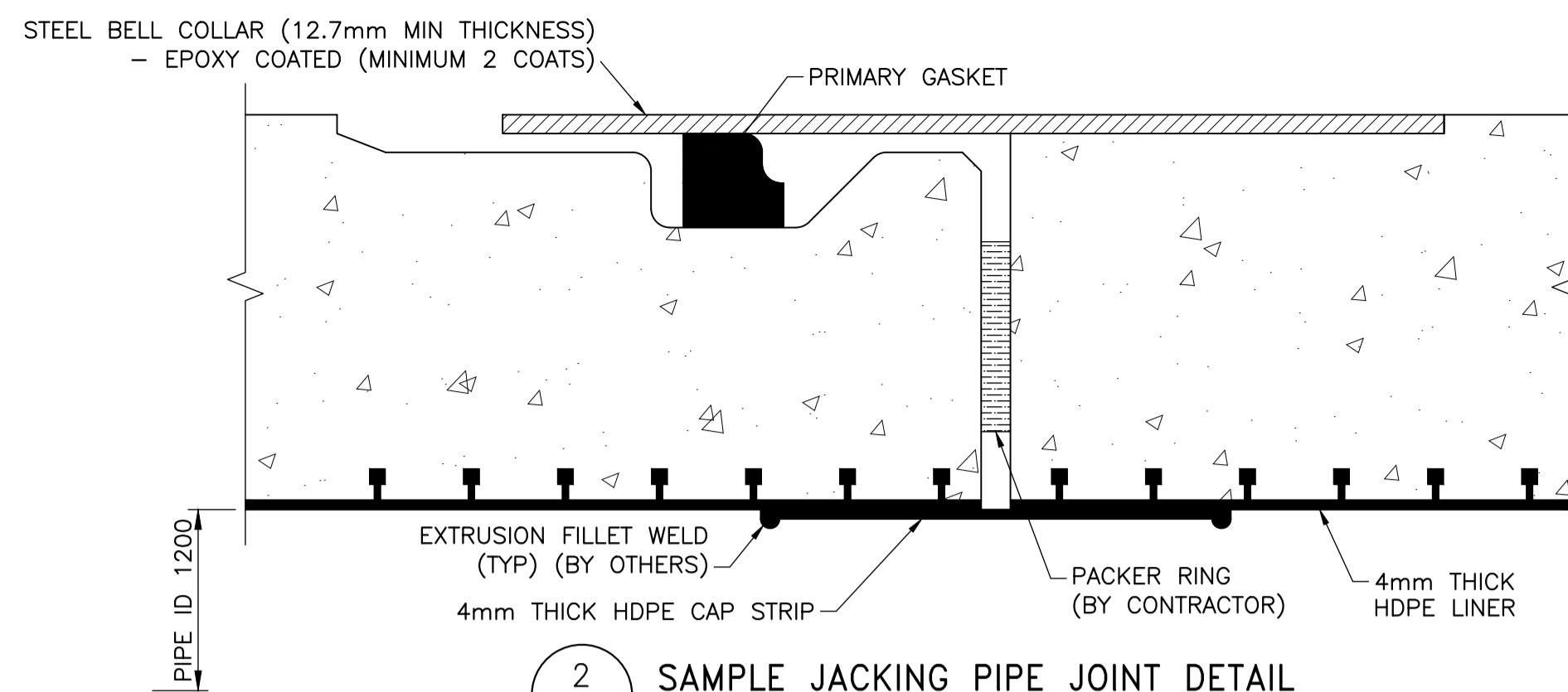
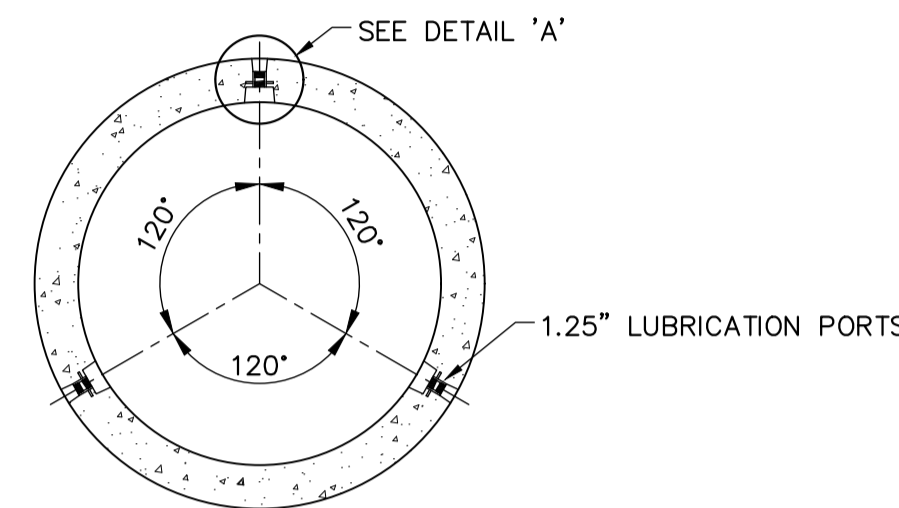


