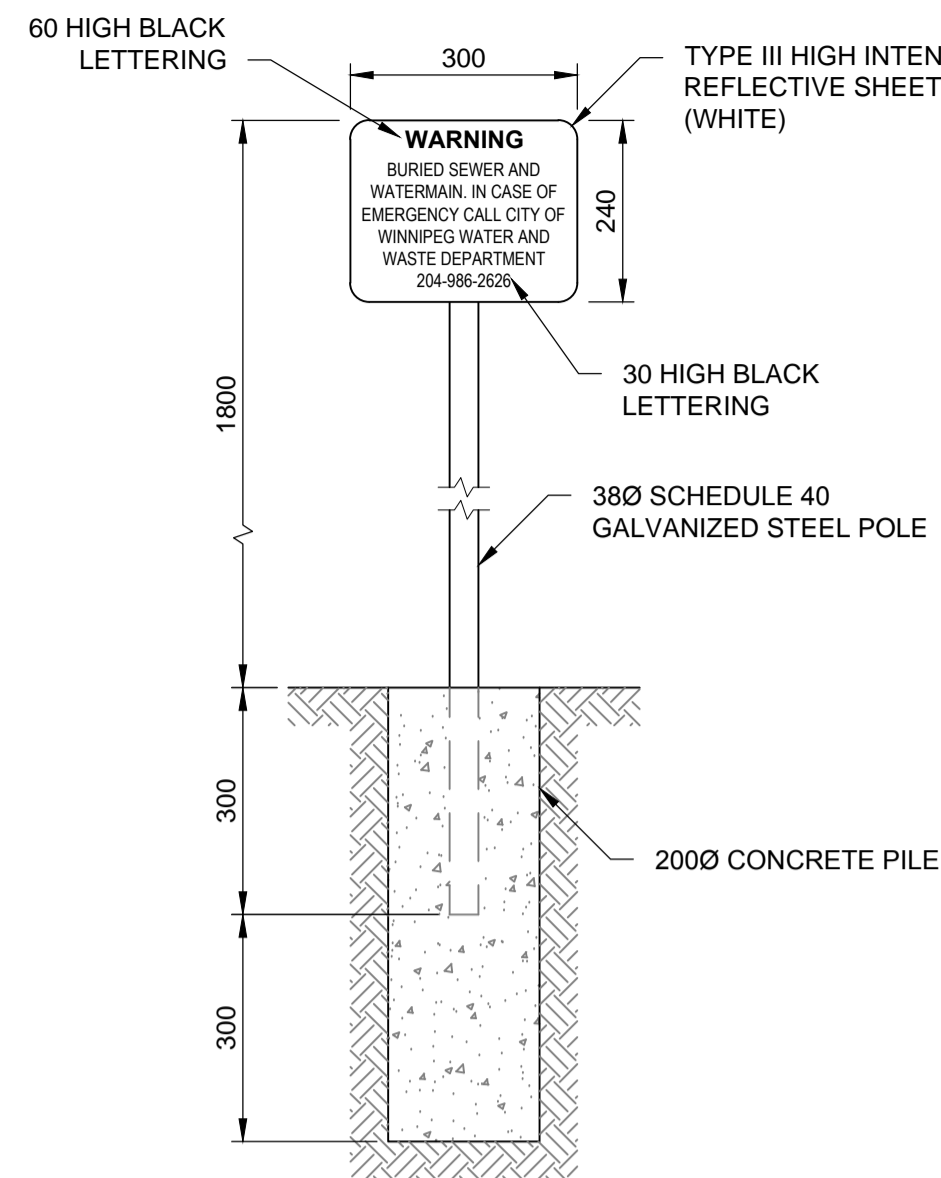
