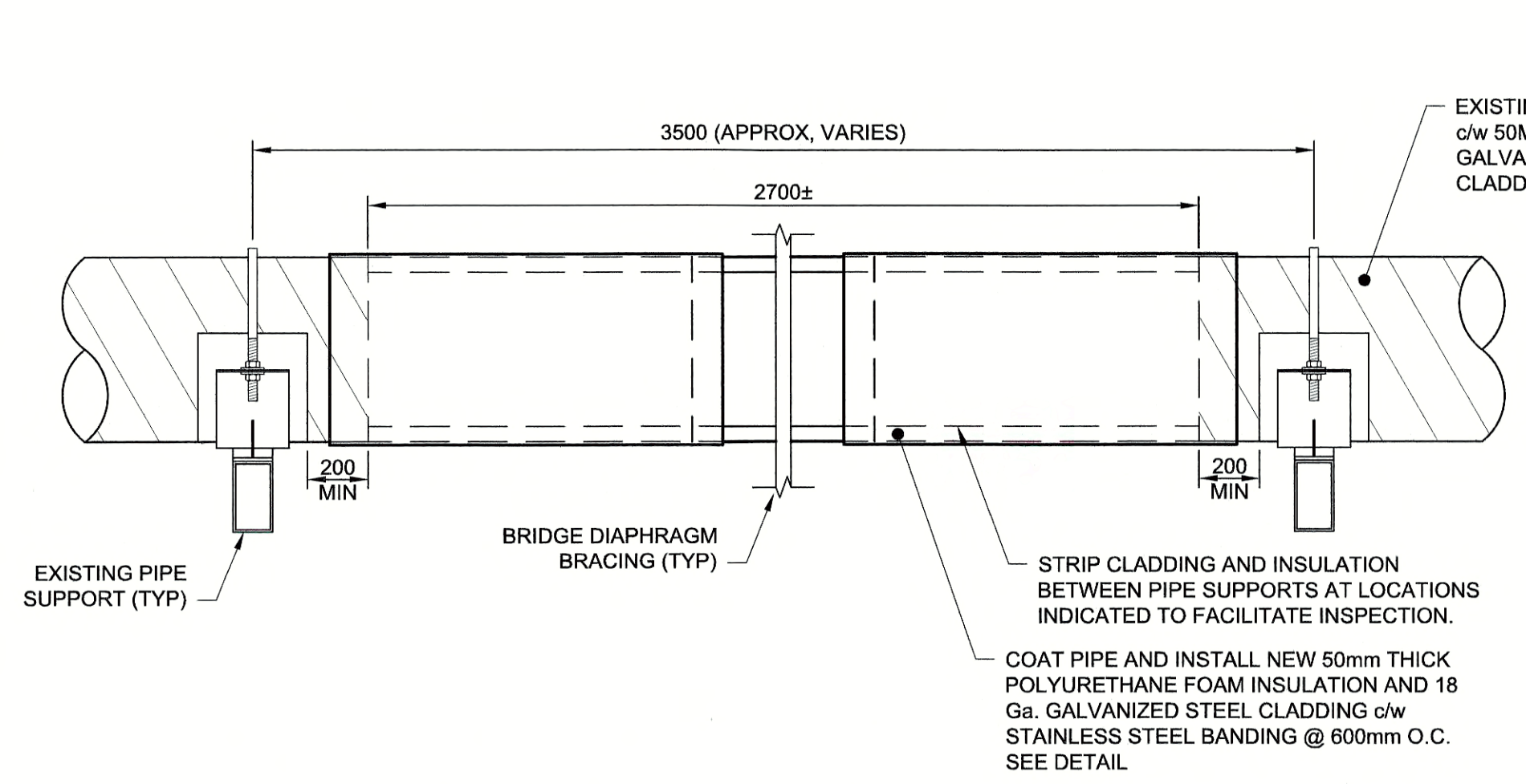
CONSULTANT DRAWING NO.
60549028-SHT-30-0000-C-1006

THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT

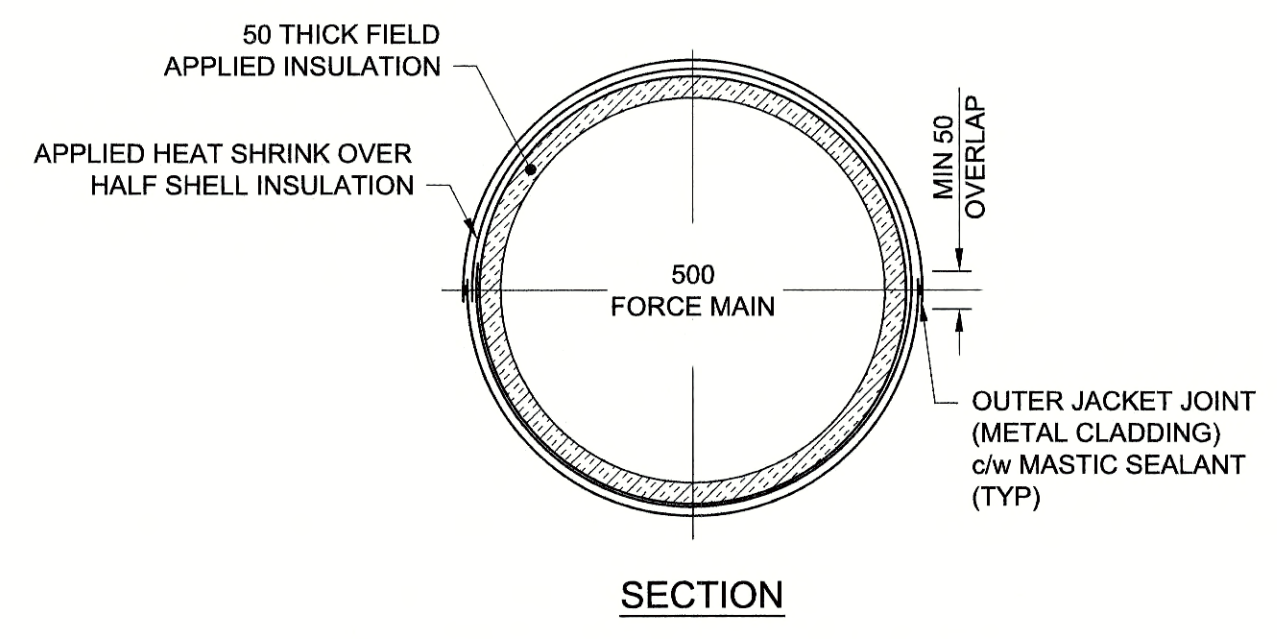
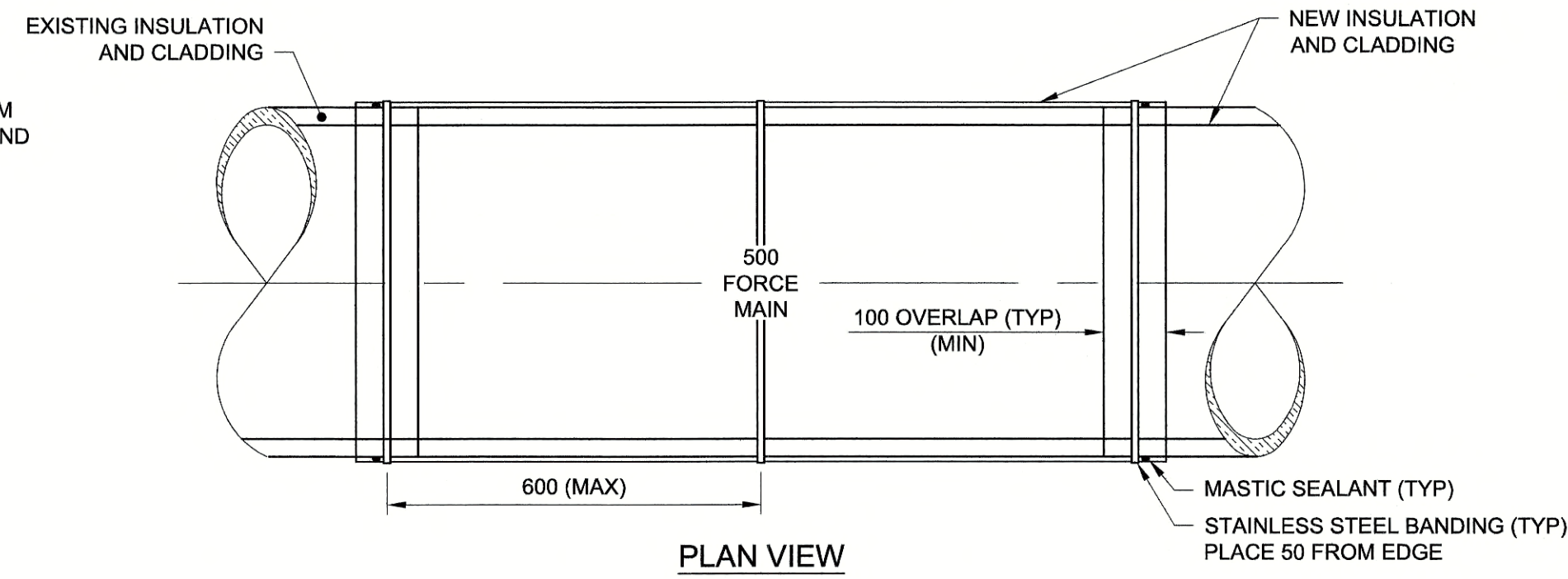
PROVISION OF PIPELINE ACCESS MODIFICATIONS, CLEANING AND SUPPORT SERVICES FOR RIVER CROSSING INSPECTIONS - PHASE TWO

