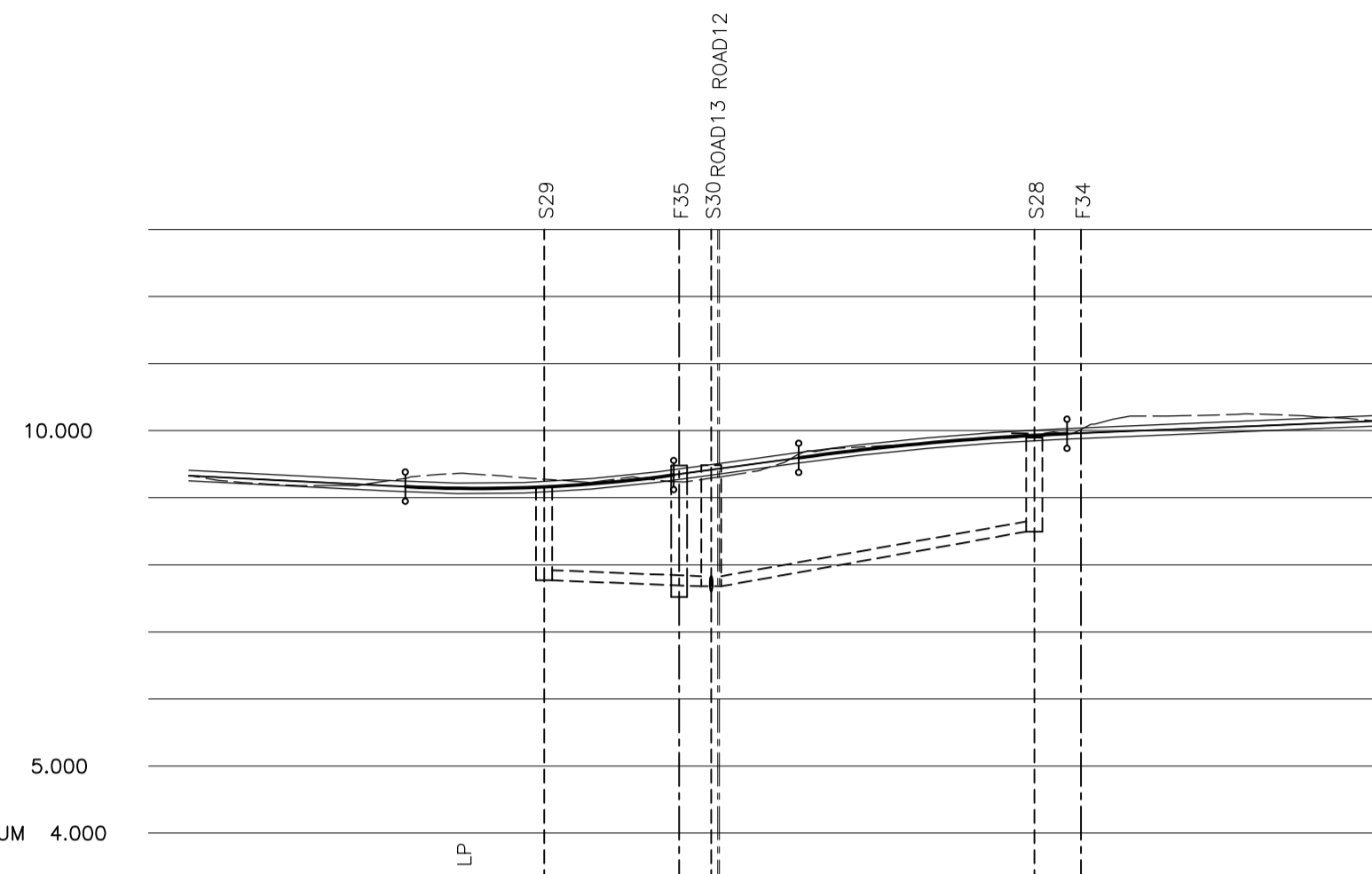
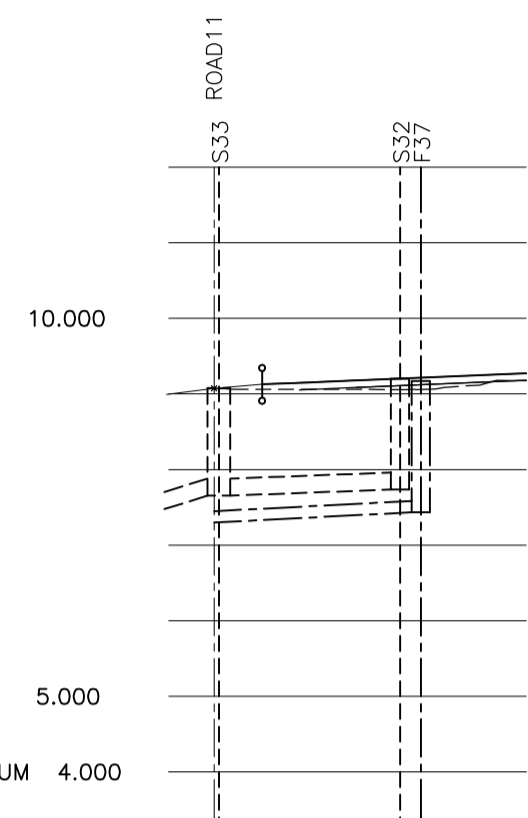