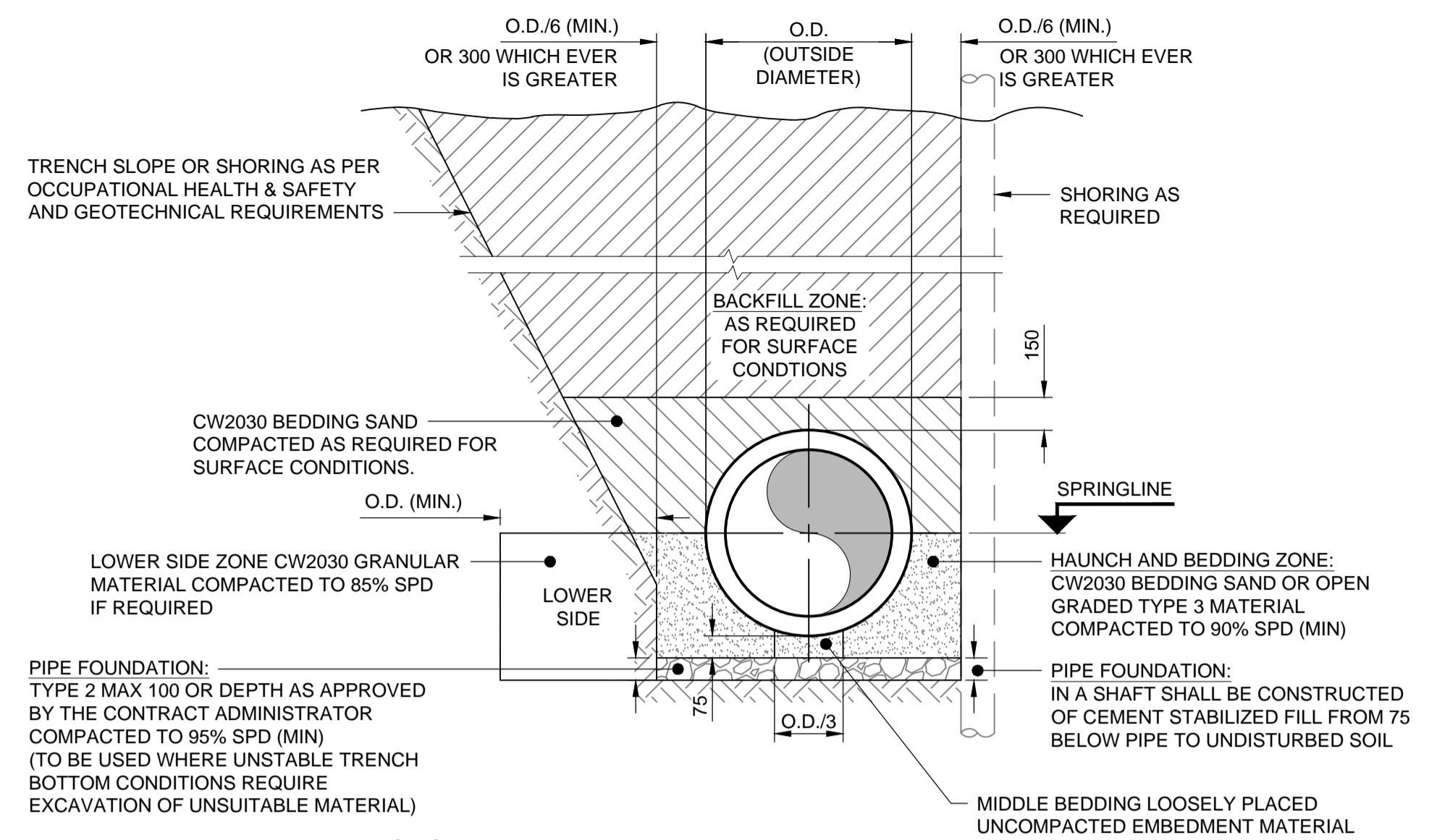


