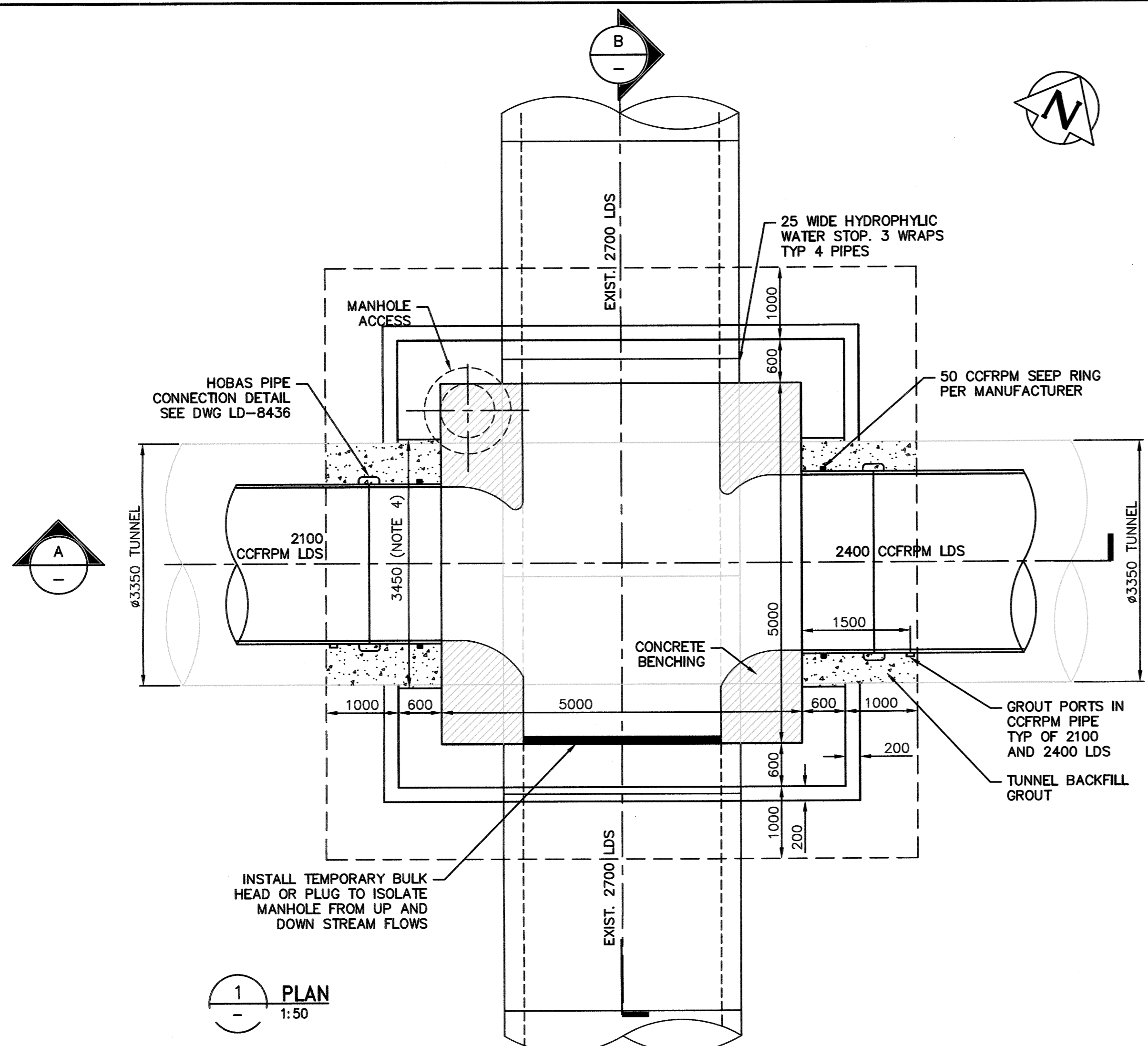
