WARNING
PROPOSED SERVICES
THE LOCATION AND EXTENT OF PROPOSED SERVICES IS INDICATIVE ONLY AND ARE NOT TO BE USED FOR CONSTRUCTION. REFER TO AUTHORISED DOCUMENTATION BY RELEVANT AUTHORITY FOR CONSTRUCTION DETAILS

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

DIAL BEFORE YOU DIG www.1100.com.au

NSW GOVERNMENT | Transport Roads & Maritime Services

HORNSBY SHIRE COUNCIL, MR548 MID DURAL ROAD
ROAD WORKS IN ASSOCIATION WITH

392 GALSTON ROAD, GALSTON

GALSTON GRANGE DEVELOPMENT

DETAILED DESIGN

SHEET INDEX

CODE	NAME
GE	GENERAL
RD	ROAD ALIGNMENT AND DETAIL
UT	UTILITIES
SM	STORMWATER MANAGEMENT
PV	PAVEMENT
RF	ROADSIDE FURNITURE AND LINEMARKING
LS	LANDSCAPING
RC	ROAD CROSS SECTIONS
PW	PROPERTY WORKS
SO	SETOUT DETAILS
MS	MISCELLANEOUS

DRAWING LIST

LOCALITY PLAN
N.T.S.

GENERAL LEGEND

SYMBOL	DESCRIPTION
PROPOSED WORKS	
	KERB INLET PIT (KIP)
	GRATED PIT (GP)
	JUNCTION PIT (JP)
	SAG KERB INLET PIT (KIP)
1.1	PIT NUMBER
Ø375	STORMWATER PIPE
E	AGG.DRAIN
X FS.207.35	FINISHED SURFACE LEVELS
X BE.206.95	BULK EARTHWORKS LEVEL
KR01	KERB RETURN REFERENCE NUMBER
RW	RETAINING WALL (RW)
KO	KERB ONLY
KG	KERB AND GUTTER (STD 150mm HIGH)
SM	RTA SM TYPE KERB
SF	RTA SF TYPE KERB
DD	DISH DRAIN
R15.0	RADIUS TO FACE OF KERB
45.50	EXISTING CONTOUR
45.50	PROPOSED CONTOUR
TOP OF BATTER / BOTTOM OF BATTER / BATTER SLOPE	BATTERS
10.000	DIMENSION (UNITS - METRES)
	PROPOSED GUARD RAIL
EXISTING WORKS	
	EXISTING GUARD RAIL
	FENCE
	EXISTING PIT
	GAS MAIN
	SEWER MAIN
	WATER MAIN
	ELECTRICITY SUPPLY
	TELECOMMUNICATION CABLES
	STORMWATER PIPE
	SERVICE TO BE DECOMMISSIONED

ABBREVIATIONS

IL	INVERT LEVEL
RL	RELATIVE LEVEL (AHD)
FFL	FINISHED FLOOR LEVEL
VC	VEHICULAR CROSSING
PR	PRAM RAMP
DR	DRIVEWAY
FP	FOOTPATH
CH	CHAINAGE
UNO	UNLESS NOTED OTHERWISE
DP	DOWNPIPE

NSW GOVERNMENT | Transport Roads & Maritime Services
These plans are accepted for construction
NOUHAD FARAH, Nouhad
Project Manager
Date 07/08/17

FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
0 5 10 15 20 25 30 35 40 45 50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: X:\111403 - Galston-Grange Retirement-Village\BIM\6_3 MHT MIE\6_3_4 MHT UDM\Mid Dural Road Drawings\DS2016-002140-DD-GE-0200.dwg	LINEAR REFERENCING		PLOT DATE / TIME: 29/07/2016 2:14:27 PM	PLOT BY: Aseip	CLIENT: NSW GOVERNMENT Transport Roads & Maritime Services
PREPARED BY: MEINHARDT	DESIGNED: SIGNED ..... NAME ANH PHAM TITLE CIVIL ENGINEER DATE	REVIEWED: SIGNED ..... NAME STEVE DUNSTONE TITLE ASSOCIATE DIRECTOR DATE	VERIFIED: SIGNED ..... NAME PAUL ENOCH TITLE ASSOCIATE DATE	RMS PROJECT MANAGER: NAME NOUHAD FARAH TITLE PROJECT ENGINEER	PREPARED FOR: BRANCH NAME SECTION NAME DEPARTMENT NAME

VALIDATION AND ACCEPTANCE OF THESE DRAWINGS AND THE DESIGN SHOWN THEREON IS TO BE CARRIED OUT UNDER SEPARATE PROCESS

HORNSBY SHIRE COUNCIL
MID DURAL ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

A3

RMS PROJECT No.	DESIGN PROJECT No.	SHEET 1 OF 23
002140	111403	

RMS REGISTRATION No. DS2016 / 002140 — PART 01

ISSUE STATUS	EDMS No.	SHEET No.	ISSUE
FC		GE-0200	E

GENERAL

1. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL, SERVICES AND OTHER CONSULTANTS DRAWINGS THE SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE TENDER AND CONTRACT.
2. IF ANY DISCREPANCY OCCURS ON THE DRAWINGS OR BETWEEN DRAWINGS AND SPECIFICATION THE CONTRACTOR SHALL REFER THE DISCREPANCY TO MEINHARDT FOR WRITTEN CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
3 ALL WORKMANSHIP AND MATERIALS SHALL COMPLY WITH THE RMS QA SPECIFICATION FOR ROADWORKS AND THE RELEVANT CURRENT AUSTRALIAN STANDARDS AS APPROPRIATE.
4. ALL DIMENSIONS SHOWN SHALL BE VERIFIED ON SITE. DRAWINGS MUST NOT BE SCALED.
5. ONLY SUBSTITUTIONS APPROVED IN WRITING BY MEINHARDT SHALL BE ACCEPTED.
6 DURING CONSTRUCTION THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL STRUCTURES AND WORKS IN A STABLE CONDITION AND SHALL ENSURE NO PART SHALL BE OVER STRESSED DURING CONSTRUCTION ACTIVITIES.

PRELIMINARIES

1. THE CONTRACTOR SHALL ALLOW FOR PROVIDING MATERIALS AND WORK WHICH IS INCIDENTAL TO THE ITEMS SPECIFIED AND WHICH WOULD BE NECESSARY TO ACHIEVE THE RESULTS REQUIRED BY THE DRAWINGS.
2. THE CONTRACTOR WILL BE DEEMED TO HAVE INSPECTED THE SITE OF THE WORKS, ASSESSED AVAILABLE ACCESS, INQUIRED INTO THE LOCATION OF AUTHORITIES UNDERGROUND ASSETS, EXAMINED THE GEOTECHNICAL REPORT AND THE NATURE OF THE GROUND AND OBTAINED THE LOCAL CLIMATE AND RAINFALL INFORMATION.
3. SAFETY REQUIREMENTS

   THE CONTRACTOR SHALL ENSURE THAT AT ALL TIMES, THE MEANS AND METHODS OF CARRYING OUT THE WORK TO BE UNDERTAKEN CONFORM WITH THE STANDARDS AND REQUIREMENTS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT AND ANY OTHER APPLICABLE LEGISLATION, CODES OF PRACTICE AND STANDARDS.

   ALL PERSONNEL WORKING ADJACENT TO A TRAFFICABLE ROAD OR FORMATION SHALL WEAR RED SAFETY VESTS.