VERTICAL RE-ALIGNMENT OF PRESSURE PIPE DETAIL

- NOTES**
- VERTICAL RE-ALIGNMENT OF PRESSURE PIPE SHALL BE PERFORMED WHERE INDICATED ON THE DRAWINGS AND WHERE ACTUAL VERTICAL SEPARATION BETWEEN EXISTING PRESSURE PIPE AND NEW GRAVITY SEWER IS LESS THAN MINIMUM REQUIREMENTS REQUIRED BY UNDERGROUND STRUCTURES.
 - VERTICAL RE-ALIGNMENT SHALL RE-ALIGN PRESSURE PIPE BELOW GRAVITY SEWER TO MINIMUM CLEARANCES INDICATED.
 - THE CONTRACTOR SHALL RESTRAIN ALL EXISTING JOINTS WITHIN 7.0 OF THE START & END OF THE NEW 45° BENDS OF THE NEW VERTICAL RE-ALIGNMENT.



DETAIL
WARNING SIGN
Scale 1:10

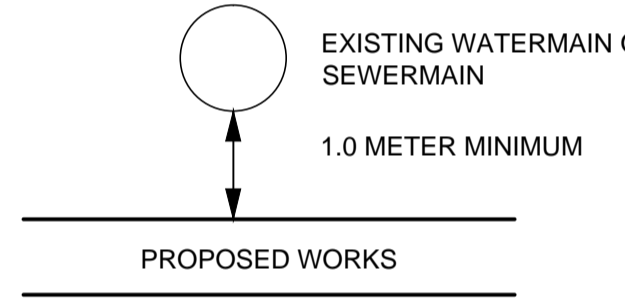


- NOTES:**
- ANY OPEN GRADED GRANULAR MATERIALS SHALL BE WRAPPED WITH A NON-WOVE GEOTEXTILE, SEAMS SHALL BE OVERLAPPED 300.

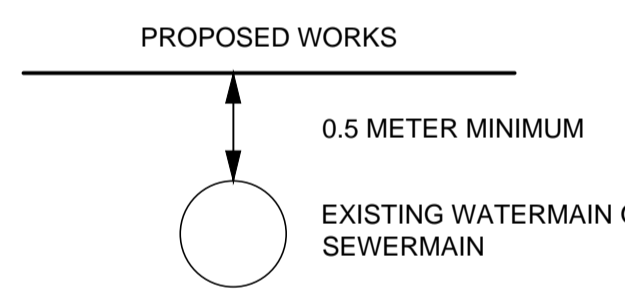
DETAIL - RIGID PIPE INSTALLATION

N.T.S. TYPE 2 SIDD (REINFORCED CONCRETE)

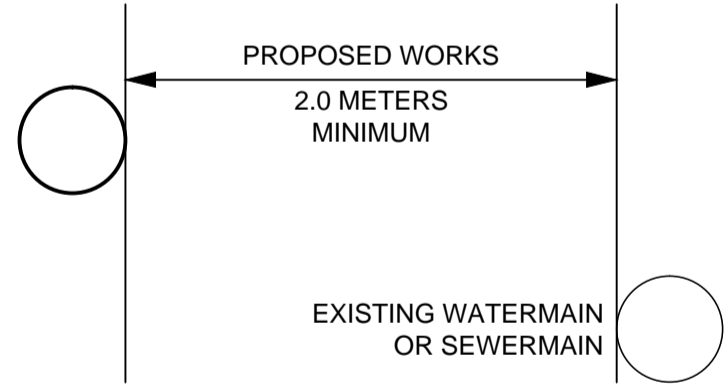
A MINIMUM CLEARANCE OF 1.0 METER MUST BE PROVIDED BETWEEN THE UNDERSIDE OF ANY EXISTING WATERMAIN OR SEWERMAIN AND THE TOP OF THE PROPOSED WORKS. THIS INSTALLATION BY TRENCHLESS METHOD ONLY.



A MINIMUM CLEARANCE OF 0.5 METER MUST BE PROVIDED BETWEEN THE UNDERSIDE OF THE PROPOSED WORKS AND THE TOP OF ANY EXISTING WATERMAIN OR SEWERMAIN.



