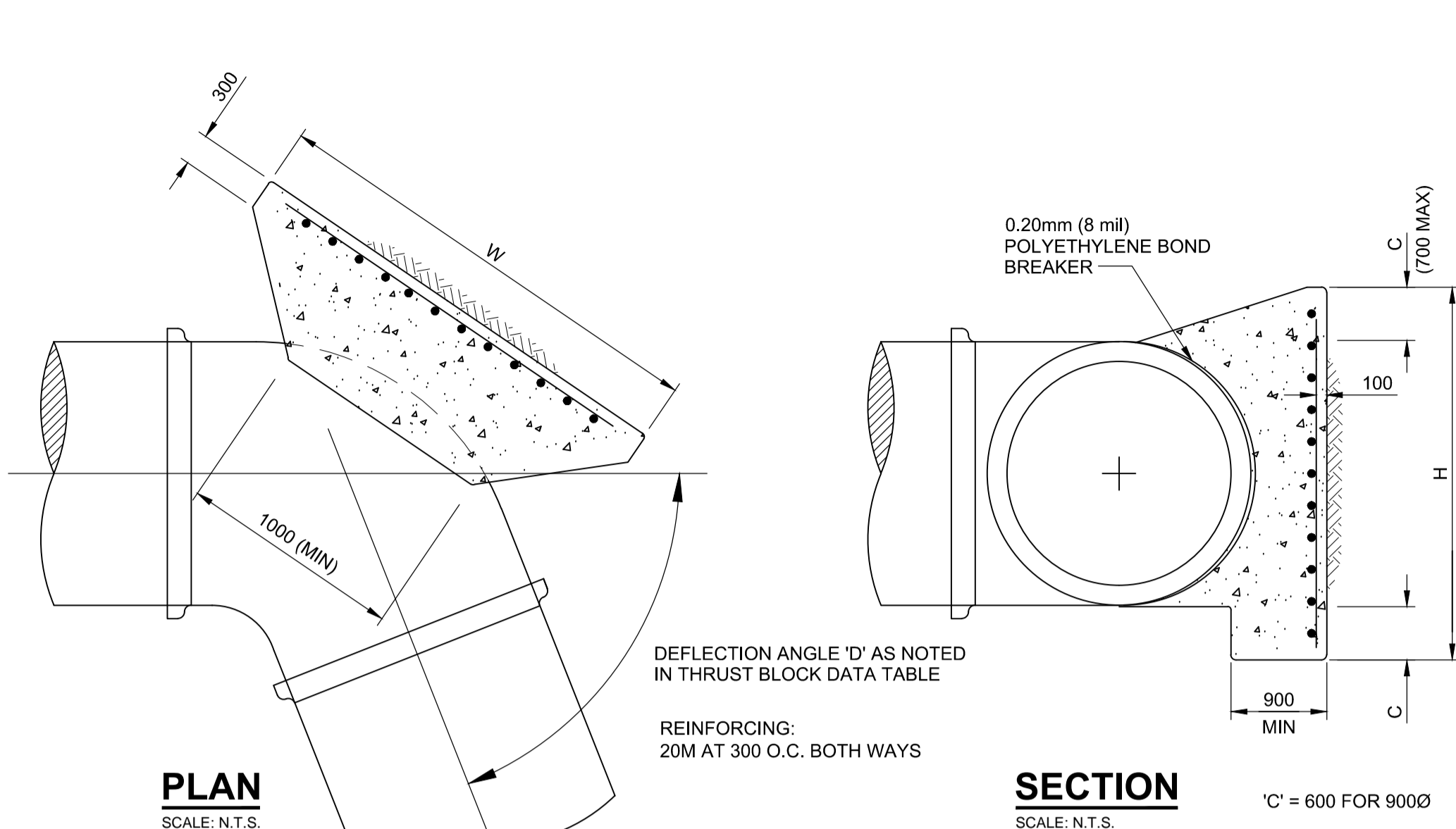


THRUST BLOCK DATA TABLE

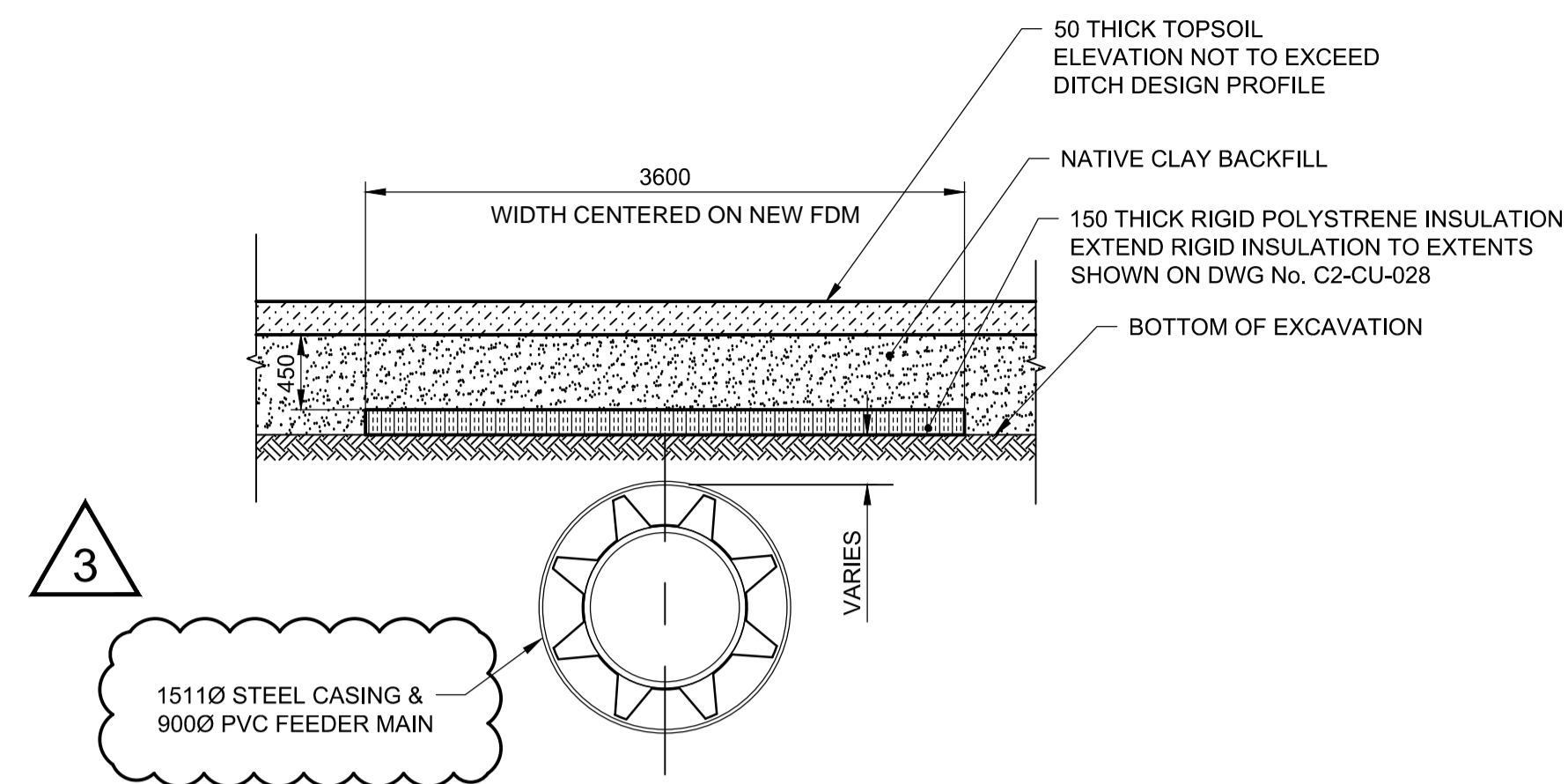
SIZE	BEARING AREA A (m <sup>2</sup> )	H (m)	W (m)	DEFLECTION ANGLE D
900Ø FM	10.85	2.40	4.55	45°
900Ø FM	12.00	2.65	4.55	50°

