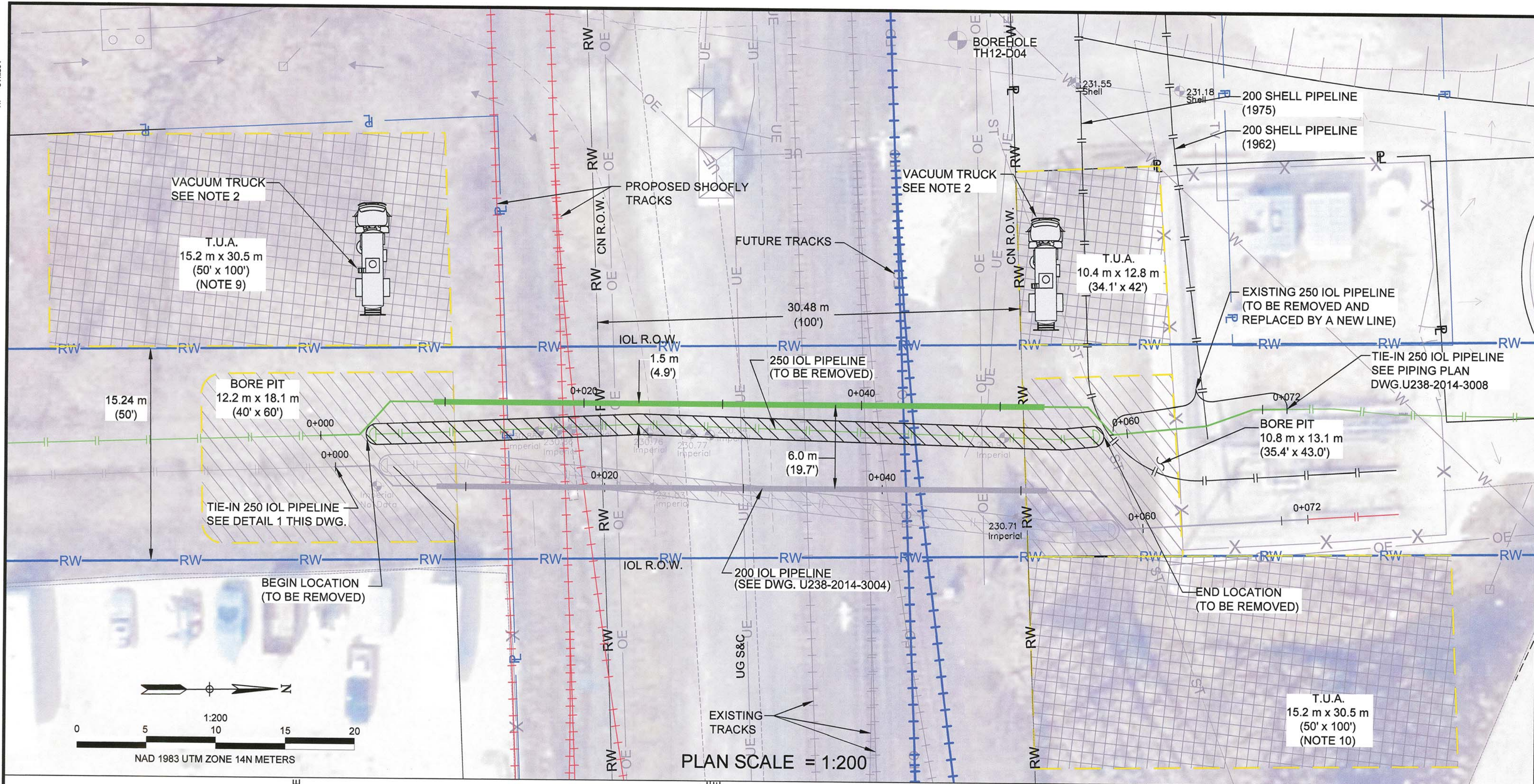


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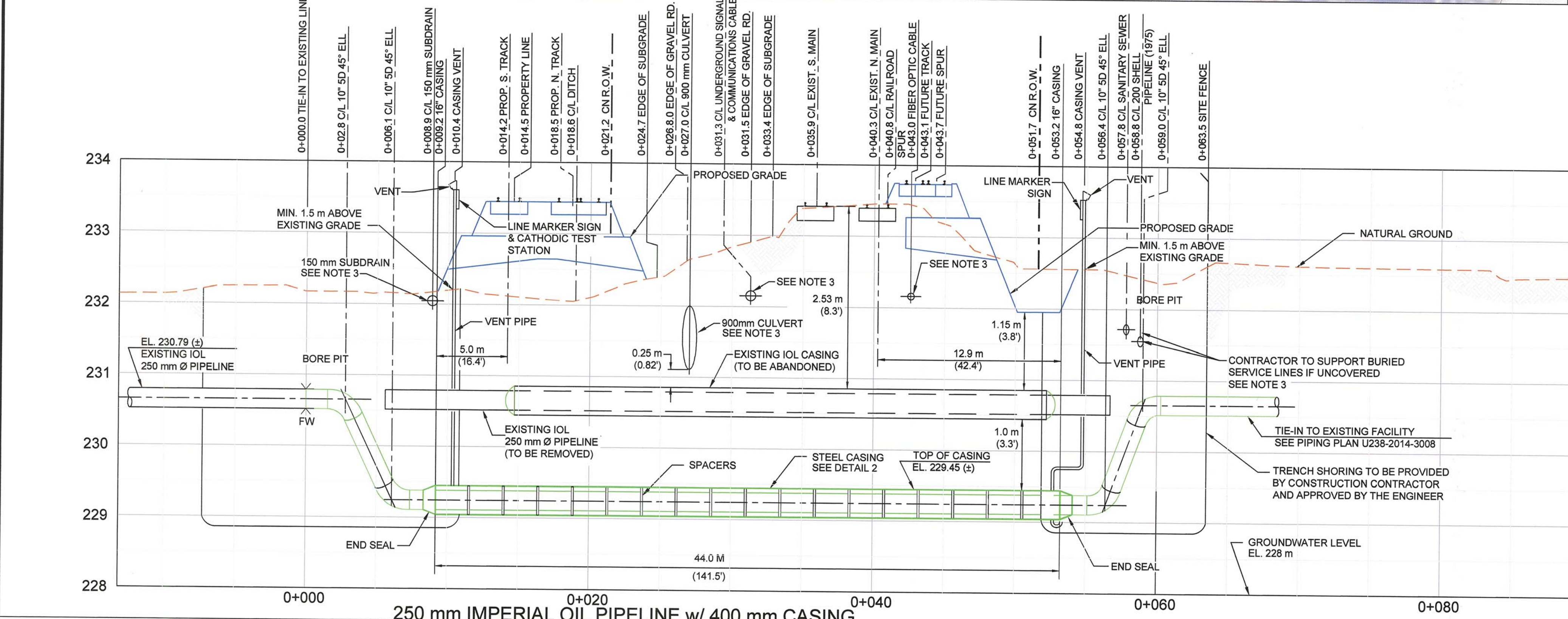
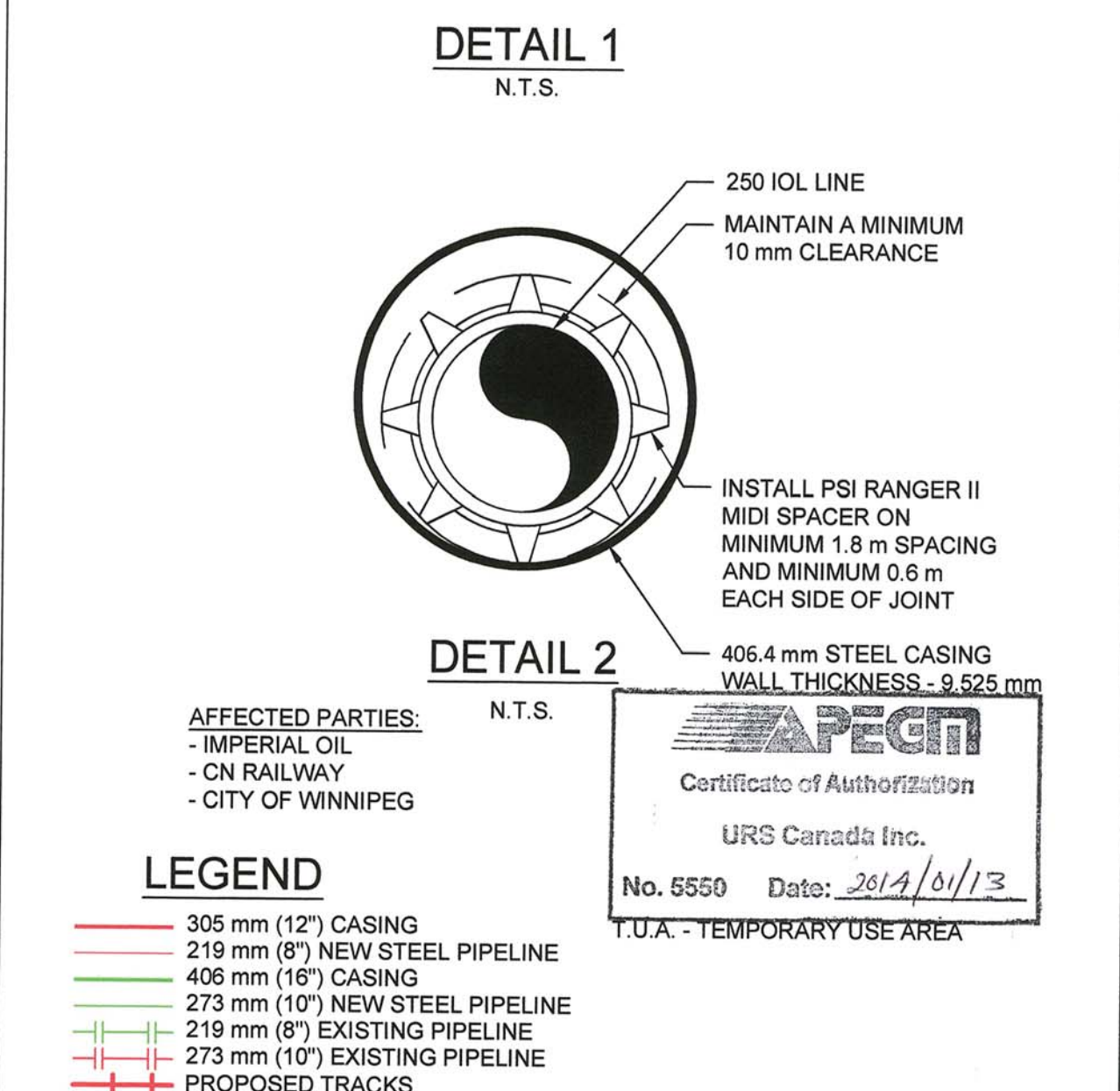
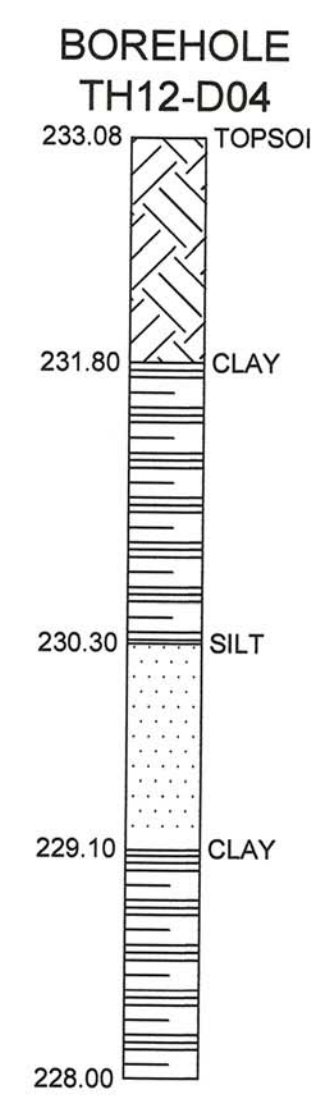
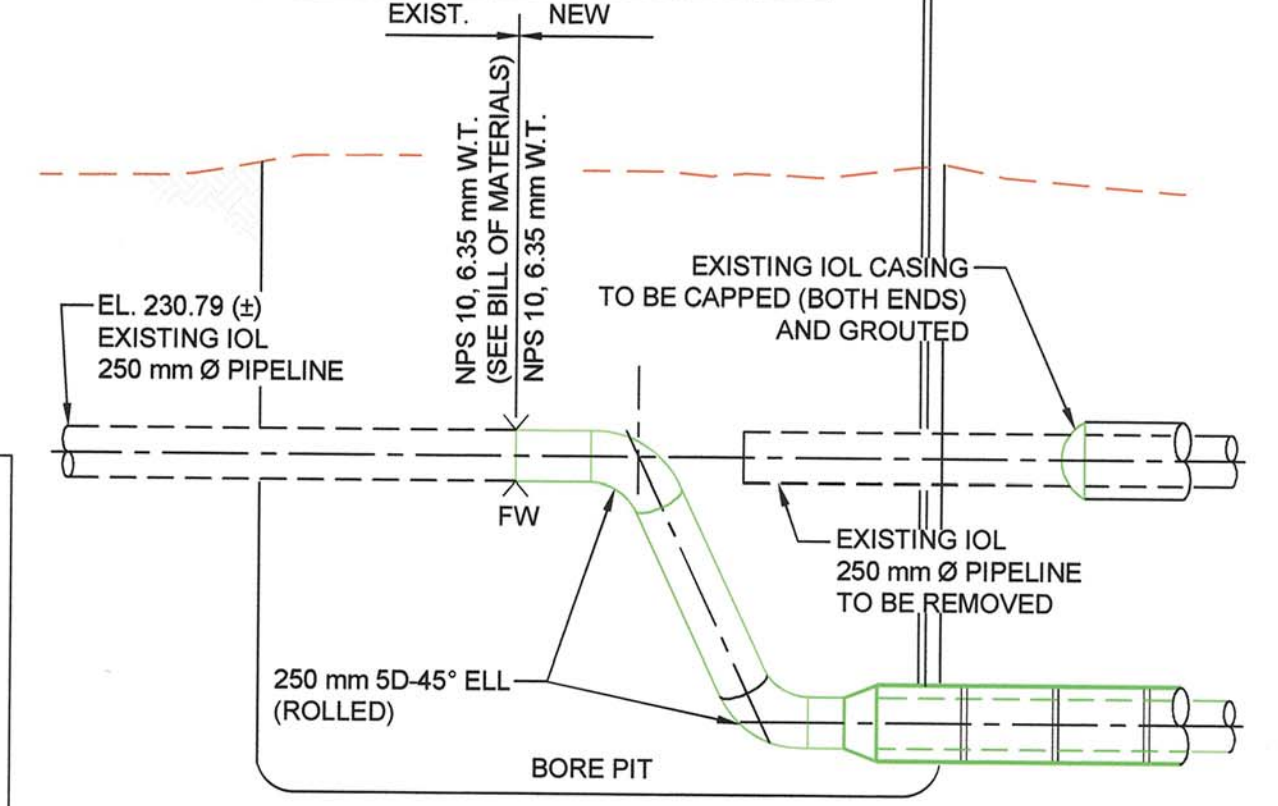
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DISCLAIMER:  
URS MAKES NO WARRANTY (EXPRESS, IMPLIED OR OTHERWISE) THAT THE INFORMATION CONTAINED HEREIN IS ACCURATE OR COMPLETE AS TO ANY AND ALL SUBSURFACE CONDITIONS AND CONFORMATION. ANY RELIANCE CONTRACTOR PLACES ON THE INFORMATION CONTAINED HEREIN AS TO SUCH CONDITIONS IS DONE SO AT ITS OWN RISK AND EXPENSE. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT THE PROVINCE "ONE CALL" SYSTEM PRIOR TO ANY EXCAVATION.