SHEET 7 OF 7
CITY DRAWING NUMBER
D-15161
REV 0

SITE 6
FORT GARRY - ST. VITAL FEEDER MAIN



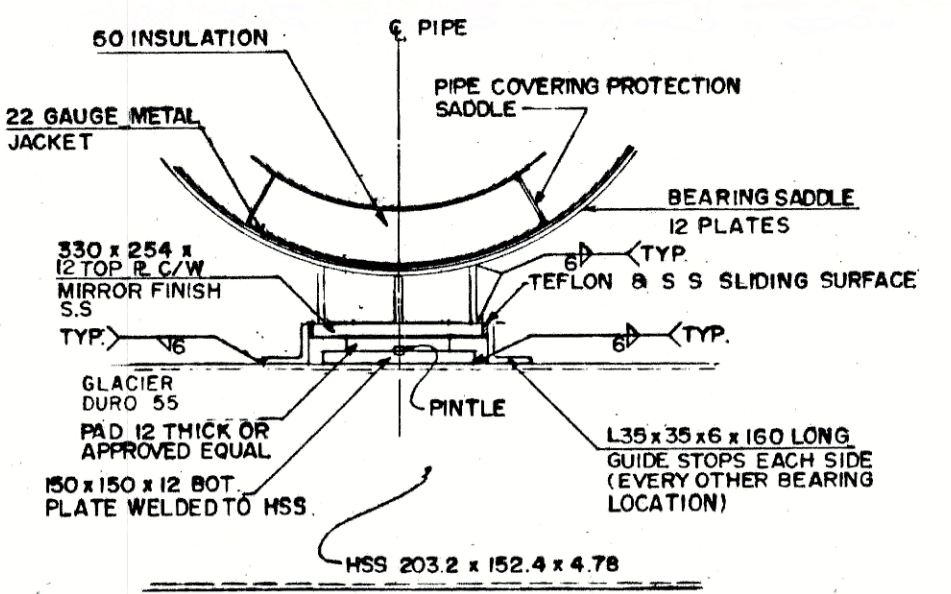
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Scale 1:20



