

CONSTRUCTION NOTES

- ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH PENRITH CITY COUNCIL'S CONSTRUCTION SPECIFICATION - DRAFT 2013 AND TO THE REQUIREMENTS OF THE SUPERVISING ENGINEERS.
- ALL CONSTRUCTION NOTES TO BE READ IN CONJUNCTION WITH COUNCIL'S SPECIFICATIONS.
- ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH THE APPROVED CONSTRUCTION CERTIFICATE PLANS AND COUNCIL'S DEVELOPMENT CONTROL PLAN.
- TO THE EXTENT SPECIFIED, THE CONTRACTOR SHALL CLEAR THE SITE BY REMOVING ALL RUBBISH, FENCES AND DEBRIS, ETC. CLEARING AND GRUBBING - NO TREES TO BE REMOVED WITHOUT COUNCIL'S PERMISSION UNTIL MARKED OUT BY COUNCIL.
- ALL NEW WORKS SHALL MAKE SMOOTH JUNCTION WITH EXISTING WORKS.
- THE CONTRACTOR SHALL CARRY OUT A SERVICES SEARCH AND SHALL LOCATE AND LEVEL ALL EXISTING SERVICES PRIOR TO COMMENCING CONSTRUCTION AND PROTECT AND MAKE ARRANGEMENT WITH THE RELEVANT AUTHORITY TO RELOCATE AND/OR ADJUST IF NECESSARY AT DEVELOPER'S EXPENSE AND AT NO COST TO COUNCIL. INFORMATION GIVEN ON THE DRAWINGS IN RESPECT TO SERVICES IS FOR GUIDANCE ONLY AND IS NOT GUARANTEED COMPLETE NOR CORRECT.
- SERVICE CONDUITS TO BE LAID AS DIRECTED BY THE RELEVANT AUTHORITY CLEAR OF ALL VEHICULAR CROSSINGS. ANY ELECTRICAL ROAD CROSSINGS ARE TO BE INSPECTED AND SURVEYED BY THE CONTRACTOR'S REGISTERED SURVEYOR IN ACCORDANCE WITH ENDEAVOUR ENERGY REQUIREMENTS. THE REGISTERED SURVEYOR MUST SIGN THE ELECTRICAL DUCT PLAN.
- PROVISION TO BE MADE FOR SUITABLE PROTECTION OF ROAD PAVEMENT KERB AND GUTTER AND FOOTPATH FORMATION.
- VEHICULAR ACCESS AND ALL SERVICES TO BE MAINTAINED AT ALL TIMES TO ADJOINING PROPERTIES AFFECTED BY CONSTRUCTION WORKS. THE CONTRACTOR IS NOT TO ENTER UPON NOR DO ANY WORK WITHIN ADJACENT LANDS WITHOUT THE PERMISSION OF THE OWNER AND SUPERINTENDENT.
- WHERE KERB & GUTTER IS LAID BY USE OF A KERB & GUTTER MACHINE THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONCRETE QUALITY. THE REMOVAL OF ALL KERB & GUTTER AT HIS OWN EXPENSE WHERE THE MINIMUM STRENGTH IS NOT ACHIEVED AT 28 DAYS IN ACCORDANCE WITH COUNCIL'S STANDARD SPECIFICATIONS.
- ALL TEMPORARY ROAD CONSTRUCTION TO BE REMOVED AND SURFACE TO BE REINSTATED TO NATURAL CONDITION WHERE PERMANENT ACCESS IS AVAILABLE.
- TOPSOIL TO BE REMOVED AND STOCKPILED WHERE SHOWN & RE-SPREAD ON COMPLETION OF EARTHWORKS.
- ALL DISTURBED AREAS AND STOCKPILES TO BE STABILISED WITHIN 14 DAYS.
- NO DISTURBANCE OF SITE PERMITTED OTHER THAN IMMEDIATE AREA OF WORKS.
- EARTHWORKS TO BE CARRIED OUT TO THE SATISFACTION OF THE SUPERVISING ENGINEER. UNSOUND MATERIAL IS TO BE REMOVED FROM ROADS AND LOTS PRIOR TO FILLING. ALL SITE REGRADING AREAS SHALL BE FINALLY GRADED TO THE SATISFACTION OF THE SUPERINTENDENT.
- WHERE LOT FILLING IN EXCESS OF 250mm IN DEPTH IS PROPOSED, LEVELS ARE TO BE TAKEN ON THE STRIPPED SURFACE PRIOR TO THE COMMENCEMENT OF FILLING BY THE CONTRACTOR AND ON THE FINISHED SURFACE. SUCH LEVELS ARE TO BE SHOWN ON THE WORK AS EXECUTED PLANS. FILLING TO BE CARRIED OUT TO COUNCIL'S STANDARDS.
- PROVIDE 150mm TOPSOIL TO ALL FOOTPATHS AND FILLED AREAS.
- DRAINAGE HOLES TO BE PROVIDED IN KERB AT LOW SIDES OF ALL LOTS WHICH DRAIN TO ROADS.
- CONDUIT TRENCHES AND STORMWATER DRAINAGE LINES TO BE BACKFILLED WITH APPROVED WASHED RIVER SAND AND VIBRATED. CONDUIT TRENCHES TO BE GRADED AT A MINIMUM OF 1% TO EITHER SUBSOIL OR STORMWATER DRAINAGE LINES.
- SUBSOIL DRAINS TO BE CONSTRUCTED AS REQUIRED BY SUPERVISING ENGINEER.
- ALL DRAINAGE LINES THROUGH ADJACENT LOTS SHALL BE CONTAINED WITHIN EASEMENTS CONFORMING TO COUNCIL'S STANDARDS.
- SERVICE CONDUIT LOCATIONS TO BE PERMANENTLY MARKED ON KERB FACE.
- PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL PROVIDE A TRAFFIC MANAGEMENT PLAN PREPARED BY AN ACCREDITED RTA TRAFFIC CONTROLLER IN ACCORDANCE WITH RTA REQUIREMENTS, FOR ANY WORK ON OR ADJACENT TO PUBLIC ROADS. PLAN TO BE SUBMITTED TO COUNCIL AND RTA.
- ALL IMPORTED FILL MATERIAL SHALL BE VIRGIN EXCAVATED NATURAL MATERIAL (VENM). VALIDATION CERTIFICATE MUST BE PROVIDED TO COUNCIL.
- NO FILL MATERIAL IS TO BE IMPORTED TO THE SITE WITHOUT THE PRIOR APPROVAL OF PENRITH CITY COUNCIL. NO RECYCLING OF MATERIAL FOR USE AS FILL MATERIAL SHALL BE CARRIED OUT ON THE SITE WITHOUT PRIOR APPROVAL FROM COUNCIL.
- NO FIRES ARE TO BE LIT OR WASTE MATERIALS BURNT ON THE SITE.
- ALL OUTBUILDINGS, RUBBISH & FENCES ARE TO BE DEMOLISHED AND THE MATERIALS DISPOSED OF WITHOUT NUISANCE. (N.B. INCINERATION OF THE MATERIALS IS STRICTLY PROHIBITED UNDER THE PROVISIONS OF THE CLEAN AIR ACT AND ANY BREACHES WILL RESULT IN LEGAL ACTION BEING RECOMMENDED.)
- WHERE THE LAND IS TO BE FILLED, GRADED OR ROADWORKS CONSTRUCTED, IT WILL BE NECESSARY THAT REGULAR WATERING DOWN OF OPERATIONS BE CARRIED OUT WHERE THE CREATION OF DUST DURING EARTHWORKS IS A PROBLEM.
- ALL TRUCKS TRANSPORTING DEBRIS FROM THE SITE MUST BE COVERED.
- CONSTRUCTION WORK IS PERMITTED ON THE SITE BETWEEN THE HOURS OF 7am TO 6pm MONDAY TO FRIDAY AND 7am TO 1pm SATURDAY (IF INAUDIBLE ON NEIGHBOURING PROPERTIES OTHERWISE 8am TO 1pm WITH NO WORK PERMITTED ON SUNDAY & PUBLIC HOLIDAYS).
- ALL NOXIOUS PLANTS TO BE REMOVED FROM THE PROPERTY.
- LAND FILLED IN EXCESS OF 250mm TO BE COMPACTED TO 95% STANDARD DRY DENSITY RATIO (AS1289 E4.1). EACH LOT, WHETHER FILLED OR NOT, TO BE CLASSIFIED IN TERMS OF THE AUSTRALIAN STANDARD FOR RESIDENTIAL SLABS AND FOOTINGS (AS2870) PREPARED BY A NATA REGISTERED SOIL TESTING CONSULTANT. WHERE THE LOT CLASSIFICATION IS H, A RESTRICTION WILL BE REQUIRED ON THE TITLE OF THAT LOT THAT SPECIAL FOOTINGS FOR ANY BUILDING MAY BE REQUIRED. A CLASSIFICATION OF E OR P IS UNACCEPTABLE.
- ALL MACHINERY AND MATERIALS TO BE LOADED/UNLOADED WITHIN WORKSITE.
- ALL CONSTRUCTION MATERIALS AND MACHINERY MUST BE KEPT WITHIN WORKSITE.
- THE CONTRACTOR SHALL ENSURE THAT SOIL/EXCAVATED MATERIAL IS NOT DEPOSITED ON SURROUNDING ROADS. ANY SOIL DROPPED ON THE SURROUNDING ROADS SHALL BE IMMEDIATELY REMOVED.
- 100 YEAR FLOW PATHS TO BE FORMED AT TIME OF CONSTRUCTION.
- DRIVEWAYS & LAYBACKS TO Min. 1m CLEARANCE FROM POWER & LIGHT POLES & STORMWATER DRAINS, & 6m CLEARANCE FROM KERB RETURN T.P.'s.
- STRUCTURAL CERTIFICATION REQUIRED FOR DESIGN AND CONSTRUCTION OF MAJOR NON-STANDARD STRUCTURES.
- ALL LIGHT POLES, STREET NAME POLES & BUS SHELTERS IN THIS SUBDIVISION WILL BE ANTI GRAFFITI COATED TO THE SATISFACTION OF COUNCIL AND WILL COMPLY WITH COUNCIL SPECIFICATIONS.
- DOCUMENTS TO BE KEPT ON SITE AT ALL TIMES INCLUDE:
 - TRAFFIC MANAGEMENT PLAN
 - STAMPED CONSTRUCTION CERTIFICATE PLANS
 - DEVELOPEMENT CONSENT
 - COUNCIL'S CONSTRUCTION SPECIFICATIONS
 - ANY OTHER CERTIFICATE TO BE RELIED UPON

CIVIL WORKS FOR SUBDIVISION OF LOT 1 DP 1144668 ANDROMEDA DRIVE, CRANE BROOK

SHEET INDEX

No.	SHEET DESCRIPTION	DWG #	ISSUE
1	COVER SHEET & LOCALITY SKETCH	I117EG-E1-1	A
2	PLAN	I117EG-E1-2	A
3	BIORETENTION PLAN AND DETAILS	I117EG-E1-3	A
4	ROAD No. 1 & ACCESS HANDLE LONG. SECTION & SETOUT	I117EG-E1-4	A
5	ROAD No. 1 CROSS SECTIONS (1)	I117EG-E1-5	A
6	ROAD No. 1 CROSS SECTIONS (2) & SETOUT	I117EG-E1-6	A
7	KERB RETURNS & INTERSECTION DETAIL	I117EG-E1-7	A
8	CATCHMENT PLAN & STORMWATER DETAILS	I117EG-E1-8	A
9	DRAINAGE LONG. SECTIONS	I117EG-E1-9	A
10	DRAINAGE CALCULATIONS (1)	I117EG-E1-10	A
11	DRAINAGE CALCULATIONS (2) & DRAINAGE SETOUT	I117EG-E1-11	A
12	PLAN - REDUNDANT SERVICES, ETC TO BE REMOVED	I117EG-E1-12	A
13	SOIL, WATER & CONSTRUCTION MANAGEMENT PLAN	I117EG-E1-13	A
14	TREE RETENTION PLAN	I117EG-E1-14	A
15	LINE MARKING & SIGNAGE PLAN	I117EG-E1-15	A



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TREE PROTECTION

- NO NATIVE TREES OR OTHER VEGETATION (INCLUDING SHRUBS AND OTHER UNDERSTOREY VEGETATION) ARE TO BE REMOVED, RINGBARKED, CUT, TOPPED, LOPPED, SLASHED OR WILFULLY DESTROYED (OTHER THAN THOSE ON THE APPROVED LANDSCAPING PLAN BY NBR&PARTNERS) WITHOUT THE PRIOR CONSENT OF PENRITH CITY COUNCIL AND IN ACCORDANCE WITH COUNCIL'S TREE PRESERVATION ORDER AND POLICY.
- PRIOR TO THE COMMENCEMENT OF ANY WORKS, THE TREES IDENTIFIED FOR RETENTION WILL BE MARKED AND PROTECTED AND CERTIFIED BY THE PROJECT ECOLOGIST. ALL THESE AREAS ARE TO BE LEFT UNDISTURBED AND CORDONED OFF.
- THERE IS TO BE NO STORAGE OF MATERIALS STOCKPILING OF EXCAVATED MATERIAL OR PARKING OF MACHINERY WITHIN 3 METRES OF ANY TREES TO BE RETAINED.
- PRIOR TO THE REMOVAL OF ANY BRANCHES OF THE TREES WHICH ARE TO BE RETAINED, COUNCIL IS TO BE NOTIFIED AT LEAST 24 HOURS PRIOR TO ANY ACTIVITY AND THE WORK IS TO BE UNDERTAKEN BY A QUALIFIED ARBORIST.
- RE-INSPECTION OF TREES BY COUNCIL PRIOR TO CONSTRUCTION WORKS COMMENCING.

VEGETATION MANAGEMENT PLAN

- ALL RECOMMENDATIONS AND ACTIVITIES OF THE APPROVED VEGETATION MANAGEMENT PLAN BY SLR FORM CONDITIONS OF CONSENT FOR THIS DEVELOPMENT.
- AREAS CORDONED OFF AND LABELLED AS THE VEGETATED MANAGEMENT AREA ARE TO BE PROTECTED AT ALL TIMES. NO WORKS ARE TO OCCUR AND NO PERSON IS TO ENTER THESE AREAS UNLESS APPROVED BY THE PROJECT ECOLOGIST OR BUSH REGENERATION TEAM.
- ALL SITE PERSONNEL ARE TO BE INDUCTED INTO THE VEGETATION MANAGEMENT PLAN PRIOR TO COMMENCEMENT OF WORKS.

SURVEY

- ALL SURVEY INFORMATION PROVIDED FOR THIS PROJECT IS OBTAINED FROM INSITES.
- ALL LEVELS ARE TO A.H.D.
- ALL CHAINAGES AND LEVELS ARE IN METRES, DIMENSIONS FOR DETAILS AS SHOWN.
- CONTRACTORS SHALL ARRANGE FOR THE WORKS TO BE SET OUT BY A REGISTERED SURVEYOR.
- EXISTING SERVICES SHOWN SHALL BE CONFIRMED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF WORK.

GEOTECHNICAL NOTES

- SITE FILLING AND COMPACTION IS TO BE CARRIED OUT UNDER THE SUPERVISION OF A CHARTERED GEOTECHNICAL ENGINEER AND SHALL BE IN ACCORDANCE WITH PENRITH CITY COUNCIL'S CONSTRUCTION SPECIFICATION - DRAFT 2013
- ALL FILL SHALL BE COMPACTED TO NOT LESS THAN 95% OF THE STANDARD MAXIMUM DRY DENSITY. ALL AREAS WHICH HAVE TEST RESULTS LESS THAN 95% STANDARD SHOULD BE REWORKED AND RETESTED TO ENSURE COMPLIANCE. IN ACCORDANCE WITH AS1289 TESTS 12 & 13.
- ALL FILL AREAS TO BE SURVEYED AT STRIPPING AND FINAL STAGES. THESE LEVELS AND 300mm DEPTH RANGES LEVELS ARE TO BE SHOWN ON PLAN SHADED. (TOGETHER WITH CROSS SECTIONS AT MAX. 20m C/C) AT WORK AS EXECUTED STAGE AND CONTROLLED BY A REGISTERED SURVEYOR.
- ALL TESTING WORKS SHALL BE CONTROLLED AND CERTIFIED BY A N.A.T.A. REGISTERED LABORATORY. A COLLATED COPY OF ALL TESTS CERTIFICATES, ACCOMPANIED BY AN OVERALL SITE PLAN, CLEARLY INDICATING THE LOCATION OF EACH TEST AND FILL AREAS ETC. AND THE LABORATORY CERTIFICATE COVERING THE WHOLE OF THE AREA TO BE FORWARDED TO THE SUPERINTENDENT UPON COMPLETION.

STORMWATER DRAINAGE

- STORMWATER DRAINAGE SHALL BE GENERALLY IN ACCORDANCE WITH AS3500.3 AND PENRITH CITY COUNCIL'S STANDARD SPECIFICATION.
- PIPES OF 225mm DIA. AND UNDER SHALL BE uPVC TO AS1254.
- PIPES OF 300mm DIA. AND LARGER SHALL BE CONCRETE Min. CLASS 2 TO AS4058, RUBBER RING JOINTED UNO, UNLESS HIGHER CLASS SPECIFIED.
- PIPES SHALL BE LAID AT A MINIMUM GRADE OF 1.0% UNO. BEDDING MATERIAL TO AS2032 OR AS3725 AS APPROPRIATE.
- MINIMUM COVER TO PIPES CLASS 2 300mm DIA. AND OVER GENERALLY SHALL BE 600mm IN ROADWAY AREAS UNO. MINIMUM COVER TO PIPES CLASS 3 300mm DIA. AND OVER GENERALLY SHALL BE 450mm IN ROADWAY AREAS UNO.
- BACKFILL TRENCHES WITH APPROVED FILL, SUCH AS SANDY LOAM, COMPACTED IN 200mm LAYERS TO 98% OF STANDARD DENSITY TO AS1289.5.1.1.
- ANY PIPES OVER 16% GRADE SHALL HAVE CONCRETE BULKHEADS AT ALL JOINTS.
- PITS SHALL BE OF REINFORCED CONCRETE CONSTRUCTION AS DETAILED: METAL GRATES AT LEVELS INDICATED. ALL PITS DEEPER THAN 1200mm TO HAVE CLUMB IRONS. ALL PITS DEEPER THAN 1500mm TO BE CONSTRUCTED OF STEEL REINFORCED CONCRETE. PITS SHALL BE BENCHED AND STREAMLINED.
- BUILD INTO UPSTREAM FACE OF ALL PITS A 3.0m SUBSOIL LINE FALLING TO PITS TO MATCH PIT INVERT.
- SUBSOIL LINE PIPES AND FITTINGS SHALL BE PERFORATED CORRUGATED OR SMOOTH WALL UPVC. CLASS 400 TO AS2439 PART 1. LAY PIPES ON FLOOR OF TRENCH GRADED 1% AND OVERLAY WITH FILTER MATERIAL EXTENDING TO WITHIN 200mm OF SURFACE. PROVIDE FILTER FABRIC OF PERMEABLE POLYPROPYLENE BETWEEN FILTER MATERIAL AND TOPSOIL.
- DRAINAGE PITS MAY ONLY BE SUBSTITUTED WITH ALTERNATIVE PRE CAST PITS WITH THE PRIOR WRITTEN APPROVAL OF COUNCIL.
- LONGITUDINAL PIPELINES IN ROADS TO BE LOCATED UNDER KERB & GUTTER U.N.O. AND TO BE BACKFILLED WITH WASHED RIVER SAND.
- ALL INTERALLOTMENT STUB LOCATIONS ARE TO BE SURVEYED BY INSITES AND SHOWN ON WAE DRAWINGS. THE CONTRACTOR IS TO ADVISE ON WHEN THESE WILL BE AVAILABLE FOR INSPECTION AND SURVEY PRIOR TO BACKFILLING.

ASPHALT PAVEMENT

- ALL ROAD SERVICE CROSSINGS TO BE LAID AND INSPECTED BY RELEVANT AUTHORITY AND CERTIFICATION TO BE PROVIDED BEFORE PLACEMENT OF PAVEMENT LAYERS.
- PREPARATION FOR PAVEMENT. CLEAR SITE, STRIP TOPSOIL, CUT AND FILL AND PREPARATIONS OF SUBGRADE SHALL BE AS DESCRIBED IN "EARTHWORKS".
- SUBGRADE SHALL BE COMPACTED TO 100% STANDARD DRY DENSITY RATIO AT OPTIMUM MOISTURE CONTENT +/-2% IN ACCORDANCE WITH AS1289.5.1.1.
- SUBBASE SHALL BE CONSTRUCTED FROM DGS40 COMPACTED TO 98% STANDARD DRY DENSITY RATIO AT OPTIMUM MOISTURE CONTENT +/-2% IN ACCORDANCE WITH AS 1289.5.1.1. OF THICKNESS NOTED ON DRAWINGS.
- BASE COURSE SHALL BE CONSTRUCTED FROM FINE CRUSHED ROCK DGB20 COMPACTED TO 98% STANDARD DRY DENSITY RATIO AT OPTIMUM MOISTURE CONTENT +/-2% IN ACCORDANCE WITH AS1289.5.1.1. OF THICKNESS NOTED ON DRAWINGS.
- APPLY TACK COAT 30-120 MINUTES BEFORE ASPHALT SURFACING IS PLACED. COVER THE SURFACE UNIFORMLY AT AN APPLICATION RATE OF 0.10-0.30 L/m² OF RESIDUAL BITUMEN.
- WEARING SURFACE SHALL BE ASPHALTIC CONCRETE TO STANDARD SPECIFICATION. THE INITIAL 2 LAYERS OF THE WEARING COURSE SHALL COMPACTED TO 98% STANDARD DRY DENSITY RATIO AT OPTIMUM MOISTURE CONTENT +/-2% IN ACCORDANCE WITH AS1289.5.1.1. OF THICKNESS NOTED ON DRAWINGS. THE FINAL LAYER WILL BE DELAYED FOR A PERIOD OF TWELVE MONTHS OR UNTIL 80% OF DWELLINGS HAVE BEEN ERRECTED IN THE SUBDIVISION.

COUNCIL INSPECTIONS

- INSPECTION OF THE WORKS REQUIRED PURSUANT TO THE ENGINEERING APPROVAL ISSUED UNDER THE ROADS ACT 1993 MUST BE MADE BY COUNCIL'S CITY WORKS DEPARTMENT WHO CAN BE CONTACTED ON 4732 7777.
- A SITE INSPECTION IS REQUIRED PRIOR TO THE COMMENCEMENT OF WORK. A MINIMUM OF TWENTY-FOUR (24) HOURS NOTICE MUST BE GIVEN PRIOR TO ANY REQUIRED INSPECTION. A SCHEDULE OF MANDATORY INSPECTIONS IS LISTED IN COUNCIL'S WORK SPECIFICATION- CIVIL (CURRENT VERSION).
- PRIOR TO THE CONNECTION OF PRIVATE DRAINAGE TO COUNCIL'S DRAINAGE SYSTEM, AN INSPECTION IS TO BE CARRIED OUT BY PENRITH CITY COUNCIL'S DEVELOPMENT ENGINEERING UNIT

NOTE

THE CONTRACTOR MUST OBTAIN A CURRENT D.B.Y.D. SEARCH BEFORE COMMENCING WORK AND SHALL POTHOLE TO CONFIRM THE LOCATION & LEVEL OF ALL SERVICES PRIOR TO COMMENCING ANY PHYSICAL WORK ON THE SITE. ANY POTENTIAL CONFLICT SHALL BE ADVISED TO THE DESIGNER FOR RESOLUTION.

ISSUE FOR C.C.

REVISIONS	DATE	REVISION DETAILS	BY
A	29.07.14	ISSUE FOR C.C.	K.G.

- NOTES:
- THIS IS A COLOURED PLAN. REPRODUCTION IN COLOUR ONLY.
 - ORIGIN OF LEVELS SSM 97356 R.L.50.53 DATUM AHD



SCALE:	DATUM: AHD
LONG SECTION: H: N/A V: N/A	CROSS SECTION: H: N/A V: N/A

SCALE IN METRES AT ORIGINAL REDUCTION RATIO

PREPARED BY

rpsgroup.com

Level 9, 17 York Street
Sydney, NSW 2000
(GPO BOX 4401, Sydney, NSW 2001)
T: 02 9248 9800
F: 02 9248 9810

Suite 2, Level 1, Aquaria Tower
666 Princess Highway
Sutherland, NSW, 2258
DX 4592 Sutherland
T: 02 9642 1177
F: 02 9642 4631

CLIENT: THE TRUSTEES OF THE ROMAN CATHOLIC CHURCH FOR THE DIOCESE OF PARRAMATTA	TITLE:
SURVEY: C.L./B.F.	DATE OF SURVEY: 18.01.13
DRAWN: K.G.	DATE OF PLAN: 29.07.14
DESIGNED: K.G./B.L.	DATE LAST SAVED: 01.08.14
APPROVED: B.L.	DATE APPROVED: 29.07.14

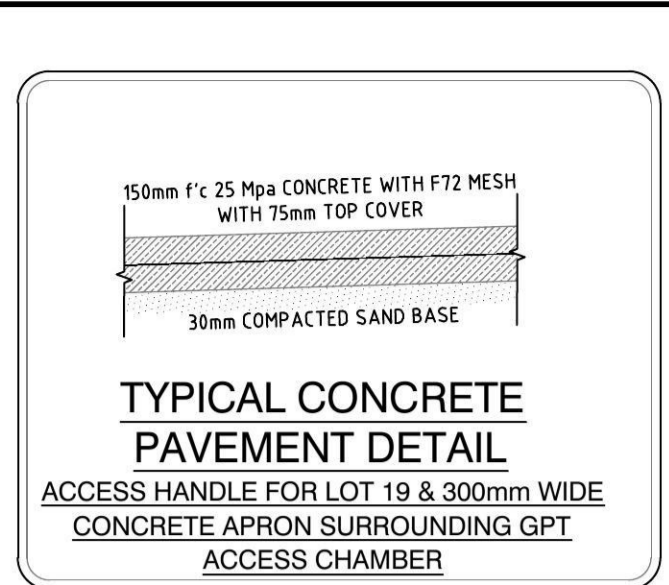
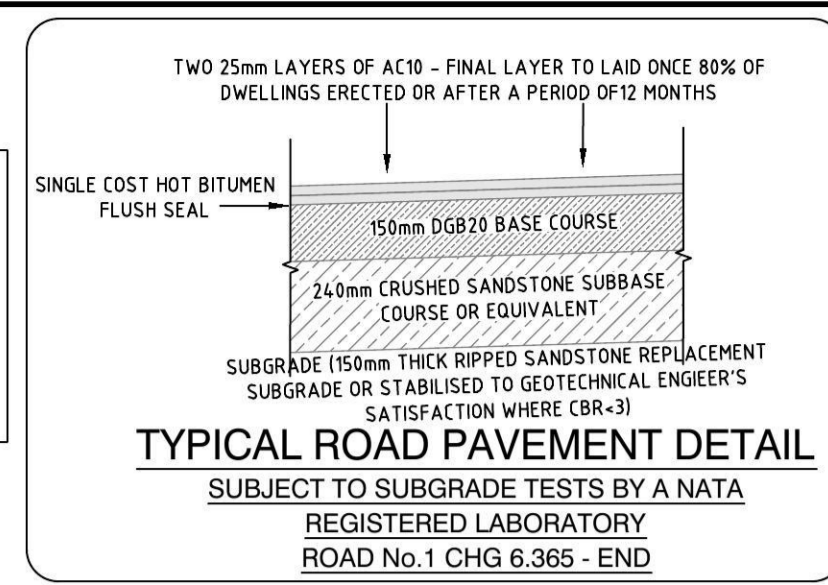
COVER SHEET & LOCALITY SKETCH
CIVIL WORKS
SUBDIVISION OF LOT 1 DP 1144668
ANDROMEDA DRIVE, CRANE BROOK

JOB No	ISSUE
I117EG	A
DWG No	
E1-1	
SHEET 1 OF 15 SHEETS	SIZE A1

DETAIL - SSM ORIGIN OF LEVELS LOCATION

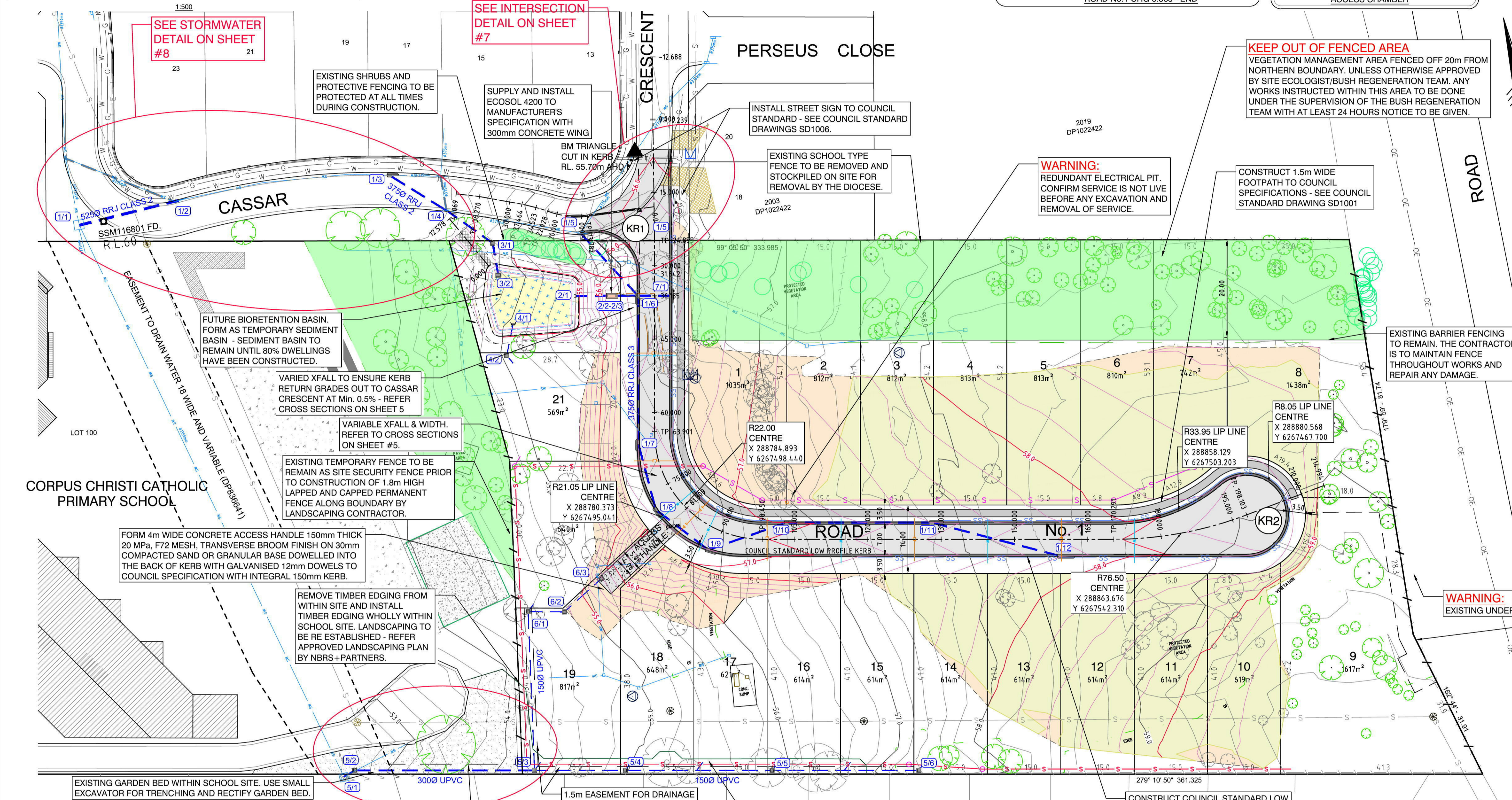
NOTE
THE CONTRACTOR MUST OBTAIN A CURRENT D.B.Y.D. SEARCH BEFORE COMMENCING WORK AND SHALL POTHOLE TO CONFIRM THE LOCATION & LEVEL OF ALL SERVICES PRIOR TO COMMENCING ANY PHYSICAL WORK ON THE SITE. ANY POTENTIAL CONFLICT SHALL BE ADVISED TO THE DESIGNER FOR RESOLUTION.

NOTE
THE CONTRACTOR IS TO USE LIGHT MACHINERY OVER ALL PIPES LAID ALONG AND UNDER ROAD 1. DUE TO THE SHALLOW PIPE COVER.