- NOTES:
- PIPE TO BE DESIGNED AS IDENTIFIED IN SPECIFICATION E20.
 - PIPE SUBMITTALS TO BE IN ACCORDANCE WITH SPECIFICATION E20.
 - HDPE LINER TO BE IN ACCORDANCE WITH SPECIFICATION E23.

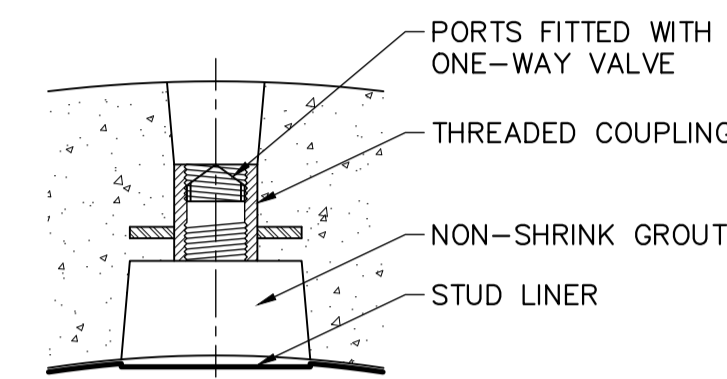
1 DIRECT-JACKED PIPE DETAIL
NTS