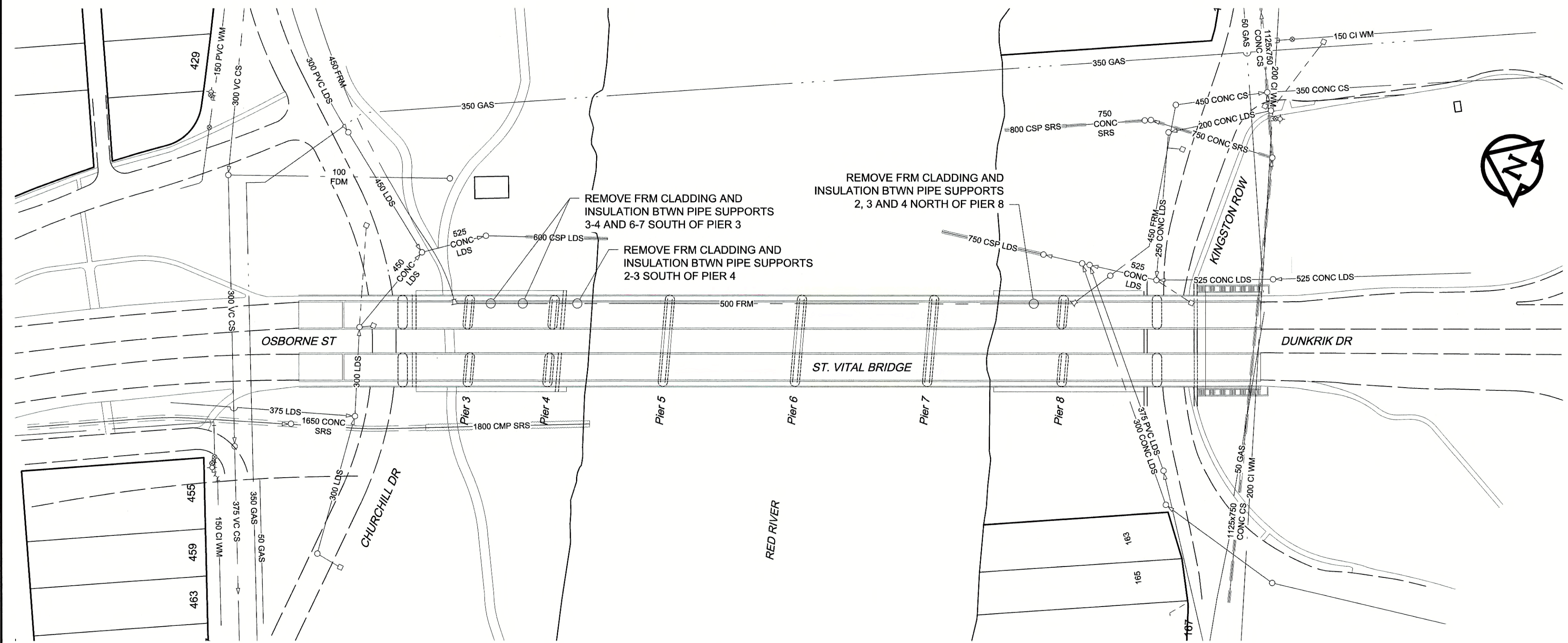
FIELD INSULATION DETAIL
Scale 1:10



SITE PLAN
Scale 1:1750
0 43.75 87.50 m



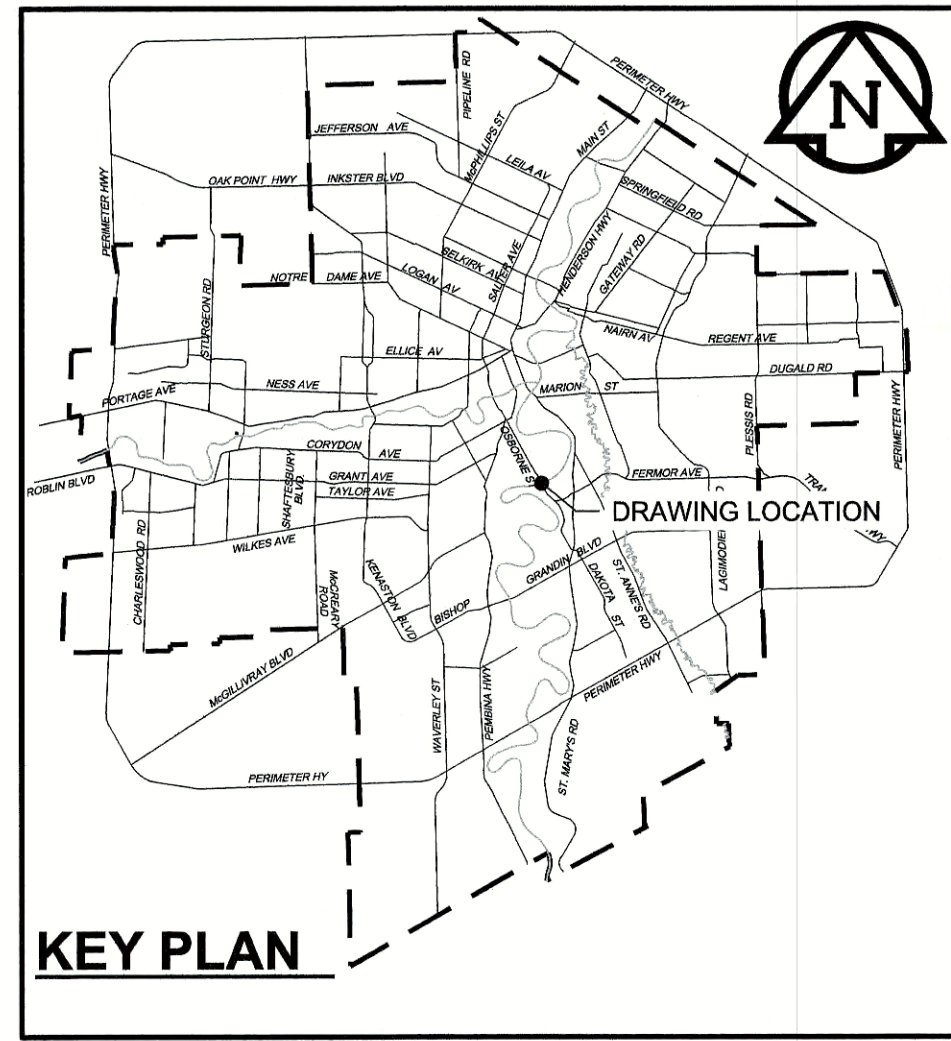
EXISTING PIPE X-SECTION
Scale N.T.S.



PLAN
Scale 1:1000
0 25 50 m

NOTES:

- SEQUENCE OF WORK:**
1. DEVELOP SITE ACCESS AND WORK AREAS FOR SCAFFOLDING ERECTION.
 2. ERECT SCAFFOLDING TO GAIN ACCESS TO FORCE MAIN PIPE AT THE LOCATIONS INDICATED.
 3. UTILIZE UNDER-BRIDGE CRANE (UBC) TRUCK TO COMPLETE WORK WHERE SCAFFOLDING ERECTION IS NOT FEASIBLE. (BY CITY)
 4. REMOVE EXISTING CLADDING AND INSULATION AT THE LOCATIONS INDICATED.
 5. REPORT ANY DAMAGE OR APPARENT DETERIORATION OF THE PIPELINE TO THE CONTRACT ADMINISTRATOR IMMEDIATELY.
 6. MECHANICALLY CLEAN EXPOSED PIPE SECTIONS TO BARE STEEL.
 7. FACILITATE EXTERIOR ELECTROMAGNETIC INSPECTION OF THE PIPELINE AT THE STRIPPED LOCATIONS. (INSPECTION BY OTHERS)
 8. COAT ALL EXPOSED STEEL PIPE.
 9. INSTALL NEW INSULATION AND CLADDING.
 10. RESTORE SITE.
- CONSTRUCTION NOTES:**
1. PIPELINE TO REMAIN IN SERVICE THROUGHOUT THE WORK.
 2. RESTORE BOULEVARDS, SIDEWALKS AND ROADWAYS DAMAGED DURING CONSTRUCTION.
 3. MUST MAINTAIN ONE LANE OF NORTHBOUND TRAFFIC ON OSBORNE STREET AT ALL TIMES.
 4. NORTHBOUND LANE CLOSURES MAY BE RESTRICTED DURING AM WEEKDAY PEAK PERIODS.



KEY PLAN

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

AECOM
Certificate of Authorization
AECOM Canada Ltd.
No. 4671 Date: June 4/18

BID OPPORTUNITY NO. 492-2018

150 WM	WATERMAIN	150 WM	○	CURB STOP	+	150 WM	WATERMAIN	150 WM	+
○	HYDRANT	+	+	REDUCER	+	+	HYDRANT	+	+
○	VALVE	+	+	COUPLING	+	+	VALVE	+	+
300 LDS	LAND DRAINAGE SEWER	300 LDS	+	ANODE	+	300 LDS	LAND DRAINAGE SEWER	300 LDS	+
250 WWS	WASTE WATER SEWER	250 WWS	+	HYDRO	+	250 WWS	WASTE WATER SEWER	250 WWS	+
○	MANHOLE	●	○	MTS	○	○	PAVEMENT CROWN	○	○
□	CATCH BASIN	□	○	GAS	○	○	N/W PROPERTY LINE	○	○
△	CURB INLET	▲	○	TESTHOLE	○	○	S/E PROPERTY LINE	○	○
—	CULVERT	—	○	LAMP STANDARD	○	○	N/W GUTTER	○	○
+	PIPE ABANDONMENTS	+	○	TREE	○	○	S/E GUTTER	○	○
+	SURVEY BAR	+	○						
EXISTING	LEGEND - PLAN	NEW	EXISTING	LEGEND - PLAN	NEW	EXISTING	LEGEND - PROFILE	NEW	

LOCATION APPROVED
UNDERGROUND STRUCTURES

SUPR. U/G STRUCTURES DATE COMMITTEE

NOTE:
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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
DATE: June 4, 2018

