

STAGE 1A, 1B & 1C

POTABLE WATER & SEWER



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04	REVISED SEWER LAYOUT AT CLIENT REQUEST	K.G.	26/9/21
03	ISSUE FOR APPROVAL	K.G.	6/8/21
02	CLIENT COMMENTS ADDRESSED	K.G.	30/7/21
01	CONCEPT DESIGN	K.G.	2/7/21
No.	REVISION DESCRIPTION	BY	DATE

SERVICE	DATE	REF.	WORK-AS-CONSTRUCTED CERTIFICATION	ROSE ATKINS RIMMER (Infrastructure) Pty. Ltd. RAR WATER RELATED INFRASTRUCTURE DESIGN AND MANAGEMENT SHOP 7 & 8 'M' CENTRE 40 STERLING ROAD, MINCHINBURY NSW 2770 PH: (02) 9853 0200 FAX: (02) 9617 7399 Incorporated in New South Wales Quality System Endorsed Company CLIENT: Aoyuan building a healthy lifestyle WINGECARRIBEE SHIRE COUNCIL TITLE: PLAN OF PROPOSED WATER INFRASTRUCTURE SERVICES CHELSEA GARDENS - MOSS VALE (STAGE 1A, 1B & 1C) YARRAWA ROAD & LOVELLE STREET, MOSS VALE L.G.A. WINGECARRIBEE	COVER SHEET				SHEET 1 OF 24	04
DEVELOPER:		PROJECT SUPERVISOR:			CONSTRUCTOR:		COMPLETED:		W.A.C. PREPARED:	

POTABLE WATER NOTES

1 ALL WORKS & MATERIALS ARE TO BE IN ACCORDANCE WITH THE WATER SUPPLY CODE OF AUSTRALIA WSA 03-2011-3.1 & WINGECARRIBEE SHIRE COUNCIL REQUIREMENTS WITH ASSOCIATED STANDARD DRAWINGS.

2 ALL SERVICES SHOWN ARE INDICATIVE ONLY. A CURRENT SERVICES SEARCH & SITE CHECK OF ALL EXISTING SERVICES WILL BE REQUIRED PRIOR TO COMMENCEMENT OF ANY WORKS.

3 THE CONSTRUCTOR IS TO DETERMINE LEVELS & LOCATIONS OF SERVICES PRIOR TO CONSTRUCTION. VERTICAL AND HORIZONTAL CLEARANCE BETWEEN WATER MAINS AND UNDERGROUND SERVICES MUST BE IN ACCORDANCE WITH SECTION 5.12.5 OF THE WATER SUPPLY CODE OF AUSTRALIA WSA 03-2011-3.1.

4 MAIN TO BE LAID GENERALLY 2.7m P.L. AT STANDARD DEPTH BELOW TOP OF KERB EXCEPT WHERE OTHERWISE SHOWN. PIPE COVER SHALL CONFORM WITH CLAUSE 7.4.2.

5 MAINLAYING NOT TO PROCEED PRIOR TO FORMATION OF FOOTWAYS TO FINISHED SURFACE LEVELS.

6 i) BENDS TO BE ANCHORED IN ACCORDANCE WITH THE DETAILS ON SHEET 8.
ii) TAPERS TO BE ANCHORED IN ACCORDANCE WITH THE DETAILS ON SHEET 9.
iii) TEES TO BE ANCHORED IN ACCORDANCE WITH THE DETAILS ON SHEET 9.
iv) HYDRANT BENDS TO BE ANCHORED IN ACCORDANCE WITH THE DETAILS ON SHEET 9.
v) STOP VALVES TO BE IN ACCORDANCE WITH WSC-WAT-001 (Issue A - 3/9/2010) & WSC-WAT-002 (Issue A - 2/9/2010).
vi) HYDRANTS TO BE IN ACCORDANCE WITH WSC-WAT-001 (Issue A - 3/9/2010) & WSC-WAT-003 (Issue A - 3/6/2010).

7 ROAD CROSSINGS & MAINS IN CARRIAGEWAYS TO HAVE STABILISED SAND (20:1 MIX) TRENCH BACKFILL TO SUB-GRADE LEVEL ONLY.

8 BURIED FITTINGS ARE NOT TO BE BACKFILLED UNTIL W.A.C. DETAILS HAVE BEEN OBTAINED BY THE DESIGNER & APPROVAL FOR BACKFILLING GIVEN BY THE W.S.C.

9 ALL SURFACE FITTINGS LOCATED WITHIN PATHWAYS SHALL BE 'CONCRETE PAVEMENT' TYPE IN ACCORDANCE WITH WAT-1303-V & WAT-1304-V.

10 AREA COVERED BY TREE PRESERVATION ORDER.

11 ALL PROPERTY (MAIN TO METER) SERVICES MUST BE CONSTRUCTED TO WINGECARRIBEE SHIRE COUNCIL'S INSTALLATION REQUIREMENTS BY A LICENSED PLUMBER, THE WORKS MUST BE INSTALLED IN ACCORDANCE WITH THE CURRENT WINGECARRIBEE SHIRE COUNCIL PROPERTY (MAIN TO METER) SERVICE INSTALLATIONS TECHNICAL REQUIREMENTS, NSW CODE OF PRACTICE FOR PLUMBING & DRAINAGE AND AS/NZS3500.

12 ALL STEEL MAINS TO BE F.B.P.E. COATED TO AS 4321 & COMPLY WITH AS/NZS 1579. CEMENT LINING OF STEEL MAIN TO COMPLY WITH AS 1281. ALL WELDS & CORROSION PROTECTION OF STEEL MAIN TO BE IN ACCORDANCE WITH WAT-1408.

13 THE MINIMUM NUMBER OF COMPACTION TESTS REQUIRED TO SATISFY THE WATER SUPPLY CODE OF AUSTRALIA ARE:

TRAFFICABLE:
PIPE EMBEDMENT ZONE: Nil TRENCH FILL ZONE: Nil **SEE NOTE 7**

NON-TRAFFICABLE:
PIPE EMBEDMENT ZONE: Nil TRENCH FILL ZONE: 35 TESTS

14 DN32 P.V.C. CONDUIT TO BE INSTALLED UNDER ROAD PAVEMENT FOR WATER SERVICE CROSSINGS. WHERE THERE ARE DUAL WATER SERVICES CROSSING, EACH WATER SERVICE TO BE IN A SEPARATE DN32 CONDUIT.

SEWER NOTES

1 ALL WORKS & MATERIALS ARE TO BE IN ACCORDANCE WITH THE SEWERAGE CODE OF AUSTRALIA WSA 02-2002-2.2 & WINGECARRIBEE SHIRE COUNCIL REQUIREMENTS WITH ASSOCIATED STANDARD DRAWINGS.

2 ALL SERVICES SHOWN ARE INDICATIVE ONLY. A CURRENT SERVICES SEARCH & SITE CHECK OF ALL EXISTING SERVICES WILL BE REQUIRED PRIOR TO COMMENCEMENT OF ANY WORKS.

3 THE CONSTRUCTOR IS TO DETERMINE LEVELS & LOCATIONS OF SERVICES PRIOR TO CONSTRUCTION. VERTICAL AND HORIZONTAL CLEARANCE BETWEEN SEWERS AND UNDERGROUND SERVICES MUST BE IN ACCORDANCE WITH TABLE 1 OF WINGECARRIBEE SHIRE COUNCIL STANDARD DRAWING WSC-SEW-002 (Issue A - 2/5/2017).

4 ALL LOTS WERE VACANT AT TIME OF SURVEY.

5 ALL SURVEY MARKS ARE PEGS UNLESS OTHERWISE NOTED.

6 THE CONSTRUCTOR SHALL VERIFY ANY EXISTING INVERT LEVELS PRIOR TO CONSTRUCTION.

7 ROAD CROSSINGS & MAINS IN CARRIAGEWAYS SHALL HAVE STABILISED SAND (20:1 MIX) TRENCH BACKFILL TO SUB-GRADE LEVEL ONLY.

8 ALL STRUCTURES TO BE IN ACCORDANCE WITH MAINTENANCE STRUCTURE SCHEDULE (SHEET 23). SHOULD THE CONSTRUCTOR CHOOSE TO USE A DIFFERENT STRUCTURE TO THAT SHOWN IN THE SCHEDULE, THE W.S.C. MUST BE INFORMED IN WRITING FOR CONSIDERATION.

9 ALL STRUCTURES TO BE CONSTRUCTED TO PROPOSED FINISHED SURFACE LEVELS. THE CONSTRUCTOR IS TO LIAISE WITH THE SITE SUPERINTENDENT TO VERIFY ALL FINAL LEVELS.

10 PIPES TO BE CONCRETE ENCASED (SUPPORT TYPE 12u) SHOWN ACCORDINGLY:

11 AREAS HATCHED THUS NOT DRAINED.

12 DRAINAGE LIMITS ARE TO PROPOSED FINISHED SURFACE LEVELS.

13 DN100 PROPERTY CONNECTION SEWERS TO BE INSTALLED IN ACCORDANCE WITH WSC-SEW-004 (Issue A - 2/5/2017).

14 BUILDING OVER/ADJACENT TO SEWER. CONDITIONS APPLY. REFER TO WINGECARRIBEE SHIRE COUNCIL REQUIREMENTS.

15 ALL LEVELS ELECTRONICALLY GENERATED. NO LEVEL BOOK AVAILABLE.

16 THE MINIMUM NUMBER OF COMPACTION TESTS REQUIRED TO SATISFY THE SEWERAGE CODE OF AUSTRALIA (CLAUSE 22.3.4.4) ARE:

TRAFFICABLE:
PIPE EMBEDMENT ZONE: Nil TRENCH FILL ZONE: Nil **SEE NOTE 7**

NON-TRAFFICABLE:
PIPE EMBEDMENT ZONE: Nil TRENCH FILL ZONE: 42 TESTS / 900mm LAYER

MAINTENANCE STRUCTURES:
1 TEST / 1m LAYER WITHIN 300mm OF EACH M.H. OR M.S.

POTABLE WATER PIPE SCHEDULE

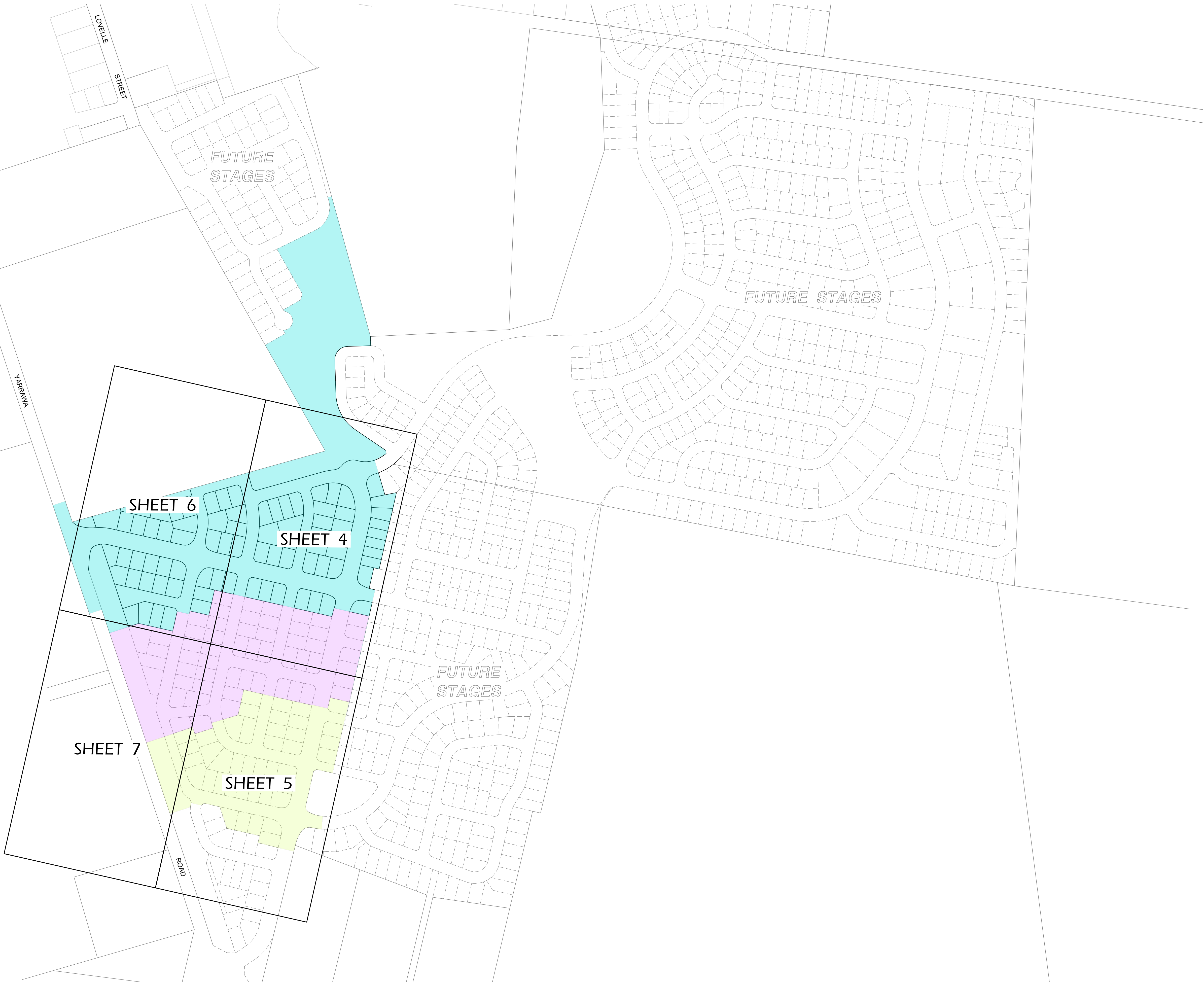
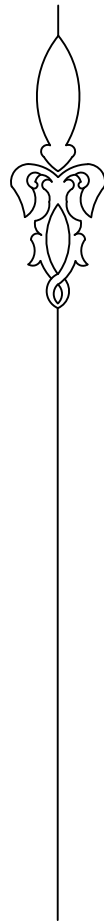
SIZE	TYPE	CLASS	LENGTH
DN225	D.I.C.L.	PN35	20
DN225	m.P.V.C.	PN16	205
DN150	D.I.C.L.	PN35	230
DN150	m.P.V.C.	PN16	1,320
DN100	D.I.C.L.	PN35	35
DN100	m.P.V.C.	PN16	1,670
TOTAL			3,480

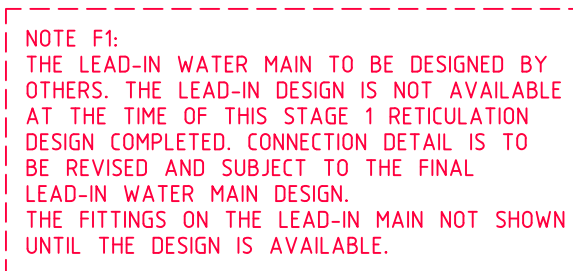
GRAVITY SEWER PIPE SCHEDULE

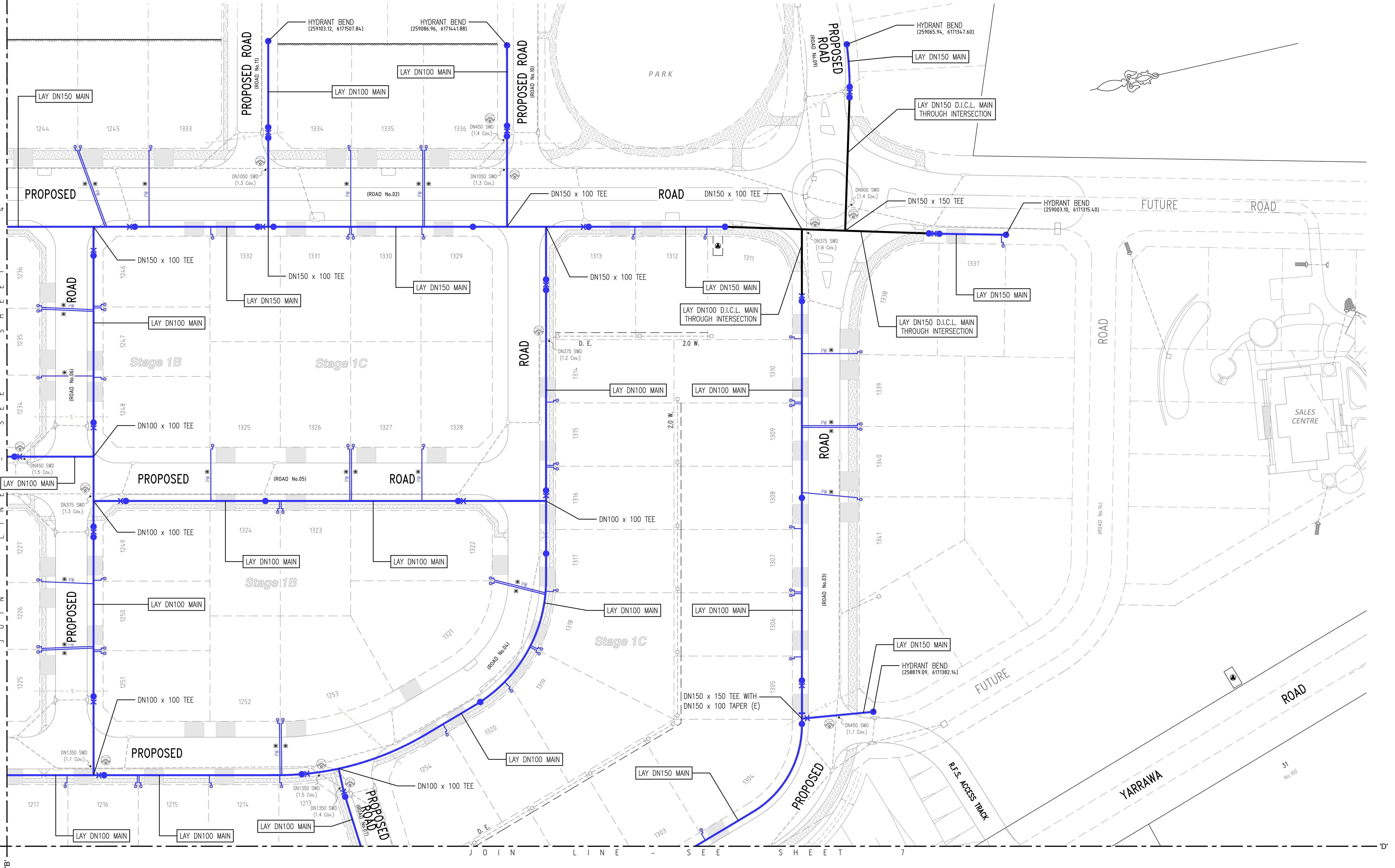
SIZE	TYPE	CLASS	LENGTH
DN225	u.P.V.C.	SN8	391.54
DN150	u.P.V.C.	SN8	4,084.03
TOTAL			4,475.57

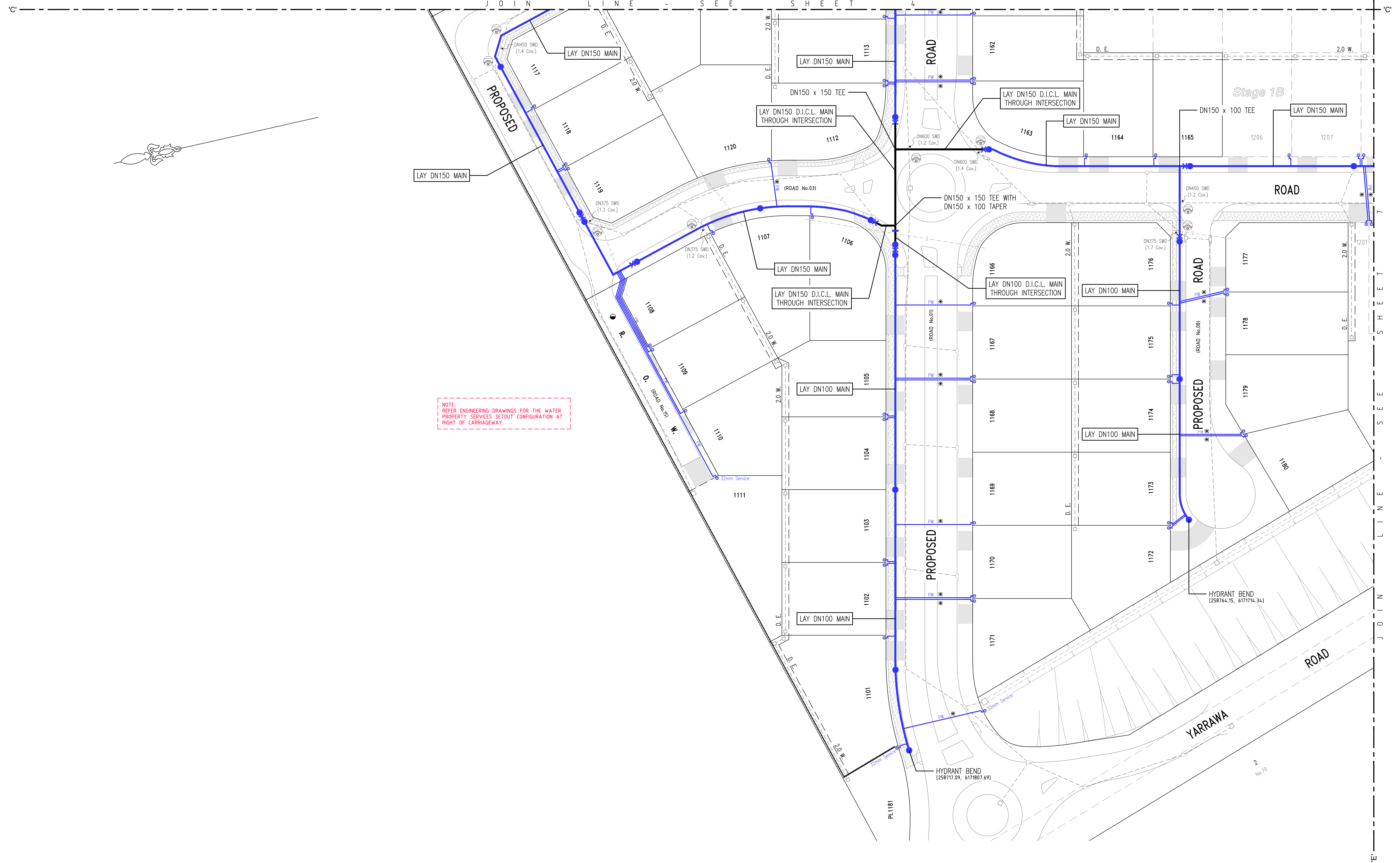
Stage 1 Development Stages

- Stage 1A
- Stage 1B
- Stage 1C



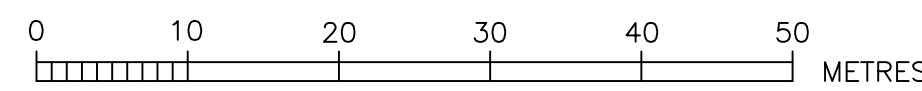






* DENOTES DN32 P.V.C. CONDUIT TO BE INSTALLED UNDER ROAD PAVEMENT FOR WATER SERVICE CROSSING.