   THE CONTRACTOR SHALL PROTECT THE PUBLIC FROM DANGERS INHERENT IN EXCAVATIONS, OBSTRUCTIONS, WORKING PLANT AND FALLING OBJECTS. SUCH MEASURES THAT ARE TAKEN SHALL BE ADEQUATE TO MAINTAIN THE SAFETY OF THE PUBLIC DURING PERIODS OUTSIDE NORMAL WORKING HOURS ON SITE.

   THE CONTRACTOR SHALL ENSURE THAT ALL TRENCH EXCAVATION FOR INSTALLATION OF PIPEWORKS (OR OTHER WORKS) OF DEPTHS GREATER THAN 1.5 METRES MUST BE CONTINUOUSLY SUPERVISED AND AT ALL TIMES BE ADEQUATELY SUPPORTED.
4. ALL WORK WITHIN ROAD RESERVES, PUBLIC PROPERTY OR PRIVATE PROPERTY - SHALL BE EXECUTED STRICTLY IN ACCORDANCE WITH THE REQUIREMENTS OF THE RELEVANT AUTHORITY OR LAND OWNER.
5. CONTRACTOR SHALL OBTAIN FROM THE RELEVANT AUTHORITIES DETAILS OF ALL EXISTING SERVICES WITHIN THE VICINITY OF THE WORKS AND SHALL BE HELD SOLELY RESPONSIBLE FOR ANY DAMAGE CAUSED TO EXISTING SERVICES DURING THE EXECUTION OF THE WORKS.
6. THE CONTRACTOR SHALL COMPLY WITH AND GIVE NOTICES REQUIRED BY ANY ACT OF PARLIAMENT, ORDINANCE REGULATION OR BY-LAW OF ANY AUTHORITY HAVING JURISDICTION OVER THE WORKS AND SHALL PAY ALL FEES OR CHARGES LEGALLY DEMANDABLE UNDER ANY SUCH ACT OF PARLIAMENT, ORDINANCE, REGULATION OR BY-LAW.
7. PRIOR TO WORKS, THE CONTRACTOR SHALL UNDERTAKE AN EXISTING DEFECTS INSPECTION AND REPORT TO LIST ANY EXISTING DAMAGE TO ROADS, FOOTPATHS, KERBS CROSSINGS CHANNELS NATURE STRIPS, ETC. SUCH LISTS SHALL BE PREPARED IN DUPLICATE BY THE CONTRACTOR AND A COPY SENT TO THE SUPERINTENDENT.

SITEWORKS NOTES

1. THE CONTRACTOR SHALL LIAISE DIRECTLY WITH ALL SERVICE AUTHORITIES INVOLVED AND SHALL COMPLY WITH ALL THEIR REGULATIONS AND REQUIREMENTS.
2. ALL LEVELS SHOWN ARE TO AUSTRALIAN HEIGHT DATUM, UNLESS STATED OTHERWISE. ALL COORDINATES SHOWN ARE TO AUSTRALIAN MAP GRID, UNLESS STATED OTHERWISE. BASE SURVEY & SETOUT HAS BEEN SUPPLIED BY OTHERS & SHALL BE CONFIRMED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION.
3. SERVICE INFORMATION SHOWN IS BASED ON PLANS SUPPLIED AND IS APPROXIMATE ONLY. ACTUAL LOCATION CAN ONLY BE DETERMINED BY EXCAVATION. THE CONTRACTOR SHALL LIAISE WITH SERVICE AUTHORITIES FOR SERVICE LOCATIONS. THE CONTRACTOR SHALL PROTECT ALL SERVICES AND SHALL RECTIFY ANY DAMAGE AT HIS EXPENSE.
4. ALL WORKS IN PUBLIC LANDS SHALL BE TO THE APPROVAL AND SATISFACTION OF THE RELEVANT AUTHORITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND OBTAINING RELEVANT AUTHORITY WRITTEN APPROVAL OF THE WORKS.
5. EXISTING SURFACE CONTOURS SHOWN ARE INTERPOLATED FROM SPOT HEIGHTS AND ARE APPROXIMATE ONLY.
6. THE CONTRACTOR MUST VERIFY ALL DIMENSIONS AND EXISTING LEVELS ON SITE PRIOR TO COMMENCEMENT OF WORK. AND REPORT ANY DISCREPANCIES TO THE SUPERINTENDENT.
7. ALL EXISTING SERVICES (INCLUDING ANY NOT SHOWN ON THE PLANS) MUST BE ACCURATELY LOCATED IN POSITION AND LEVEL PRIOR TO ANY EXCAVATION. ANY DISCREPANCIES SHALL BE REPORTED TO THE SUPERINTENDENT. MINIMUM SERVICE CLEARANCES SHALL BE MAINTAINED FROM THE RELEVANT SERVICE AUTHORITY.
8. ALL DIMENSIONS AND SET OUTS SHOWN ARE EITHER TO FACE OF BUILDING, GRID LINES OR LIP OF KERB, UNLESS SHOWN OTHERWISE.
9. CONTRACTOR SHALL BE ISSUED AN ELECTRONIC COPY OF THE CIVIL DETAIL PLANS IN AUTOCAD DWG FORMAT FOR SET OUT PURPOSES. ALL DIMENSIONS SHOWN ON PLAN SHALL OVER RIDE SETOUT POINTS SELECTED FROM ELECTRONIC FILE PROVIDED.
10. THE CONTRACTOR SHALL ARRANGE FOR ALL SETTING OUT BY A REGISTERED SURVEYOR.
11. THE CONTRACTOR SHALL OBTAIN ALL REGULATORY AUTHORITY APPROVALS .
12. WHERE NEW WORKS ABUT EXISTING, THE CONTRACTOR MUST ENSURE THAT A SMOOTH AND EVEN PROFILE, FREE FROM ABRUPT CHANGES IS OBTAINED.
13. SAWCUT EXISTING KERB/KERB & CHANNEL AND PAVING WHERE NEW WORKS ARE TO MATCH EXISTING WORKS.
14. BUILDING AND SITE MAINTENANCE PROGRAM IS TO INCORPORATE REGULAR FLUSHING OF ALL STORMWATER PITS, PIPES, DOWNPIPES, SUB-SOIL DRAINS AND ASSOCIATED FITTINGS TO AVOID BLOCKAGES WITHIN THE SYSTEM.
15. ALL DISTURBED AREAS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION, UNLESS SPECIFIED OTHERWISE.
16. EXCAVATED TRENCHES SHALL BE COMPACTED TO THE SAME DENSITY AS THE ADJACENT NATURAL MATERIAL. ANY SUBSIDENCES DURING THE PERIOD TO BE RECTIFIED AS DIRECTED BY THE SUPERINTENDENT.
17. THE CONTRACTOR SHALL KEEP THE SITE WELL DRAINED AND COMPLETELY FREE OF STANDING WATER AT ALL TIMES.
18. GRADE EVENLY BETWEEN FINISHED SURFACE SPOT LEVELS. (FINISHED SURFACE CONTOURS ARE SHOWN FOR CLARITY ONLY.) WHERE FINISHED SURFACE SPOT LEVELS ARE NOT SHOWN THE SURFACE SHALL BE GRADED SMOOTHLY SO THAT IT WILL DRAIN FREELY. AND TO MATCH THE LEVELS OF ADJACENT SURFACES OR STRUCTURES.
19. ANY EXISTING TREES WHICH FORM PART OF THE FINAL LANDSCAPING PLAN WILL BE PROTECTED FROM CONSTRUCTION ACTIVITIES IN ACCORDANCE WITH THE LANDSCAPE ARCHITECT'S DETAILS AND/OR BY
   a) PROTECTING THEM WITH BARRIER FENCING OR SIMILAR MATERIALS INSTALLED OUTSIDE THE DRIP LINE,
   b) ENSURING THAT NOTHING IS NAILED TO THEM,
   c) PROHIBITING PAVING, GRADING, SEDIMENT WASH OR PLACING OF STOCKPILES WITHIN THE DRIP LINE EXCEPT AS ADVISED BY A QUALIFIED ARBORIST.
20. RECEPTORS FOR CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT-WEIGHT WASTE MATERIALS AND LITTER ARE TO BE EMPTIED AS NECESSARY. DISPOSAL OF WASTE SHALL BE IN A MANNER APPROVED BY THE SUPERINTENDENT OR AS SPECIFIED IN THE WASTE MANAGEMENT PLAN.