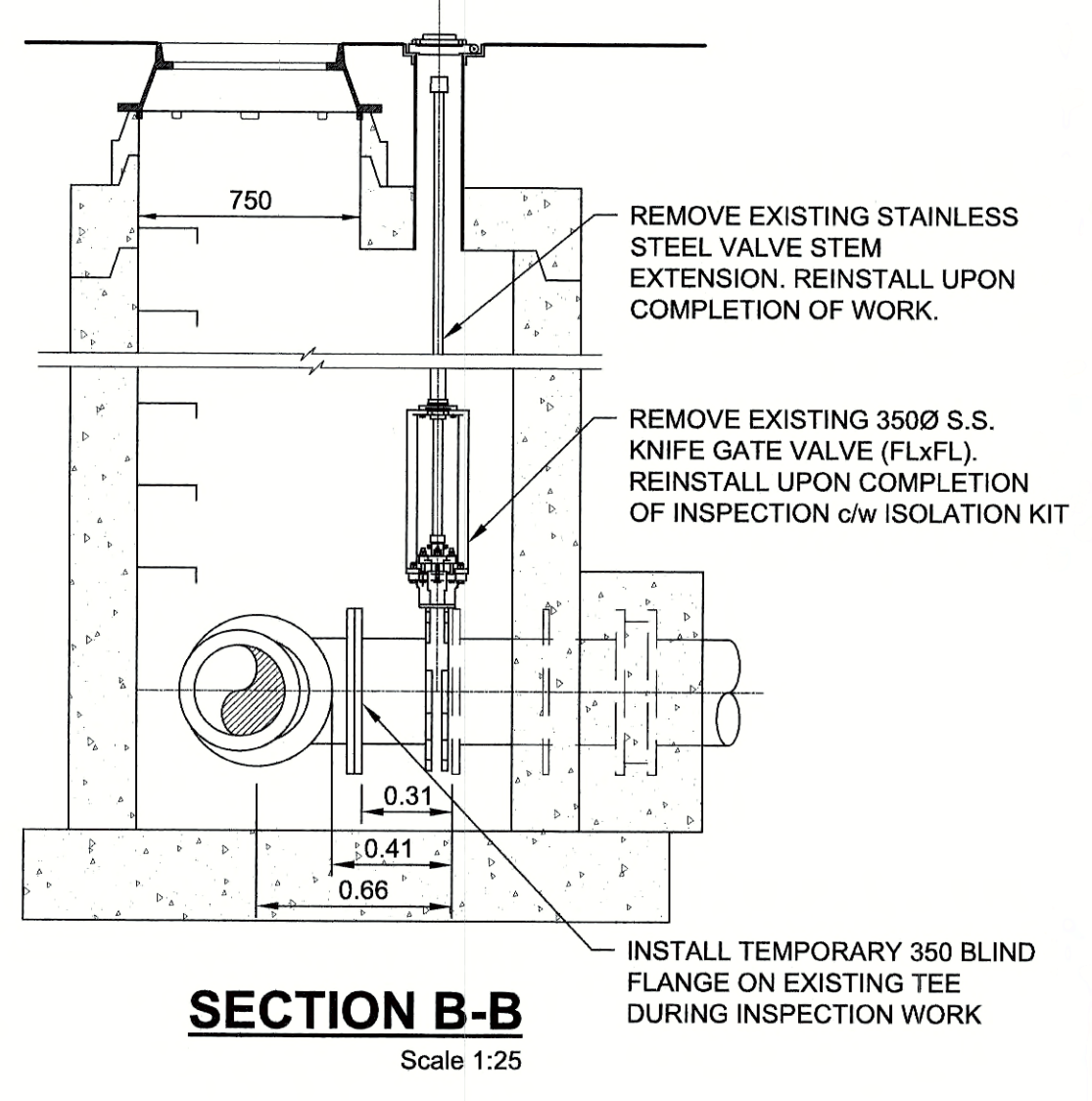
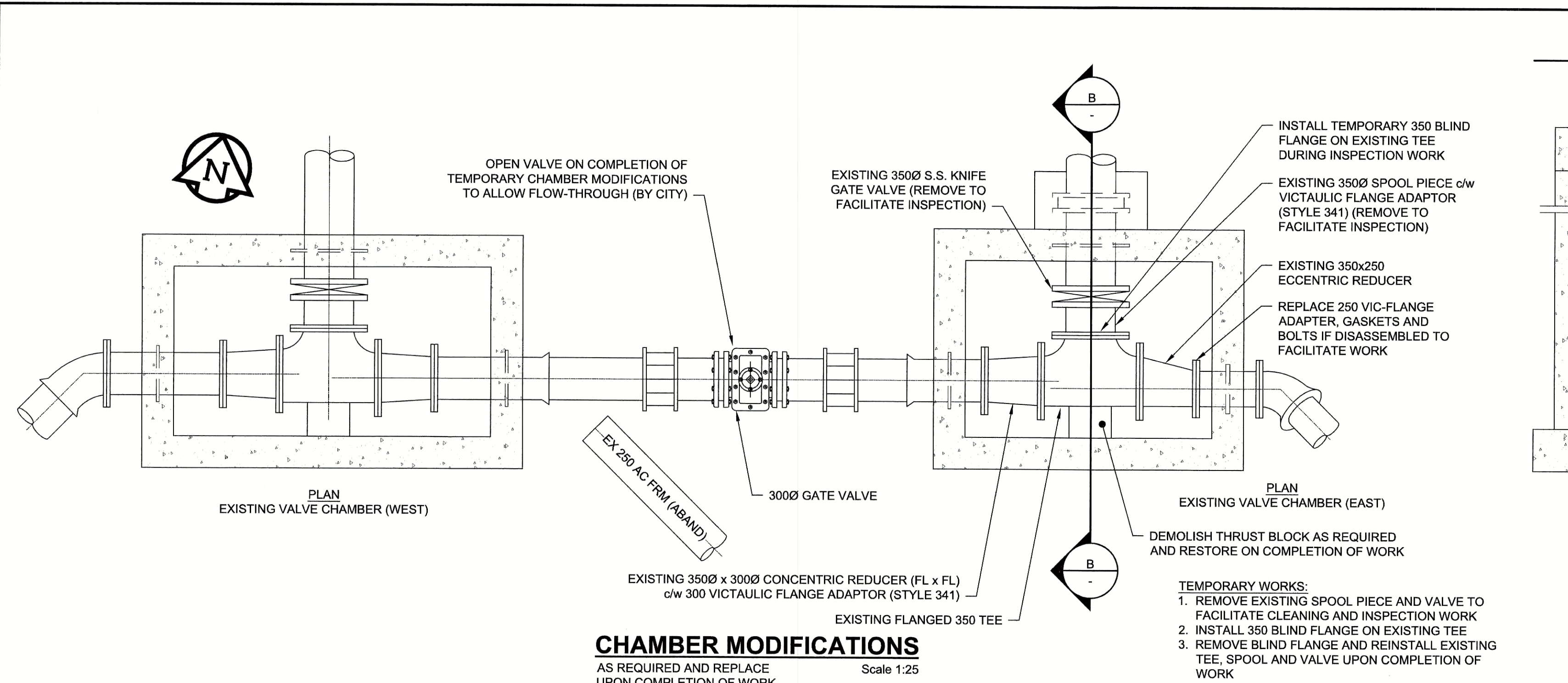
PROFESSIONAL'S SEAL
PROVINCE OF MANITOBA
A.D.
BRAUN
Member
24453
REGISTERED PROFESSIONAL ENGINEER
CONSULTANT DRAWING NO.
60549028-SHT-30-0000-C-1003

THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT

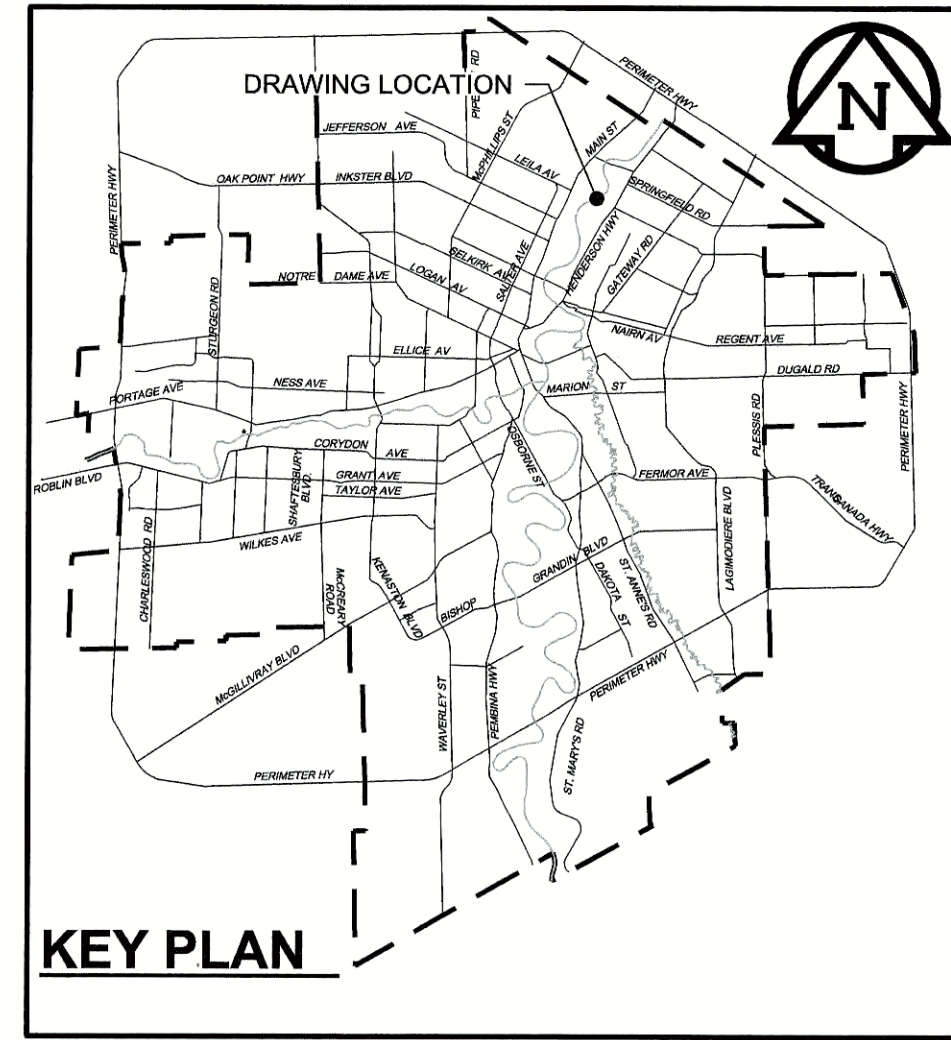
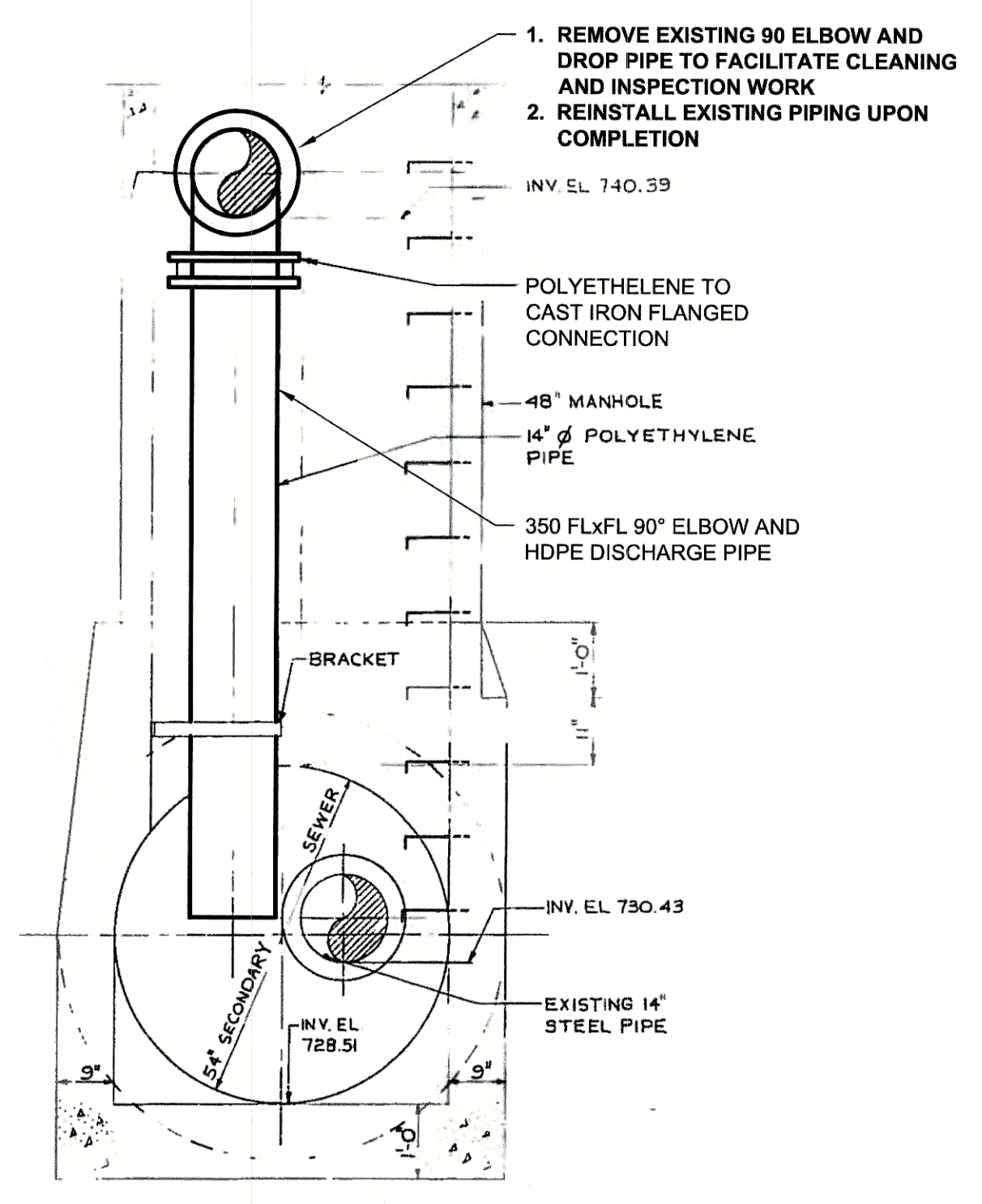
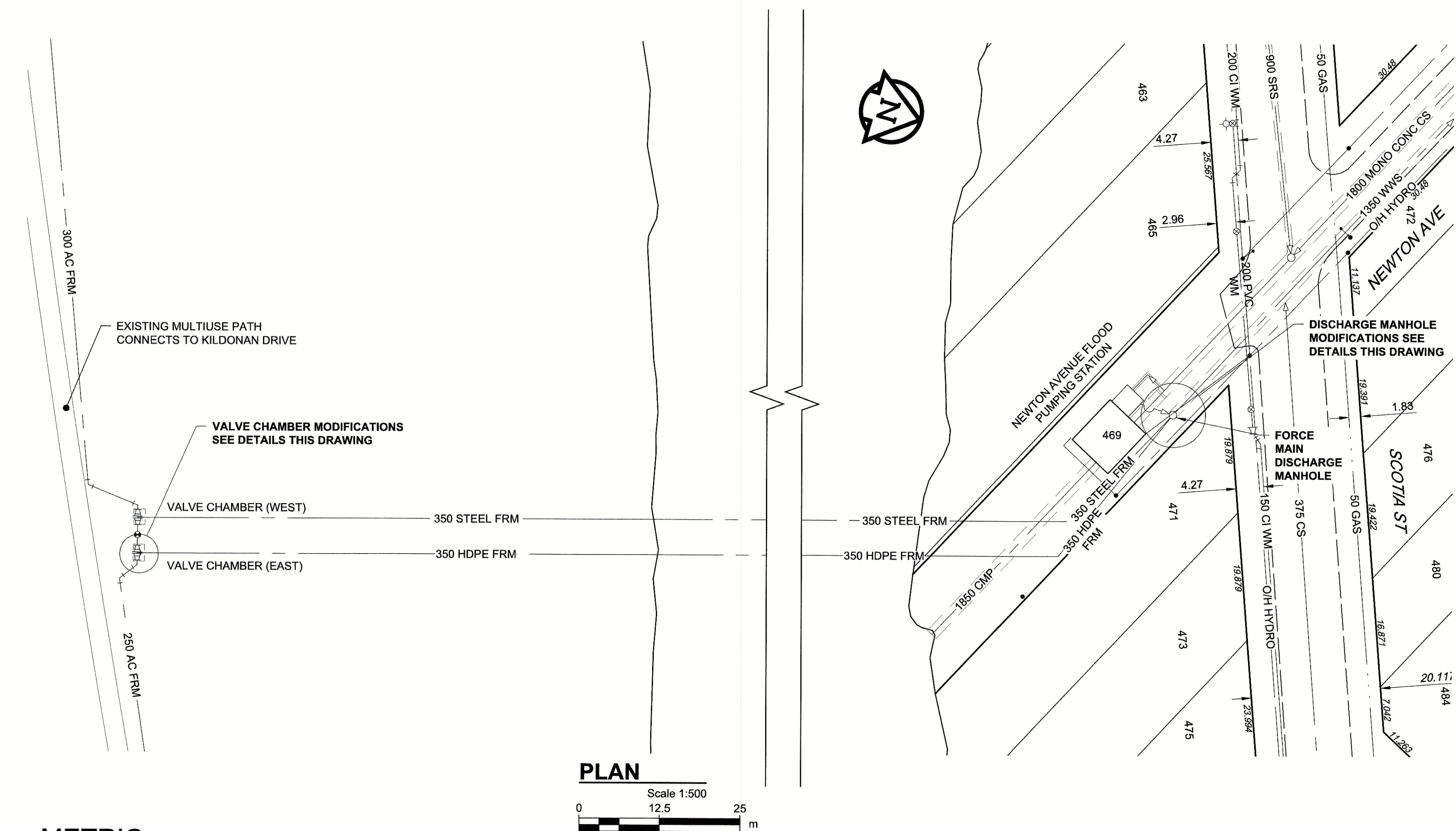
PROVISION OF PIPELINE ACCESS MODIFICATIONS, CLEANING AND SUPPORT SERVICES FOR RIVER CROSSING INSPECTIONS - PHASE TWO

