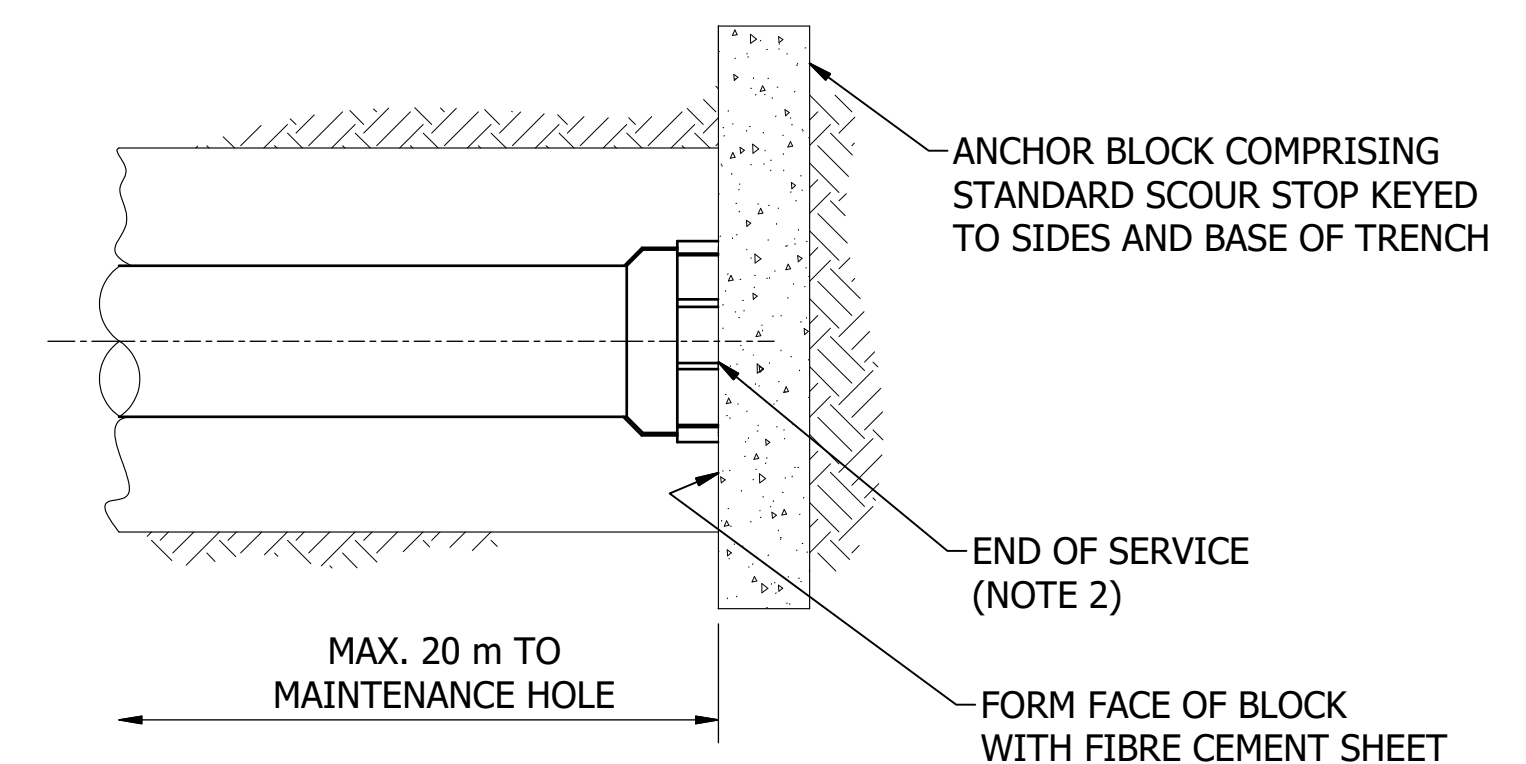
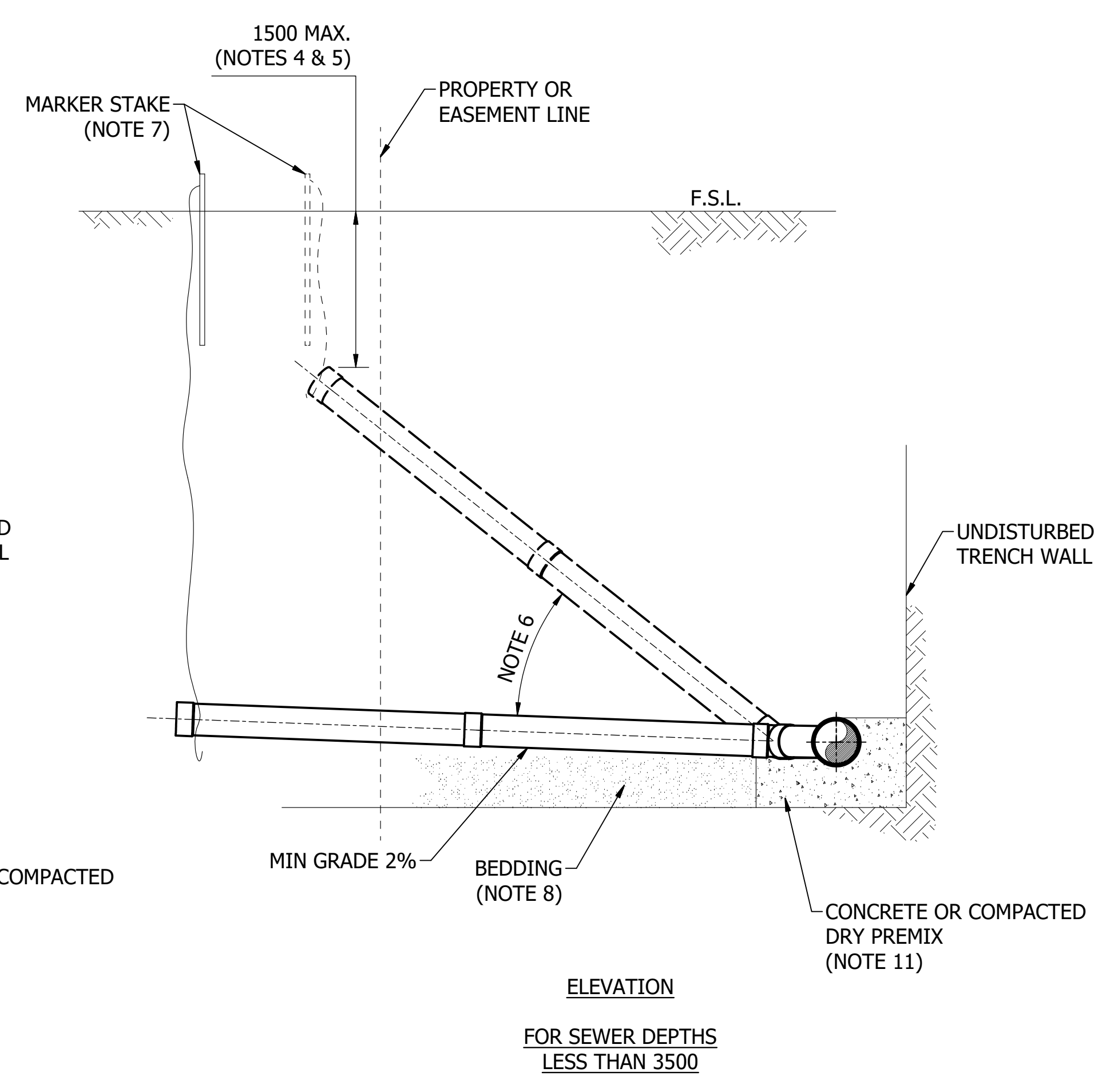
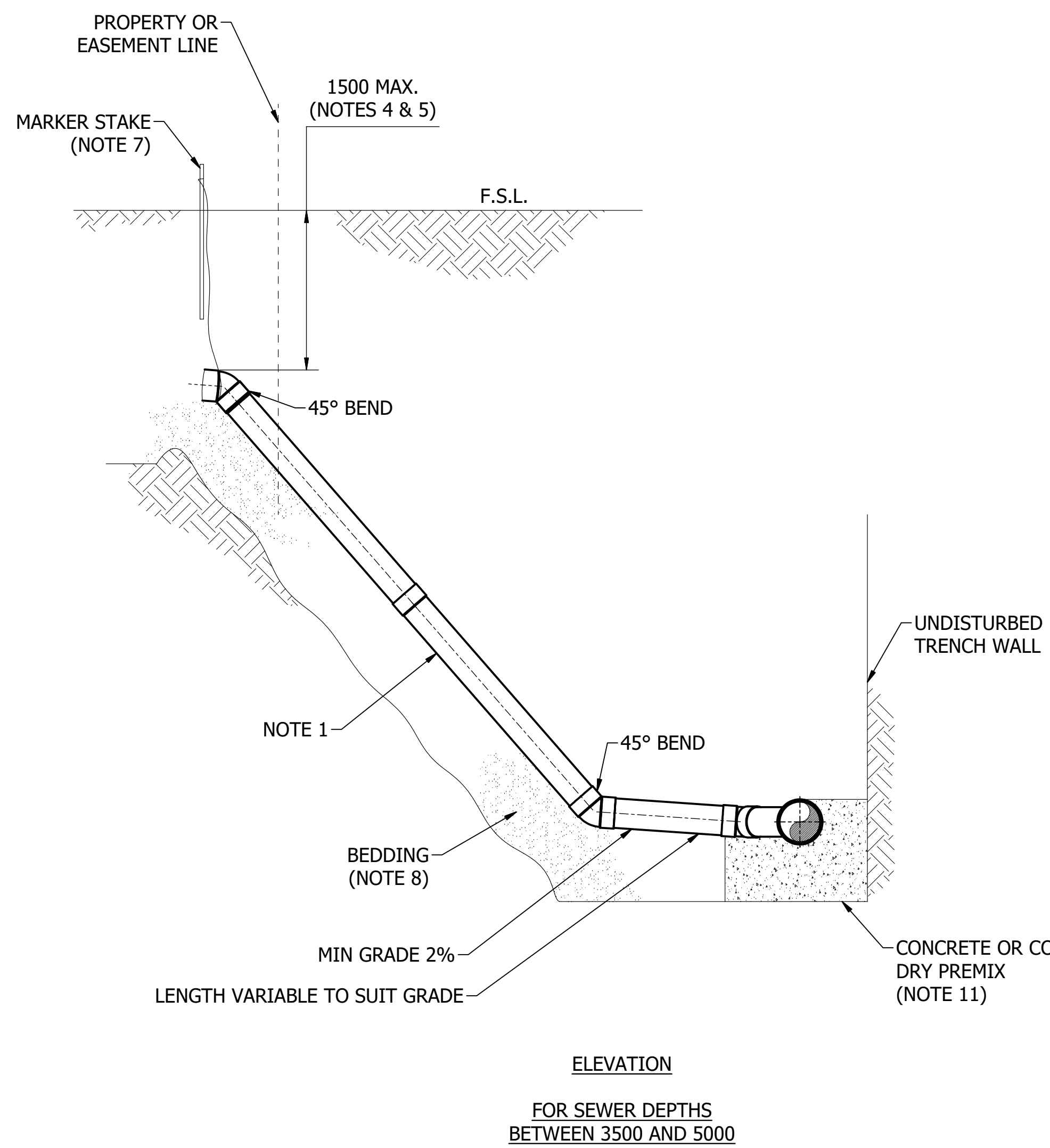
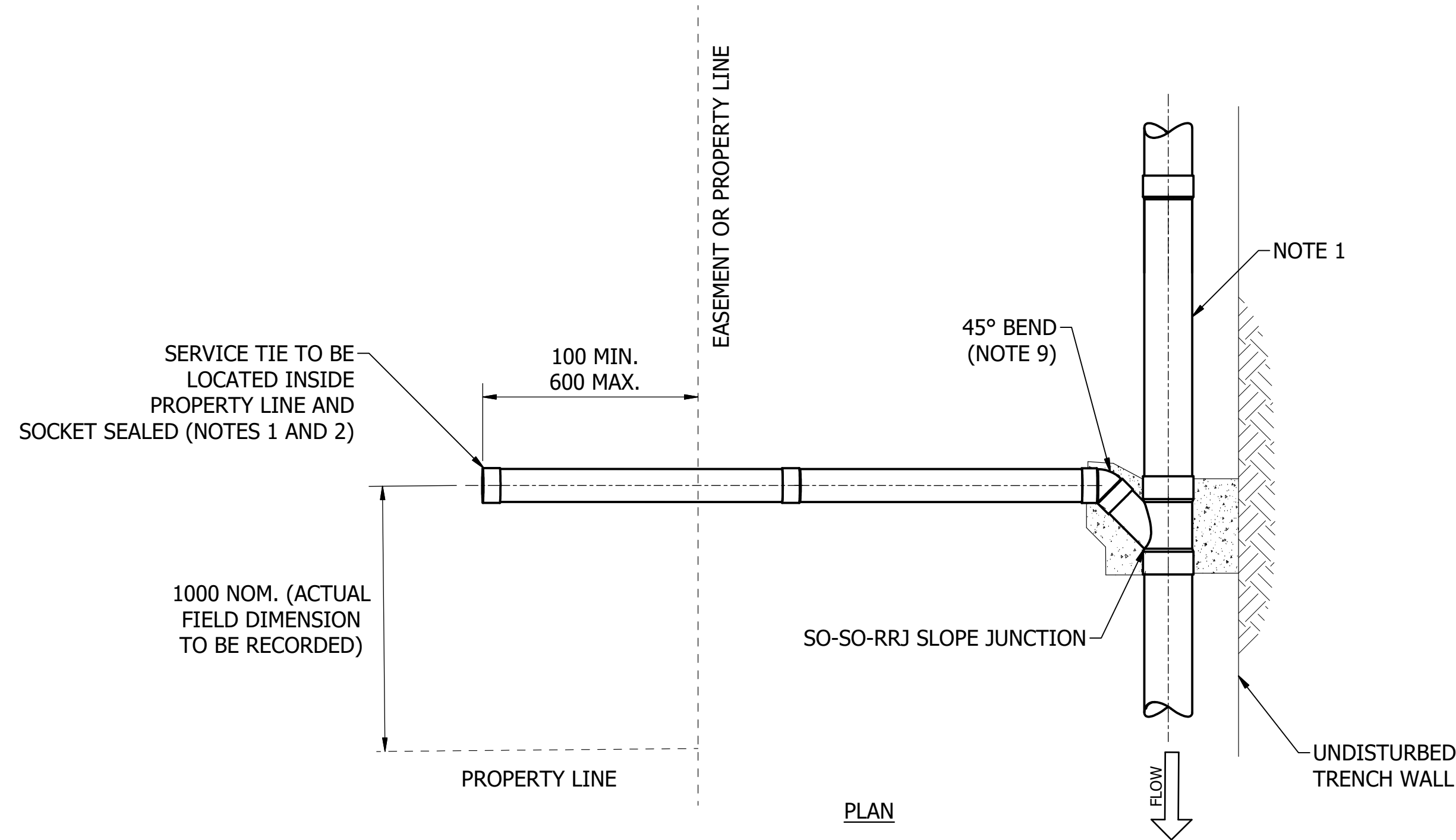