● DENOTES EASEMENT FOR RIGHT OF CARRIAGEWAY & SERVICES 10.0 WIDE AND VARIABLE



ROSE ATKINS RIMMER (Infrastructure) Pty. Ltd.

RAR WATER RELATED INFRASTRUCTURE DESIGN AND MANAGEMENT

SHOP 7 & 8 'M CENTRE'
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PH: (02) 9853 0200 FAX: (02) 9671 7399

DESIGNED: K.GAO

DRAWN: K.GAO

SCALE: 1:500

REVIEWED: D.SHEATHER

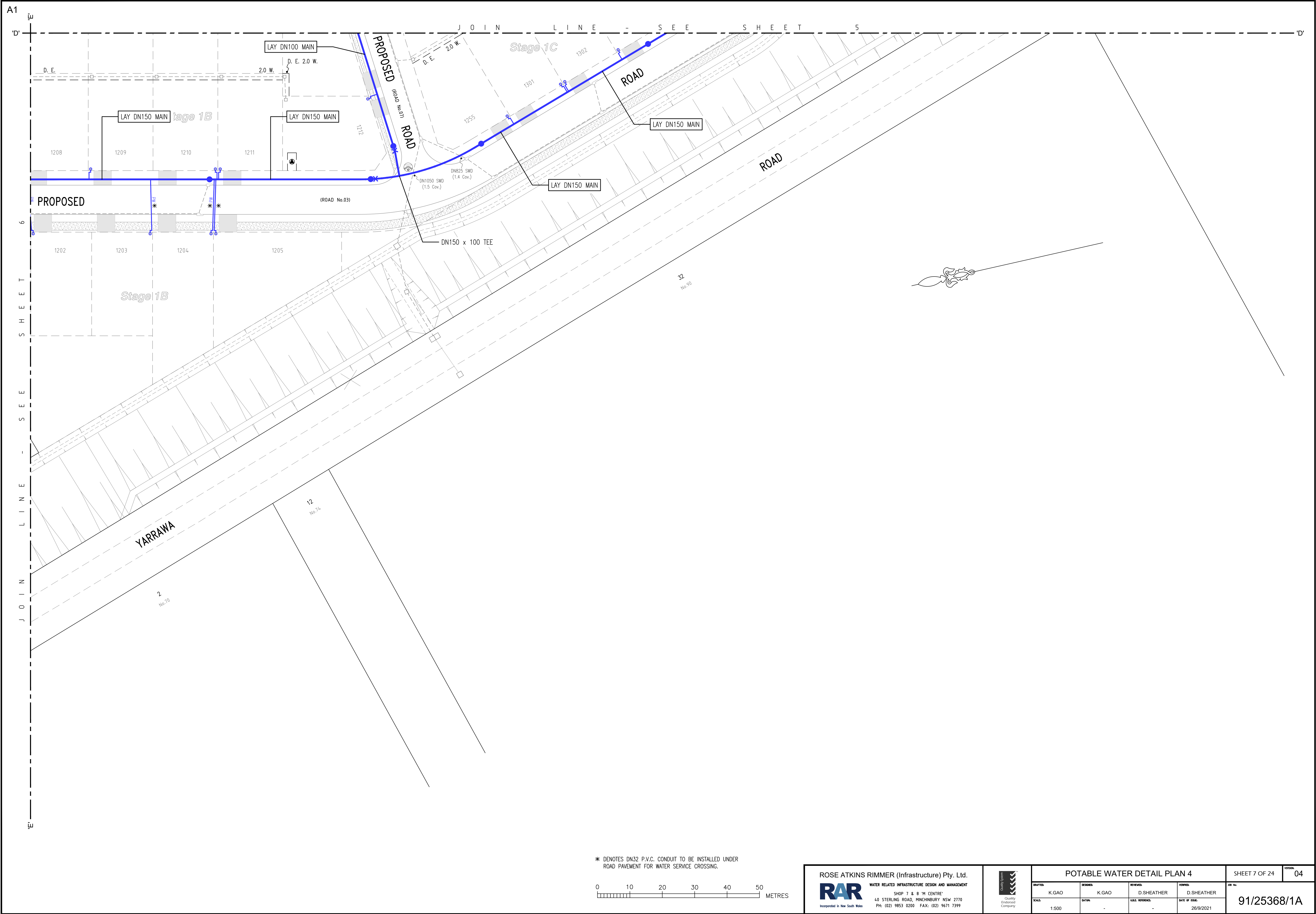
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DATE OF ISSUE: 28/9/2021

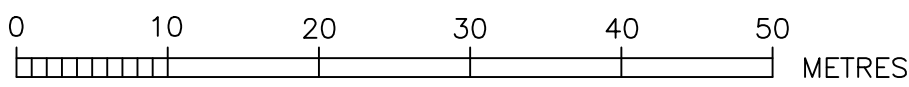
POTABLE WATER DETAIL PLAN 3

SHEET 6 OF 24

91/25368/1A



* DENOTES DN32 P.V.C. CONDUIT TO BE INSTALLED UNDER ROAD PAVEMENT FOR WATER SERVICE CROSSING.



ROSE ATKINS RIMMER (Infrastructure) Pty. Ltd.

RAR

WATER RELATED INFRASTRUCTURE DESIGN AND MANAGEMENT

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Quality
Endorsed
Company

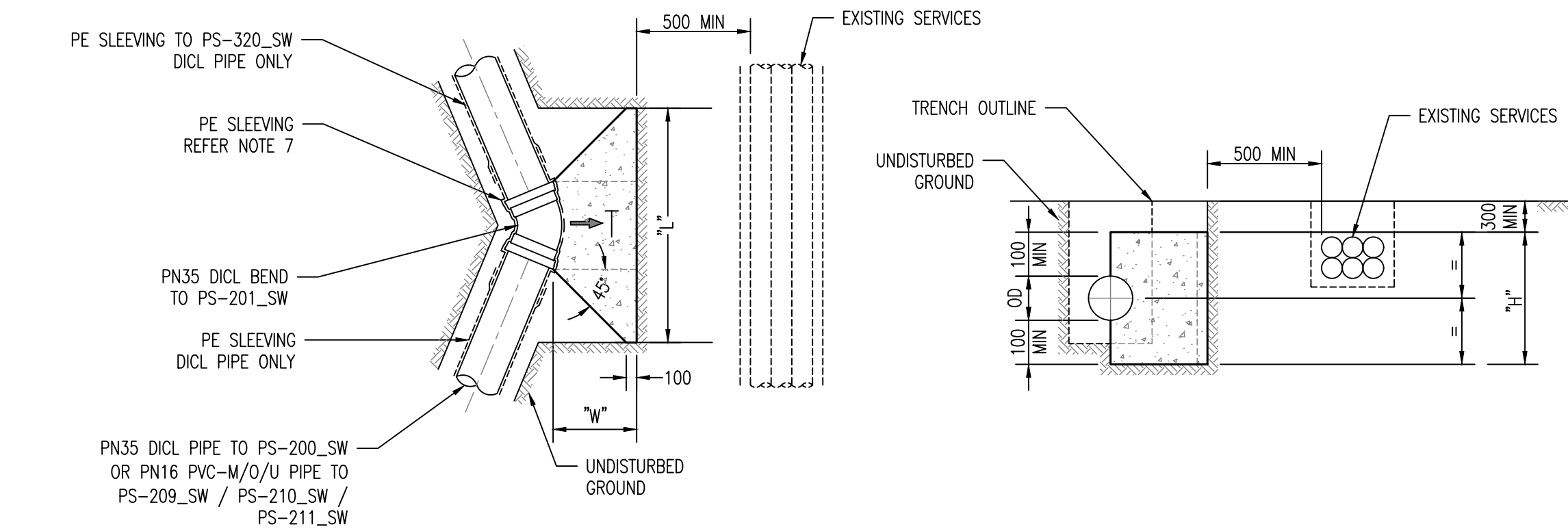
POTABLE WATER DETAIL PLAN 4

DRAWN: K.GAO	DESIGNED: K.GAO	REVIEWED: D.SHEATHER	VERIFIED: D.SHEATHER
SCALE: 1:500	DATA: -	DATA REFERENCE: -	DATE OF ISSUE: 28/9/2021

SHEET 7 OF 24

VERSION:
04

JOB No:
91/25368/1A



HORIZONTAL BEND
THRUST BLOCK TYPE 1 PLAN

NOT TO SCALE

HORIZONTAL BEND
THRUST BLOCK TYPE 1 ELEVATION

NOT TO SCALE

THRUST BLOCK AREAS & DIMENSIONS FOR 11.25° HORIZONTAL BENDS - TYPE 1 (m ²)									
DN	OD	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	REQUIRED BEARING AREA	W	H	L
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(m ²)	(mm)	(mm)	(mm)
100	122	120	150	3.4	50	0.067	250	350	500
150	177	120	150	7.1	50	0.142	300	400	600
225	259	120	150	15.2	50	0.304	300	500	800

THRUST BLOCK AREAS & DIMENSIONS FOR 45° HORIZONTAL BENDS - TYPE 1 (m ²)									
DN	OD	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	REQUIRED BEARING AREA	W	H	L
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(m ²)	(mm)	(mm)	(mm)
100	122	120	150	13.2	50	0.263	300	450	650
150	177	120	150	27.7	50	0.554	400	600	950
150	177	120	150	27.7	100	0.277	300	400	700
225	259	120	150	59.3	50	1.186	600	1000	1500
225	259	120	150	59.3	100	0.593	400	700	1100

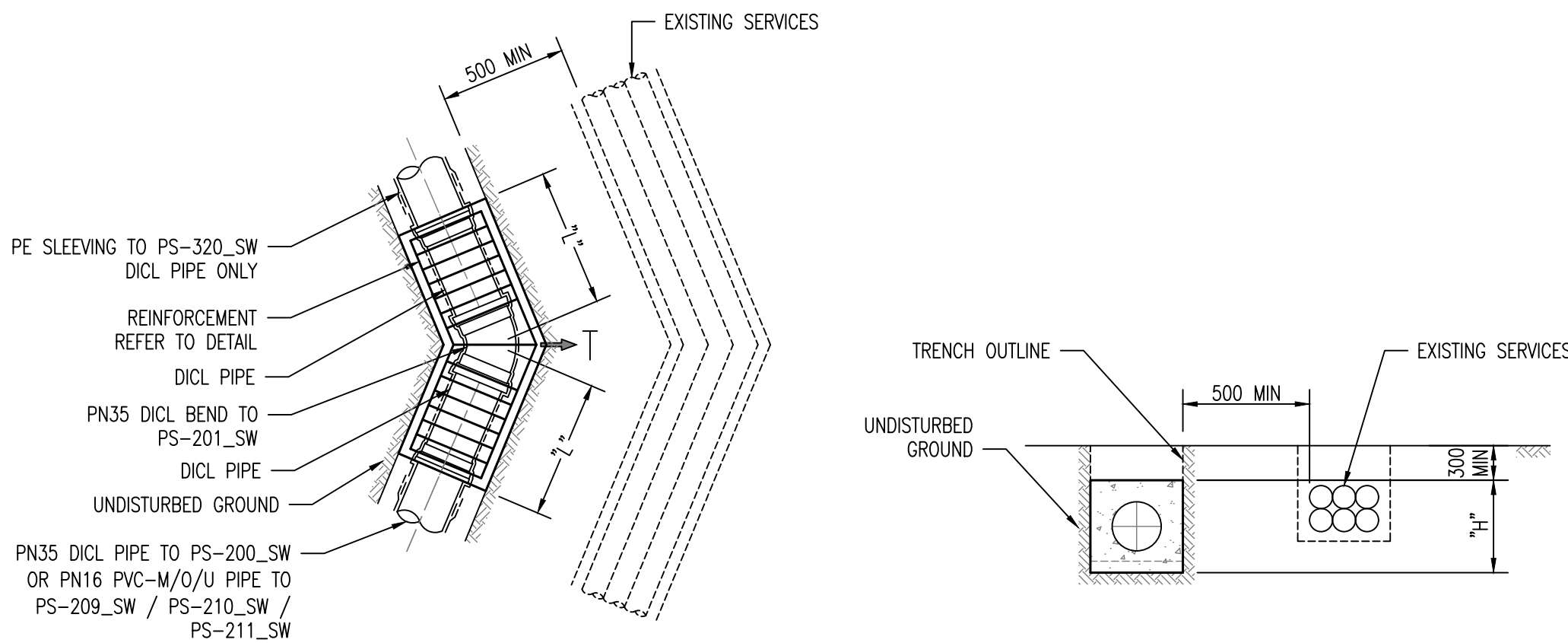
THRUST BLOCK AREAS & DIMENSIONS FOR 22.5° HORIZONTAL BENDS - TYPE 1 (m ²)									
DN	OD	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	REQUIRED BEARING AREA	W	H	L
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(m ²)	(mm)	(mm)	(mm)
100	122	120	150	6.7	50	0.134	250	350	500
150	177	120	150	14.1	50	0.282	350	450	700
225	259	120	150	30.2	50	0.604	450	750	1000

THRUST BLOCK AREAS & DIMENSIONS FOR 90° HORIZONTAL BENDS - TYPE 1 (m ²)									
DN	OD	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	REQUIRED BEARING AREA	W	H	L
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(m ²)	(mm)	(mm)	(mm)
100	122	120	150	24.3	50	0.486	400	600	900
100	122	120	150	24.3	100	0.243	300	400	650
150	177	120	150	51.2	50	1.023	550	800	1300
150	177	120	150	51.2	100	0.512	350	600	900
225	259	120	150	109.6	50	2.192	REFER TO TYPE 2		
225	259	120	150	109.6	100	1.096	REFER TO TYPE 2		
225	259	120	150	109.6	200	0.548	300	650	1100

HORIZONTAL BEND TYPE 1 NOTES :-

- ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.
- THRUST BLOCKS DESIGNED TO WITHSTAND A DESIGN PRESSURE OF 120m AND A TEST PRESSURE OF 150m HEAD OF WATER.
- NOT USED.
- THE ALLOWABLE HORIZONTAL BEARING PRESSURE (AHBP) OF UNDISTURBED NATURAL SOIL TO BE DETERMINED BY A SUITABLY EXPERIENCED GEOTECHNICAL ENGINEER PRIOR TO CASTING THRUST BLOCKS.
- CAST THE THRUST AREA OF ALL THRUST BLOCKS AGAINST A CLEAN FACE OF UNDISTURBED NATURAL SOIL.
- DO NOT USE THRUST BLOCKS AS SPECIFIED IN THIS DRAWING IN SOILS WHERE AHBP < 50kPa. WSC TO BE NOTIFIED IF THESE CONDITIONS ARISE.
- ALL DI FITTINGS AND PIPES TO BE WRAPPED IN POLYETHYLENE SLEEVING. TAPE 700 LONG PE SLEEVING TO END OF DICL PIPE TO BE ENCASED 150 FROM THE SOCKET FACE TO OVERLAP PE SLEEVED DICL PIPE. WHEN CONNECTING TO PVC PIPE (WITHOUT PE SLEEVE) TAPE 700 LONG PE SLEEVE TO PVC PIPE. POLYETHYLENE SLEEVING TO PS-320_SW.

- CONCRETE SHALL BE CLASS N25 TO PS-357_SW. SLUMP SHALL BE IN THE RANGE 80mm - 120mm. MAXIMUM NOMINAL AGGREGATE SIZE SHALL BE 20mm.
- DO NOT APPLY ANY THRUST LOAD FOR AT LEAST 14 DAYS AFTER POURING THRUST BLOCKS.
- THRUST BLOCK DESIGNS SHOWN ON THIS DRAWING ARE NOT SUITABLE FOR USE IN AGGRESSIVE OR CONTAMINATED SOILS.



HORIZONTAL BEND
THRUST BLOCK TYPE 2 PLAN

NOT TO SCALE

HORIZONTAL BEND
THRUST BLOCK TYPE 2 ELEVATION

NOT TO SCALE

THRUST BLOCK AREAS & DIMENSIONS FOR 11.25° HORIZONTAL BENDS - TYPE 2 (m ²)								
DN	OD	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	REQUIRED BEARING AREA	L	H
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(m ²)	(mm)	(mm)
100	122	120	150	3.4	50	0.067	600	450
150	177	120	150	7.1	50	0.142	600	500
225	259	120	150	15.2	50	0.304	600	600

THRUST BLOCK AREAS & DIMENSIONS FOR 45° HORIZONTAL BENDS - TYPE 2 (m ²)								
DN	OD	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	REQUIRED BEARING AREA	L	H
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(m ²)	(mm)	(mm)
100	122	120	150	13.2	50	0.263	600	450
150	177	120	150	27.7	50	0.554	600	500
225	259	120	150	59.3	50	1.186	1200	600

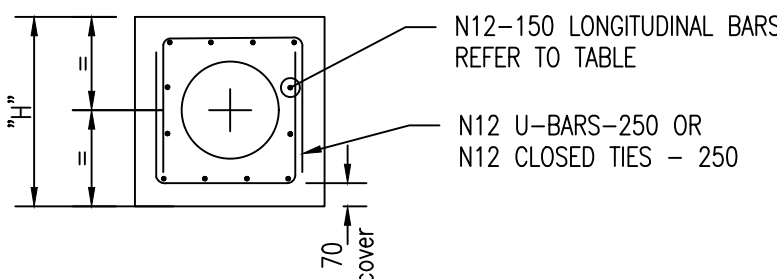
THRUST BLOCK AREAS & DIMENSIONS FOR 22.5° HORIZONTAL BENDS - TYPE 2 (m ²)								
DN	OD	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	REQUIRED BEARING AREA	L	H
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(m ²)	(mm)	(mm)
100	122	120	150	6.7	50	0.134	600	450
150	177	120	150	14.1	50	0.282	600	500
225	259	120	150	30.2	50	0.604	600	600

THRUST BLOCK AREAS & DIMENSIONS FOR 90° HORIZONTAL BENDS - TYPE 2 (m ²)								
DN	OD	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST T	SOIL AHBP	REQUIRED BEARING AREA	L	H
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(m ²)	(mm)	(mm)
100	122	120	150	24.3	50	0.486	700	450
150	177	120	150	51.2	50	1.023	1300	500
225	259	120	150	109.6	50	2.192	2300	700

HORIZONTAL BEND TYPE 2 NOTES :-

- ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.
- THRUST BLOCKS DESIGNED TO WITHSTAND A DESIGN PRESSURE OF 120m AND A TEST PRESSURE OF 150m HEAD OF WATER.
- THE ALLOWABLE HORIZONTAL BEARING PRESSURE (AHBP) OF UNDISTURBED NATURAL SOIL TO BE DETERMINED BY A SUITABLY EXPERIENCED GEOTECHNICAL ENGINEER PRIOR TO CASTING THRUST BLOCKS.
- CAST THE THRUST AREA OF ALL THRUST BLOCKS AGAINST A CLEAN FACE OF UNDISTURBED NATURAL SOIL.
- DO NOT USE THRUST BLOCKS AS SPECIFIED IN THIS DRAWING IN SOILS WHERE AHBP < 50kPa. WSC TO BE NOTIFIED IF THESE CONDITIONS ARISE.
- ALL DI FITTINGS AND PIPES TO BE WRAPPED IN POLYETHYLENE SLEEVING. TAPE 700 LONG PE SLEEVING TO END OF DICL PIPE TO BE ENCASED 150 FROM THE SOCKET FACE TO OVERLAP PE SLEEVED DICL PIPE. WHEN CONNECTING TO PVC PIPE (WITHOUT PE SLEEVE) TAPE 700 LONG PE SLEEVE TO PVC PIPE. POLYETHYLENE SLEEVING TO PS-320_SW.
- CONCRETE SHALL BE CLASS N25 TO PS-357_SW. SLUMP SHALL BE IN THE RANGE 80mm - 120mm. MAXIMUM NOMINAL AGGREGATE SIZE SHALL BE 20mm.