LEGEND

- CONSTRUCT AC PAVEMENT - REFER TO DETAIL
- CONSTRUCT CONCRETE ACCESS HANDLE - REFER TO DETAIL ON SHEET # 4
- CONSTRUCT 1.5 WIDE FOOTPATH
- LOT REGRADING/FILLING (Min. 1% TO KERB)
- LOT REGRADING/CUT (Min. 1% TO KERB)
- Denotes FUTURE BIORETENTION BASIN
- Denotes KERB RETURN NUMBER. REFER TO CORRESPONDING KERB RETURN PLAN FOR DETAIL.
- Denotes STORMWATER INFRASTRUCTURE TO BE CONSTRUCTED - REFER SHEETS #9 & 10.
- INSTALL SUBSOIL DRAINAGE TO COUNCIL STANDARDS AND AS INSTRUCTED BY THE SUPERINTENDENT
- Denotes VEGETATION MANAGEMENT AREA - DO NOT ENTER WITHOUT APPROVAL FROM SITE ECOLOGIST/BUSH REGENERATION TEAM
- Denotes PROPOSED SEWER LOCATION (REFER TO APPROVED SEWER PLAN BY QALCHEK)
- PROPOSED SERVICE CONDUIT LOCATIONS (REFER TO APPROVED SERVICE PLAN BY CONNECT, QALCHEK, TELSTRA & JEMENA)
- Denotes EXISTING STORMWATER
- Denotes EXISTING DEEP SEWER TO REMAIN
- Denotes APPROX EXISTING SERVICES LOCATION (D.B.Y.D.)
- Denotes EXISTING TREE AS PER SURVEY
- Denotes EXISTING TREE TO BE REMOVED
- Denotes APPROX SIGNIFICANT TREE TO BE PROTECTED DURING WORKS
- Denotes EXISTING LANDSCAPED GARDEN AREA WITHIN SCHOOL CONTAINING SMALL TREES AND SHRUBS. ANY DISTURBED AREA TO BE RECTIFIED AS SOON AS PRACTICABLE UPON COMPLETION OF CIVIL WORKS IN THIS AREA.



PIT TABLE

Pit No.	Pit Description
1/1	EXISTING LETTER BOX PIT
1/2	EXISTING 1.8m LINTEL
1/3	1.8m LINTEL
1/4	EXISTING 1.8m LINTEL
1/5	EXISTING 1.8m LINTEL
1/6	1.8m LINTEL
1/7	1.8m LINTEL
1/8	1.8m LINTEL

1/9	1.8m LINTEL
1/10	1.8m LINTEL
1/11	3.0m LINTEL
1/12	3.0m LINTEL
2/1	HEADWALL 375Ø
2/2-2/3	ECOSOL 4200 GPT
3/1	600X600 JUNCTION PIT
3/2	600X900 LETTERBOX PIT
4/1	HEADWALL 150Ø
4/2	600X600 GRATED SURFACE INLET PIT
5/1	EXISTING LETTER BOX PIT
5/2	600X600 JUNCTION PIT
5/3	600X600 GRATED SURFACE INLET PIT
5/4	600X600 GRATED SURFACE INLET PIT
5/5	600X600 GRATED SURFACE INLET PIT
5/6	600X600 GRATED SURFACE INLET PIT
6/3	600X600 GRATED SURFACE INLET PIT - WITH HEAVY DUTY LID
6/2	600X600 GRATED JUNCTION PIT
6/1	600X600 GRATED SURFACE INLET PIT
7/1	2.4m LINTEL - SAG
8/1	EXISTING GRATED INLET PIT WITHIN SCHOOL CULDESAC

- NOTES**
- CONTRACTOR IS TO REMOVE AND DISPOSE OF OFF SITE ALL REDUNDANT SERVICES, CONCRETE FOOTINGS, FENCES, RUBBISH, etc - REFER PLAN - REDUNDANT SERVICES, ETC TO BE REMOVED (SHEET #12) FOR DETAILS.
 - DRAINAGE HOLES TO BE PROVIDED IN KERB AT LOW SIDE OF ALL LOTS WITHIN SUBDIVISION WHICH DRAIN TO ROADS BY CORING. KERB OUTLETS TO BE HOT DIPPED GALVANISED STEEL AND TO MATCH THE PROFILE OF THE KERB WITH KERB ADAPTOR (INTERNAL ROADS INCLUDED AND EXISTING ADJACENT LOT- No. 20 CASSAR CR.). INSTALL 100mm UPVC CONDUIT WITHIN THE FOOTPATH AREA FOR LOTS THAT DRAIN TO THE FRONT WHERE A CONCRETE FOOTPATH IS TO BE CONSTRUCTED.
 - REFER TO LOT SETOUT (SHEET #6) FOR SETOUT DETAIL FOR FILLING/REGRADING.
 - SEE SHEET #6 FOR TYPICAL ROAD SECTION.
 - REFER TO BIORETENTION DETAIL PLAN FOR CONSTRUCTION DETAIL OF SEDIMENTATION BASIN (SHEET #3).
 - REFER TO SHEET #11 SETOUT OF DRAINAGE INFRASTRUCTURE

REVISIONS

No.	DATE	REVISION DETAILS	BY
A	29.07.14	ISSUE FOR C.C.	K.G.

NOTES

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- ORIGIN OF LEVELS SSM 97355 R.L.50.53 DATUM AHD

PLAN

SCALE: 1:500
LONG SECTION: H: N/A, V: N/A
CROSS SECTION: H: N/A, V: N/A

DATUM: AHD

PREPARED BY: RPS

CLIENT: THE TRUSTEES OF THE ROMAN CATHOLIC CHURCH FOR THE DIOCESE OF PARRAMATTA

SURVEY: C.L.B.F.
DRAWN: K.G.
DESIGNED: K.G./B.L.
APPROVED: B.L.

DATE OF SURVEY: 18.01.13
DATE OF PLAN: 29.07.14
DATE LAST SAVED: 04.08.14
DATE APPROVED: 29.07.14

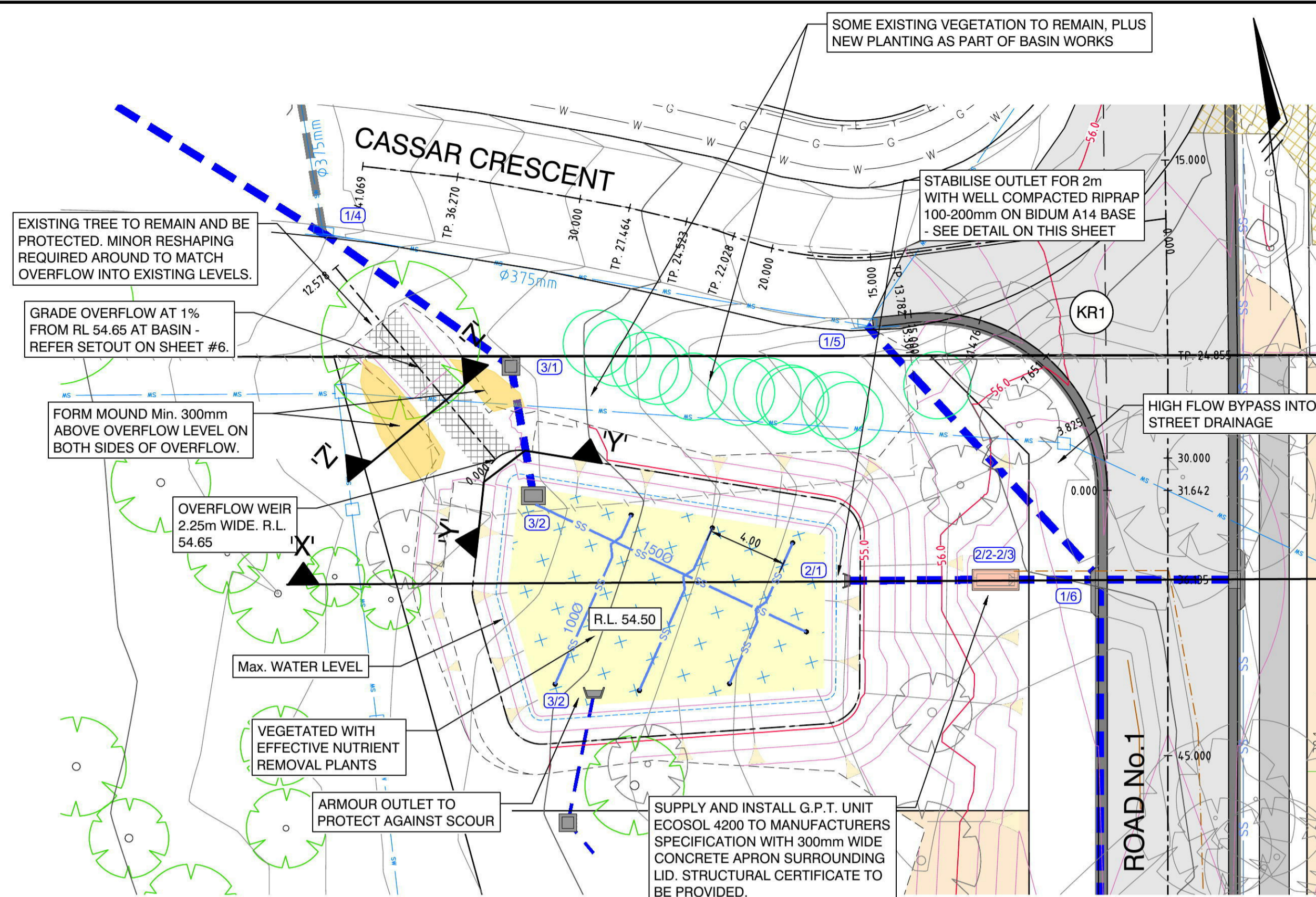
Level 9, 17 York Street Sydney, NSW 2000 (GPO BOX 4401, Sydney, NSW 2001) T: 02 9248 8800 F: 02 9248 8810

Suite 2, Level 1, Aquarius Tower 688 Princess Highway Sutherland, NSW, 2258 DX 4522 Sutherland T: 02 9642 1177 F: 02 9642 4631

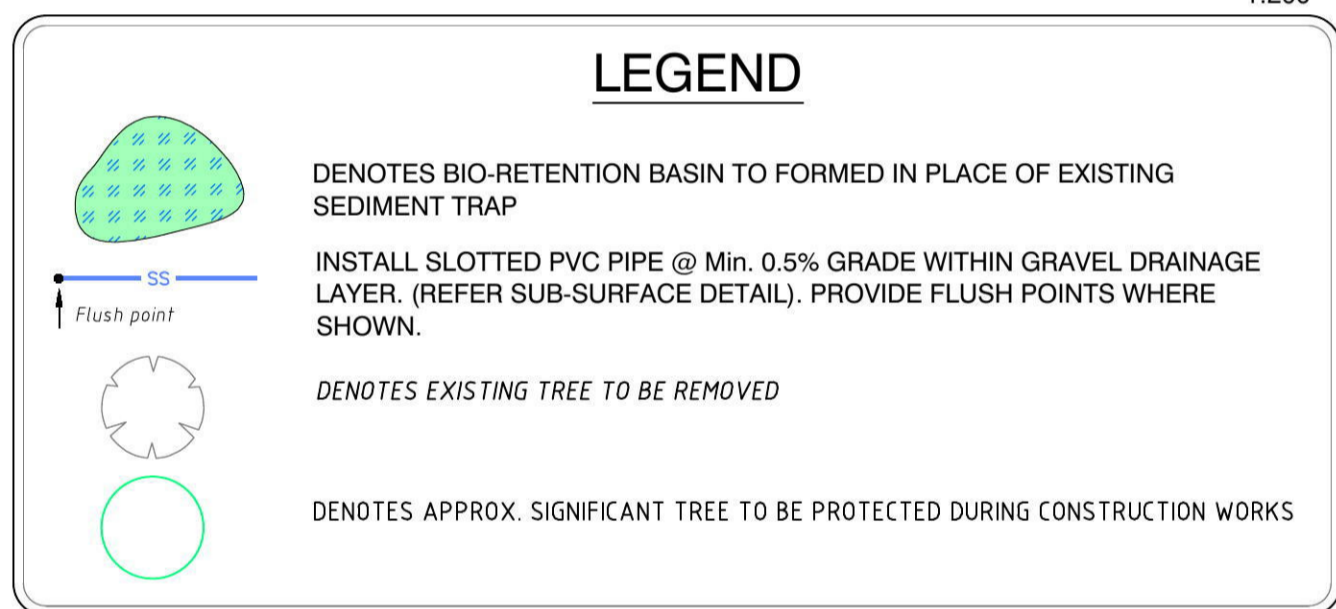
ISSUE FOR C.C.

PLAN CIVIL WORKS
SUBDIVISION OF LOT 1 DP 1144668 ANDROMEDA DRIVE, CRANE BROOK

JOB No: 1117EG
DWG No: E1-2
SHEET 2 OF 15 SHEETS
SCALE: A1



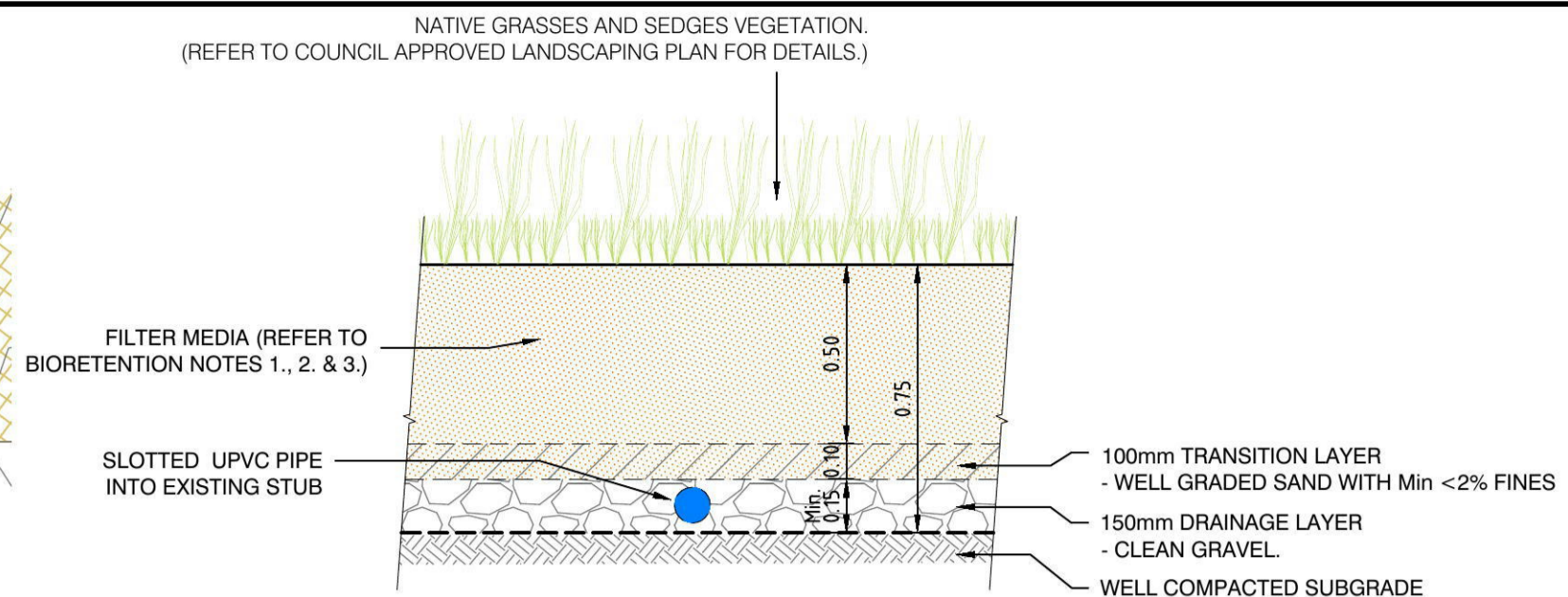
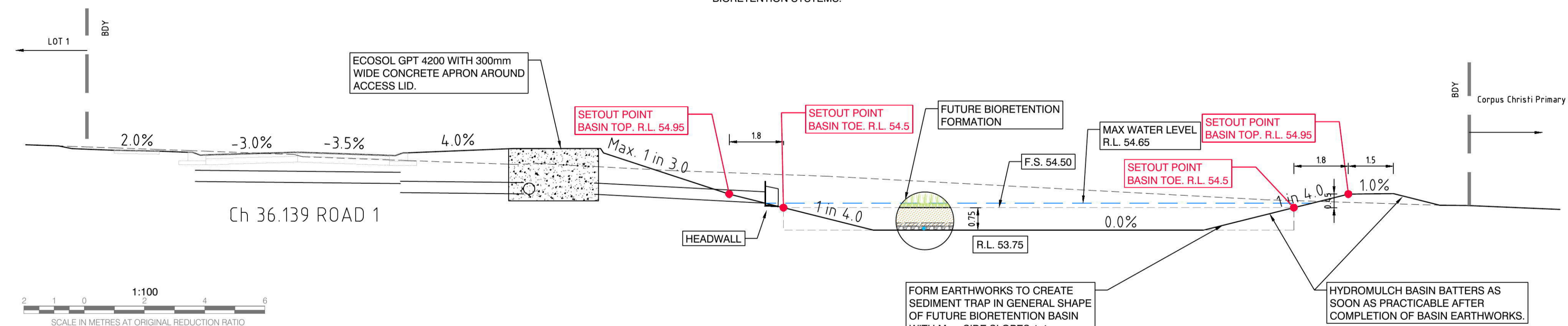
BIORETENTION DETAIL
1:200



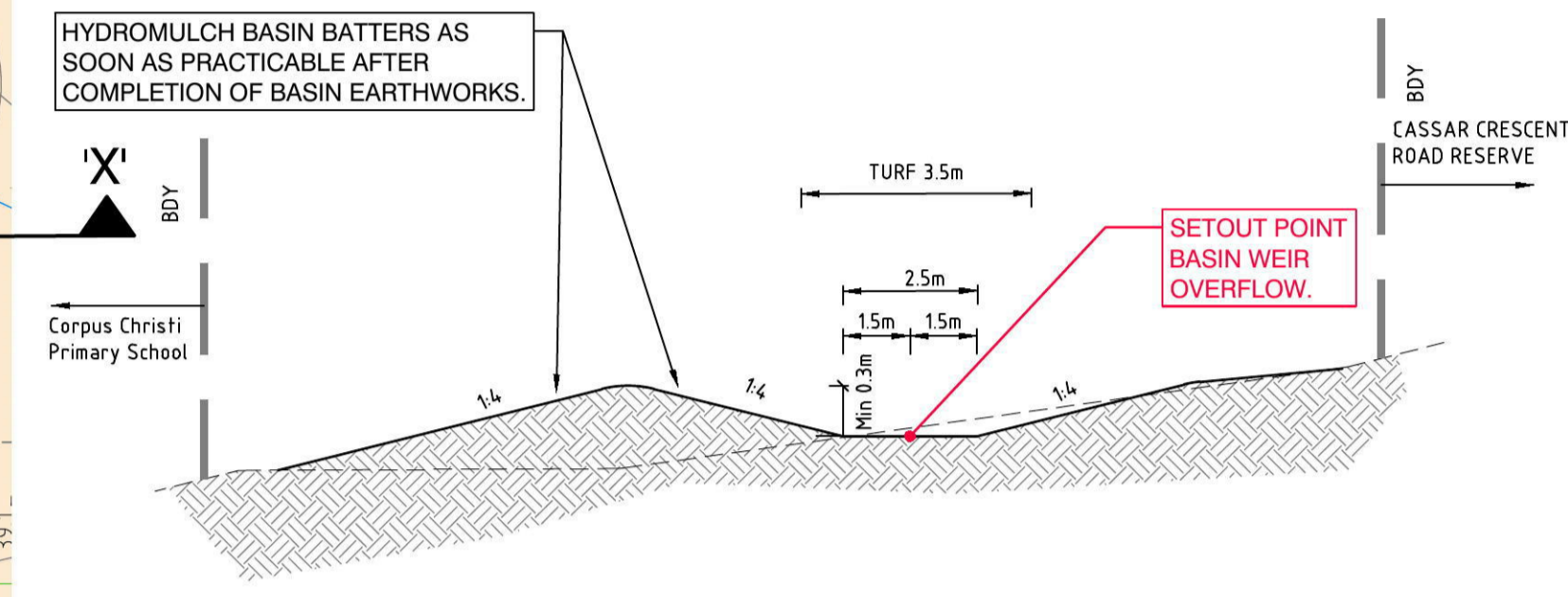
SEDIMENT BASIN NOTES

BIORETENTION BASIN IS TO BE CONSTRUCTED ONCE 80% OF DWELLINGS HAVE BEEN CONSTRUCTED.

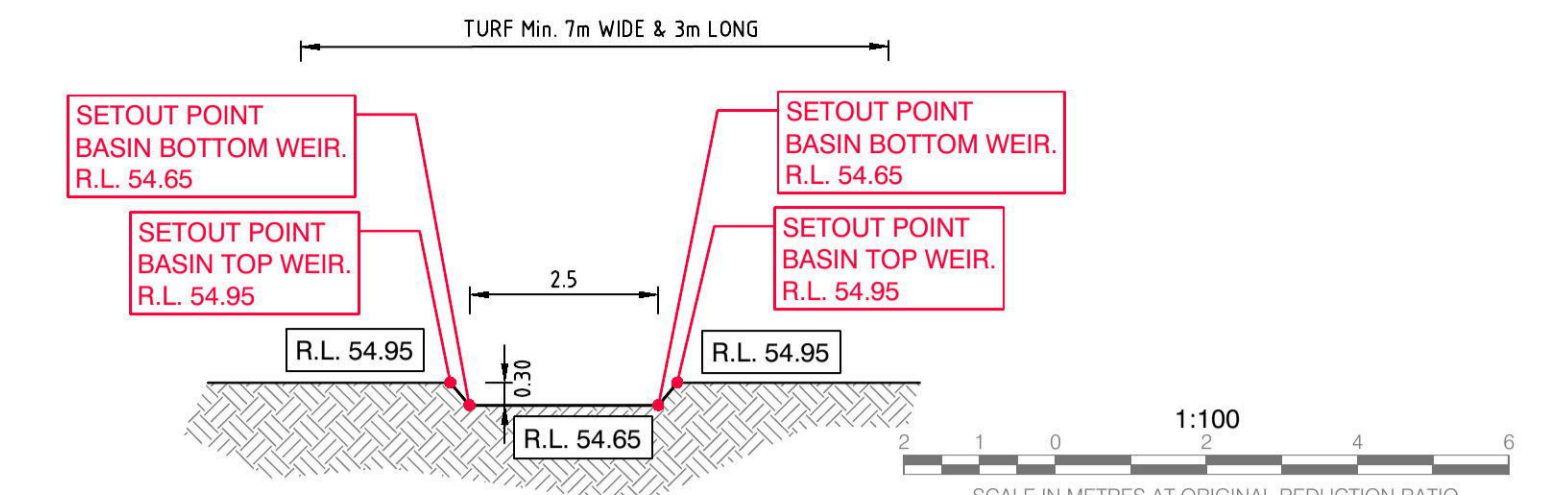
- CONTRACTOR IS TO FORM SEDIMENT BASIN AS PER SETOUT ON SHEET # 6 AND DETAILS SHOWN ON THIS SHEET.
- THE WEIR TO THE BASIN AND OVERFLOW PATH TO CASSAR CRESCENT AND ASSOCIATED EARTH MOUND ARE TO BE TURFED WITH KIKUYU TURF ON COMPLETION OF SHAPING OF THE BASIN.
- ALL BATTERS INTO AND SURROUNDING THE BASIN ARE TO BE HYDROMULCHED UPON COMPLETION OF THE SHAPING OF THE BASIN.
- THE SEDIMENT BASIN AND GPT ARE TO BE CLEANED OUT AS REQUIRED AND PRIOR TO PRACTICAL COMPLETION.



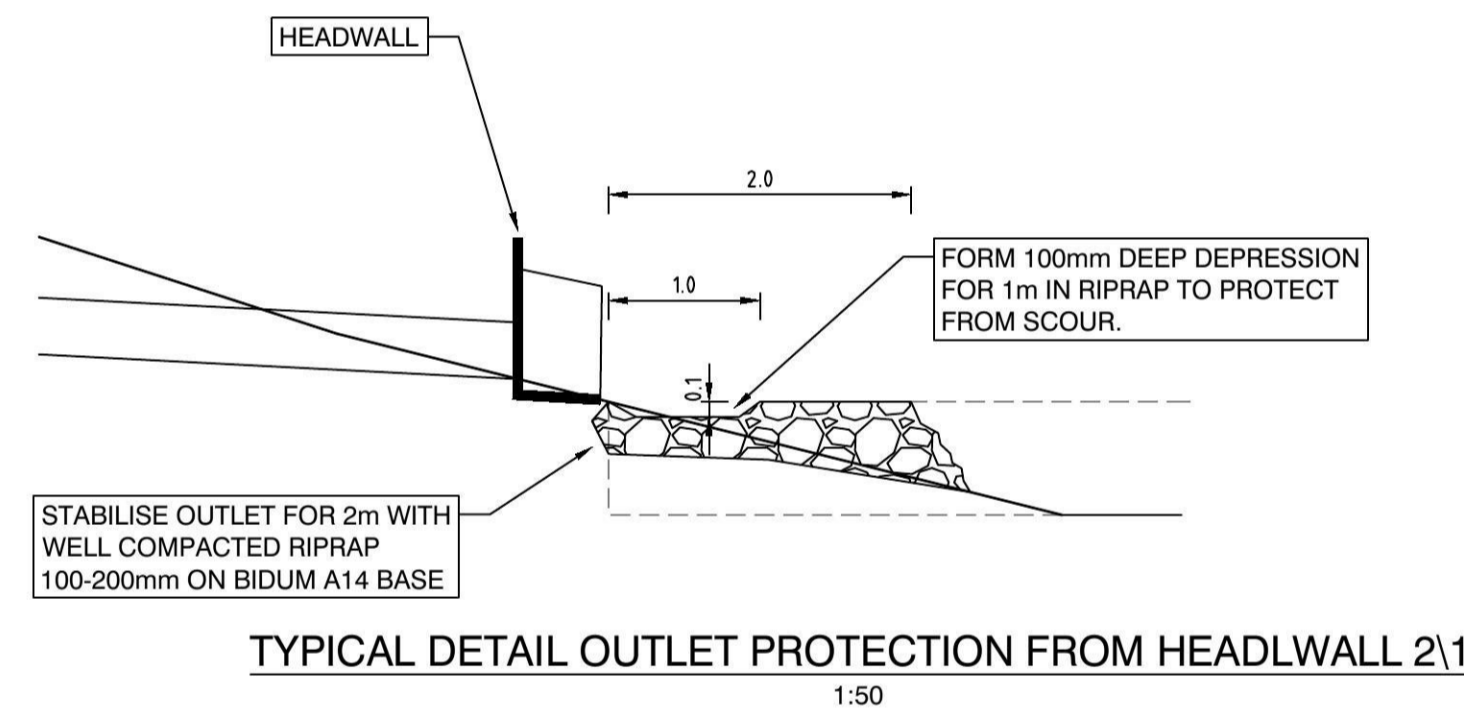
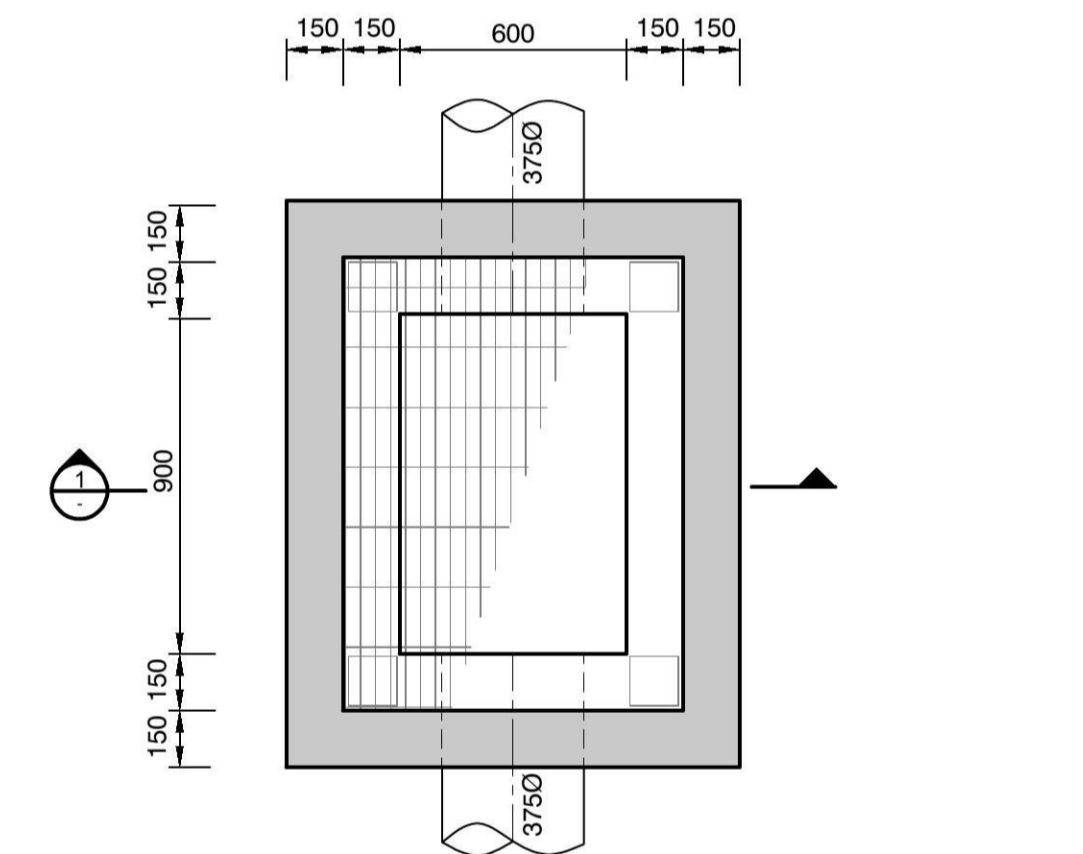
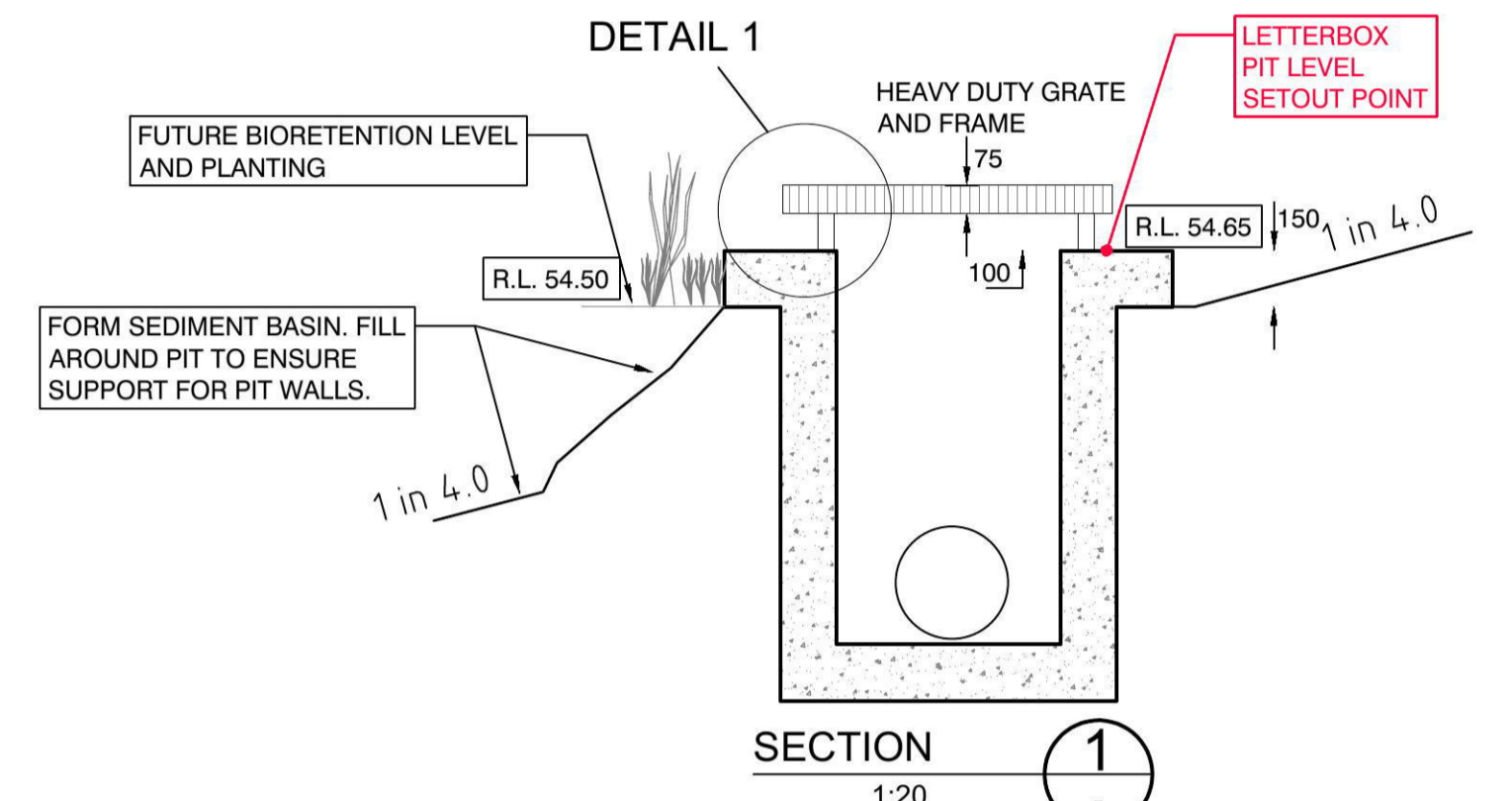
TYPICAL BIORETENTION SUBSURFACE DETAIL
1:20