PROVISION FOR TRAFFIC

1. UNLESS OTHERWISE SPECIFIED, THE CONTRACTOR SHALL MAKE PROVISION FOR TRAFFIC, IN ACCORDANCE WITH RMS QA SPECIFICATION FOR ROADWORKS OR AUSTRALIAN STANDARD AS1742 "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES".
2. THE CONTRACTOR SHALL ASCERTAIN AND COMPLY WITH THE REQUIREMENTS OF THE AUTHORITY RESPONSIBLE FOR PUBLIC ROADS.
3. THE CONTRACTOR SHALL SO CONDUCT THE OPERATIONS AS TO MINIMISE OBSTRUCTION AND INCONVENIENCE TO THE PUBLIC, AND SHALL NOT HAVE UNDER CONSTRUCTION A GREATER LENGTH OR AMOUNT OF WORK THAN CAN BE MANAGED PROPERLY WITH DUE REGARD TO THE CONVENIENCE OF THE PUBLIC.

EARTHWORKS (CONTINUED)

5. WHEN A SURFACE IS UNABLE TO SUPPORT CONSTRUCTION EQUIPMENT OR IT IS NOT POSSIBLE TO COMPACT THE OVERLYING MATERIALS BECAUSE OF HIGH MOISTURE CONTENT, THEN ONE OR MORE OF THE FOLLOWING ALTERNATIVE ACTIONS MAY BE TAKEN:
   (I) ALLOW THE MATERIAL TO DRY TO A MOISTURE CONTENT WHICH ALLOW IT TO BE COMPACTED AND ALLOW THE PLACEMENT AND COMPACTION OF OVERLYING MATERIAL
   (II) SCARIFY THE MATERIAL TO A DEPTH OF 200MM AND WORK AS NECESSARY TO ACCELERATE DRYING. RECOMPACT AS SPECIFIED WHEN MOISTURE CONTENT APPROXIMATES OPTIMUM
   (III) EXCAVATE AND REPLACE THE SOFT MATERIAL.

   THE ACTION TO BE ADOPTED SHALL BE AT THE CONTRACTOR'S DISCRETION AND EXPENSE, BUT SHALL BE ADVISED TO THE SUPERINTENDENT BEFORE ACTION COMMENCES.

   IF THE CONTRACTOR ELECTS PURSUANT TO (I) ABOVE TO ALLOW THE MATERIAL TO DRY, RESULTING DELAYS, IF ANY, SHALL NOT CONSTITUTE GROUNDS FOR AN EXTENSION OF CONTRACT PERIOD OR DATE OF PRACTICAL COMPLETION.
6. THE FINISHED SUBGRADE SHALL NOT BE DISTURBED BY TRAFFIC OR OTHER OPERATIONS, AND SHALL BE PROTECTED AND MAINTAINED BY THE CONTRACTOR UNTIL THE FIRST LAYER OF FILL OR SUB-BASE IS PLACED THEREON. THE SUBGRADE SHALL BE KEPT DRAINED AND COMPLETELY FREE OF STANDING WATER AT ALL TIMES.

   THE CONTRACTOR SHALL PLAN AND CARRY OUT THE WHOLE OF THE WORKS TO MINIMISE THE EFFECTS OF RUN-OFF AND EROSION ON THE SITE AND ON DOWNSTREAM AREAS. HE SHALL AVOID UNNECESSARY GROUND DISTURBANCE AND PROVIDE AS NECESSARY FOR THE PROPER CONTROL OF STORMWATER RUN-OFF AT EVERY STAGE OF THE WORKS ALL IN ACCORDANCE WITH "MANAGING URBAN STORMWATER / SOIL AND CONSTRUCTION" (LANDCOM "BLUE BOOK")
7. PRIOR TO THE COMMENCEMENT OF EARTHWORKS TOPSOIL IS TO BE STRIPPED WITHIN THE LIMITS OF THE EARTHWORKS AND FROM ANY AREAS TO BE COVERED BY PAVING, STRUCTURES OR FILL, AND ALL AREAS WHICH ARE TO SUPPORT PAVEMENTS, EMBANKMENTS, STRUCTURES AND THE LIKE OR FILLING UNDER SUCH WORKS, SHALL BE STRIPPED CLEAR OF ALL TREES, LOGS, STUMPS, SCRUB, GRASS, ROOT GROWTH, CULTIVATED SOIL, WET OR SPONGY NATURAL SOIL, DECAYED VEGETABLE MATTER AND ANY OTHER DELETERIOUS SUBSTANCE. THE CONTRACTOR SHALL BREAK UP AND REMOVE ALL ASPHALT AND CONCRETE MATERIAL UPON WHICH FILL OR PAVEMENT SHALL BE PLACED.

   ALL MATERIAL WITHIN THE LIMIT OF THE EARTHWORKS SHALL BE WHOLLY REMOVED.

   FILL ALL HOLES WITH APPROVED MATERIAL IN MAXIMUM 150MM COMPACTED THICKNESS LAYERS COMPACTED TO THE DENSITY TO THE ADJOINING UNDISTURBED SOIL AND TO THE APPROVAL OF THE SUPERINTENDENT.
8. MOISTURE CONDITION THE NATURAL SUBGRADE TO WITHIN THE RANGE 97% TO 103% OF STANDARD OPTIMUM MOISTURE CONTENT AND COMPACT TO ACHIEVE A MINIMUM STANDARD DRY DENSITY RATIO TO A MINIMUM DEPTH OF 200MM. IF REQUIRED THE AREA SHOULD BE TYNED AND SCARIFIED FULL DEPTH TO FACILITATE THIS PROCESS.

   ANY SOFT, WEAK OR UNSTABLE AREAS EXPOSED BY THE COMPACTION PROCESS, OR DURING TEST ROLLING, AND WHICH DO NOT RESPOND TO FURTHER COMPACTION OR MOISTURE CONDITIONING SHALL BE EXCAVATED AND REPLACED.

