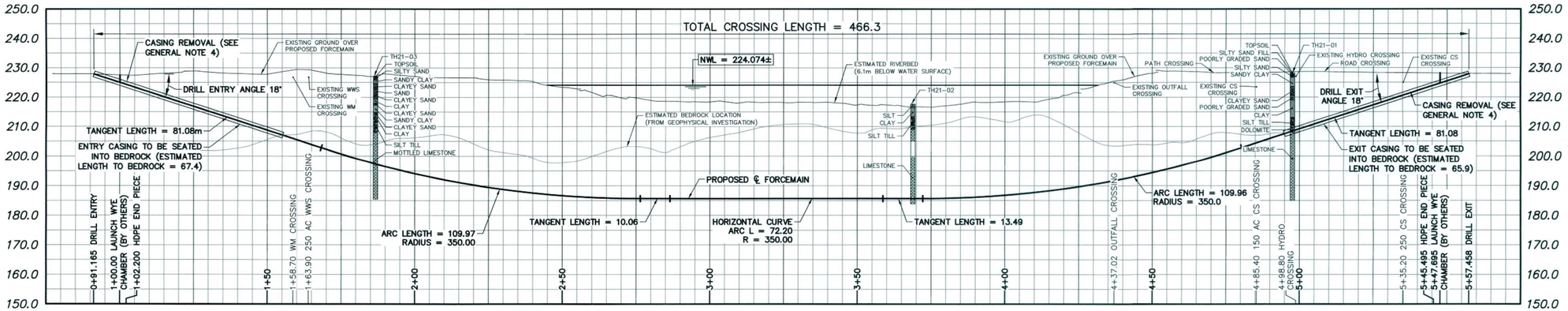
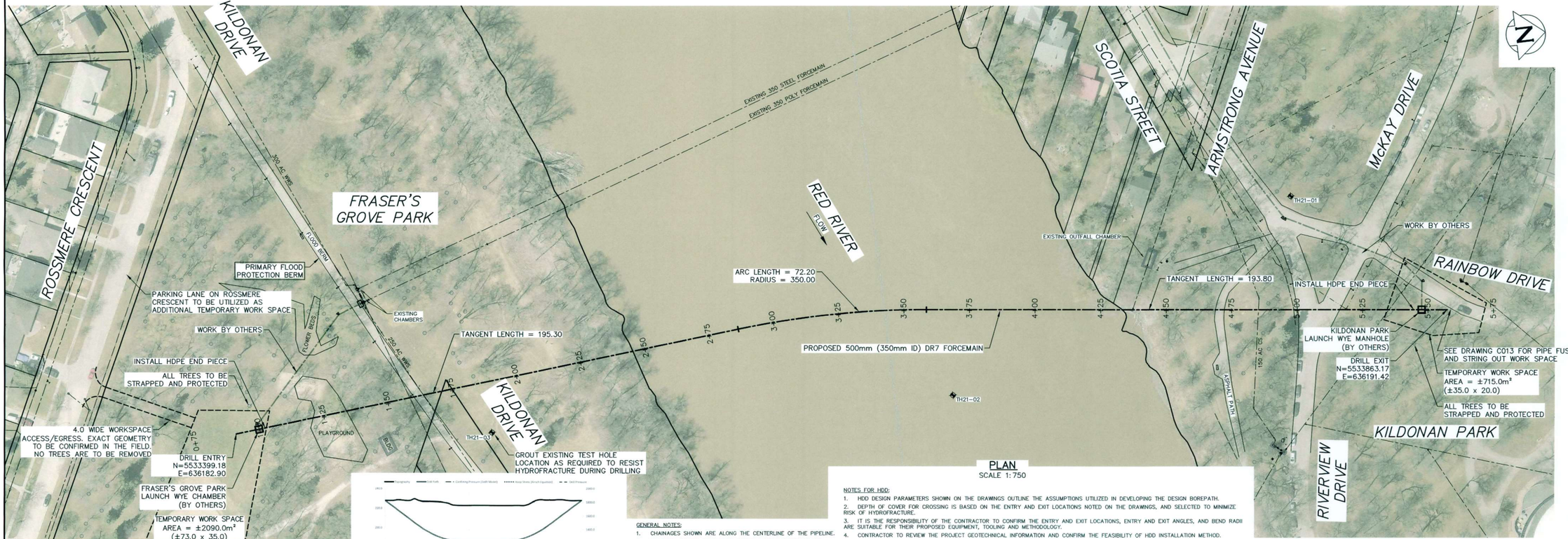
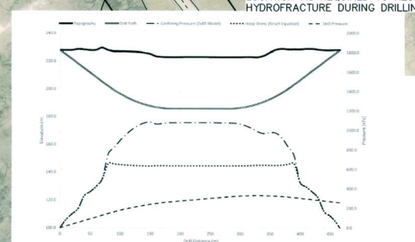