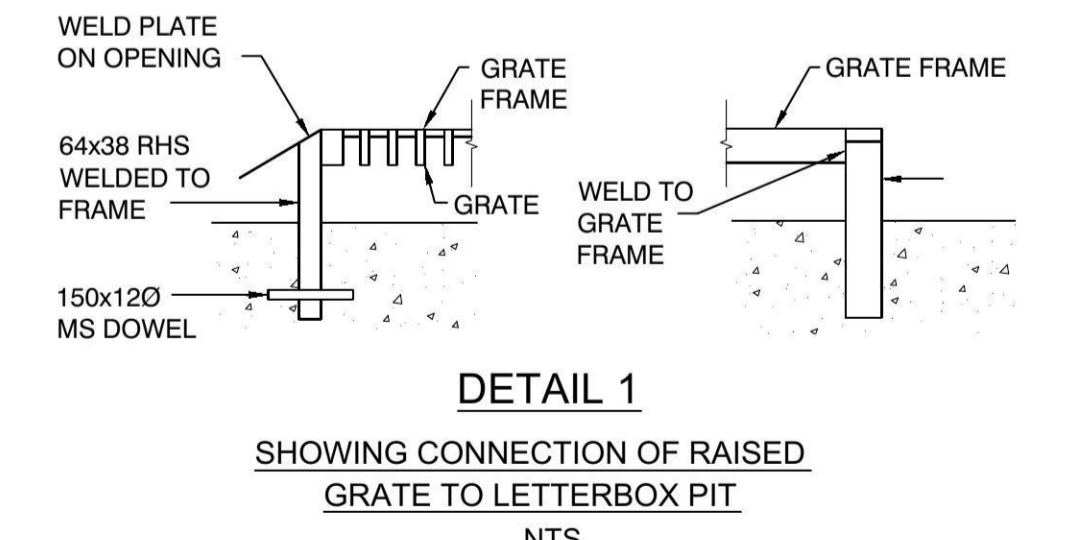
EARTH MOUND FOR BIORETENTION BASIN OVERFLOW - SECTION Z-Z TYPICAL SECTION NTS
1:20



BIORETENTION BASIN OVERFLOW WEIR - SECTION Y-Y
SEE SETOUT ON SHEET #6
1:100



TYPICAL DETAIL OUTLET PROTECTION FROM HEADWALL 2/1
1:50



BIO-RETENTION NOTES

- HYDRAULIC CONDUCTIVITY OF 160mm/hr MUST BE WELL GRADED AND HAVE THE FOLLOWING:
 - PARTICLE SIZE DISTRIBUTION
 - CLAY AND SILT <3% (<0.05mm)
 - VERY FINE SAND 5-30% (0.05-0.15mm)
 - FINE SAND 10-30% (0.15-0.25mm)
 - MEDIUM TO COARSE SAND 40-60% (0.25-1.0 mm)
 - COARSE SAND 7-10% (1.0-2.0mm)
 - FINE GRAVEL <3% (2.0-3.4mm)
- SOIL-BASED FILTER MEDIA PROPERTIES:
 - TOTAL NITROGEN (TN) CONTENT- <1000mg/kg
 - ORTHOPHOSPHATE (PO) CONTENT- <80 mg/kg
 - ORGANIC MATTER CONTENT- AT LEAST 3% (w/w)
 - pH- AS SPECIFIED FOR NATURAL SOILS AND SOIL BLENDS- 5.5-7.5 (pH 1:5 IN WATER)
 - ELECTRICAL CONDUCTIVITY (EC)- AS SPECIFIED FOR NATURAL SOILS AND SOIL BLENDS- <1.2 dS/m
- WHERE LOCALLY AVAILABLE SOIL-BASED MATERIAL IS NOT AVAILABLE AN ENGINEERED FILTER MEDIA MAY BE USED TO THE SPECIFICATION SET BY THE SUPERVISING ENGINEER.
- PRIOR TO HANDOVER A GEOTECHNICAL ENGINEER IS TO UNDERTAKE INSITU SATURATION HYDRAULIC CONDUCTIVITY TESTING THE BIORETENTION SYSTEMS IN ACCORDANCE WITH PRACTICE NOTE 1 OF THE FAWB GUIDELINES. WHERE THE HYDRAULIC CONDUCTIVITY OF THE SOIL DOES NOT ACHIEVE 100mm PER HOUR, THEN REMEDIATION WORKS WILL BE REQUIRED OVER THE WHOLE FILTER AREA TO RESTORE THE CONDUCTIVITY. THE TEST IS TO BE REPEATED UNTIL THE HYDRAULIC CONDUCTIVITY IS ACHIEVED. A GEOTECHNICAL ENGINEER IS THEN TO CERTIFY THAT IN ACCORDANCE WITH PRACTICE NOTE 1 OF THE FAWB GUIDELINES, THE SATURATION HYDRAULIC CONDUCTIVITY IS WITHIN TOLERANCE TO THE RATE SPECIFIED IN MUSIC FOR EACH OF THE BIORETENTION SYSTEMS.

ISSUE FOR C.C.

REVISIONS	No	DATE	REVISION DETAILS	BY
A	29.07.14	ISSUE FOR C.C.		K.G.

NOTES:
THIS IS A COLOURED PLAN. REPRODUCTION IN COLOUR ONLY.

- ORIGIN OF LEVELS SSM 97355 R.L.50.53 DATUM AHD



SCALE: 1:200	DATUM: AHD
LONG SECTION: H: N/A V: N/A	CROSS SECTION: H: 1:100 V: 1:100



CLIENT: THE TRUSTEES OF THE ROMAN CATHOLIC CHURCH FOR THE DIOCESE OF PARRAMATTA	TITLE: BIORETENTION PLAN & DETAILS CIVIL WORKS SUBDIVISION OF LOT 1 DP 1144668 ANDROMEDA DRIVE, CRANE BROOK
SURVEY: C.L./B.F.	DATE OF SURVEY: 18.01.13
DRAWN: K.G.	DATE OF PLAN: 29.07.14
DESIGNED: K.G./B.L.	DATE LAST SAVED: 01.08.14
APPROVED: B.L.	DATE APPROVED: 29.07.14

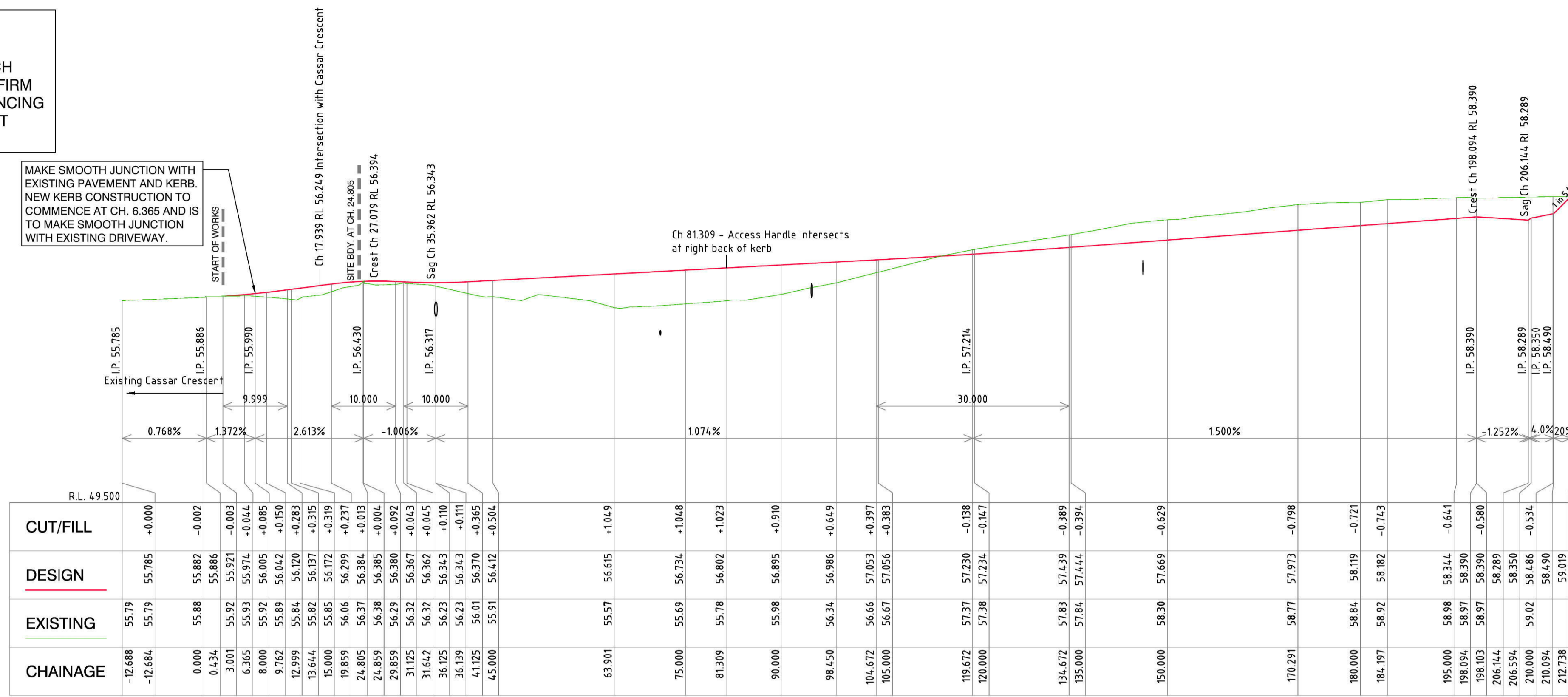
BIORETENTION PLAN & DETAILS CIVIL WORKS
SUBDIVISION OF LOT 1 DP 1144668 ANDROMEDA DRIVE, CRANE BROOK

JOB No 1117EG	ISSUE A
DWG No E1-3	
SHEET 3 OF 15 SHEETS	SIZE A1

NOTE

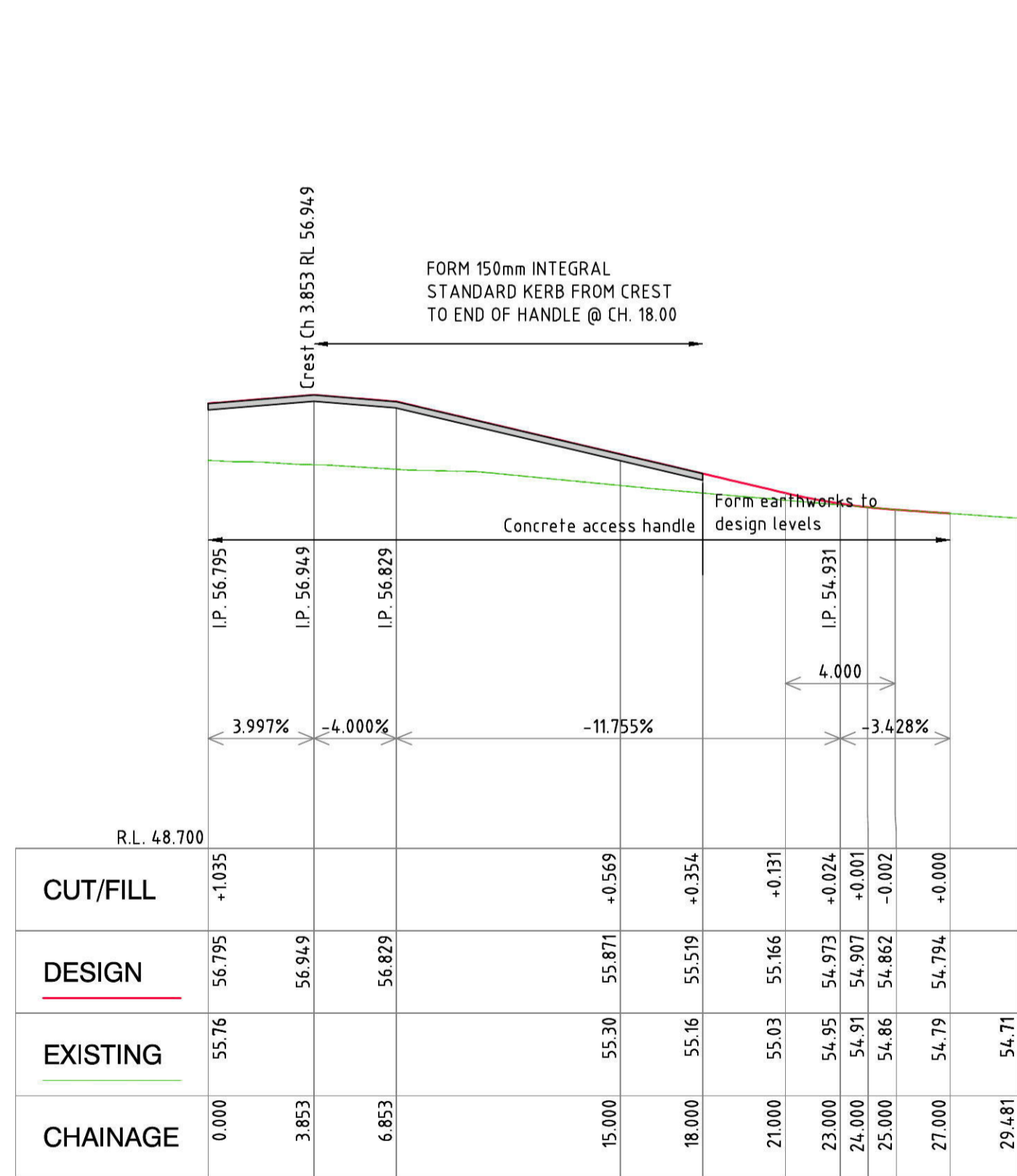
THE CONTRACTOR MUST OBTAIN A CURRENT D.B.Y.D. SEARCH BEFORE COMMENCING WORK AND SHALL POTHOLE TO CONFIRM THE LOCATION & LEVEL OF ALL SERVICES PRIOR TO COMMENCING ANY PHYSICAL WORK ON THE SITE. ANY POTENTIAL CONFLICT SHALL BE ADVISED TO THE DESIGNER FOR RESOLUTION.

MAKE SMOOTH JUNCTION WITH EXISTING PAVEMENT AND KERB. NEW KERB CONSTRUCTION TO COMMENCE AT CH. 6.365 AND IS TO MAKE SMOOTH JUNCTION WITH EXISTING DRIVEWAY.



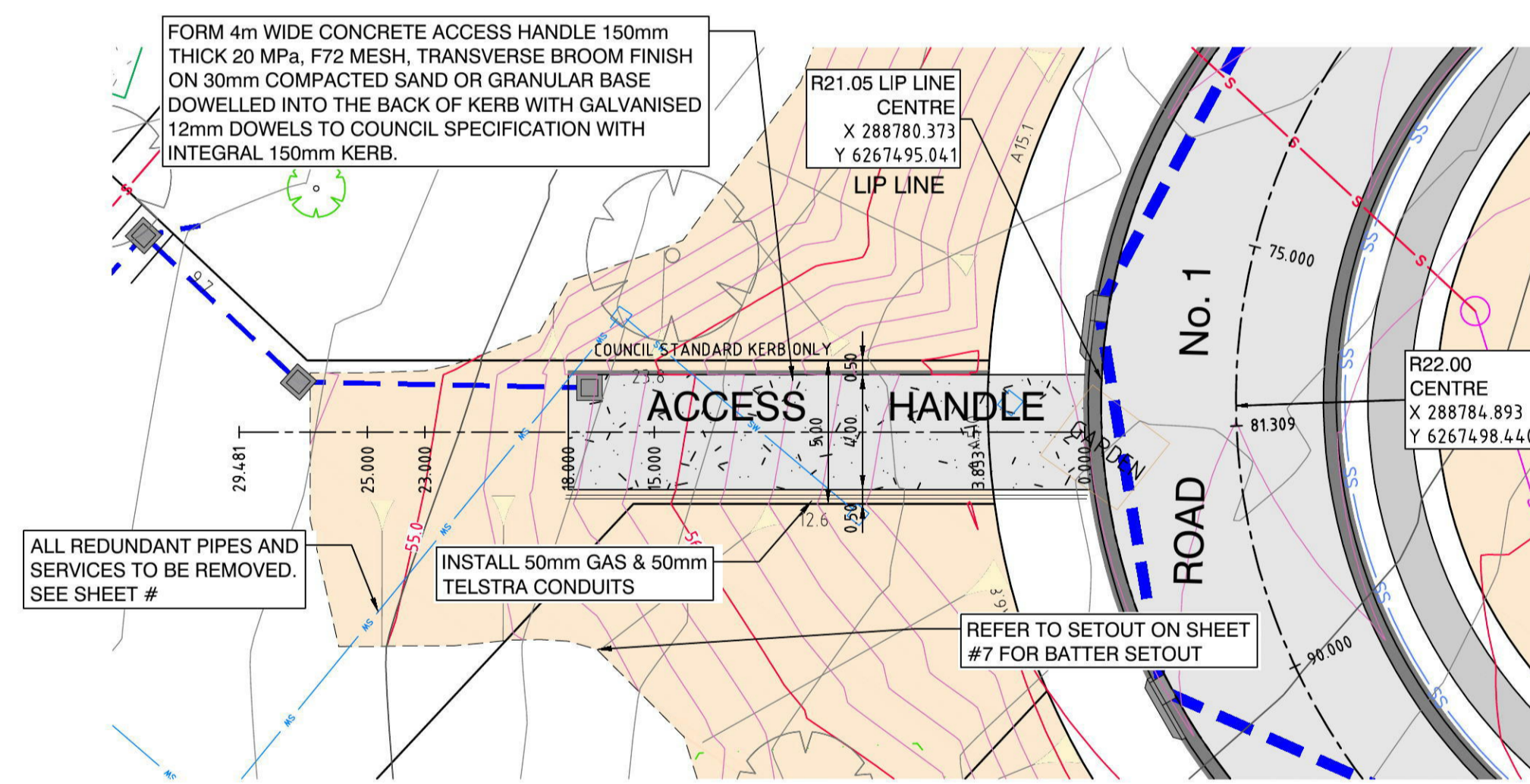
ROAD No. 1 - WITH CONNECTION INTO CASSAR CRESCENT (NORTH-SOUTH)

H 1:500 V 1:100



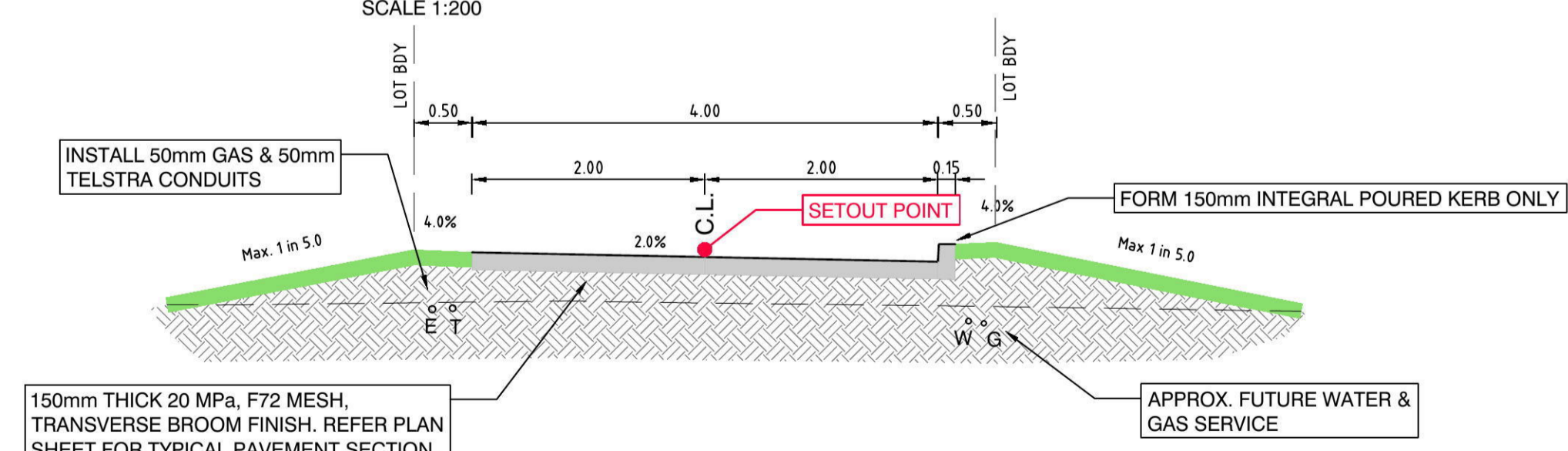
ACCESS HANDLE - LOT 19

H 1:200 V 1:20



ACCESS HANDLE - LOT 19

SCALE 1:200



ACCESS HANDLE TO LOT 19 - TYPICAL SECTION FROM CH. 3.853-18.000

1:50

STRING	CHAINAGE	EASTING	NORTHING	LEVEL
Road 1	-12.684	288773.509	6267577.395	55.785
Road 1	-5.000	288772.432	6267569.787	55.844
Road 1	0.000	288771.731	6267564.837	55.882
Road 1	0.239	288771.698	6267564.600	55.884
Road 1	0.243	288771.697	6267564.596	55.884
Road 1	6.365	288770.922	6267558.524	55.974
Road 1	6.787	288770.868	6267558.105	55.982
Road 1	9.762	288770.492	6267555.154	56.042
Road 1	13.644	288770.000	6267551.303	56.137
Road 1	15.000	288769.828	6267549.958	56.172
Road 1	24.805	288768.586	6267540.232	56.384
Road 1	31.642	288767.629	6267533.462	56.362
Road 1	36.139	288766.999	6267529.009	56.343
Road 1	45.000	288765.758	6267520.236	56.412
Road 1	63.901	288763.110	6267501.521	56.615
Road 1	75.000	288764.335	6267490.608	56.734
Road 1	81.309	288767.390	6267485.113	56.802
Road 1	90.000	288773.867	6267479.403	56.895
Road 1	98.450	288781.804	6267476.658	56.986
Road 1	105.000	288788.289	6267475.738	57.056
Road 1	120.000	288803.140	6267473.632	57.234
Road 1	135.000	288817.991	6267471.525	57.444
Road 1	150.000	288832.843	6267469.419	57.669
Road 1	170.291	288852.933	6267466.569	57.973
Road 1	180.000	288862.606	6267465.819	58.119
Road 1	184.197	288866.802	6267465.875	58.182
Road 1	195.000	288877.529	6267467.076	58.344
Road 1	198.103	288880.568	6267467.700	58.390
Access Handle	0.000	288763.166	6267481.901	56.795
Access Handle	15.000	288750.867	6267473.315	55.871
Access Handle	18.000	288748.407	6267471.597	55.519
Access Handle	24.000	288743.487	6267468.163	54.907
Access Handle	25.000	288742.667	6267467.590	54.862

ROAD CENTRELINE SETOUT TABLE

NO.	DATE	REVISION DETAILS	BY
A	29.07.14	ISSUE FOR C.C.	K.G.

NOTES:
 THIS IS A COLOURED PLAN. REPRODUCTION IN COLOUR ONLY.
 1. ORIGIN OF LEVELS SSM 97355 R.L. 50.53 DATUM AHD



SCALE: 1:200
 LONG SECTION: H: 1:500 V: 1:100
 CROSS SECTION: H: 1:50 V: 1:50
 DATUM: AHD
 PREPARED BY: RPS

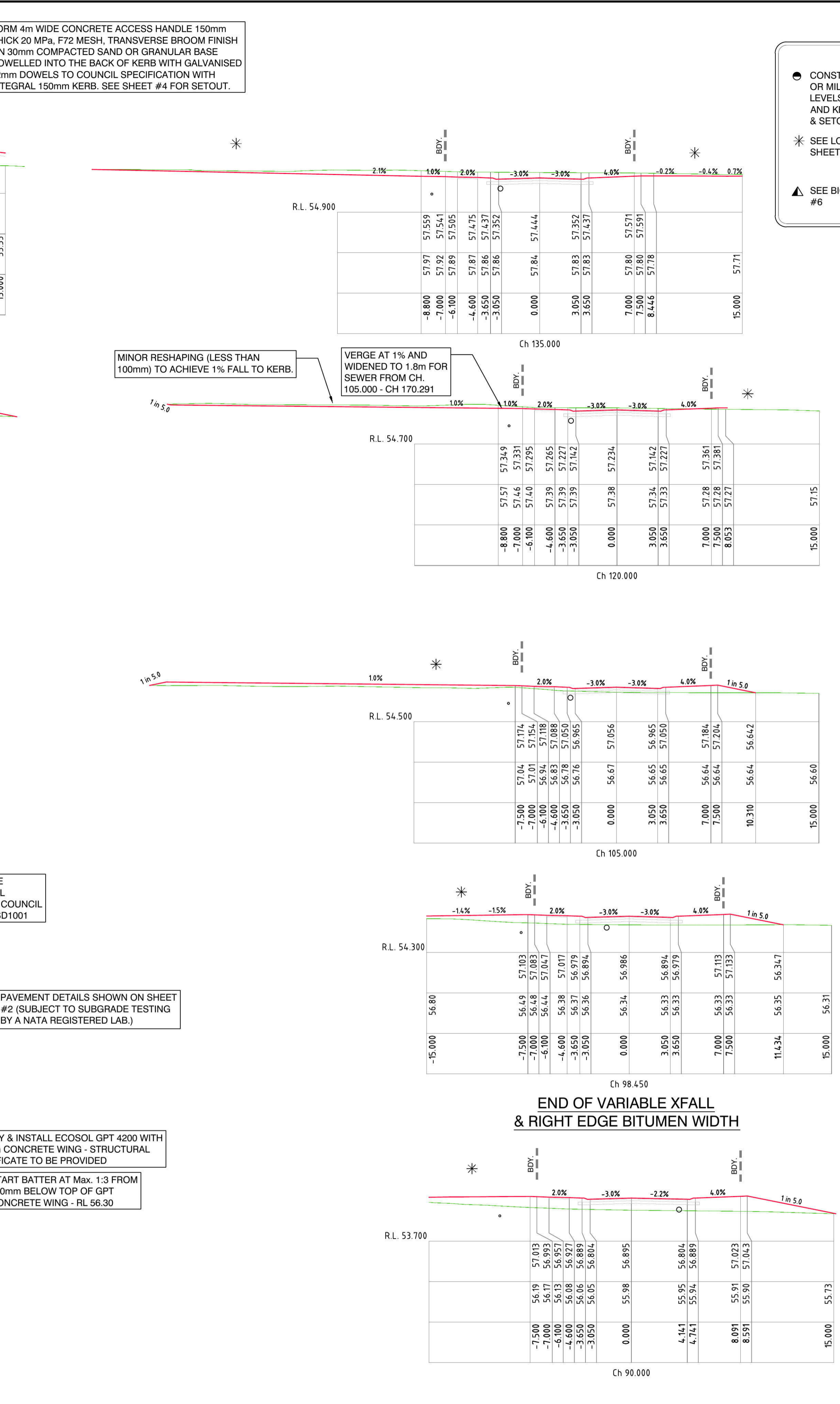
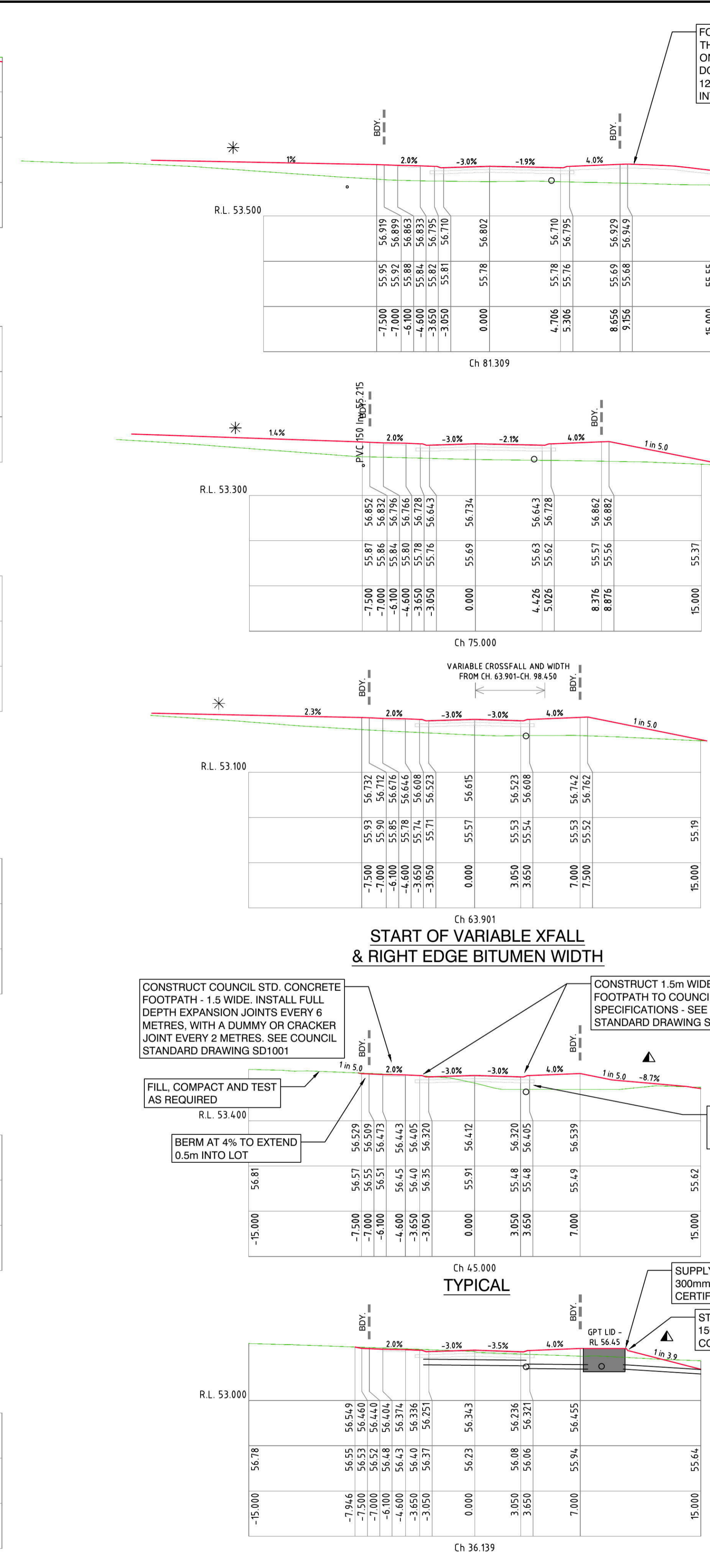
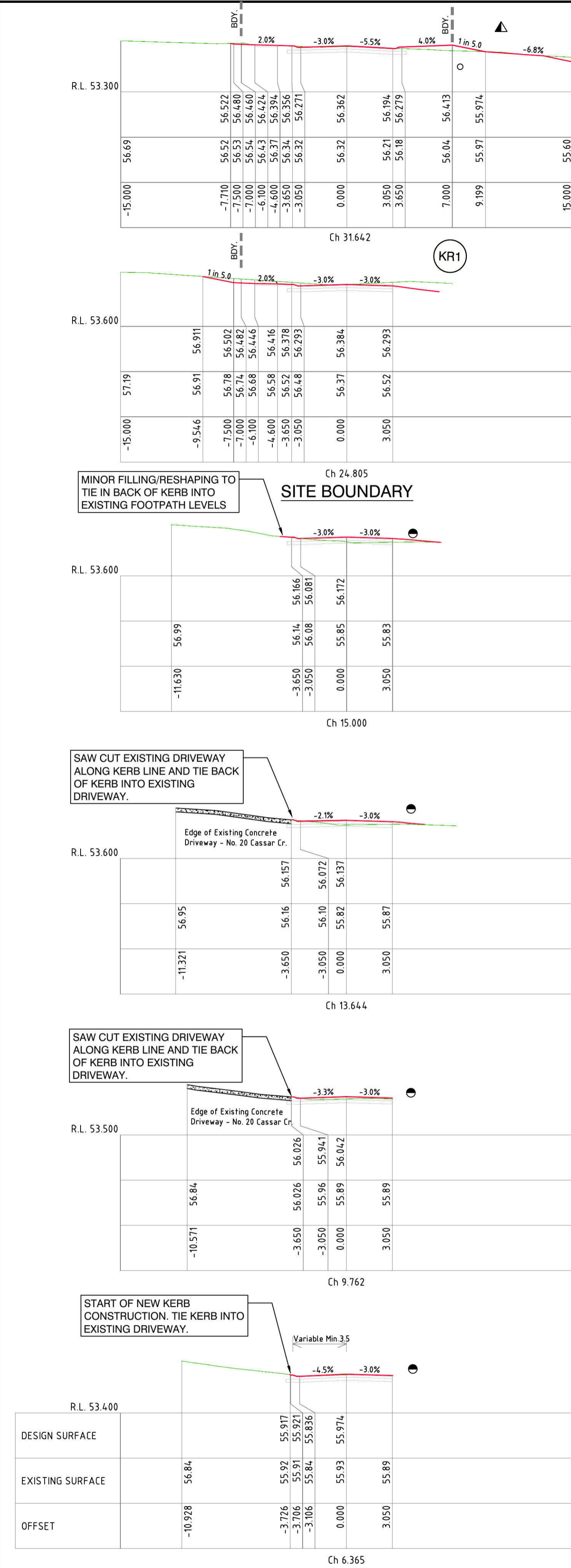


Level 9, 17 York Street Sydney, NSW 2000 (GPO BOX 4401, Sydney, NSW 2001) T: 02 9248 8800 F: 02 9248 8810
 Suite 2, Level 1, Aquarius Tower 688 Princess Highway Sutherland, NSW, 2258 DX 4522 Sutherland T: 02 9642 1177 F: 02 9642 4631

CLIENT: THE TRUSTEES OF THE ROMAN CATHOLIC CHURCH FOR THE DIOCESE OF PARRAMATTA
 SURVEY: C.L.B.F.
 DRAWN: K.G.
 DESIGNED: K.G./B.L.
 APPROVED: B.L.
 DATE OF SURVEY: 18.01.13
 DATE OF PLAN: 29.07.14
 DATE LAST SAVED: 01.08.14
 DATE APPROVED: 29.07.14

TITLE: ROAD No. 1 & ACCESS HANDLE LONG. SECTIONS & SETOUT CIVIL WORKS
 SUBDIVISION OF LOT 1 DP 1144668 ANDROMEDA DRIVE, CRANE BROOK

ISSUE FOR C.C.
 JOB No: 1117EG
 DWG No: E1-4
 SHEET 4 OF 15 SHEETS
 ISSUE: A



- CONSTRUCT FULL DEPTH PAVEMENT OR MILL EXISTING AC TO DESIGN LEVELS & TIE INTO EXISTING PAVEMENT AND KERB. SEE INTERSECTION DETAIL & SETOUT ON SHEET #7.
- * SEE LOT REGRADING SETOUT ON SHEET #6
- ▲ SEE BIORETENTION SETOUT ON SHEET #6

REVISIONS	DATE	REVISION DETAILS	BY
A	29.07.14	ISSUE FOR C.C.	K.G.