- ALL REINFORCEMENT SHALL BE TO AS4671, SHAPE - D, STRENGTH GRADE = 500 MPa, DUCTILITY CLASS - N.
- MINIMUM CLEAR COVER TO REINFORCEMENT SHALL BE 70mm.
- DO NOT APPLY ANY THRUST LOAD FOR AT LEAST 14 DAYS AFTER POURING THRUST BLOCKS.
- THRUST BLOCK DESIGNS SHOWN ON THIS DRAWING ARE NOT SUITABLE FOR USE IN AGGRESSIVE OR CONTAMINATED SOILS.



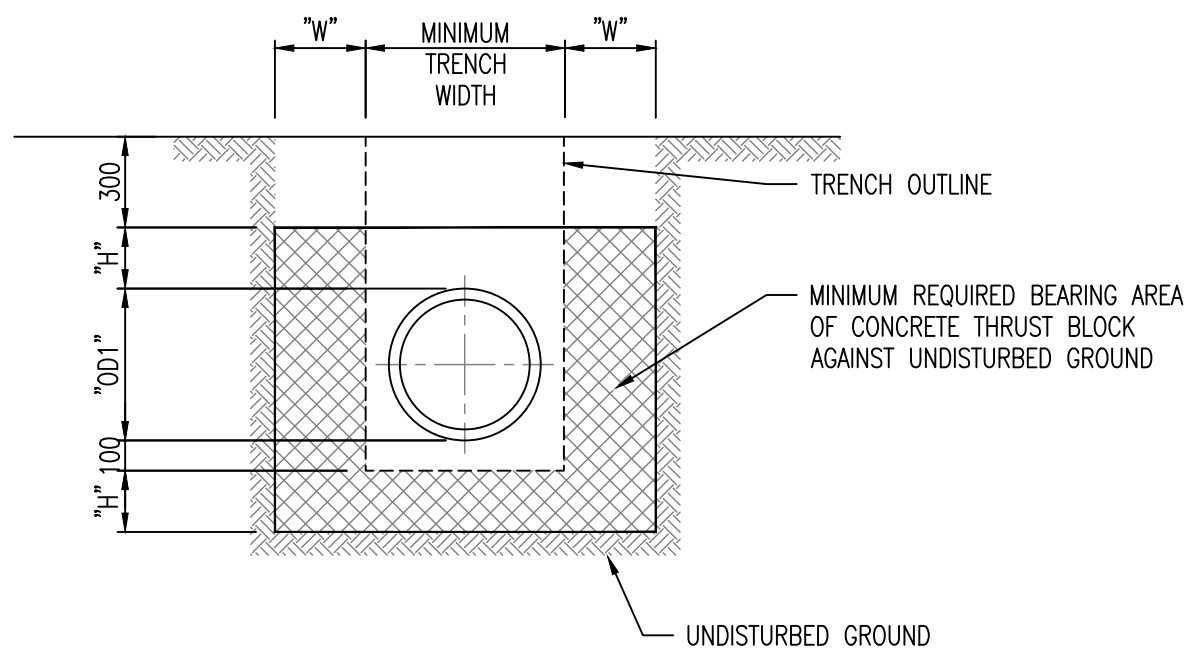
CONCRETE ENCASEMENT DETAIL

NOT TO SCALE

CONCRETE ENCASEMENT REINFORCEMENT DETAILS

MAIN SIZE	LONGITUDINAL REINFORCEMENT
DN100	8N12
DN150	8N12
DN225	12N12

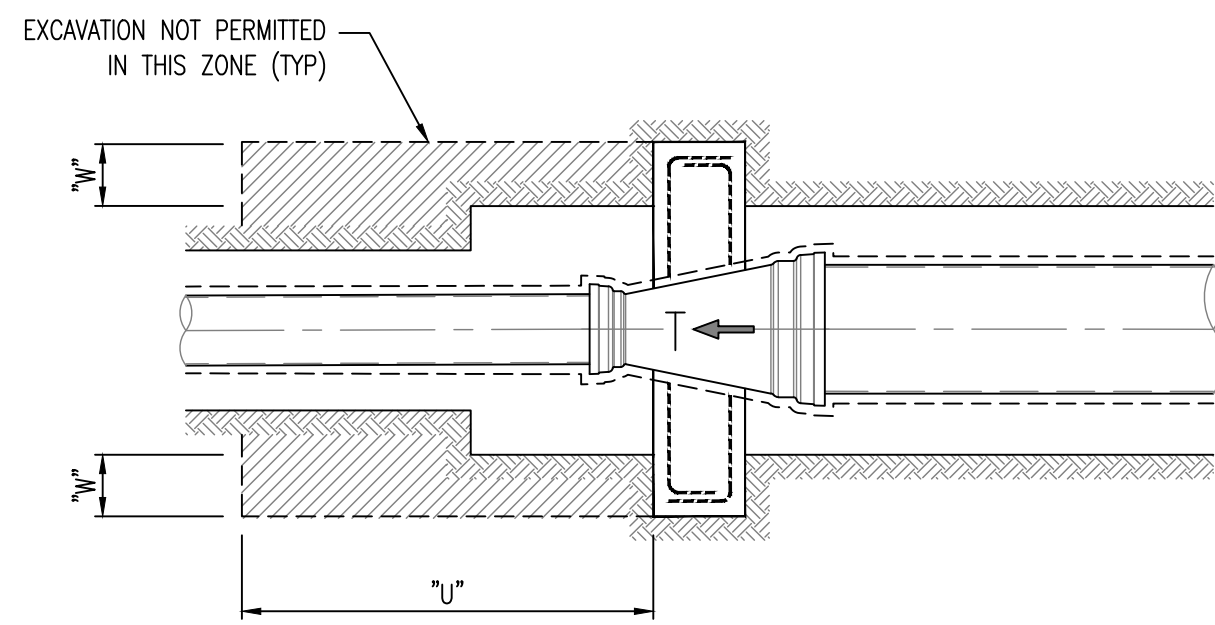
ROSE ATKINS RIMMER (Infrastructure) Pty. Ltd. RAR WATER RELATED INFRASTRUCTURE DESIGN AND MANAGEMENT SHOP 7 & 8 'M CENTRE' 40 STERLING ROAD, MINCHINBURY NSW 2770 PH: (02) 9853 0200 FAX: (02) 9671 7399				POTABLE WATER THRUST BLOCK DETAILS 1				SHEET 8 OF 24	VERSION 04
DRAWN K.GAO	DESIGNED K.GAO	REVIEWED D.SHEATHER	VERIFIED D.SHEATHER	JOB No. 91/25368/1A					
SCALE -	DATAN -	DATA REFERENCE -	DATE OF ISSUE 28/9/2021						



TAPER

DETAILS OF AREA TO BE CAST AGAINST UNDISTURBED GROUND ELEVATION

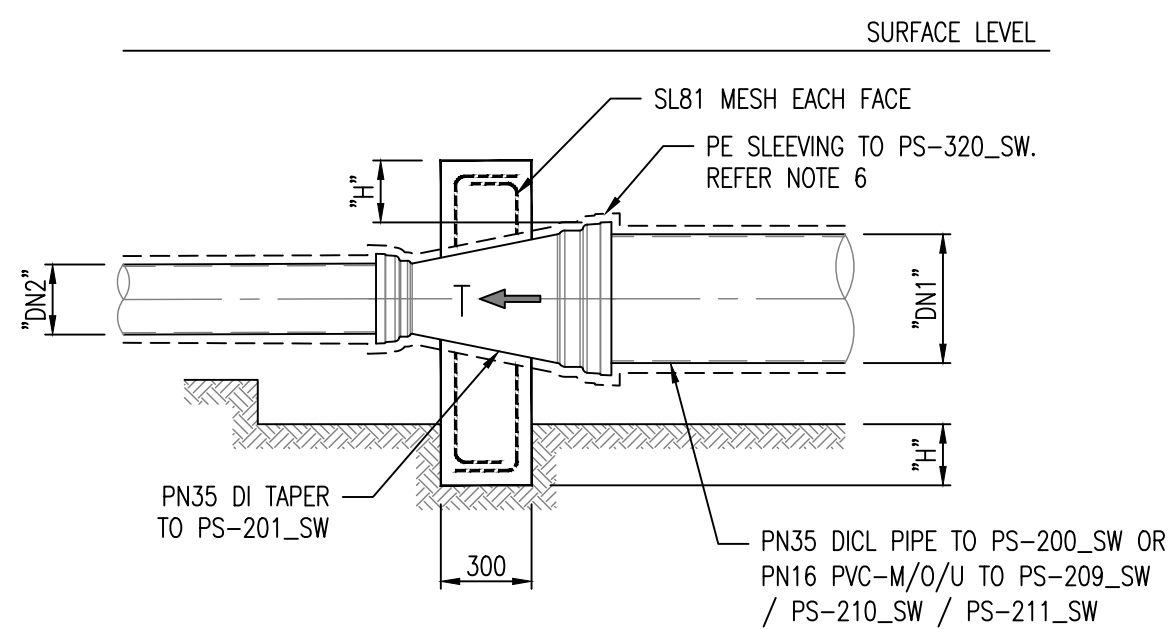
NOT TO SCALE



TAPER

DETAILS OF AREA TO BE CAST AGAINST UNDISTURBED GROUND PLAN

NOT TO SCALE



TAPER

THRUST BLOCK REINFORCEMENT DETAIL

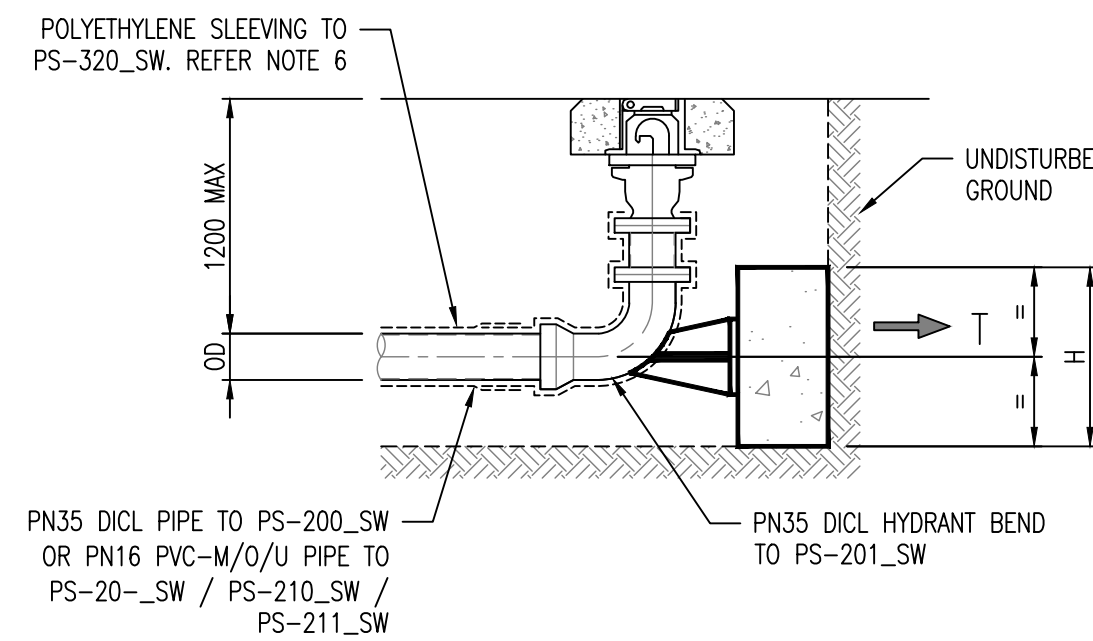
NOT TO SCALE

THRUST BLOCK AREAS & DIMENSIONS FOR TAPERS - TYPE 1 (m²)

DN	OD	DN2	OD2	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST 'T'	SOIL AHP	REQUIRED BEARING AREA	H	MINIMUM TRENCH WIDTH	W	U
(mm)	(mm)	(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(m ²)	(mm)	(mm)	(mm)	(mm)
150	177	100	122	120	150	19.0	50	0.380	200	380	300	1550
150	177	100	122	120	150	19.0	100	0.190	100	380	300	1200
150	177	100	122	120	150	19.0	200	0.095	100	380	300	1200
225	259	150	177	120	150	60.3	50	1.206	400	590	650	2400
225	259	150	177	120	150	60.3	100	0.603	350	590	300	2200
225	259	150	177	120	150	60.3	200	0.153	150	590	300	1500

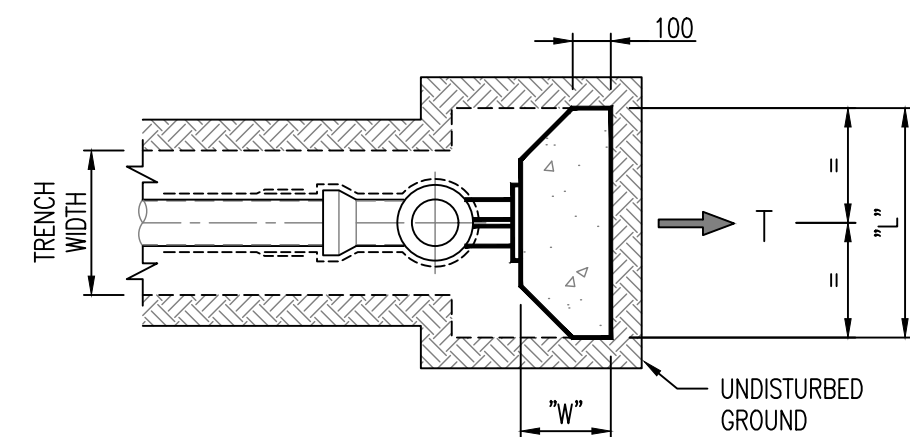
TAPER NOTES :-

- ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.
- THRUST BLOCKS DESIGNED TO WITHSTAND A DESIGN PRESSURE OF 120m AND A TEST PRESSURE OF 150m HEAD OF WATER.
- THE ALLOWABLE HORIZONTAL BEARING PRESSURE (AHBP) OF UNDISTURBED NATURAL SOIL TO BE DETERMINED BY A SUITABLY EXPERIENCED GEOTECHNICAL ENGINEER PRIOR TO CASTING THRUST BLOCKS.
- CAST THE THRUST AREA OF ALL THRUST BLOCKS AGAINST A CLEAN FACE OF UNDISTURBED NATURAL SOIL. THRUST BLOCKS NOT TO INTERFERE WITH OTHER SERVICES.
- DO NOT USE THRUST BLOCKS AS SPECIFIED IN THIS DRAWING IN SOILS WHERE AHBP < 50kPa. WSC TO BE NOTIFIED IF THESE CONDITIONS ARISE.
- ALL DI FITTINGS AND PIPES TO BE WRAPPED IN POLYETHYLENE SLEEVING. TAPE 700 LONG PE SLEEVING TO END OF DICL PIPE TO BE ENCASED 150 FROM THE SOCKET FACE TO OVERLAP PE SLEEVED DICL PIPE. WHEN CONNECTING TO PVC PIPE (WITHOUT PE SLEEVE) TAPE 700 LONG PE SLEEVE TO PVC PIPE. POLYETHYLENE SLEEVING TO PS-320_SW.
- CONCRETE SHALL BE CLASS N25 TO PS-357_SW. SLUMP SHALL BE IN THE RANGE 80mm – 120mm. MAXIMUM NOMINAL AGGREGATE SIZE SHALL BE 20mm.
- ALL REINFORCEMENT SHALL BE TO AS4671, SHAPE – D, STRENGTH GRADE = 500 MPa, DUCTILITY CLASS – N.
- MINIMUM CLEAR COVER TO REINFORCEMENT SHALL BE 70mm.
- CONCRETE SHALL ACHIEVE A MINIMUM COMPRESSIVE STRENGTH OF 25MPa OR BE CURED FOR A MINIMUM OF 28 DAYS PRIOR TO APPLICATION OF THRUST LOADS.
- THRUST BLOCK DESIGNS SHOWN ON THIS DRAWING ARE NOT SUITABLE FOR USE IN AGGRESSIVE OR CONTAMINATED SOILS.



THRUST BLOCK FOR HYDRANT BEND UNRESTRICTED AREAS ELEVATION

NOT TO SCALE

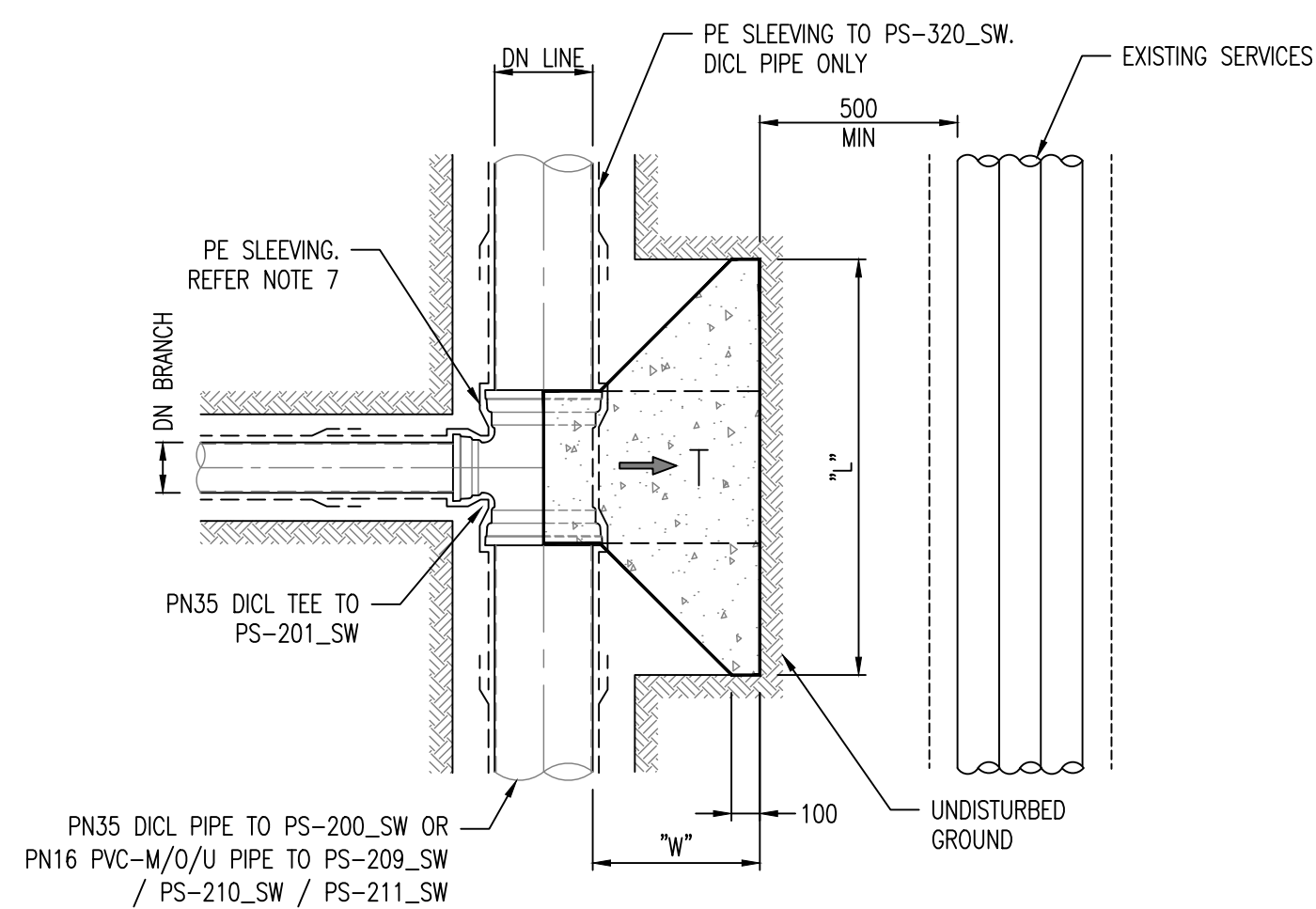


THRUST BLOCK FOR HYDRANT BEND UNRESTRICTED AREAS PLAN

NOT TO SCALE

THRUST BLOCK AREAS & DIMENSIONS FOR HYDRANT BENDS (m²)