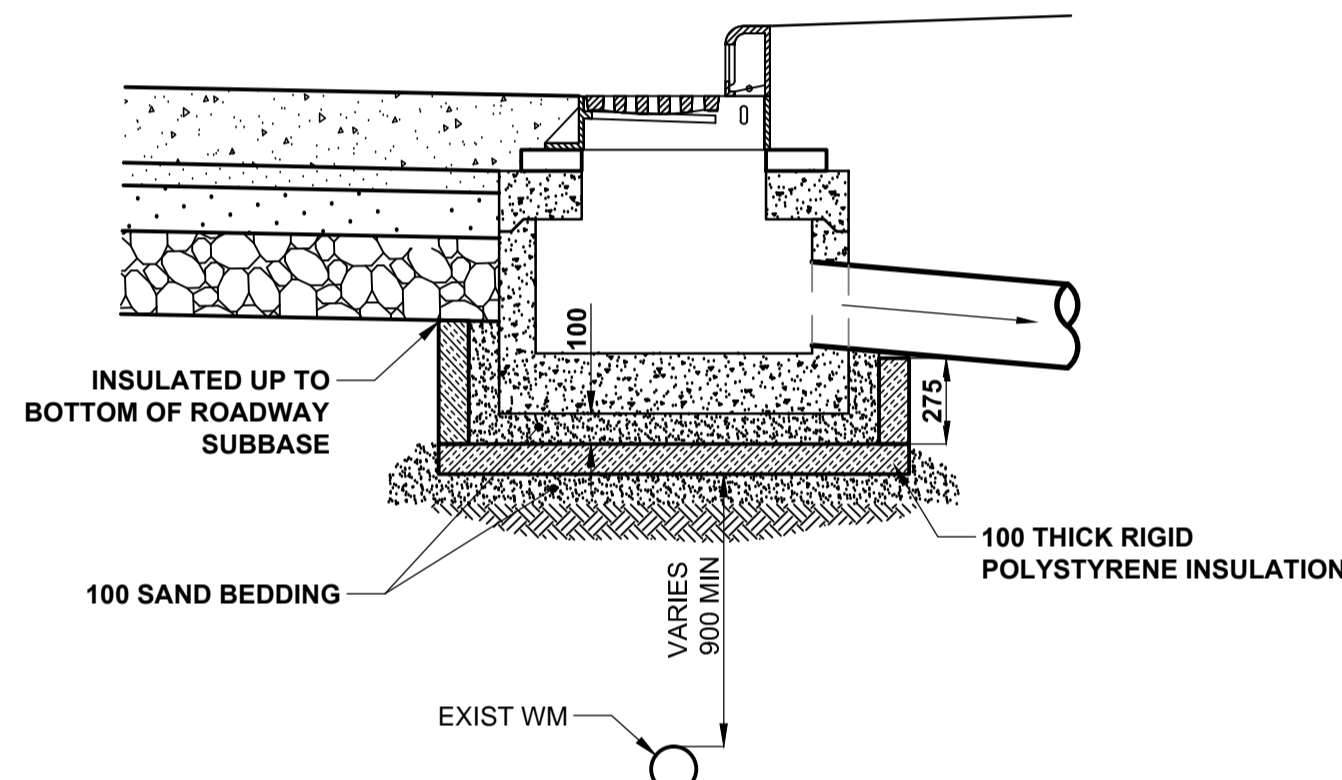
A MINIMUM LATERAL CLEARANCE OF 2.0 METERS MUST BE PROVIDED BETWEEN ANY EXISTING WATERMAIN OR SEWERMAIN PIPE AND THE PROPOSED WORKS.



