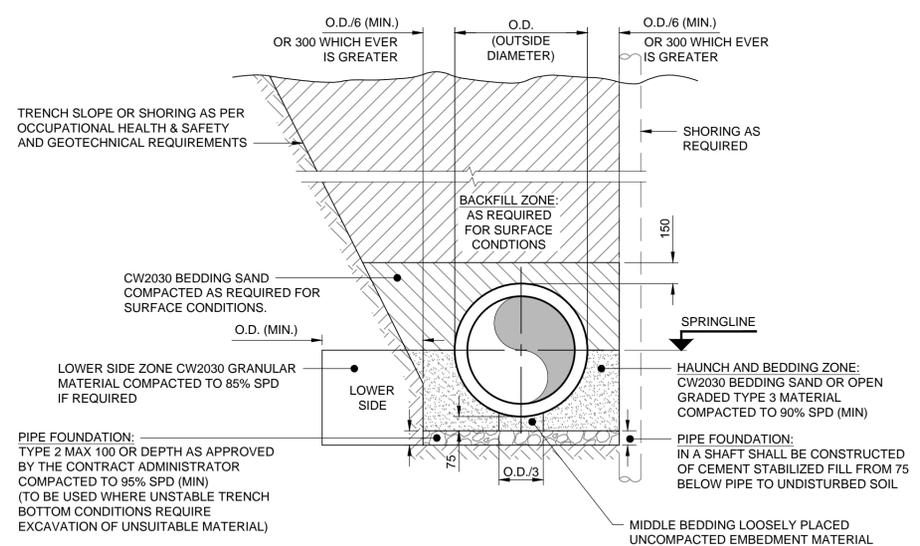
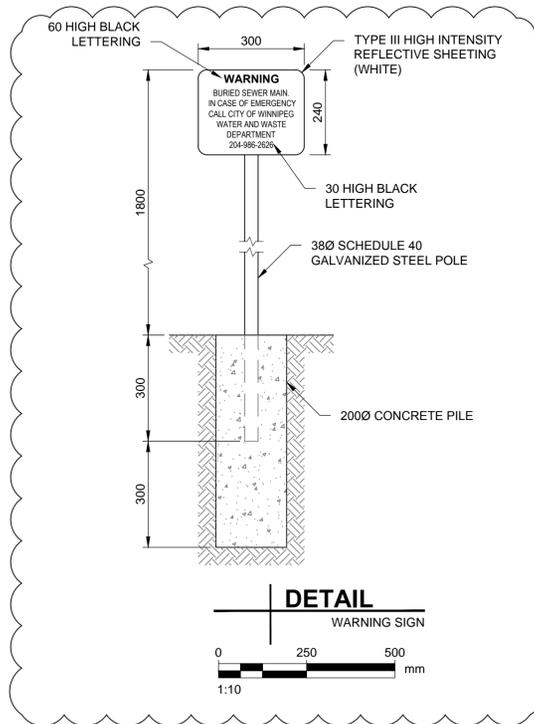


VERTICAL RE-ALIGNMENT OF PRESSURE PIPE DETAIL

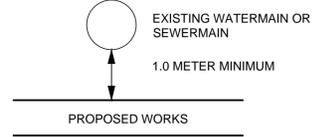
- Scale 1:20
- NOTES**
1. VERTICAL RE-ALIGNMENT OF PRESSURE PIPE SHALL BE PERFORMED WHERE INDICATED ON THE DRAWINGS AND WHERE ACTUAL VERTICAL SEPARATION BETWEEN EXISTING PRESSURE PIPE AND NEW GRAVITY SEWER IS LESS THAN MINIMUM REQUIREMENTS REQUIRED BY UNDERGROUND STRUCTURES.
 2. VERTICAL RE-ALIGNMENT SHALL RE-ALIGN PRESSURE PIPE BELOW GRAVITY SEWER TO MINIMUM CLEARANCES INDICATED.
 3. 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.



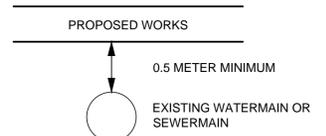
DETAIL - RIGID PIPE INSTALLATION

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

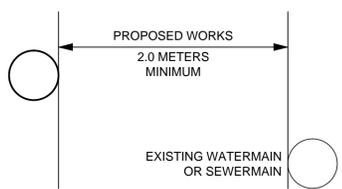
A MINIMUM CLEARANCE OF 1.0 METER MUST BE PROVIDED BETWEEN THE UNDERSIDE OF ANY EXISTING WATERMAIN OR SEWERMAIN AND THE TOP OF THE PROPOSED WORKS. THIS INSTALLATION BY TRENCHLESS METHOD ONLY.



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.