2 SAMPLE JACKING PIPE JOINT DETAIL
NTS

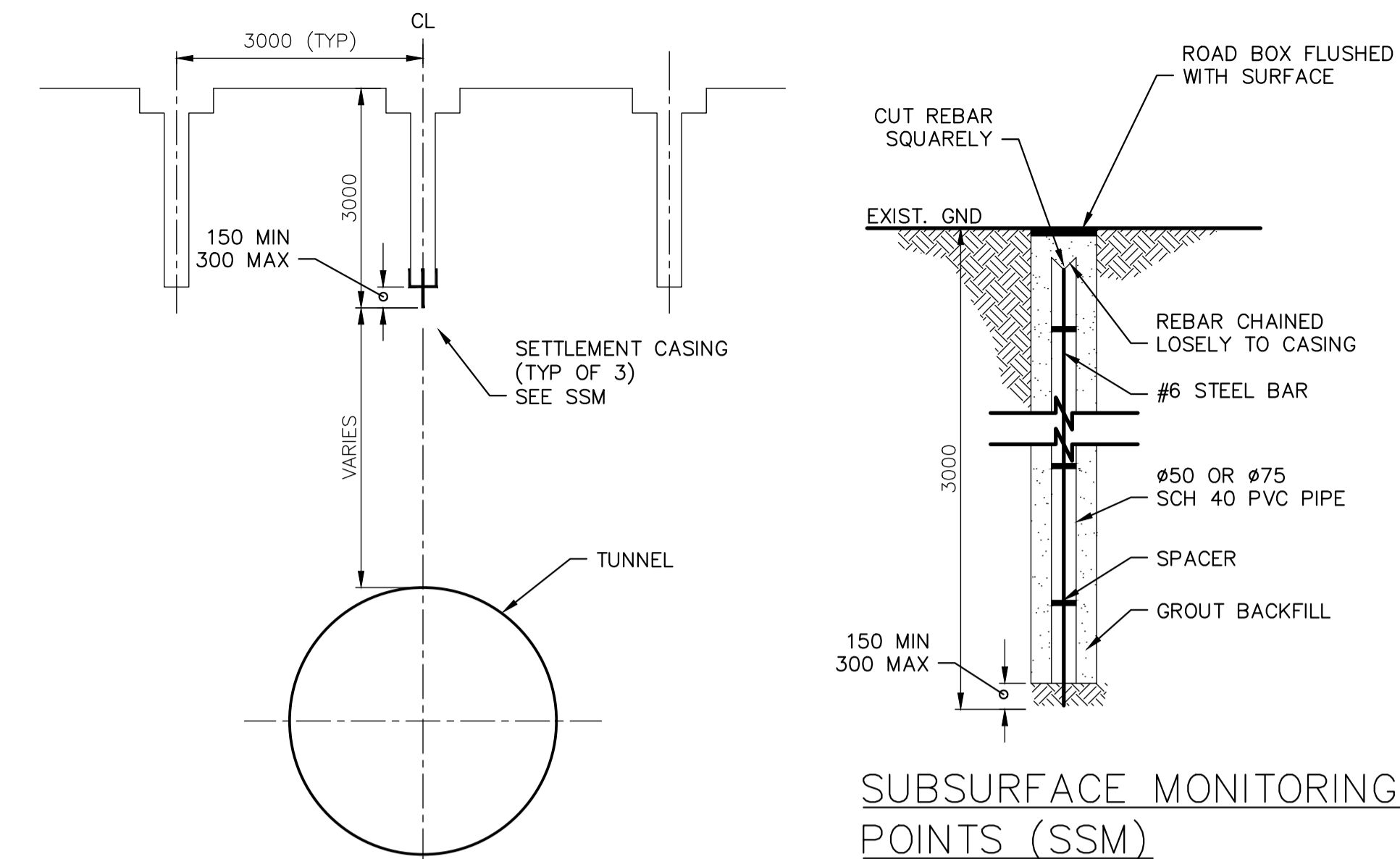


3 LUBRICATION/GROUT PORT DETAIL
NTS



DETAIL 'A'

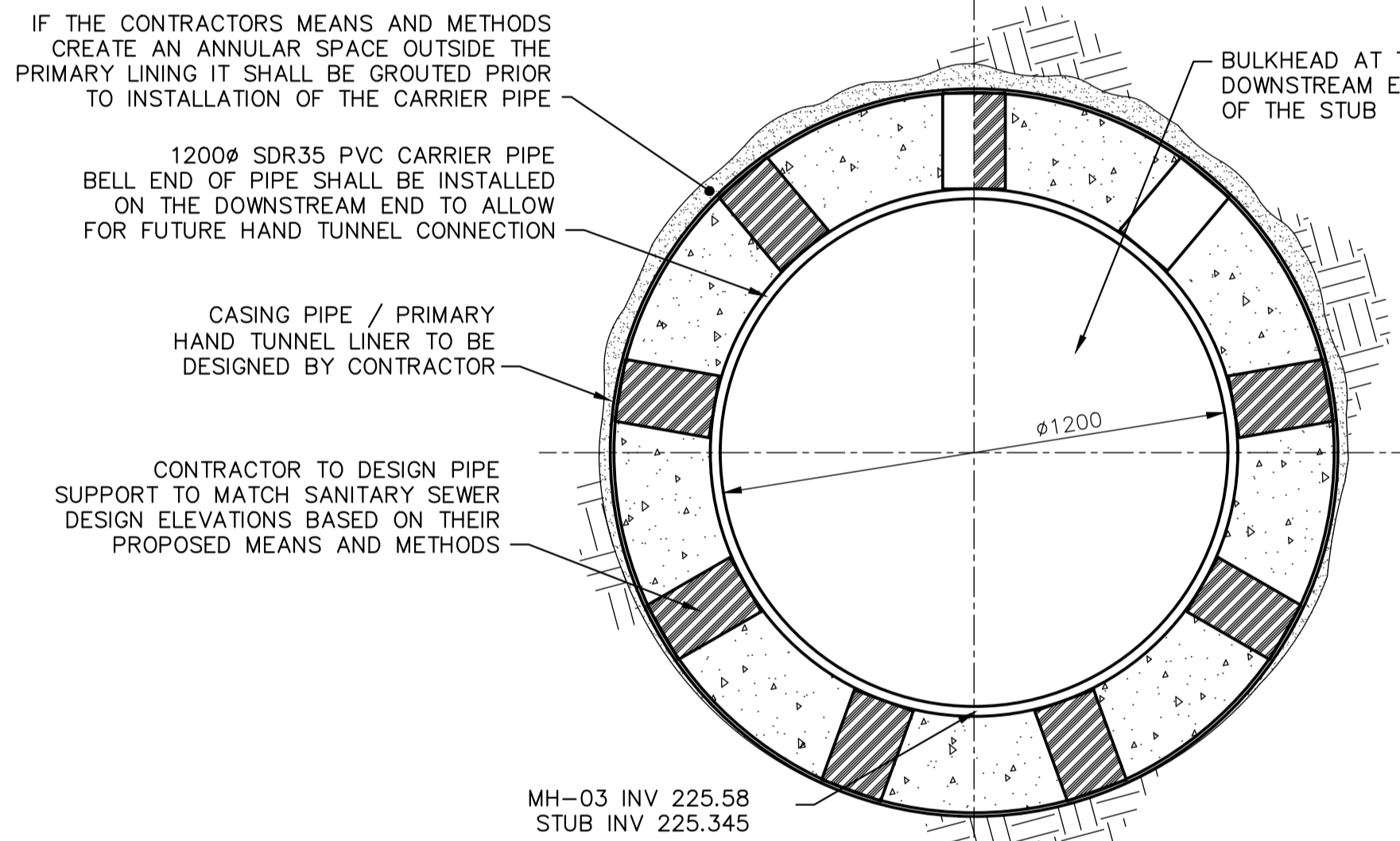
- NOTES:
- GROUT PORTS TO BE FILLED WITH NON-SHRINK GROUT AFTER CONTACT GROUTING.