DESIGN CRITERIA

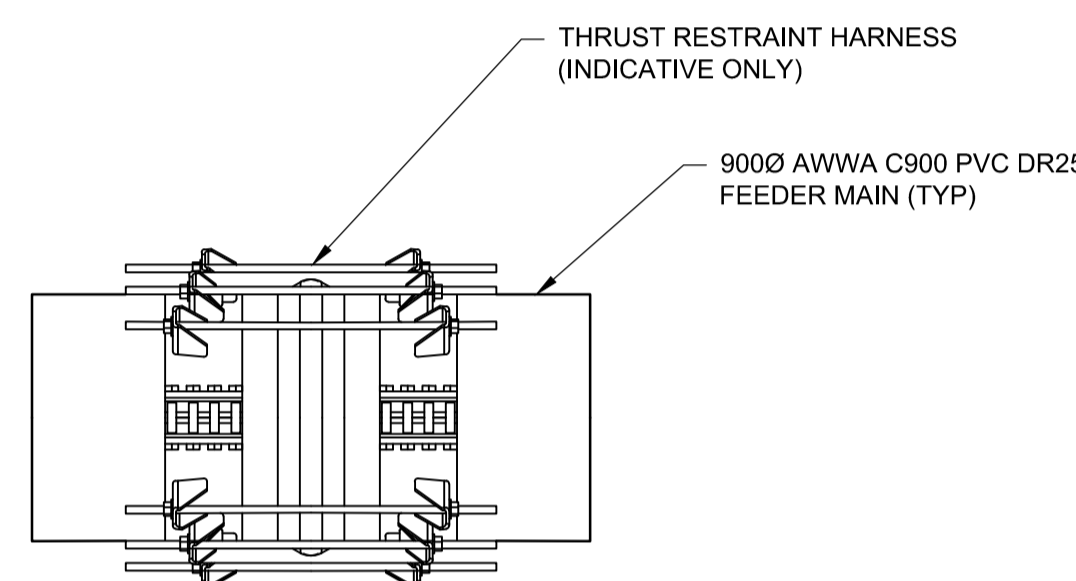
	PRESSURE	SOIL BEARING
PRESSURE TEST	830 KPa	58 KPa
LONG TERM	700 KPa	48 KPa



BENDS  
SCALE: N.T.S.