PLAN
SCALE 1:750



ESTIMATED PRESSURE CURVES (ASSUMING 12" PILOT)

GENERAL NOTES:

1. CHAINAGES SHOWN ARE ALONG THE CENTERLINE OF THE PIPELINE.
2. LOCATION OF THE BOREHOLES SHOWN ON PLAN/PROFILE ARE APPROXIMATE. REFER TO THE GEOTECHNICAL DATA REPORT AND GEOTECHNICAL BASELINE REPORT FOR ADDITIONAL INFORMATION.
3. CONTRACTOR SHALL LOCATE EXISTING UTILITIES TO CONFIRM LOCATION PRIOR TO CONSTRUCTION. VARIATIONS SHALL BE REPORTED TO THE DESIGNER PRIOR TO THE COMMENCEMENT OF DRILLING.
4. CASING REMOVAL SHALL BE AT THE DISCRETION OF THE CONTRACTOR. IF THE CASING IS TO BE ABANDONED IN PLACE, THE CASING SHALL BE REMOVED TO A MINIMUM OF 1.0m HORIZONTALLY DOWN SLOPE OF THE LOCATION OF THE HDPE END PIECE AND BLIND FLANGE (LOCATED TO SUPPORT CONNECTION TO FUTURE LAUNCH WYE CHAMBERS) AS SHOWN ON THE DRAWING. THE CONTRACTOR MUST MAKE PROVISIONS TO CUT THE CASING WITHOUT DAMAGING THE HDPE FORCEMAIN.
5. FORCEMAIN SHALL BE CAPPED WITH AN HDPE END PIECE, DUCTILE IRON BACKING RING, AND BLIND FLANGE PRIOR TO BACKFILL

NOTES FOR HDD:

1. HDD DESIGN PARAMETERS SHOWN ON THE DRAWINGS OUTLINE THE ASSUMPTIONS UTILIZED IN DEVELOPING THE DESIGN BOREPATH.
2. DEPTH OF COVER FOR CROSSING IS BASED ON THE ENTRY AND EXIT LOCATIONS NOTED ON THE DRAWINGS, AND SELECTED TO MINIMIZE RISK OF HYDROFRACTURE.
3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONFIRM THE ENTRY AND EXIT LOCATIONS, ENTRY AND EXIT ANGLES, AND BEND RADII ARE SUITABLE FOR THEIR PROPOSED EQUIPMENT, TOOLING AND METHODOLOGY.
4. CONTRACTOR TO REVIEW THE PROJECT GEOTECHNICAL INFORMATION AND CONFIRM THE FEASIBILITY OF HDD INSTALLATION METHOD.
5. IF THE CONTRACTOR DETERMINES THE BOREPATH NOT TO BE FEASIBLE, IT IS THE CONTRACTOR'S RESPONSIBILITY TO SUBMIT AN ALTERNATIVE BOREPATH AND/OR ALIGNMENT FOR CONSIDERATION AT THE TIME OF TENDER.
6. IF THE CONTRACTOR PROPOSES DIFFERENT ENTRY AND EXIT LOCATIONS, THE CONTRACTOR WILL SUBMIT A REVISED STAMPED ENGINEERED DESIGN DRAWING WITH HYDROFRACTURE CALCULATION DETERMINING THE APPROPRIATE DEPTH OF COVER FOR THE CROSSING.
7. CONTRACTOR SHALL ASSESS THE INSTALLATION METHODOLOGY FOR ENTRY AND EXIT CONDUCTOR CASING BASED ON THE CONDITIONS OUTLINED IN THE GEOTECHNICAL REPORT. ENTRY AND EXIT CONDUCTOR CASING TO BE SEATED INTO BEDROCK. CASING SIZE AND LENGTH TO BE DETERMINED BY THE CONTRACTOR.
8. CONTRACTOR SHALL ASSESS THE NEED FOR GROUTING BEDROCK SECTIONS ALONG THE BOREPATH IN THE FRACTURED ZONES TO MAINTAIN CIRCULATION.
9. THE PILOT HOLE SHALL BE INSTALLED ALONG THE DESIGN BOREPATH ALIGNMENT WITH THE DESIGN CURVE RADII SHOWN ON THE DRAWING. THE BOREPATH SHALL BE INSTALLED WITHIN +/− 2m RADIAL DISTANCE OF THE DESIGN ALIGNMENT.
10. CONTRACTOR TO ENSURE THAT THE FORCE APPLIED TO THE PRODUCT PIPE DURING PULLBACK DOES NOT EXCEED THE MANUFACTURER'S RECOMMENDED ALLOWABLE TENSILE LOAD.

INSTALLED PIPE SPECIFICATION:

SPECIFICATION: AWWA C906 / CSA B137.1
SIZE: NPS 20 / DN 500
OUTSIDE DIAMETER: 508 mm
DIMENSION RATIO: DR7
MATERIAL DESIGNATION: PE4710
JOINTS: BUTT FUSION TO ASTM F2620

HDD DESIGN PARAMETERS:

DESIGN RADIUS OF CURVATURE: 350 m
MINIMUM RADIUS: 225 m
PULL FORCE (w/o BALLAST w/SF): 130,000 LBS
MINIMUM RECOMMENDED RIG: 200,000 LBS

ENGINEERS GEOSCIENTISTS MANITOBA
Certificate of Authorization
KGS Group
No. 245

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

FOR INDEX PAGE SEE DWG 13154

0.0 5.0 10.0 15.0 20.0 25.0

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 210/72 FOR DETAILS

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 INDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION.

B.M. ELEV.

NO.	REVISIONS	DATE	BY
0	ISSUED FOR TENDER	2022 10 19	RSG

KGS GROUP | Associated Engineering

DESIGNED BY CL (AE) | CHECKED BY NA
DRAWN BY GEL (KGS) | APPROVED BY NA
SCALE: HORIZONTAL 1:750, VERTICAL –
DATE 2022 10 17 | RELEASED FOR CONSTRUCTION DATE Oct 18/22
PLOT DATE: 2022 10 17

ENGINEER'S SEAL
PROVINCE OF MANITOBA
ADEDAPO Member 31499
REGISTERED PROFESSIONAL ENGINEER
2022-10-17

CONSULTANT DRAWING NUMBER
22-0107-21_C102

BID OPPORTUNITY: 327-2022B
CONTRACT NUMBER:

Winnipeg

THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

NEWTON FORCE MAIN RED RIVER CROSSING BY HORIZONTAL DIRECTIONAL DRILLING

RIVER CROSSING PLAN PROFILE

SHEET OF 3 4

CITY DRAWING NUMBER
13155

FILE PATH: P:\Projects\2022\22-0107-021\Dwg\Mun\
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