SUBSURFACE MONITORING ARRAY

NOTE: REFER TO SPECIFICATIONS AND DRAWINGS FOR EXACT INSTALLATION LOCATION.

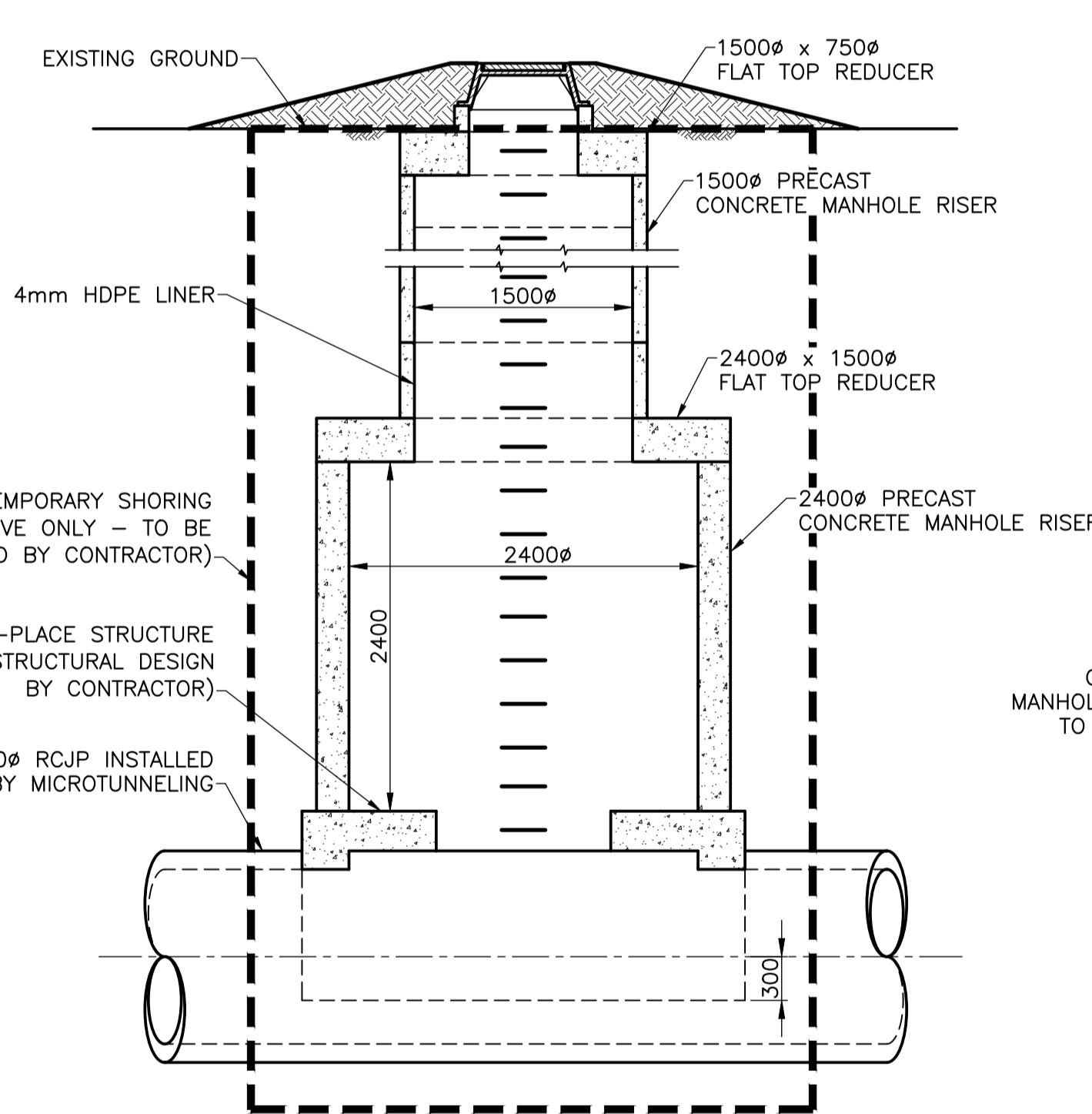
5 MONITORING POINT DETAILS
NTS



4 HAND TUNNEL CROSS SECTION
NTS

HAND TUNNEL NOTES:

- HAND TUNNEL PRIMARY LINER TO BE SELECTED AND DESIGNED BY THE CONTRACTOR BASED ON THE GEOTECHNICAL CONDITIONS AND MEANS AND METHODS CHOSEN.
- PVC PIPE TO BE BLOCKED IN PLACE AND THE ANNULUS GROUTED USING A LOW HEAT OF HYDRATION CEMENTITIOUS MIX. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE BLOCKING, FLOATING, AND BUCKLING CALCULATIONS. METHOD OF BLOCKING / BRACING SHALL BE DESIGNED BY THE CONTRACTOR AND SHALL BE USED IN A WAY THAT DOES NOT EXPOSE THE NEW CARRIER PIPE TO DAMAGE AS A RESULT OF INSTALLATION, INCLUDING OVALITY, BUCKLING, OR HEAT OF HYDRATION. THE CONTRACTOR MAY CHOOSE TO GROUT THE ANNULAR SPACE IN ONE LIFT OR MULTIPLE. DENSITY OF THE GROUT SHALL BE NOTED IN THE PROPOSED CALCULATIONS.
- CONTRACTOR MUST SUBMIT AN INSTALLATION PLAN FOR REVIEW BY THE CONSULTANT WHICH INCLUDES, AT A MINIMUM, THE FOLLOWING:
 - CARRIER PIPE INSTALLATION AND SUPPORT.
 - GROUTING PROCEDURE COMPLETE WITH PROPOSED MATERIAL STRENGTHS, HEAT OF HYDRATION CALCULATIONS OR TEST RESULTS, BUOYANCY CALCULATIONS, BUCKLING CALCULATIONS, BASED ON GROUTING PRESSURE AND LIFT PLAN.