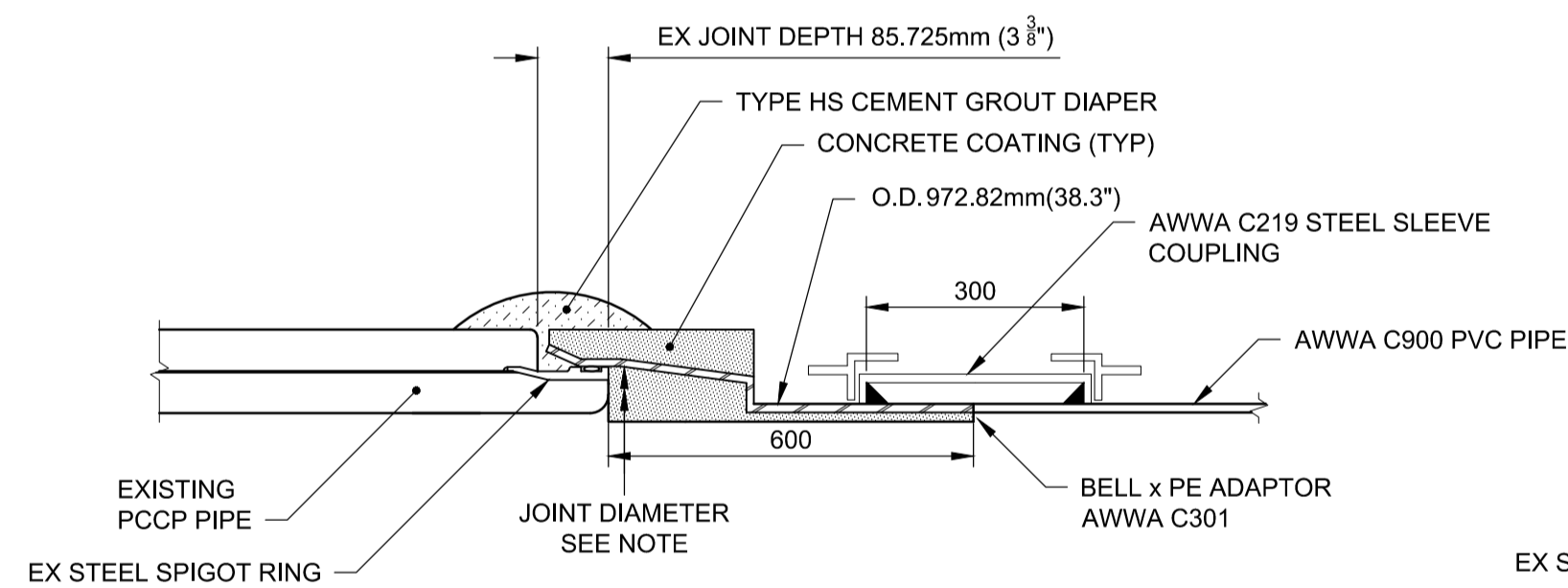


INSULATION DETAIL FOR MIDTOWN FEEDER MAIN AT C.N. CROSSING  
1:40

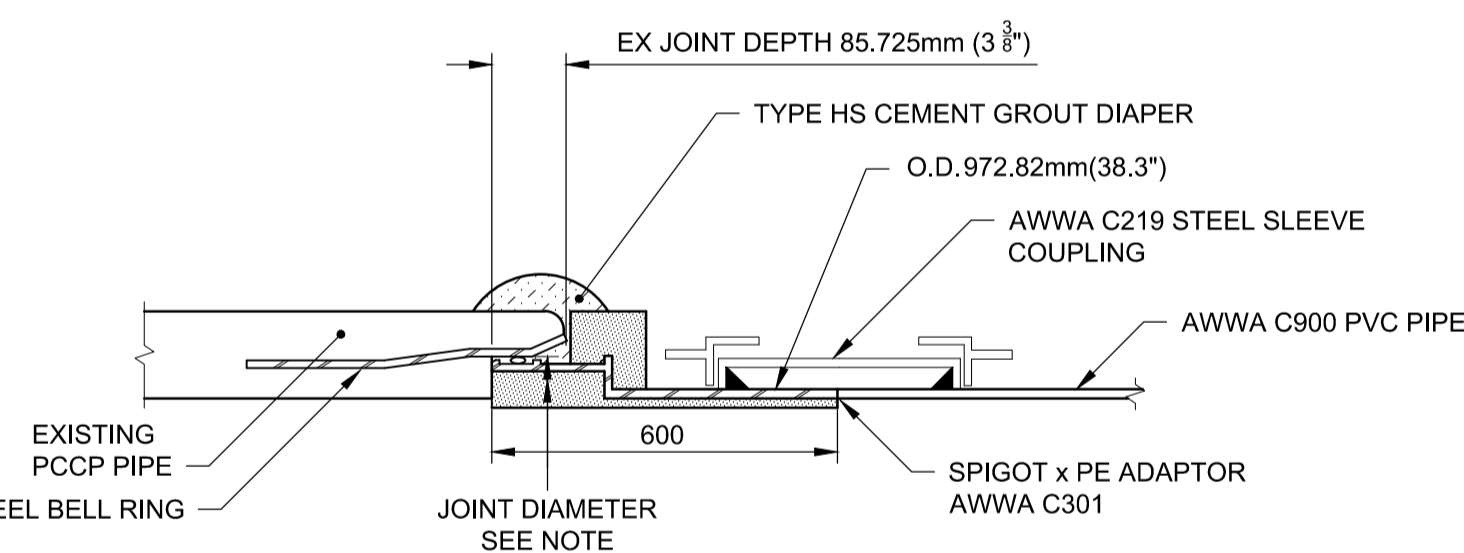


JOINT RESTRAINT DETAIL  
1:25

NOTE:  
RESTRAINT TO BE SIZED TO MATCH EITHER THE BELL OR THE PIPE BARREL AS REQUIRED FOR THE RESTRAINT SYSTEM



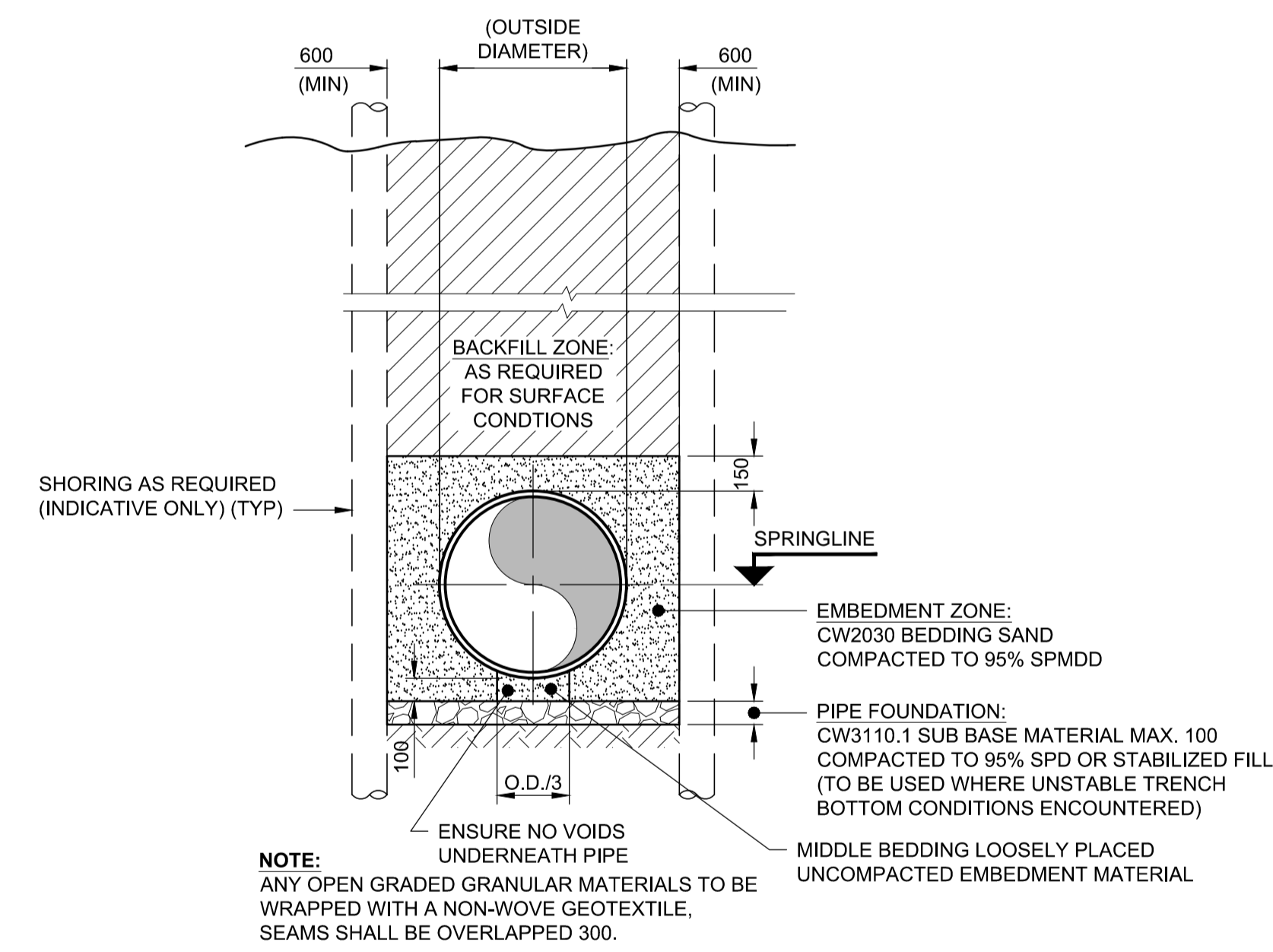
DETAIL  
EXISTING PCCP SPIGOT TO PVC CONNECTION  
N.T.S.



DETAIL  
EXISTING PCCP BELL TO PVC CONNECTION  
N.T.S.

NOTES:

1. COAT ALL EXPOSED STEEL INCLUDING PIPE COUPLING AS PER AWWA C210
2. WRAP COUPLINGS & STEEL COMPONENTS WITH PETROLATUM CORROSION PROTECTION WRAP
3. CONFIRM 'O' RING DIAMETERS
4. GROUT INTERIOR GAP
5. CONTRACTOR TO CONFIRM JOINT DIAMETERS PRIOR TO PROCUREMENT OF ADAPTORS
6. JOINT DIAMETERS:
  - 900 (NOM)Ø: 990.6mm (39")



DETAIL  
MIDTOWN FEEDER MAIN & CASING INSTALLATION (TRENCH DETAIL)  
N.T.S.

WARNING

IF POWER EQUIPMENT OR EXPLOSIVES ARE TO BE USED FOR EXCAVATION ON THIS PROJECT THE CONTRACTOR MUST:

1. NOTIFY THE GAS COMPANY OF THE PROPOSED LOCATION OF EXCAVATION.
2. TAKE PRECAUTION TO AVOID DAMAGE TO GAS COMPANY INSTALLATIONS SEE PROVINCIAL REGULATION 210/72 FOR DETAILS.
3. OBTAIN EXCAVATION PERMITS PRIOR TO CONSTRUCTION.