NOTES:

THIS IS A COLOURED PLAN. REPRODUCTION IN COLOUR ONLY.

1. ORIGIN OF LEVELS SSM 97365 R.L.50.53 DATUM AHD

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SCALE: 1:200

DATUM: AHD

LONG SECTION: H: N/A V: N/A

CROSS SECTION: H: 1:200 V: 1:200

SCALE IN METRES AT ORIGINAL REDUCTION RATIO

PREPARED BY

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CLIENT: THE TRUSTEES OF THE ROMAN CATHOLIC CHURCH FOR THE DIOCESE OF PARRAMATTA

SURVEY: C.L./B.F.

DRAWN: K.G.

DESIGNED: K.G./B.L.

APPROVED: B.L.

DATE OF SURVEY: 18.01.13

DATE OF PLAN: 29.07.14

DATE LAST SAVED: 01.08.14

DATE APPROVED: 29.07.14

TITLE

ROAD No.1 CROSS SECTIONS (1)
CIVIL WORKS
SUBDIVISION OF LOT 1 DP 1144668
ANDROMEDA DRIVE, CRANE BROOK

ISSUE FOR C.C.

JOB No: 1117EG

DWG No: E1-5

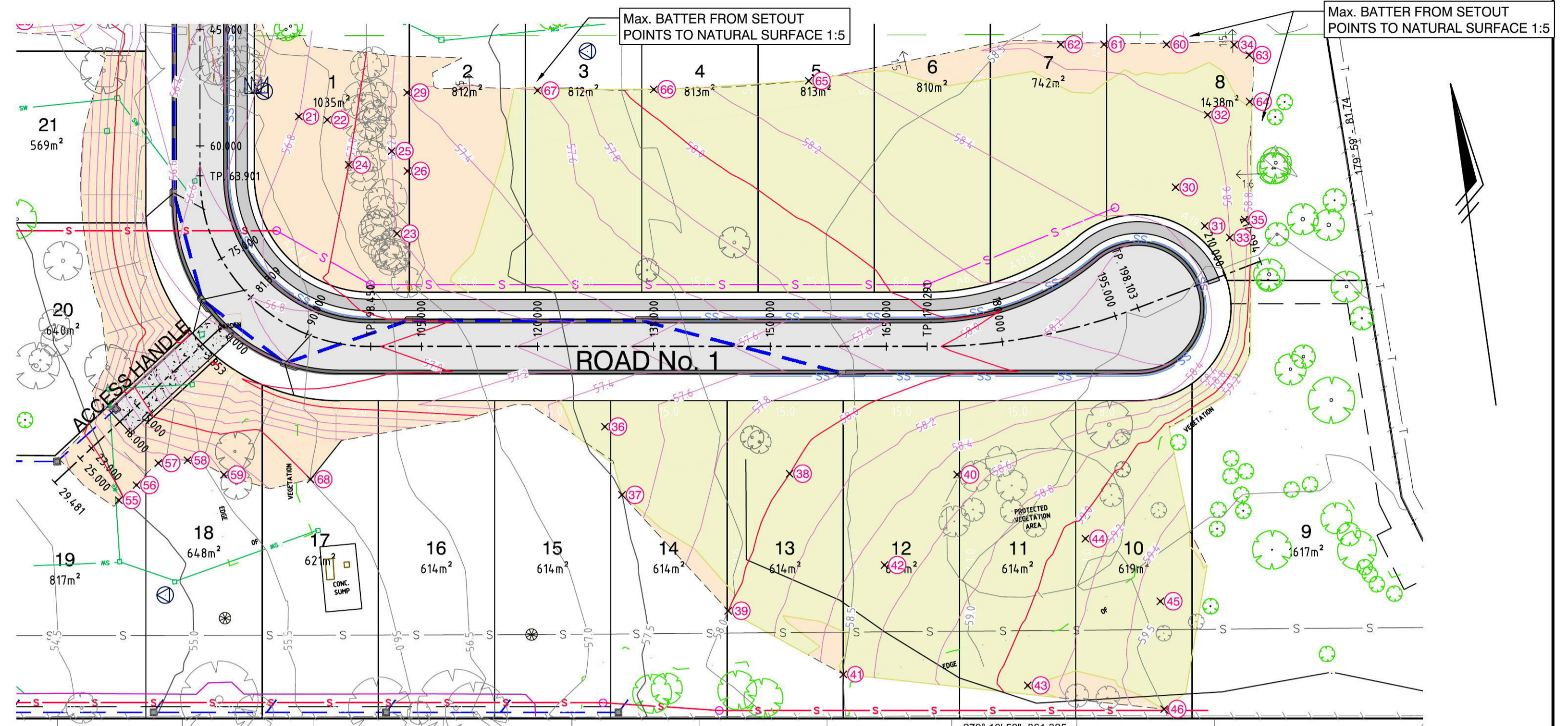
SHEET 5 OF 15 SHEETS

SIZE: A1

CO-ORDINATE SCHEDULE				
Point #	Easting	Northing	Desc.	Level
2	288734.016	6267533.076	BASIN TOE	54.500
3	288735.371	6267538.191	BASIN TOE	54.500
4	288750.204	6267533.641	BASIN TOE	54.500
5	288749.079	6267526.045	BASIN TOE	54.500
6	288734.858	6267527.027	BASIN TOE	54.500
7	288741.968	6267526.536	BASIN TOE	54.500
8	288742.768	6267535.958	BASIN TOE	54.500
9	288732.233	6267532.828	BASIN TOP	54.950
10	288732.271	6267533.518	BASIN TOP	54.950
11	288733.475	6267538.274	BASIN TOP WEIR	54.950
12	288735.493	6267540.069	BASIN TOP WEIR	54.950
13	288750.739	6267535.359	BASIN TOP	54.950
14	288751.984	6267533.377	BASIN TOP	54.950
15	288750.859	6267525.781	BASIN TOP	54.950
16	288748.955	6267524.249	BASIN TOP	54.950
17	288734.734	6267525.231	BASIN TOP	54.950
18	288733.075	6267526.778	BASIN TOP	54.950
19	288743.304	6267537.677	BASIN TOP	54.950
20	288741.844	6267524.740	BASIN TOP	54.950
21	288776.819	6267507.353	LOT REGRADE	56.800
22	288780.386	6267506.408	LOT REGRADE	56.900
23	288787.235	6267490.612	LOT REGRADE	57.200
24	288782.318	6267500.283	LOT REGRADE	57.000

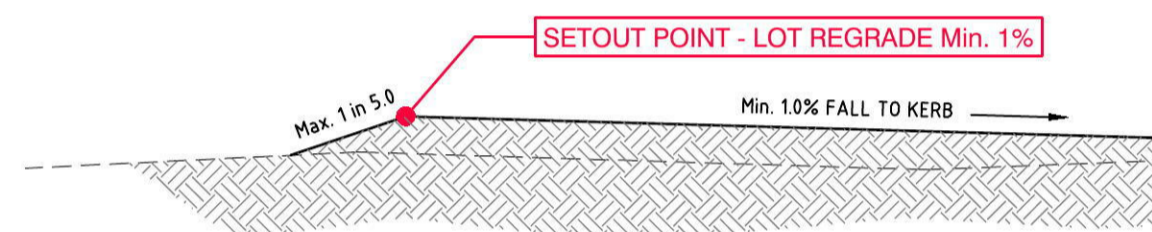
CO-ORDINATE SCHEDULE				
Point #	Easting	Northing	Desc.	Level
25	288788.056	6267501.251	LOT REGRADE	57.200
26	288789.711	6267498.426	LOT REGRADE	57.300
29	288791.083	6267508.451	LOT REGRADE	57.400
30	288887.558	6267482.419	LOT REGRADE	58.500
31	288890.585	6267476.952	LOT REGRADE	58.500
32	288892.970	6267491.098	LOT REGRADE	58.600
33	288893.574	6267475.011	LOT REGRADE	58.600
34	288897.618	6267499.572	LOT REGRADE - Min 1%	58.700
35	288895.793	6267477.025	LOT REGRADE - Min 1%	58.700
36	288810.301	6267462.170	LOT REGRADE	57.500
37	288811.243	6267453.142	LOT REGRADE	57.500
38	288833.048	6267452.818	LOT REGRADE	58.000
39	288822.724	6267436.411	LOT REGRADE	58.000
40	288854.432	6267449.681	LOT REGRADE	58.500
41	288836.278	6267426.213	LOT REGRADE	58.500
42	288843.504	6267439.431	LOT REGRADE	58.501
43	288859.633	6267421.449	LOT REGRADE	59.100
44	288869.667	6267439.161	LOT REGRADE	59.100
45	288878.093	6267429.798	LOT REGRADE	59.500
46	288876.630	6267415.949	LOT REGRADE	59.500
47	288734.320	6267539.765	BASIN WEIR OVERFLOW	54.650
48	288732.551	6267542.628	BASIN WEIR OVERFLOW	54.616
49	288730.750	6267545.542	BASIN WEIR OVERFLOW	54.582

CO-ORDINATE SCHEDULE				
Point #	Easting	Northing	Desc.	Level
50	288766.710	6267549.623	ROAD LEVELS	56.100
51	288767.217	6267553.586	ROAD LEVELS	56.000
52	288767.755	6267557.800	ROAD LEVELS	55.900
53	288733.536	6267538.517	BASIN BOTTOM WEIR	54.650
54	288735.243	6267540.074	BASIN BOTTOM WEIR	54.650
55	288746.858	6267461.587	HANDLE BATTER	54.969
56	288749.395	6267463.194	HANDLE BATTER	55.099
57	288752.580	6267465.619	HANDLE BATTER	55.267
58	288756.355	6267465.454	HANDLE BATTER	55.430
59	288760.740	6267462.936	HANDLE BATTER	55.600
60	288888.982	6267500.847	LOT REGRADE - Min 1%	58.655
61	288881.013	6267501.977	LOT REGRADE - Min 1%	58.636
62	288875.480	6267502.762	LOT REGRADE - Min 1%	58.634
63	288899.350	6267497.972	LOT REGRADE - Min 1%	58.747
64	288898.572	6267492.023	LOT REGRADE - Min 1%	58.777
65	288842.609	6267502.668	LOT REGRADE - Min 1%	58.359
66	288822.652	6267504.381	LOT REGRADE - Min 1%	58.074
67	288807.780	6267506.347	LOT REGRADE - Min 1%	57.592
68	288771.736	6267460.785	HANDLE BATTER	56.000



LOT FILLING SETOUT

1:500

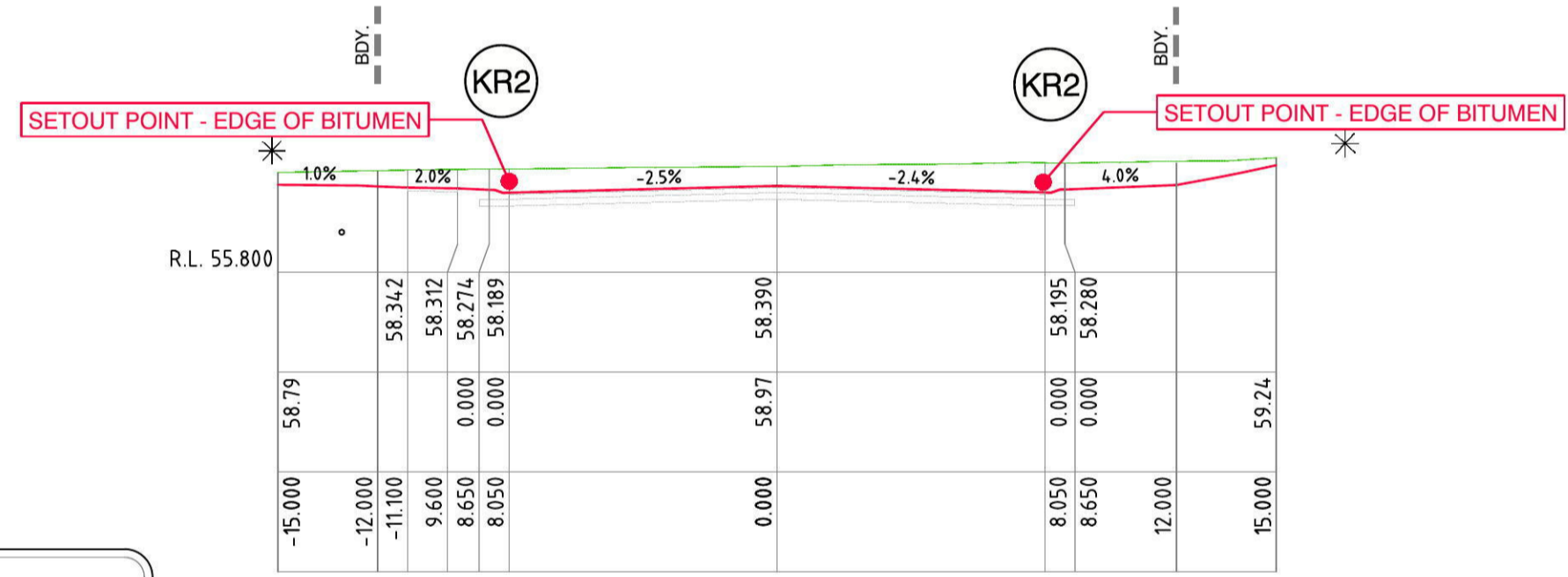


DETAIL LOT FILLING SETOUT POINT

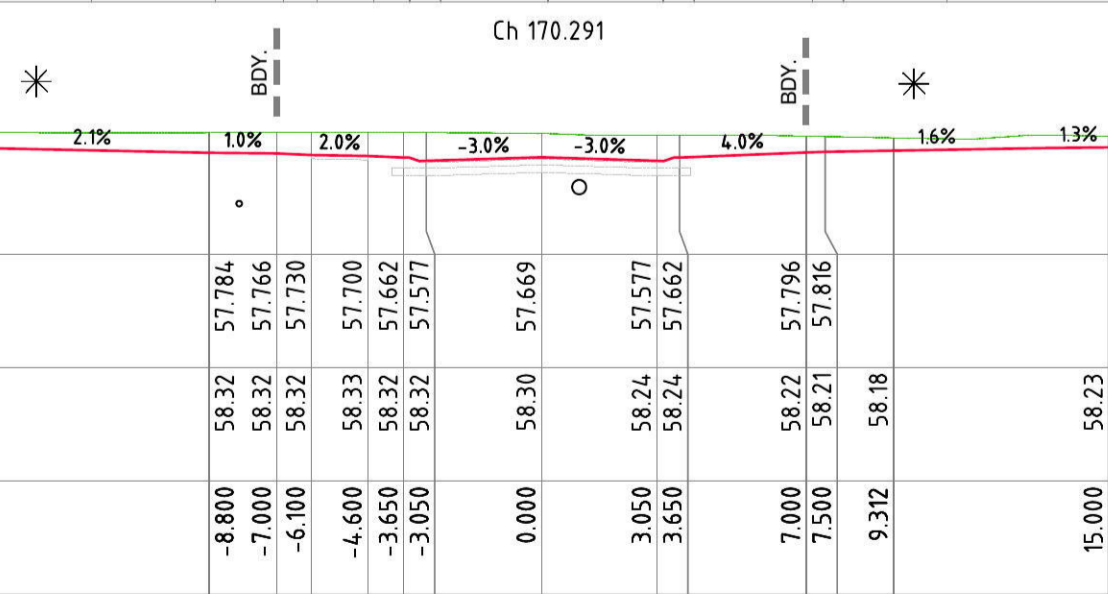
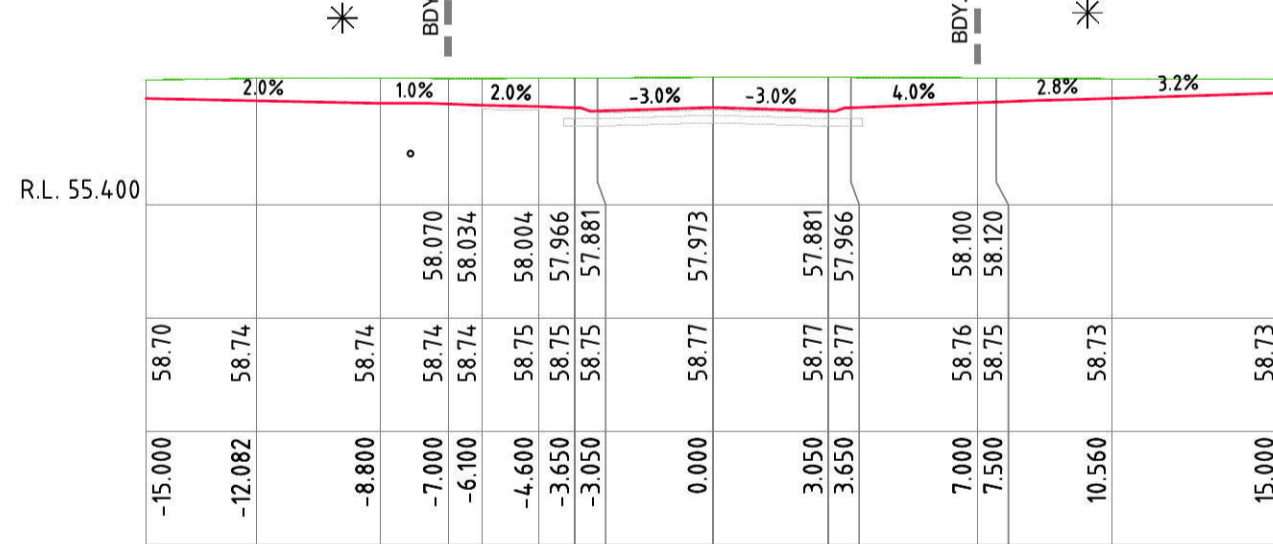
NTS

LEGEND

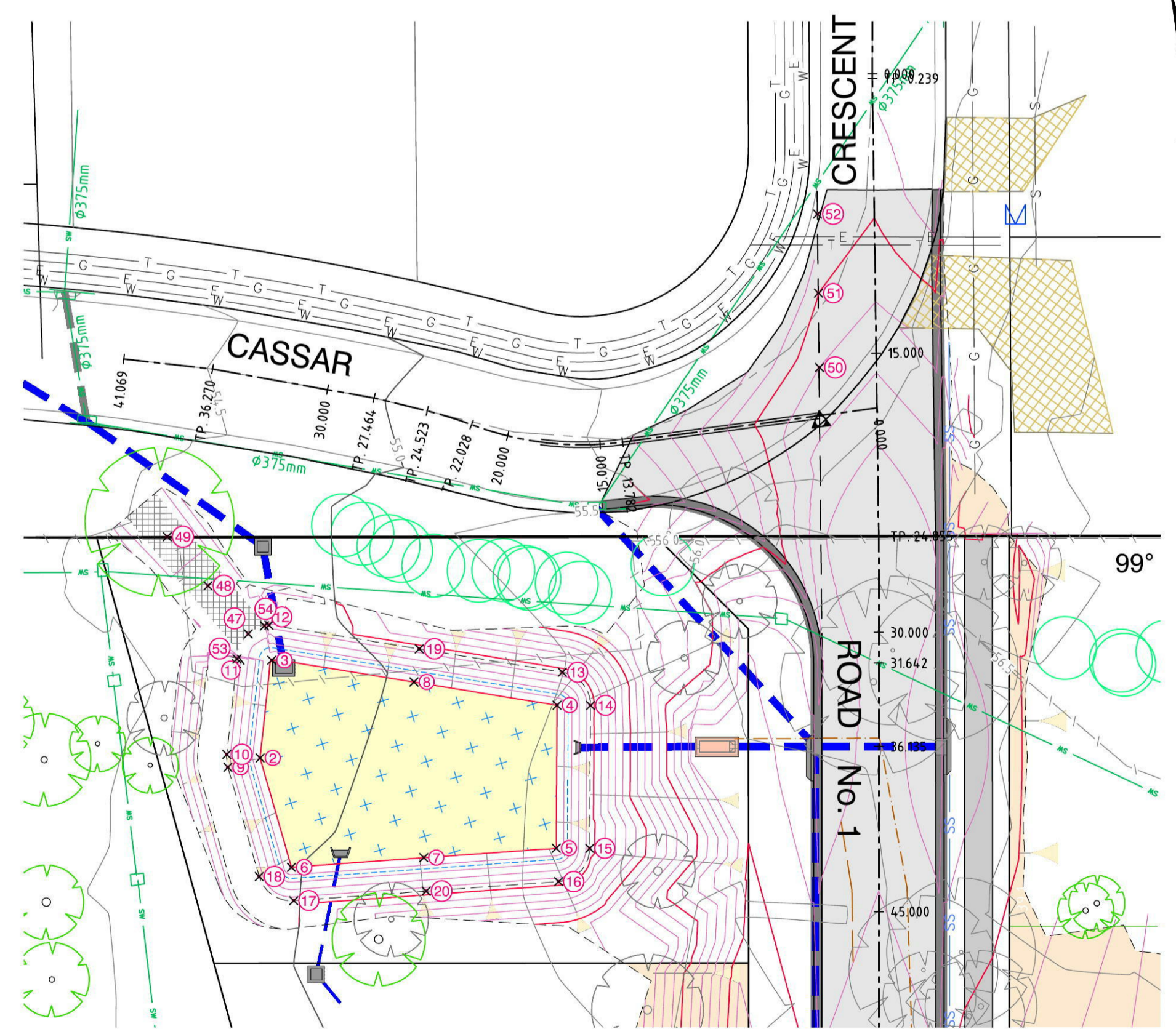
- LOT REGRADING/FILLING (Min. 1% TO KERB)
- LOT REGRADING/CUT (Min. 1% TO KERB)



CUL-DE-SAC HEAD - REFER KR2 FOR KERB SETOUT FOR CHAINAGES 170.291-END ROAD 1



ROAD No. 1 CROSS SECTIONS CONT.



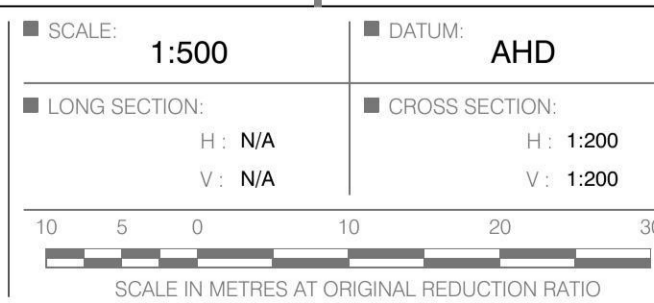
BIORETENTION AND INTERSECTION SETOUT

1:250



* SEE LOT REGRADING SETOUT ON THIS SHEET

NOTES:
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REPRODUCTION IN COLOUR ONLY.



SCALE: 1:500
DATUM: AHD
LONG SECTION: H: N/A, V: N/A
CROSS SECTION: H: 1:200, V: 1:200
PREPARED BY: RPS
rpsgroup.com

Level 9, 17 York Street
Sydney, NSW 2000
(GPO BOX 4401, Sydney, NSW 2001)
T: 02 9248 8800
F: 02 9248 8810

CLIENT:
THE TRUSTEES OF THE ROMAN CATHOLIC
CHURCH FOR THE DIOCESE OF PARRAMATTA
SURVEY: C.L./B.F.
DRAWN: K.G.
DESIGNED: K.G./B.L.
APPROVED: B.L.

TITLE:
ROAD No.1 CROSS SECTIONS (2) & SETOUT
CIVIL WORKS
SUBDIVISION OF LOT 1 DP 1144668
ANDROMEDA DRIVE, CRANE BROOK

ISSUE FOR C.C.

JOB No: I117EG
DWG No: E1-6
SHEET 6 OF 15 SHEETS
ISSUE: A

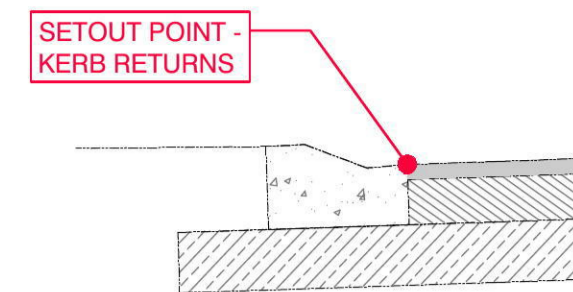
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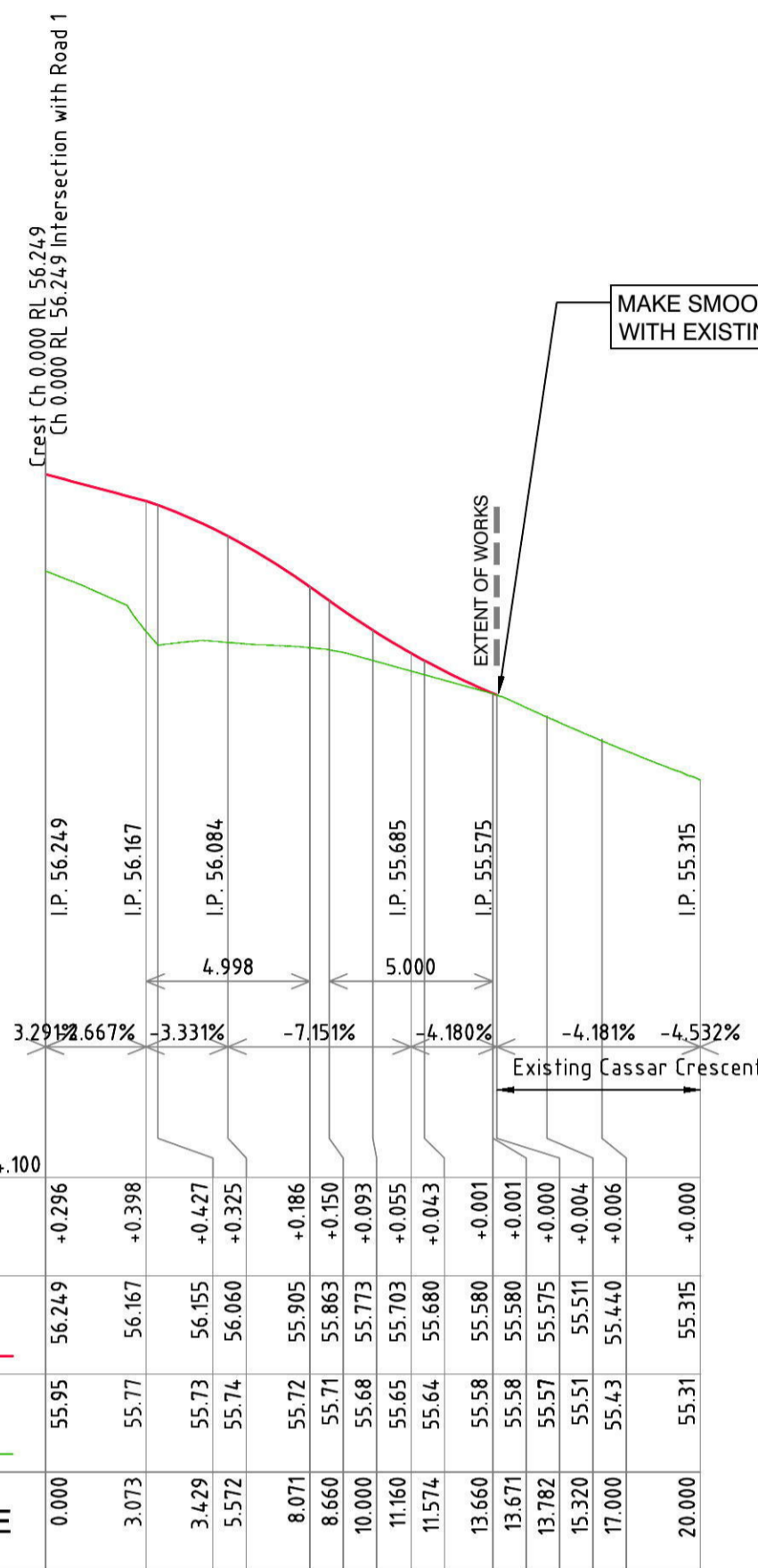
ROAD CENTRELINE SETOUT TABLE				
STRING	CHAINAGE	EASTING	NORTHING	LEVEL
Cassar Crescent	0.000	288769.456	626754.7042	56.249
Cassar Crescent	3.429	288766.027	626754.7067	56.155
Cassar Crescent	10.000	288759.456	626754.7116	55.773
Cassar Crescent	11.574	288757.882	626754.7127	55.680
Cassar Crescent	13.671	288755.785	626754.7143	55.580
Cassar Crescent	13.782	288755.674	626754.7143	55.575
Cassar Crescent	15.320	288754.139	626754.7226	55.511
Cassar Crescent	20.000	288749.609	626754.8339	55.315

KERB SETOUT TABLE (LIP LINE)				
KERB	CHAINAGE	EASTING	NORTHING	LEVEL
KR1	0.000	288764.609	626753.889	56.194
KR1	3.825	288764.332	626753.7675	56.101
KR1	11.476	288759.471	626754.3282	55.663
KR1	15.301	288755.762	626754.4093	55.465
KR2	0.000	288853.361	626746.9589	57.881
KR2	5.980	288859.325	626746.9274	57.965
KR2	11.960	288865.252	626747.0008	58.034
KR2	17.940	288870.958	626747.1770	58.097
KR2	23.919	288876.267	626747.4504	58.160