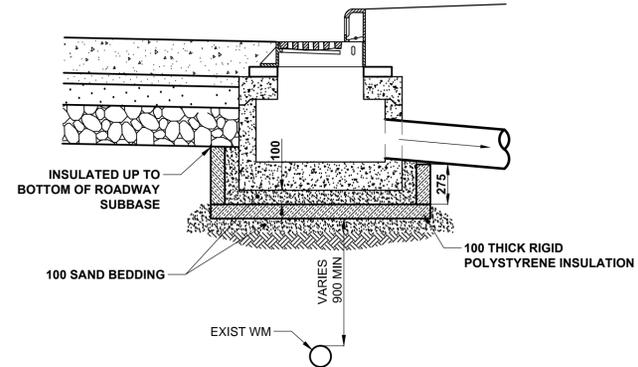
A MINIMUM LATERAL CLEARANCE OF 2.0 METERS MUST BE PROVIDED BETWEEN ANY EXISTING WATERMAIN OR SEWERMAIN PIPE AND THE PROPOSED WORKS.



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.

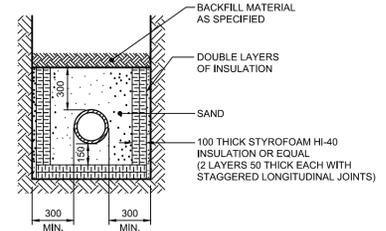
WATER & WASTE DEPARTMENT UNDERGROUND STRUCTURES PIPE CLEARANCE REQUIREMENTS

Scale 1:1



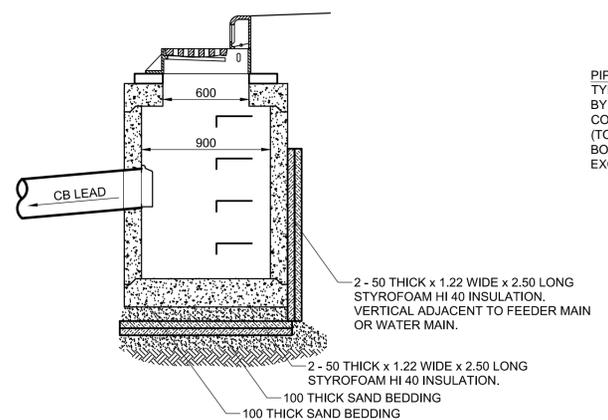
CATCHPIT INSULATION DETAIL

Scale 1:25



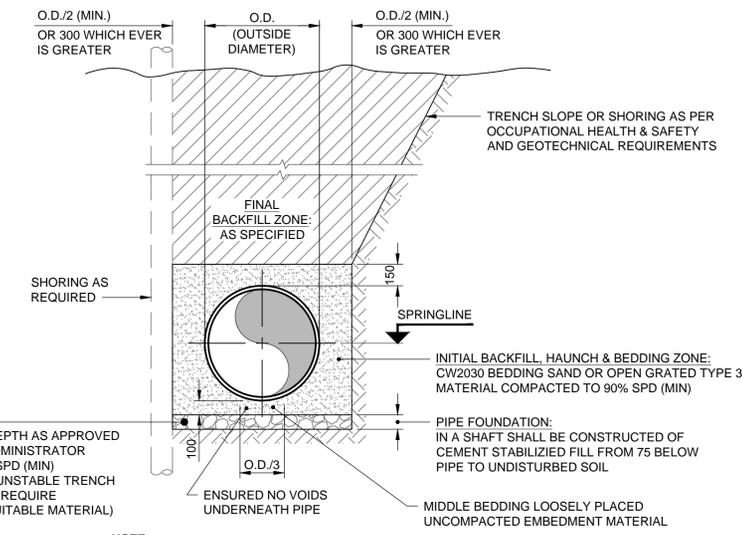
BOX INSULATION DETAIL

SCALE 1:25



CATCHBASIN INSULATION DETAIL

Scale 1:25



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

<p>UNDERGROUND STRUCTURES</p> <p>SUPV. U/G STRUCTURES DATE</p>		<p>B.M. ELEV.</p>		<p>AECOM</p>		<p>ENGINEER'S SEAL</p> <p>PROVINCE OF MANITOBA</p> <p>M.P.A. GAUDREAU</p> <p>Member 32167</p> <p>REGISTERED PROFESSIONAL ENGINEER</p>		<p>THE CITY OF WINNIPEG</p> <p>PUBLIC WORKS DEPARTMENT</p>	
<p>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.</p>		<p>DESIGNED BY: MPG</p> <p>CHECKED BY:</p> <p>DRAWN BY: KLC</p> <p>APPROVED BY:</p> <p>HOR. SCALE: AS NOTED</p> <p>VERTICAL: AS NOTED</p> <p>RELEASED FOR CONSTRUCTION</p>		<p>CONSULTANT PROJECT NUMBER: 60321148</p>		<p>WAVERLEY STREET UNDERPASS AT CN MILE 3.89 RIVERS SUB CONTRACT 2: UNDERPASS STRUCTURE, RAILWORKS, ROADWORKS, LAND DRAINAGE SEWER, PUMPING STATION AND LANDSCAPING WORKS</p>		<p>CITY DRAWING NUMBER: U239-2016-C2-CU-034</p> <p>SHEET 34 OF 41</p> <p>CONSULTANT DRAWING NUMBER: C2-CU-034</p>	
<p>NO. REVISIONS</p> <p>DATE</p> <p>BY</p>		<p>DATE</p> <p>DATE</p> <p>DATE</p>		<p>DATE</p> <p>DATE</p> <p>DATE</p>		<p>CIVIL UTILITIES MISC DETAILS 2</p>		<p>C2-CU-034</p>	



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