- GROUT TESTING SHALL BE DONE IN ACCORDANCE WITH ASTM C109. MINIMUM ONE TEST PER 30m³. MIX DESIGN SHALL BE INCLUDED IN THE INSTALLATION PLAN SUBMITTAL.
- CONTRACTOR SHALL REFER TO THE CRITICAL TIMING OF THE PROJECT AND SCHEDULE THE WORK NEEDED FOR THE HAND TUNNEL / DOWN STREAM CONNECTION STUB TO ACCOMMODATE THE CONNECTION FROM THE LIFT STATION CONTRACT. CONTRACTOR SHALL INSTALL AN INFLATABLE PLUG IN THE PVC PIPE TO ISOLATE THE TWO POTENTIAL SITES BETWEEN THE HAND TUNNEL CARRIER PIPE.



6 MH-05 (INTERMEDIATE MANHOLE)
SCALE 1:40

TYPICAL MANHOLE NOTES:

- LADDER RUNGS:
- LADDER RUNGS TO BE POLYCOATED ALUMINUM, MSU MODEL 360 OR APPROVED EQUIVALENT.
 - DIMENSIONS AND SPACING TO CITY OF WINNIPEG STANDARD NO. CoW-SM-14. CONCRETE PROTECTION:
 - MANHOLES TO BE HDPE LINED WITH 4mm THICK HDPE LINER TO BE IN ACCORDANCE WITH SPECIFICATION E23.
 - EPOXY COAT UNLINED MANHOLE INTERIOR INCLUDING PRECAST RINGS, UNLINED JACKING PIPE ENDS, CAST-IN-PLACE CONCRETE BENCHING, AND MORTARED PIPE-TO-MANHOLE CONNECTIONS.
 - EPOXY COATING TO BE IN ACCORDANCE WITH SPECIFICATION 23. CAST-IN-PLACE MATERIALS:
 - CAST-IN-PLACE CONCRETE BENCHING AND PIPE-TO-MANHOLE CONNECTIONS GROUT/MORTAR IN ACCORDANCE CW2160.
- BACKFILL:
- CEMENT STABILIZED FILL IN ACCORDANCE WITH CONTRACT SPECIFICATIONS.