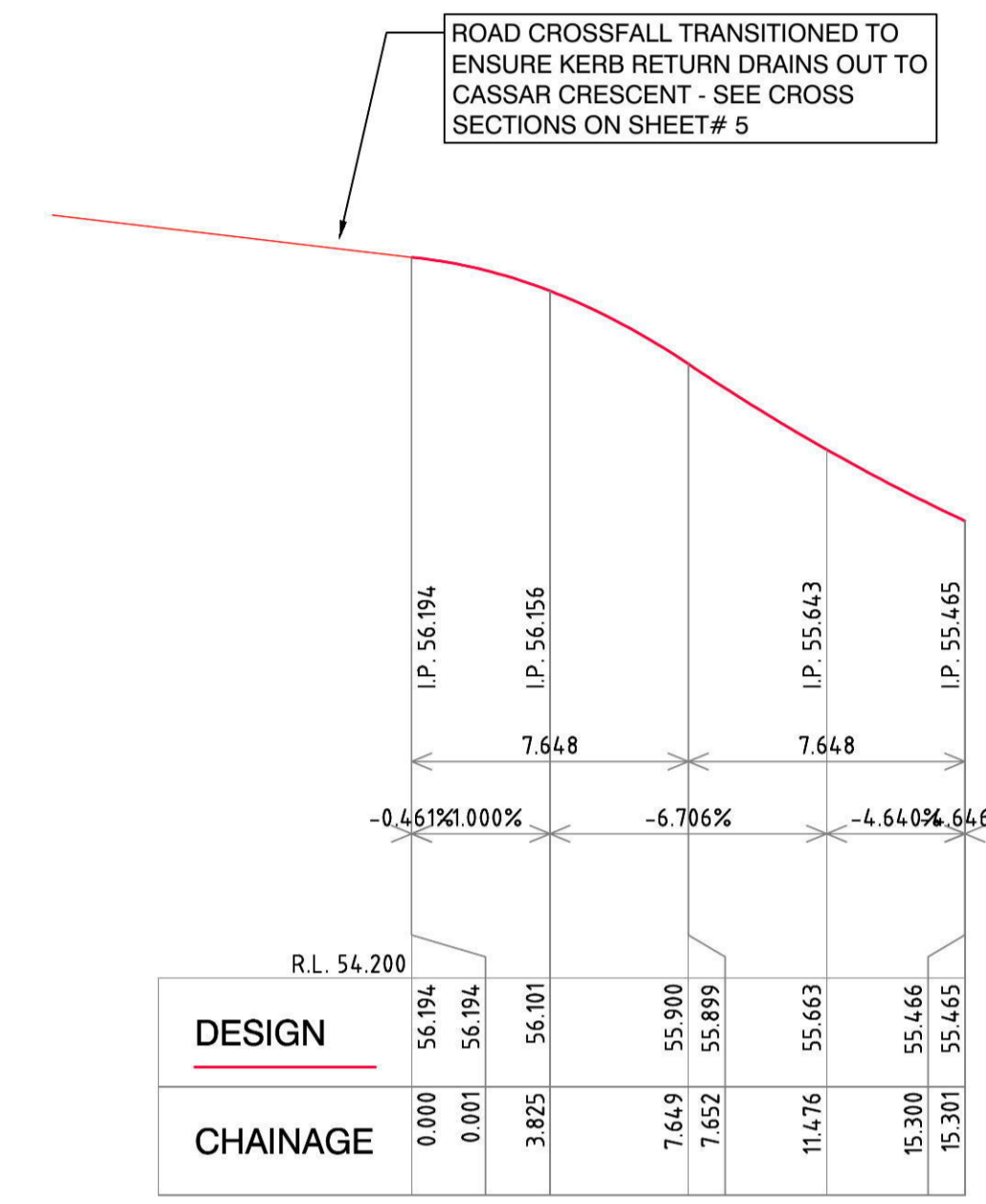
KR2	26.664	288878.791	626747.5551	58.189
KR2	29.826	288881.931	626747.5634	58.223
KR2	32.987	288884.863	626747.4508	58.256
KR2	36.148	288887.142	626747.2346	58.281
KR2	39.309	288888.420	626746.9478	58.290
KR2	42.471	288888.502	626746.6337	58.283
KR2	45.632	288887.377	626746.3405	58.259
KR2	48.793	288885.215	626746.1126	58.227
KR2	51.954	288882.346	626745.9848	58.195
KR2	54.881	288879.438	626745.9729	58.166
KR2	82.084	288852.504	626746.3550	57.881



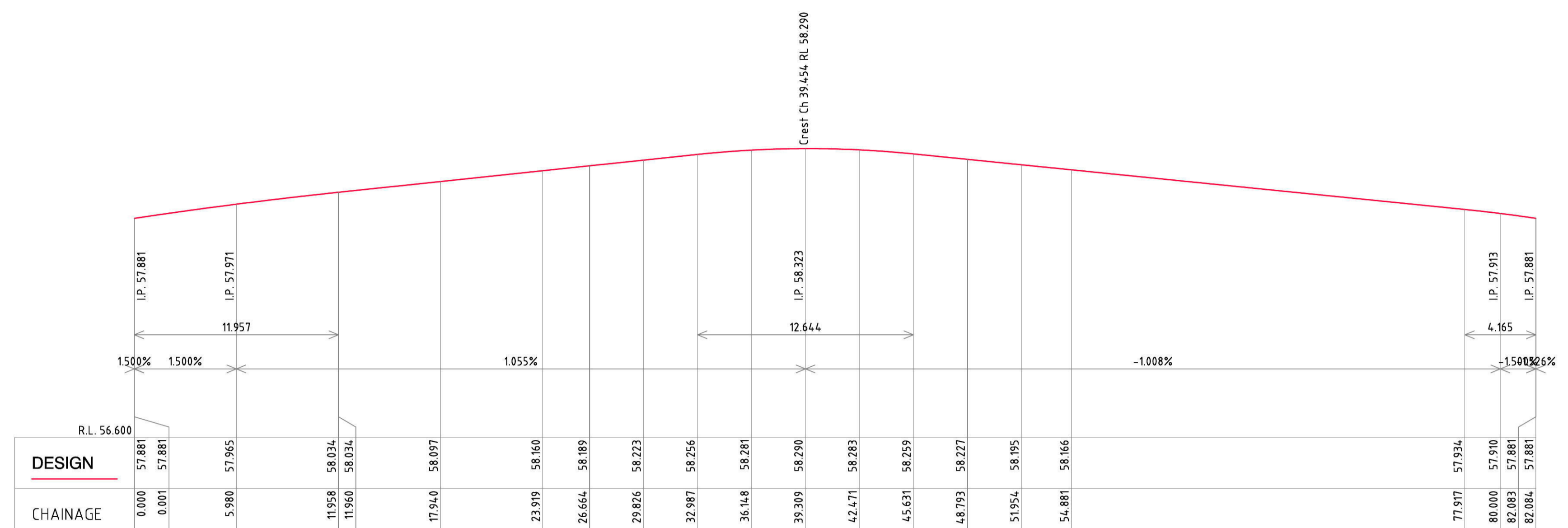
SETOUT POINT FOR KERB RETURNS - LIP LINE
NTS



CUT/FILL	DESIGN	EXISTING	CHAINAGE
	56.249	55.95	0.000
	56.167	55.77	3.073
	56.155	55.73	3.429
	56.084	55.74	5.572
	55.905	55.71	8.071
	55.773	55.68	10.000
	55.703	55.65	11.574
	55.680	55.64	13.660
	55.580	55.58	13.671
	55.575	55.57	13.782
	55.511	55.51	15.320
	55.440	55.43	17.000
	55.315	55.31	20.000

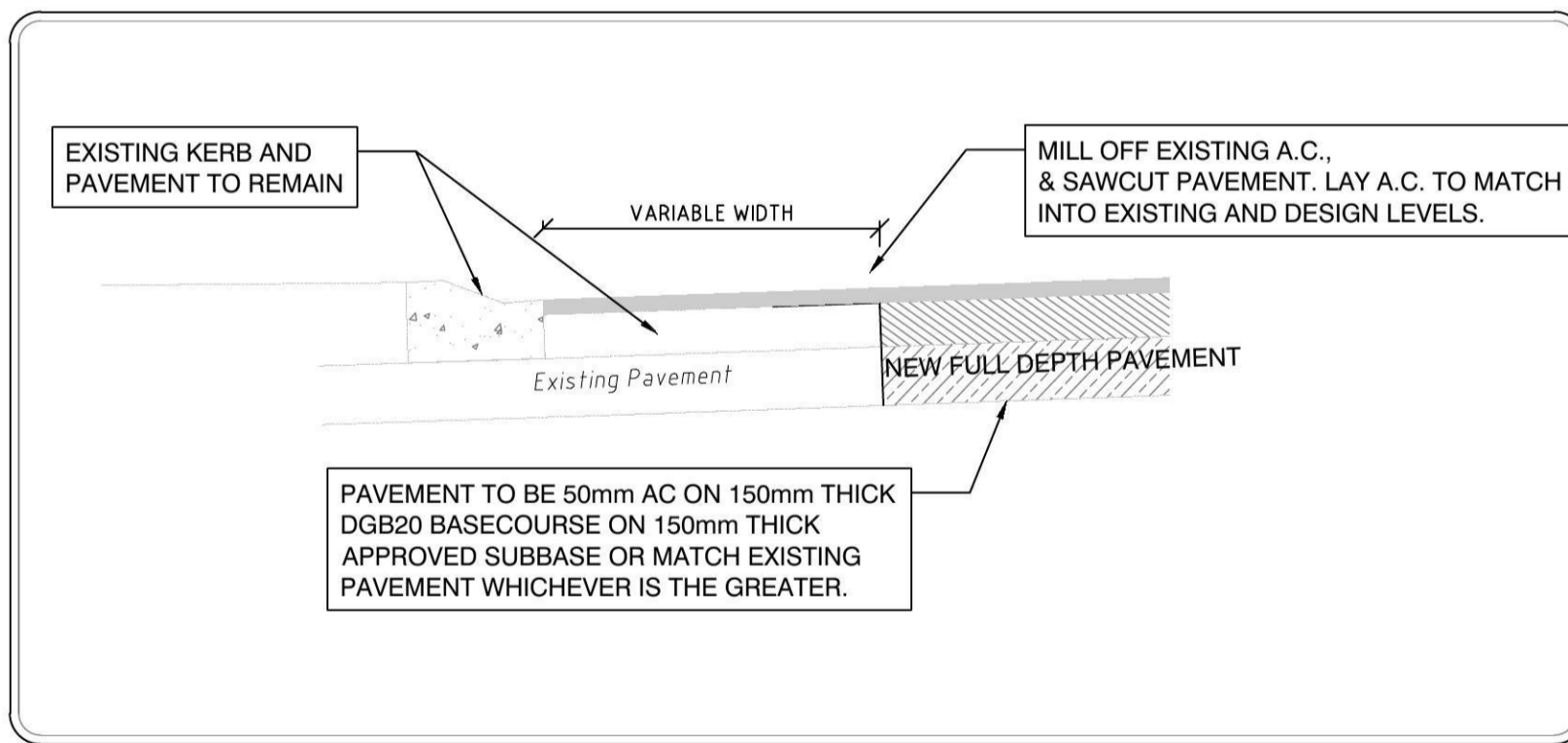


KERB RETURN 1 - LIP LINE
H 1:200 V 1:20



KERB RETURN 2 - CULDESAC LIP LINE
H 1:200 V 1:20

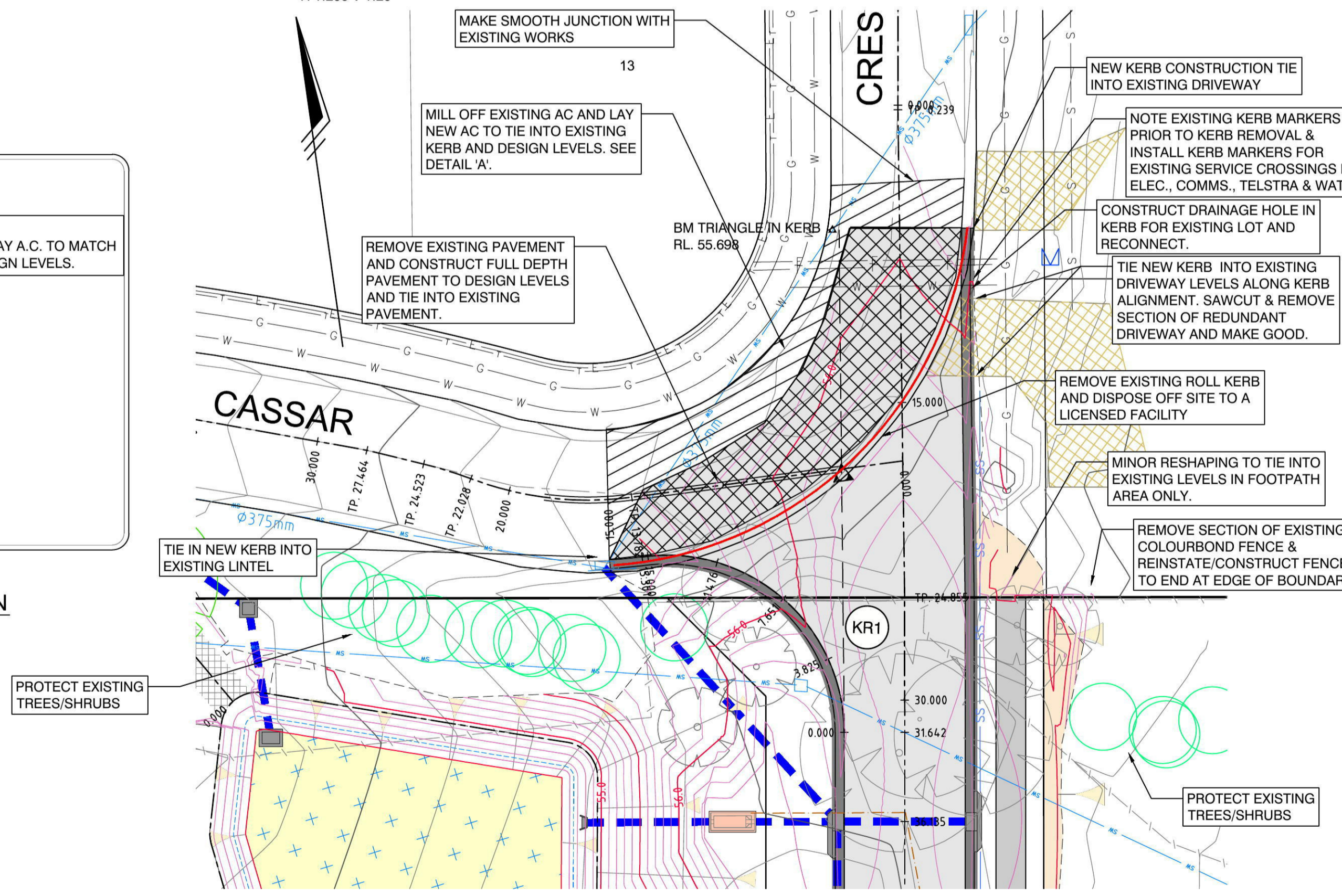
CASSAR CRESCENT (EAST-WEST) CENTRELINE
H 1:200 V 1:20



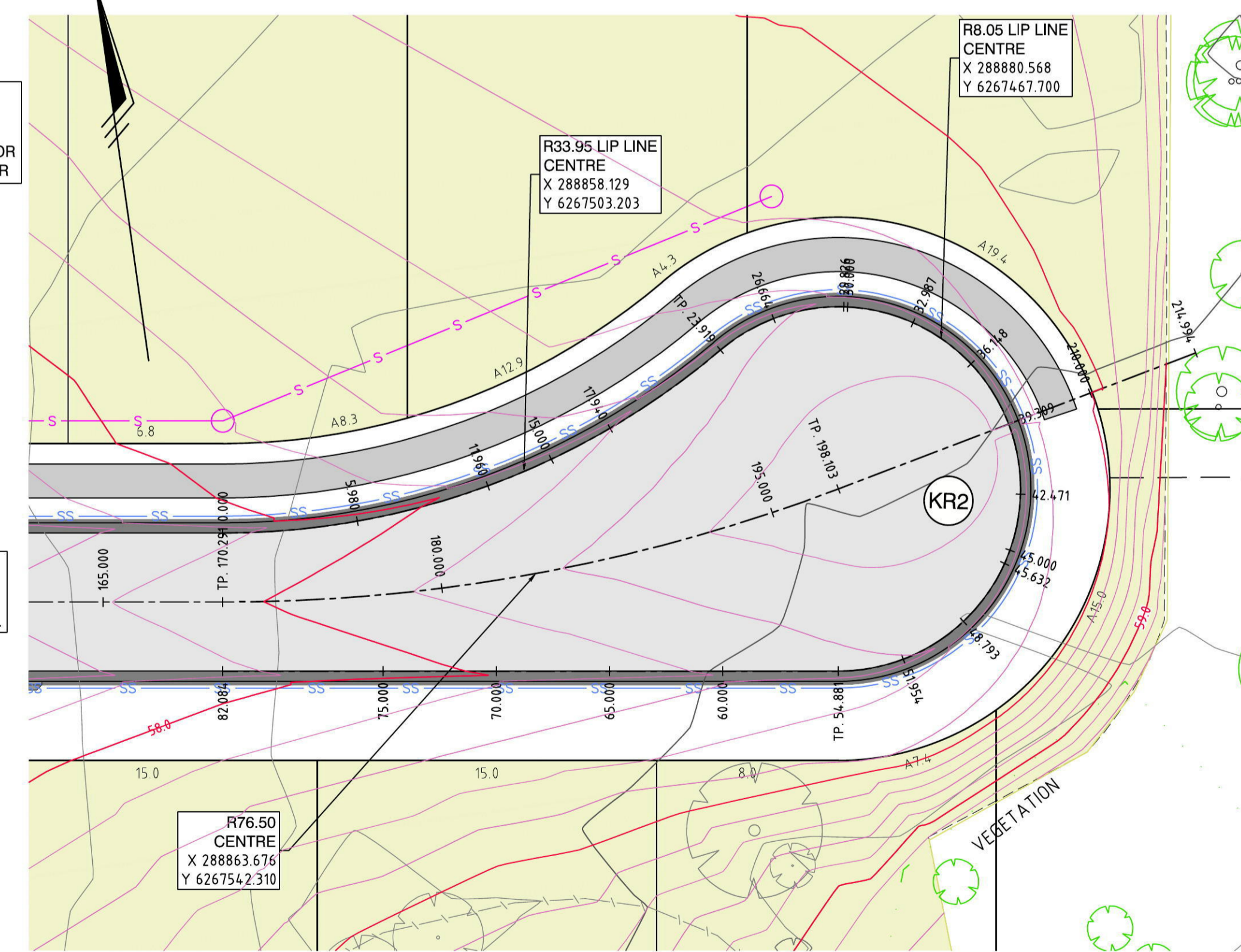
DETAIL 'A'
TYPICAL DETAIL NEW PAVEMENT TYING IN WITH EXISTING IN NEW INTERSECTION
NTS

LEGEND

- PAVEMENT TO BE REMOVED AND CONSTRUCTED TO DESIGN LEVELS
- REMOVE AND DISPOSE OF KERB AND GUTTER
- AC TO BE MILLED AND CONSTRUCTED TO DESIGN LEVELS
- CONSTRUCT PAVEMENT



PLAN KR1 & INTERSECTION DETAIL
SCALE 1:200



PLAN KR2 - CUL-DE-SAC
SCALE 1:200

NO.	DATE	REVISION DETAILS	BY
A	29.07.14	ISSUE FOR C.C.	K.G.

NOTES:
THIS IS A COLOURED PLAN. REPRODUCTION IN COLOUR ONLY.
1. ORIGIN OF LEVELS SSM 97355 R.L. 50.53 DATUM AHD



SCALE: 1:200
LONG SECTION: H: 1:200 V: 1:20
CROSS SECTION: H: N/A V: N/A
DATUM: AHD
SCALE IN METRES AT ORIGINAL REDUCTION RATIO

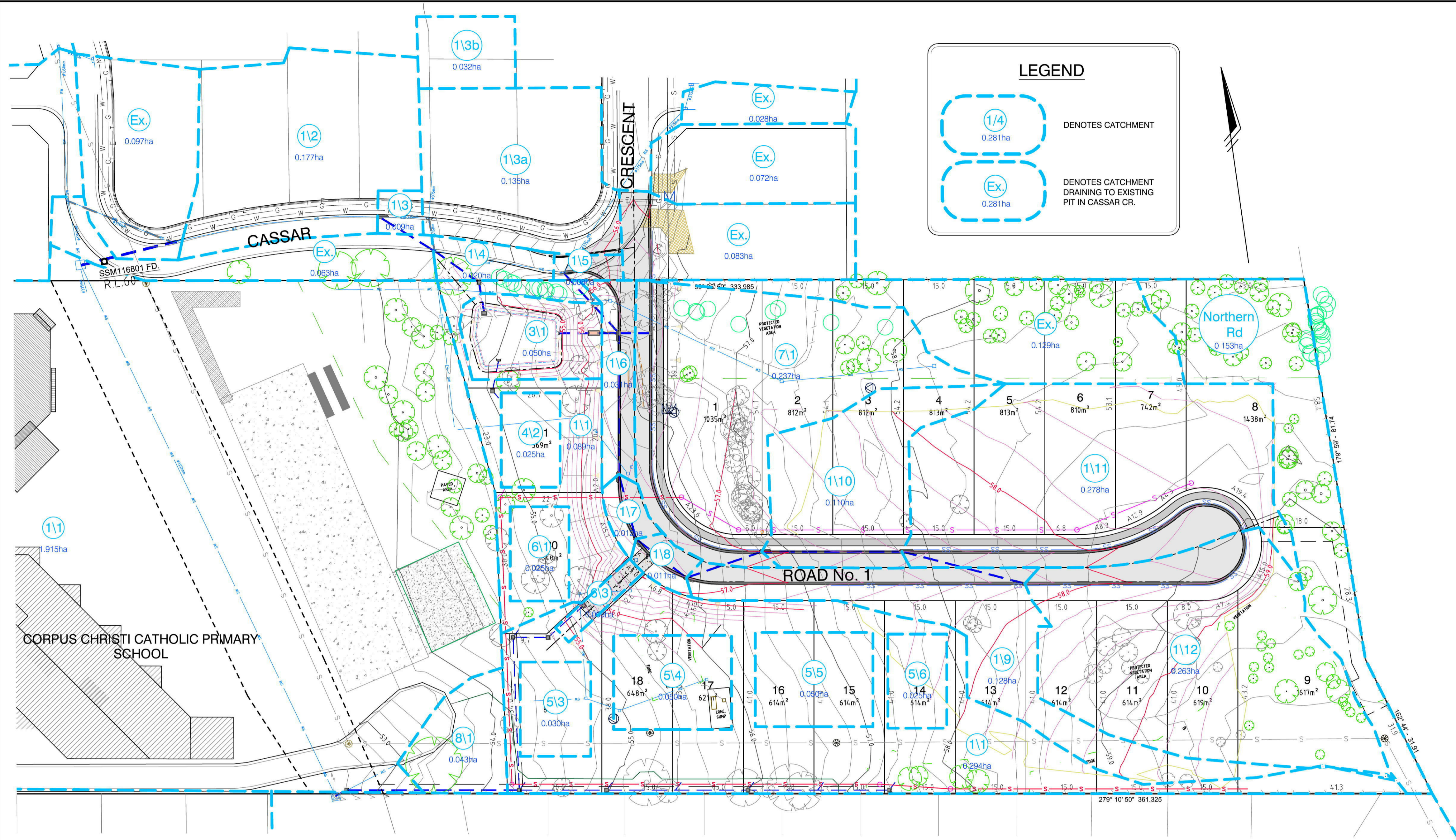


Level 9, 17 York Street
Sydney, NSW 2000
(GPO BOX 4401, Sydney, NSW 2001)
T: 02 9248 8800
F: 02 9248 8810

CLIENT:
THE TRUSTEES OF THE ROMAN CATHOLIC CHURCH FOR THE DIOCESE OF PARRAMATTA
SURVEY: C.L./B.F.
DRAWN: K.G.
DESIGNED: K.G./B.L.
APPROVED: B.L.

TITLE:
KERB RETURNS & INTERSECTION DETAIL
CIVIL WORKS
SUBDIVISION OF LOT 1 DP 1144668
ANDROMEDA DRIVE, CRANE BROOK
DATE OF PLAN: 29.07.14
DATE LAST SAVED: 01.08.14
DATE APPROVED: 29.07.14

ISSUE FOR C.C.
JOB No: 1117EG
DWG No: E1-7
SHEET 7 OF 15 SHEETS
SIZE: A1



LEGEND

1/4
0.281ha
DENOTES CATCHMENT

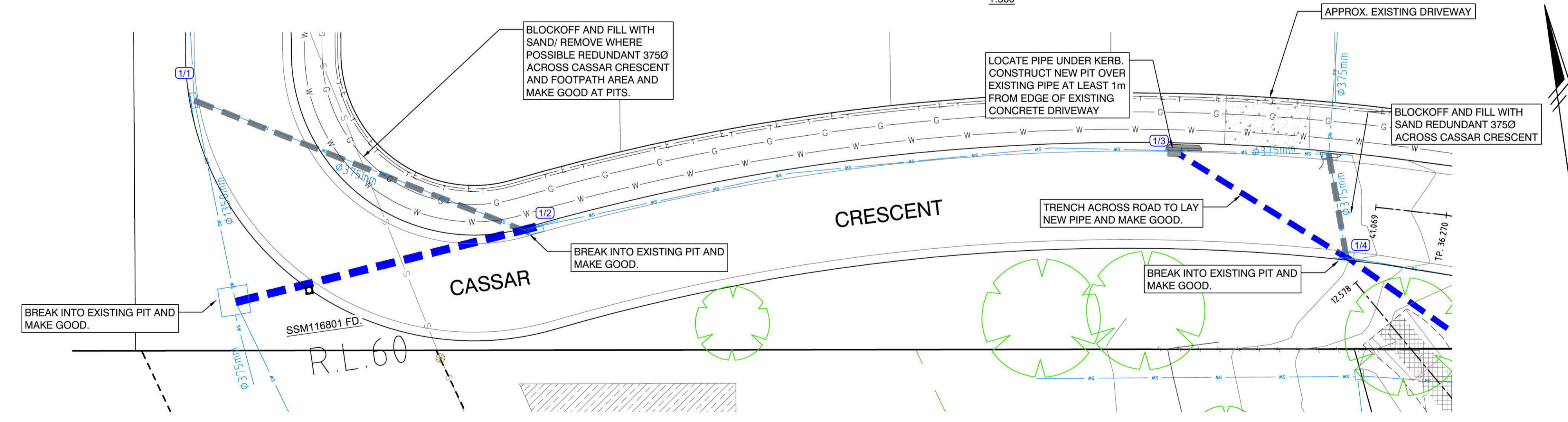
0.281ha
DENOTES CATCHMENT DRAINING TO EXISTING PIT IN CASSAR CR.

NOTE
COUNCIL IS TO BE CONTACTED PRIOR TO CONNECTION INTO COUNCIL DRAINAGE TO ARRANGE INSPECTION

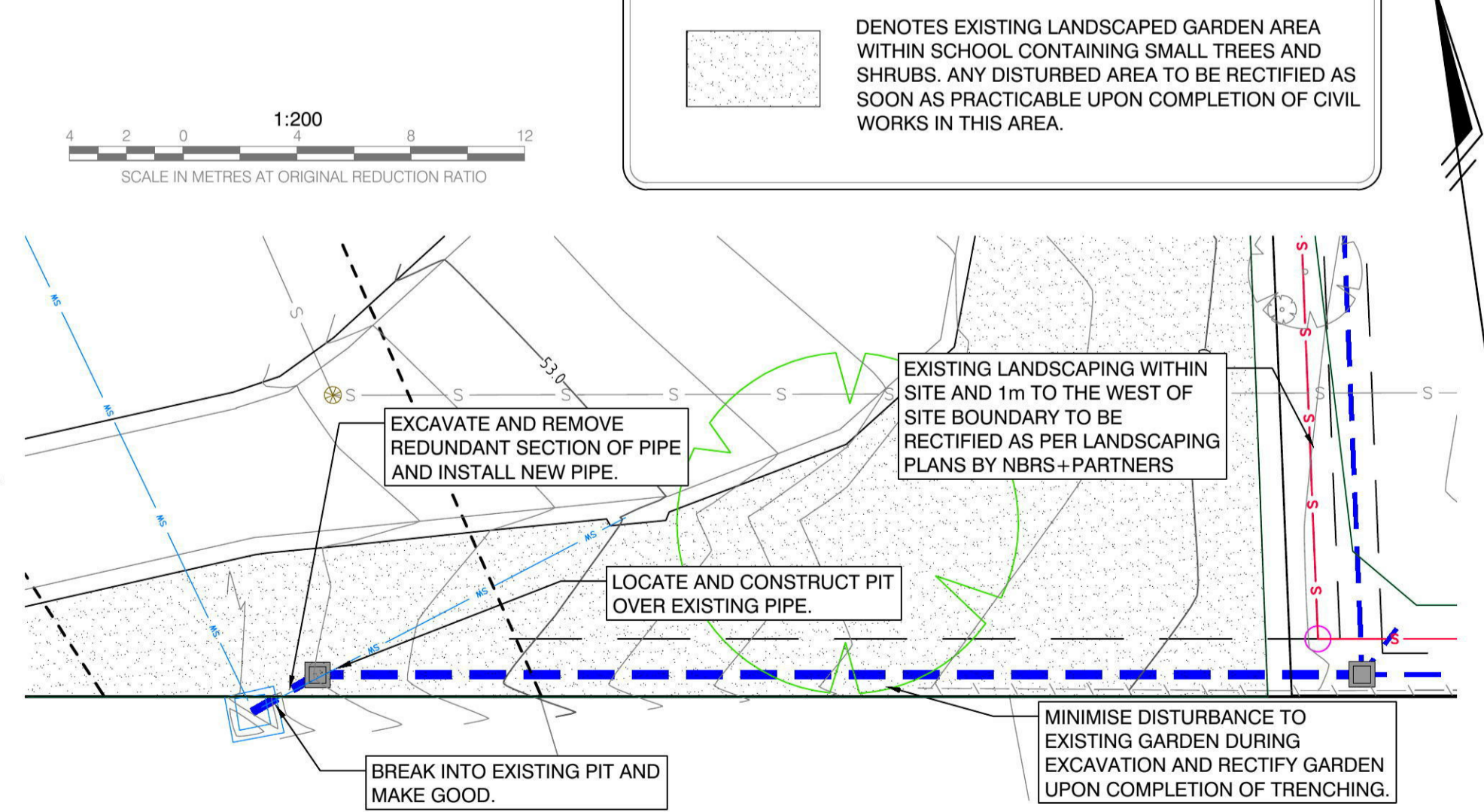
LEGEND

DENOTES EXISTING LANDSCAPED GARDEN AREA WITHIN SCHOOL CONTAINING SMALL TREES AND SHRUBS. ANY DISTURBED AREA TO BE RECTIFIED AS SOON AS PRACTICABLE UPON COMPLETION OF CIVIL WORKS IN THIS AREA.

CATCHMENT PLAN
1:500



CASSAR CRESCENT UPGRADE DETAIL
1:200



INTERALLOTMENT DRAINAGE CONNECTION
1:200

REVISIONS	No.	DATE	REVISION DETAILS	BY
A	29.07.14	ISSUE FOR C.C.		K.G.