   THE CONTRACTOR SHALL BE DEEMED TO HAVE ASSESSED THE EXTENT OF UNSTABLE AREAS AND SHALL BE DEEMED TO HAVE INCLUDED IN THE CONTRACT SUM FOR ALL ACTIVITIES REQUIRED FOR UNSTABLE AREA RECTIFICATION INCLUDING THE DELIVERY, PLACING AND COMPACTING OF APPROVED MATERIAL AS WELL AS THE EXCAVATION AND DISPOSAL OF REPLACED MATERIAL.
9. EXCAVATION TO THE LINES, LEVELS AND GRADES AS REQUIRED FOR UNDERGROUND SERVICES SPECIFIED IN THE RELEVANT SERVICES SECTIONS, INCLUDING DRAINAGE, HYDRAULIC, ELECTRICAL AND THE LIKE. UNLESS OTHERWISE SPECIFIED MAKE THE TRENCHES STRAIGHT BETWEEN MANHOLES, INSPECTION POINTS, JUNCTIONS AND THE LIKE, WITH VERTICAL SIDES AND UNIFORM GRADES. DEPTH SHALL BE AS REQUIRED BY THE RELEVANT SERVICES AND ITS BEDDING. CUT BACK ROOTS ENCOUNTERED IN TRENCHES TO LESS THAN 600mm CLEAR OF THE RELEVANT SERVICE. REMOVE SUCH OTHER OBSTRUCTIONS INCLUDING ROOTS, STUMPS, BOULDERS AND THE LIKE WHICH MAY, IN THE OPINION OF THE SUPERINTENDENT, INTERFERE WITH THE PROPER FUNCTIONING OF THE SERVICE. LAY AND BED SERVICES IN ACCORDANCE WITH THE RELEVANT SERVICES SPECIFICATION SECTION.
10. BACKFILL AND COMPACT SERVICE TRENCHES AS SOON AS POSSIBLE AFTER APPROVAL OF LAID AND BEDDED SERVICE. COMPACT BACKFILL IN PIPE TRENCHES SO THAT THE PIPE IS BUTTRESSED BY THE WALLS OF THE TRENCH.
11 WHERE FILLING IS DESIGNATED BY THE CONTRACT OR IS SHOWN ON THE DRAWINGS AS STRUCTURAL OR CONTROLLED FILL THE CONTRACTOR SHALL ENGAGE AN INDEPENDENT GEOTECHNICAL TESTING AUTHORITY TO SUPERVISE SUBGRADE PREPARATION, FILL PLACEMENT, COMPACTION AND TO UNDERTAKE SAMPLING AND TESTING AND REPORTING TO SATISFY THE REQUIREMENTS OF THIS SPECIFICATION AND THOSE OF AS 2870 AND AS 3798, FOR CONTROLLED FILL.
12. NO FILL SHALL BE PLACED OVER LAYERS NOT TESTED AND HAVING SATISFACTORY RESULTS. WHERE EXCAVATED MATERIAL IS NOT SUITABLE FOR FILLING, FILL MATERIAL, AS SPECIFIED IN THIS SPECIFICATION SECTION, "IMPORTED FILL" SHALL BE USED. ALL FILL MATERIAL SHALL BE PLACED IN MAXIMUM 200mm THICK LAYERS AND COMPACTED AT OPTIMUM MOISTURE CONTENT (+ OR - 2%) TO ACHIEVE A DRY DENSITY DETERMINED IN ACCORDANCE WITH AS1289.5.1.1-2003-METHODS OF TESTING SOILS FOR ENGINEERING PURPOSES OF NOT LESS THAN THE FOLLOWING STANDARD MINIMUM DRY DENSITY -

LOCATION	STANDARD DRY DENSITY
UNDER BUILDING SLABS	98%
VEHICULAR PAVED AREAS	98%
NON-VEHICULAR PAVED AREAS	95%
LANDSCAPED AREAS	95%

13. UNLESS OTHERWISE PERMITTED, NO FILLING SHALL BE PLACED AGAINST ANY STRUCTURES, WING WALLS OR RETAINING WALLS WITHIN FOURTEEN DAYS OF CASTING. STRUT WALLS AS NECESSARY TO PREVENT MOVEMENT DURING PLACING AND COMPACTION. PLACE AND COMPACT FILLING OVER AND AROUND PIPES, CULVERTS, BRIDGES AND OTHER STRUCTURES SO AS TO AVOID UNBALANCED LOADING OR MOVEMENT. UNLESS OTHERWISE DETAILED BACKFILL AT STRUCTURES SHALL BE FILLED AS FOLLOWS

   WHERE THE GAP BETWEEN THE STRUCTURE AND UNDISTURBED GROUND EXCEEDS 2m, BACKFILL THE ZONE WITHIN 2m OF THE STRUCTURE WITH DGS20 SUBBASE FINE CRUSHED ROCK AND BACKFILL IN THE ZONE BEYOND 2m OF THE STRUCTURE WITH SELECT FILL TO THE APPROVAL OF THE SUPERINTENDENT OR DGS20 SUBBASE FINE CRUSHED ROCK.

   UNLESS OTHERWISE DETAILED, MATERIAL WITHIN 300mm OF WEEPHOLES SHALL BE AN APPROVED GRANULAR FILTER MEDIUM OF COARSE SAND OR CRUSHED STONE WRAPPED AND SURROUNDED WITH AN APPROVED GEOTEXTILE SEPARATION LAYER.
14. HORIZONTAL.
   NO POINT SHALL BE GREATER THAN + OR - 100mm FROM THE DESIGN LOCATION.
   VERTICAL.
   SUBGRADE LEVEL: +0, -25mm
   PAVEMENT DESIGN SUBGRADE
   LEVEL. +0, -25mm
   OTHER. +50, -50mm
   STRAIGHTNESS (EXCLUDES ROCK): MAXIMUM 20MM DEPARTURE FROM 3M STRAIGHT EDGE LAID:
   - PARALLEL TO ROAD CENTER LINE
   - NORMAL TO INTENDED CONTOURS
15. AREAS UPON WHICH FILLS ARE TO BE CONSTRUCTED, ALL LAYERS OF FILLING, AND MATERIALS LESS THAN 150mm BELOW PERMANENT SUBGRADE LEVEL IN CUTTINGS, SHALL BE COMPACTED SO AS TO BE CAPABLE OF WITHSTANDING TEST ROLLING, WITHOUT VISIBLE DEFORMATION OR SPRINGING, WITH A PNEUMATIC TYRED ROLLER OR HIGHWAY TRUCK BALLASTED TO COMPLY WITH THE FOLLOWING:
   PNEUMATIC TYRED - NOT LESS THAN 3 T PER TYRE WITH TYRES INFLATED TO 550 KPa.
   HIGHWAY TRUCK - WITH REAR AXLE OR AXLES LOADED TO NOT LESS THAN 8 T EACH WITH TYRES INFLATED TO 550KPa
   TEST ROLLING SHALL BE CARRIED OUT IMMEDIATELY BEFORE OVERLYING LAYERS ARE PLACED.
   WHERE TEST ROLLING IS REQUIRED AT SOME LATER DATE, THE SURFACE SHALL BE MOISTURE CONDITIONED AS AND GIVEN NOT LESS THAN FOUR
   COVERAGES OF THE TEST ROLLER BEFORE TEST ROLLING COMMENCES.
16. THE WORK SHALL NOT BE ACCEPTED AS COMPLETE UNLESS ALL TEST RESULTS ARE PROVIDED TO THE SUPERINTENDENT. THE CONTRACTOR SHALL PROVIDE ALL MATERIAL PROPERTY AND QUALITY TEST RESULTS TO THE SUPERINTENDENT.
17. THE CONTRACTOR SHALL PROGRAM THE EARTHWORKS OPERATION SO THAT THE WORKING AREAS ARE ADEQUATELY DRAINED DURING THE PERIOD OF CONSTRUCTION. THE SURFACE SHALL BE GRADED AND SEALED OFF TO REMOVE DEPRESSIONS, ROLLER MARKS AND SIMILAR WHICH WOULD ALLOW WATER TO POND AND PENETRATE THE UNDERLYING MATERIAL. ANY DAMAGE RESULTING FROM THE CONTRACTOR NOT OBSERVING THESE REQUIREMENTS SHALL BE RECTIFIED BY THE CONTRACTOR AT THEIR OWN EXPENSE.
18. TESTING OF THE FILL MATERIAL SHALL BE CARRIED OUT BY AN APPROVED NATA REGISTERED LABORATORY AT THE CONTRACTORS EXPENSE.

