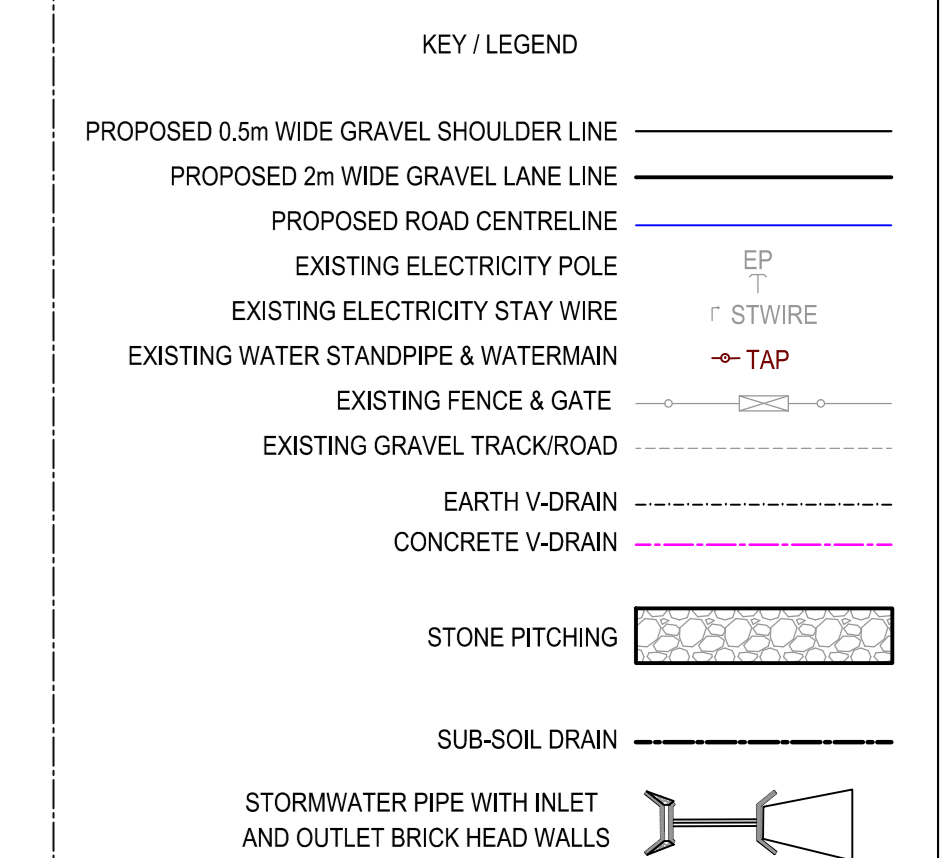