NOTES:
THIS IS A COLOURED PLAN. REPRODUCTION IN COLOUR ONLY.
1. ORIGIN OF LEVELS SSM 97356 R.L. 90.53 DATUM AHD



SCALE: 1:500
LONG SECTION: H: N/A, V: N/A
CROSS SECTION: H: N/A, V: N/A
DATUM: AHD

PREPARED BY
RPS
rpsgroup.com

Level 9, 17 York Street
Sydney, NSW 2000
(GPO BOX 4401, Sydney, NSW 2001)
T: 02 9248 8800
F: 02 9248 8810

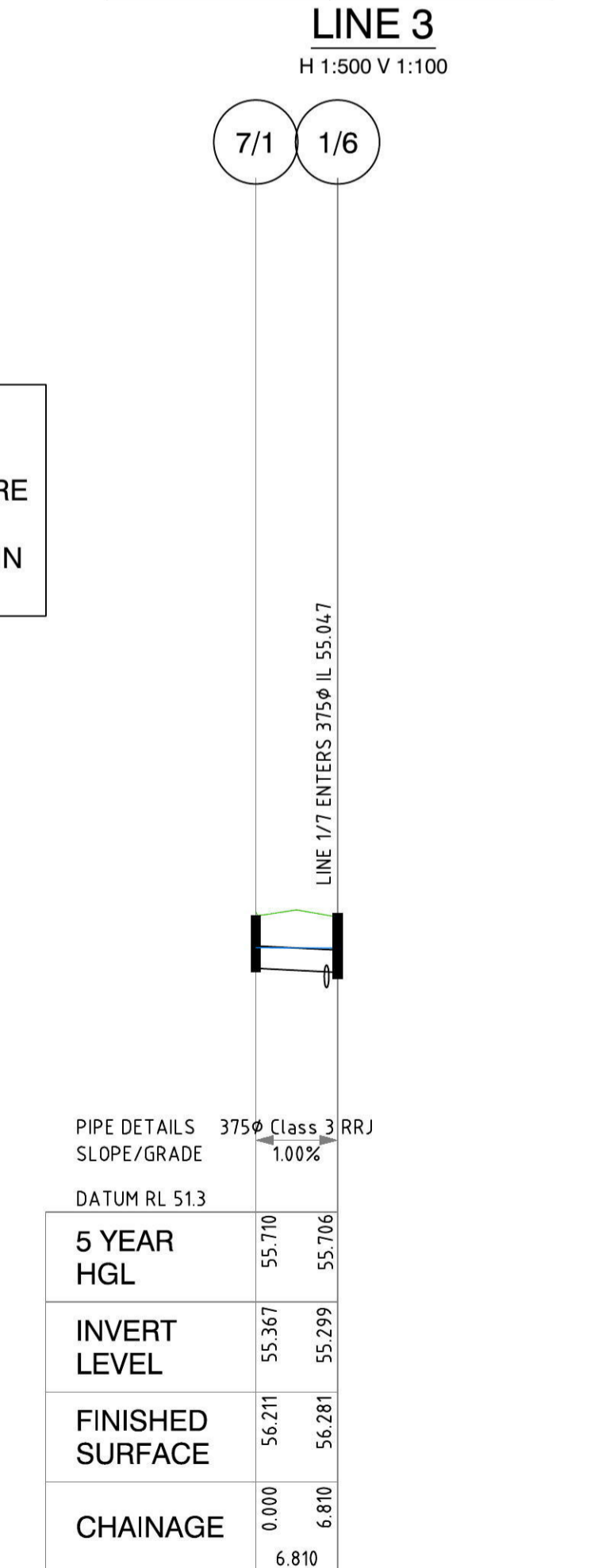
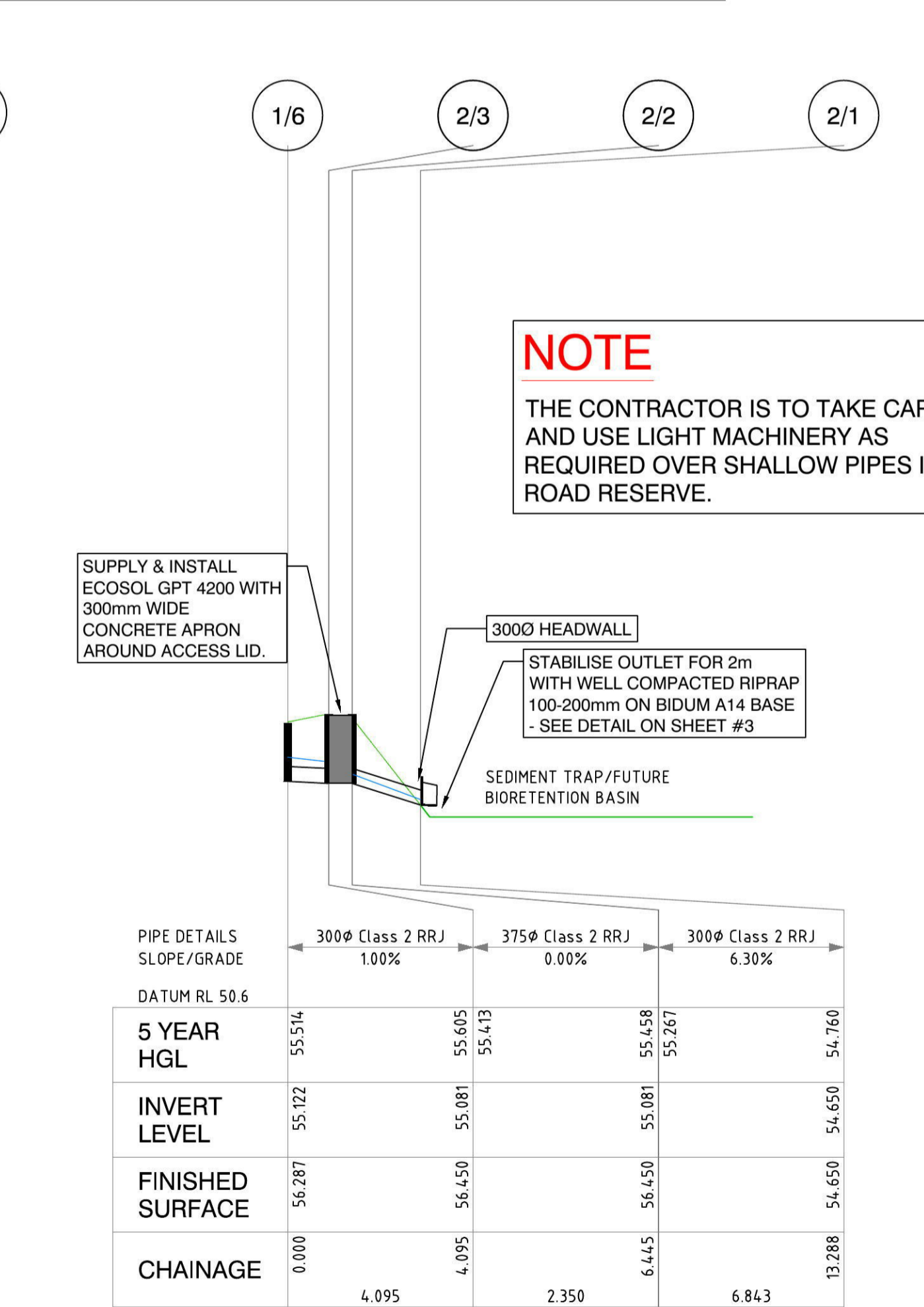
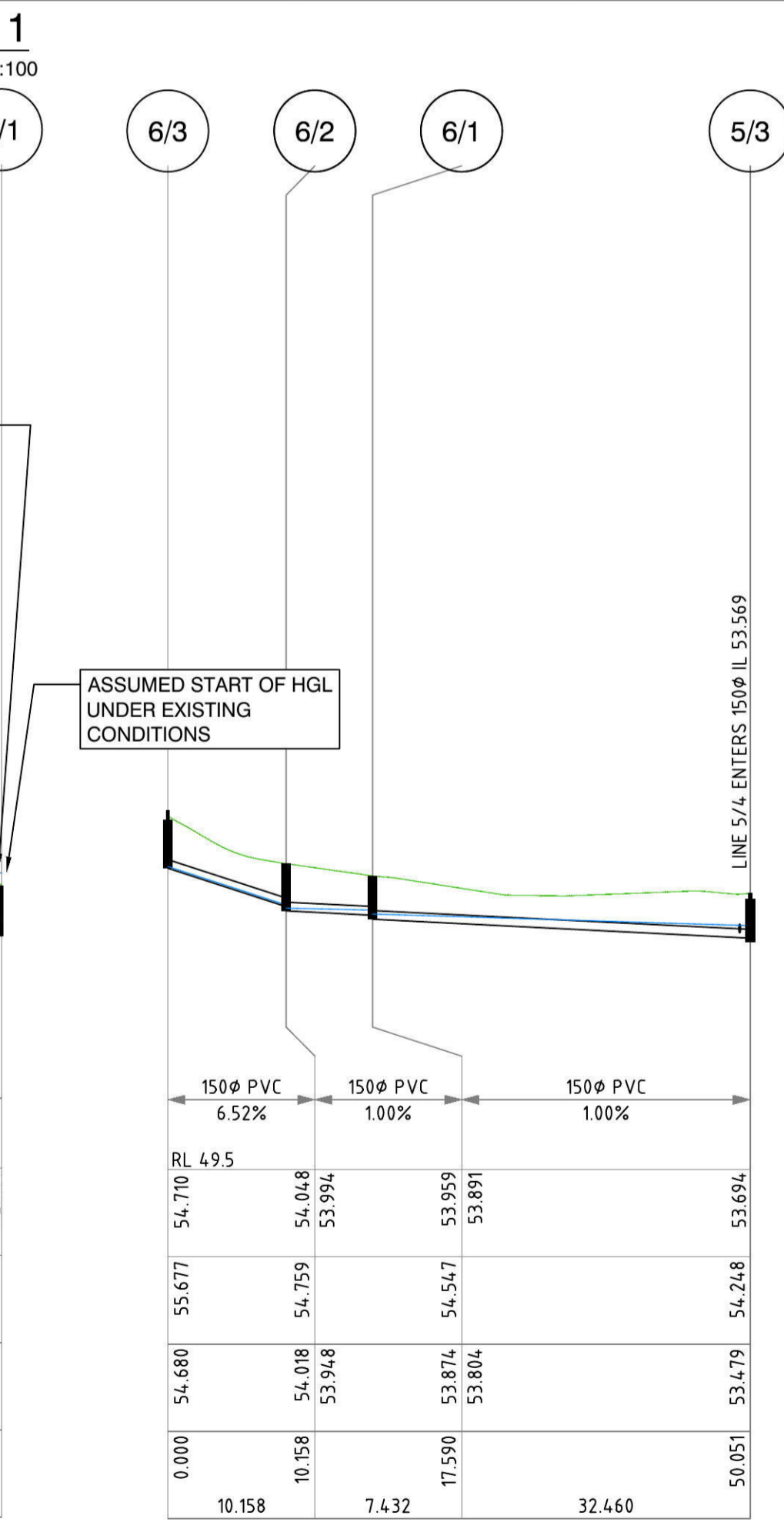
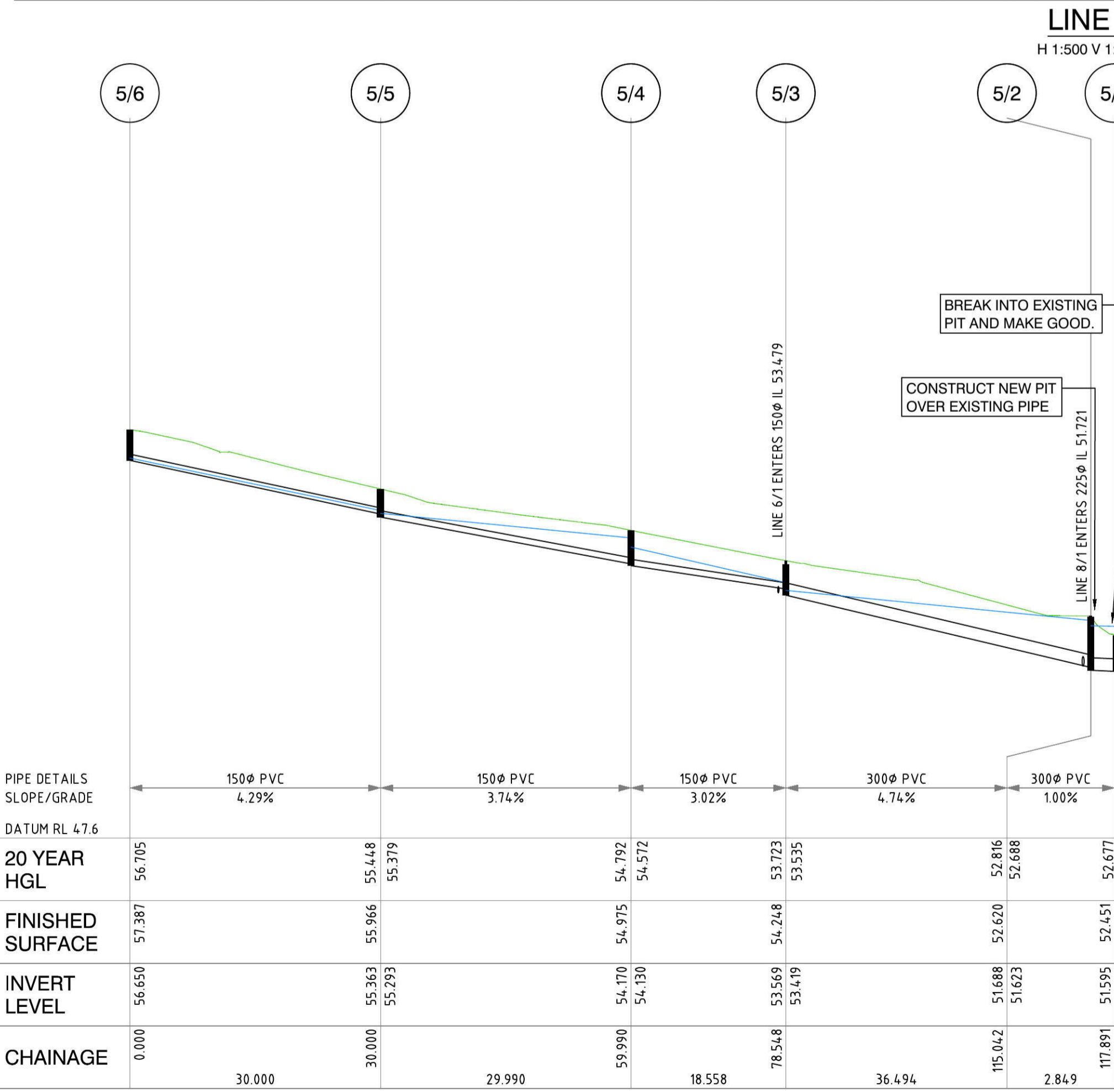
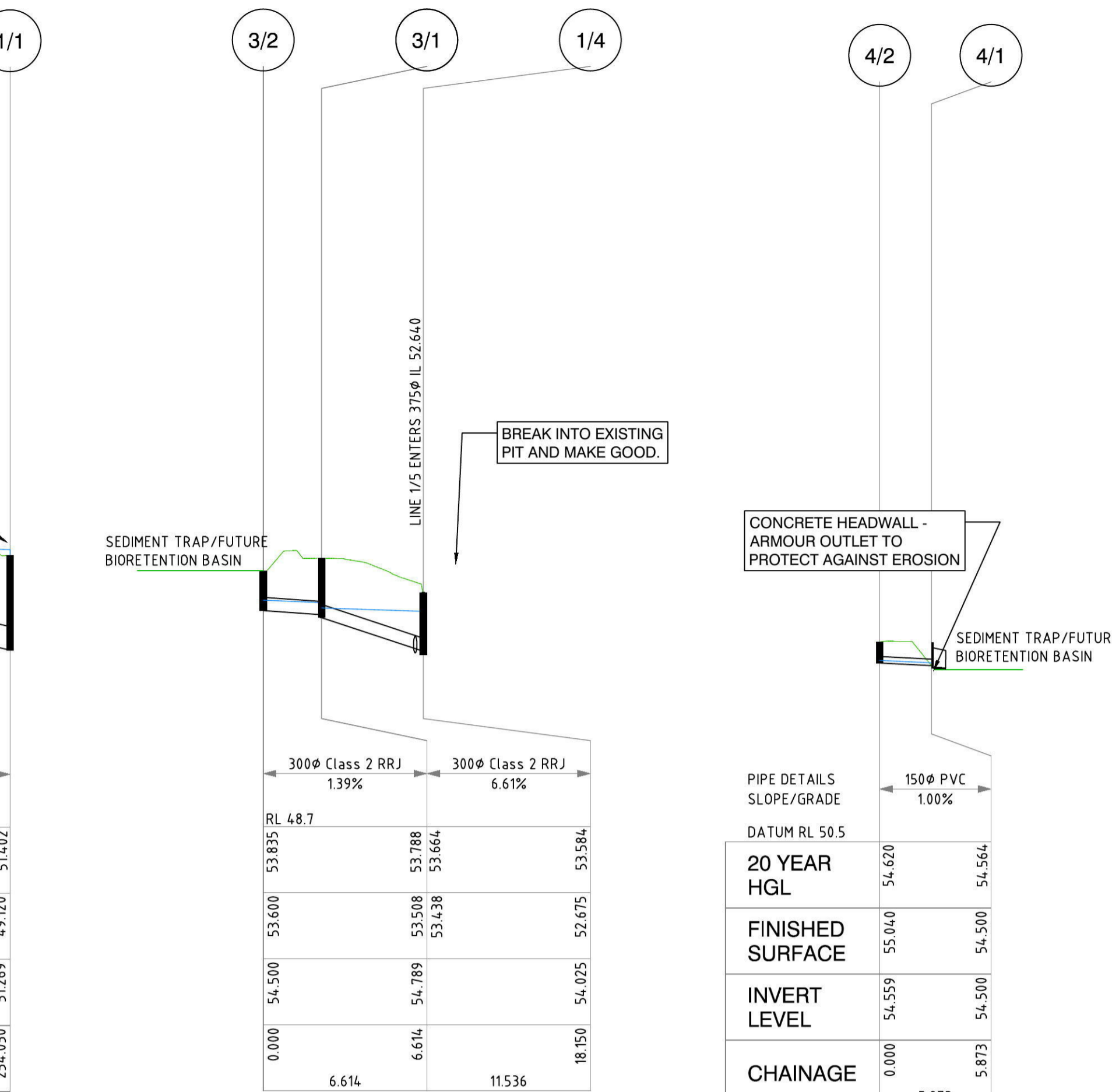
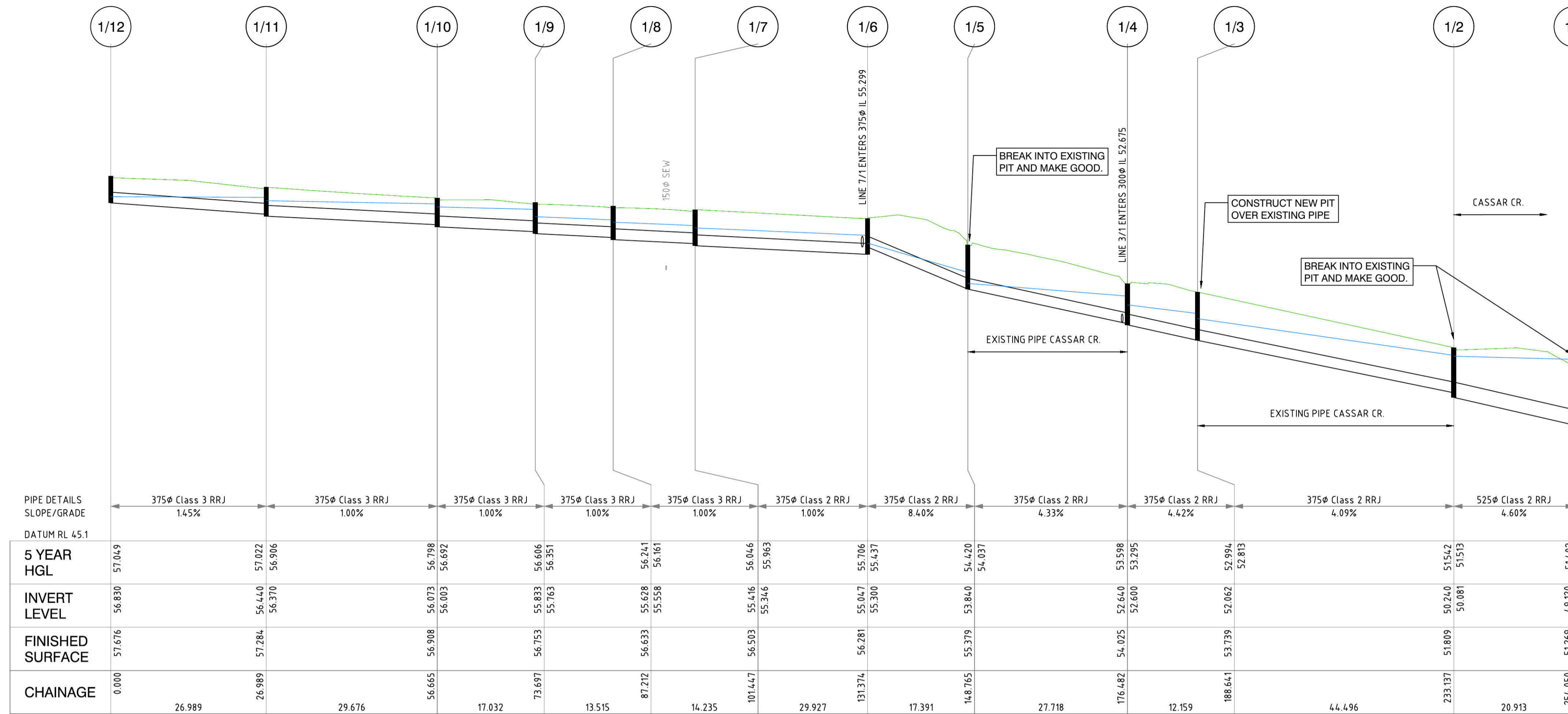
CLIENT:
THE TRUSTEES OF THE ROMAN CATHOLIC CHURCH FOR THE DIOCESE OF PARRAMATTA

SURVEY: C.L./B.F.
DRAWN: K.G.
DESIGNED: K.G./B.L.
APPROVED: B.L.

DATE OF SURVEY: 18.01.13
DATE OF PLAN: 29.07.14
DATE LAST SAVED: 01.08.14
DATE APPROVED: 29.07.14

TITLE
CATCHMENT PLAN & STORMWATER DETAILS
CIVIL WORKS
SUBDIVISION OF LOT 1 DP 1144668
ANDROMEDA DRIVE, CRANE BROOK

ISSUE FOR C.C.
JOB No: 1117EG
DWG No: E1-8
SHEET 8 OF 15 SHEETS
ISSUE: A
SIZE: A1



INTERALLOTMENT LINE 4
H 1:500 V 1:100

PIT TABLE	
Pit No.	Pit Description
1/1	EXISTING LETTER BOX PIT
1/2	EXISTING 1.8m LINTEL
1/3	1.8m LINTEL
1/4	EXISTING 1.8m LINTEL
1/5	EXISTING 1.8m LINTEL
1/6	1.8m LINTEL
1/7	1.8m LINTEL
1/8	1.8m LINTEL
1/9	1.8m LINTEL
1/10	1.8m LINTEL
1/11	3.0m LINTEL
1/12	3.0m LINTEL
2/1	HEADWALL 375ø
2/2-2/3	ECOSOL 4200 GPT
3/1	600X600 JUNCTION PIT
3/2	600X900 LETTERBOX PIT
4/1	HEADWALL 150ø
4/2	600X600 GRATED SURFACE INLET PIT
5/1	EXISTING LETTER BOX PIT
5/2	600X600 JUNCTION PIT
5/3	600X600 GRATED SURFACE INLET PIT
5/4	600X600 GRATED SURFACE INLET PIT
5/5	600X600 GRATED SURFACE INLET PIT
5/6	600X600 GRATED SURFACE INLET PIT
6/3	600X600 GRATED SURFACE INLET PIT - WITH TRAFFICABLE LID
6/2	600X600 GRATED JUNCTION PIT
6/1	600X600 GRATED SURFACE INLET PIT
7/1	2.4m LINTEL - SAG
8/1	EXISTING GRATED INLET PIT WITHIN SCHOOL CULDESAC

INTERALLOTMENT LINE 5
H 1:500 V 1:100

REVISIONS	DATE	REVISION DETAILS	BY
A	29.07.14	ISSUE FOR C.C.	K.G.

NOTES:

1. ORIGIN OF LEVELS SSM 97355 RL.50.53 DATUM AHD

THIS IS A COLOURED PLAN. REPRODUCTION IN COLOUR ONLY.

www.1100.com.au

SCALE:

LONG SECTION: H: 1:500 V: 1:100

CROSS SECTION: H: N/A V: N/A

DATUM: AHD

PREPARED BY: RPS

SCALE IN METRES AT ORIGINAL REDUCTION RATIO

LINE 2
H 1:500 V 1:100

NOTE: THE CONTRACTOR IS TO TAKE CARE AND USE LIGHT MACHINERY AS REQUIRED OVER SHALLOW PIPES IN ROAD RESERVE.

SUPPLY & INSTALL ECOSOL GPT 4200 WITH 300mm WIDE CONCRETE APRON AROUND ACCESS LID.

300ø HEADWALL

STABILISE OUTLET FOR 2m WITH WELL COMPACTED RIPRAP 100-200mm ON BIDUM A14 BASE - SEE DETAIL ON SHEET #9

SEDIMENT TRAP/FUTURE BIORETENTION BASIN

LINE 7
H 1:500 V 1:100

ISSUE FOR C.C.

THE TRUSTEES OF THE ROMAN CATHOLIC CHURCH FOR THE DIOCESE OF PARRAMATTA

DATE OF SURVEY: 18.01.13

DATE OF PLAN: 29.07.14

DATE LAST SAVED: 01.08.14

DATE APPROVED: 29.07.14

DRAINAGE LONG. SECTIONS CIVIL WORKS

SUBDIVISION OF LOT 1 DP 1144668 ANDROMEDA DRIVE, CRANE BROOK

JOB No: 1117EG

DWG No: E1-9

SHEET 9 OF 15 SHEETS

ISSUE: A

SIZE: A1

5 YEAR RESULTS																									
LOCATION AND LAND-USE					TIME AND RUNOFF					INLET DESIGN		PIPE SYSTEM DESIGN								PIT RESULTS					
Design ARI	Pit Name	Sub-Catchment Area	Land-Use	Percentage	Constant Flow Time (minutes)	Kinematic Wave Length (m)	Wave Slope (%)	Wave Roughness (n)	Total Time (minutes)	Peak Sub-Catchment Flowrate (m³/s)	Overflow Bypass Flow (m³/s)	Leaving Pit Flow Width (m)	Peak Flow in Pipe (m³/s)	Reach Length (m)	Pipe Slope (m)	Pipe Diameter (mm)	U/S Pipe Invert Level (m)	D/S Pipe Invert Level (m)	U/S HGL in Pipe (m)	D/S HGL in Pipe (m)	Pipe Flow Velocity (m/s)	Pressure Change Coeff. (Ku)	Water Surface Elevation (m)	Surface Level (m)	Free-board (m)
5	11Ex	1.948	Paved Grassed	75 25	0 0	20 25	2 2	0.01 0.15	2.19 12.69	0.523	0	0	5.741	13.91	0.5	1350	49.12	49.05	51.016	50.908	3.89	0.5	51.4	51.28	-0.12
5	1/3Ex	0.135	Paved Grassed	80 20	0 0	5 20	3 2	0.01 0.08	0.57 5.15	0.042	0.005	0.84	0.049	9.299	4.44	375	52.475	52.062	52.987	52.983	0.45	1.7	53	53.93	0.93
5	113	0.009	Paved Grassed	80 20	0 0	5 10	3 2	0.01 0.08	0.57 3.4	0.003	0	0	0.39	44.496	4.09	375	52.062	50.24	52.815	51.54	3.53	0.7	52.98	53.64	0.66
5	1/2Ex	0.177	Paved Grassed	80 20	0 0	5 20	3 2	0.01 0.08	0.57 5.15	0.055	0.009	1.01	0.436	20.913	4.6	525	50.081	49.12	51.512	51.402	2.01	0.2	51.54	51.72	0.18
5	1/5Ex	0.008	Paved Grassed	95 5	0 0	5 5	3 2	0.01 0.08	0.48 1.87	0.003	0	0	0.246	27.718	4.33	375	53.84	52.64	54.037	53.587	4.19	1.5	54.42	55.31	0.89
5	1/4Ex	0.015	Paved Grassed	95 5	0 0	5 20	3 2	0.01 0.08	0.48 4.3	0.005	0	0	0.331	12.159	4.42	375	52.6	52.062	53.31	52.983	3	0.8	53.59	54	0.41
5	1112	0.263	Paved Grassed	80 20	2 0	6 30	3 2	0.01 0.08	2.64 6.57	0.077	0.01	1.06	0.066	26.989	1.45	375	56.83	56.44	57.049	57.022	0.99	4.5	57.2	57.767	0.57
5	1111	0.278	Paved Grassed	80 20	2 0	6 30	3 1	0.01 0.08	2.64 8.09	0.08	0.011	1.09	0.13	29.676	1	375	56.37	56.073	56.906	56.798	1.18	1.8	57.02	57.376	0.35
5	1110	0.11	Paved Grassed	80 20	2 0	6 30	3 1	0.01 0.08	2.64 8.09	0.032	0.005	0.84	0.161	17.032	1	375	56.003	55.833	56.692	56.606	1.46	1.1	56.8	57	0.2
5	119	0.128	Paved Grassed	65 35	0 0	4 15	3 4	0.01 0.08	0.5 3.52	0.039	0.007	0.92	0.189	13.515	1	375	55.763	55.628	56.35	56.241	1.71	1.8	56.61	56.846	0.24
5	118	0.011	Paved Grassed	50 50	0 0	4 4	1.5 4	0.01 0.08	0.51 1.33	0.003	0	0	0.197	14.235	1	375	55.558	55.416	56.16	56.045	1.78	0.5	56.24	56.724	0.48
5	117	0.012	Paved Grassed	55 45	2 0	6 20	3 3	0.01 0.08	2.64 4.56	0.003	0	0	0.202	29.927	1	375	55.346	55.047	55.963	55.707	1.83	0.5	56.05	56.596	0.55
5	116	0.031	Paved Grassed	55 45	1 1	4 4	3 4	0.01 0.08	1.5 2.59	0.009	0	0	0.179	17.391	8.4	375	55.3	53.84	55.437	54.419	4.9	2	55.71	56.287	0.58
5	711	0.237	Paved Grassed	70 30	0.5 0.5	6 60	3 3	0.01 0.15	1.14 13.36	0.061	0	0	0.068	6.81	3.73	375	55.311	55.057	55.711	55.707	0.62	4.5	55.8	56.25	0.45
5	311	0.05	Paved Grassed	0 100	2 0	4 20	3 4	0.01 0.15	2.79 9.66	0.011	0	0	0.106	6.122	1.5	300	53.6	53.508	53.832	53.783	1.81	4.5	54.35	54.5	0.15

STREET DRAINAGE - 100 YEAR FLOW			
Design ARI	Pit Name	Bypass Flow (m³/s)	Depth x Velocity (m²/s)
100	111Ex	3.776	0.16
100	1/3Ex	0.021	0.03
100	113	0.001	0
100	1/2Ex	0.254	0.14
100	1/5Ex	0.041	0.06
100	1/4Ex	0.263	0.12
100	1112	0.075	0.07
100	1111	0.104	0.08
100	1110	0.186	0.12
100	119	0.113	0.09
100	118	0.068	0.06
100	117	0.018	0
100	116	0.001	0.01
100	711	0.15	0.1
100	311	0.09	0.01

POST DEVELOPMENT: 100 YEAR FLOW - STREET DRAINAGE

POST DEVELOPMENT: 5 YEAR FLOW - STREET DRAINAGE DRAINS RESULTS

5 YEAR RESULTS																									
LOCATION AND LAND-USE					TIME AND RUNOFF					INLET DESIGN		PIPE SYSTEM DESIGN								PIT RESULTS					
Design ARI	Pit Name	Sub-Catchment Area	Land-Use	Percentage	Constant Flow Time (minutes)	Kinematic Wave Length (m)	Wave Slope (%)	Wave Roughness (n)	Total Time (minutes)	Peak Sub-Catchment Flowrate (m³/s)	Overflow Bypass Flow (m³/s)	Leaving Pit Flow Width (m)	Peak Flow in Pipe (m³/s)	Reach Length (m)	Pipe Slope (m)	Pipe Diameter (mm)	U/S Pipe Invert Level (m)	D/S Pipe Invert Level (m)	U/S HGL in Pipe (m)	D/S HGL in Pipe (m)	Pipe Flow Velocity (m/s)	Pressure Change Coeff. (Ku)	Water Surface Elevation (m)	Surface Level (m)	Free-board (m)
5	111Ex	1.948	Paved Grassed	75 25	0 0	20 25	2 2	0.01 0.15	2.19 12.69	0.523	0	0	5.498	13.91	0.5	1350	49.12	49.05	51.064	50.965	3.73	0.4	51.35	51.28	-0.07
5	113Ex	0.135	Paved Grassed	80 20	0 0	5 20	3 2	0.01 0.08	0.57 5.15	0.042	0.005	4.94	0.127	53.795	4.09	375	52.44	50.24	52.578	51.11	3.44	2.2	52.76	53.93	1.17
5	112Ex	0.186	Paved Grassed	80 20	0 0	5 20	3 2	0.01 0.08	0.57 5.15	0.057	0.013	1.15	0.198	24.6	4.84	375	50.24	49.05	51.026	50.965	1.79	1.2	51.11	51.72	0.61
5	115Ex	0.09	Paved Grassed	90 10	0 0	5 15	3 2	0.01 0.08	0.48 3.62	0.029	0.002	0.41	0.074	27.8	4.32	375	53.84	52.64	53.942	52.892	3.02	1.5	54.05	55.31	1.26
5	114Ex	0.015	Paved Grassed	95 5	0 0	5 20	3 2	0.01 0.08	0.48 4.3	0.005	0	0	0.091	7.08	2.82	375	52.64	52.44	52.784	52.762	2.33	2	52.89	54	1.11

PRE DEVELOPMENT: 5 YEAR FLOW - STREET DRAINAGE DRAINS RESULTS

ISSUE FOR C.C.