EARTHWORKS

1. THE CONTRACTOR SHALL COMPLY WITH RMS QA SPECIFICATIONS FOR ROADWORKS AND THE CURRENT EDITIONS OF THE AUSTRALIAN STANDARDS.
   AS 1289 TESTING SOILS FOR ENGINEERING PURPOSES
   AS 3798 GUIDELINES ON EARTHWORKS FOR COMMERCIAL AND RESIDENTIAL DEVELOPMENTS
2. ALL WORK SHALL COMPLY WITH THE PROJECT GEOTECHNICAL REPORT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CARRYING OUT ALL CONTROL AND COMPLIANCE EXAMINATION AND TESTING OF MATERIALS AND WORK.UNLESS OTHERWISE SPECIFIED, ALL TESTS SHALL BE UNDERTAKEN IN ACCORDANCE WITH THE APPROPRIATE AUSTRALIAN STANDARD TEST METHOD. WHERE THERE IS NO RELEVANT AUSTRALIAN STANDARD TEST METHOD THEN THE CURRENT APPROPRIATE RTA TEST METHOD OR OTHER SPECIFIED TEST METHOD SHALL BE USED. ALL TESTS SHALL BE CONDUCTED BY EXPERIENCED TESTING OFFICERS IN A LABORATORY ACCREDITED BY THE NATIONAL ASSOCIATION OF TESTING AUTHORITIES-NATA.
4. DETERMINATION OF THE NATURE AND QUANTITY(IES) OF THE EXISTING SITE MATERIALS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. WHERE INCLUDED IN THE DOCUMENTS, GEOTECHNICAL REPORTS ARE INCLUDED FOR INFORMATION ONLY. INTERPRETATION OF THE REPORT/S SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
   USE OF ON-SITE MATERIAL WITHIN THE WORKS SHALL ONLY BE PERMITTED WHERE THE MATERIAL EITHER.
   I. IS SPECIALLY STATED WITHIN THE DOCUMENTS AS BEING USED IN THE WORKS, OR
   II. IS PERMITTED BY THE SUPERINTENDENT & GEOTECHNICAL TESTING / ENGINEER
   ALL FILL MATERIAL SHALL BE FROM A SOURCE APPROVED BY THE SUPERINTENDENT AND SHALL COMPLY WITH THE FOLLOWING -
   a) FREE FROM ORGANIC AND PERISHABLE MATTER;
   b) MAXIMUM PARTICLE SIZE 75mm; AND
   c) PLASTICITY INDEX - BETWEEN 2% AND 15%.

STORMWATER DRAINAGE

1. THE CONTRACTOR SHALL COMPLY WITH RMS QA SPECIFICATIONS FOR ROADWORKS FOR ALL STORMWATER DRAINAGE WORKS.
2. ALL DRAINAGE PIPES Ø375mm AND ABOVE SHALL BE SPIGOT AND SOCKET REINFORCED CONCRETE PIPES WITH RUBBER RING JOINTS (UNO).
3. ALL DRAINAGE PIPES LESS THAN OR EQUAL TO Ø225mm SHALL BE uPVC DWV GRADE CLASS SN8 IN ACCORDANCE WITH AS/NZS1260.2009-PVC-U PIPES AND FITTINGS FOR DRAIN, WASTE AND VENT APPLICATION WITH SOLVENT WELDED JOINTS (UNO).
4. ALL PIPE JUNCTIONS UP TO AND INCLUDING Ø450mm AND TAPERS, SHALL BE VIA PURPOSE MADE FITTINGS (UNO).
5. MINIMUM GRADE TO STORMWATER LINES TO BE 1%(UNO).
6. EQUIVALENT STRENGTH FIBROUS REINFORCED CONCRETE AND/OR VITRIFIED CLAY PIPE MAY BE USED SUBJECT TO APPROVAL BY THE SUPERINTENDENT AND CONSENT AUTHORITY.
7. TRENCHES MUST BE KEPT CLEAR OF WATER AT ALL TIMES AND TIMBERED WHERE NECESSARY TO PREVENT COLLAPSE.
8. WHERE STORMWATER LINES PASS UNDER FLOOR SLABS DWV GRADE uPVC RUBBER RING JOINTS ARE TO BE USED (UNO).
9. PIPES SHALL BEAR EVENLY ON THE BED PREPARED AS SPECIFIED ABOVE AND LAID WITH THE SOCKETS POINTED UPGRADE. ALL PIPES SHALL BE LAID IN STRAIGHT LINES, TO TRUE INVERT LEVELS AND GRADES AS SHOWN ON PLANS. EACH PIPE SHALL BE SEPARATELY BONED BETWEEN ACCURATELY ESTABLISHED GRADE POINTS. THE CONTRACTOR SHALL ADHERE TO THE SUPERINTENDENT'S WRITTEN APPROVAL.
10. UNLESS NOTED OTHERWISE, BEDDING SHALL BE TYPE H2 FOR PIPES NOT UNDER PAVEMENTS AND TYPE HS3 FOR PIPES UNDER PAVEMENTS IN ACCORDANCE WITH AS/NZS3725 (2007) - DESIGN FOR INSTALLATION OF BURIED CONCRETE PIPES.
11. BACKFILL TRENCH WITH SAND OR APPROVED GRANULAR BACKFILL TO 300mm (MIN) ABOVE THE PIPE. WHERE THE PIPE IS UNDER PAVEMENTS BACKFILL REMAINDER OF TRENCH TO PAVEMENT SUBGRADE WITH SAND OR APPROVED GRAVEL SUB-BASE COMPACTED IN 150mm LAYERS TO 98% STANDARD MAXIMUM DRY DENSITY. THE CONTRACTOR IS TO ENSURE COMPACTION EQUIPMENT IS APPROPRIATE FOR THE PIPE CLASS USED.
12. ALL PIPE JOINTING SHALL BE CARRIED OUT IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN SPECIFICATIONS FOR THE TYPE OF PIPE BEING USED.
13. CONTRACTOR TO SUPPLY AND INSTALL ALL FITTINGS AND SPECIALS INCLUDING VARIOUS PIPE ADAPTORS TO ENSURE PROPER CONNECTION BETWEEN DISSIMILAR PIPEWORK.
14. ALL CONNECTIONS TO EXISTING DRAINAGE PITS SHALL BE MADE IN A TRADESMAN-LIKE MANNER AND THE INTERNAL WALL OF THE PIT AT THE POINT OF ENTRY SHALL BE CEMENT RENDERED TO ENSURE A SMOOTH FINISH WITH NO PROTRUSION.
15. WHERE ANY PIPE IS CUT INTO A LARGER PIPE, SUCH CONNECTION SHALL BE NEATLY MADE AND NO PART OF THE PIPE OR DOWNPIPE SHALL BE ALLOWED TO PROJECT. ANY CUT-IN JUNCTION SHALL BE MADE IN THE TOP HALF OF THE LARGER PIPE. SUCH JUNCTION TO CONCRETE PIPES SHALL BE SURROUNDED WITH A NEAT COLLAR OF CEMENT MORTAR AS DIRECTED OR AS DETAILED ON THE DRAWINGS. JUNCTIONS BETWEEN PVC PIPES SHALL USE PROPRIETY FITTINGS INTENDED FOR THE PURPOSE.
16. THE ENDS OF PIPES WHICH CONNECT WITH SIDE ENTRY, JUNCTION OR OTHER PITS SHALL BE NEATLY CUT TO FIT THE INNER FACE OF THE CONCRETE. WHERE UPVC PIPES ENTER/LEAVE PITS A RUBBER RING JOINT MANHOLE COUPLING SHALL BE CAST INTO THE PIT WALL.BEDDING, HAUNCH AND OVERLAY MATERIALS SHALL CONFORM TO THE DETAILS SHOWN ON THE DRAWINGS.
17. ALL PITS AND ENDWALLS SHALL BE CONSTRUCTED IN THE POSITIONS AND TO THE LEVELS SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE SUPERINTENDENT. LOCATION OF ALL IAD PITS TO BE CONFIRMED WITH SUPERINTENEND & LANDSCAPE ARCHITECT BEFORE CONSTRUCTION.