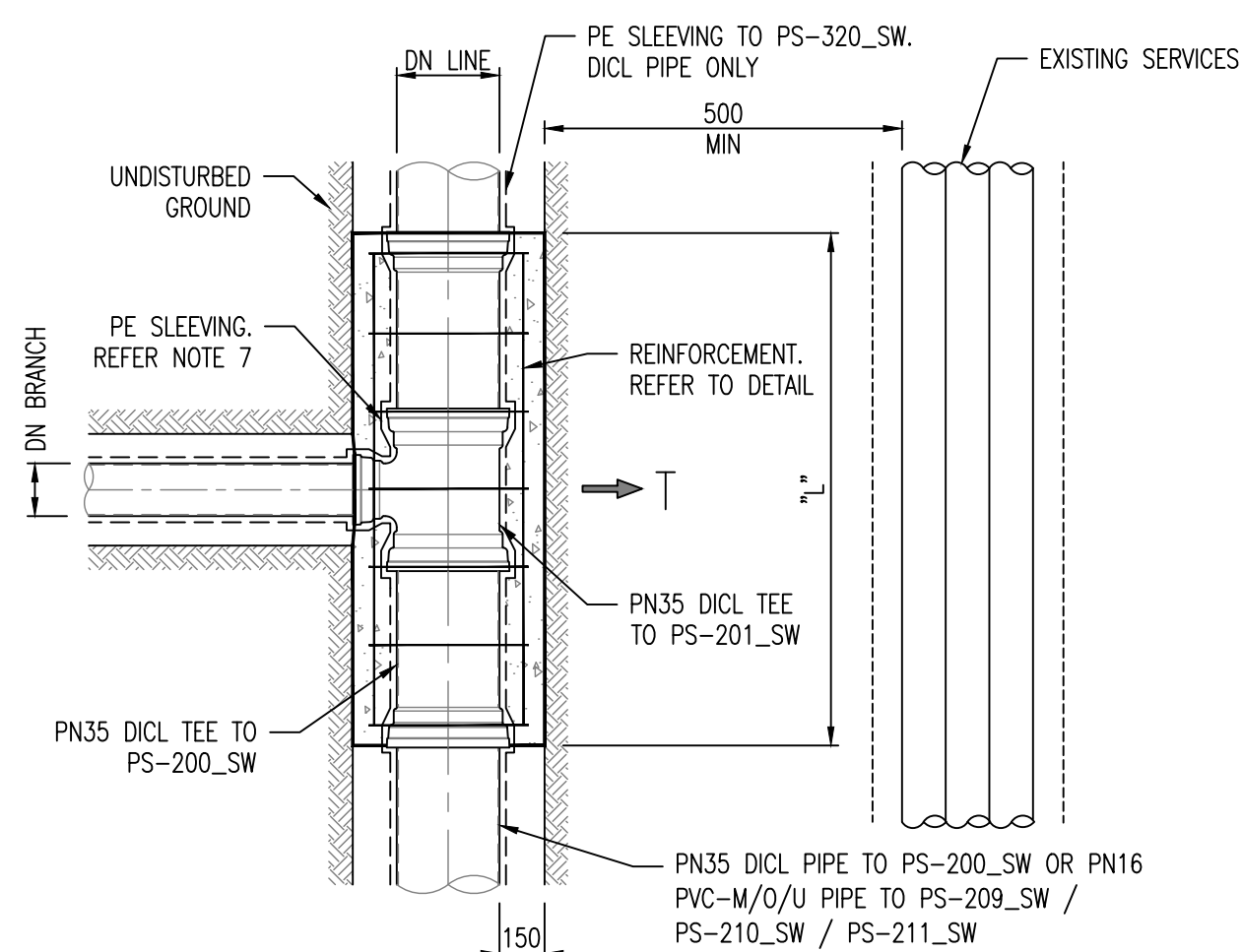
DN	OD	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST 'T'	SOIL AHP	W	H	L	REQUIRED BEARING AREA
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(mm)	(mm)	(mm)	(m ²)
100	122	120	150	17.2	50	450	450	800	0.344
100	122	120	150	17.2	100	250	450	450	0.172
100	122	120	150	17.2	200	250	350	450	0.086
150	177	120	150	36.2	50	750	500	1500	0.724
150	177	120	150	36.2	100	400	500	750	0.362
150	177	120	150	36.2	200	250	400	500	0.181



TEE

THRUST BLOCK TYPE 1 PLAN

NOT TO SCALE



TEE

THRUST BLOCK TYPE 2 PLAN

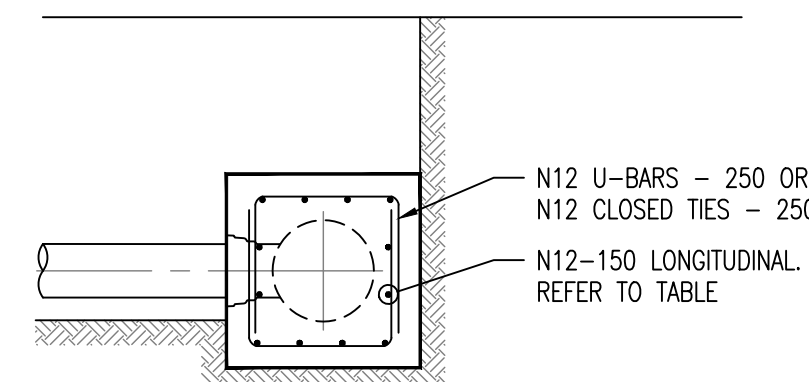
NOT TO SCALE

THRUST BLOCK AREAS & DIMENSIONS FOR TEES - TYPE 1 (m²)

DN BRANCH	OD BRANCH	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST 'T'	SOIL AHP	H	L	W	REQUIRED BEARING AREA
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(mm)	(mm)	(mm)	(m ²)
100	122	120	150	17.2	50	500	700	400	0.344
100	122	120	150	17.2	100	400	450	250	0.172
100	122	120	150	17.2	200	400	400	300	0.086
150	177	120	150	36.2	50	700	1100	600	0.724
150	177	120	150	36.2	100	500	750	400	0.362
150	177	120	150	36.2	200	450	600	350	0.181
225	259	120	150	77.5	50	REFER TO TYPE 2	1550		
225	259	120	150	77.5	100	800	1200	500	0.775
225	259	120	150	77.5	200	600	800	300	0.388

THRUST BLOCK AREAS & DIMENSIONS FOR TEES - TYPE 2 (m²)

DN BRANCH	OD BRANCH	DESIGN PRESSURE HEAD	TEST PRESSURE HEAD	THRUST 'T'	SOIL AHP	H	L	REQUIRED BEARING AREA
(mm)	(mm)	(m)	(m)	(kN)	(kPa)	(mm)	(mm)	(m ²)
100	122	120	150	17.2	50	650	1150	0.344
100	122	120	150	17.2	100	650	1150	0.172
100	122	120	150	17.2	200	650	1150	0.086
150	177	120	150	36.2	50	750	1200	0.724
150	177	120	150	36.2	100	650	1200	0.362
150	177	120	150	36.2	200	650	1200	0.181
225	259	120	150	77.5	50	900	2150	1.550
225	259	120	150	77.5	100	900	1300	0.775
225	259	120	150	77.5	200	900	1300	0.388



TEE THRUST BLOCK TYPE 2 CONCRETE ENCASEMENT DETAIL

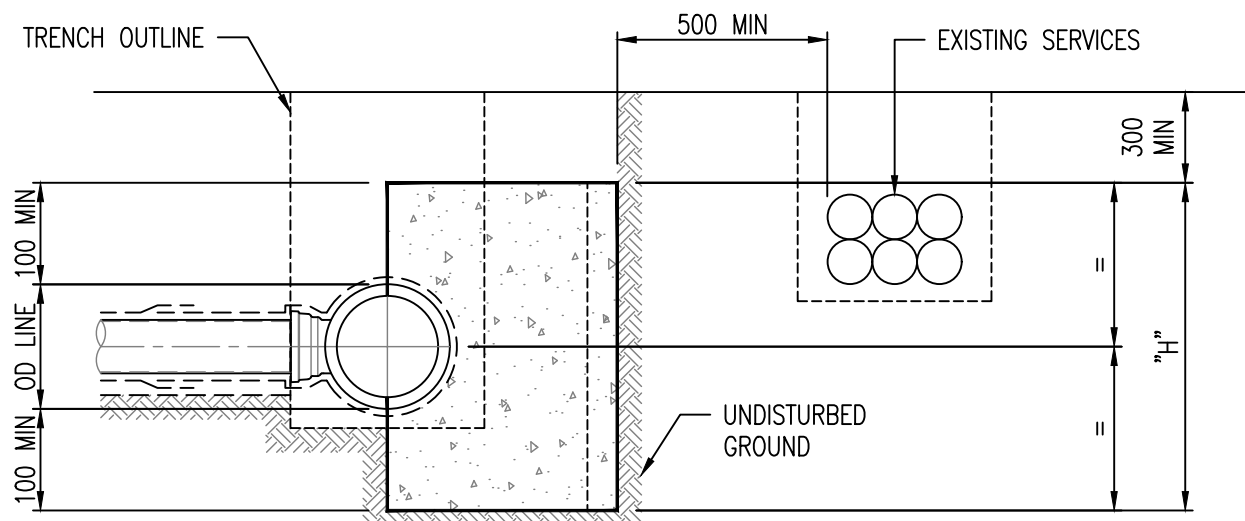
NOT TO SCALE

CONCRETE ENCASEMENT REINFORCEMENT DETAILS

MAIN SIZE	LONGITUDINAL REINFORCEMENT
DN100	8N12
DN150	8N12
DN225	12N12

TEE NOTES :-

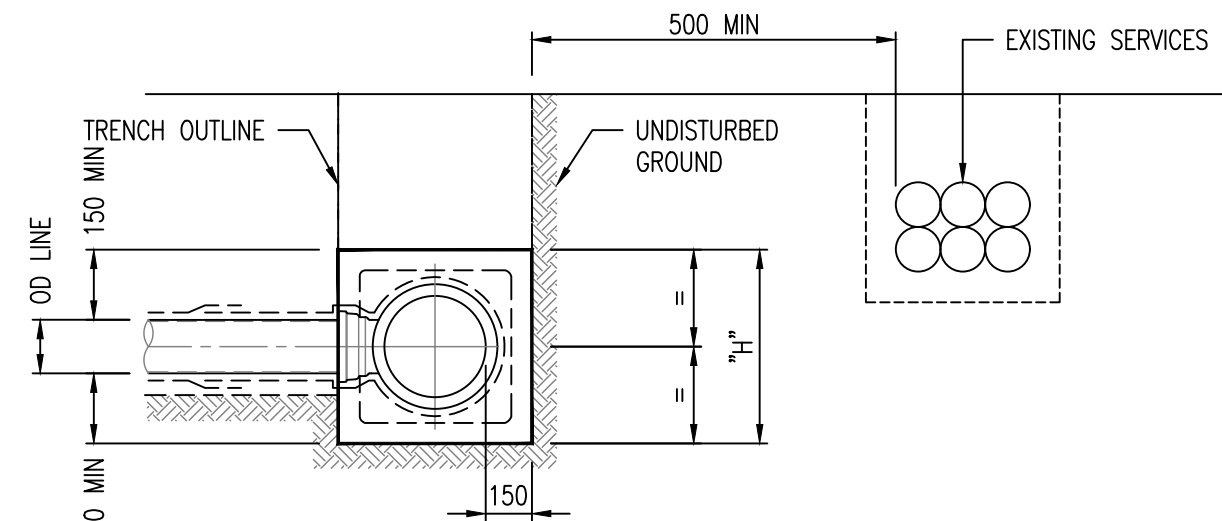
- ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.
- THRUST BLOCKS DESIGNED TO WITHSTAND A DESIGN PRESSURE OF 120m AND A TEST PRESSURE OF 150m HEAD OF WATER.
- THE ALLOWABLE HORIZONTAL BEARING PRESSURE (AHBP) OF UNDISTURBED NATURAL SOIL TO BE DETERMINED BY A SUITABLY EXPERIENCED GEOTECHNICAL ENGINEER PRIOR TO CASTING THRUST BLOCKS.
- CAST THE THRUST AREA OF ALL THRUST BLOCKS AGAINST A CLEAN FACE OF UNDISTURBED NATURAL SOIL. THRUST BLOCK NOT TO INTERFERE WITH OTHER SERVICES.
- DO NOT USE THRUST BLOCKS SPECIFIED IN THIS DRAWING IN SOILS WHERE AHBP < 50kPa.
- DO NOT USE THRUST BLOCKS SPECIFIED IN THIS DRAWING WITHIN 5m OF AN EMBANKMENT, CUTTING OR RETAINING WALL. A GEOTECHNICAL ASSESSMENT AND INDIVIDUAL DESIGN IS REQUIRED FOR THESE CONDITIONS.
- ALL DI FITTINGS AND PIPES TO BE WRAPPED IN POLYETHYLENE SLEEVING. TAPE 700 LONG PE SLEEVING TO END OF DICL PIPE TO BE ENCASED 150 FROM THE SOCKET FACE TO OVERLAP PE SLEEVED DICL PIPE. WHEN CONNECTING TO PVC PIPE (WITHOUT PE SLEEVING) TAPE 700 LONG PE SLEEVE TO PVC PIPE. POLYETHYLENE SLEEVING TO PS-320_SW.
- CONCRETE SHALL BE CLASS N25 TO PS-357_SW. SLUMP SHALL HAVE SLUMP IN THE RANGE OF 80mm – 120mm. MAXIMUM NOMINAL AGGREGATE SIZE SHALL BE 20mm.
- ALL REINFORCEMENT SHALL BE TO AS4671, SHAPE – D, STRENGTH GRADE = 500 MPa, DUCTILITY CLASS – N.
- MINIMUM CLEAR COVER TO REINFORCEMENT SHALL BE 70mm.
- DO NOT APPLY ANY THRUST LOAD FOR AT LEAST 14 DAYS AFTER POURING THRUST BLOCKS.
- THRUST BLOCK DESIGNS SHOWN ON THIS DRAWING ARE NOT SUITABLE FOR USE IN AGGRESSIVE OR CONTAMINATED SOILS.



TEE

THRUST BLOCK TYPE 1 ELEVATION

NOT TO SCALE



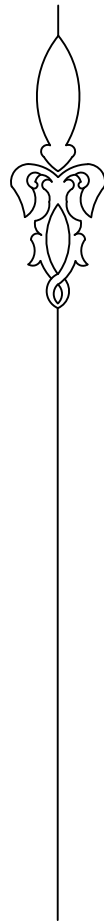
TEE

THRUST BLOCK TYPE 2 ELEVATION

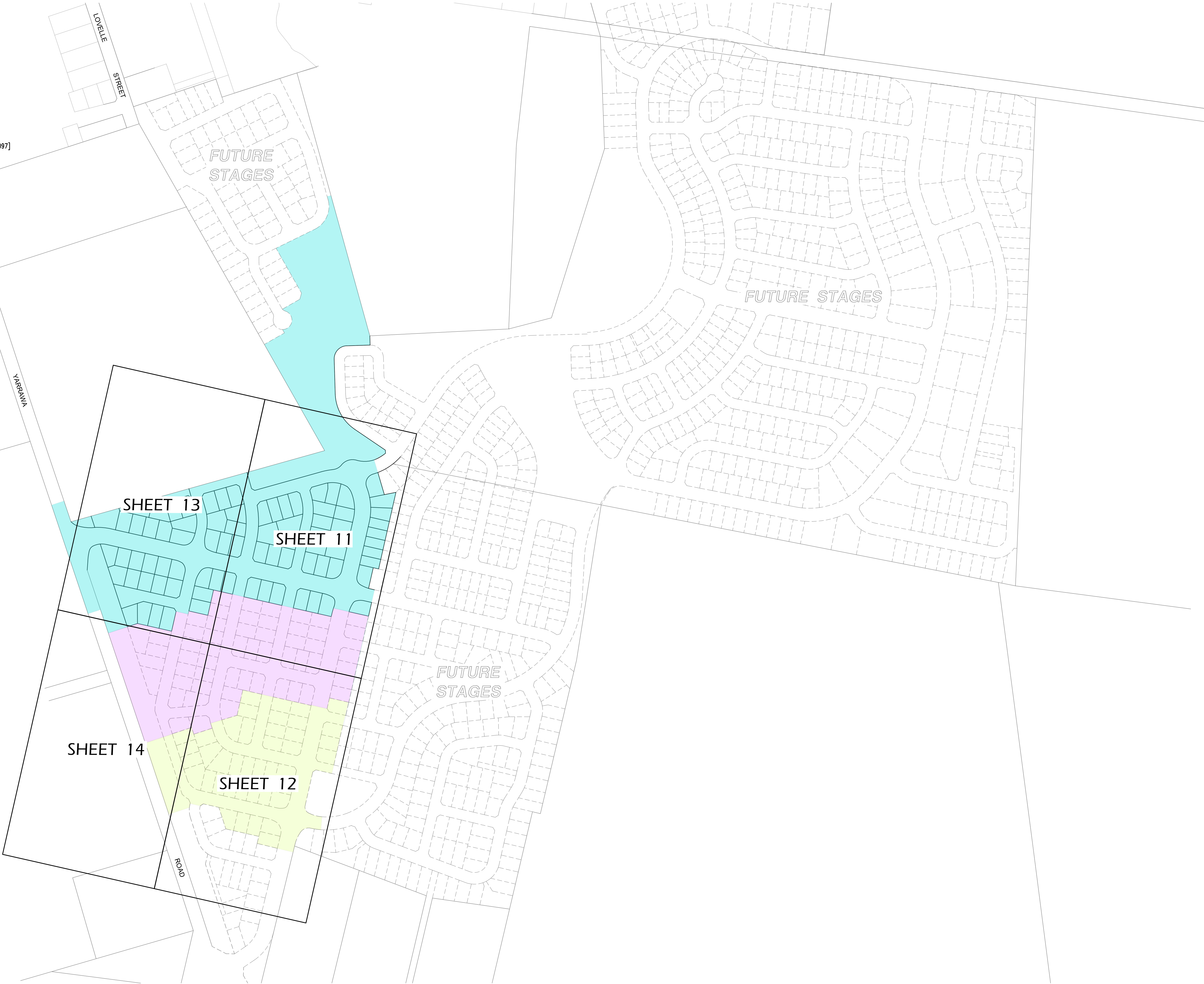
NOT TO SCALE

Stage 1 Development Stages

- Stage 1A
- Stage 1B
- Stage 1C



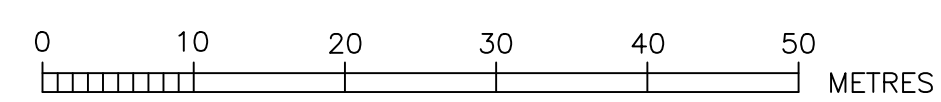
□ S.S.M. 14137
700.172 (Origin)
[258465.097,6172425.097]





■ DENOTES EASEMENT FOR SEWER SUPPORT 3.0 W.

● DENOTES EASEMENT FOR PADMOUNT SUBSTATION 2.75 W.



ROSE ATKINS RIMMER (Infrastructure) Pty. Ltd.
WATER RELATED INFRASTRUCTURE DESIGN AND MANAGEMENT
RAR
SHOP 7 & 8 'M CENTRE'
40 STERLING ROAD, MINCHINBURY NSW 2770
PH: (02) 9853 0200 FAX: (02) 9671 7399



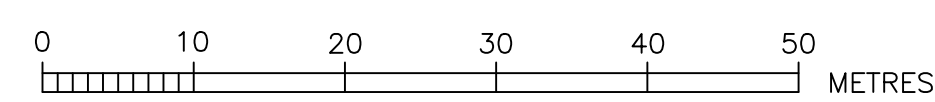
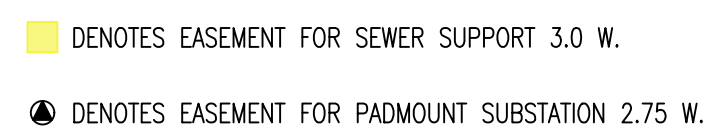
GRAVITY SEWER DETAIL PLAN 1

DRAWN	DESIGNED	REVIEWED	VERIFIED
K.GAO	K.GAO	D.SHEATHER	D.SHEATHER
SCALE	DATUM	DATA REFERENCE	DATE OF ISSUE
1:500	A.H.D.	-	28/9/2021

SHEET 11 OF 24

04

91/25368/1A



ROSE ATKINS RIMMER (Infrastructure) Pty. Ltd.

RAR

WATER RELATED INFRASTRUCTURE DESIGN AND MANAGEMENT

SHOP 7 & 8 'M CENTRE'

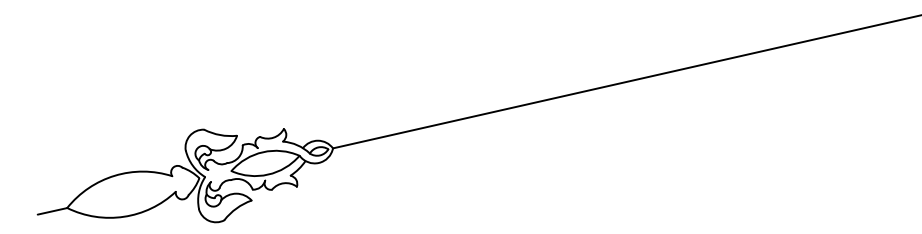
40 STERLING ROAD, MINCHINBURY NSW 2770

PH: (02) 9853 0200 FAX: (02) 9671 7399

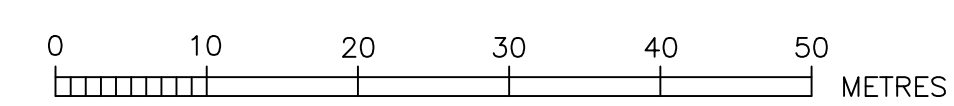
Incorporated in New South Wales



GRAVITY SEWER DETAIL PLAN 2				SHEET 12 OF 24		VERSION 04
DRAWN K. GAO	DESIGNED K. GAO	REVIEWED D. SKEATHER	VERIFIED D. SKEATHER	JOB No. 91/25368/1A		
SCALE 1:500	DATUM A.H.D.	U.S. REFERENCES -	DATE OF ISSUE 26/9/2021			



⊖ DENOTES EASEMENT FOR RIGHT OF CARRIAGEWAY & SERVICES 10.0 WIDE AND VARIABLE



ROSE ATKINS RIMMER (Infrastructure) Pty. Ltd.