ROAD9 DATUM 2.000	
CHAINAGE	0.000 6.313 11.155 15.000 20.000 24.817
EXISTING GROUND LEVEL	7.574 7.351 7.421 7.516 7.611 7.702
ALIGNMENT LEVEL	7.351 7.421 7.516 7.611 7.702
VERTICAL ALIGNMENT	G = 1.901% L = 152.6
HORIZONTAL ALIGNMENT	
LEFT HAND CHANNEL	7.374 7.385 7.447 7.542 7.634
RIGHT HAND CHANNEL	7.374 7.385 7.447 7.542 7.634
STORMWATER COVER LEVEL	7.488
STORMWATER INVERT	5.706
STORMWATER DETAILS	Pipe 1.016 Dia 525 Circular CONC 1 in 120
STORMWATER LENGTHS	22.486
FOULWATER COVER LEVEL	7.439
FOULWATER INVERT	4.850
FOULWATER DETAILS	Pipe 1.015 Dia 300 Circular CLAY 1 in 63
FOULWATER LENGTHS	19.518



ROAD10 DATUM 4.000	
CHAINAGE	0.000 5.000 8.008 10.000 13.396 15.000 16.128 20.000 24.817 25.000 26.509 30.000 36.128 38.682 40.582 45.445 50.000 55.000 60.000 65.000 66.113 68.113 71.85 75.000 80.000 85.000 88.583
EXISTING GROUND LEVEL	9.329 9.278 9.228 9.177 9.165 9.140 9.149 9.206 9.309 9.338 9.445 9.583 9.595 9.710 9.753 9.814 9.893 9.980 9.949 9.953 9.991 10.207 10.033 10.074 10.242 10.116 10.146 10.146 10.146
ALIGNMENT LEVEL	9.329 9.278 9.228 9.177 9.165 9.140 9.149 9.206 9.309 9.338 9.445 9.583 9.595 9.710 9.753 9.814 9.893 9.980 9.949 9.953 9.991 10.207 10.033 10.074 10.242 10.116 10.146 10.146 10.146
VERTICAL ALIGNMENT	G = -1.015% L = -98.5 KF = 5.31392 L = 20.000 G = 2.748% L = 36.4 L = 20.000 KF = -10.44361 G = 0.833% L = 120.0
HORIZONTAL ALIGNMENT	R = 12.000 R = 35.000 R = 27.500
LEFT HAND CHANNEL	9.408 9.250 9.357 9.200 9.306 9.149 9.256 9.098 9.219 9.061 9.228 9.071 9.284 9.127 9.388 9.230 9.524 9.366 9.661 9.504 9.789 9.631 9.892 9.735 9.972 9.815 10.028 9.870 10.070 9.912 10.111 9.954 10.153 9.995 10.195 10.037 10.224 10.067
RIGHT HAND CHANNEL	9.408 9.250 9.357 9.200 9.306 9.149 9.256 9.098 9.219 9.061 9.228 9.071 9.284 9.127 9.388 9.230 9.524 9.366 9.661 9.504 9.789 9.631 9.892 9.735 9.972 9.815 10.028 9.870 10.070 9.912 10.111 9.954 10.153 9.995 10.195 10.037 10.224 10.067
STORMWATER COVER LEVEL	9.168
STORMWATER INVERT	7.768
STORMWATER DETAILS	Pipe 8.000 Dia 150 Circular CLAY 1 in 150
STORMWATER LENGTHS	13.154 23.980
FOULWATER COVER LEVEL	9.479
FOULWATER INVERT	10.042
FOULWATER DETAILS	Pipe 7.000 Dia 150 Circular CLAY 1 in 29
FOULWATER LENGTHS	