A SHAFT MUST BE EXCAVATED BY SOFT DIG METHODS 4.0 METERS FROM THE CENTERLINE OF THE EXISTING WATERMAIN OR SEWERMAIN PIPE TO CONFIRM THE ALIGNMENT AND ELEVATION OF THE DRILLING ROD BEFORE IT CROSSES OVER OR UNDER THE EXISTING WATERMAIN OR SEWERMAIN PIPE. THIS CONFIRMATION MUST BE WITNESSED BY A CITY REPRESENTATIVE.

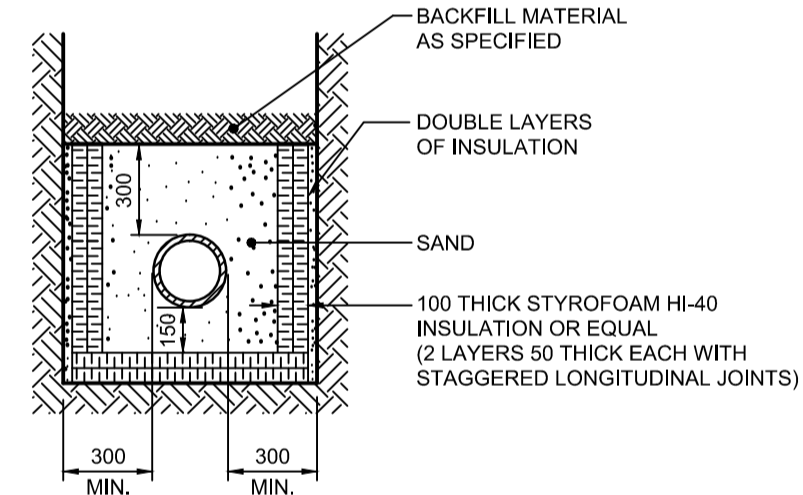
WATER & WASTE DEPARTMENT UNDERGROUND STRUCTURES PIPE CLEARANCE REQUIREMENTS

Scale 1:1



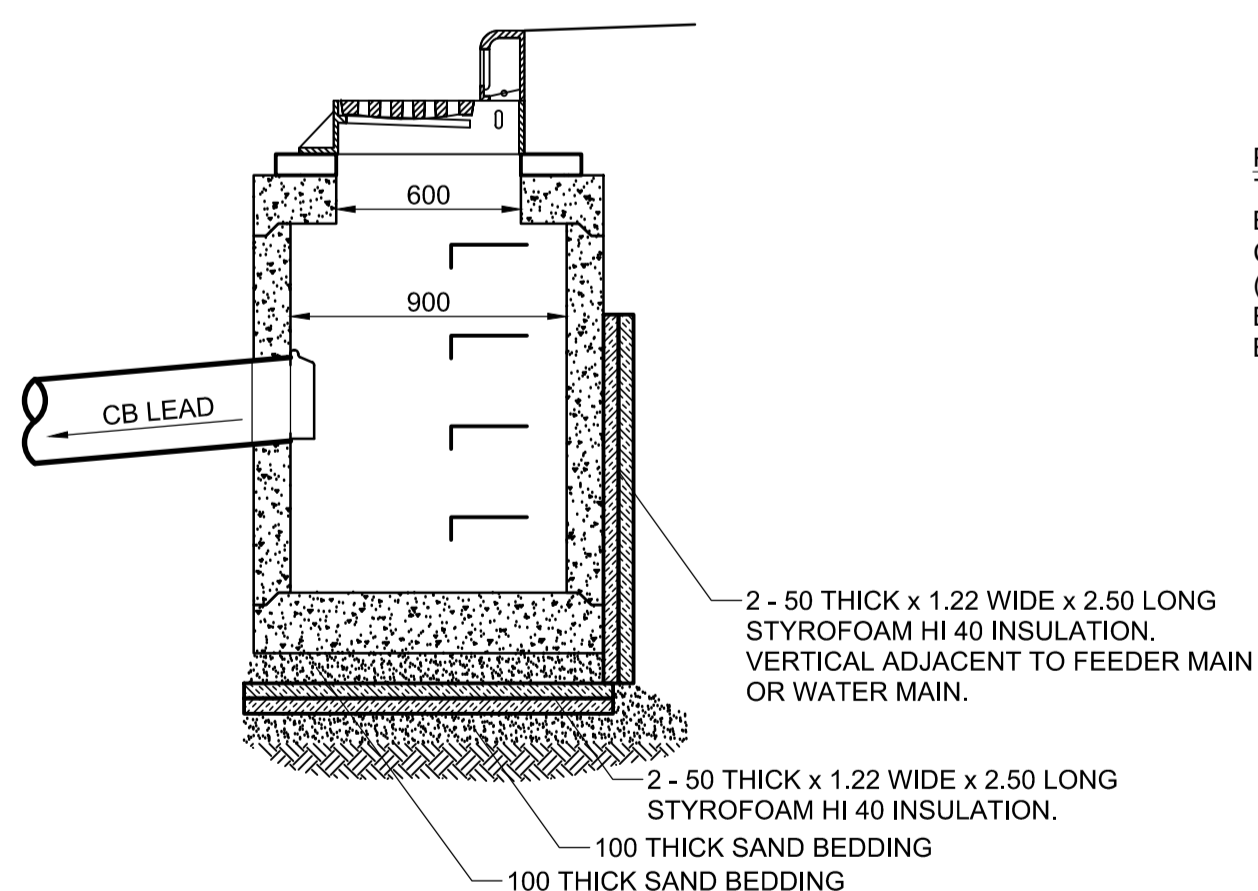
CATCHPIT INSULATION DETAIL

Scale 1:25



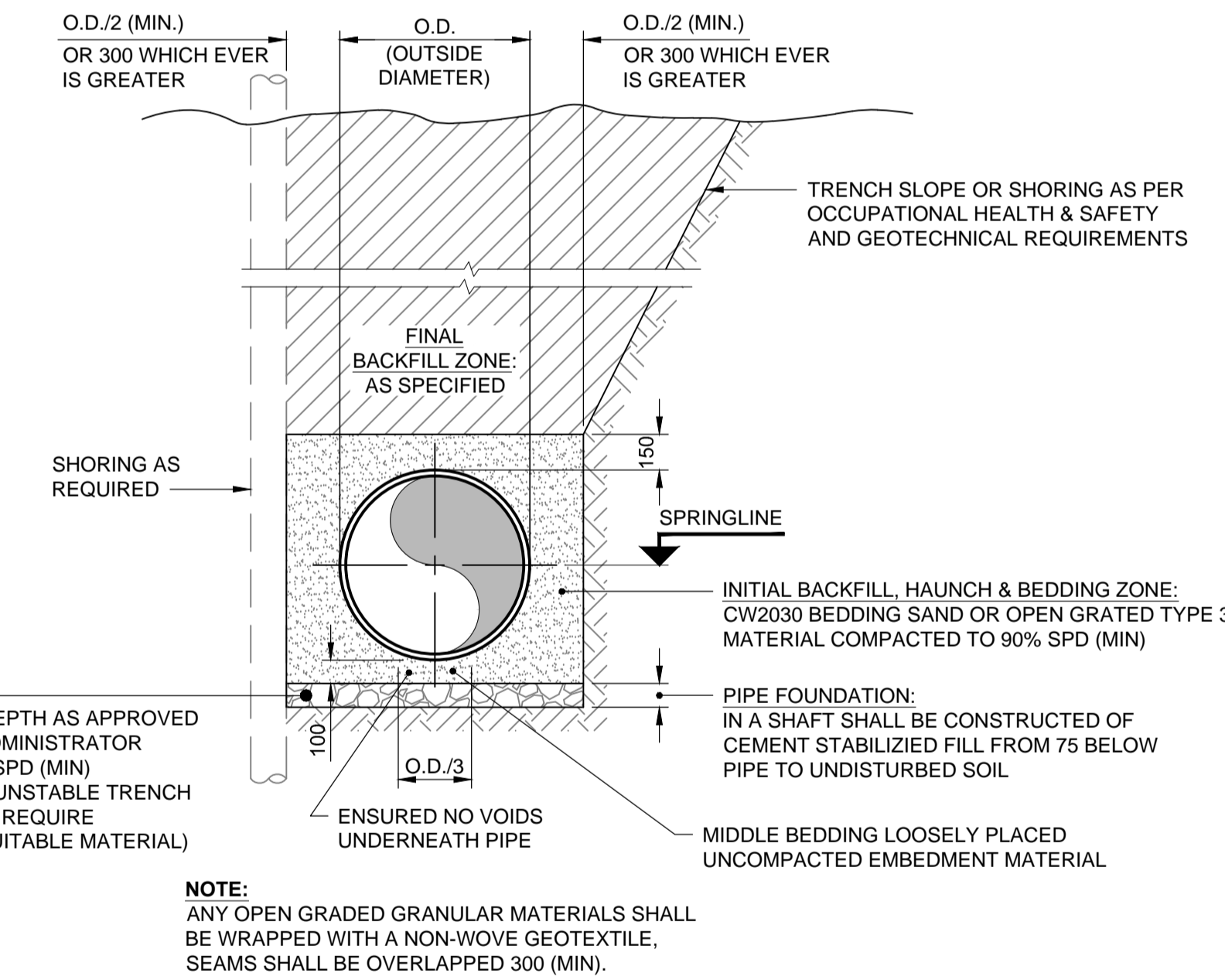
BOX INSULATION DETAIL

SCALE 1:25



CATCHBASIN INSULATION DETAIL

Scale 1:25