NOTES:

1. ONLY ONE FIELD CUT SHALL BE PROVIDED ON FULL PIPE LENGTHS BETWEEN CONSECUTIVE SEWER TIES AND MH'S WITH THE EXCEPTION OF SHORT PIPE LENGTHS INSTALLED TO ALLOW FOR DIFFERENTIAL SETTLEMENT BETWEEN ADJACENT RIGID STRUCTURES. OTHERWISE, STANDARD LENGTHS MUST BE USED TO OBTAIN THE NECESSARY DIMENSIONS.
2. FOR DEAD ENDS AND SERVICE TIES, VC SERVICES SHALL BE SEALED WITH A VC PLUG, RUBBER RING AND GALVANISED WIRE RETAINING CLIP. PVC SERVICES SHALL BE SEALED WITH A SOLVENT CEMENTED END CAP OR SCREW CAP.
3. VERTICAL RISERS (AS SHOWN ON SD-2006) SHALL ONLY BE PROVIDED WHEN THE LICENSED PLUMBER OR BUILDER IS REQUIRED TO EXCAVATE (AS PART OF THEIR SCOPE OF WORKS) FOR A TIE DEPTH GREATER THAN 1500 mm OR WHEN THERE IS INSUFFICIENT SPACE ON PUBLIC LAND TO PERMIT ANY OTHER APPROVED MEANS OF ACHIEVING A TIE (e.g. 45° JUMP UP DIRECT CONNECTION OR A MAINTENANCE HOLE WITH AN EXTERNAL DROP). VERTICAL RISERS SHALL BE INSTALLED DURING THE INSTALLATION OF THE SEWER MAIN AND SHALL BE CAPPED AT A DEPTH OF 600 mm. IT IS THE RESPONSIBILITY OF THE LICENSED PLUMBER TO CONNECT TO THE RISER TO FORM THE TIE POINT AT THE APPROPRIATE DEPTH (TO A MAXIMUM OF 1500 mm). THE LICENSED PLUMBER SHALL, AT THE TIME OF CONNECTION, EXTEND THE RISER AND CAP IT AT THE FINISHED SURFACE LEVEL AS PER THE DETAILS SHOWN.
4. MINIMUM DEPTH OF COVER:
 - a) FOR RESIDENTIAL BLOCKS, IT SHALL BE 600 mm AT ALL POINTS (BASED ON A MAXIMUM POSSIBLE LENGTH OF HOUSE DRAIN AT A GRADE OF 1 IN 50).
 - b) FOR INDUSTRIAL AND COMMERCIAL BLOCKS, IT SHALL BE 900 mm.
 - c) FOR ROAD RESERVES AND ROADWAYS, IT SHALL BE 900 mm.
5. THE DEPTH OF THE TIE POINT PROVIDED BY A PLUMBER OR BUILDER AS PART OF THEIR SCOPE OF WORKS FOR CONNECTION OF A SERVICE TIE SHALL BE 1500 mm MAX, UNLESS A PROJECT SPECIFIC APPROVAL IS OBTAINED FROM ICON WATER. PROJECT SPECIFIC APPROVALS SHALL BE LIMITED TO A MAXIMUM TIE POINT DEPTH OF 2500 mm.
6. SERVICE TIES MAY BE ANGLED UP TO SUIT TO A MAXIMUM OF A 100% GRADE (i.e. 1:1).
7. SERVICE TIE LOCATIONS SHALL BE IDENTIFIED WITH AN APPROVED MARKER TAPE (REF: ICON WATER APPROVED PRODUCTS LIST). THE TAPE SHALL BE SECURED TO THE END OF THE TIE AND BROUGHT VERTICALLY TO THE SURFACE AND ATTACHED TO A MARKER STAKE WHICH PROTRUDES 300 mm ABOVE THE FINISHED SURFACE LEVEL.
8. LOW SLUMP CONCRETE BEDDING SHALL BE USED FOR GRADES EXCEEDING 15% AND UP TO 50%. A 150 mm THICK N15 PLAIN CONCRETE SURROUND SHALL BE USED FOR GRADES EXCEEDING 50%.
9. TIE AND SEWER BENDS SHALL HAVE A DIAMETER $\geq 2.5 \times$ PIPE DIAMETER.
10. MINIMUM SEPARATION BETWEEN PROPERTY (SEWER) BRANCH LINES AND OTHER SERVICES SHALL BE 250 mm. FOR SEWER MAINS, REFER TO SD-2101.
11. CONCRETE OR COMPACT DRY PREMIX SUPPORTING THE SLOPE JUNCTION IS TO FULLY SUPPORT THE Y-ELBOW AND CURTAIL CONCRETE 25 mm BEFORE THE ENDS OF THE FITTINGS. NO SPECIAL FORMWORK IS REQUIRED ON THE PROVISO THAT THE JUNCTION IS FULLY SUPPORTED SO THAT (i) THE PIPE INVERT LEVEL DOES NOT DROP AND (ii) THE JUNCTION IS SUPPORTED TO PREVENT "PUNCH THROUGH" DURING RODDING ACTIVITIES.
12. REFER TO ICON WATER SPECIFICATION STD-SPE-M-006 FOR SPECIFIC DETAILS REGARDING WHEN MH's, BVR's AND JUMP UPS ARE TO BE USED.
13. ALL JUNCTION ARMS ARE TO BE RUBBER RING JOINT (TO ALLOW FOR DIFFERENTIAL SETTLEMENT BETWEEN THE MAIN AND BRANCH LINE).