NOTES:

- PLANS AND SECTIONS ARE SHOWN SCHEMATICALLY. TEMPORARY WORKING SHAFT AND FINISHED ACCESS MANHOLE DESIGN AND DETAILS BY CONTRACTOR.
- SUPPORT OF EXCAVATION SYSTEM TO BE DESIGNED BY THE CONTRACTOR
- CONTRACTOR SHALL DESIGN THE MANHOLE STRUCTURE BASED ON THE TEMPORARY SHORING METHOD SELECTED.
- STRUCTURE MAY CONSIST OF A FULL BASE OR A PERCHED MANHOLE.
- PERCHED MANHOLE BASE SHALL EXTEND 300 BELOW THE SPRINGLINE OF THE RCJP.
- CONTRACTOR SHALL SUBMIT SHOP DRAWINGS THAT SHOW WORKING DESIGN SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA.
- CONTRACTOR IS REQUIRED TO REMOVE SUPPORT OF EXCAVATION SYSTEM TO A MINIMUM OF 3.0m BELOW SURFACE FOLLOWING COMPLETION OF CONSTRUCTION.

FOR INDEX SEE
C-3-102

PROPERTY LIMITS DELINEATION DELINEATION OF PROPERTY LIMITS AS SHOWN ON THIS DWG DOES NOT REPRESENT A "LEGAL SURVEY". KGS GROUP AND ASSOCIATED ENGINEERING MAKES NO REPRESENTATION OR WARRANTY AS TO THE ACCURACY OF PROPERTY LIMITS DELINEATED ON THIS DWG, NOR ON THE DIMENSIONAL ACCURACY OF DWG FEATURES RELATIVE TO THOSE PROPERTY LIMITS.	WARNING IF POWER EQUIPMENT OR EXPLOSIVES ARE TO BE USED FOR EXCAVATION ON THIS PROJECT THE CONTRACTOR MUST: <ol style="list-style-type: none"> NOTIFY THE GAS COMPANY OF THE PROPOSED LOCATION OF EXCAVATION. TAKE PRECAUTION TO AVOID DAMAGE TO GAS COMPANY INSTALLATIONS. SEE PROVINCIAL REGULATION 21072 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.	VERTICAL DATUM: CGVD28 (HT2.0 Geoid) HORIZONTAL DATUM: NAD83 (June 1990), Zone 14	KGS GROUP	AE Associated Engineering	ENGINEER'S SEAL TUNNELING WORKS THE ORIGINAL ISSUE REV. 0 WAS STAMPED, DATED AND SIGNED BY <u>J.S. LUEKE</u> ON <u>19 04 2024</u> D/M/Y	ENGINEER'S SEAL CIVIL WORKS THE ORIGINAL ISSUE REV. 0 WAS STAMPED, DATED AND SIGNED BY <u>R.B. OFFMAN</u> ON <u>19 04 2024</u> D/M/Y	THE CITY OF WINNIPEG WATER AND WASTE DEPARTMENT ENGINEERING SERVICES DIVISION CENTREPORT SOUTH REGIONAL WATER AND WASTEWATER SERVICING - PHASE 1A (CONTRACT 3) MISCELLANEOUS DETAILS SHEET 1	SHEET 8 OF 9 CITY DRAWING NUMBER 13446
			DESIGNED BY CON CHECKED BY JL DRAWN BY GLG APPROVED BY RBO SCALE: HORIZONTAL VERTICAL DATE 2024 05 08			RELEASED FOR CONSTRUCTION CONSULTANT DRAWING NUMBER C-3-108			
WHOLE NUMBERS INDICATE MILLIMETRES DECIMALIZED NUMBERS INDICATE METRES			PLOT DATE: 2024 05 08	TENDER: 990-2023B CONTRACT NUMBER: #		FILE PATH: R:\Projects\2023\23-0107-009\Dwg\Mun\C3 - Interceptor Sewer\ FILE NAME: 23-0107-009_C3_Interceptor Sewer_COV-IND-DET.dwg			