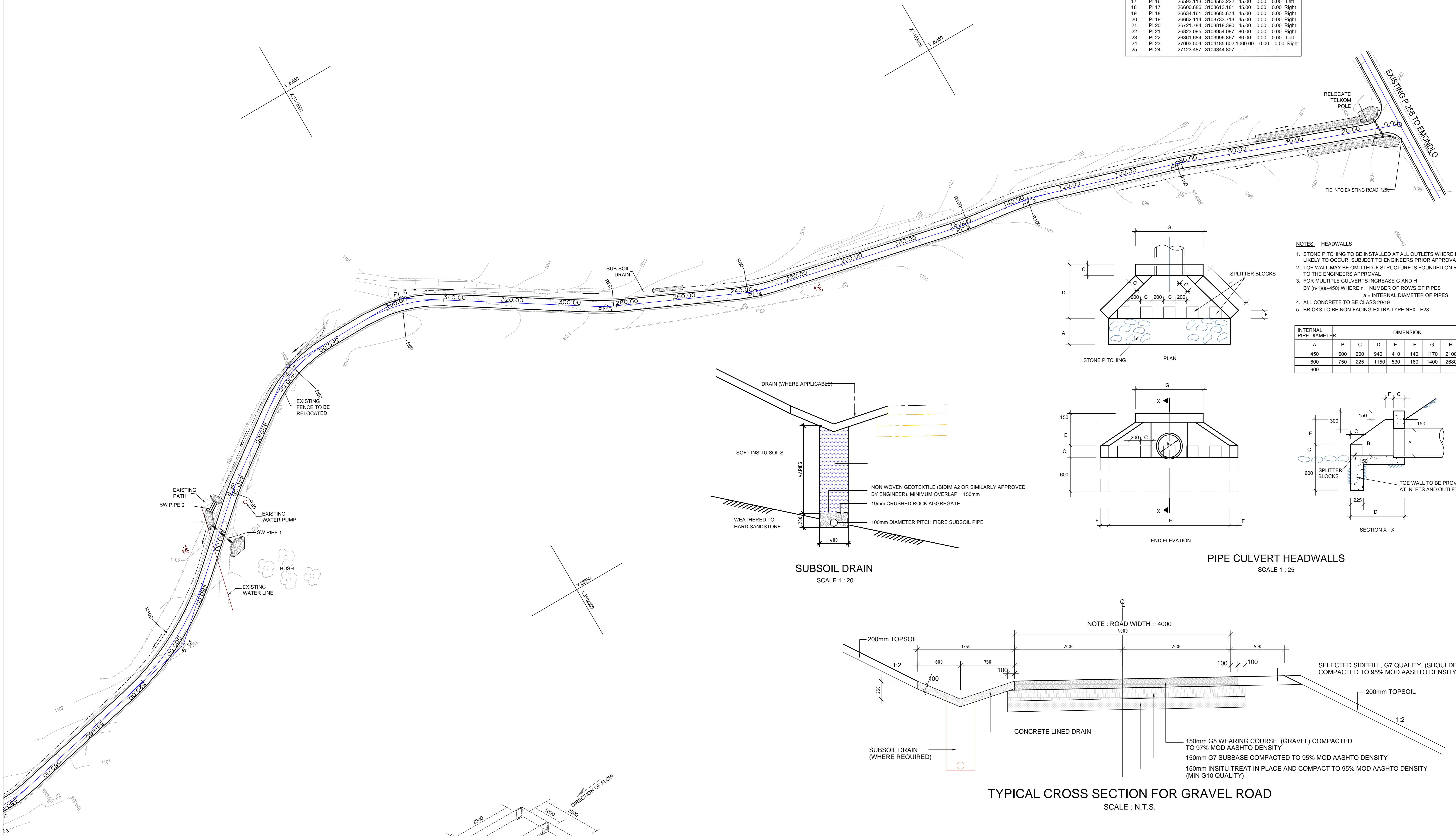