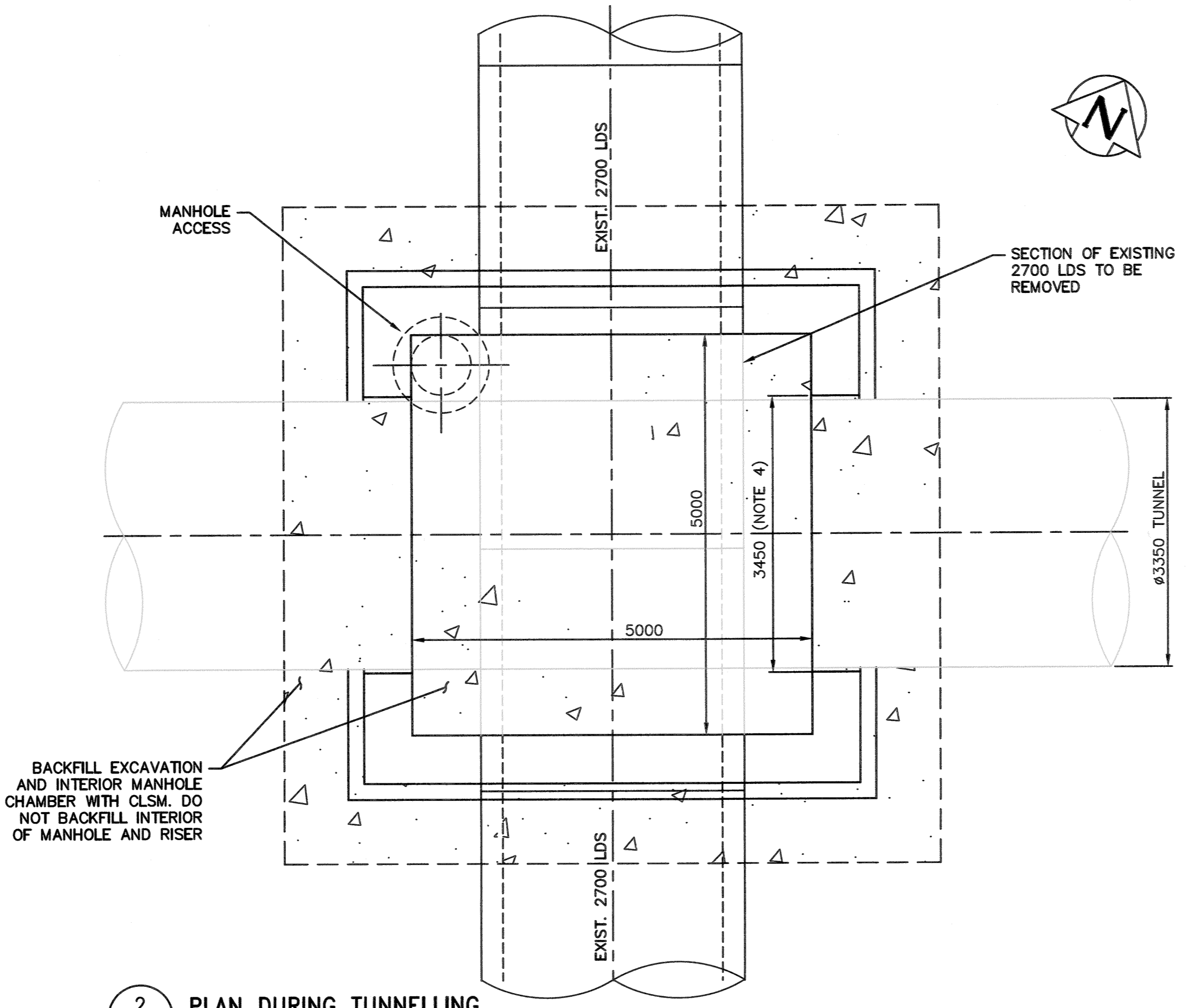