   COUNCIL'S CONSTRUCTION PIT DETAILS TO TAKE PRECEDENCE TO THE CONSTRUCTION DETAILS SHOWN IN THIS DOCUMENTATION. PRECAST PITS OR ALTERNATIVE DESIGN TYPES CAN BE USED SUBJECT TO COUNCIL / PCA APPROVAL. (IAD ONLY)

   PIT COVERS SHALL BE PLACED IN ACCORDANCE WITH THE DETAIL SITE PLANS AND PIT SCHEDULE (IF PROVIDED) IN REGARD TO TYPE, SIZE, LOCATION AND LEVEL. THE BASE OF EACH PIT SHALL BE INFILLED AND SHAPED WITH CONCRETE OR CEMENT MORTAR TO PROVIDE A SMOOTH FLOW PATH.
18. PITS DEEPER THAN 1000mm SHALL HAVE STEP IRONS INSTALLED IN ACCORDANCE WITH THE LOCAL OR STATUTORY AUTHORITY REQUIREMENTS.
19. ALL DOWNPIPES SHALL BE CONNECTED TO AT THE END OF A PIPE OR ELBOW AND WHICH THEY SHALL ENTER CENTRALLY. WHERE PVC DOWNPIPES AND UNDERGROUND DRAINAGE ARE USED, THE DOWNPIPES SHALL BE CONNECTED TO THE UNDERGROUND DRAINS WITH SUITABLE STANDARD FITTINGS, BENDS ETC AND WITH SOLVENT JOINTS. THE CONTRACTOR SHALL LAY AND GRADE DRAINS FROM DOWNPIPES TO COMPLY WITH THE REQUIREMENTS FOR PIPE MATERIAL AND COVER REQUIRED BY AS3500.3. WHERE THE REQUIREMENTS OF AS3500.3 CANNOT BE MET THE CONTRACTOR SHALL REFER THE MATTER TO THE SUPERINTENDENT.
20. SUPPLY APPARATUS AND MATERIALS NECESSARY FOR, AND CARRY OUT THE TESTS REQUIRED BY THE SPECIFICATION OR REGULATORY AUTHORITIES, IN THE PRESENCE OF THE SUPERINTENDENT AND THE RELEVANT AUTHORITY. LEAVE PIPE JOINTS EXPOSED TO ENABLE OBSERVATION DURING THE TESTS. ENSURE PVC SOLVENT CEMENT JOINTS HAVE BEEN CURED FOR AT LEAST 24 HOURS BEFORE TESTING.
21. THE CONTRACTOR SHALL PRESSURE TEST WITH WATER, ALL STORMWATER PIPEWORK IN OR UNDER ANY STRUCTURES, IN ACCORDANCE WITH AS 3500.3.
22. WHERE SHOWN IN THE DOCUMENTS OR WHERE THE GRADE OF THE PIPELINE IS ≥15%, CONCRETE BULKHEADS SHALL BE CONSTRUCTED AT EVERY SECOND JOINT. THE AXIS OF THE BULKHEAD SHALL BE VERTICAL WITH A MINIMUM TOP WIDTH OF 200mm. UNLESS OTHERWISE DIRECTED THE TOP OF BULKHEADS SHALL EXTEND TO WITHIN 300mm OF FINISHED SURFACE LEVEL OR TO THE SUBGRADE LEVEL WHERE THE PIPELINE IS UNDER A ROAD PAVEMENT. ON EACH SIDE OF THE PIPE AT THE LEVEL OF THE TRENCH INVERT 100mm DIA PIPES SHALL PASS THROUGH THE BULKHEAD. SUCH PIPES SHALL BE FILLED WITH FIBREGLASS WOOL OR OTHER APPROVED FILTER MATERIAL. THE BULKHEAD SHALL BE LOCATED DIRECTLY BEHIND THE DOWNSTREAM COLLAR SO AS NOT TO ENCASE THE JOINT. REFER TO DETAILS SHEET.

EXISTING SERVICES

1. EXISTING SERVICES HAVE BEEN PLOTTED FROM SUPPLIED DATA AND AS SUCH THEIR ACCURACY CANNOT BE GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH THE LOCATION AND LEVEL OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE SUPERINTENDENT.
2. THE CONTRACTOR SHALL ALLOW FOR THE CAPPING OFF, EXCAVATION AND REMOVAL IF REQUIRED OF ALL REDUNDANT EXISTING SERVICES IN AREAS AFFECTED BY WORKS WITHIN THE CONTRACT AREA, AS SHOWN ON THE DRAWINGS UNLESS DIRECTED OTHERWISE BY THE SUPERINTENDENT.
3. THE CONTRACTOR SHALL ENSURE THAT AT ALL TIMES SERVICES TO ALL BUILDINGS NOT AFFECTED BY THE WORKS ARE NOT DISRUPTED.
4. IF REQUIRED, THE CONTRACTOR SHALL CONSTRUCT TEMPORARY SERVICES TO MAINTAIN EXISTING SUPPLY TO BUILDINGS REMAINING IN OPERATION DURING WORKS TO THE SATISFACTION AND APPROVAL OF THE SUPERINTENDENT. ONCE DIVERSION IS COMPLETE AND COMMISSIONED THE CONTRACTOR SHALL REMOVE ALL SUCH TEMPORARY SERVICES AND MAKE GOOD TO THE SATISFACTION OF THE SUPERINTENDENT AND THE RELEVANT SERVICE AUTHORITY.
5. INTERRUPTION TO SUPPLY OF EXISTING SERVICES SHALL BE DONE SO AS NOT TO CAUSE ANY INCONVENIENCE TO THE PRINCIPAL. THE CONTRACTOR IS TO GAIN APPROVAL FROM THE SUPERINTENDENT FOR TIME OF INTERRUPTION - THE CONTRACTOR IS RESPONSIBLE FOR ALL LIAISON.
6. ALL BRANCH GAS AND WATER SERVICES UNDER DRIVEWAYS AND BRICK PAVING SHALL BE LOCATED IN 80mm DIA uPVC SEWER GRADE CONDUITS EXTENDING A MINIMUM OF 500mm BEYOND THE EDGE OF PAVING.
7. CLEARANCE AND COVER REQUIREMENTS SHALL BE OBTAINED FROM THE RELEVANT SERVICE AUTHORITY BEFORE COMMENCEMENT OF WORKS AND SHALL BE ADHERED TO AT ALL TIMES
8. CARE IS TO BE TAKEN WHEN EXCAVATING NEAR EXISTING SERVICES. NO MECHANICAL EXCAVATIONS ARE TO BE UNDERTAKEN OVER TELECOM OR ELECTRICAL SERVICES. HAND EXCAVATE IN THESE AREAS ONLY.