RAR

WATER RELATED INFRASTRUCTURE DESIGN AND MANAGEMENT

SHOP 7 & 8 'M CENTRE'

40 STERLING ROAD, MINCHINBURY NSW 2770

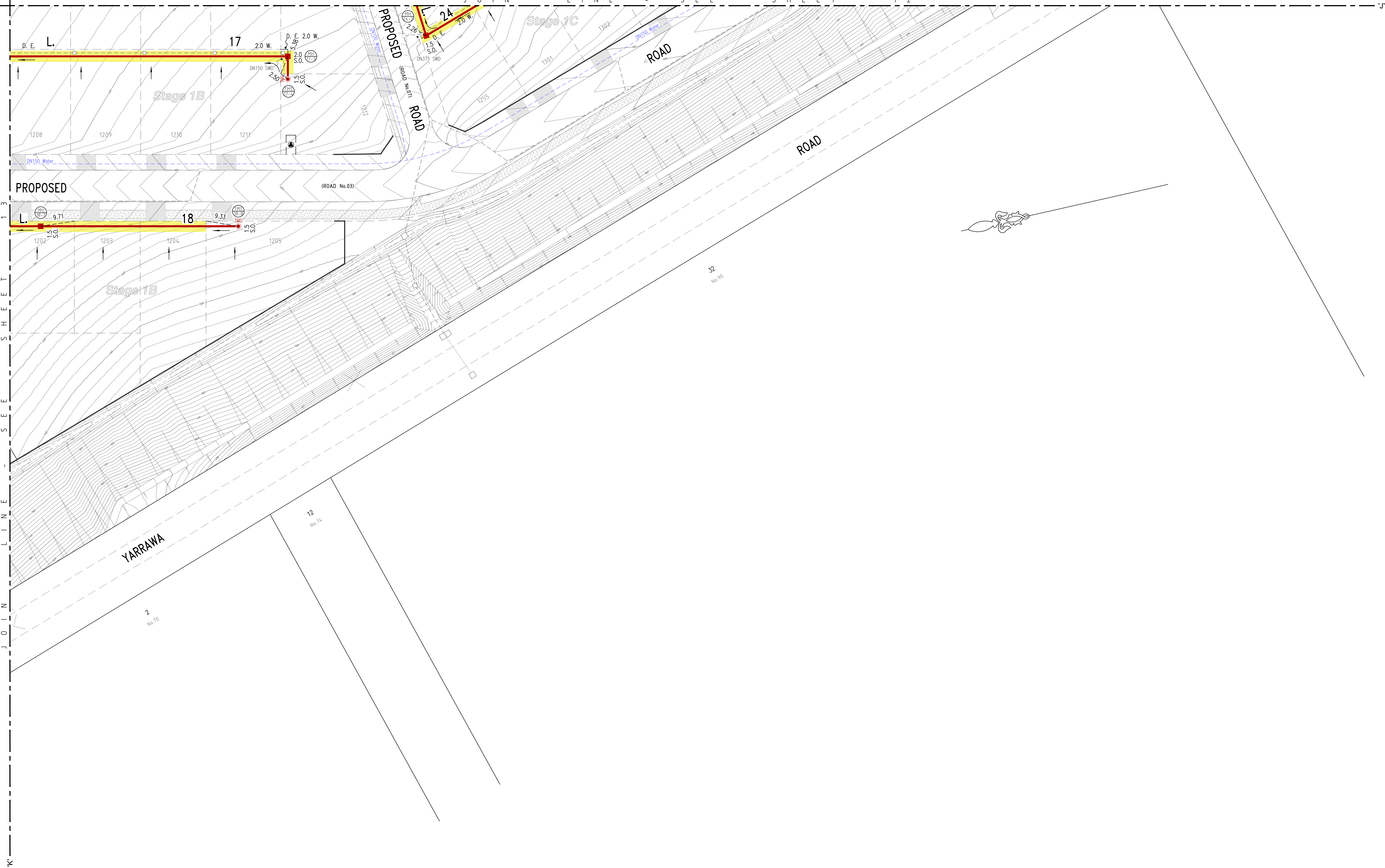
PH: (02) 9853 0200 FAX: (02) 9671 7399

Incorporated in New South Wales

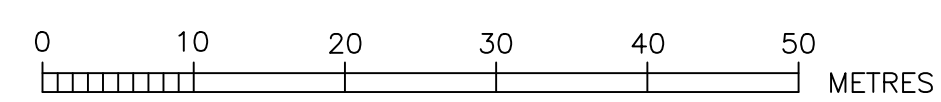


GRAVITY SEWER DETAIL PLAN 3				SHEET 13 OF 24		VERSION	04
DRAFTED: K.GAO		DESIGNED: K.GAO		REVIEWED: D.SHEATHER		VERIFIED: D.SHEATHER	
SCALE: 1"=50'		SOUTH: A.H.D.		U.S.D. REFERENCE: -		DATE OF ISSUE: 2/6/2021	
91/25368/1A							

J O I N L I N E - S E E S H E E T 1 2



⦿ DENOTES EASEMENT FOR PADMOUNT SUBSTATION 2.75 W.



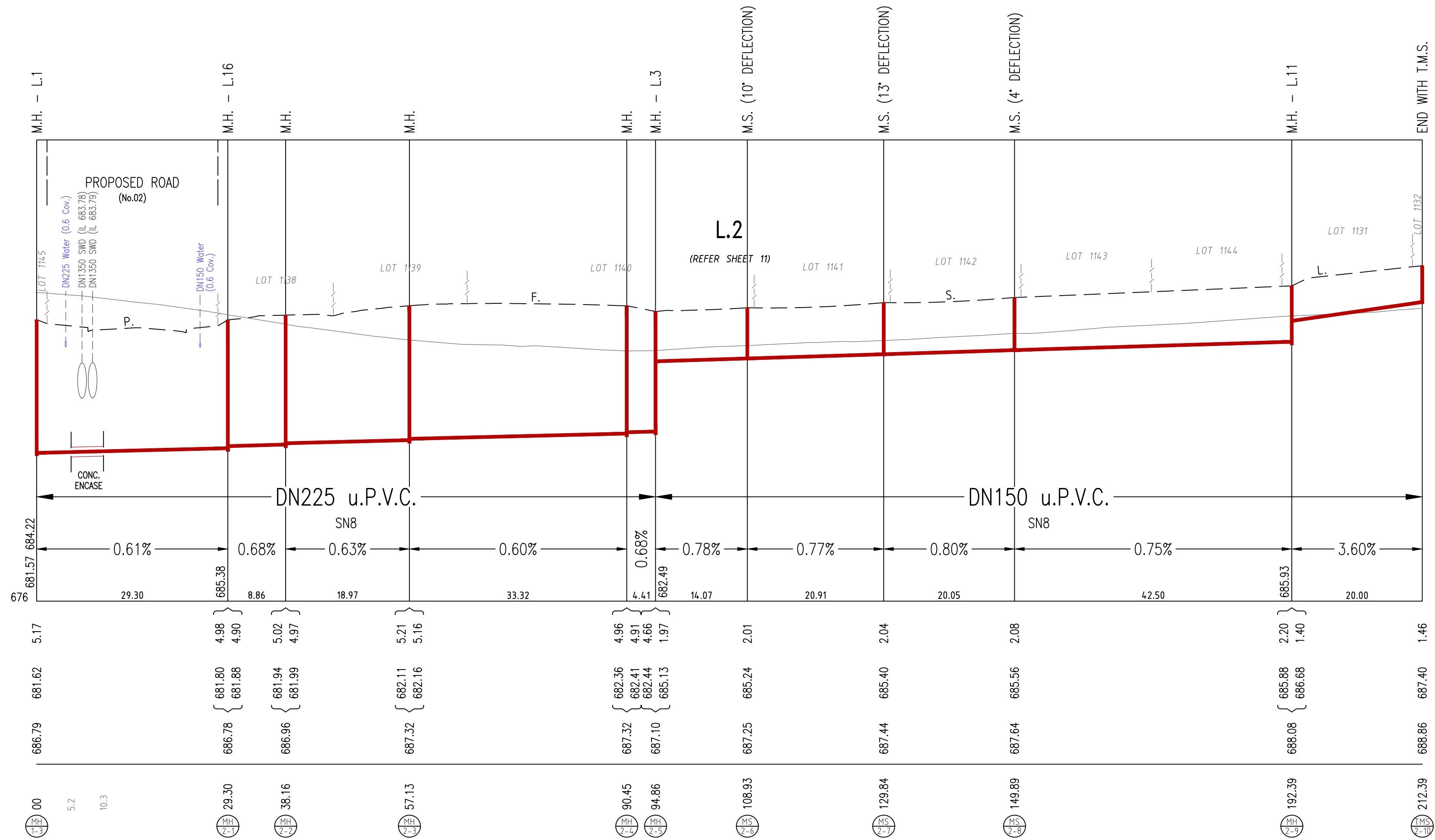
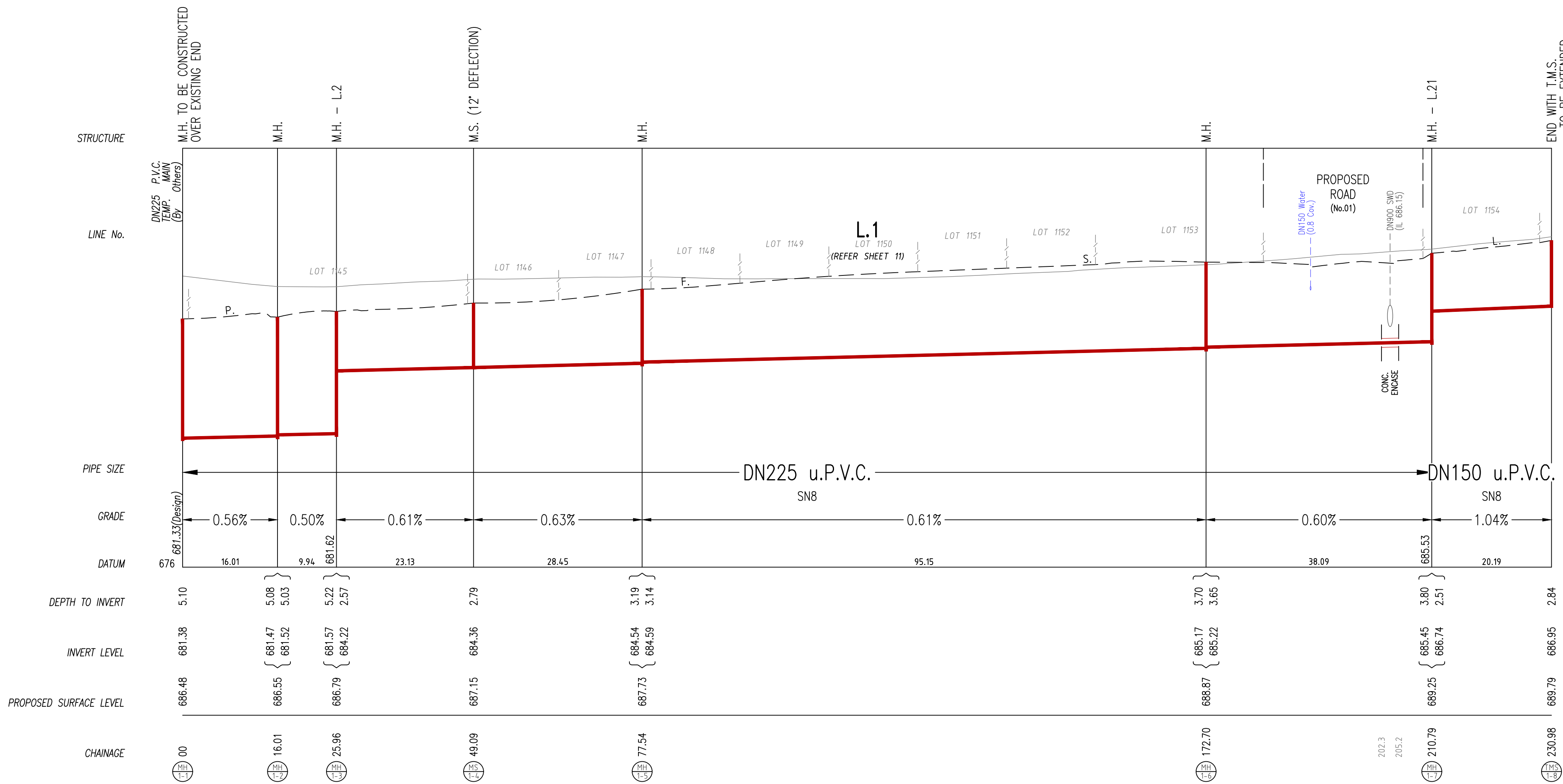
RAR
Incorporated in New South Wales

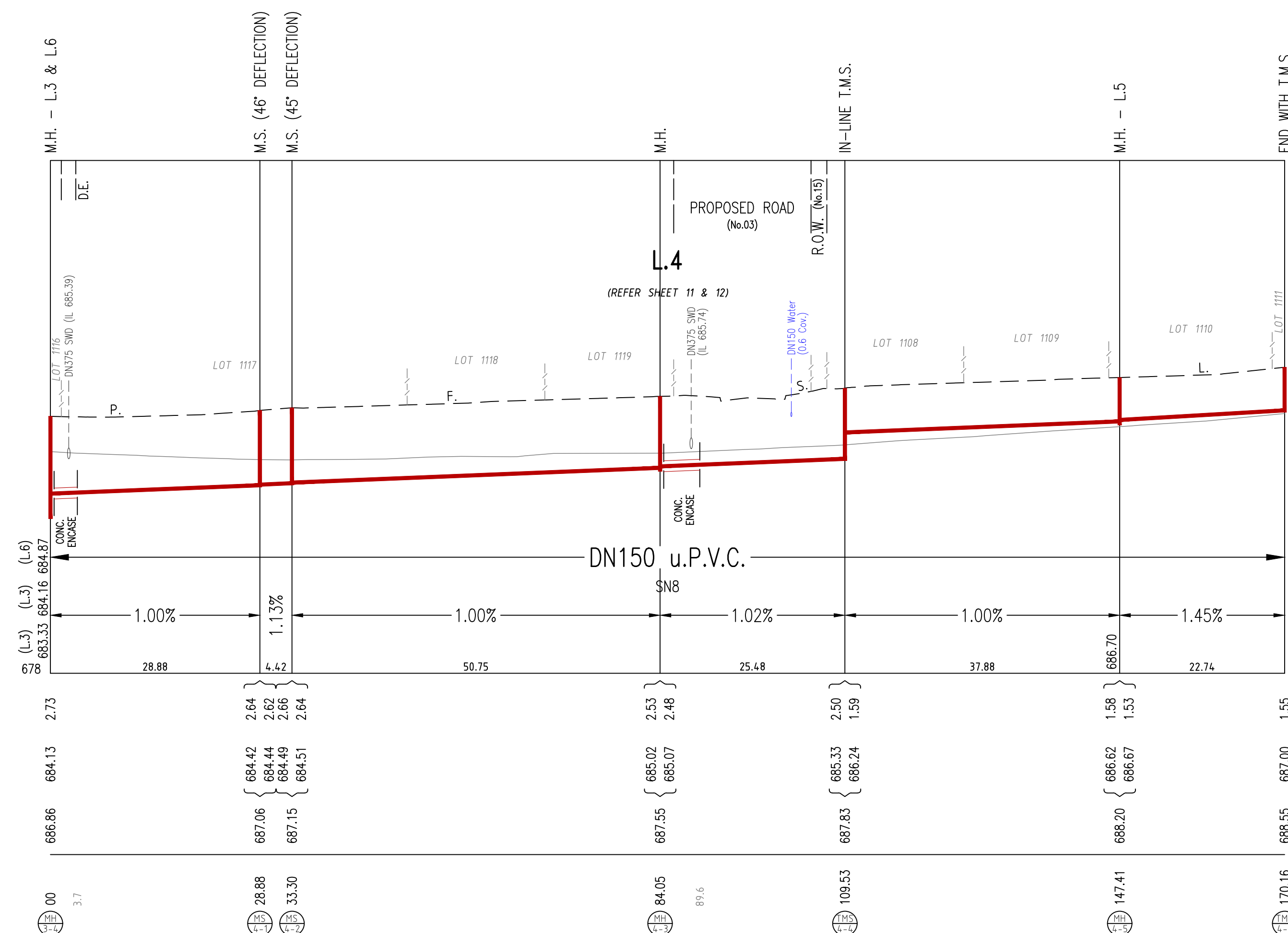
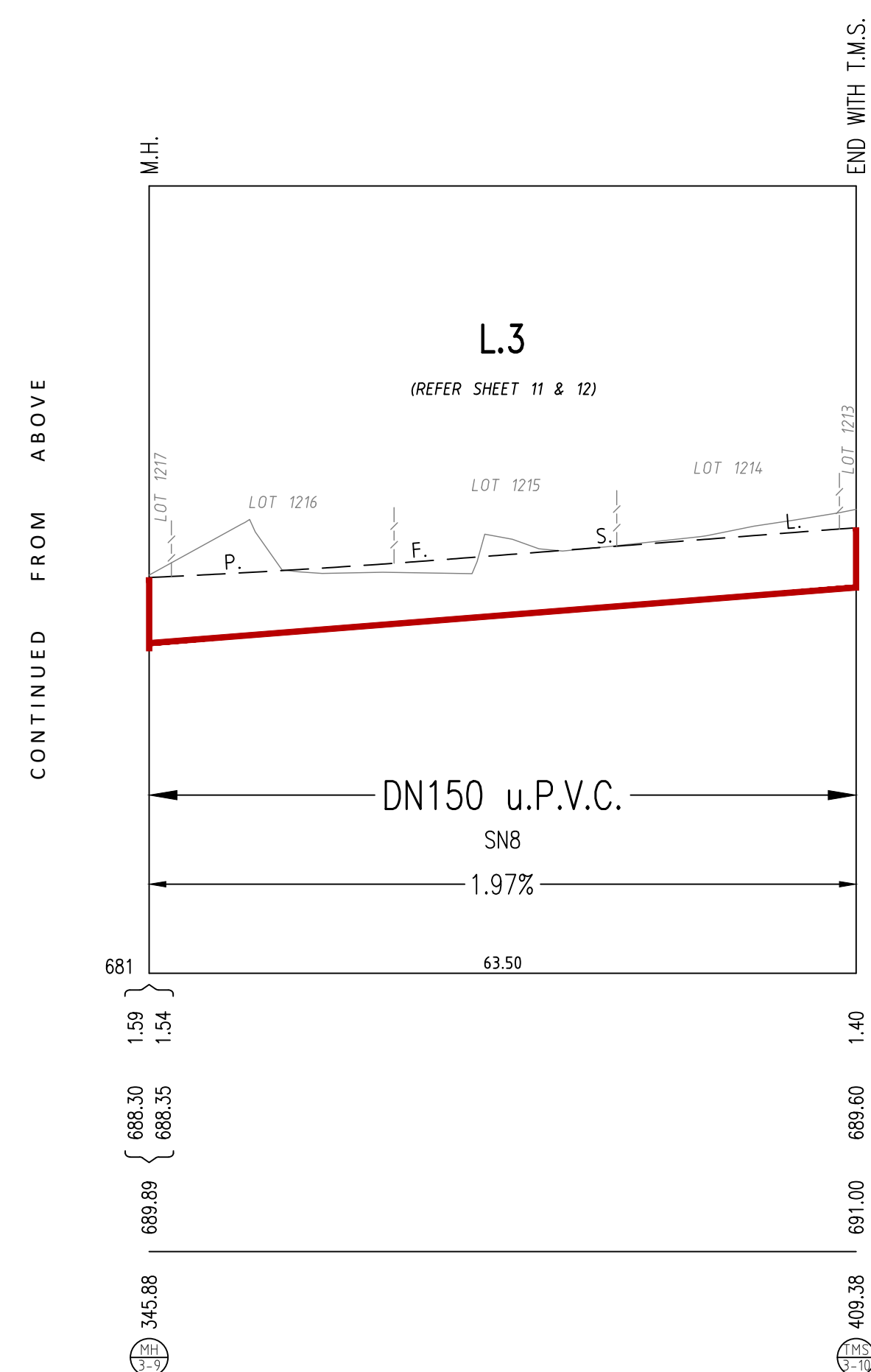
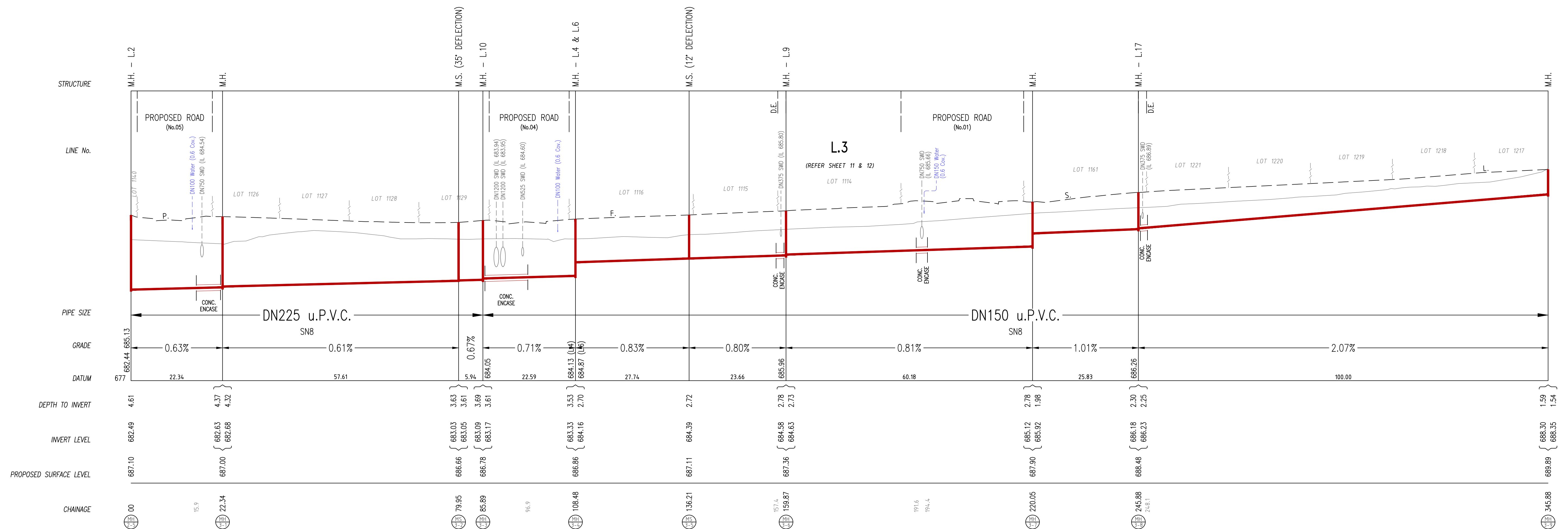
WATER RELATED INFRASTRUCTURE DESIGN AND MANAGEMENT