NOTES:  
 ALL WORK MUST COMPLY WITH THE SANS 1200  
 FIGURED DRAWINGS TO BE TAKEN IN PREFERENCE TO SCALING FROM DRAWING.  
 ALL DIMENSIONS AND LEVELS MUST BE CHECKED ON SITE BEFORE THE COMMENCEMENT OF ANY WORK.  
 THIS DRAWING IS A COPYRIGHT MATERIAL AND REMAINS WITH THE AUTHOR.



HORIZONTAL ALIGNMENT DATA

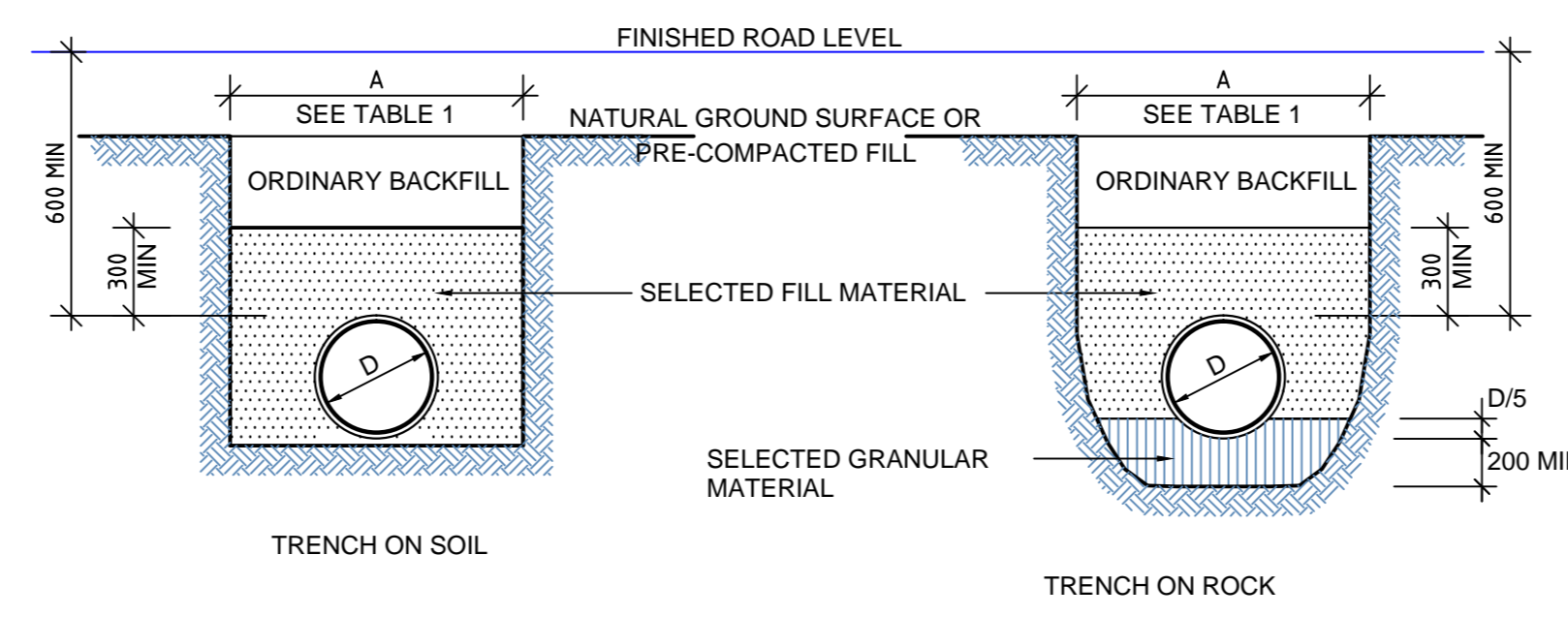
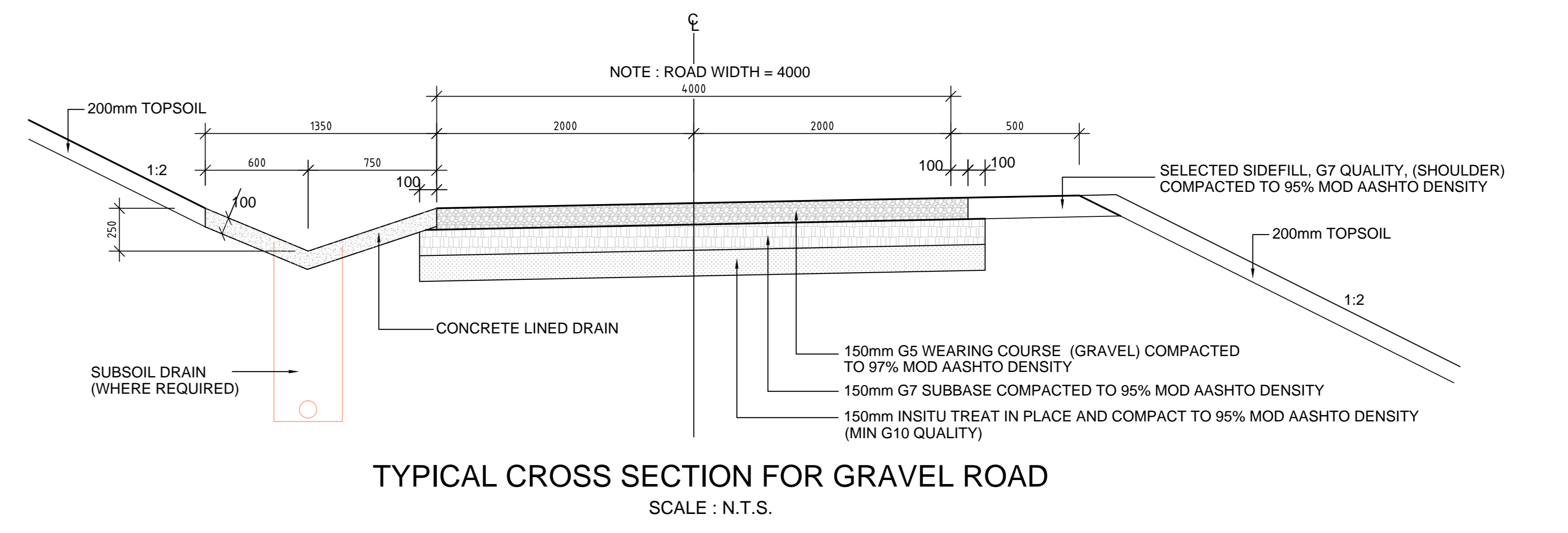
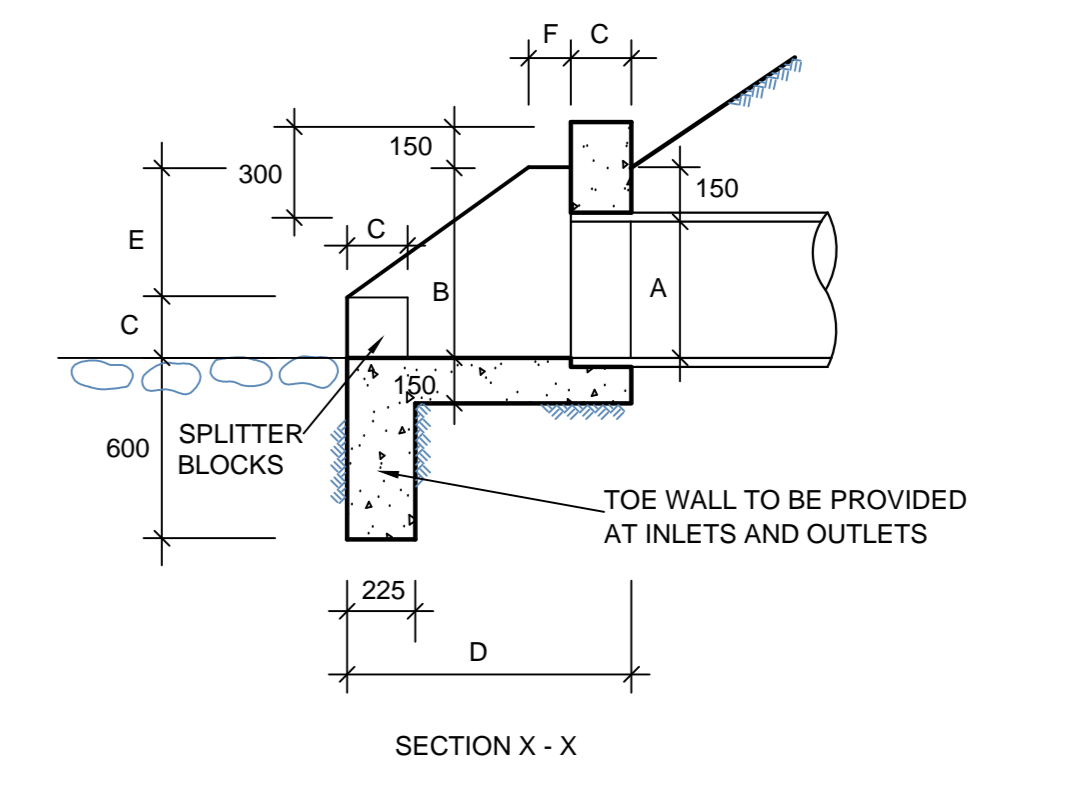