No	DATE	REVISION DETAILS	BY
A	29.07.14	ISSUE FOR C.C.	K.G.

NOTES:
THIS IS A COLOURED PLAN. REPRODUCTION IN COLOUR ONLY.
1. ORIGIN OF LEVELS SSM 97355 R.L.50.53 DATUM AHD



SCALE:
LONG SECTION: H: N/A V: N/A
CROSS SECTION: H: N/A V: N/A
DATUM: AHD



PREPARED BY:
Level 9, 17 York Street Sydney, NSW 2000 (GPO BOX 4401, Sydney, NSW 2001) t: 02 9248 9800 f: 02 9248 9810
Suite 2, Level 1, Aquarius Tower 688 Princess Highway Sutherland, NSW, 2258 DX 4522 Sutherland t: 02 9642 1177 f: 02 9642 4631

CLIENT: THE TRUSTEES OF THE ROMAN CATHOLIC CHURCH FOR THE DIOCESE OF PARRAMATTA
SURVEY: C.L.B.F. DATE OF SURVEY: 18.01.13
DRAWN: K.G. DATE OF PLAN: 29.07.14
DESIGNED: K.G./B.L. DATE LAST SAVED: 01.08.14
APPROVED: B.L. DATE APPROVED: 29.07.14

TITLE: DRAINAGE CALCULATIONS (1) CIVIL WORKS SUBDIVISION OF LOT 1 DP 1144668 ANDROMEDA DRIVE, CRANE BROOK

JOB No: I117EG
DWG No: E1-10
SHEET 10 OF 15 SHEETS
ISSUE: A
SIZE: A1

LOCATION AND LAND-USE		20 YEAR RESULTS - INTERALLOTMENT DRAINAGE										PIT RESULTS													
Design ARI	Pit Name	Sub-Catchment Area	Land-Use	Percentage	TIME AND RUNOFF					INLET DESIGN					PIPE SYSTEM DESIGN				PIT RESULTS						
					Constant Flow Time (minutes)	Kinematic Wave Length (m)	Parameters Slope (%)	Roughness n	Total Time tc (minutes)	Peak Sub-Catchment Flowrate (m ³ /s)	Overflow Bypass Flow (m ³ /s)	Leaving Pit Flow (m ³ /s)	Flow in Pipe (m ³ /s)	Peak Reach Length (m)	Pipe Slope (m)	Pipe Diameter (mm)	Invert Level (m)	U/S Pipe Invert Level (m)	D/S Pipe HGL in Pipe (m)	U/S HGL in Pipe (m)	D/S Flow Velocity (m/s)	Pipe Change Coeff. Ku	Pressure Surface Elevation (m)	Water Surface Level (m)	Free-board (m)
20	516	0.025	Paved	100	0.5	6	3	0.01	0.97	0.012	0	0	0.015	30	4.29	150	56.65	55.363	56.705	55.448	2.44	1.5	56.81	57.385	0.57
20	515	0.05	Paved	100	0.5	6	3	0.01	0.97	0.023	0	0	0.039	29.99	3.74	150	55.293	54.17	55.379	54.792	3.63	0.5	55.45	55.966	0.52
20	514	0.05	Paved	100	0.5	6	3	0.01	0.97	0.023	0	0	0.055	18.558	3.02	150	54.13	53.569	54.572	53.723	2.94	0.5	54.79	54.974	0.18
20	513	0.03	Paved	100	0.5	6	3	0.01	0.97	0.014	0	0	0.084	36.494	4.74	300	53.419	51.688	53.535	52.816	3.32	2	53.69	54.155	0.46
20	512	0	Paved	100	0.5	6	3	0.01	0.97	0.012	0	0	0.094	2.849	0.98	300	51.623	51.595	52.688	52.677	1.3	1.5	52.82	52.9	0.08
20	513	0.009	Paved	100	0.5	4	3	0.01	0.87	0.004	0	0	0.005	10.158	6.52	150	54.68	54.018	54.71	54.048	2.14	4.5	54.79	55.504	0.72
20	512	0	Paved	100	0.5	6	3	0.01	0.97	0.012	0	0	0.005	7.432	1	150	53.948	53.874	53.994	53.959	1.02	1.2	54.02	54.759	0.74
20	511	0.025	Paved	100	0.5	6	3	0.01	0.97	0.012	0	0	0.017	32.46	1	150	53.804	53.479	53.891	53.694	1.59	2	53.96	54.547	0.59

20 YEAR FLOW - INTERALLOTMENT DRAINAGE

	5 year flow		Comment
	Pre existing	Post development	
k factor (Pit 1\1)	0.4	0.5	Slight increase in 'k' factor as only 10% of flow enters from the side of the pit
Ponding at sag pit (1\1), m	0.066	0.122	Sag pit ponds under pre existing conditions modelled. 56mm increase in ponding at sag pit under post development conditions.
Gutter Flow from Pit 1\1, L/s	0	0	
Gutter flow around kerb return (from 1\2), L/s	13	9	Reduction in kerb return gutter flow of 4 L/s

SUMMARY RESULTS FROM DRAINS - RELEVANT CHANGES FROM PRE TO POST DEVELOPMENT FOR THE CASSAR CRESCENT UPGRADE

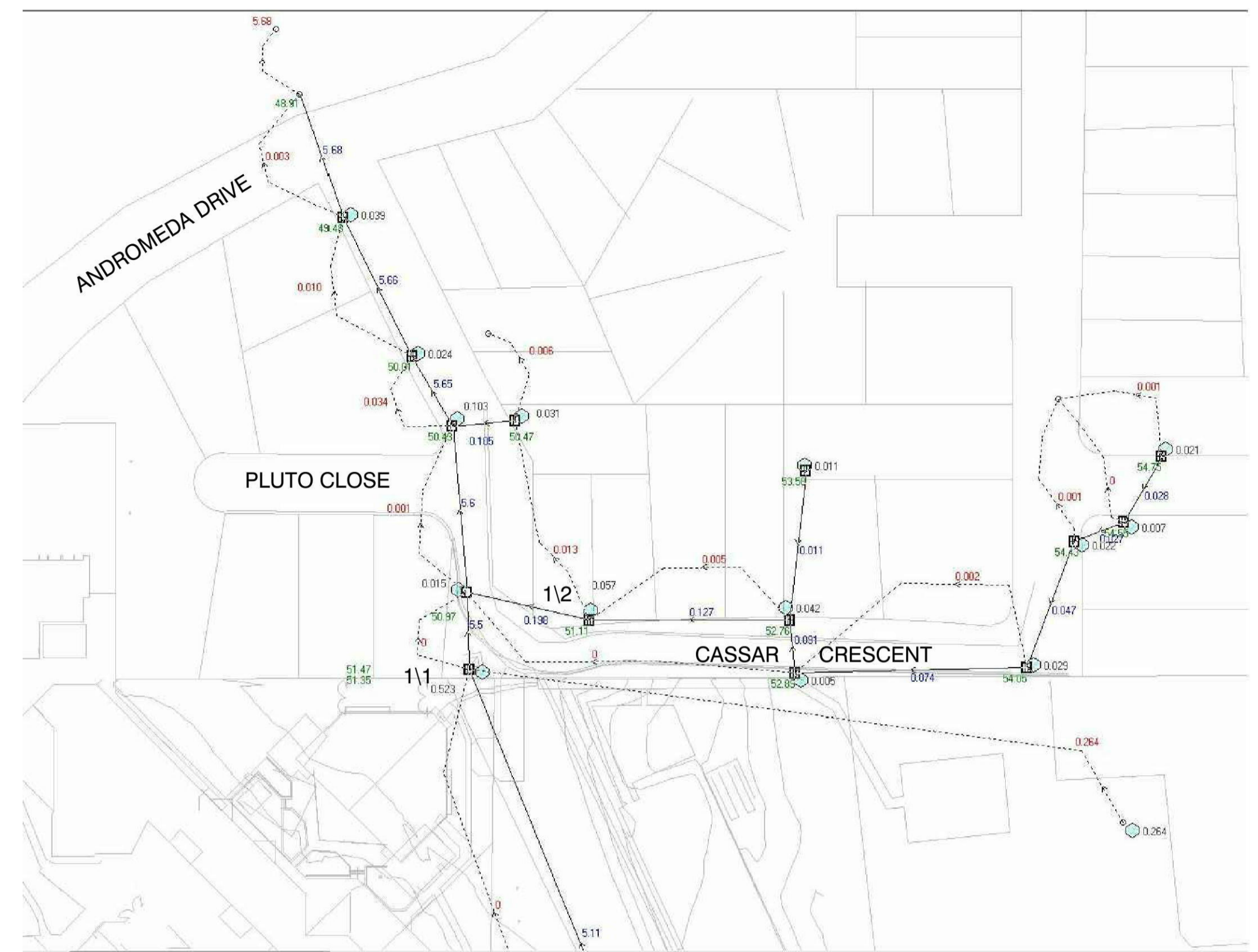
PIT SETOUT TABLE

Pit No.	Pit Invert (m)	Lid Level (m)	Depth (m)	Easting (m)	Northing (m)	Road (Name)	Chainage (m)	Offset (m)	Pit Description
1/1	49.120	51.269	2.149	288652.610	6267559.786				EXISTING LETTER BOX PIT
1/10	56.003	56.908	0.905	288787.240	6267479.326	Road 1	103.458	-3.405	1.8m LINTEL
1/11	56.370	57.284	0.914	288816.622	6267475.159	Road 1	133.134	-3.405	3.0m LINTEL
1/12	56.830	57.676	0.846	288841.523	6267464.749	Road 1	159.250	3.405	3.0m LINTEL
1/2	50.081	51.809	1.728	288673.408	6267561.976				EXISTING 1.8m LINTEL
1/3	52.062	53.739	1.677	288717.850*	6267559.777*				1.8m LINTEL
1/4	52.600	54.025	1.425	288727.382	6267552.229				EXISTING 1.8m LINTEL
1/5	53.840	55.379	1.539	288753.799	6267543.838	Cassar Crescent	15.320	-3.405	EXISTING 1.8m LINTEL
1/6	55.122	56.281	1.159	288763.629	6267529.491	Road 1	36.134	3.405	1.8m LINTEL
1/7	55.346	56.503	1.157	288759.433	6267499.860	Road 1	65.767	3.500	1.8m LINTEL
1/8	55.558	56.633	1.075	288761.105	6267485.723	Road 1	77.793	4.974	1.8m LINTEL
1/9	55.763	56.753	0.990	288770.529	6267476.037	Road 1	89.007	4.613	1.8m LINTEL
3/1	53.438	54.785	1.347	288736.006	6267543.809				600X600 JUNCTION PIT
3/2	53.600	54.500	0.900	288735.964	6267537.687				600X900 LETTERBOX PIT
7/1	55.367	56.211	0.844	288770.371	6267528.537	Road 1	36.134	-3.405	2.4m LINTEL - SAG
4/1	54.500	54.500	0.000	288736.400	6267526.920				HEADWALL 1500
4/2	54.559	55.040	0.481	288735.375	6267521.138				600X600 GRATED SURFACE INLET PIT
2/1	54.650	54.650	0.000	288750.464	6267531.304				HEADWALL 3750
2/2	55.081	56.450	1.369	288757.245	6267530.381				START - ECOSOL 4200 GPT
2/3	55.081	56.450	1.369	288759.573	6267530.065				END - ECOSOL 4200 GPT
5/1	51.595	52.451	0.856	288690.279	6267440.606				EXISTING LETTER BOX PIT
5/2	51.623	52.620	0.996	288692.964*	6267441.556*				600X600 JUNCTION PIT
5/3	53.419	54.248	0.829	288729.099	6267436.447				600X600 GRATED SURFACE INLET PIT
5/4	54.130	54.975	0.845	288747.474	6267433.850				600X600 GRATED SURFACE INLET PIT
5/5	55.293	55.966	0.673	288777.166	6267429.629				600X600 GRATED SURFACE INLET PIT
5/6	56.650	57.387	0.737	288806.868	6267425.416				600X600 GRATED SURFACE INLET PIT
6/1	53.804	54.547	0.743	288732.342	6267468.745				600X600 GRATED SURFACE INLET PIT
6/2	53.948	54.759	0.811	288739.693	6267467.648				600X600 GRATED JUNCTION PIT
6/3	54.680	55.677	0.997	288748.135	6267473.298	Access Handle	17.250	1.550	600X600 GRATED SURFACE INLET PIT - WITH TRAFFICABLE LID
8/1	52.272	53.009	0.737	288704.237	6267445.541				EXISTING GRATED INLET PIT WITHIN SCHOOL CULDESAC

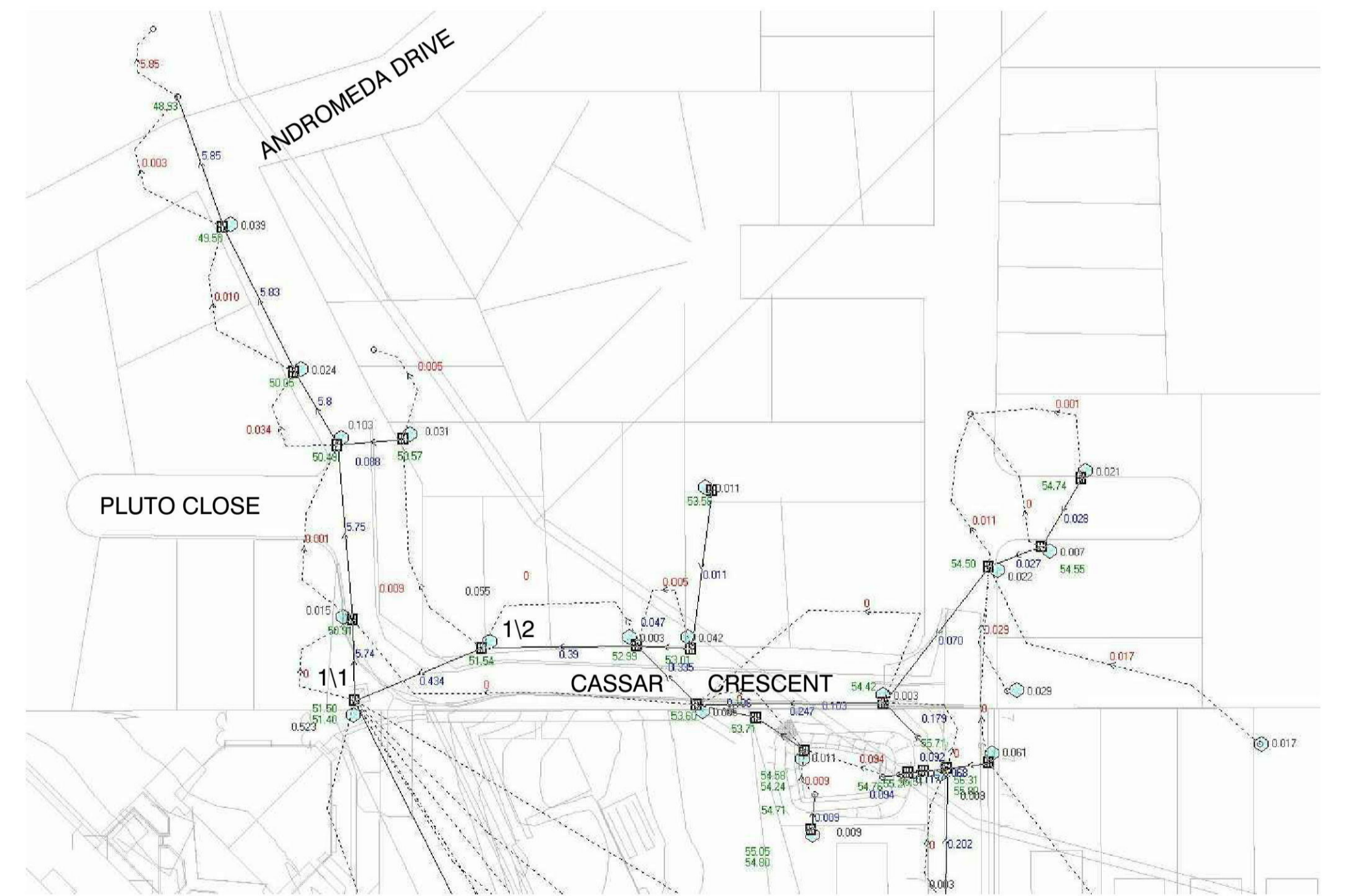
* EASTING AND NORTHING APPROXIMATE ONLY AS PIT IS TO BE CONSTRUCTED OVER EXISTING PIPE. EXISTING PIPE TO BE LOCATED BY THE CONTRACTOR TO CONFIRM LOCATION WITH SITE ENGINEER.

NOTE

THE CONTRACTOR MUST OBTAIN A CURRENT D.B.Y.D. SEARCH BEFORE COMMENCING WORK AND SHALL POTHOLE TO CONFIRM THE LOCATION & LEVEL OF ALL SERVICES PRIOR TO COMMENCING ANY PHYSICAL WORK ON THE SITE. ANY POTENTIAL CONFLICT SHALL BE ADVISED TO THE DESIGNER FOR RESOLUTION.



PRE DEVELOPMENT DRAINS MODEL - 5 YEAR EVENT
NTS



POST DEVELOPMENT DRAINS MODEL - 5 YEAR EVENT
NTS

REVISIONS	DATE	REVISION DETAILS	BY
A	29.07.14	ISSUE FOR C.C.	K.G.

NOTES:
THIS IS A COLOURED PLAN. REPRODUCTION IN COLOUR ONLY.
1. ORIGIN OF LEVELS SSM 97355 R.L.50.53 DATUM AHD



SCALE:
LONG SECTION: H: N/A, V: N/A
CROSS SECTION: H: N/A, V: N/A
DATUM: AHD



CLIENT: THE TRUSTEES OF THE ROMAN CATHOLIC CHURCH FOR THE DIOCESE OF PARRAMATTA
SURVEY: C.L./B.F.
DRAWN: K.G.
DESIGNED: K.G./B.L.
APPROVED: B.L.

DATE OF PLAN: 29.07.14
DATE OF SURVEY: 18.01.13
DATE LAST SAVED: 01.08.14
DATE APPROVED: 29.07.14

TITLE: DRAINAGE CALCS (2) & DRAINAGE SETOUT CIVIL WORKS
SUBDIVISION OF LOT 1 DP 1144668 ANDROMEDA DRIVE, CRANE BROOK

ISSUE FOR C.C.

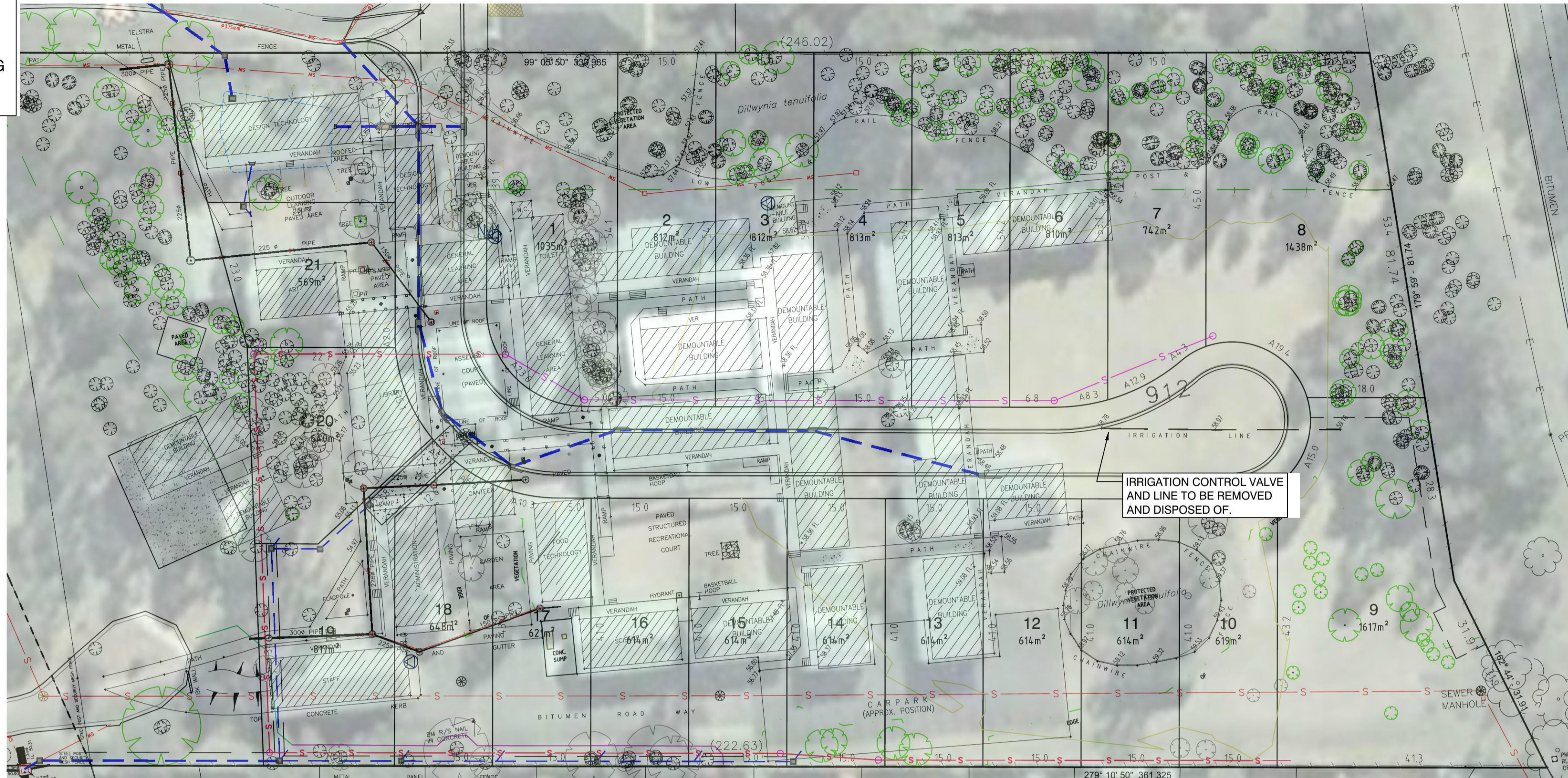
JOB No: 1117EG
DWG No: E1-11
SHEET 11 of 15 SHEETS
ISSUE: A

NOTE

THE CONTRACTOR MUST OBTAIN A CURRENT D.B.Y.D. SEARCH BEFORE COMMENCING WORK AND SHALL POTHOLE TO CONFIRM THE LOCATION & LEVEL OF ALL SERVICES PRIOR TO COMMENCING ANY PHYSICAL WORK ON THE SITE. ANY POTENTIAL CONFLICT SHALL BE ADVISED TO THE DESIGNER FOR RESOLUTION.

LEGEND

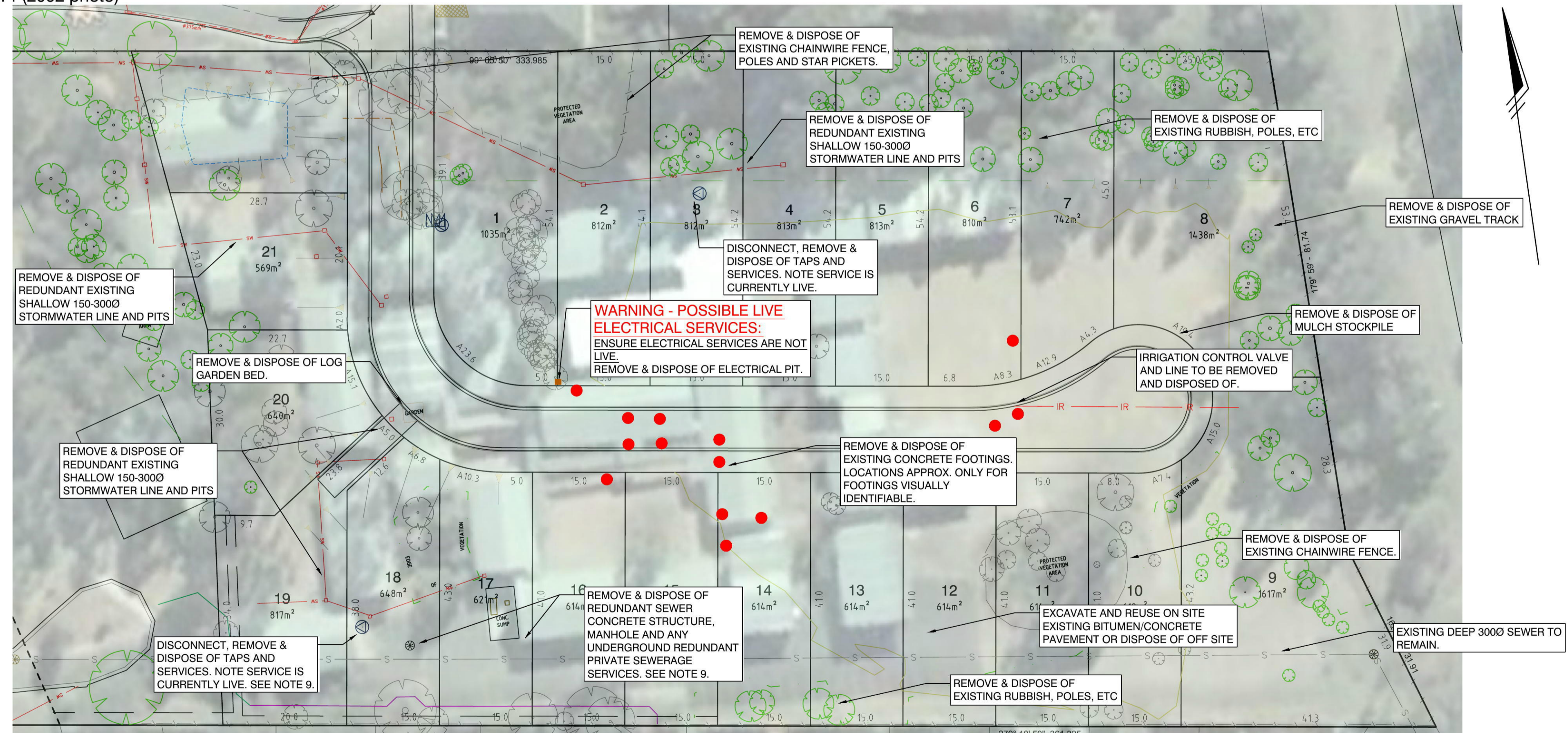
- APPROXIMATE LOCATION OF POSSIBLE CONCRETE FOOTING OBSERVED ON SITE
- SW — INDICATIVE LOCATION OF 150-3000 UPVC STORMWATER PIPES
- EXISTING SERVICE PITS SURVEYED
- IR — APPROX. LOCATION OF IRRIGATION LINE WITH CONTROL VALVE VISIBLE FROM SURFACE
- EXISTING CHAINWIRE OR MESH FENCING
- EXISTING WATER TAPS - LIVE
- ELECTRICAL PIT - WARNING: ENSURE ELECTRICAL SERVICES ARE NOT LIVE.
- S — EXISTING DEEP SEWER (BETWEEN 5-10m DEEP) TO REMAIN



SOURCE AERIAL IMAGE: © Google, 2014; © SKM, 2014 (2002 photo)

PREVIOUS SITE USE - DEMOUNTABLE CLASSROOMS NOW REMOVED FROM SITE

SCALE 1:200



SOURCE AERIAL IMAGE: © Google, 2014; © SKM, 2014 (2002 photo)

EXISTING UNDERGROUND SERVICES

SCALE 1:200

NOTES

1. THE CONTRACTOR IS TO FULLY INVESTIGATE ALL EXISTING ABOVE GROUND RUBBISH, REDUNDANT FENCES, BITUMEN, ETC ON SITE IDENTIFIED FOR REMOVAL.
2. THE CONTRACTOR IS TO FULLY INVESTIGATE ALL SERVICE PITS VISIBLE ABOVE GROUND - PITS HAVE BEEN SURVEYED AND ARE SHOWN IN RED WITH INDICATIVE LOCATION OF UNDERGROUND PIPES.
3. ALL ABOVE GROUND STRUCTURES (CLASSROOMS, ETC) HAVE BEEN REMOVED FROM THE SITE IN RECENT YEARS.
4. GOOGLE EARTH AERIAL IMAGE IS FROM 2007 AND IS SHOWN TO INDICATE POSSIBLE BELOW GROUND STRUCTURE/SERVICES THAT MAY REMAIN, eg. CONCRETE FOOTINGS, ETC.
5. THE CLASSROOM LAYOUT IS APPROX. ONLY AND IS FROM AN EARLIER SURVEY PRIOR TO BUILDINGS BEING REMOVED.
6. THE CONTRACTOR IS TO REMOVE ALL REDUNDANT CHAINWIRE FENCING SHOWN ON THE PLAN AND RUBBISH (POLES, CONCRETE, ETC) AND DISPOSE OF OFF SITE.
7. THE CONTRACTOR IS TO REMOVE ALL REDUNDANT UNDERGROUND SERVICES AND DISPOSE OF OFF SITE TO A LICENSED FACILITY.
8. ALL CUT PERFORMED TO EXCAVATED SERVICES, FOOTING, ETC MUST HAVE STRIP LEVELS TAKEN AND BE FILLED AND COMPACTED IN CONJUNCTION WITH THE GEOTECHNICAL NOTES.
9. ALL DISUSED PRIVATE WATER AND SEWERAGE SERVICES MUST BE DISCONNECTED AND SEALED OFF AT THE POINT OF CONNECTION TO A SYDNEY WATER MAIN BY A LICENSED PLUMBER TO SYDNEY WATER'S STANDARDS IN THE PLUMBING CODE OF AUSTRALIA. THE CONTRACTOR IS TO ARRANGE AN INSPECTION OF THE WORK BY A NSW FAIR TRADING PLUMBING INSPECTION ASSURANCE SERVICES (PIAS) OFFICER. THE CONTRACTOR IS TO PROVIDE THE CERTIFICATE OF COMPLIANCES.

ISSUE FOR C.C.

REVISIONS	DATE	REVISION DETAILS	BY
A	29.07.14	ISSUE FOR C.C.	K.G.