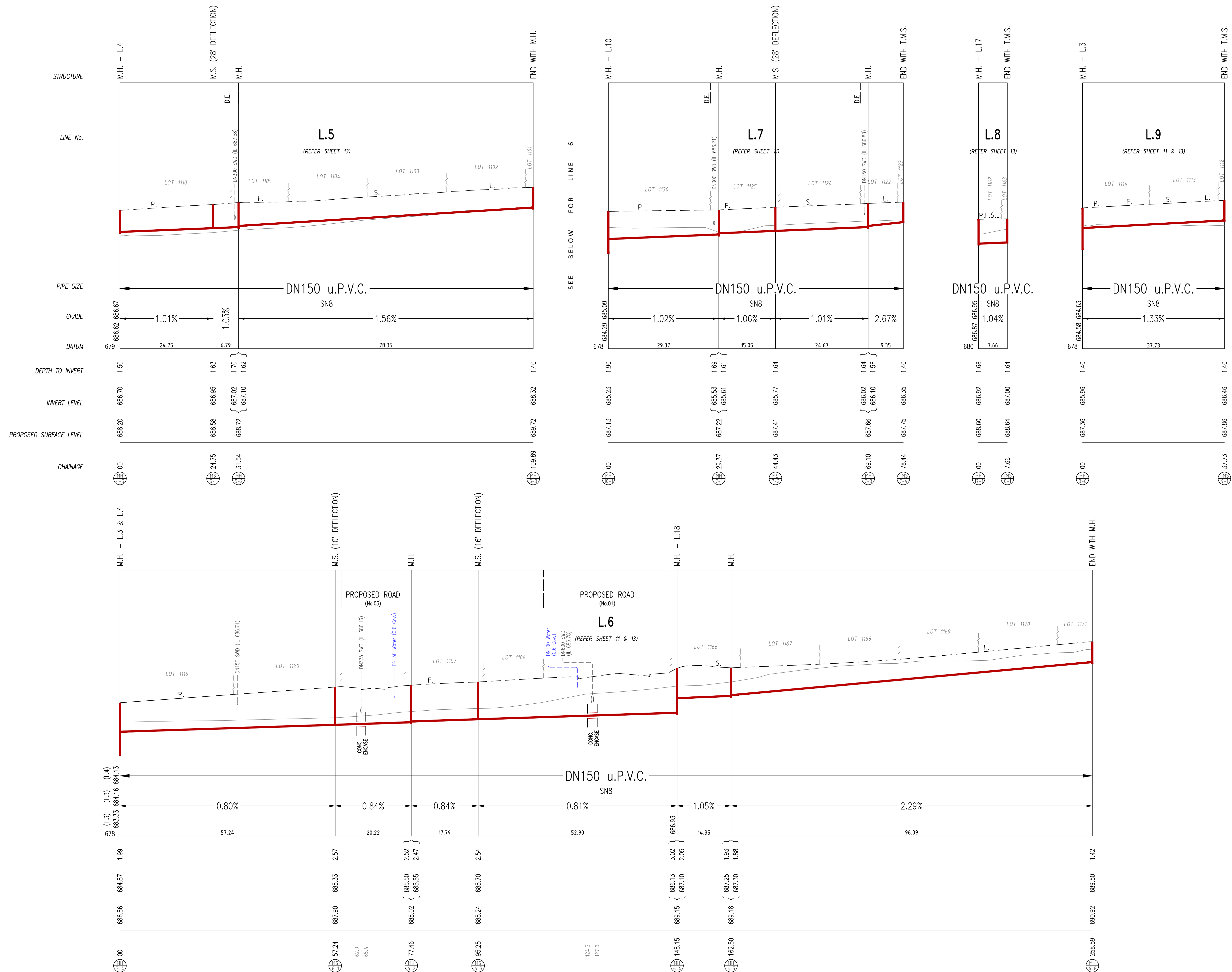
SHOP 7 & 8 'M CENTRE'
40 STERLING ROAD, MINCHINBURY NSW 2770
PH: (02) 9853 0200 FAX: (02) 9671 7399

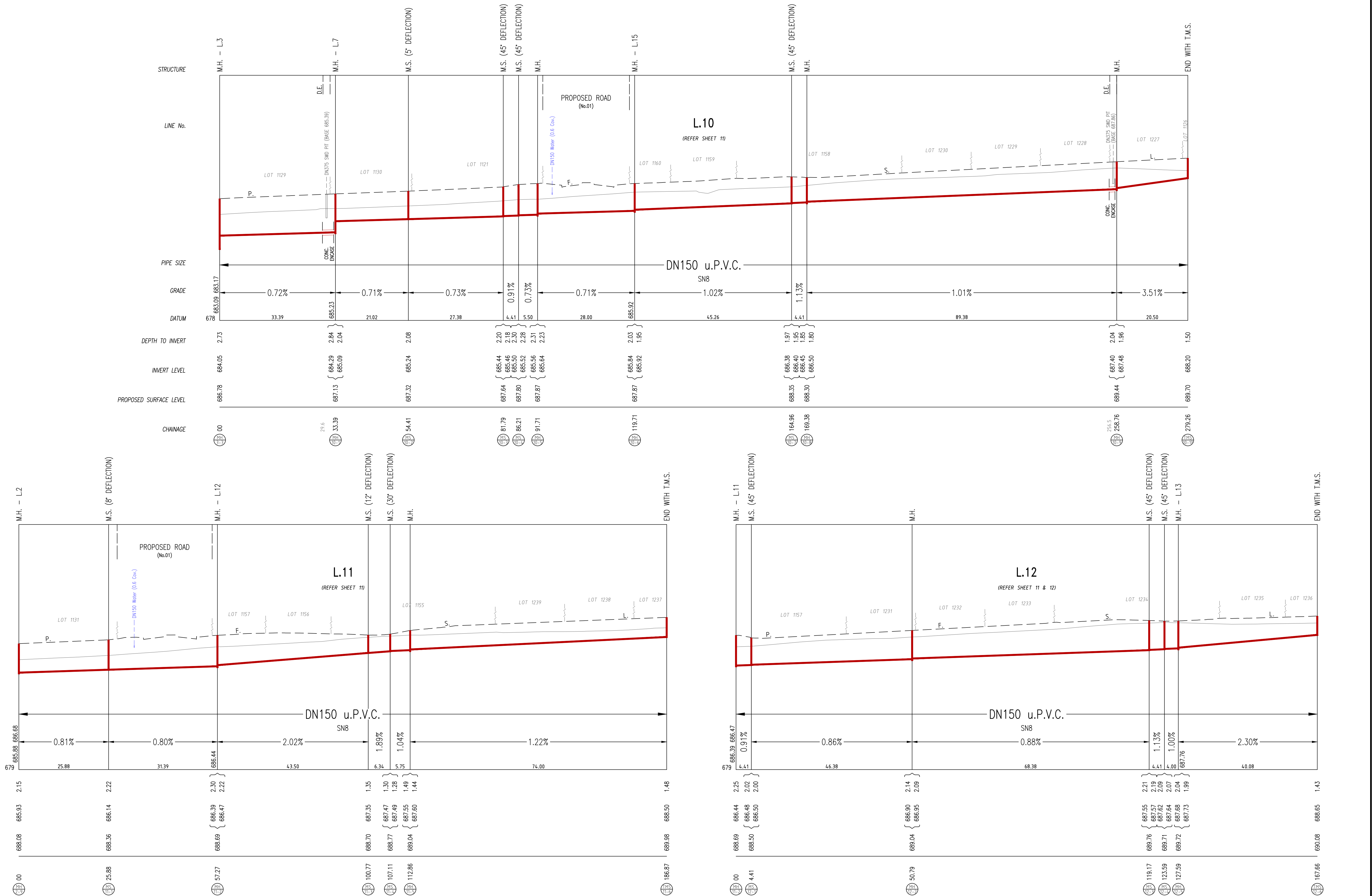


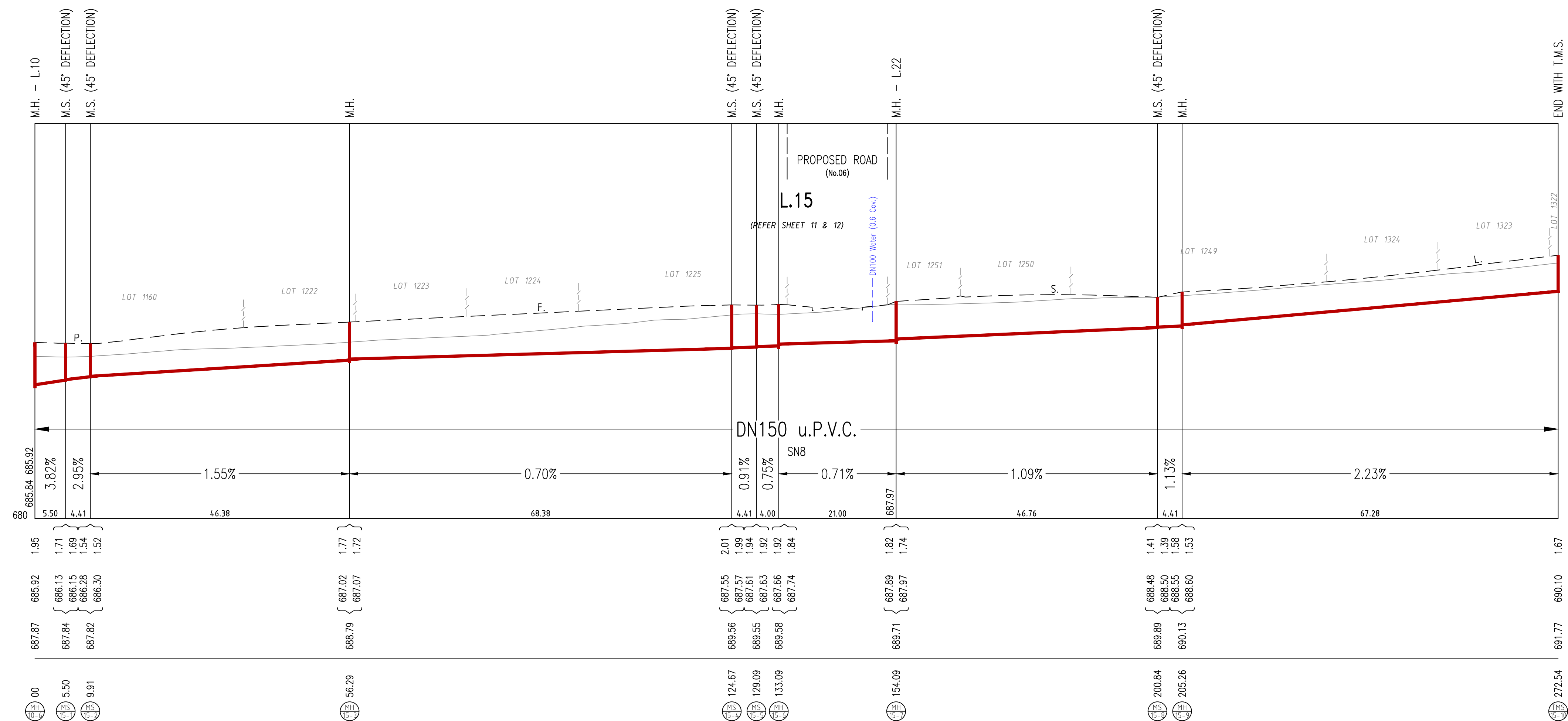
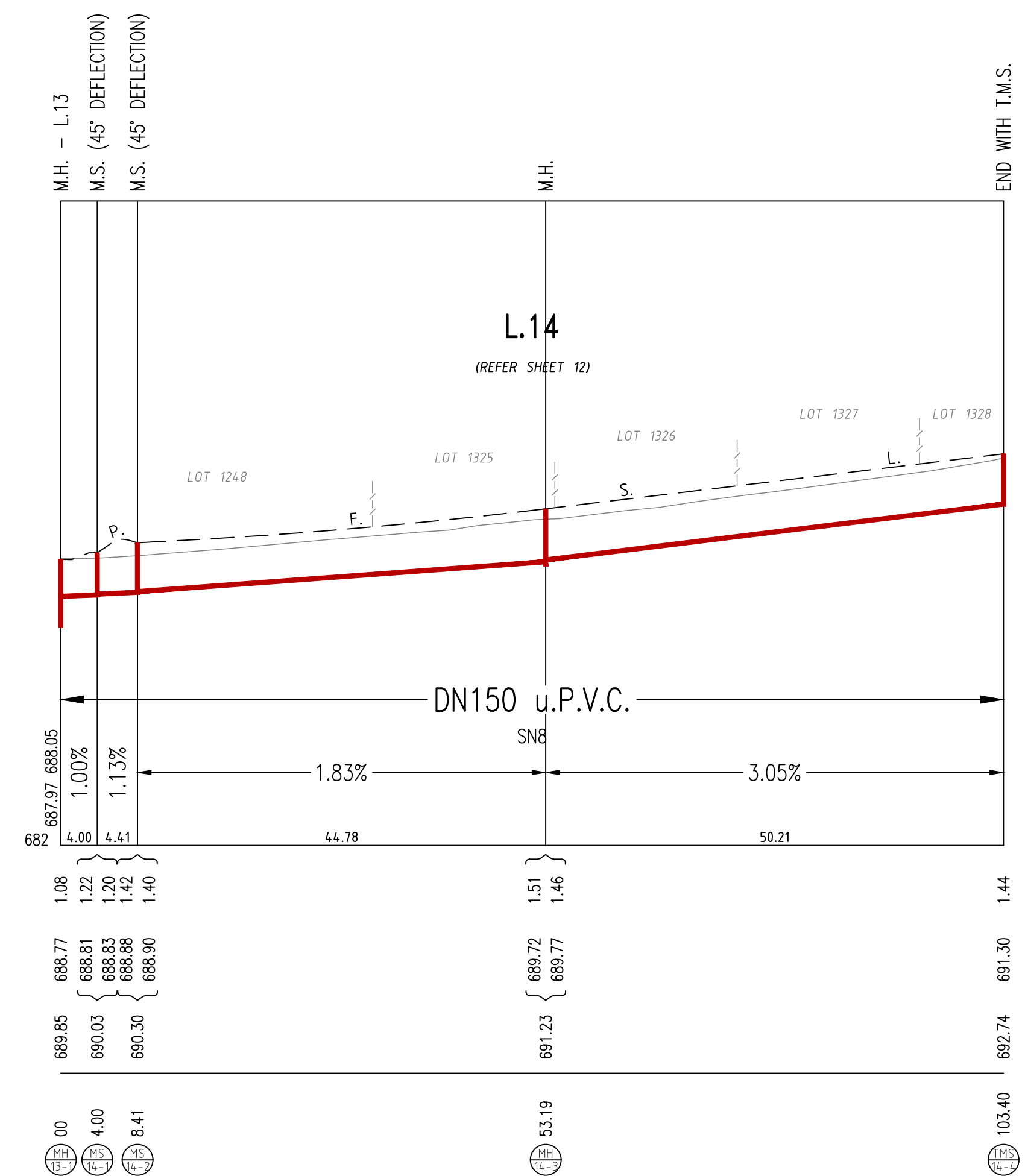
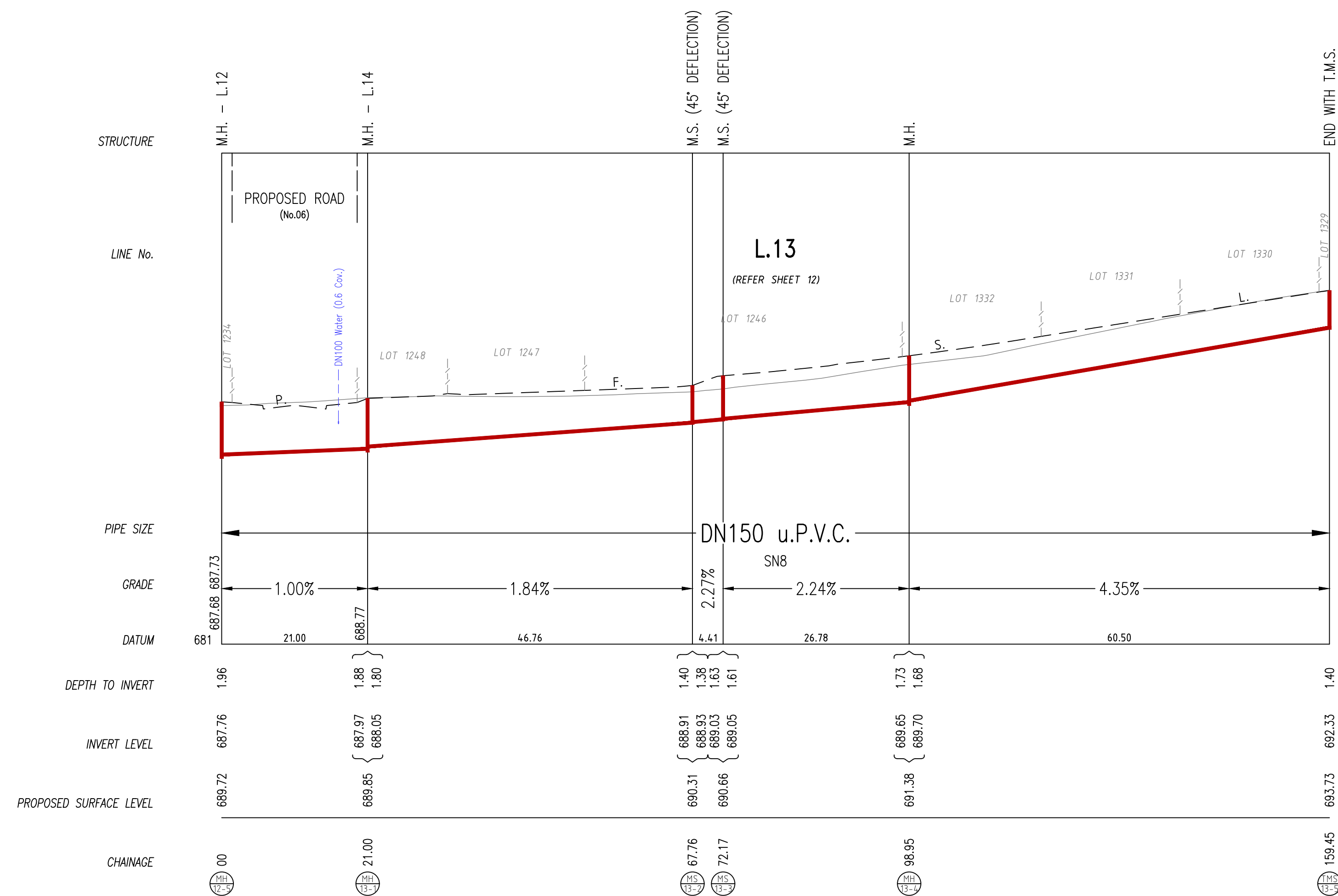
GRAVITY SEWER DETAIL PLAN 4				SHEET 14 OF 24		VERSION 04
DRAWN: K. GAO	DESIGNED: K. GAO	REVIEWED: D. SHEATHER	CHECKED: D. SHEATHER	JOB No.		
SCALE: 1:500	DATE: A.H.D.	U.S.D. REFERENCE: -	DATE OF ISSUE: 26/9/2021	91/25368/1A		