45 DEGREE JUMP UP DIRECT CONNECTION TO SEWER OUTSIDE LEASE

SEWER DEAD END DETAIL (ONLY TO BE USED FOR FUTURE UPSTREAM CONNECTIONS)

A	INITIAL ISSUE	16/05/2018	S. Essery	K. Danenbergson	D. Eager
B	NOTES AND SLOPE JUNCTION LEADER UPDATES	18/06/2019	S. Essery	K. Danenbergson	C. Patrick
C	NOTE 11 UPDATED	17/07/2019	S. Essery	K. Danenbergson	C. Patrick
No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED

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BWS	WAT	STP
WTP	SEW	
WPS	REC	
ASSET AREA APPLICABILITY		

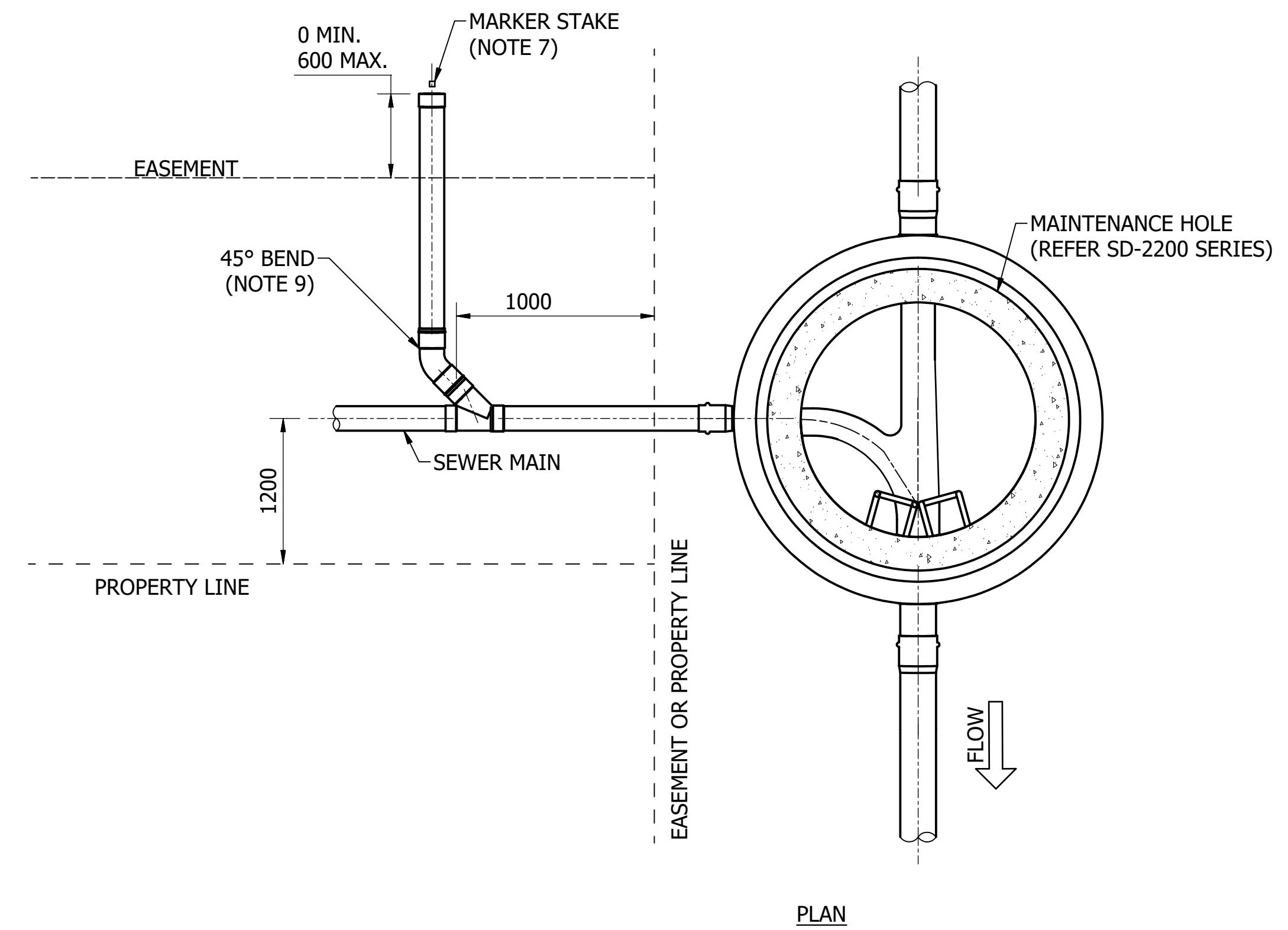
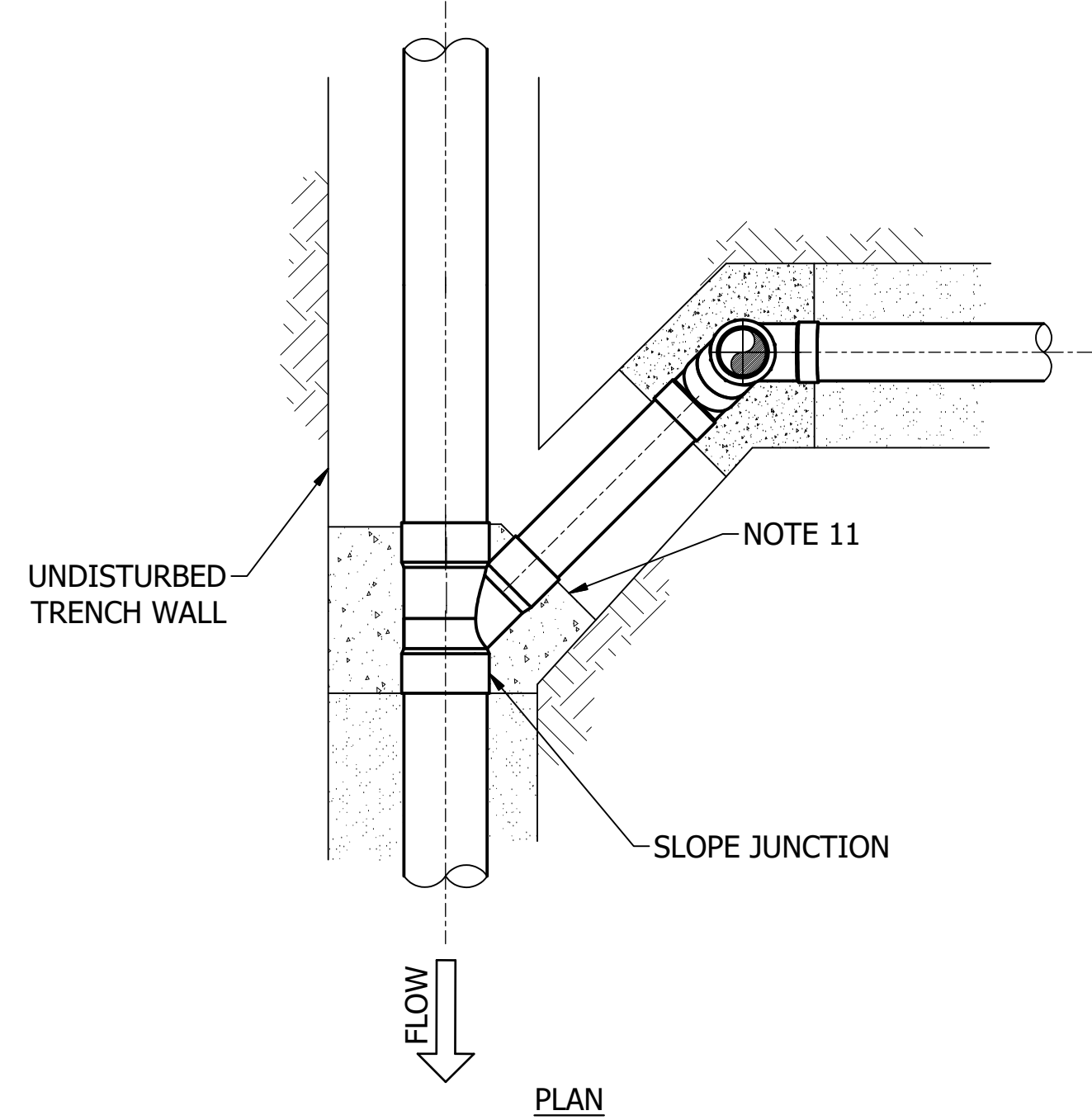