ROAD12 DATUM 4.000	
CHAINAGE	0.000 3.172 5.000 5.634 9.404 10.000 13.675 15.000 20.000 20.633
EXISTING GROUND LEVEL	9.070 9.127 9.142 9.184 9.059 10.000 13.675 15.000 19.175 20.633
ALIGNMENT LEVEL	9.127 9.142 9.184 9.059 9.226 9.267 9.273 9.175 20.633
VERTICAL ALIGNMENT	G = 0.833% L = 120.0
HORIZONTAL ALIGNMENT	
LEFT HAND CHANNEL	9.054 9.085 9.085 9.090 9.090 9.132 9.132 9.174 9.179 9.179 9.179 20.633
RIGHT HAND CHANNEL	9.054 9.085 9.085 9.090 9.090 9.132 9.132 9.174 9.179 9.179 9.179 20.633
STORMWATER COVER LEVEL	9.080
STORMWATER INVERT	7.655
STORMWATER DETAILS	Pipe 9.000 Dia 225 Circular CLAY 1 in 150
STORMWATER LENGTHS	11.982
FOULWATER COVER LEVEL	7.435 9.173
FOULWATER INVERT	
FOULWATER DETAILS	Pipe 11.000 Dia 150 Circular CLAY 1 in 100
FOULWATER LENGTHS	13.737

NOTES(Cont)

- CONTRACTOR TO TAKE MEASURES TO PROTECT HIS OPERATIVES WITH RESPECT TO THE PRESENCE OF GAS IN SEWER TRENCHES AND MANHOLES THROUGH THE USE OF GAS MONITORING EQUIPMENT AND BREATHING APPARATUS AS REQUIRED.
 - CONTRACTOR TO APPLY FOR SEWER PERMITS AND ROAD OPENING PERMITS AS NECESSARY FROM THE APPROPRIATE AUTHORITIES, PRIOR TO COMMENCING WORKS.
- HEALTH & SAFETY**
- CONTRACTOR SHOULD BE AWARE OF GENERAL CONSTRUCTION RISKS TO PREVENT SLIPS, TRIPS AND FALLS AND TAKE NECESSARY PRECAUTIONS WITHOUT SPECIAL INSTRUCTION.
 - CONTRACTOR TO PROVIDE TRENCH SUPPORTS AS APPROPRIATE AND ENSURE THAT PLANT REMAINS A SAFE DISTANCE FROM TRENCHES PRIOR TO INSTALLING DRAINAGE.
 - THE TIME THAT EXCAVATIONS ARE OPEN ON SITE SHOULD BE KEPT TO A MINIMUM AND ALL TRENCHES SHOULD BE SURROUNDED BY A BARRIER.
 - CONNECTIONS TO EXISTING SEWERS TO BE MADE BY NMI APPROVED CONTRACTOR ONLY.
 - CONTRACTOR TO MAKE OPERATIVES AWARE OF ASSOCIATED DANGERS TO HEALTH SUCH AS LEPTOSPIROSIS (WELLS DISEASE) AND RECOMMENDED PRECAUTIONS. ADEQUATE WELFARE FACILITIES AND PROTECTIVE CLOTHING TO BE PROVIDED AS REQUIRED.
 - UNFINISHED MANHOLES MUST BE COVERED WITH LOAD BEARING MATERIALS AND SURROUNDED WITH BARRIER.
- PIPES & CABLES**
- SERVICE RECORDS TO BE REFERRED TO PRIOR TO WORK COMMENCING. CONTRACTOR TO PROCEED WITH CAUTION AND SERVICES TO BE LOCATED BY HAND DIG AND PROTECTED ACCORDINGLY.
- EXCAVATION/FILL**
- CONTRACTOR TO ENSURE RELEVANT MEASURES ARE TAKEN TO KEEP PLANT AND PEOPLE A SAFE DISTANCE FROM STEEP SLOPES DURING THE WORKS.
 - CONTRACTOR TO ENSURE THAT PROCEDURES ARE IN PLACE TO KEEP PEOPLE A SAFE DISTANCE FROM WORKING PLANT WHERE NECESSARY.
 - CONTRACTOR TO REFER TO GROUND INVESTIGATION REPORT FOR CONTAMINATION TESTS AND TO PROVIDE ADEQUATE WELFARE FACILITIES AND PROTECTIVE CLOTHING AS REQUIRED.