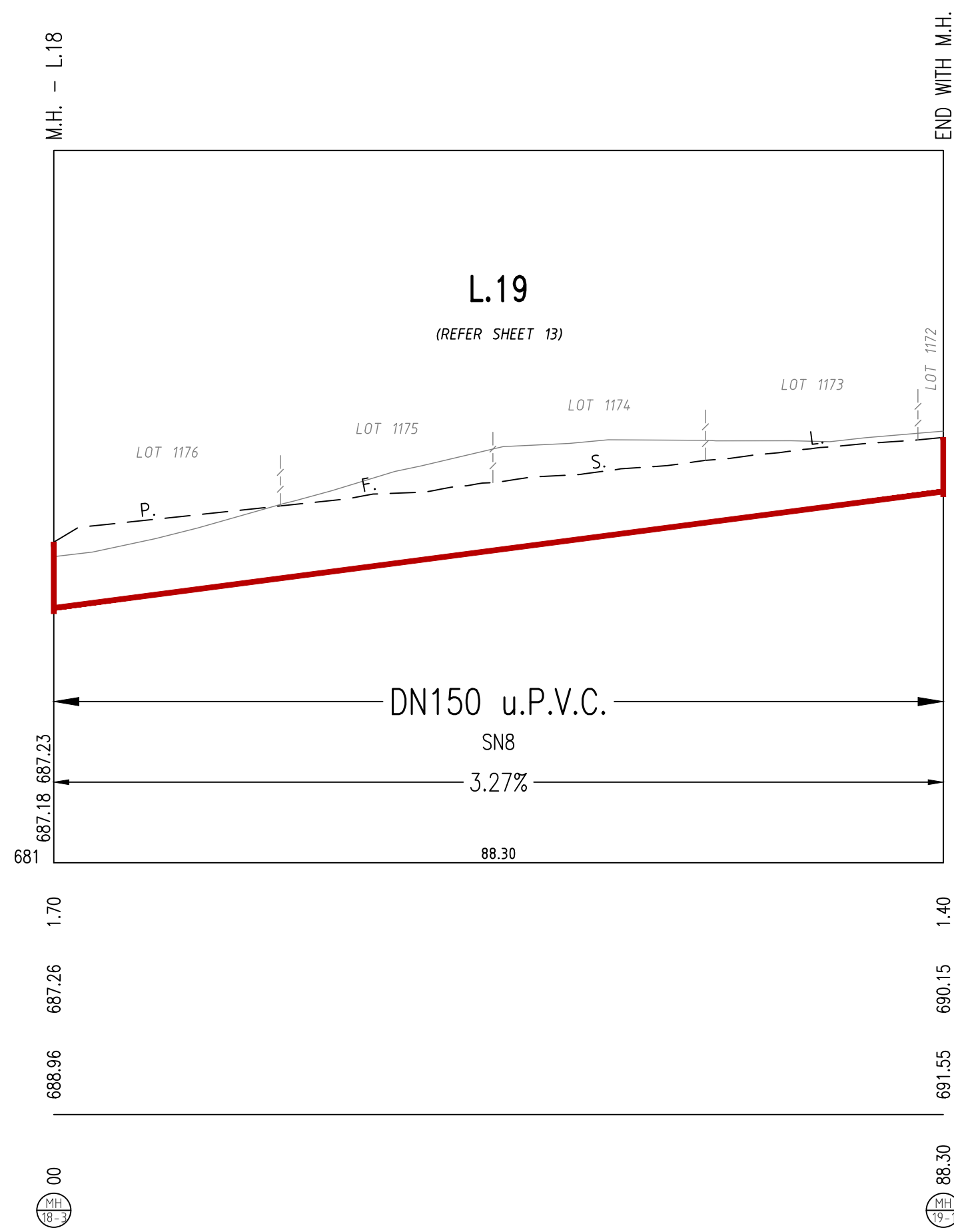
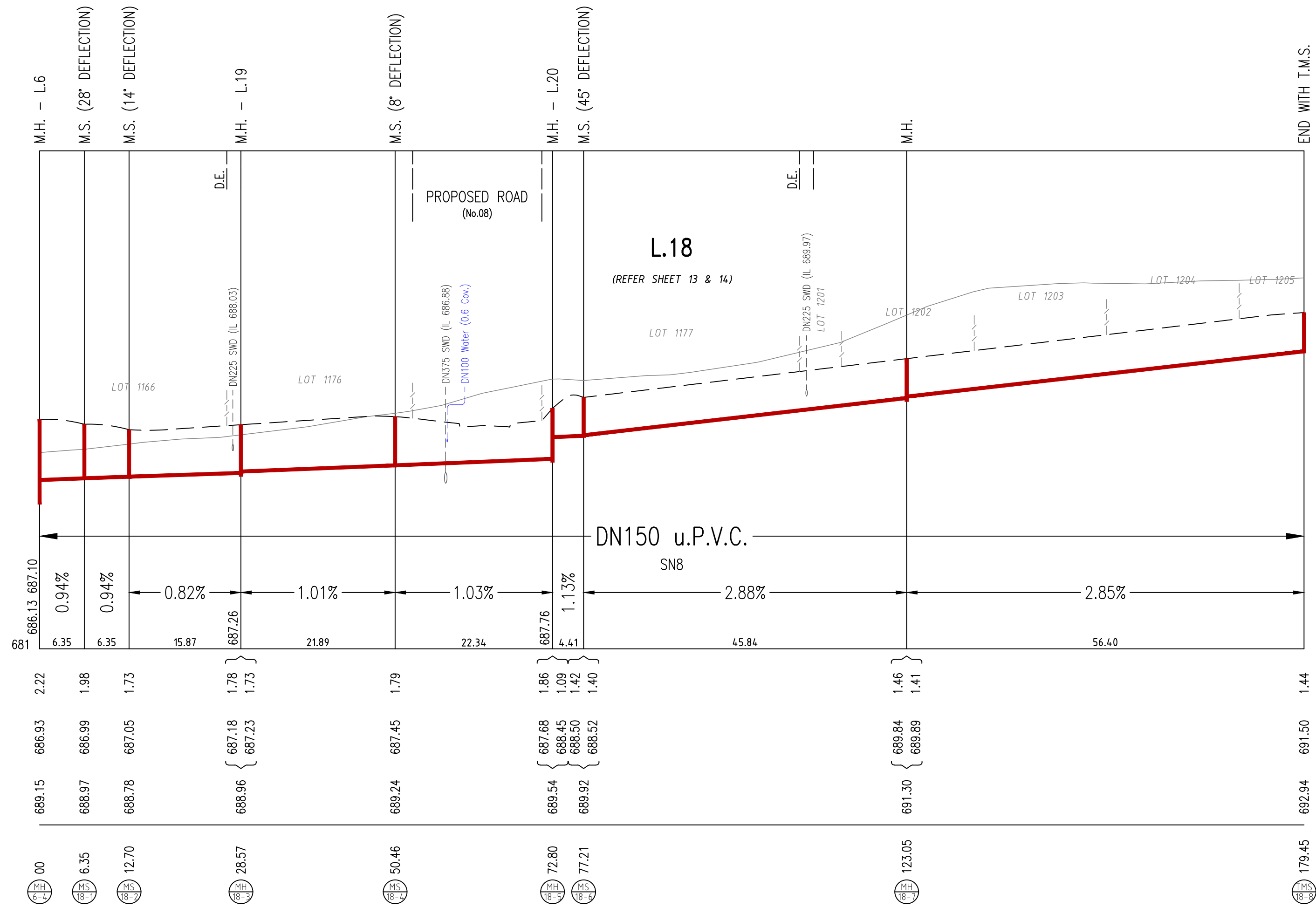
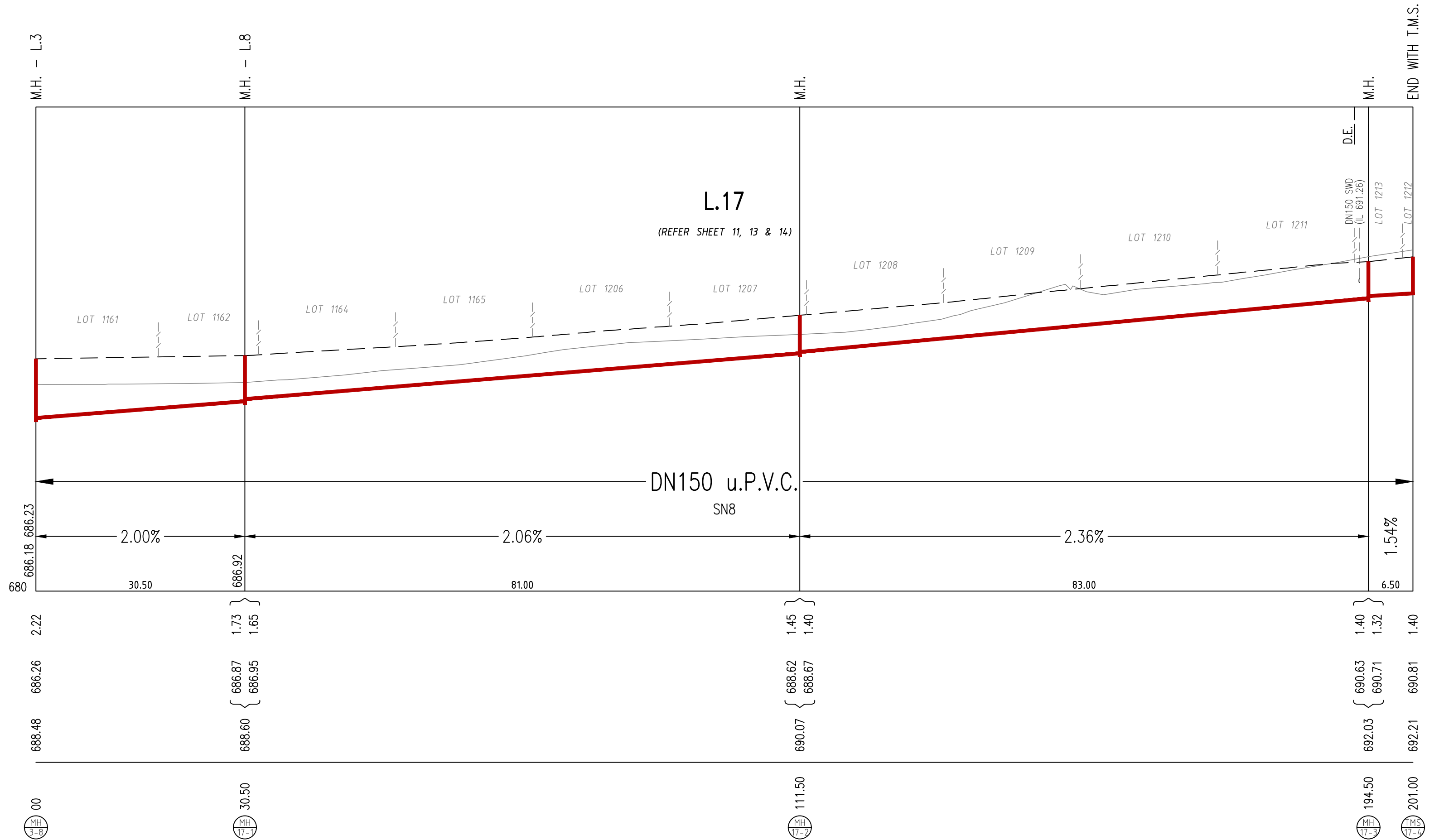
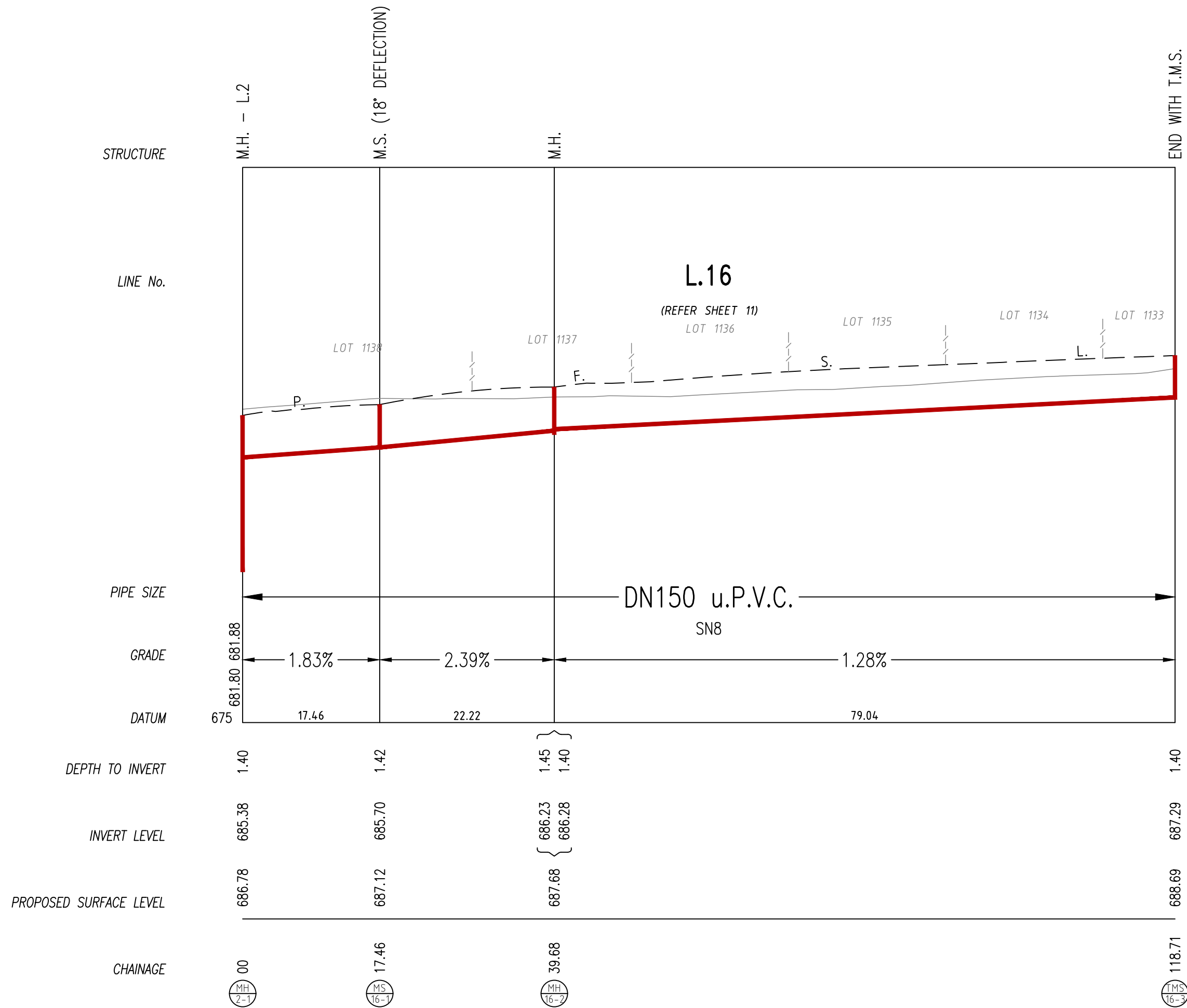