PA:60321148-900-Work\9100-DD CAD-200-SHEETS\Municipal\63353-C2-CO-CU-Midtown FM Off-line Replacement.dwg

150 WM	150 WM	150 WM	150 WM	150 WM	150 WM	150 WM	150 WM
WATER MAIN	HYDRANT	VALVE	LAND DRAINAGE SEWER	WASTE WATER SEWER	SEWER SERVICE PIPE	DRAINAGE CONNECTION PIPE	MANHOLE
HYDRANT	VALVE	LAND DRAINAGE SEWER	WASTE WATER SEWER	SEWER SERVICE PIPE	DRAINAGE CONNECTION PIPE	MANHOLE	CATCH BASIN
SURVEY BAR	CURB STOP	REDUCER	COUPLING	ANODE	HYDRO	MTS	GAS
CURB STOP	REDUCER	COUPLING	ANODE	HYDRO	MTS	GAS	TESTHOLE
REDUCER	COUPLING	ANODE	HYDRO	MTS	GAS	TESTHOLE	LAMP STANDARD
COUPLING	ANODE	HYDRO	MTS	GAS	TESTHOLE	LAMP STANDARD	LEGEND - PLAN
ANODE	HYDRO	MTS	GAS	TESTHOLE	LAMP STANDARD	LEGEND - PLAN	LEGEND - PROFILE
HYDRO	MTS	GAS	TESTHOLE	LAMP STANDARD	LEGEND - PLAN	LEGEND - PROFILE	LEGEND - PROFILE
MTS	GAS	TESTHOLE	LAMP STANDARD	LEGEND - PLAN	LEGEND - PROFILE	LEGEND - PROFILE	LEGEND - PROFILE
GAS	TESTHOLE	LAMP STANDARD	LEGEND - PLAN	LEGEND - PROFILE	LEGEND - PROFILE	LEGEND - PROFILE	LEGEND - PROFILE
TESTHOLE	LAMP STANDARD	LEGEND - PLAN	LEGEND - PROFILE	LEGEND - PROFILE	LEGEND - PROFILE	LEGEND - PROFILE	LEGEND - PROFILE
LAMP STANDARD	LEGEND - PLAN	LEGEND - PROFILE	LEGEND - PROFILE	LEGEND - PROFILE	LEGEND - PROFILE	LEGEND - PROFILE	LEGEND - PROFILE
LEGEND - PLAN	LEGEND - PROFILE	LEGEND - PROFILE	LEGEND - PROFILE	LEGEND - PROFILE	LEGEND - PROFILE	LEGEND - PROFILE	LEGEND - PROFILE

UNDERGROUND STRUCTURES

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.

B.M. ELEV.	NO.	REVISIONS	DATE	BY
	3	ISSUED FOR ADDENDUM 7	17/03/09	WJd
	2	ISSUED FOR ADDENDUM 5	17/03/02	WJd
	1	ISSUED FOR ADDENDUM 1	17/01/25	DKD
	0	ISSUED FOR TENDER	17/01/09	DKD

<b>AECOM</b>	
DESIGNED BY	ADB
CHECKED BY	
DRAWN BY	WJd
APPROVED BY	
HOR. SCALE	AS NOTED
VERTICAL	AS NOTED
CONSULTANT PROJECT NUMBER	60321148

ENGINEER'S SEAL
PROVINCE OF MANITOBA
<b>A. D. BRAUN</b>
Member
24453
REGISTERED PROFESSIONAL ENGINEER
CONSULTANT PROJECT NUMBER
60321148

<b>THE CITY OF WINNIPEG</b> 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-030
EXISTING MIDTOWN FEEDER MAIN RAIL CROSSING FM OFF-LINE REPLACEMENT DETAILS 2	SHEET 30 OF 41 CONSULTANT DRAWING NUMBER C2-CU-030

**APEGM**  
Certificate of Authorization  
AECOM Canada Ltd.  
No. 4671 Date: \_\_\_\_\_

METRIC  
WHOLE NUMBERS INDICATE MILLIMETRES  
DECIMALIZED NUMBERS INDICATE METRES

BID OPPORTUNITY NO. 473-2016