SITE 3
ST. VITAL BRIDGE
FORCE MAIN

SHEET 4 OF 7
CITY DRAWING NUMBER
11820
REV 0



- NOTES:**
- SEQUENCE OF WORK:**
1. ALL PIPING TO BE MEASURED, PRE-ASSEMBLED (WHERE POSSIBLE), AND ALL POSSIBLE PREP WORK COMPLETED PRIOR TO LIFT STATION SHUTDOWNS AND PIPING DISASSEMBLY
 2. ISOLATE LIFT STATION (BY CITY)
 3. REMOVE KNIFE GATE VALVE AND SPOOL PIECE TO FACILITATE CLEANING AND INSPECTION WORK
 4. INSTALL TEMPORARY BLIND FLANGE ON 350 TEE
 5. OPEN 300 GATE VALVE TO ALLOW FLOW-THROUGH TO WEST VALVE CHAMBER (BY CITY)
 6. REINSTATE LIFT STATION OPERATION (BY CITY)
 7. REMOVE ELBOW AND DROP PIPE IN DOWNSTREAM MANHOLE
 8. COMPLETE CLEANING OF HDPE FORCE MAIN
 9. COMPLETE INSPECTION OF HDPE FORCE MAIN (BY OTHERS)
 10. REINSTATE DROP PIPE IN DOWNSTREAM MANHOLE
 11. ISOLATE LIFT STATION AND CLOSE 300 GATE VALVE (BY CITY) AND RESTORE VALVE CHAMBER PIPING
 12. REINSTATE LIFT STATION OPERATION (BY CITY)
 13. RESTORE SITE
- CONSTRUCTION NOTES:**
1. HAVE NEW GASKETS FOR FLANGED AND VICTAULIC CONNECTIONS ON HAND PRIOR TO DISASSEMBLY OF ANY CHAMBER PIPING
 2. RESTORE BOULEVARDS, SIDEWALKS AND ROADWAYS DAMAGED DURING CONSTRUCTION
 3. ENSURE PIPELINE IS NOT DEWATERED DURING CLEANING AND INSPECTION WORK



METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

EXISTING	LEGEND - PLAN	NEW	EXISTING	LEGEND - PLAN	NEW	EXISTING	LEGEND - PROFILE	NEW
150 WM	WATERMAIN	150 WM	CURB STOP	150 WM	WATERMAIN	150 WM	WATERMAIN	150 WM
300 LDS	LAND DRAINAGE SEWER	300 LDS	REDUCER	300 LDS	LAND DRAINAGE SEWER	300 LDS	HYDRANT	300 LDS
250 WWS	WASTE WATER SEWER	250 WWS	COUPLING	250 WWS	WASTE WATER SEWER	250 WWS	VALVE	250 WWS
	MANHOLE		ANODE		PAVEMENT CROWN		HYDRO	
	CATCH BASIN		MTS		N/W PROPERTY LINE		TESTHOLE	
	CURB INLET		GAS		S/E PROPERTY LINE		LAMP STANDARD	
	CULVERT		TESTHOLE		N/W GUTTER		TREE	
	PIPE ABANDONMENTS		LAMP STANDARD		S/E GUTTER			
	SURVEY BAR		TREE					