BILL OF MATERIAL			
Item	NS	Description	QTY
1	10"	PIPE, 10.75" OD (273.05 mm OD), 0.25" WT (6.35 mm WT), CS, API 5L CAT II, CLASS 600, X42, SMLS CSA Z245.1, EXTERNALLY COATED USING YJ2K TYPE, DSAW, WELDED IN ACCORDANCE WITH GP 29-03-18.	70 m
2	10"	PIPE, 10.75" OD (273.05 mm OD), 0.25" WT (6.35 mm WT), CS, API 5L CAT II, X42, CLASS 600, SMLS CSA Z245.1, BARE PIPE, DSAW, WELDED IN ACCORDANCE WITH GP 29-03-18.	4 m
3	16"	PIPE, 16" OD (406.4 mm OD), 0.375" WT (9.525 mm WT), CS, API 5L CAT II, X42, CLASS 600, SMLS CSA Z245.1, BARE PIPE, DSAW, TO USE AS CASING.	45 m
4	10"	ELBOW, 45°, 10.75" OD (273.05 mm OD), 5D, 0.25" WT (6.35 mm WT), CS, BW, CAT II, X42, CLASS 600, CSA Z245.11, EXTERNALLY COATED USING YJ2K TYPE	6 EA.
5	10"	FLANGE, WN, ANSI 600, RF, 10.25" BORE (260.35 mm BORE), CSA Z245.12 CAT II,	1 EA.
6	1 1/4"	BOLT, 8 3/4" L, STUD, ASTM A-193 GR. B, w/ 2 HEAVY HEX NUTS ASTM A-194 GR. 2HM, (FOR 10.75" ANSI 600 RF FLG.).	16 EA.
7	10"	PSI RANGER II, MIDI SPACER, MIN 1.8 m SPACING, MIN 0.6 EACH SIDE OF THE JOINT, TO BE USED FOR THE 10" LINE.	25 EA.
8	10"	PSI END SEAL MODEL C	2 EA.
9	10"	GASKET, ANSI 600, 1/8" WT, SPIRAL WOUND, FLEXIBLE GRAPHITE FILLER, SS INNER AND CS OUTER RING, ASME B16.5 & ASME B16.20.	1 EA.
10	10"	WELD CAP, BW, 10.75" OD, CS, API 5L, CLASS 600 X42, ASME B16.9	2 EA.