STANDARD DRAWING
SEWERAGE NETWORK
PROPERTY CONNECTION DETAILS
SEWER TIES
SHEET 1 OF 2

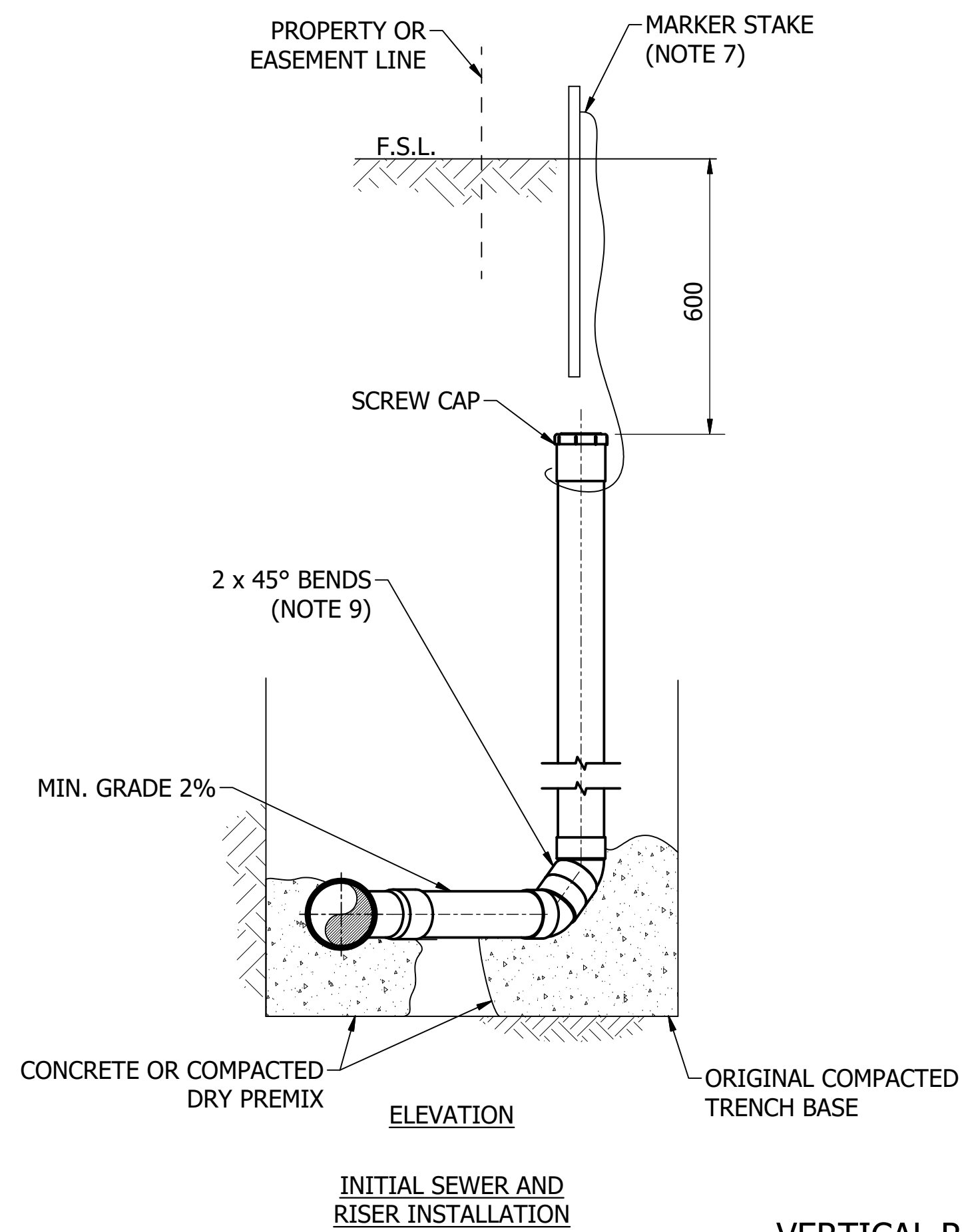
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Current	
SD-2005-D	
A1	ISSUE C
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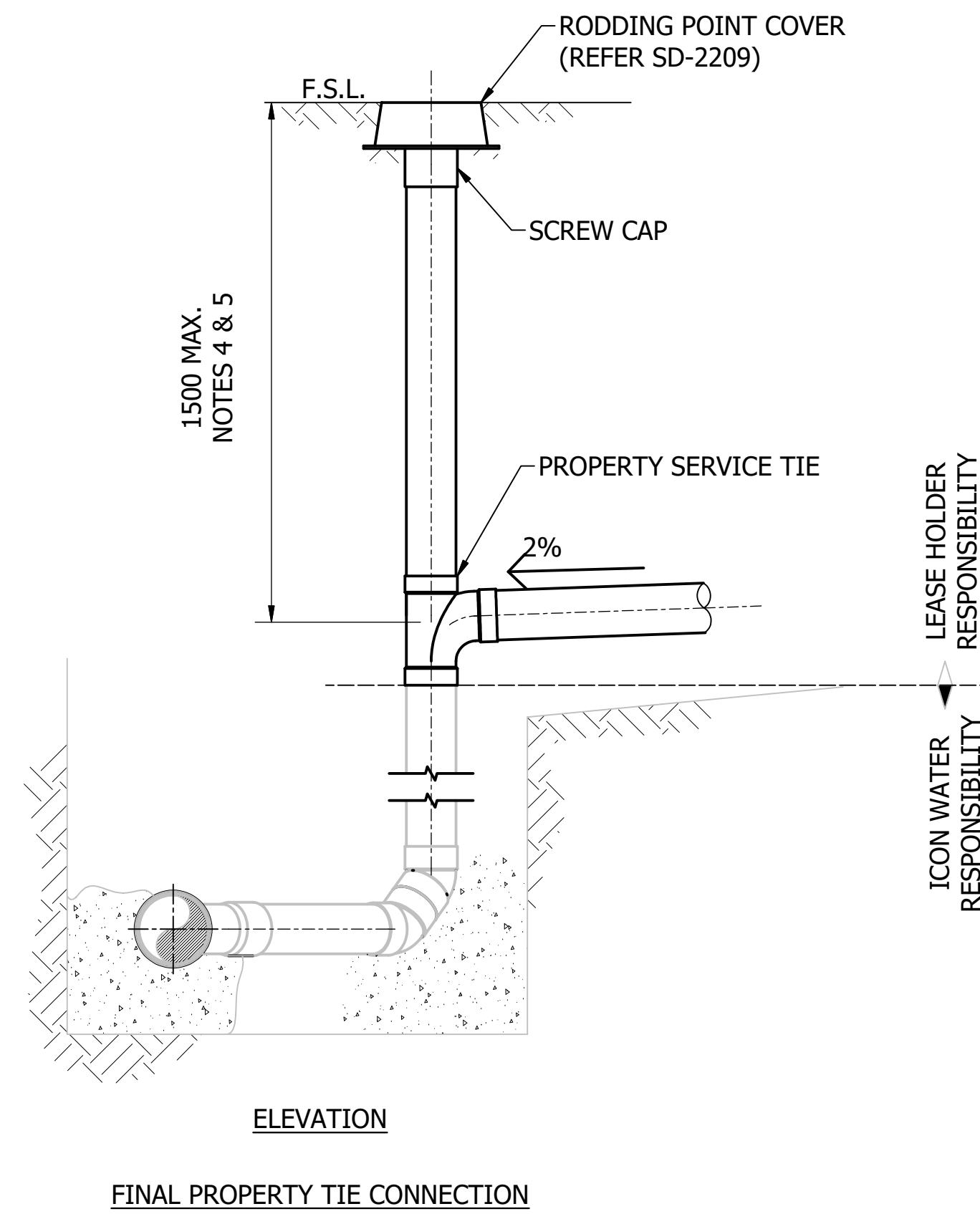
FOR ALL NOTES REFER TO SD-2005



SEWER MAIN AND TIE WITHIN LEASE

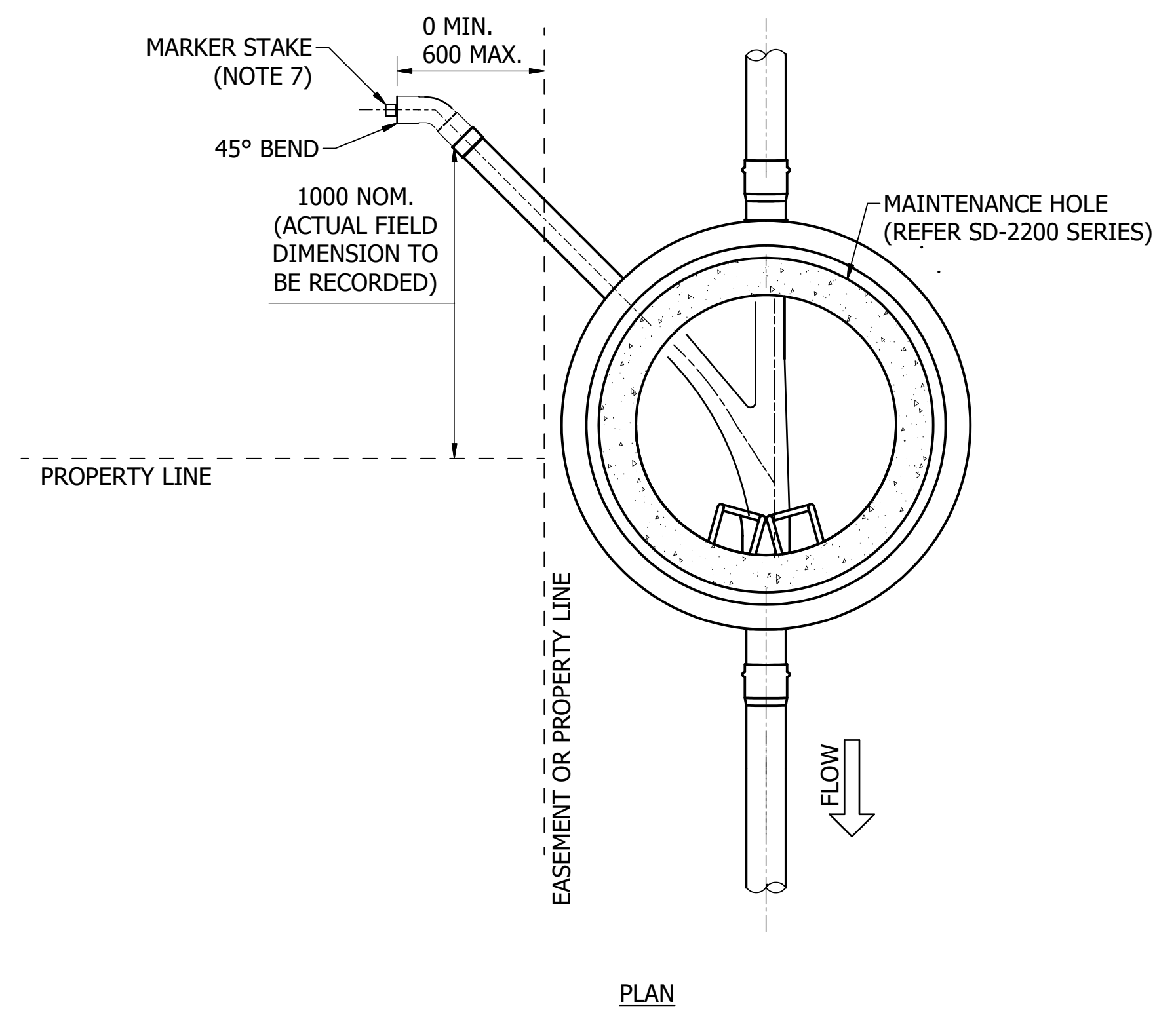


INITIAL SEWER AND RISER INSTALLATION



FINAL PROPERTY TIE CONNECTION

VERTICAL RISERS INSTALLATION AND CONNECTION (NOTE 3)



SEWER TIE TO MAINTENANCE HOLE (NOTE 12)