LOCATION APPROVED
UNDERGROUND STRUCTURES

SUPR. U/G STRUCTURES DATE COMMITTEE

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AECOM

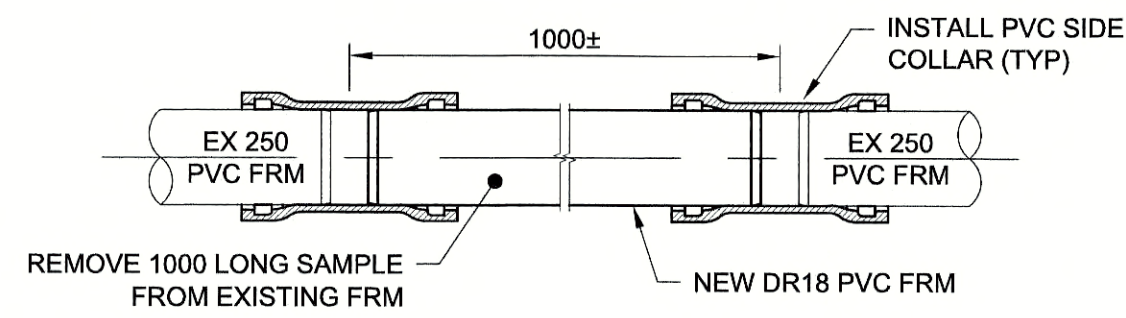
DESIGNED BY: NJK
CHECKED BY: [Signature]
DRAWN BY: KLC
APPROVED BY: [Signature]
HOR. SCALE: AS NOTED
VERT. SCALE: N/A
DATE: June 4, 2018

APEGM
Certificate of Authorization
AECOM Canada Ltd.
No. 4671 Date: June 4/18

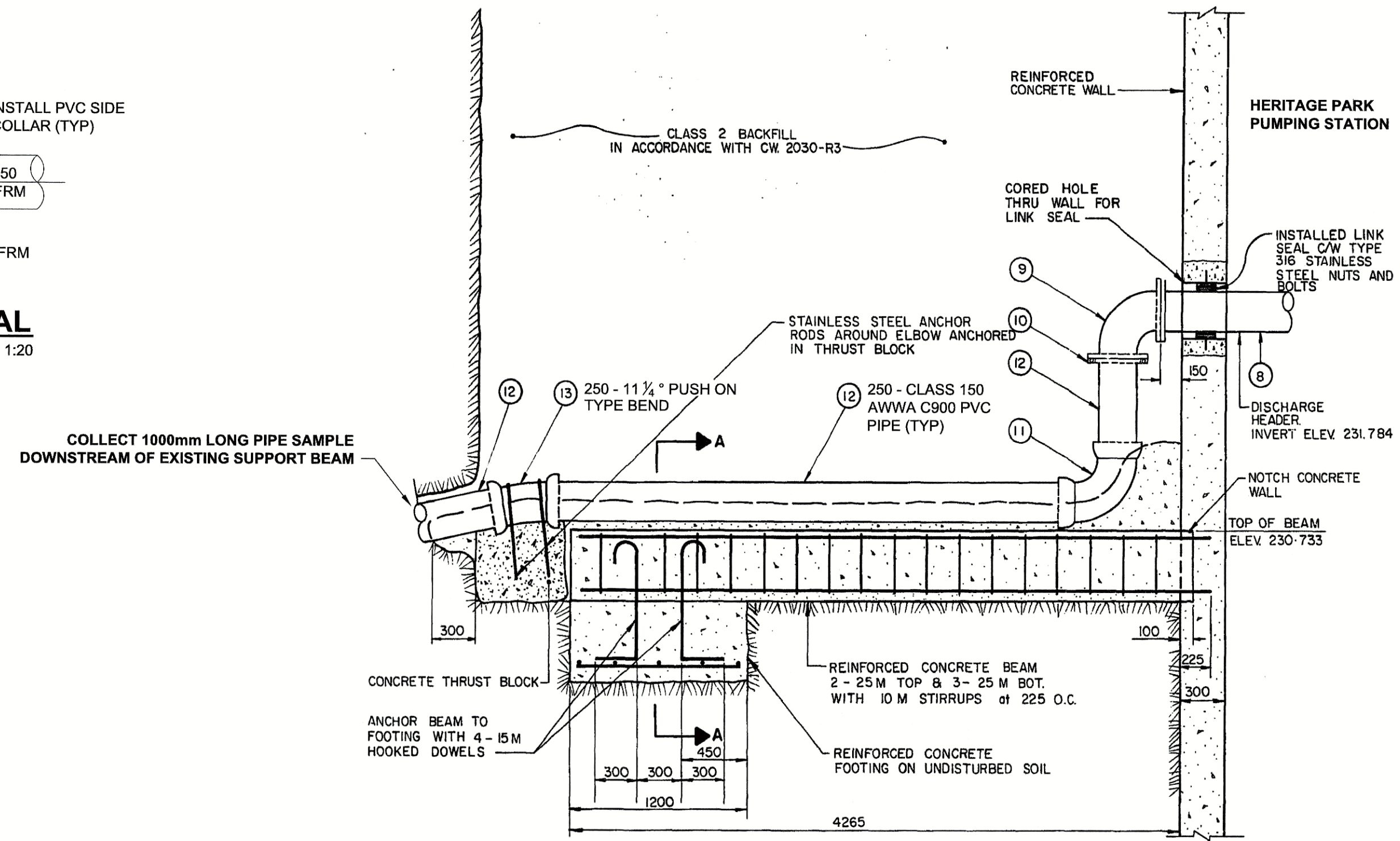
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT

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

SHEET 5 OF 7
CITY DRAWING NUMBER 11821
REV 0



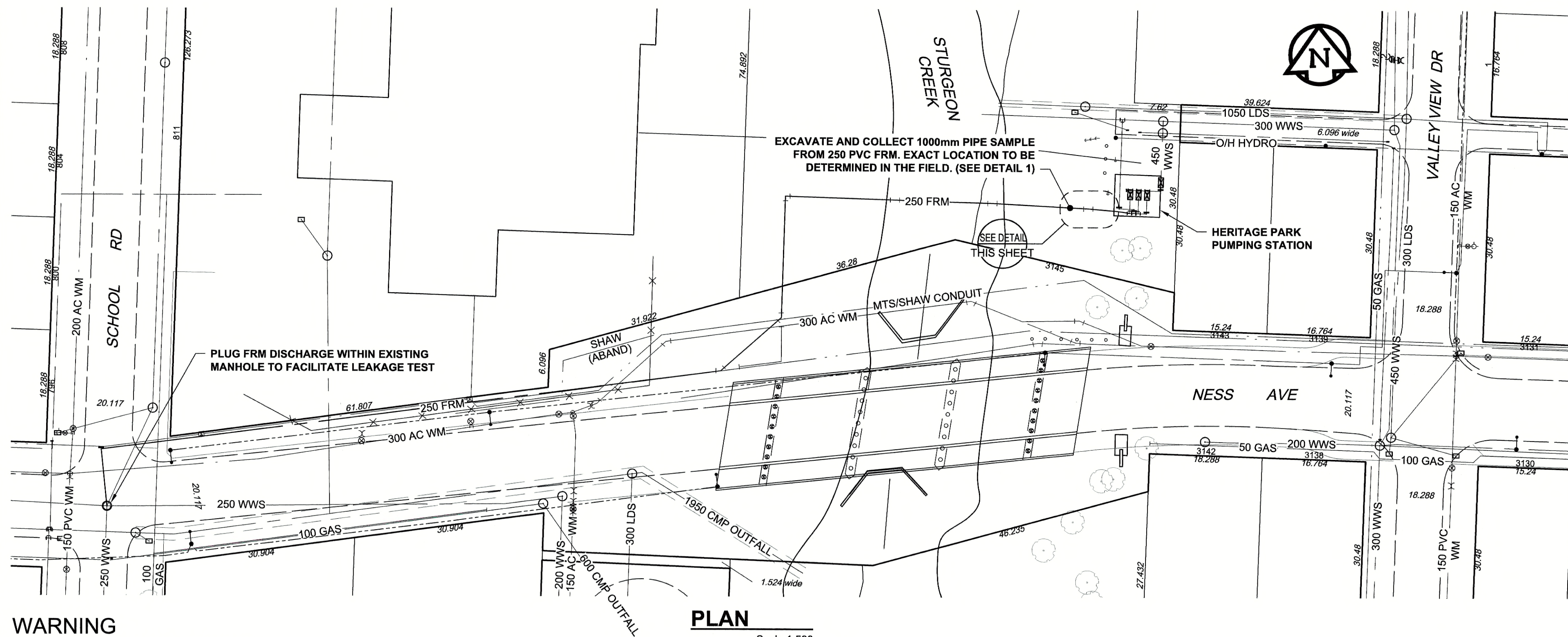
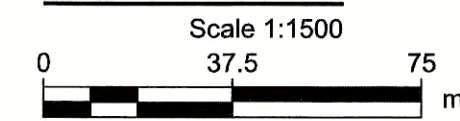
1 | PVC SAMPLE REMOVAL
Scale: 1:20