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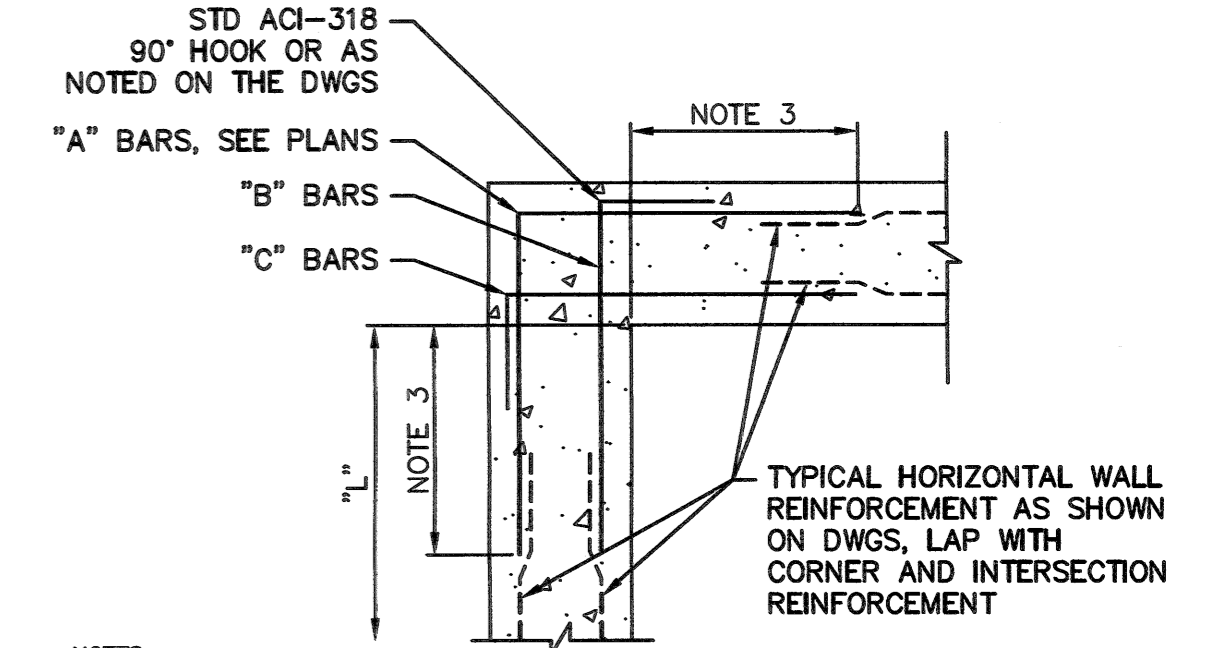
1. CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS 32 MPa PER SPECIFICATION TABLE CW 2160.1.
2. SUPPORT EXCAVATION TO BE DESIGNED AND INSTALLED BY THE CONTRACTOR PRIOR TO CUT AND COVER OPERATION.
3. MANHOLE JUNCTION BOX SHALL BE FILLED WITH CLSM AND SITE BACKFILLED PRIOR TO TUNNELLING OPERATION.
4. 3450 OPENING IN CAST IN PLACE WALL (INCLUDING TUNNEL CONSTRUCTION TOLERANCES)
5. REINFORCING STEEL IN ACCORDANCE WITH CSA G30.18 GRADE 400W. REFER TO SPECIFICATION CW2160.
6. REFER TO CITY OF WINNIPEG STANDARD DETAIL SD-009 FOR CONNECTIONS.
7. DEWATERING MECHANISM TO REMAIN IN PLACE TO RELIEVE PRESSURE UNDER BOTTOM MUD SLAB UNTIL CONCRETE GAINS DESIGN COMPRESSIVE STRENGTH.
8. CHAMBER CONCRETE WALL TO BE POURED AGAINST SHORING STRUCTURE.
9. DEPTH AND LOCATION OF EXISTING UTILITY LINES SHALL BE VERIFIED ON-SITE AND NECESSARY PROTECTION MEASURES SHALL BE PUT IN PLACE BEFORE CONSTRUCTION.