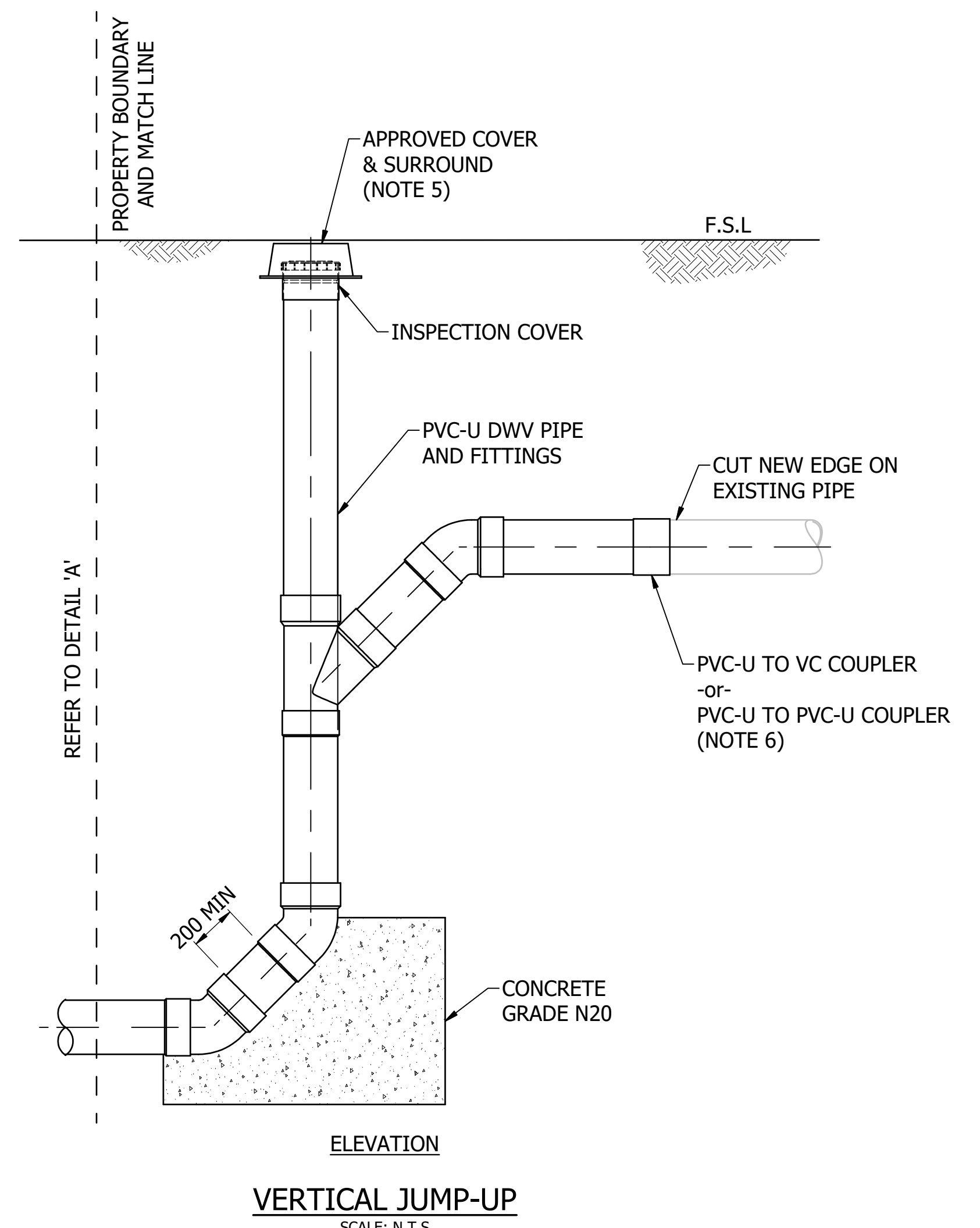
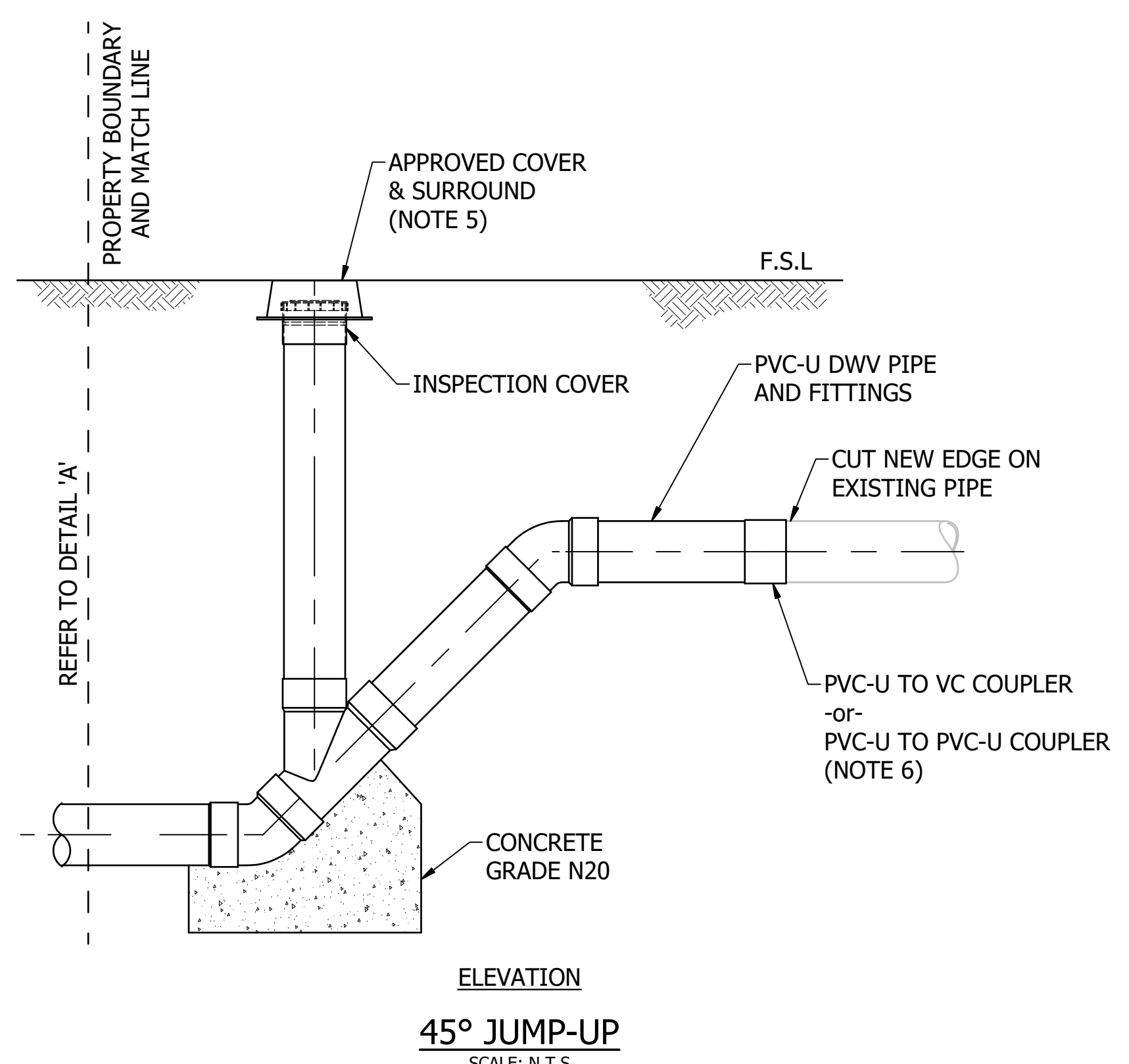
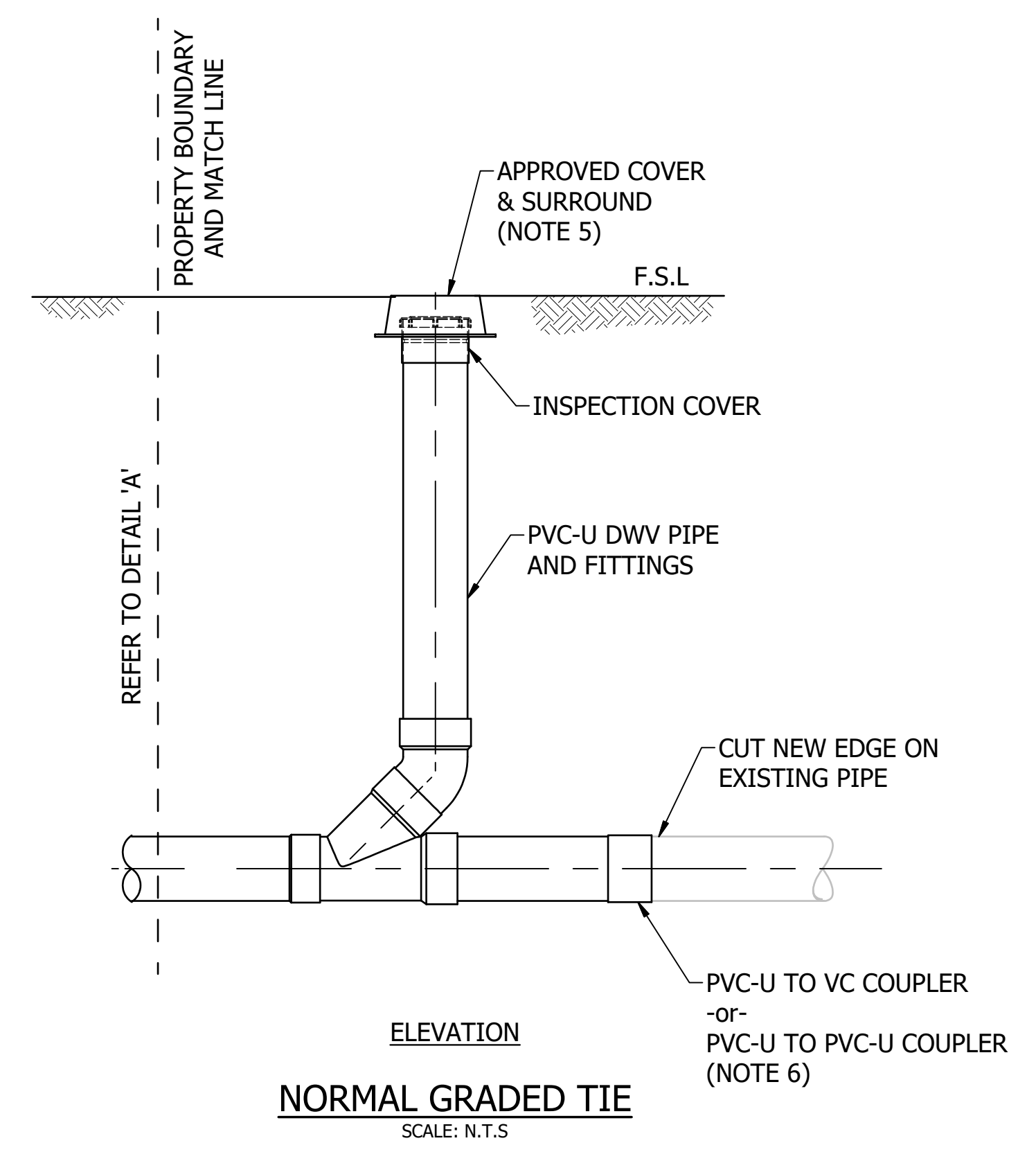
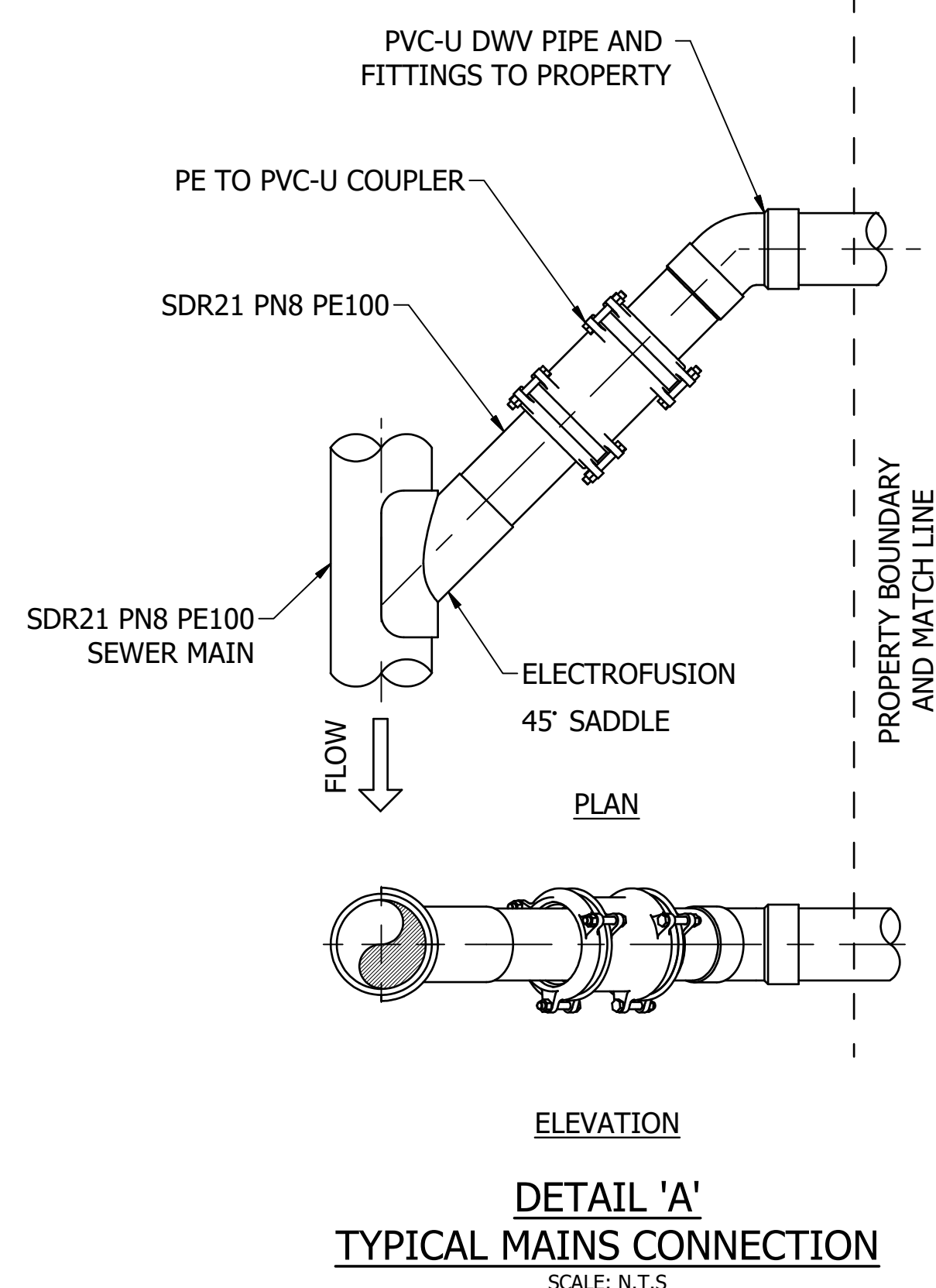
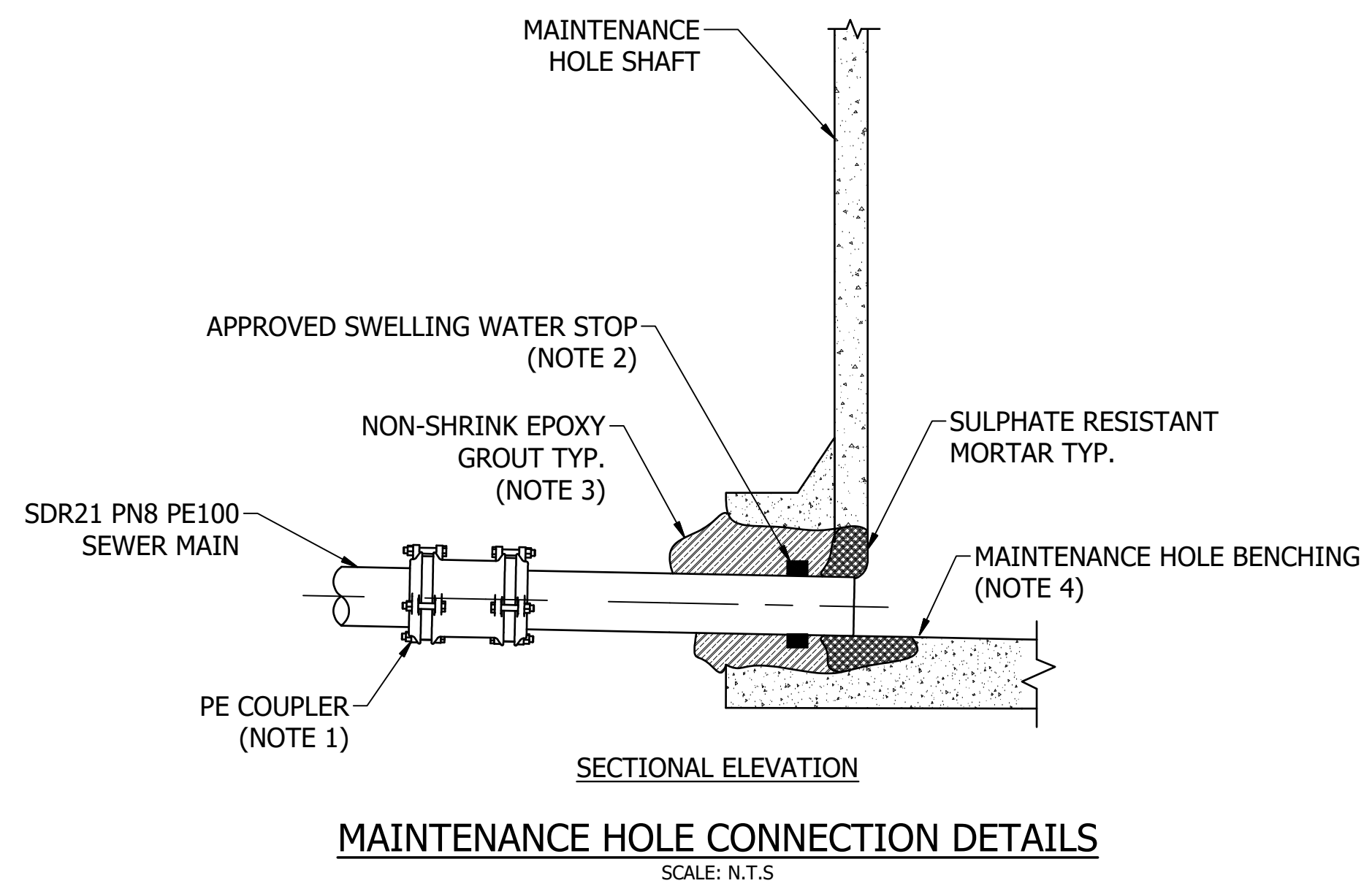
No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	15/06/2018	S. Essery	K. Danenbergsons	D. Eager