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Contractors should refer to the residual risks contained in the CDM Pre Construction Information before carrying out any site operations and should not issue parts of this drawing without including the CDM notes and references. This information will include details of the SIGNIFICANT RISKS which 3E have considered beyond that which a competent contractor should be aware.

- NOTES**
- ALL DRAINAGE WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE WATER SERVICES ASSOCIATION "SEWERS FOR ADOPTION" - 7TH EDITION AND ADOPTING WATER AUTHORITY/SEWERAGE AGENCY REQUIREMENTS AND SPECIFICATIONS.
 - ALL PRIVATE DRAINAGE WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH BUILDING REGULATIONS 2002 EDITION.
 - CONTRACTOR TO ESTABLISH POSITION SIZE AND DEPTH OF ALL EXISTING SEWERS AND SERVICES PRIOR TO COMMENCEMENT ON SITE.
 - THE CONTRACTOR SHALL ALLOW FOR THE PROTECTION, TEMPORARY AND PERMANENT SUPPORT, AND TEMPORARY AND PERMANENT DIVERSION WORKS, AS NECESSARY TO ALL EXISTING SERVICES.
 - THE CONTRACTOR SHALL ALLOW FOR ALL TRAFFIC MANAGEMENT IN CONNECTION WITH ROAD AND SEWER WORKS.
 - THE CONTRACTOR SHALL ALLOW FOR KEEPING SEWER TRENCHES AND EXCAVATIONS AS DRY AS PRACTICABLE BY PUMPING FROM TEMPORARY SUMPS AND DENATURING AS APPROPRIATE. THE POINT AND METHOD OF DISCHARGE TO BE AGREED WITH THE DRAINAGE AUTHORITY.
 - PIPES UP TO AND INCLUDING 300mmØ TO BE UNPLASTICISED PVC. PIPES 375mmØ AND GREATER TO BE CONCRETE CLASS H.
 - ALL PIPEWORK TO BE 100mm DIAMETER UNLESS NOTED OTHERWISE.
 - INSITU AND PRECAST CONCRETE UNITS SHALL HAVE SULPHATE RESISTING PORTLAND CEMENT TO BS 4027, UNLESS AGREED OTHERWISE WITH THE ADOPTING AUTHORITY.
 - PRECAST CONCRETE PRODUCTS SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS 5911 AND BE KITEMARKED. CONCRETE PIPES TO BE CLASS H UNLESS NOTED OTHERWISE.
 - MANHOLE COVERS AND FRAMES SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS EN124 AND BE OF A NON-ROCKING DESIGN WITH 150 DEEP FRAMES UNLESS OTHERWISE SPECIFIED. MANHOLE COVERS AND FRAMES TO BE OF A NON-ROCKING DESIGN WITHOUT CUSHION INSERTS AND BE KITEMARKED. LOAD CLASS D400 IN VEHICULAR TRAFFICKED AREAS AND LOAD CLASS B125 IN FOOTWAYS AND PEDESTRIAN AREAS.
 - GULLY GRATES AND FRAMES SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS EN124 AND BE OF A NON-ROCKING DESIGN WITH CAPTIVE HINGE ACCESS AND BE KITEMARKED. LOAD CLASS D400 FOR ROADS REGULARLY CARRYING FAST MOVING HEAVY VEHICLES. CLASS C250 TO BE USED IN LESSER TRAFFICKED AREAS eg. ESTATE ROADS, CUL-DE-SACS, RESIDENTIAL CAR PARKING AREAS ETC.
 - CLASS 2 BEDDING DETAIL SHALL BE PROVIDED WHERE COVER TO THE PIPE BARREL IS LESS THAN 1.2M IN VEHICULAR TRAFFICKED AREAS AND 0.9M ELSEWHERE, TO ALL ROAD GULLY CONNECTIONS AND WITHIN AREAS OF DEEP ROOTING VEGETATION.