SERVICE TRENCHES AND CONDUITS

1. MATERIAL SHALL COMPLY WITH RMS QA SPECIFICATIONS FOR ROADWORKS AND THE CURRENT EDITIONS OF THE FOLLOWING AUSTRALIAN STANDARDS.
   AS 2053 NON-METALLIC CONDUITS AND FITTINGS.
   AS 2032 CODE OF PRACTICE FOR UPVC PIPE SYSTEMS.
   AS 3500.3 NATIONAL PLUMBING AND DRAINAGE CODE, PART 3 STORMWATER DRAINAGE.
2. ELECTRICAL, WATER & GAS DUCTING CONDUITS SHALL BE IN ACCORDANCE WITH THE RELEVANT AUTHORITY REQUIREMENTS.
3. CONTRACTOR TO COORDINATE SHARED TRENCH AND LIASE WITH NBN Co / GAS / TELSTRA FOR SUPPLY AND PLACEMENT OF CONDUIT AND GIVE MINIMUM 14 DAYS PRIOR TO THE NEED FOR DUCTING TO BE INSTALLED.
4. DRAW WIRES SHALL BE 2.8mm HIGH TENSILE GALVANISED DRAW WIRE.
5. ALL EXCAVATION AND BACKFILL SHALL BE IN ACCORDANCE WITH THE STORMWATER DRAINAGE AND BASE AND SUBBASE-CRUSHED ROCK SECTION.
6. BEDDING AND HAUNCHING SHALL COMPLY WITH THE REQUIREMENTS OF AS2032 UNLESS OVERRIDEN BY THE REQUIREMENTS OF THE RELEVANT AUTHORITY OR THE RELEVANT SERVICES SECTIONS OF THE SPECIFICATION. LOW PERMEABILITY BEDDING AND BACKFILL SHALL BE PROVIDED, WHERE SHOWN ON THE PLAN OR OTHERWISE DIRECTED.

7. WHERE SERVICES OR CONDUITS ARE PLACED UNDER PAVEMENT THE COVER FROM TOP OF THE SERVICE OR CONDUIT TO THE PAVEMENT SURFACE SHALL, UNLESS SHOWN OTHERWISE ON THE DRAWINGS OR REQUIRED BY SERVICE AUTHORITIES, BE NOT LESS THAN 750MM AND TO THE INVERT LEVEL OF OPEN DRAINS SHALL BE NOT LESS THAN 600mm. UNLESS OTHERWISE APPROVED BY THE SUPERINTENDENT, CROSSING OF PAVEMENT SHALL BE MADE SQUARE OR NEAR SQUARE WITH THE DIRECTION OF TRAFFIC.
   WHERE IT IS NECESSARY FOR EXISTING ASPHALT OR CONCRETE PAVEMENTS TO BE CUT THEY SHALL BE SAWN FOR THE FULL DEPTH OF ASPHALT OR CONCRETE.
8. CONDUITS SHALL BE PLACED UNDER LANDSCAPE OR NON-PAVED AREAS WITH NOT LESS THAN 450mm COVER UNLESS A GREATER DEPTH IS REQUIRED BY THE RELEVANT AUTHORITY OR SERVICES SECTION OF THE SPECIFICATION.

9. END DUCT CROSSINGS 500mm BEHIND KERBS UNLESS SHOWN OTHERWISE ON THE DRAWINGS. END DUCT CROSSINGS 1000mm CLEAR OF THE PAVEMENT WHERE THERE IS NO KERB, UNLESS SHOWN OTHERWISE ON THE DRAWINGS.
   LOCATE DUCTS TO AVOID OTHER SERVICES AND WITH STRAIGHT LINES AND GRADES UNLESS DIRECTED OTHERWISE.
   EACH UNUSED CONDUIT IN EACH CONDUIT BANK SHALL BE FITTED WITH A SINGLE UNJOINED LENGTH OF DRAW WIRE OF A LENGTH EQUAL TO THE LENGTH OF THE DUCT PLUS 2 METERS.
   CAP BOTH ENDS OF ALL UNUSED CONDUITS WITH STANDARD UPVC CAPS OR APPROVED WATERTIGHT CAP.
   LEAVE ENDS OF CONDUITS EXPOSED UNTIL THEIR LOCATIONS HAVE BEEN RECORDED BY THE RELEVANT AUTHORITIES.

SUBSOIL DRAINAGE

1. THE CONTRACTOR SHALL COMPLY WITH RMS QA SPECIFICATIONS FOR ROADWORKS FOR ALL SUBSOIL DRAINAGE WORKS.
2. WHERE SUBSOIL DRAINAGE LINES PASS UNDER FLOOR SLABS AND VEHICULAR PAVEMENTS, UNSLOTTED uPVC DWV GRADE CLASS SN8 PIPE SHALL BE USED.
3. PROVIDE SUBSOIL DRAINAGE IN ACCORDANCE WITH COUNCIL SPECIFICATIONS WITH CONTINUOUS FALL TO DOWNSTREAM PITS LOCATED AS SHOWN ON PLAN AND AS MAYBE DIRECTED BY COUNCIL / SUPERINTENDENT.
4. ALL SUBSOIL DRAINAGE PIPES SHALL BE Ø100mm CLASS 400 PERFORATED DRAINAGE PIPE LAID AT 1.0%MIN GRADE WRAPPED IN GEOFABRIC (UNO) AND BE LAID AT A MIN DEPTH OF 400mm BELOW PAVEMENT SUB-BASE COURSE.