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WTP	SEW	X
WPS	REC	



STANDARD DRAWING
SEWERAGE NETWORK
PROPERTY CONNECTION DETAILS
SEWER TIES
SHEET 2 OF 2

DRAWING STATUS	Current
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- NOTES:**
1. PE JUNCTION TO BE JOINED USING AN ELECTROFUSION COUPLING OR AN APPROVED MECHANICAL COUPLING.
 2. WATERSTOP IS TO BE LOCATED IN THE CENTRELINE OF MAINTENANCE HOLE WALL.
 3. COMPACTED GROUT IS TO FILL VOIDS LEFT FROM BREAKING OUT MAINTENANCE HOLE.
 4. BENCHING IS TO BE REINSTATED AS PER SD-2208.
 5. INSPECTION SHAFT COVER AND SURROUNDS DETAILS SHALL MATCH THE DETAILS FOR SEWER MAINTENANCE SHAFTS AND RODDING POINTS. REFER TO SD-2209.
 6. IF THE CONNECTION TO THE PROPERTY LINE IS PVC-U TO VC OR EARTHENWARE, THE JOINT SHALL BE HAUNCHED WITH CONCRETE.
 7. FOR BEDDING DETAILS, REFER TO TABLE 1 OF SD-2102 (AS WELL AS SD-2005 WHEN GRADES EXCEED 15%).
 8. ALL CONSTRUCTION DETAILS ON THE CUSTOMER SIDE OF THE SEWER TIE SHALL COMPLY WITH THE PLUMBING CODE OF AUSTRALIA.