1 PLAN
1:50

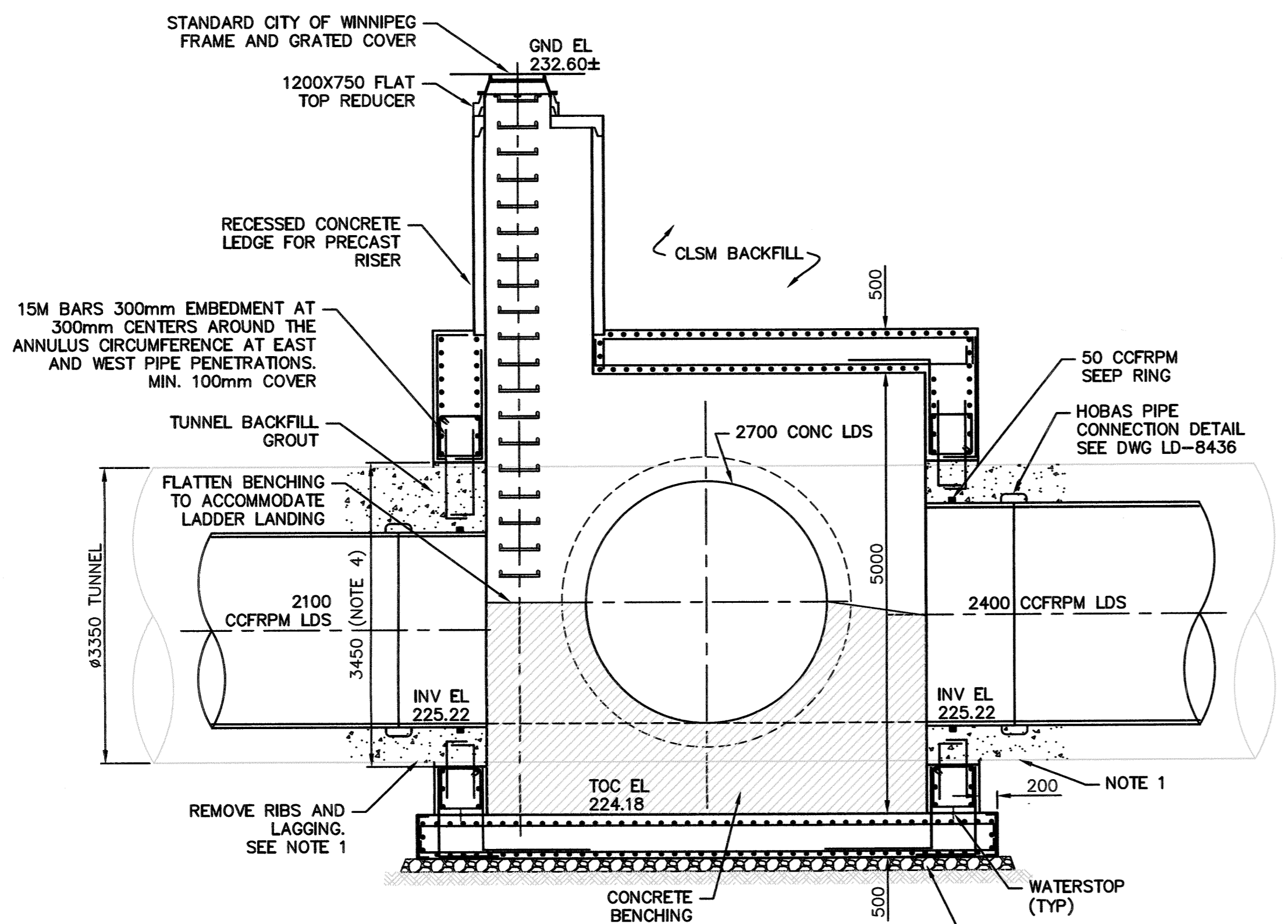


2 PLAN DURING TUNNELLING
1:50

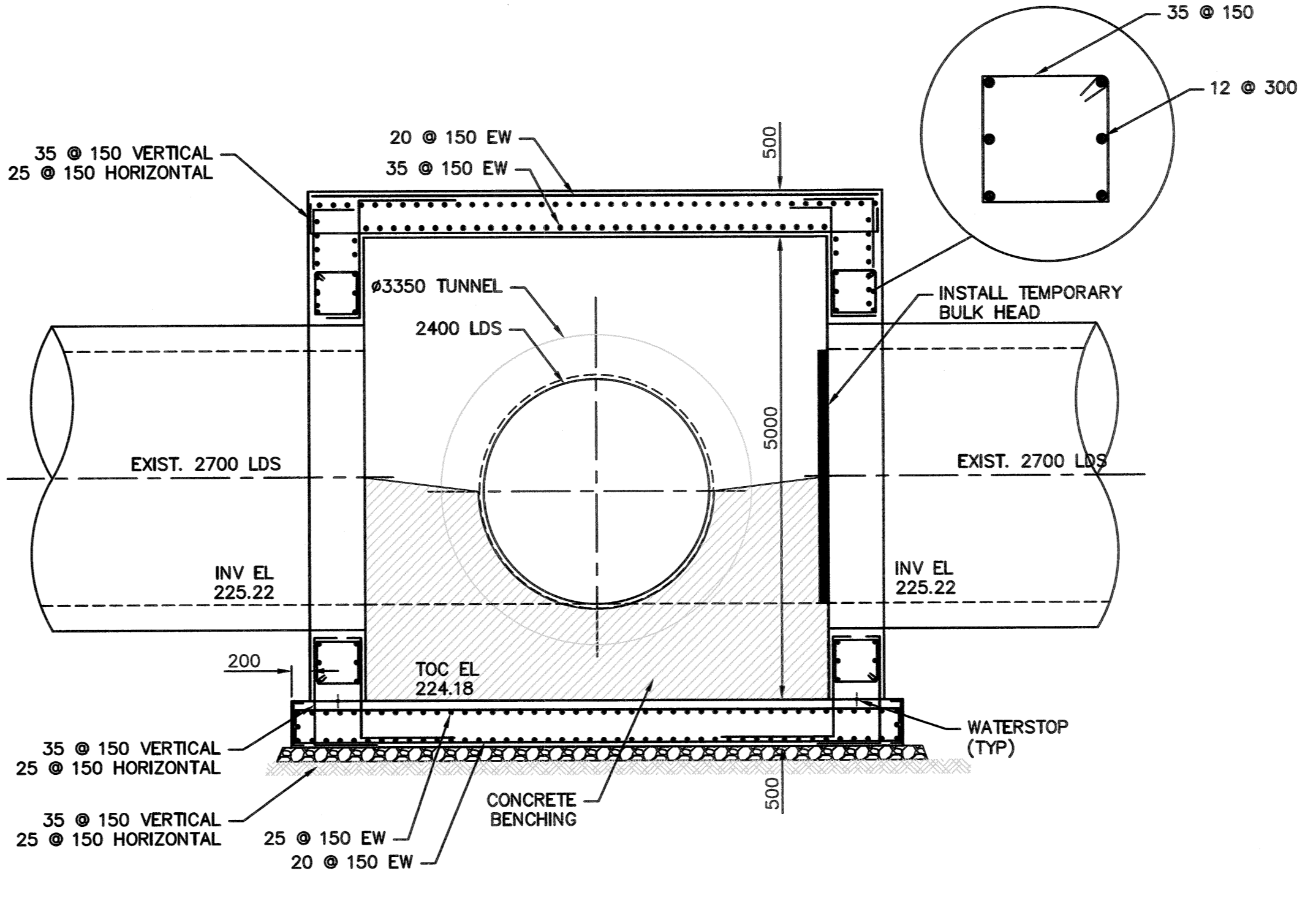


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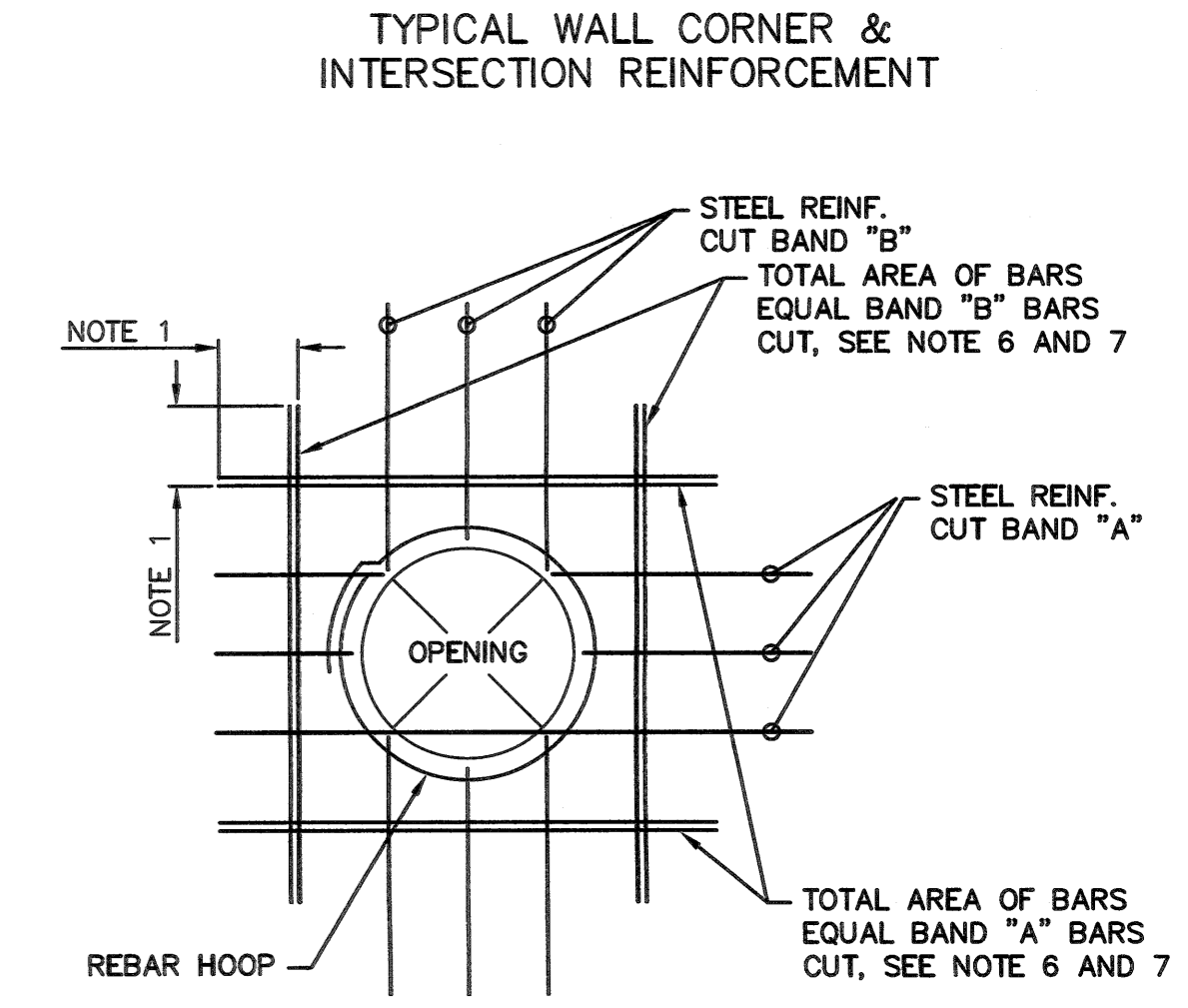
1. TYPICAL HORIZONTAL WALL CORNER AND INTERSECTION REINFORCEMENT LAYOUT IS SHOWN TO AVOID CONGESTION AND PERMIT PROPER PLACEMENT. FOR SIZE AND SPACING SEE PLANS. ALL HORIZONTAL REINFORCEMENT AT CORNERS