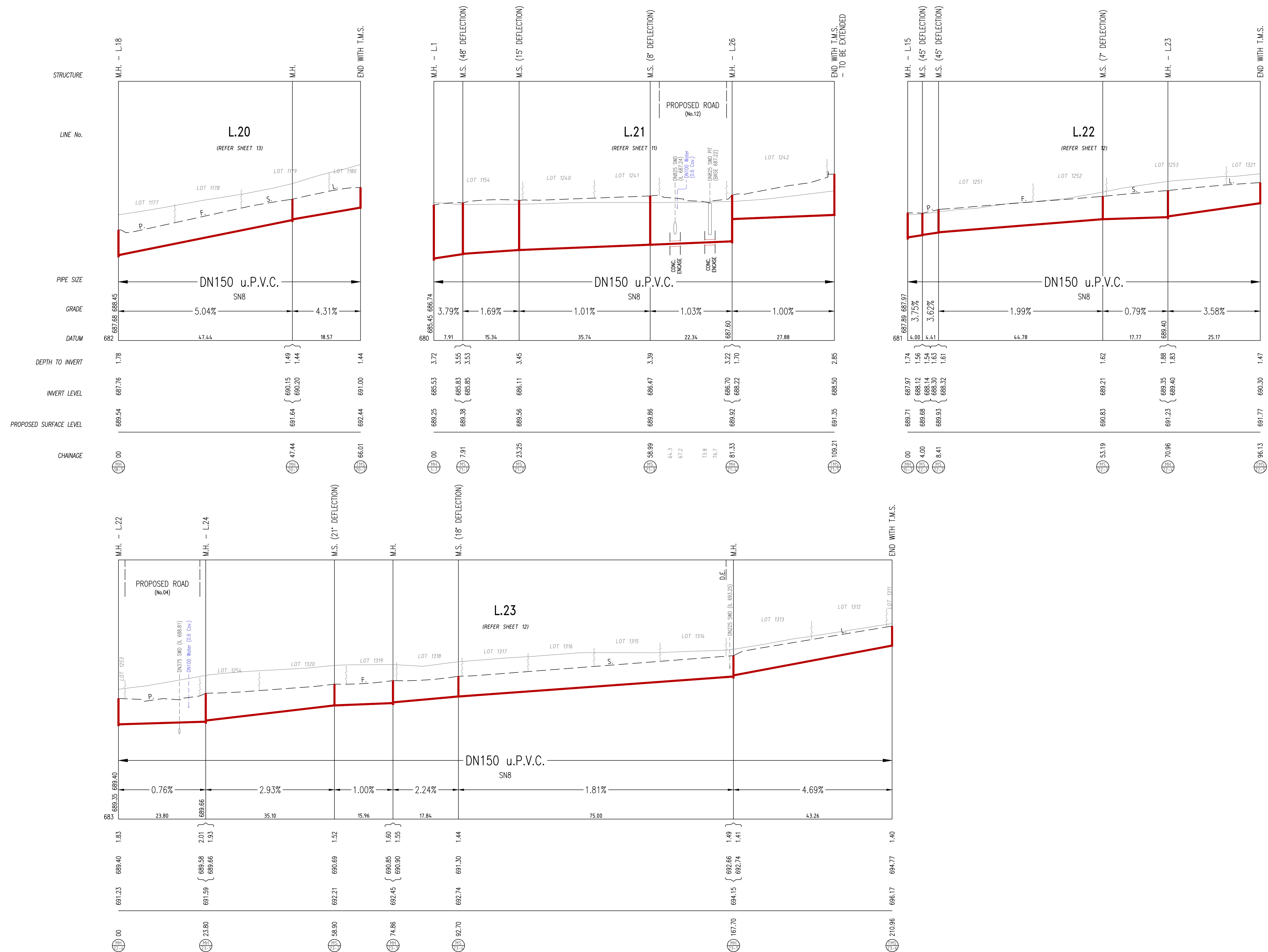


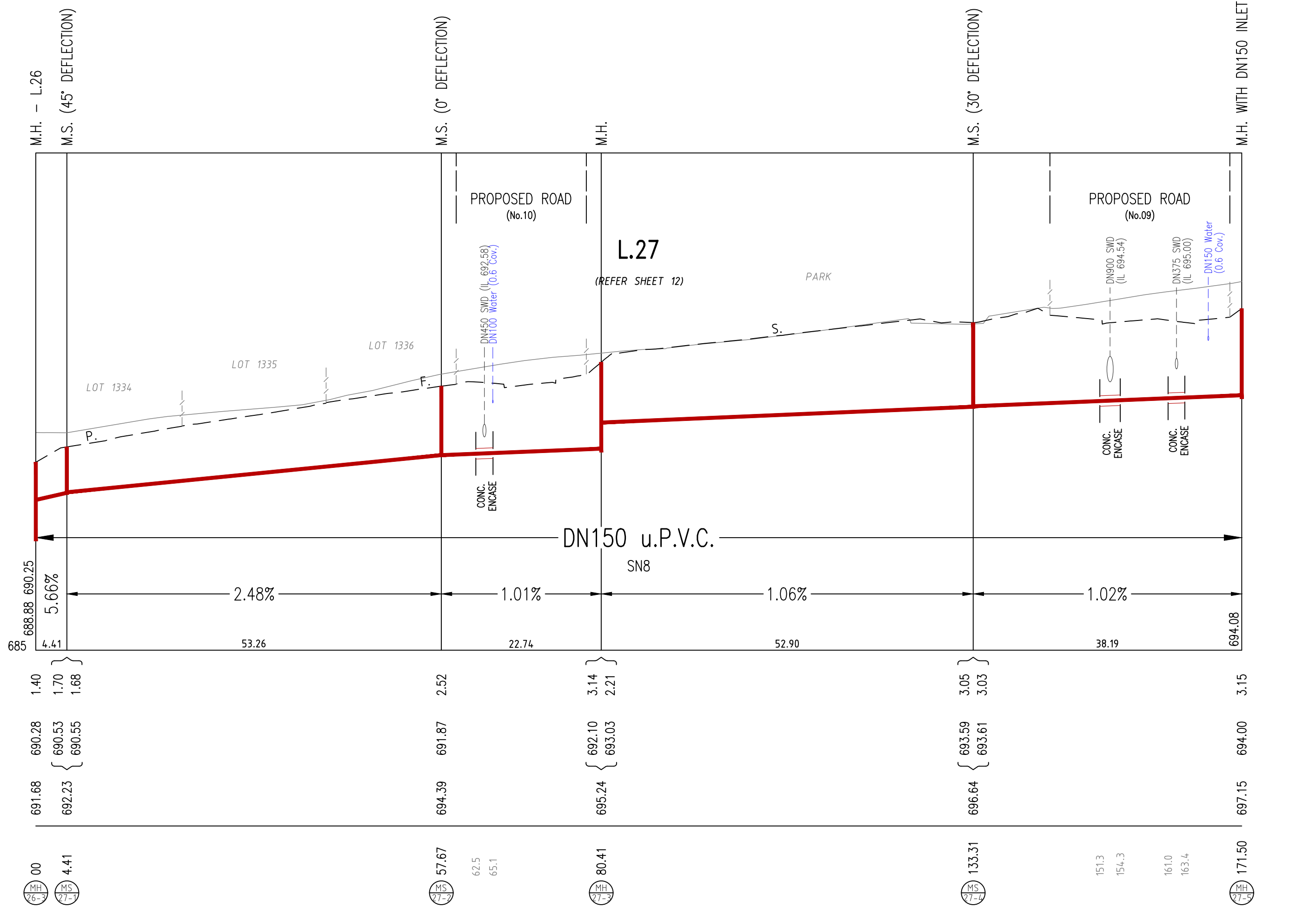
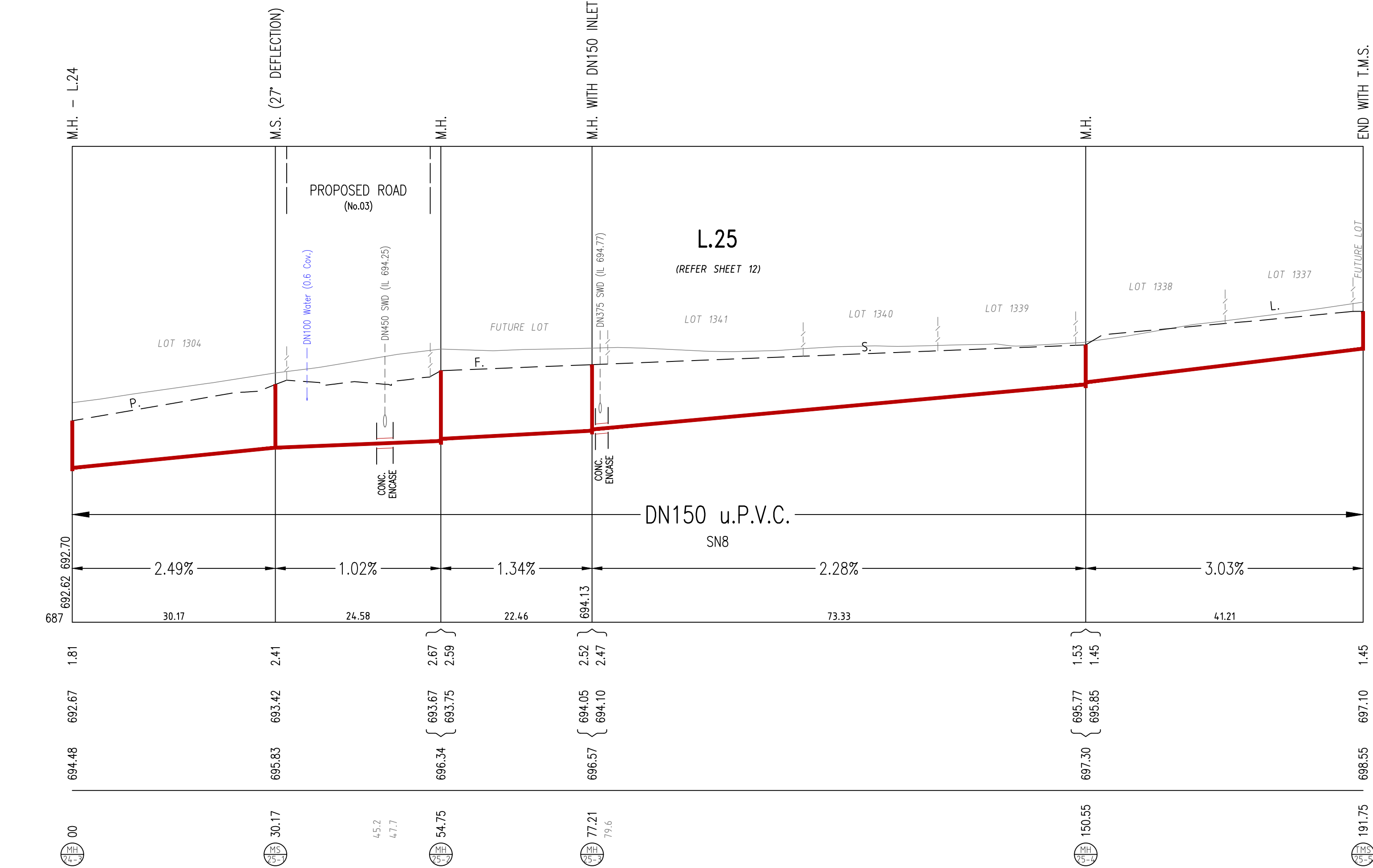
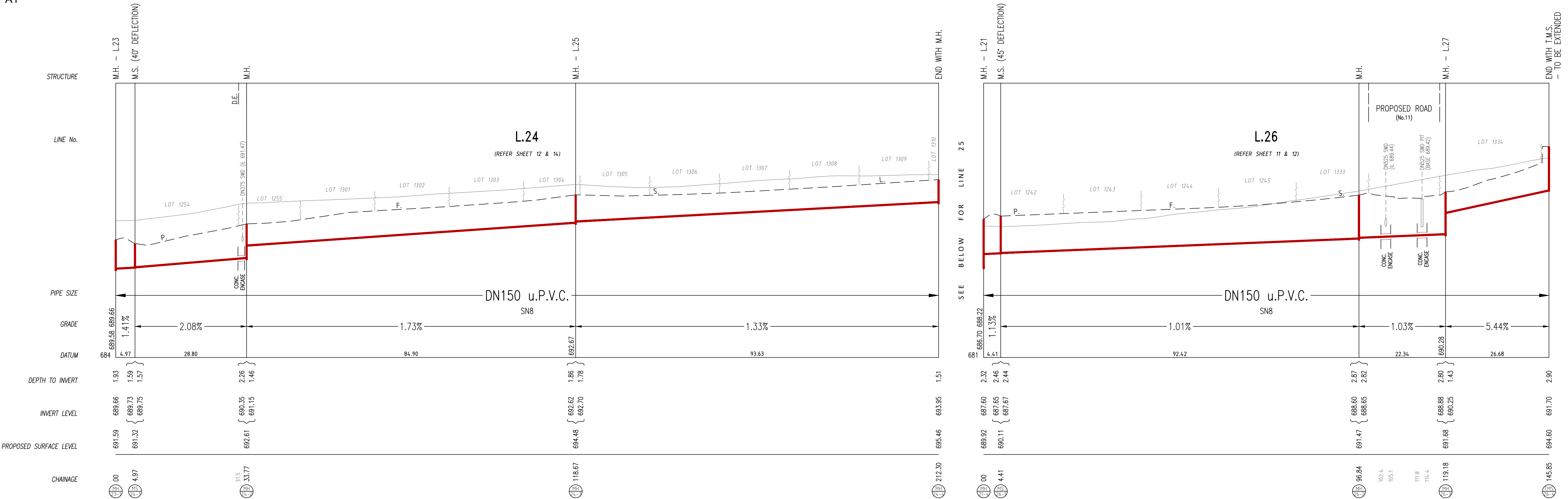










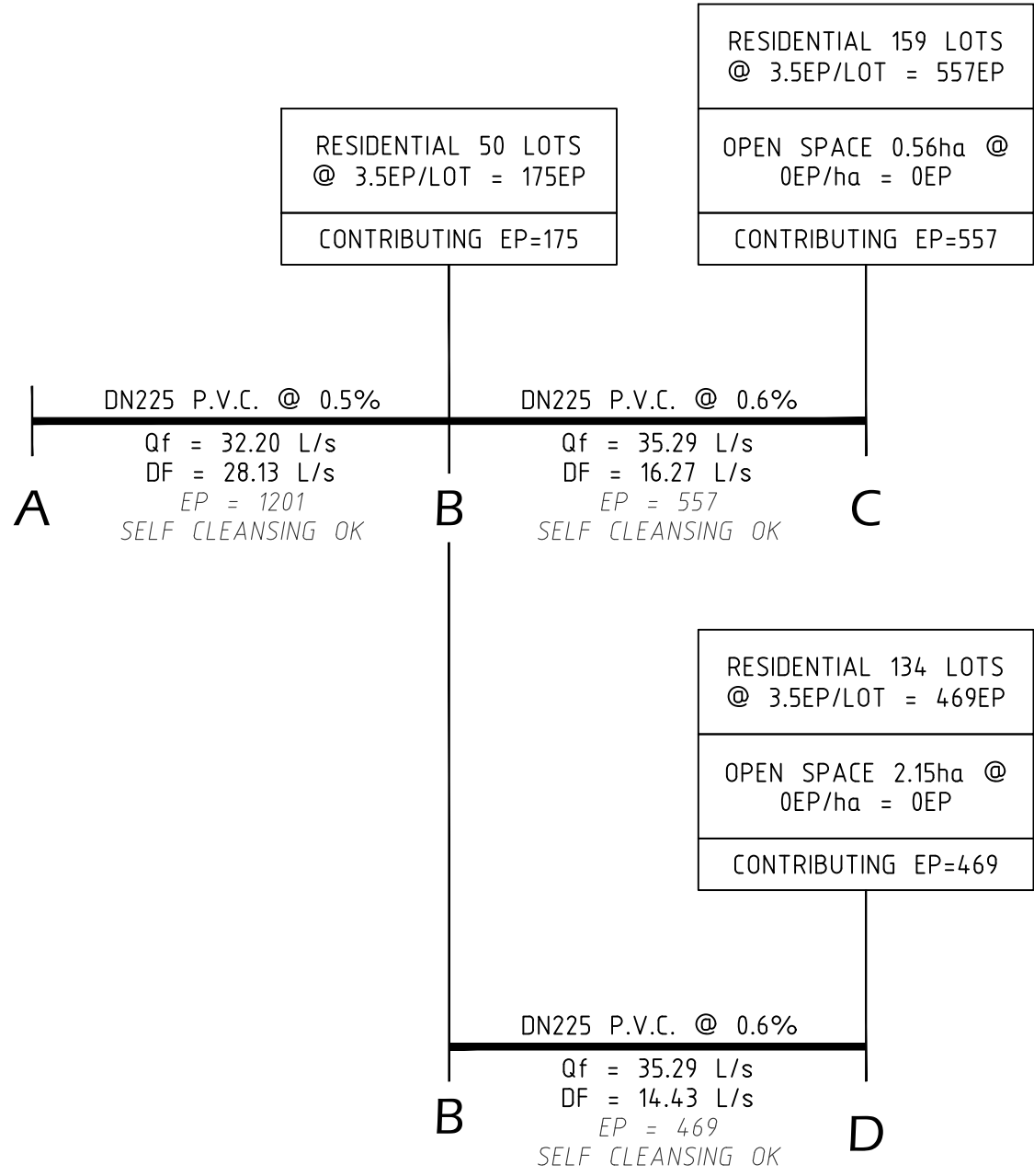
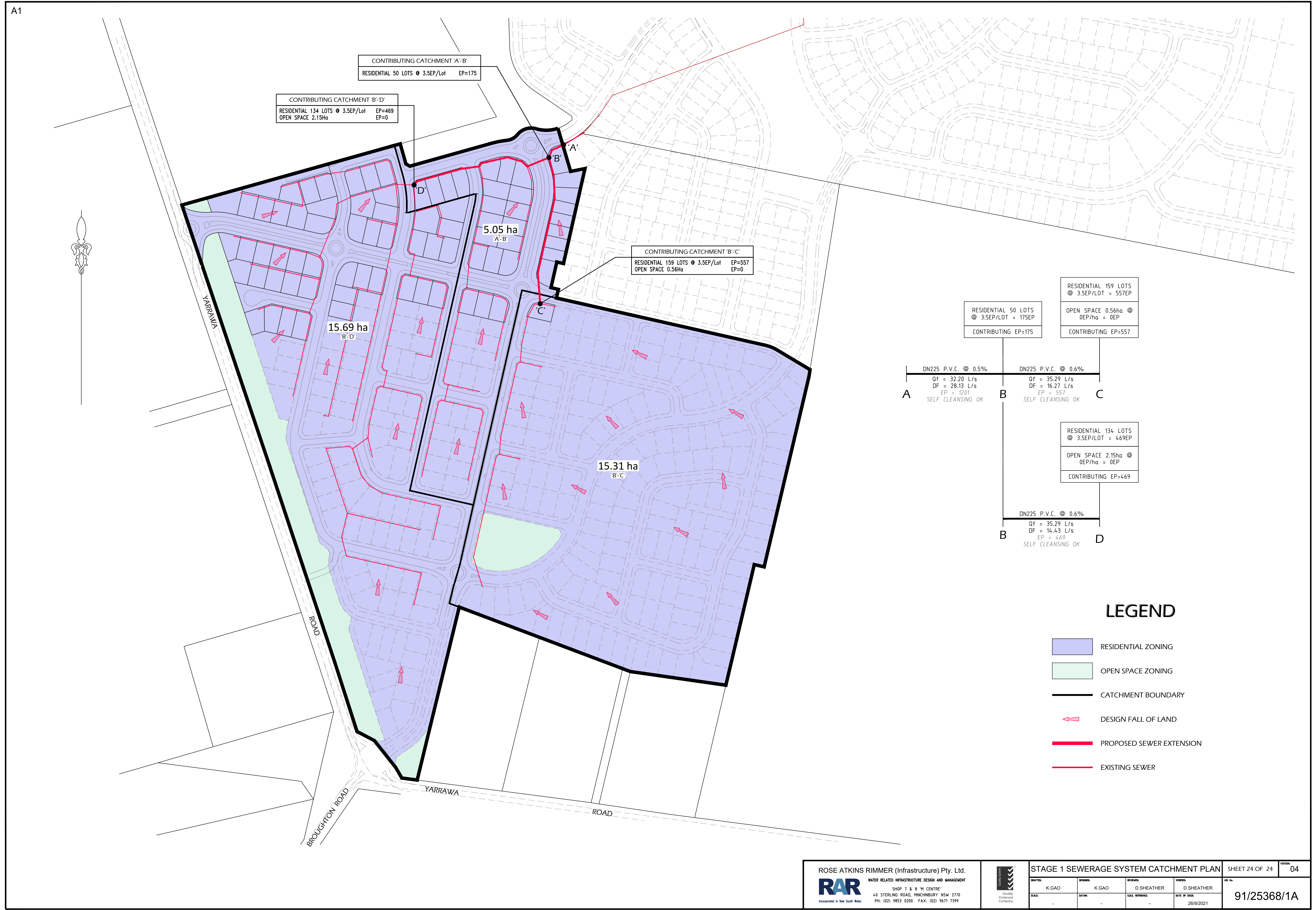


MAINTENANCE STRUCTURE SCHEDULE
(REFER SEWER NOTE 8 ON SHEET 2 & MAINTENANCE SHAFT NOTES BELOW)

LINE NO.	CHAINAGE	TYPE & I.D.	DN RISER	CLASS OF COVER	MATERIAL	COMMENTS
1	00	MH 1-1	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
1	16.01	MH 1-2	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
1	25.96 (L.2 CH00)	MH 1-3	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017) WITH EXTERNAL DROP INLET
1	49.09	MS 1-4	225	D	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
1	77.54	MH 1-5	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
1	172.70	MH 1-6	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
1	210.79 (L.21 CH00)	MH 1-7	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017) WITH EXTERNAL DROP INLET
1	230.98	TMS 1-8	225	B	PVC-U	-
2	29.30	MH 2-1	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017) WITH EXTERNAL DROP INLET
2	38.16	MH 2-2	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
2	57.13	MH 2-3	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
2	90.45	MH 2-4	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
2	94.86 (L.3 CH00)	MH 2-5	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017) WITH EXTERNAL DROP INLET
2	108.93	MS 2-6	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
2	129.84	MS 2-7	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
2	149.89	MS 2-8	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
2	192.39 (L.11 CH00)	MH 2-9	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017) WITH EXTERNAL DROP INLET
2	212.39	TMS 2-10	225	B	PVC-U	-
3	22.34	MH 3-1	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
3	79.95	MS 3-2	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
3	85.89 (L.10 CH00)	MH 3-3	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017) WITH EXTERNAL DROP INLET
3	108.48 (L.4 CH00 & L.6 CH00)	MH 3-4	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017) WITH 3 x EXTERNAL DROP INLETS
3	136.21	MS 3-5	225	D	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
3	159.87 (L.9 CH00)	MH 3-6	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017) WITH EXTERNAL DROP INLET
3	220.05	MH 3-7	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017) WITH EXTERNAL DROP INLET
3	245.88 (L.17 CH00)	MH 3-8	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
3	345.88	MH 3-9	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
3	409.38	TMS 3-10	225	B	PVC-U	-
4	28.88	MS 4-1	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
4	33.30	MS 4-2	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
4	84.05	MH 4-3	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
4	109.53	TMS 4-4	300	B	PVC-U	IN-LINE T.M.S. WITH HIGH LEVEL INLET
4	147.41 (L.5 CH00)	MH 4-5	1050	D	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
4	170.16	TMS 4-6	225	D	PVC-U	-
5	24.75	MS 5-1	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
5	31.54	MH 5-2	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
5	109.89	MH 5-3	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
6	57.24	MS 6-1	225	D	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
6	77.46	MH 6-2	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
6	97.25	MS 6-3	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
6	148.15 (L.18 CH00)	MH 6-4	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017) WITH 2 x EXTERNAL DROP INLETS
6	162.50	MH 6-5	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
6	258.59	MH 6-6	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
7	29.37	MH 7-1	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
7	44.43	MS 7-2	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
7	69.10	MH 7-3	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
7	78.44	TMS 7-4	225	B	PVC-U	-
8	7.66	TMS 8-1	225	B	PVC-U	-
9	37.73	TMS 9-1	225	B	PVC-U	-
10	33.39 (L.7 CH00)	MH 10-1	1050	D	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017) WITH 2 x EXTERNAL DROP INLETS
10	54.41	MS 10-2	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
10	81.79	MS 10-3	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
10	86.21	MS 10-4	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
10	91.71	MH 10-5	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
10	119.71 (L.15 CH00)	MH 10-6	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
10	164.96	MS 10-7	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
10	169.38	MH 10-8	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
10	258.76	MH 10-9	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
10	279.26	TMS 10-10	225	B	PVC-U	-
11	25.88	MS 11-1	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
11	57.27 (L.12 CH00)	MH 11-2	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
11	100.77	MS 11-3	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
11	107.11	MS 11-4	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
11	112.86	MH 11-5	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
11	186.87	TMS 11-6	225	B	PVC-U	-
12	4.41	MS 12-1	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
12	50.79	MH 12-2	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
12	119.17	MS 12-3	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
12	123.59	MS 12-4	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
12	127.59 (L.13 CH00)	MH 12-5	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
12	167.44	TMS 12-6	225	B	PVC-U	-
13	21.00 (L.14 CH00)	MH 13-1	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017) WITH EXTERNAL DROP INLET
13	67.76	MS 13-2	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
13	72.17	MS 13-3	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
13	98.95	MH 13-4	1050	D	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
13	159.45	TMS 13-5	225	B	PVC-U	-

MAINTENANCE STRUCTURE SCHEDULE (CONTINUED)
(REFER SEWER NOTE 8 ON SHEET 2 & MAINTENANCE SHAFT NOTES BELOW)

LINE NO.	CHAINAGE	TYPE & I.D.	DN RISER	CLASS OF COVER	MATERIAL	COMMENTS
14	4.00	MS 14-1	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
14	8.41	MS 14-2	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
14	53.19	MH 14-3	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
14	103.40	TMS 14-4	225	B	PVC-U	-
15	5.5	MS 15-1	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
15	9.91	MS 15-2	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
15	56.29	MH 15-3	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
15	124.67	MS 15-4	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
15	129.09	MS 15-5	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
15	133.09	MH 15-6	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
15	154.09 (L.22 CH00)	MH 15-7	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
15	200.84	MS 15-8	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
15	205.26	MH 15-9	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
15	272.54	TMS 15-10	225	B	PVC-U	-
16	17.46	MS 16-1	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
16	39.68	MH 16-2	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
16	118.71	TMS 16-3	225	B	PVC-U	-
17	30.50 (L.8 CH00)	MH 17-1	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017) WITH EXTERNAL DROP INLET
17	111.50	MH 17-2	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
17	194.50	MH 17-3	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
17	201.00	TMS 17-4	225	B	PVC-U	-
18	6.35	MS 18-1	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
18	12.70	MS 18-2	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
18	28.57 (L.19 CH00)	MH 18-3	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
18	50.46	MS 18-4	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
18	72.80 (L.20 CH00)	MH 18-5	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017) WITH EXTERNAL DROP INLET
18	77.21	MS 18-6	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
18	123.05	MH 18-7	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
18	179.45	TMS 18-8	225	B	PVC-U	-
19	88.30	TMS 19-1	225	B	PVC-U	-
20	47.44	MH 20-1	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
20	66.01	TMS 20-2	225	B	PVC-U	-
21	7.91	MS 21-1	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
21	23.25	MS 21-2	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
21	58.99	MS 21-3	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
21	81.33 (L.26 CH00)	MH 21-4	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017) WITH 2 x EXTERNAL DROP INLETS
21	109.21	TMS 21-5	225	B	PVC-U	-
22	4.00	MS 22-1	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
22	8.41	MS 22-2	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
22	53.19	MS 22-3	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
22	70.96 (L.23 CH00)	MH 22-4	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
22	96.13	TMS 22-4	225	B	PVC-U	-
23	23.80 (L.24 CH00)	MH 23-1	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
23	58.90	MS 23-2	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
23	74.86	MH 23-3	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
23	92.70	MS 23-4	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
23	167.70	MH 23-5	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
23	210.96	TMS 23-6	225	B	PVC-U	-
24	4.97	MS 24-1	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
24	33.77	MH 24-2	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017) WITH EXTERNAL DROP INLET
24	118.67 (L.25 CH00)	MH 24-3	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
24	212.30	MH 24-4	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
25	30.17	MS 25-1	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1315-V
25	54.75	MH 25-2	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
25	77.21	MH 25-3	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
25	150.55	MH 25-4	1050	D	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
25	191.75	TMS 25-5	225	B	PVC-U	-
26	4.41	MS 26-1	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
26	96.84	MH 26-2	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)
26	119.18 (L.27 CH00)	MH 26-3	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017) WITH 2 x EXTERNAL DROP INLETS
26	145.85	TMS 26-4	225	B	PVC-U	-
27	4.41	MS 27-1	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
27	57.67	MS 27-2	225	B	PVC-U	M.S. WITH NO CROSSFALL. REFER SEW-1314-V
27	80.41	MH 27-3	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017) WITH EXTERNAL DROP INLET
27	133.31	MS 27-4	225	B	PVC-U	AYMROO 'C.A.M.S.' TYPE *
27	171.50	MH 27-5	1050	B	CAST IN-SITU	WSC-SEW-005[A] (2/5/2017) & WSC-SEW-006[A] (2/5/2017)



LEGEND

- RESIDENTIAL ZONING
- OPEN SPACE ZONING
- CATCHMENT BOUNDARY
- DESIGN FALL OF LAND
- PROPOSED SEWER EXTENSION
- EXISTING SEWER