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BWS	WAT	STP
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ASSET AREA APPLICABILITY



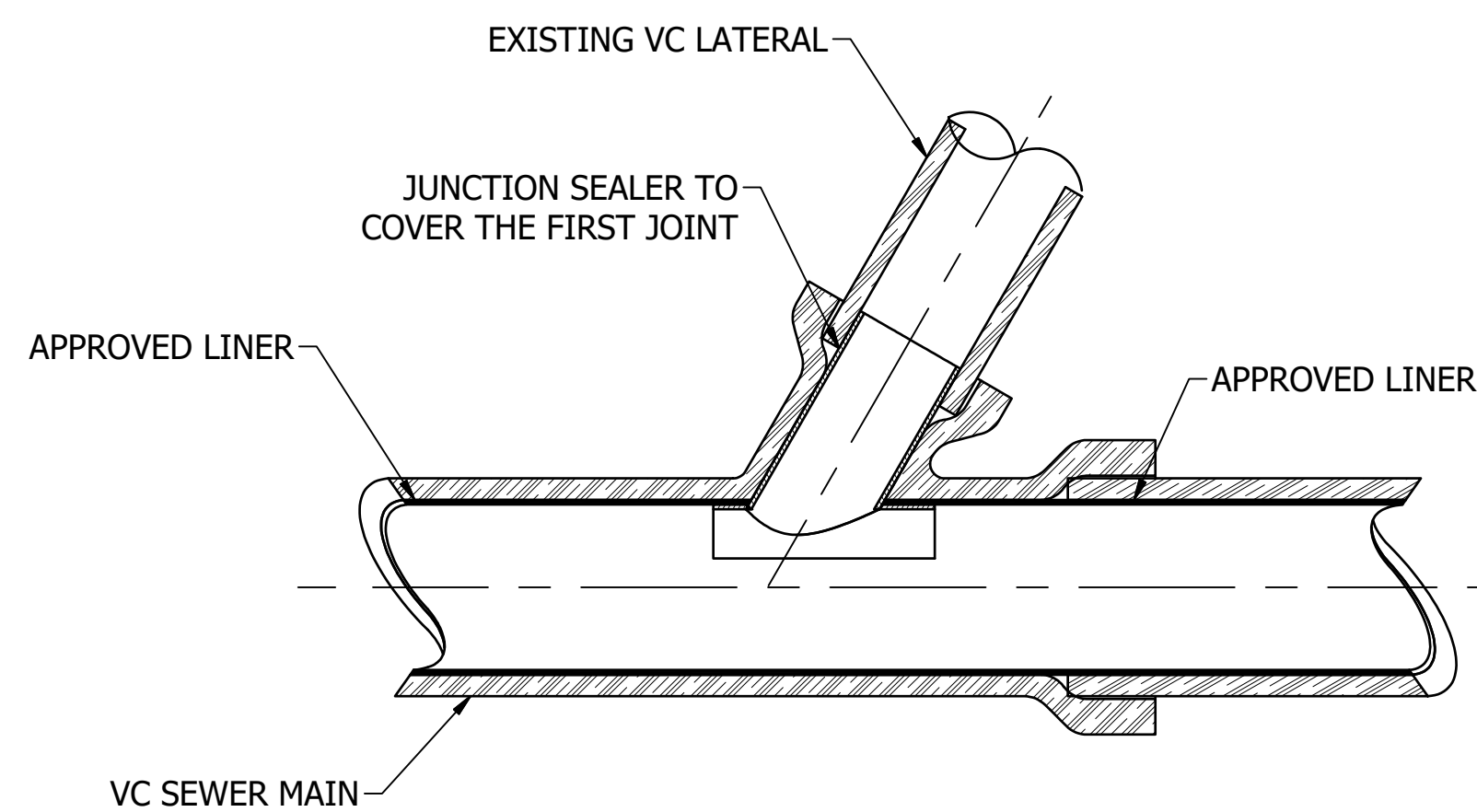
STANDARD DRAWING
SEWERAGE NETWORK
TYPICAL MAINS CONSTRUCTION
TYPICAL MAINS RENEWAL - PIPEBURSTING

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Current	
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A1	ISSUE A

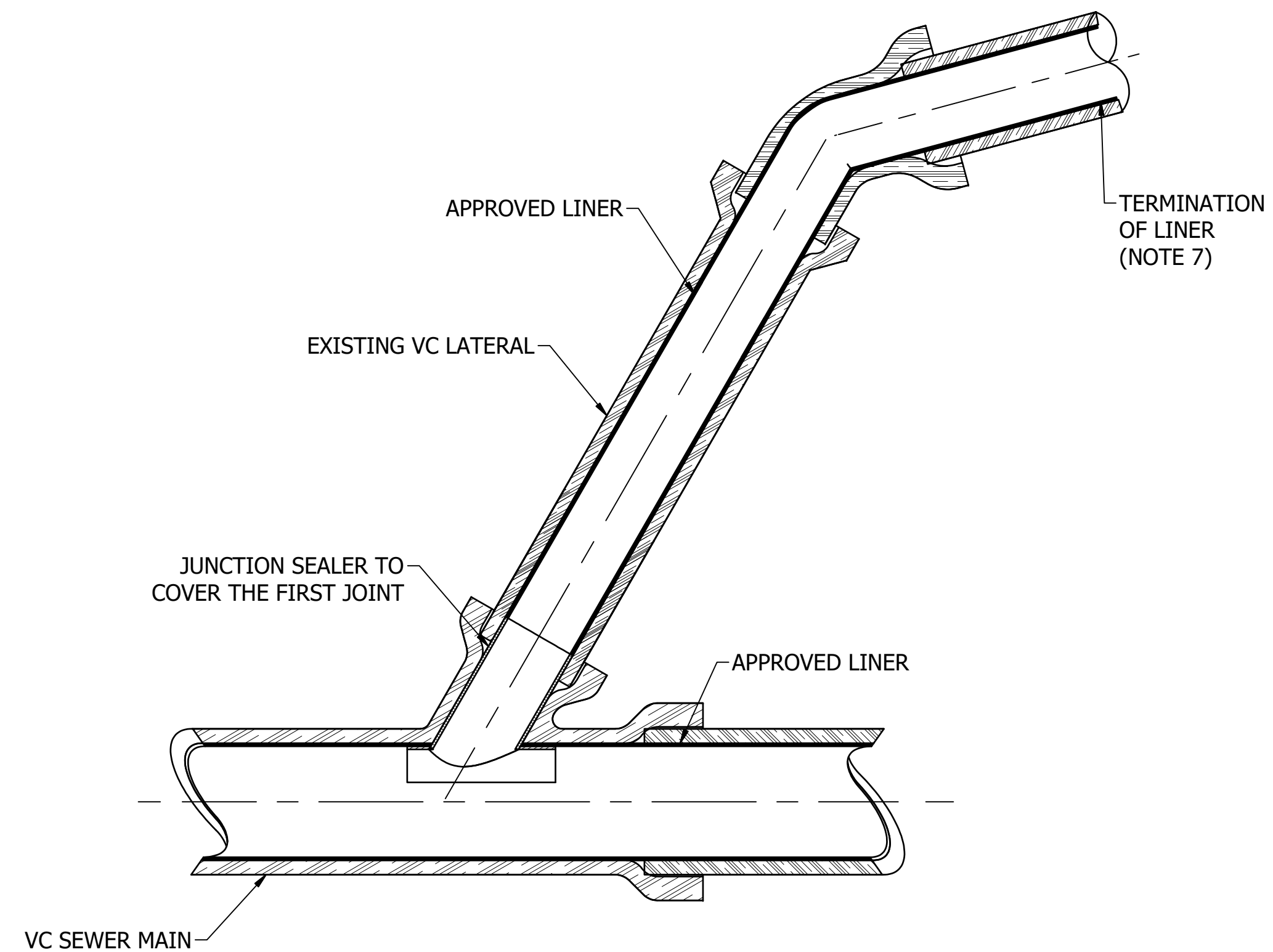
No.	ISSUE	DATE	DRAWN	CHECKED	AUTHORISED
A	INITIAL ISSUE	30/08/2018	S. Essery	W. Ambadeniya	K. Danenbergsons

NOTES:

1. BENCHING IS TO BE REINSTATED AS PER SD-2208.
2. INSPECTION SHAFT COVER AND SURROUNDS DETAILS SHALL MATCH THE DETAILS FOR SEWER MAINTENANCE SHAFTS AND RODDING POINTS. REFER TO SD-2209.
3. IF THE CONNECTION TO THE PROPERTY LINE IS PVC-U TO VC OR EARTHENWARE, THE JOINT SHALL BE HAUNCHED WITH CONCRETE.
4. FOR BEDDING DETAILS, REFER TO TABLE 1 OF SD-2102 (AS WELL AS SD-2005 WHEN GRADES EXCEED 15%).
5. ALL CONSTRUCTION DETAILS ON THE CUSTOMER SIDE OF THE SEWER TIE SHALL COMPLY WITH THE PLUMBING CODE OF AUSTRALIA.
6. INSTALL THE PVC-EARTHENWARE CONNECTOR AS CLOSE AS POSSIBLE TO THE MAIN SEWER LINE TO ENSURE PIPE LINING COVERS THE JOINT. REMOVE THE VC PIPE SOCKET (IF APPLICABLE) TO FACILITATE THE CONNECTOR INSTALLATION LOCATION.
7. LATERAL LINER TO TERMINATE AT PROPERTY INSPECTION SHAFT OPENING.