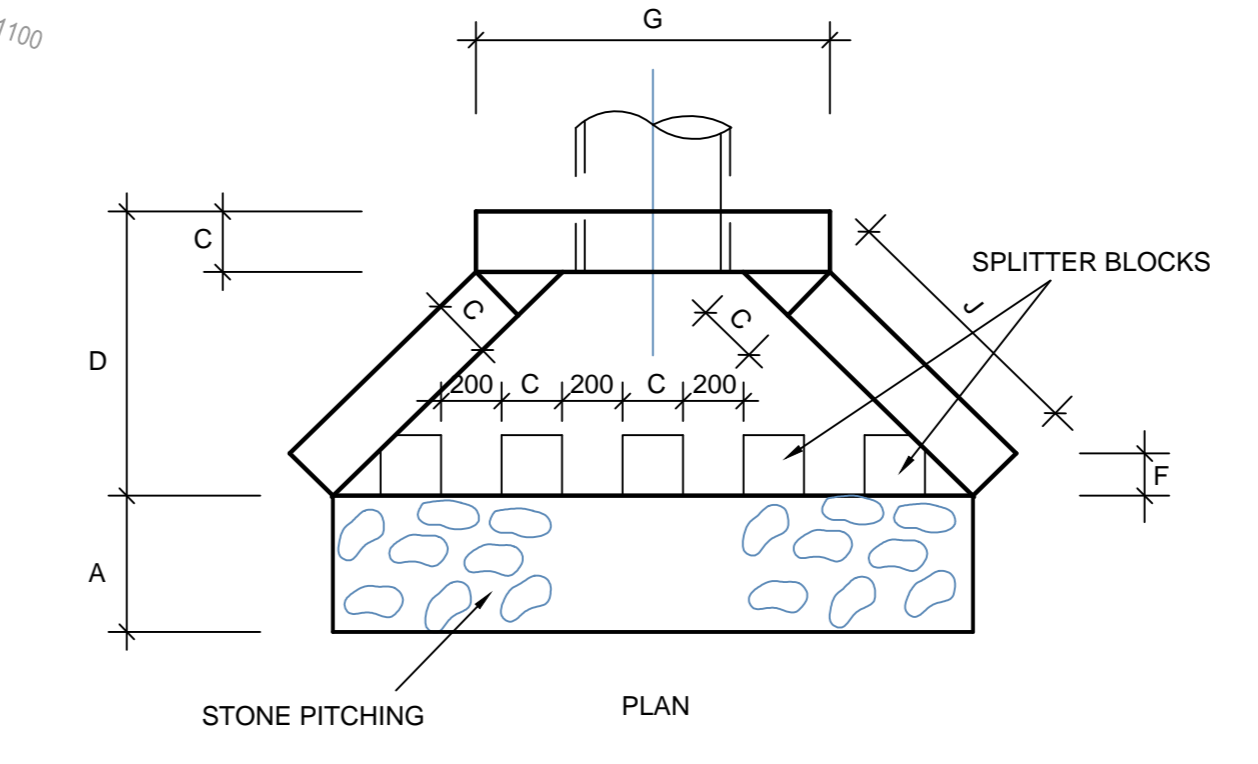
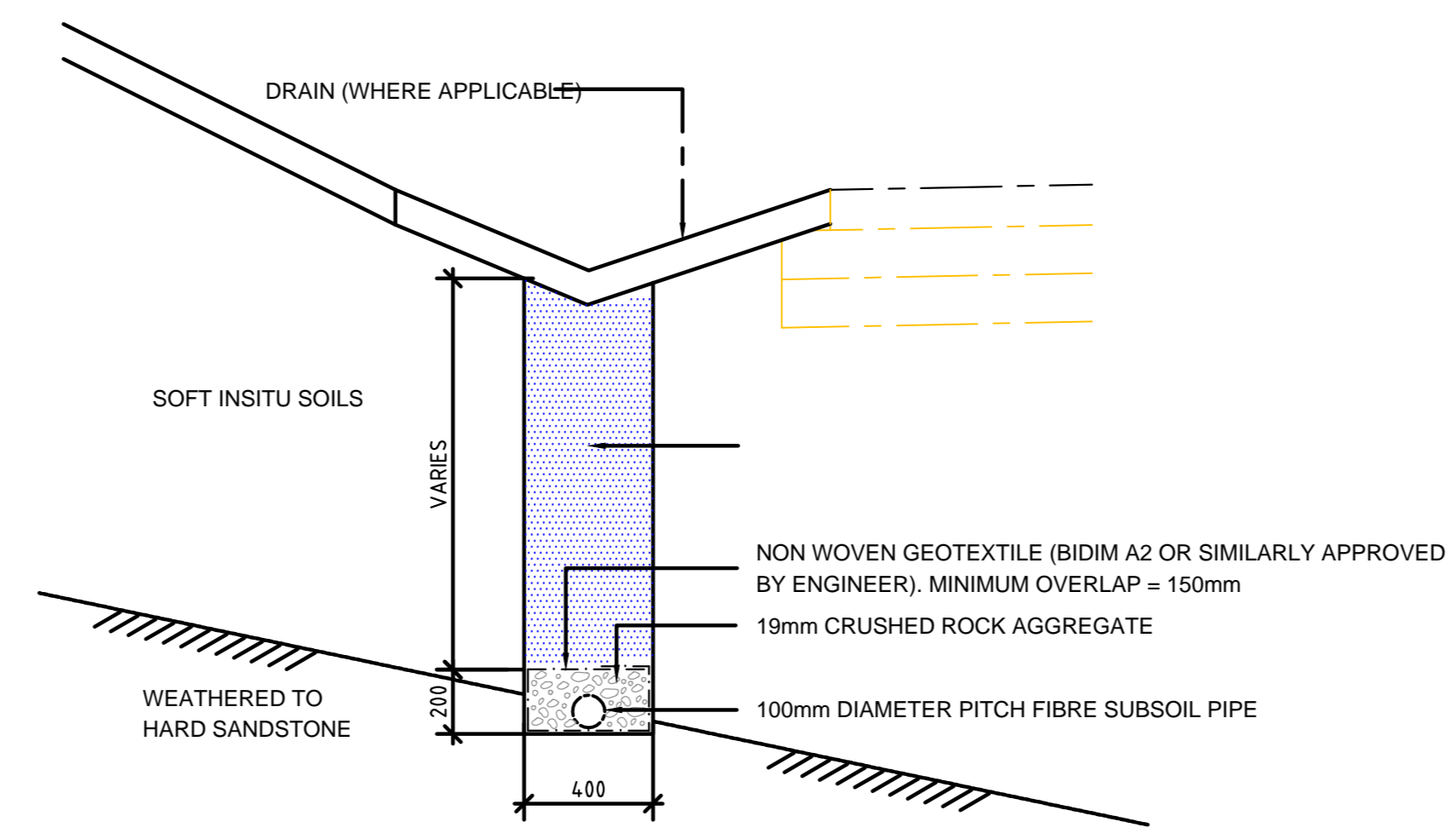
Pino Name	Y	X	Radius	Tr.In	Tr.Out	Defl.
1 Start	26345.227	3102471.985				
2 PI 1	26372.498	3102545.328	100.00	0.00	Left	
3 PI 2	26386.068	3102595.729	100.00	0.00	Left	
4 PI 3	26391.442	3102620.510	100.00	0.00	Right	
5 PI 4	26407.923	3102694.237	60.00	0.00	Right	
6 PI 5	26429.650	3102741.723	60.00	0.00	Right	
7 PI 6	26468.053	3102801.462	50.00	0.00	Left	