 - WHERE CLASS 2 TRENCH BEDDING DETAIL IS USED, THE CONCRETE BED AND SURROUND SHALL BE DISCONTINUED AT EACH PIPE JOINT OVER THE FULL CROSS SECTION BY MEANS OF A SHAPED COMPRESSIBLE FILLER.
 - SELECTED BACKFILL MATERIAL SHALL CONSIST OF UNIFORM MATERIAL FREE FROM STONES LARGER THAN 40mm, CLAY LUMPS LARGER THAN 75mm, TREE ROOTS, ORGANIC MATTER AND FROZEN SOIL. SELECTED BACKFILL MATERIAL SHALL BE PLACED IN LAYER NOT EXCEEDING 225mm, EACH LAYER COMPACTED TO FORM A STABLE TRENCH BACKFILL.
 - GENERAL BACKFILL MATERIAL TO BE FREE FROM STONES LARGER THAN 40mm. GENERAL BACKFILL MATERIAL IS TO BE PLACED IN LAYERS NOT EXCEEDING 150mm THICKNESS AND EACH LAYER COMPACTED BY HAND. NO MECHANICAL COMPACTION OF FILL MATERIAL SHALL BE PERMITTED WITHIN 300mm ABOVE THE CROWN/BARREL OF THE PIPE.
 - BACKFILLING AND REINSTATEMENT TO TRENCHES IN PUBLIC HIGHWAYS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS AND SPECIFICATIONS OF THE ADOPTING AUTHORITY, OR IN THE ABSENCE OF SUCH, IN ACCORDANCE WITH THE REQUIREMENTS OF THE STREET WORKS REGULATIONS 1992 AND RELEVANT PROVISIONS OF H.A.U.C. "SPECIFICATION FOR THE REINSTATEMENT OF OPENINGS IN HIGHWAYS" JUNE 1992, BOTH UNDER SECTION 71 OF THE NEW ROADS AND STREET WORKS ACT 1991.
 - BACKFILL TO DRAINAGE TRENCHES IN HARD PAVED AREAS SHALL BE G.S.B. TYPE 1.
 - ALL ROAD GULLIES ARE TO BE TRAPPED GULLIES.
 - ALL GULLY LEADS TO BE 150mm DIAMETER.
 - ALL REDUNDANT EXISTING DRAINAGE TO BE GRUBBED UP OR GROUTED, ANY EXISTING LIVE DRAINAGE SHOULD BE REPORTED TO THE ENGINEER AND RECONNECTED.
 - ALL ROAD GULLIES & LEADS TO BE CLEARED OF DEBRIS UPON COMPLETION OF WORKS.
 - ANY EXISTING DRAINAGE WHICH BECOMES UNDER TRAFFICKED AREAS IN THE NEW SCHEME SHOULD BE SUBJECT TO THE FOLLOWING REMEDIALS/REVISIONS. WHERE DEPTH OF COVER IS LESS THAN 1200MM, THE EXISTING PIPEWORK SHALL BE EXPOSED & SURROUNDED WITH 150MM CONCRETE AS CLASS "Z" BEDDING, WHERE THE EXISTING MANHOLE COVER & FRAME IS NOT AS MANHOLE DETAIL A OR B, OR TO BS497 GRADE A, OR EN124 CLASS D, THEN IT SHOULD BE CHANGED FOR SUCH.
 - THE CONTRACTOR MUST ENSURE THAT ANY OF THE EXISTING DRAINAGE WHICH IS LIVE IS KEPT CLEAR OF DEBRIS AND SHOULD ALLOW FOR JETTING THROUGH THE NEW & EXISTING DRAINAGE UPON COMPLETION.

19/02/13	DRAINAGE AMENDED	MP	P2
15/02/13	TENDER ISSUE	MP	P1
Date	Revisions	Drawn	Rev.

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Project **TRINITY SOUTH SOUTH SHIELDS**

Title **PROPOSED ROAD LONGITUDINAL SECTIONS SHEET 4**

Scale	Drawn	Checked	Date
H1:500 V1:100	MP	SH	JAN 2013

Drawing Status **TENDER**

Job No.	Drawing No.	Revision
11547	C0007	P2

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DO NOT SCALE.