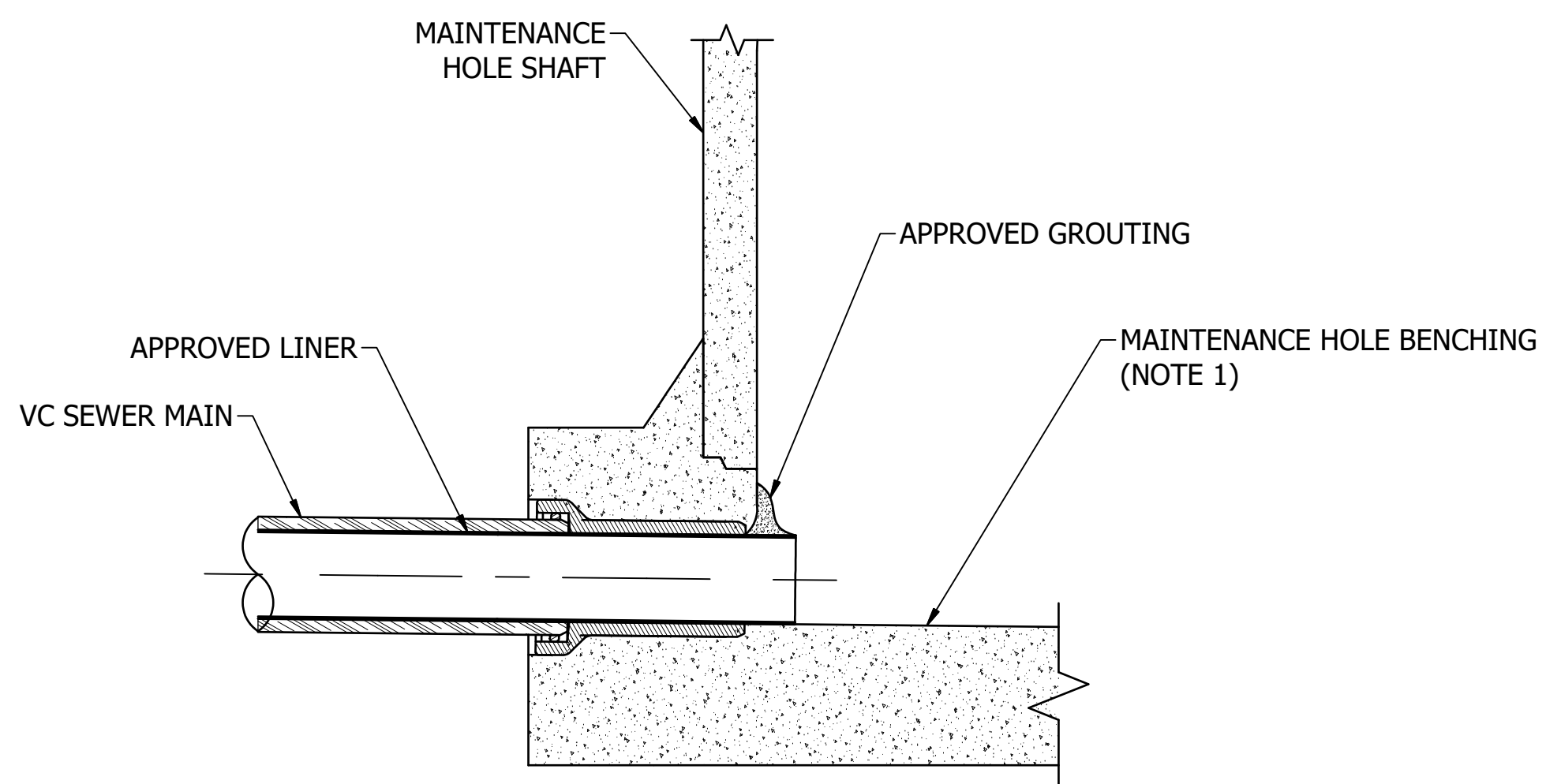
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TYPE 2: JUNCTION AND LATERAL LINING

MAINS SEWER LINING WITH EXISTING VC LATERAL

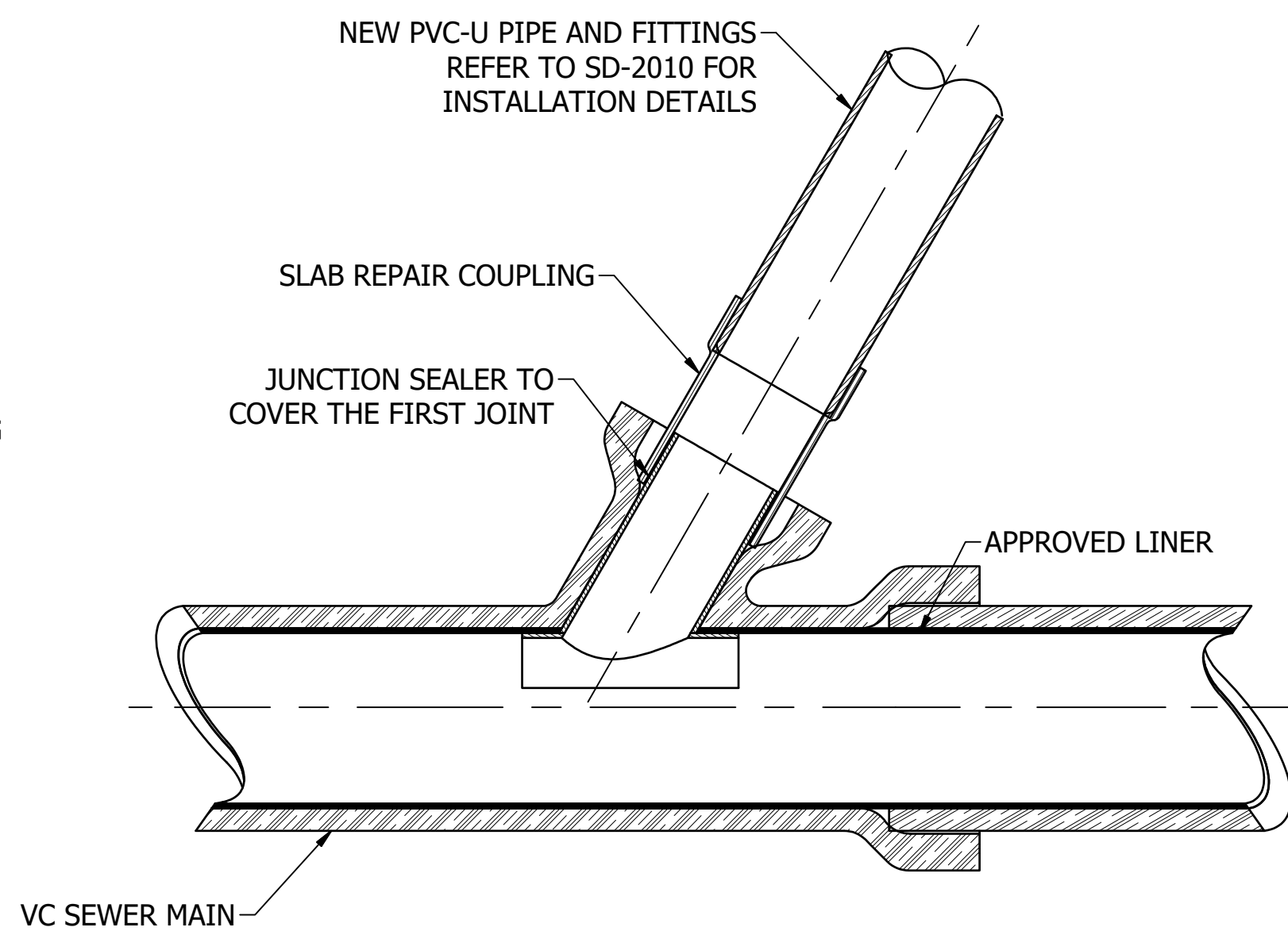
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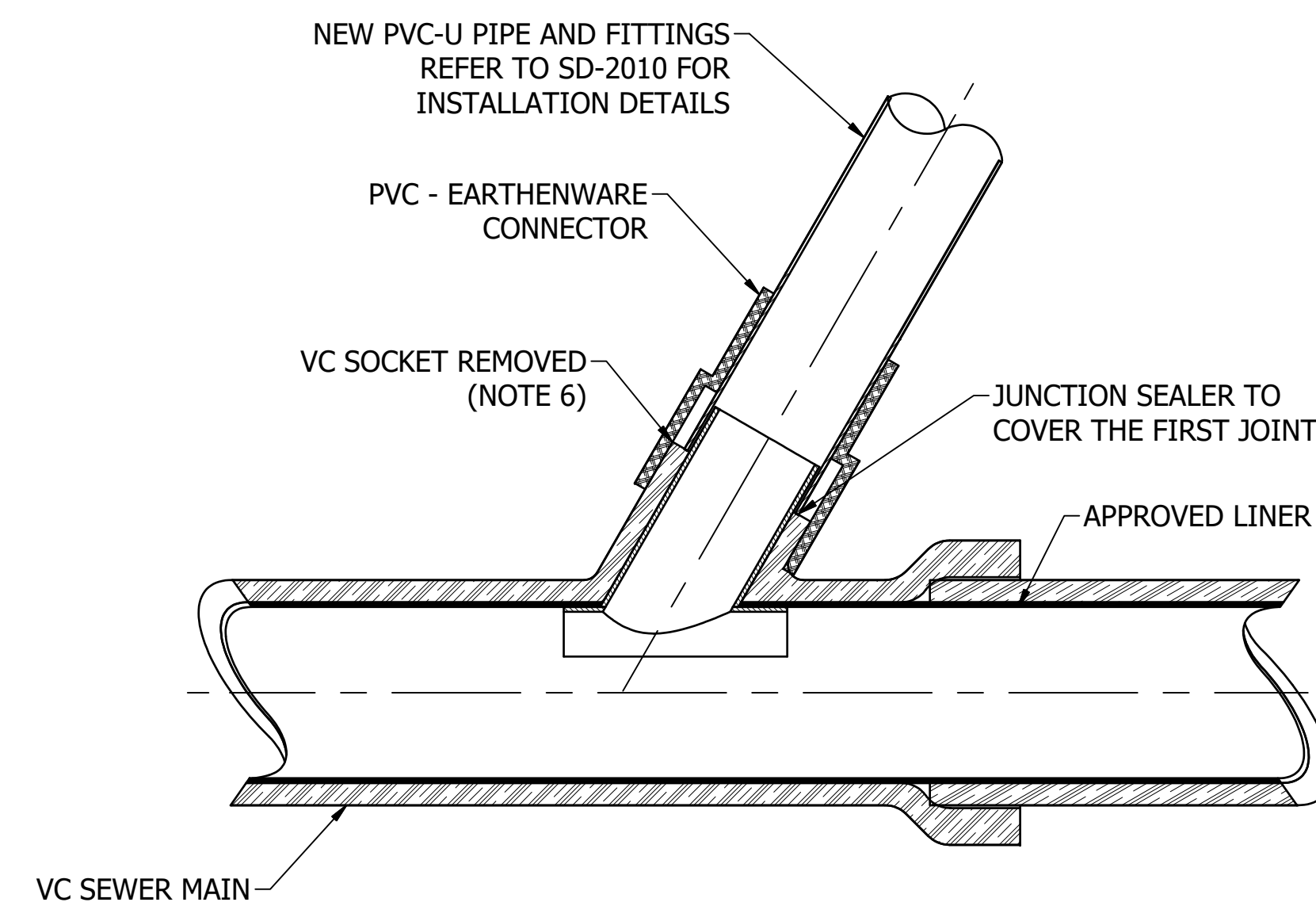
SECTIONAL ELEVATION

MAINTENANCE HOLE DETAILS

SCALE: N.T.S



TYPE 3: PVC-U LATERAL WITH SLAB REPAIR COUPLING



TYPE 4: PVC-U LATERAL WITH PVC-EARTHENWARE COUPLING

MAINS SEWER LINING WITH NEW PVC-U LATERAL

SCALE : N.T.S

DAM	RES	SPS
BWS	WAT	STP
WTP	SEW	X
WPS	REC	



STANDARD DRAWING
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TYPICAL MAINS CONSTRUCTION
TYPICAL MAINS RENEWAL - PIPE LINING

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A	INITIAL ISSUE	30/08/2018	S. Essery	J. Moltan	K. Danenbergsons