8 PI 7	26487.531	3102847.365	50.00	0.00	Left	
9 PI 8	26439.982	3102885.619	50.00	0.00	Left	
10 PI 9	26402.270	3102927.652	100.00	0.00	Right	
11 PI 10	26383.938	3103012.995	45.00	0.00	Right	
12 PI 11	26429.256	3103119.934	45.00	0.00	Left	
13 PI 12	26436.854	3103146.663	45.00	0.00	Right	
14 PI 13	26561.808	3103436.996	100.00	0.00	Left	
15 PI 14	26566.754	3103492.081	45.00	0.00	Right	
16 PI 15	26578.956	3103541.882	45.00	0.00	Right	
17 PI 16	26593.113	3103563.222	45.00	0.00	Left	
18 PI 17	26600.686	3103613.181	45.00	0.00	Right	
19 PI 18	26634.161	3103685.674	45.00	0.00	Right	
20 PI 19	26662.114	3103733.713	45.00	0.00	Right	
21 PI 20	26721.784	3103818.390	45.00	0.00	Right	
22 PI 21	26823.095	3103954.087	80.00	0.00	Right	
23 PI 22	26961.684	3103996.987	80.00	0.00	Left	
24 PI 23	27003.504	3104185.602	1000.00	0.00	Right	
25 PI 24	27123.487	3104344.607				