AND INTERSECTIONS SHALL BE FABRICATED AND INSTALLED WITH SPLICES LOCATED WHERE SHOWN REGARDLESS OF BAR SIZE AND SPACING.
2. WHERE THE CORNER OR INTERSECTION REINFORCEMENT SIZE AND SPACING IS NOT SHOWN, NOTED OR TABULATED ON THE PLANS, THE SIZE AND SPACING SHALL BE THE SAME AS THE WALL HORIZONTAL REINFORCEMENT SHOWN ON THE WALL SECTIONS OR AS NOTED FOR THE REINFORCEMENT BETWEEN THE CORNERS OR INTERSECTIONS.
3. EXCEPT WHERE OTHERWISE SHOWN ON THE DRAWINGS, THE LENGTH INDICATED AS "NOTE 3" SHALL BE THE LESSER OF L/4, 300mm, OR 1.0 TIMES THE HEIGHT OF THE WALL, EXCEPT THAT IN NO CASE SHALL IT BE LESS THAN 600mm.
4. L = LENGTH OF WALL PARALLEL TO THE BAR LENGTH IN QUESTION.
5. USE THE LAP LENGTH AS REQUIRED FOR THE SMALLER OF THE TWO REINFORCEMENT BARS BEING SPLICED.
6. UNLESS OTHERWISE NOTED, "B" AND "C" BARS ARE THE SAME SIZE AND SPACING.