NOTES:
 THIS IS A COLOURED PLAN. REPRODUCTION IN COLOUR ONLY.
 1. ORIGIN OF LEVELS SSM 97355 R.L.50.53 DATUM AHD



SCALE: 1:500	DATUM: AHD
LONG SECTION: H: N/A, V: N/A	CROSS SECTION: H: N/A, V: N/A

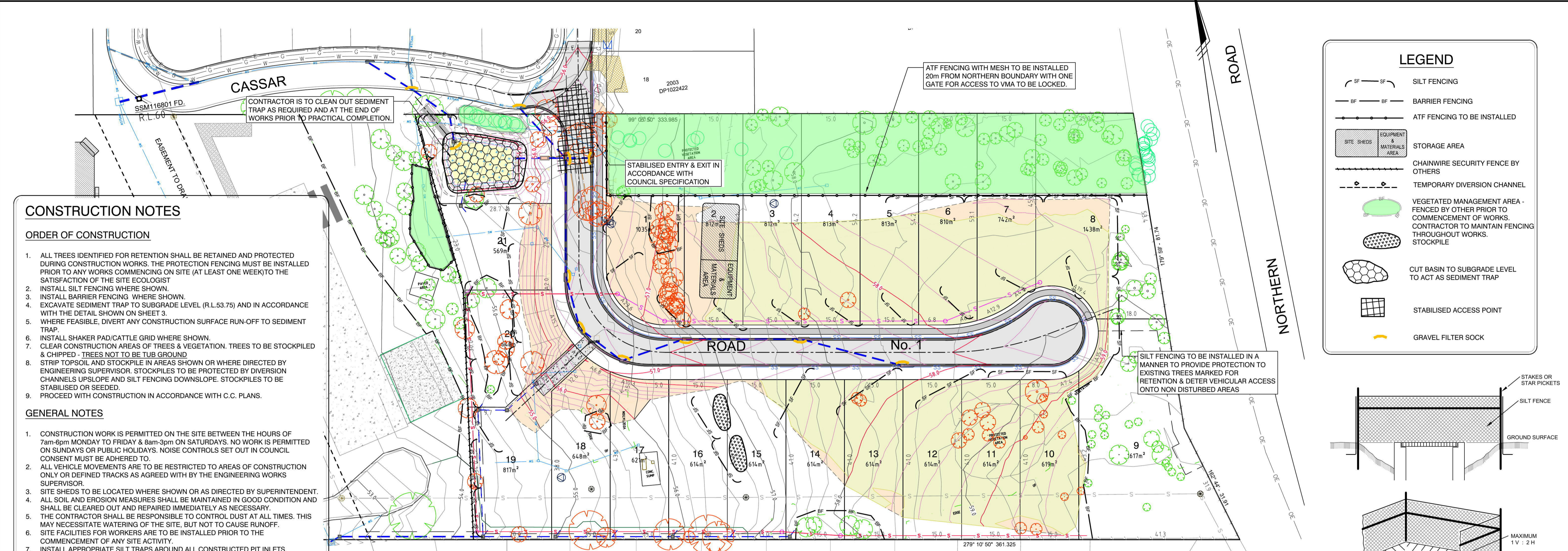


CLIENT:
 THE TRUSTEES OF THE ROMAN CATHOLIC CHURCH FOR THE DIOCESE OF PARRAMATTA

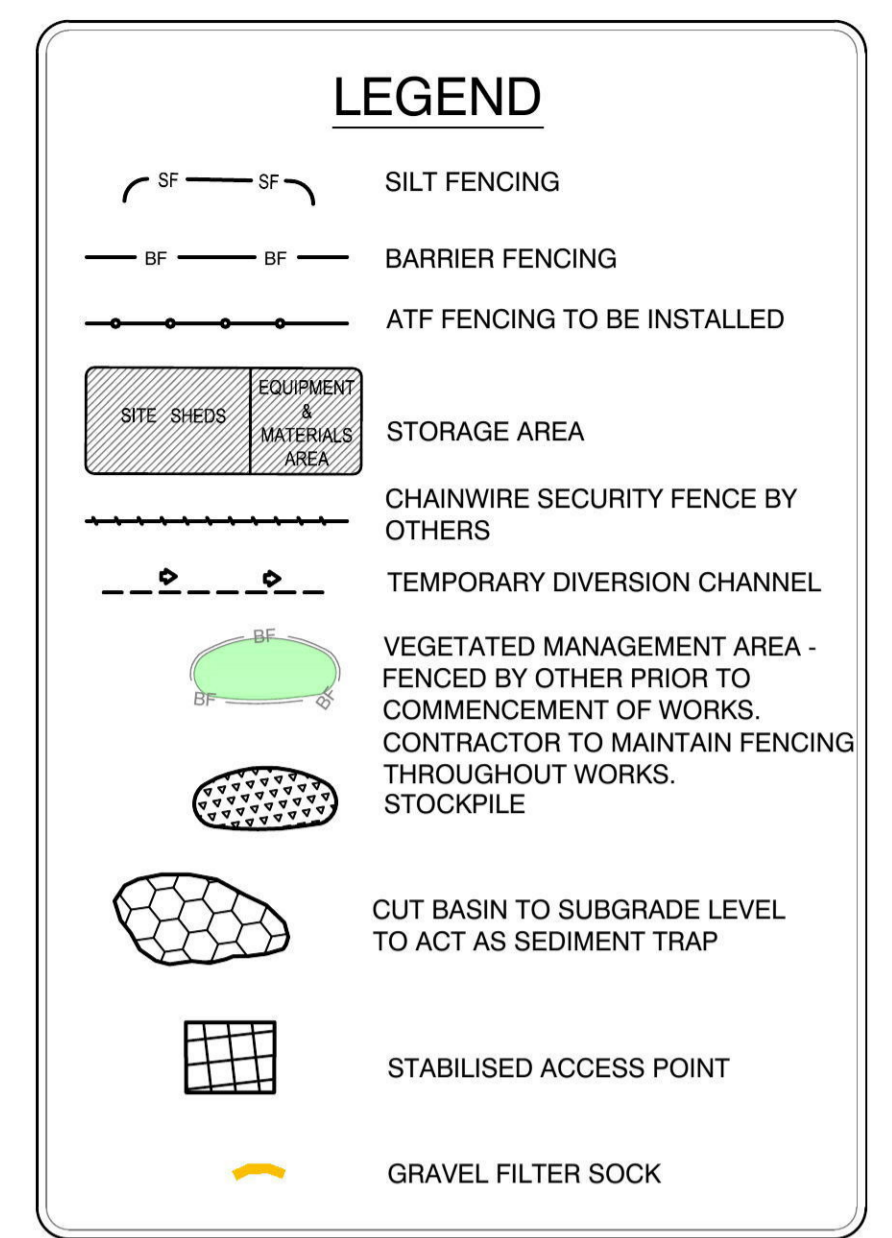
SURVEY: C.L./B.F.
 DRAWN: K.G.
 DESIGNED: K.G./B.L.
 APPROVED: B.L.

TITLE:
PLAN - REDUNDANT SERVICES, ETC TO BE REMOVED CIVIL WORKS
 SUBDIVISION OF LOT 1 DP 1144668 ANDROMEDA DRIVE, CRANE BROOK

JOB No	1117EG
DWG No	E1-12
SHEET 12 OF 15 SHEETS	SIZE A1

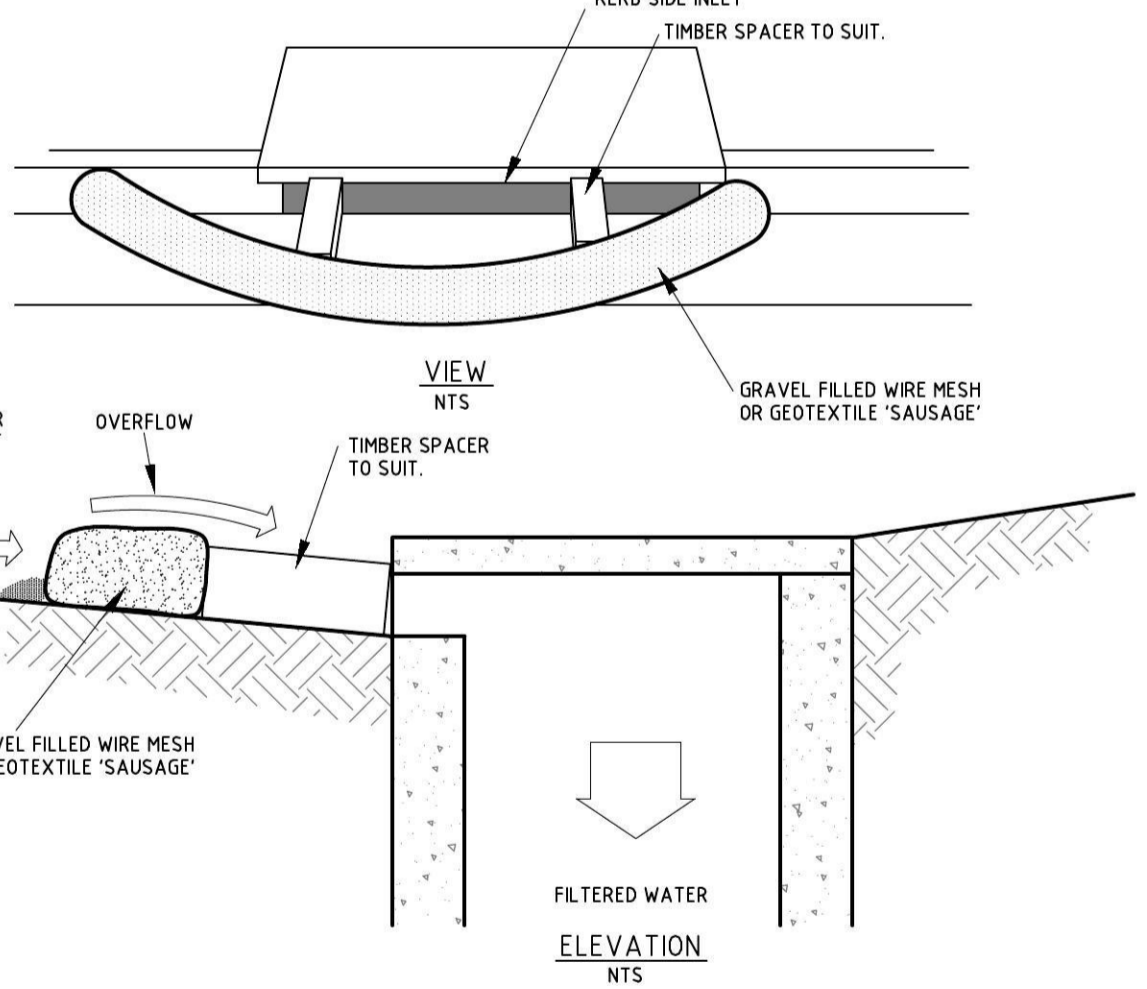


- ### CONSTRUCTION NOTES
- #### ORDER OF CONSTRUCTION
- ALL TREES IDENTIFIED FOR RETENTION SHALL BE RETAINED AND PROTECTED DURING CONSTRUCTION WORKS. THE PROTECTION FENCING MUST BE INSTALLED PRIOR TO ANY WORKS COMMENCING ON SITE (AT LEAST ONE WEEK) TO THE SATISFACTION OF THE SITE ECOLOGIST.
 - INSTALL SILT FENCING WHERE SHOWN.
 - INSTALL BARRIER FENCING WHERE SHOWN.
 - EXCAVATE SEDIMENT TRAP TO SUBGRADE LEVEL (R.L.53.75) AND IN ACCORDANCE WITH THE DETAIL SHOWN ON SHEET 3.
 - WHERE FEASIBLE, DIVERT ANY CONSTRUCTION SURFACE RUN-OFF TO SEDIMENT TRAP.
 - INSTALL SHAKER PAD/CATTLE GRID WHERE SHOWN.
 - CLEAR CONSTRUCTION AREAS OF TREES & VEGETATION. TREES TO BE STOCKPILED & CHIPPED - TREES NOT TO BE TUB GROUND.
 - STRIP TOPSOIL AND STOCKPILE IN AREAS SHOWN OR WHERE DIRECTED BY ENGINEERING SUPERVISOR. STOCKPILES TO BE PROTECTED BY DIVERSION CHANNELS UPSLOPE AND SILT FENCING DOWNSLOPE. STOCKPILES TO BE STABILISED OR SEEDED.
 - PROCEED WITH CONSTRUCTION IN ACCORDANCE WITH C.C. PLANS.
- #### GENERAL NOTES
- CONSTRUCTION WORK IS PERMITTED ON THE SITE BETWEEN THE HOURS OF 7am-6pm MONDAY TO FRIDAY & 8am-3pm ON SATURDAYS. NO WORK IS PERMITTED ON SUNDAYS OR PUBLIC HOLIDAYS. NOISE CONTROLS SET OUT IN COUNCIL CONSENT MUST BE ADHERED TO.
 - ALL VEHICLE MOVEMENTS ARE TO BE RESTRICTED TO AREAS OF CONSTRUCTION ONLY OR DEFINED TRACKS AS AGREED WITH BY THE ENGINEERING WORKS SUPERVISOR.
 - SITE SHEDS TO BE LOCATED WHERE SHOWN OR AS DIRECTED BY SUPERINTENDENT.
 - ALL SOIL AND EROSION MEASURES SHALL BE MAINTAINED IN GOOD CONDITION AND SHALL BE CLEARED OUT AND REPAIRED IMMEDIATELY AS NECESSARY.
 - THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL DUST AT ALL TIMES. THIS MAY NECESSITATE WATERING OF THE SITE, BUT NOT TO CAUSE RUNOFF.
 - SITE FACILITIES FOR WORKERS ARE TO BE INSTALLED PRIOR TO THE COMMENCEMENT OF ANY SITE ACTIVITY.
 - INSTALL APPROPRIATE SILT TRAPS AROUND ALL CONSTRUCTED PIT INLETS.
 - AT COMPLETION OF WORKS SILT IS TO BE REMOVED FROM THE SEDIMENT TRAP.
 - VEGETATED MANAGEMENT AREAS MUST BE PROTECTED AT ALL TIMES. NO WORK IS TO ENCOACH ON THESE AREAS. ALL STAFF AND CONTRACTORS ARE TO BE INDUCTED BY SITE ECOLOGIST INTO THE VEGETATED MANAGEMENT PLAN. ANY FENCES TO VMA AREAS ARE TO BE MAINTAINED BY THE CONTRACTOR AND INSPECTED DAILY.



SOIL, WATER & CONSTRUCTION MANAGEMENT PLAN

SCALE 1:500

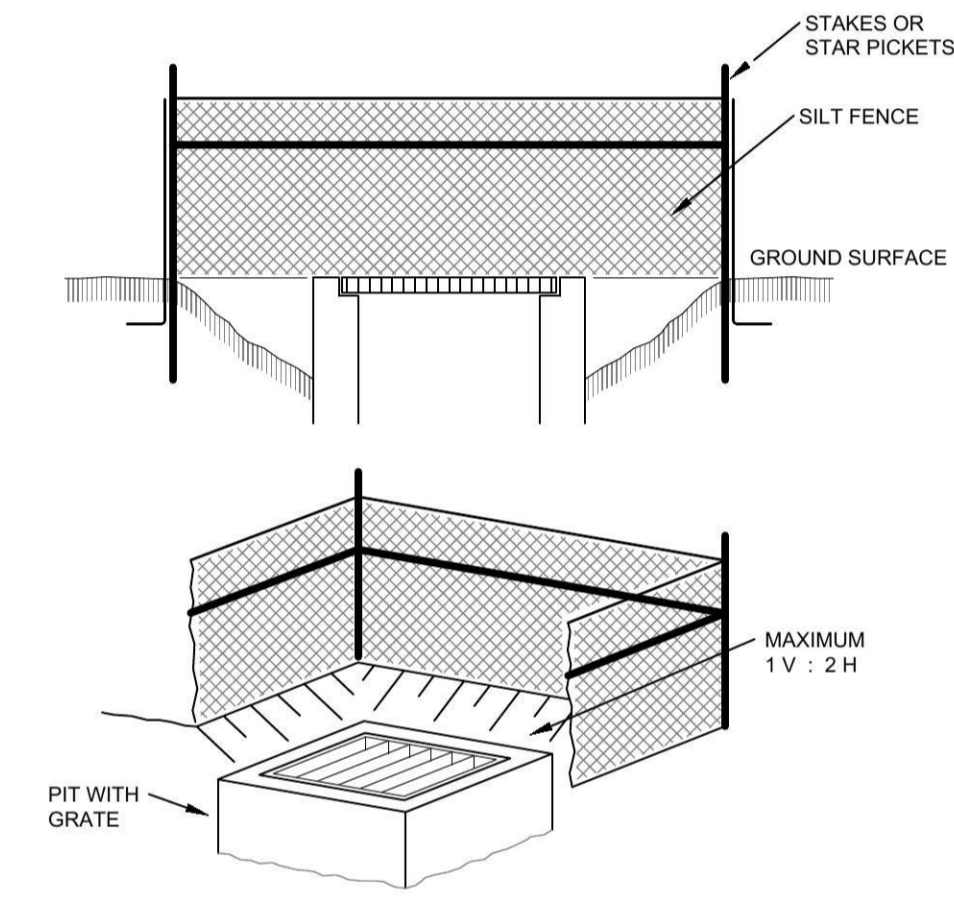


NOTE: THIS PRACTICE ONLY TO BE USED WHERE SPECIFIED IN AN APPROVED SWMP/ESCP.

GENERAL CONSTRUCTION NOTES

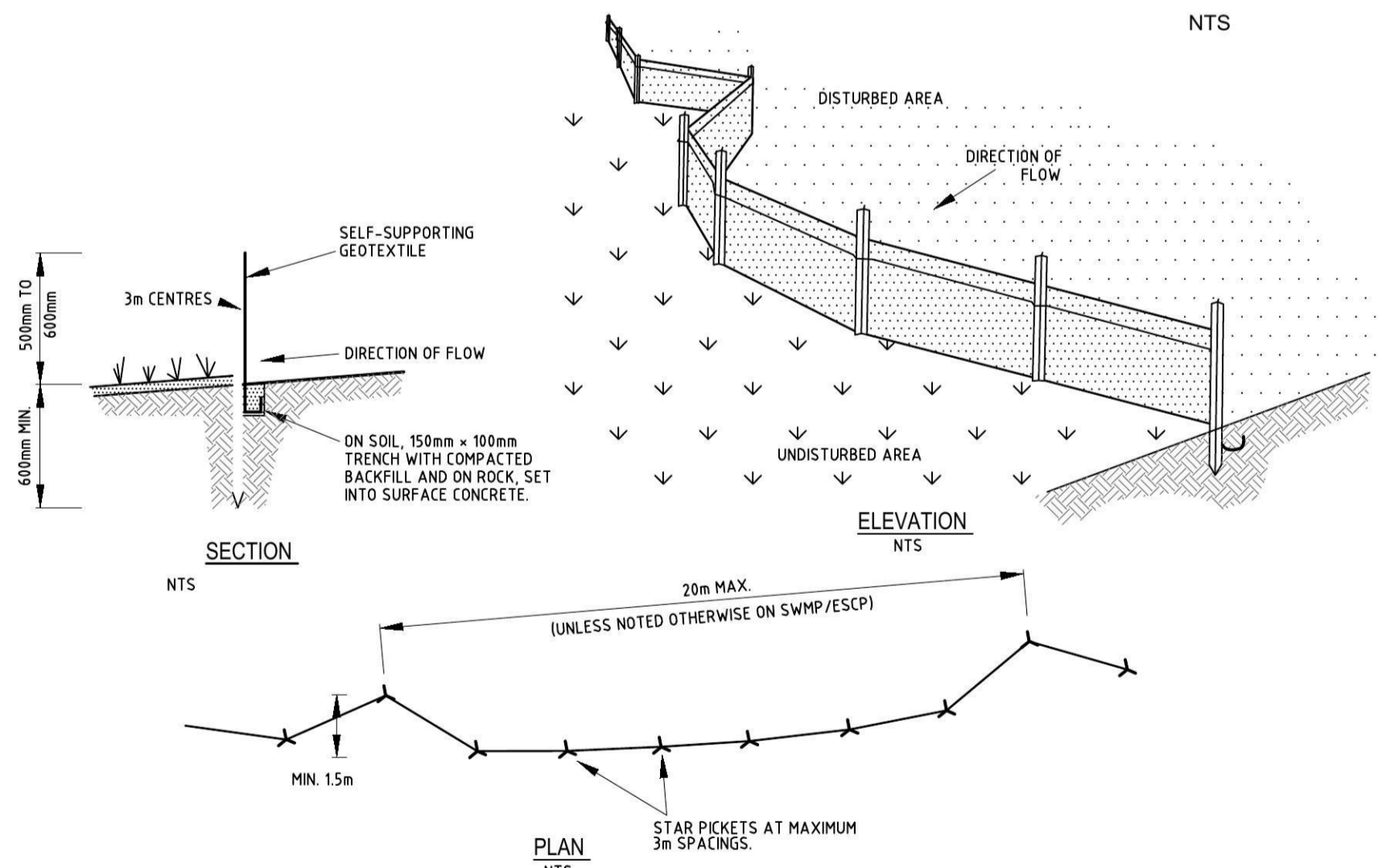
- FABRICATE A SLEEVE MADE FROM GEOTEXTILE OR WIRE MESH LONGER THAN THE LENGTH OF THE INLET PIT.
- FILL THE SLEEVE WITH 25mm TO 50mm GRAVEL.
- FORM AN ELLIPTICAL CROSS SECTION ABOUT 150mm HIGH x 400mm WIDE.
- PLACE THE FILTER AT THE OPENING OF THE KERB INLET LEAVING A 100mm GAP AT THE TOP TO ACT AS AN EMERGENCY SPILLWAY.
- MAINTAIN THE OPENING WITH SPACER BLOCKS.
- FORM A SEAL WITH THE KERBING AND PREVENT SEDIMENT BYPASSING THE FILTER.
- FIT TO ALL KERB INLETS AS SHOWN.

MESH AND GRAVEL INLET FILTER



SURFACE INLET PIT PROTECTION

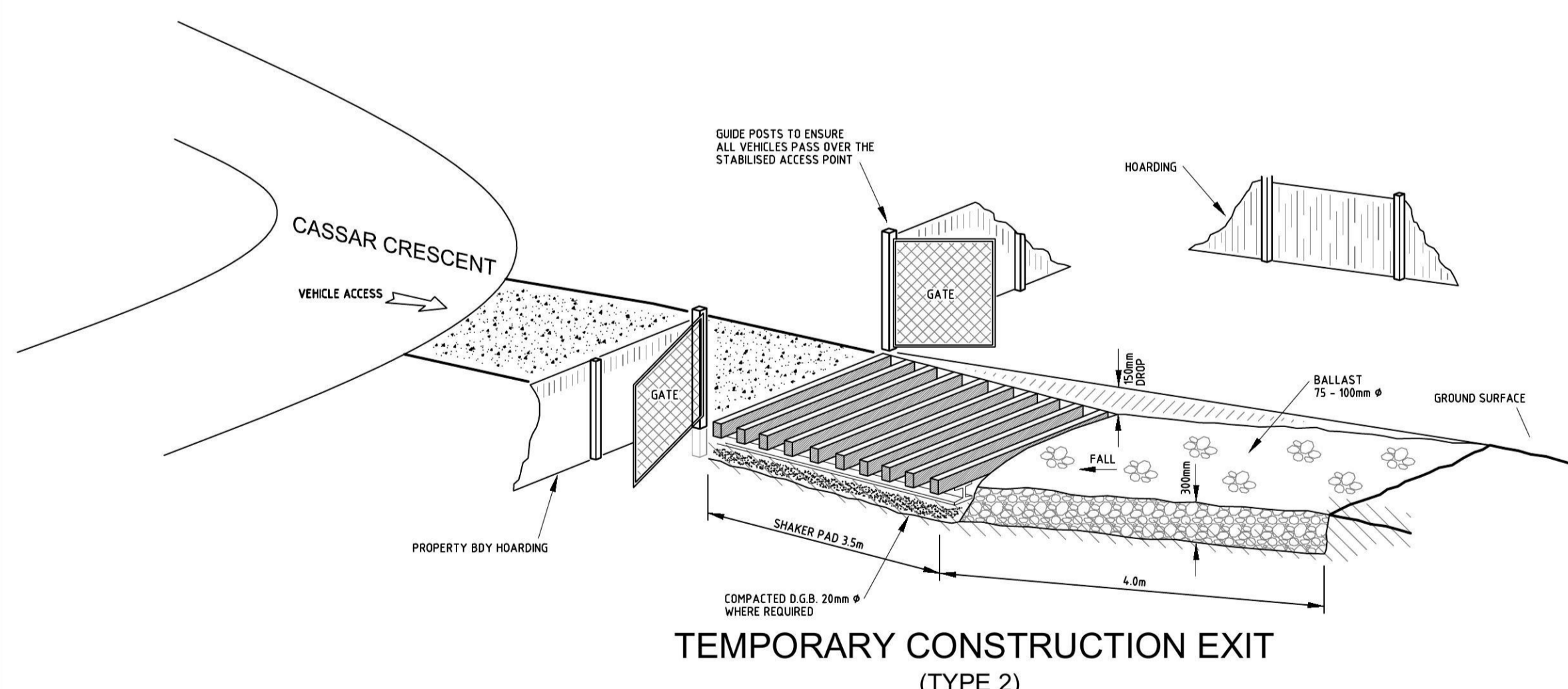
NTS



GENERAL CONSTRUCTION NOTES

- CONSTRUCT SEDIMENT FENCE AS CLOSE AS POSSIBLE TO PARALLEL TO THE CONTOURS OF THE SITE.
- DRIVE 15m LONG STAR PICKETS INTO GROUND, 3m APART.
- DIG A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
- BACKFILL TRENCH OVER BASE OF FABRIC.
- FIX SELF-SUPPORTING GEOTEXTILE TO UPSLOPE SIDE OF POSTS WITH WIRE TIES OR AS RECOMMENDED BY GEOTEXTILE MANUFACTURER.
- JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.

SEDIMENT FENCE



NOTE

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NO.	DATE	REVISION DETAILS	BY
A	29.07.14	ISSUE FOR C.C.	K.G.

NOTES:

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- ORIGIN OF LEVELS SSM 97355 R.L.50.53 DATUM AHD

DIAL BEFORE YOU DIG www.1100.com.au

SCALE: 1:500

DATUM: AHD

LONG SECTION: H: N/A V: N/A

CROSS SECTION: H: N/A V: N/A

SCALE IN METRES AT ORIGINAL REDUCTION RATIO

PREPARED BY

rpsgroup.com

Level 9, 17 York Street Sydney, NSW 2000 (GPO BOX 4401, Sydney, NSW 2001) T: 02 9248 9800 F: 02 9248 9810

Suite 2, Level 1, Aquarius Tower 688 Princess Highway Sutherland, NSW, 2258 DX 4522 Sutherland T: 02 9642 1177 F: 02 9642 4631

CLIENT: THE TRUSTEES OF THE ROMAN CATHOLIC CHURCH FOR THE DIOCESE OF PARRAMATTA

SURVEY: C.L.B.F.

DRAWN: K.G.

DESIGNED: K.G./B.L.

APPROVED: B.L.

DATE OF SURVEY: 18.01.13

DATE OF PLAN: 29.07.14

DATE LAST SAVED: 01.08.14

DATE APPROVED: 29.07.14

TITLE: SOIL, WATER & CONSTRUCTION MANAGEMENT PLAN CIVIL WORKS

SUBDIVISION OF LOT 1 DP 1144668 ANDROMEDA DRIVE, CRANE BROOK

ISSUE FOR C.C.

JOB No: 1117EG

DWG No: E1-13

SHEET 13 OF 15 SHEETS

ISSUE: A

SIZE: A1



LEGEND

- DENOTES EXISTING TREE TO BE RETAINED
- DENOTES EXISTING TREE TO BE REMOVED
- DENOTES APPROX. SIGNIFICANT TREE TO BE PROTECTED DURING CONSTRUCTION WORKS

TREE RETENTION NOTES

- REFER TO EROSION, SEDIMENT & CONSTRUCTION MANAGEMENT PLAN FOR TREE PROTECTION STRATEGY (BARRIER FENCING)
- ALL TREES MARKED FOR RETENTION MUST BE PROTECTED

NOTE

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REVISIONS	No	DATE	REVISION DETAILS	BY
A	29.07.14	ISSUE FOR C.C.		K.G.

NOTES:

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- ORIGIN OF LEVELS SSM 97365 R.L. 50.53 DATUM AHD



SCALE: 1:500

DATUM: AHD

LONG SECTION: H: N/A V: N/A

CROSS SECTION: H: N/A V: N/A

SCALE IN METRES AT ORIGINAL REDUCTION RATIO



Level 9, 17 York Street
Sydney, NSW 2000
(GPO BOX 4401, Sydney, NSW 2001)
T: 02 9248 9800
F: 02 9248 9810

Suite 2, Level 1, Aquarius Tower
668 Princess Highway
Sutherland, NSW, 2258
T: 02 9642 1177
F: 02 9642 4631

CLIENT: THE TRUSTEES OF THE ROMAN CATHOLIC CHURCH FOR THE DIOCESE OF PARRAMATTA

SURVEY: C.L.B.F. DATE OF SURVEY: 18.01.13

DRAWN: K.G. DATE OF PLAN: 29.07.14

DESIGNED: K.G./B.L. DATE LAST SAVED: 01.08.14

APPROVED: B.L. DATE APPROVED: 29.07.14

TITLE

**TREE RETENTION PLAN
CIVIL WORKS**

SUBDIVISION OF LOT 1 DP 1144668
ANDROMEDA DRIVE, CRANE BROOK

ISSUE FOR C.C.

JOB No: **1117EG**

DWG No: **E1-14**

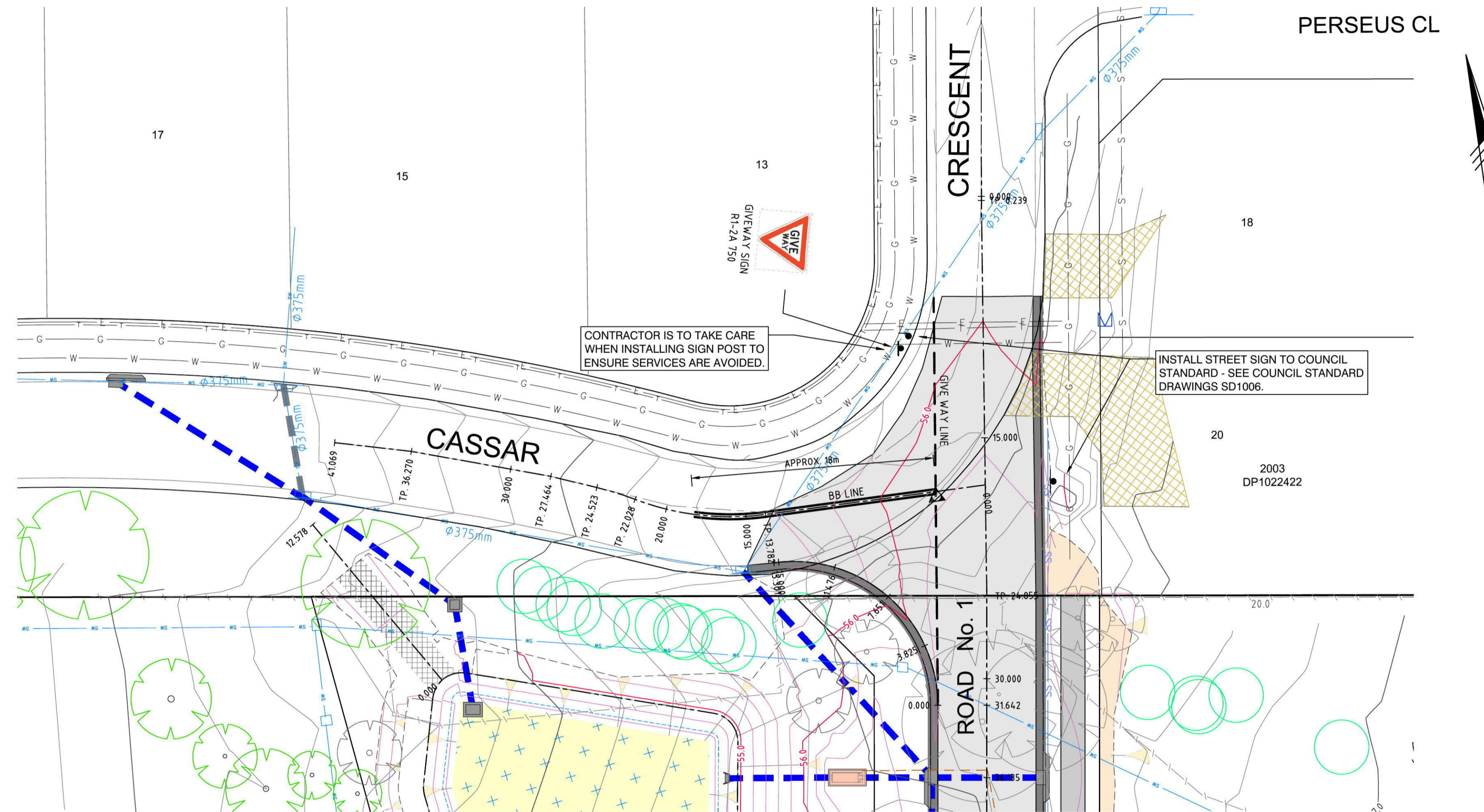
SHEET 14 OF 15 SHEETS

ISSUE: **A**

SIZE: **A1**

NOTE

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LINEMARKING PLAN
SCALE 1:1000

LINEMARKING AND SIGNAGE TO BE IN ACCORDANCE WITH RTA GUIDELINES & AS 1742.2-2009

REVISIONS	No	DATE	REVISION DETAILS	BY
A	29.07.14	ISSUE FOR C.C.		K.G.

NOTES:
THIS IS A COLOURED PLAN. REPRODUCTION IN COLOUR ONLY.
1. ORIGIN OF LEVELS SSM 97395 RL 50.53 DATUM AHD



SCALE:	DATUM: AHD
LONG SECTION: H: N/A V: N/A	CROSS SECTION: H: N/A V: N/A

PREPARED BY

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Level 9, 17 York Street
Sydney, NSW 2000
(GPO BOX 4401, Sydney, NSW 2001)
t: 02 9248 9800
f: 02 9248 9810

Suite 2, Level 1, Aquarius Tower
668 Princess Highway
Sutherland, NSW, 2258
DX 4522 Sutherland
t: 02 9642 1177
f: 02 9642 4631

CLIENT: THE TRUSTEES OF THE ROMAN CATHOLIC CHURCH FOR THE DIOCESE OF PARRAMATTA	DATE OF SURVEY: 18.01.13
SURVEY: C.L./B.F.	DATE OF PLAN: 29.07.14
DRAWN: K.G.	DATE LAST SAVED: 01.08.14
DESIGNED: K.G./B.L.	DATE APPROVED: 29.07.14
APPROVED: B.L.	

TITLE
LINEMARKING & STREET SIGNAGE PLAN
CIVIL WORKS
SUBDIVISION OF LOT 1 DP 1144668
ANDROMEDA DRIVE, CRANE BROOK

ISSUE FOR C.C.

JOB No I117EG	ISSUE A
DWG No E1-15	
SHEET 15 OF 15 SHEETS	SIZE A1