PIPE FOUNDATION: TYPE 2 MAX 100 OR DEPTH AS APPROVED BY THE CONTRACT ADMINISTRATOR COMPACTED TO 95% SPD (MIN) (TO BE USED WHERE UNSTABLE TRENCH BOTTOM CONDITIONS REQUIRE EXCAVATION OF UNSUITABLE MATERIAL)

- NOTE:**
- ANY OPEN GRADED GRANULAR MATERIALS SHALL BE WRAPPED WITH A NON-WOVE GEOTEXTILE, SEAMS SHALL BE OVERLAPPED 300 (MIN).

DETAIL - FLEXIBLE PIPE INSTALLATION

N.T.S. TRENCH OR SHAFT (PVC & CSP PIPE)

METRIC

WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

BID OPPORTUNITY NO. 473-2016

PA 60321148\900-Work\9100-DD CAD\200-SHEETS\Municipal\63353-C2-CO-CU-Details-001.dwg

APEGM
Certificate of Authorization
AECOM Canada Ltd.
No. 4671 Date: _____

UNDERGROUND STRUCTURES		B.M. ELEV.			
SUPV. U/G STRUCTURES	DATE				
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 TENDER	17/01/09	Wjd		
NO.	REVISIONS	DATE	BY	DATE	DATE

AECOM

DESIGNED BY	MPG	CHECKED BY	
DRAWN BY	KLC	APPROVED BY	
HOR. SCALE	AS NOTED	RELEASED FOR CONSTRUCTION	
VERTICAL	AS NOTED		

ENGINEER'S SEAL
PROVINCE OF MANITOBA
M.P.A. GAUDREAU
Member
32167
REGISTERED PROFESSIONAL ENGINEER

CONSULTANT PROJECT NUMBER
60321148

THE CITY OF WINNIPEG
PUBLIC WORKS DEPARTMENT

Waverley Street Underpass at CN Mile 3.89 Rivers Sub
Contract 2: Underpass Structure, Railworks, Roadworks, Land Drainage Sewer, Pumping Station and Landscaping Works

CITY DRAWING NUMBER
U239-2016-C2-CU-034
SHEET 34 OF 41
CONSULTANT DRAWING NUMBER
C2-CU-034

CIVIL UTILITIES MISC DETAILS 2