A SECTION
1:50



B SECTION
1:50



NOTES:

1. PROVIDE MINIMUM LAP. SEE GENERAL STRUCTURAL NOTES.
2. TYPICAL FOR ALL OPENINGS IN CONCRETE WALLS OF BELOW GRADE AND HYDRAULIC STRUCTURES AND ALL STRUCTURAL CONCRETE SLABS UNLESS INDICATED OTHERWISE ON PLANS.
3. DO NOT WELD REINFORCEMENT TO PIPE SLEEVES AND INSERTS. PROVIDE MIN. OF 2 "A" BARS AND 2 "B" BARS EACH SIDE OF OPENING (1 EACH FACE), INCLUDING DOWELS AND CORNER BARS, TYP.
4. SPACE BARS AT 3 BAR DIAMETERS (OR 75mm MIN) ON CENTER. LOCATE HALF OF TOTAL AREA ON EACH SIDE OF OPENING.
5. AT OPENINGS WITHIN 300mm OF AN INTERSECTING WALL OR SLAB, PROVIDE ONLY THE EXTRA REINFORCEMENT WHICH WILL FIT, AT THE BAR SPACING.

REINFORCING AT OPENINGS

- NOTES:**
1. REMOVE RIBS AND LAGGING TO FACILITATE DOWEL INSERTION, BUT NOT TO DISTURB NATIVE GROUND.
 2. CONTRACTOR TO USE FORM SAVERS FOR THE INSTALLATION OF THE DOWELS.



B.M. ELEV.					
DESIGNED BY	KM	CHECKED BY	EL		
DRAWN BY	JBC	APPROVED BY	[Signature]		
HOR. SCALE:	AS NOTED	RELEASED FOR CONSTRUCTION:	[Signature]		
VERTICAL:	-	DATE	Jan 19/19		
ISSUED FOR TENDER	01/2018	DATE			
NO. REVISIONS		DATE			

KGS GROUP CONSULTING ENGINEERS

ch2m

DESIGNED BY: KM
DRAWN BY: JBC
CHECKED BY: EL
APPROVED BY: [Signature]
HOR. SCALE: AS NOTED
VERTICAL: -
RELEASED FOR CONSTRUCTION: [Signature]
DATE: Jan 19/19

PROVINCE OF MANITOBA
REGISTERED PROFESSIONAL ENGINEER
S.L.E. [Signature]
Number 37003
JAN 19 2018
CONSULTANT DRAWING NO. S-510

THE CITY OF WINNIPEG WATER AND WASTE DEPARTMENT

PROJECT TITLE
COCKBURN AND CALROSSIE COMBINED SEWER RELIEF WORKS - CONTRACT 5

STRUCTURAL MANHOLE CHAMBER MH-42 DETAILS

SHEET OF 24 OF 25
COMPUTER FILE NAME S-510.dwg
CITY DRAWING NUMBER LD-8435

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