- NOTES:
- PIPELINE STATIONING IS TEMPORARY AND SHOWN FOR PIPELINE CROSSING PURPOSES ONLY.
  - ANY VACUUM VEHICLE APPROACHING BURIED UTILITIES MUST HAVE LOADING ANALYSIS REVIEWED AND ASSURE SAFE CROSSING.
  - CONSTRUCTION CONTRACTOR TO CONFIRM LOCATION AND DEPTH OF ALL BURIED UTILITIES.
  - FOR IMPERIAL OIL GENERAL NOTES, SEE ENGINEERING WORK PACKAGE (5421-B-SR-0001).
  - CONTRACTOR TO REVIEW CN REQUIREMENTS PRIOR TO CONSTRUCTION.
  - CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO CONSTRUCTION.
  - THE EXISTING 8" AND 10" PIPELINES WILL BE ABANDONED IN PLACE EXCEPT FOR THE LAST SEGMENT WHICH WILL BE REMOVED.
  - DESIGNS ARE NOT YET FINALIZED AND APPROVED BY IMPERIAL OIL.
  - REQUIRES EASEMENT AGREEMENT WITH EAST SIDE STORAGE.
  - REQUIRES EASEMENT AGREEMENT WITH EAST SIDE STORAGE.
  - BEDDING AND BACKFILLING REQUIREMENTS ARE DETAILED IN THE ENGINEERING WORK PACKAGE (5421-B-SR-0001).
  - FOR DRAINAGE AND EROSION SEDIMENT CONTROL, REFER TO AECOM CIVIL DRAWINGS.

LOCATION APPROVED UNDERGROUND STRUCTURES			
SUPV. U/G STRUCTURES COMMITTEE	DATE	B.M. ELEV.	

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.

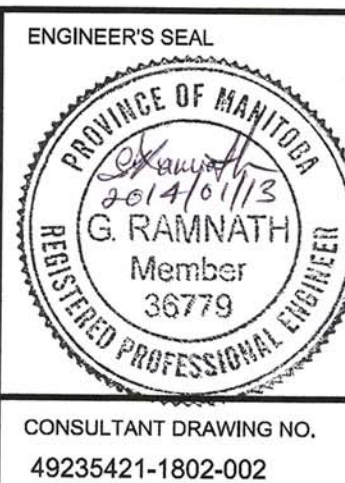
NO.	REVISIONS	DATE	BY	DATE	BY
0	ISSUED FOR TENDER	2014/01/11	CC		
A	ISSUED FOR APPROVAL	2014/01/10	CC		

DESIGNED BY				CHECKED BY			
LN	LN	LN	LN	LN	LN	LN	LN

DESIGNED BY: LN  
DRAWN BY: CMC  
CHECKED BY: LN  
APPROVED BY: LN

HOR. SCALE: AS NOTED  
VERTICAL: AS NOTED  
RELEASED FOR CONSTRUCTION BY: URS

DATE: 2013-11-11  
DATE: 2013-12-26



CONSULTANT DRAWING NO. 49235421-1802-002

**THE CITY OF WINNIPEG PUBLIC WORKS DEPARTMENT**

IMPERIAL OIL LIMITED AND SHELL CANADA PIPELINES RELOCATION WORKS

PIPELINE CASED BORE RAILWAY CROSSING WPL NPS 10 GREINA TO IOL

CITY DRAWING NUMBER U238-2014-3005  
SHEET 01 OF 01

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BID OPPORTUNITY NO. 1058-2013