- NOTES: HEADWALLS
- STONE PITCHING TO BE INSTALLED AT ALL OUTLETS WHERE EROSION IS LIKELY TO OCCUR. SUBJECT TO ENGINEERS PRIOR APPROVAL.
  - TOE WALL MAY BE OMITTED IF STRUCTURE IS FOUNDED ON ROCK TO THE ENGINEERS APPROVAL.
  - FOR MULTIPLE CULVERTS INCREASE G AND H BY (n-1)(a+450) WHERE n = NUMBER OF ROWS OF PIPES a = INTERNAL DIAMETER OF PIPES
  - ALL CONCRETE TO BE CLASS 2019
  - BRICKS TO BE NON-FACING-EXTRA TYPE NFX - E28.

INTERNAL PIPE DIAMETER DIMENSION

INTERNAL PIPE DIAMETER	A	B	C	D	E	F	G	H	J
450	600	200	940	410	140	1170	2100	860	
600	750	225	1150	530	160	1400	2680	1120	
900									

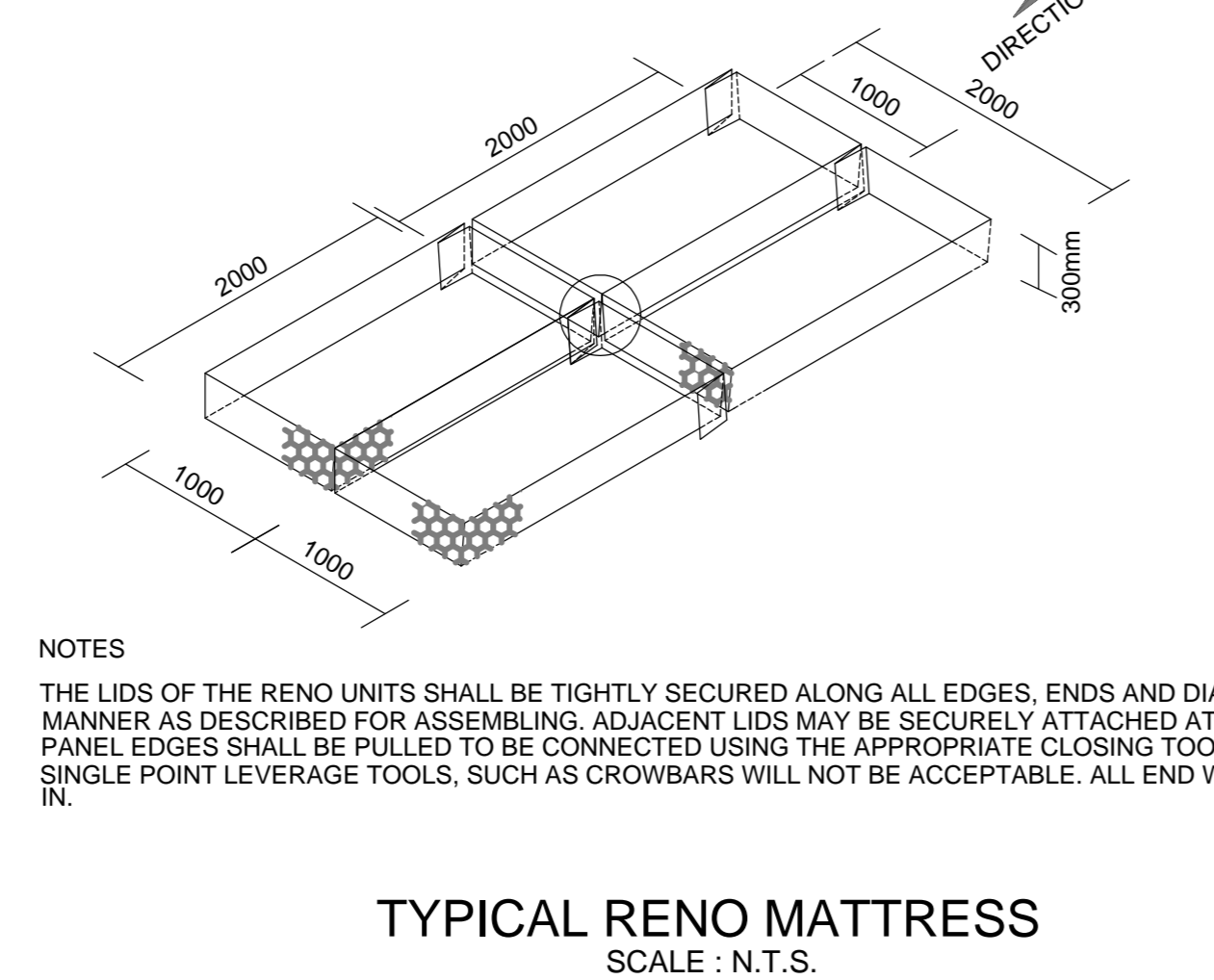
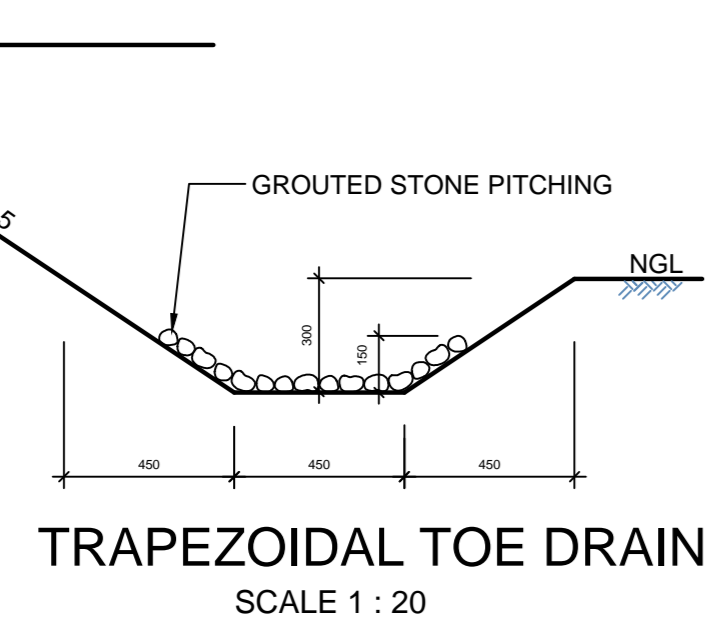