EXISTING SUPPORT BEAM DETAIL
Scale N.T.S.



SITE PLAN



PLAN



METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

NOTES:

SEQUENCE OF SAMPLING WORK:

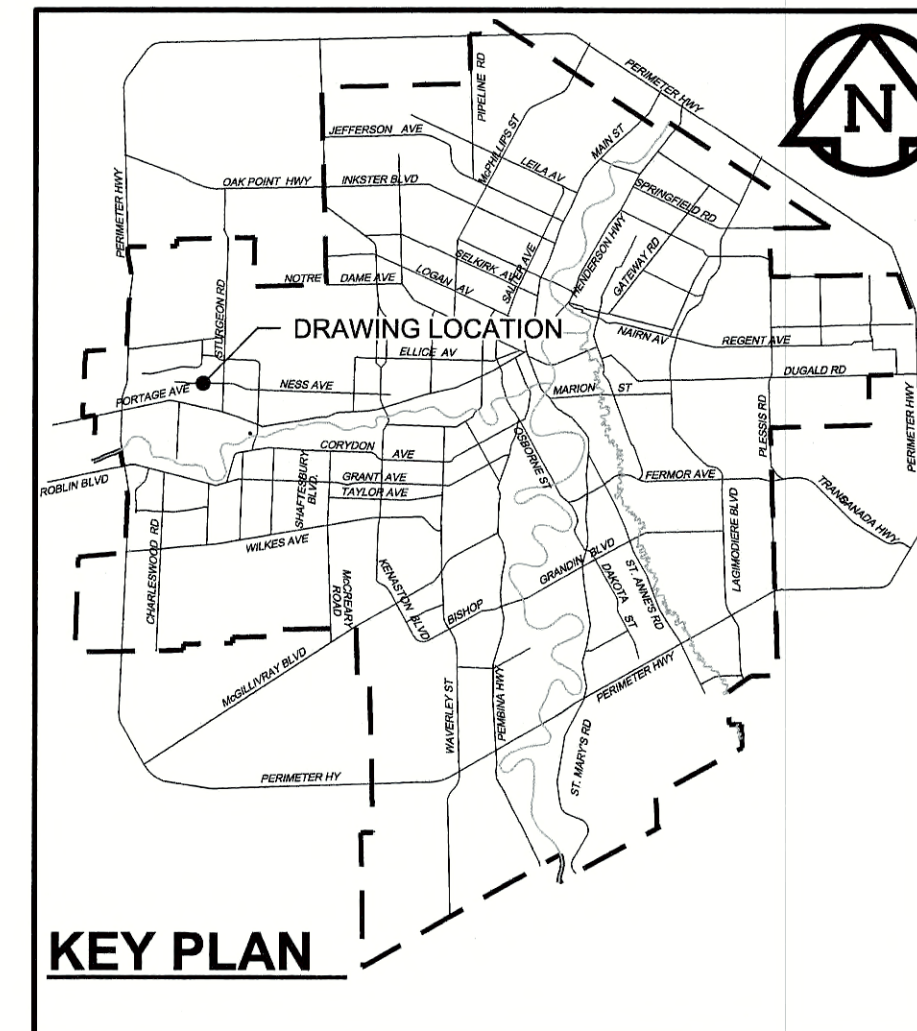
1. LOCATE PIPE BY SOFT DIG METHODS
2. COMPLETE EXCAVATION AND INSTALL SHORING
3. VERIFY PIPE MATERIAL AND OUTSIDE DIAMETER
4. VERIFY ALL REPAIR COMPONENTS ARE ON HAND AND PRE-ASSEMBLED PRIOR TO SHUTDOWN OF PUMP STATION
5. COORDINATE PIPE SAMPLE COLLECTION WITH PUMP STATION SHUTDOWN (BY CITY)
6. BACKFILL AND RESTORE SITE

SEQUENCE OF LEAKAGE TESTING WORK:

1. INSTALL FLUSHING AND TESTING EQUIPMENT WITHIN STATION. UTILIZE EXISTING VALVED PORTS
2. COORDINATE PUMP STATION SHUTDOWN WITH CITY
3. PLUG DISCHARGE END OF FRM
4. COMPLETE LEAKAGE TEST
5. REMOVE PLUG
6. RESTORE PUMP STATION OPERATION (BY CITY) AND REMOVE EQUIPMENT

CONSTRUCTION NOTES:

1. RESTORE BOULEVARDS, SIDEWALKS AND ROADWAYS DAMAGED DURING CONSTRUCTION.
2. UNDERTAKE FLOW MONITORING IN ACCORDANCE WITH SPECIFICATIONS DURING PUMP STATION SHUTDOWN.



KEY PLAN

WARNING

IF POWER EQUIPMENT OR EXPLOSIVES ARE TO BE USED FOR EXCAVATION ON THIS PROJECT, THE CONTRACTOR MUST:
1) NOTIFY THE GAS COMPANY OF THE PROPOSED LOCATION OF EXCAVATION.
2) TAKE PRECAUTION TO AVOID DAMAGE TO GAS COMPANY INSTALLATIONS.
SEE PROVINCIAL REGULATION 140/92 FOR DETAILS

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

LOCATION APPROVED

UNDERGROUND STRUCTURES

SUPR. U/G STRUCTURES COMMITTEE DATE

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NO.	REVISIONS	YYMMDD	BY

AECOM

DESIGNED BY: NJK
CHECKED BY: [Signature]
DRAWN BY: KLC
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HOR. SCALE: AS NOTED
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THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
PROVISION OF PIPELINE ACCESS MODIFICATIONS, CLEANING AND SUPPORT SERVICES FOR RIVER CROSSING INSPECTIONS - PHASE TWO
SHEET 6 OF 7
CITY DRAWING NUMBER
11822
REV 0
SITE 5
HERITAGE PARK FORCE MAIN