- NOTES: PIPE BEDDING
- SELECTED GRANULAR MATERIAL SHALL BE GRANULAR, FREE DRAINING, NON-COHESIVE MATERIAL GRADED BETWEEN 0.6 AND 19mm, AND IT SHALL BE COMPACTED TO 93% MOD. AASHTO IN LAYERS NOT EXCEEDING 150mm.
  - SELECTED BACKFILL/FILL MATERIAL SHALL BE A GRANULAR SOIL WITH A PI<6 AND FREE FROM VEGETATION, LUMPS AND STONES LARGER THAN 30mm AND IT SHALL BE COMPACTED TO 93% MOD. AASHTO IN LAYERS NOT EXCEEDING 150mm.
  - ORDINARY BACKFILL SHALL BE MATERIAL CLASSIFIED AS GROUP A1 TO A6 OF THE AASHTO CLASSIFICATION. IT EXCLUDES MATERIAL WITH MORE THAN 10% PARTICLES RETAINED ON A 50mm SIEVE. STONES - 150mm AND CLAY LUMPS THAT DO NOT BREAK UP BY THE COMPACTION EQUIPMENT. THE MATERIAL SHALL BE COMPACTED IN LAYERS NOT EXCEEDING 300mm TO 93% MOD. AASHTO DENSITY.

TABLE 1

INTERNAL PIPE Ø (D)	MIN TRENCH WIDTH AND WIDTH ADMITTED TO MEASUREMENT OF EXCAVATION (A)	MAX TRENCH WIDTH ALLOWABLE
450	1050	1150
600	1200	1300

- ALL PIPE LIFTING HOLES MUST BE PLUGGED TO THE SATISFACTION OF THE ENGINEER
- WHERE PIPES ARE LAID IN CONJUNCTION WITH A FILL EMBANKMENT, THE FILL IS TO BE PLACED AND COMPACTED TO A HEIGHT OF D + MINIMUM COVER.
- WHERE D=INTERNAL DIA. & MIN COVER = 1 PIPE DIA. BUT > 0.6m. THE TRENCH IS THEN TO BE EXCAVATED AND THE PIPE LAID.



NOTES  
 THE LIDS OF THE RENO UNITS SHALL BE TIGHTLY SECURED ALONG ALL EDGES, ENDS AND DIAPHRAGMS IN THE SAME MANNER AS DESCRIBED FOR ASSEMBLING. ADJACENT LIDS MAY BE SECURELY ATTACHED AT THE SAME TIME. THE PANEL EDGES SHALL BE PULLED TO BE CONNECTED USING THE APPROPRIATE CLOSING TOOLS WHERE NECESSARY. SINGLE POINT LEVERAGE TOOLS, SUCH AS CROWBARS WILL NOT BE ACCEPTABLE. ALL END WIRE SHALL THEN BE TURNED IN.

Rev.	Description	Date
0	For Tender Purposes Only	10/2012
1	For Construction Purposes Only	02/2013

Client

U M A S I P A L A  
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Project

**NYANDA GRAVEL ROAD  
 IN WARD 21**

Drawing Title

**ROAD LAYOUT PLAN**

Scale 1:500 Date 25/10/2012  
 Drawn S.M. Checked S.X.

Phase / Stage

**ISSUED FOR  
 CONSTRUCTION PURPOSES**

Job No.	Dwg No.	Rev
3388	3388/4000	01

Sheet : 1 of 2