BASE AND SUBBASE-CRUSHED ROCK

1. ALL WORKMANSHIP AND MATERIALS SHALL COMPLY WITH RMS QA SPECIFICATIONS FOR ROADWORKS AND THE CURRENT EDITIONS OF THE AUS-SPEC AND RELEVANT AUSTRALIAN STANDARDS .
2. WHERE IT IS SPECIFIED THAT WATER SHALL BE ADDED TO THE CRUSHED ROCK PRIOR TO DELIVERY, SUCH WATER SHALL BE CLEAR AND SUBSTANTIALLY FREE FROM DETRIMENTAL IMPURITIES SUCH AS SOILS, SALTS, ACIDS, ALKALIS AND VEGETABLE SUBSTANCES.
3. WHERE SPECIFIED CEMENT SHALL COMPLY WITH THE REQUIREMENTS OF EITHER AUSTRALIAN STANDARD SPECIFICATION AS1315-PORTLAND CEMENT OR AS1317-BLENDED CEMENT.
4. THE SUBGRADE, OR PREVIOUS PAVEMENT COURSE, SHALL HAVE BEEN TESTED AND ACCEPTANCE CRITERIA MET BEFORE THE PLACING OF THE NEXT COURSE WILL BE PERMITTED. CRUSHED ROCK MATERIAL SHALL NOT BE PLACED ON A WATERLOGGED SUBGRADE OR LOWER COURSE.
5. THE MOISTURE CONTENT OF THE CRUSHED ROCK SHALL BE MAINTAINED WITHIN -2%, +2% OF OPTIMUM MOISTURE CONTENT AT ALL TIMES DURING SPREADING AND COMPACTION.
6. EACH LAYER SHALL BE COMPACTED AS SOON AS POSSIBLE AFTER SPREADING AND WHILE THE MOISTURE CONTENT IS WITHIN THE SPECIFIED RANGE TO ACHIEVE A UNIFORM DENSITY IN THE LAYER.
7. AT THE COMPACTION OF EACH LAYER WITHIN THE COURSE, THE CONTRACTOR SHALL ARRANGE FOR THE LAYER TO BE TESTED FOR COMPLIANCE WITH THE REQUIRED DENSITY. ALL TEST RESULTS SHALL BE SUBMITTED TO THE SUPERINTENDENT FOR APPROVAL PRIOR TO CONSTRUCTION OF THE NEXT COURSE OR SURFACE TREATMENT.
8. WHERE TEST RESULTS INDICATE THE AREA FAILS TO COMPLY WITH THE REQUIRED DENSITY CRITERIA, THE CONTRACTOR SHALL RE-ROLL, LOOSEN, RE-WATER, RE-COMPACT, OR REMOVE AND REPLACE THE LAYER AS DIRECTED BY THE SUPERINTENDENT, TO ACHIEVE A LAYER COMPLYING IN FULL WITH THIS SPECIFICATION. COSTS OF RECTIFICATION AND RETESTS SHALL BE BORNE BY THE CONTRACTOR.

NSW GOVERNMENT | Transport Roads & Maritime Services
These plans are accepted for construction
Project Manager
Date 07/08/17

FOR CONSTRUCTION

DRAWING FILE LOCATION / NAME
X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MIE\6_3_4 MHT UD\Mid Dural Road Drawings\DS2016-002140-DD-GE-0201-201A.dwg

DESIGN LOT CODE

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	A	29-07-16	ISSUED FOR 100% DESIGN DEVELOPMENT		
	B	04-11-16	INCORPORATED RMS COMMENTS DATED 03-08-2016	SK	PE
	C	27-11-17	INCORPORATED BRS COMMENTS DATED 22-12-2016	SK	PE
	D	05-06-17	INCORPORATED RMS COMMENTS DATED 16-05-2017	SK	PE

SCALES ON A3 SIZE DRAWING

CO-ORDINATE SYSTEM: MGA ZONE 56
HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY
MEINHARDT
Meinhardt Australia Pty Ltd

PLOT DATE / TIME: 29/07/2016 2:21:41 PM
PLOT BY: Aseip

TITLE	NAME	DATE
DRAWN	D.CREARY	
DRG CHECK	M.GRINHAM	
DESIGN	A.PHAM	
DESIGN CHECK	S.DUNSTONE	
DESIGN MNGR	P.ENOCH	
PROJECT MNGR	P.ENOCH	

CLIENT
NSW GOVERNMENT | Transport Roads & Maritime Services

PREPARED FOR
BRANCH NAME
SECTION NAME
DEPARTMENT NAME

HORNSBY SHIRE COUNCIL
MID DURAL ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

A3

GENERAL NOTES SHEET 1 OF 2

SHEET 02 OF 23

RMS REGISTRATION No. DS2016 / 002140
PART 01
ISSUE STATUS: FC
EDMS No.
SHEET No. GE-0201
ISSUE D

ASPHALTIC CONCRETE NOTES

GENERAL
ASPHALTIC CONCRETE MIX DESIGN, MANUFACTURE, PLACING AND COMPACTION SHALL BE IN ACCORDANCE WITH RMS QA SPECIFICATIONS FOR ROADWORKS.

PAVEMENT PREPARATION
2. THE EXISTING SURFACE TO BE SEALED, SHALL BE DRY AND BROOMED BEFORE COMMENCEMENT OF WORK TO ENSURE COMPLETE REMOVAL OF ALL FOREIGN AND LOOSE MATTER.
3. ALL DEPRESSIONS OR UNEVEN AREAS ARE TO BE TACK-COATED AND BROUGHT UP TO GENERAL LEVEL OF PAVEMENT WITH ASPHALTIC CONCRETE BEFORE LAYING OF MAIN COURSE.

TACK COAT
4. THE WHOLE OF THE AREA TO BE SHEETED WITH ASPHALTIC CONCRETE SHALL BE LIGHTLY AND EVENLY COATED WITH RAPID SETTING BITUMEN. APPLICATION SHALL BE BY MEANS OF A MECHANICAL SPRAYER WITH SPRAY BAR.

SPREADING
5. ALL ASPHALTIC CONCRETE SHALL BE SPREAD WITH A SELF PROPELLED PAVING MACHINE.
6. THE ASPHALTIC CONCRETE SHALL BE LAID AT A MIX TEMPERATURE AS SHOWN BELOW -

ROAD SURFACE TEMP IN SHADE (°C)	MIX TEMPERATURES(°C)
5 - 10	NOT PERMITTED
10 - 15	150
15 - 25	145
25+	140

7. ASPHALTIC CONCRETE SHALL NOT BE LAID WHEN THE ROAD SURFACE IS WET OR WHEN COLD WINDS CHILL THE MIX TO ADVERSELY AFFECT TEMPERATURE OF MIX DURING SPREADING AND COMPACTION OPERATIONS.

JOINTS
8. THE NUMBER OF JOINTS BOTH LONGITUDINAL AND TRANSVERSE SHALL BE KEPT TO A MINIMUM.
9. THE DENSITY AND SURFACE FINISH AT JOINTS SHALL BE SIMILAR TO THOSE OF THE REMAINDER OF THE LAYER.

COMPACTION
10 ALL COMPACTION SHALL BE UNDERTAKEN USING SELF PROPELLED ROLLERS.
11. INITIAL ROLLING SHALL BE COMPLETED BEFORE THE MIX TEMPERATURE FALLS BELOW 11.5°C.
12. SECONDARY ROLLING SHALL BE COMPLETED BEFORE THE MIX TEMPERATURE FALLS BELOW 60°C.

FINISHED PAVEMENT PROPERTIES
13. FINISHED SURFACES SHALL BE SMOOTH, DENSE AND TRUE TO SHAPE AND SHALL NOT VARY MORE THAN 10mm FROM THE SPECIFIED PLAN LEVEL AT ANY POINT AND SHALL NOT DEVIATE FROM THE BOTTOM OF A 3m STRAIGHT EDGE LAID IN ANY DIRECTION BY MORE THAN 5mm.

CONCRETE NOTES

GENERAL
CONCRETE MIX DESIGN, MANUFACTURE, PLACING AND COMPACTION SHALL BE IN ACCORDANCE WITH RMS QA SPECIFICATIONS FOR ROADWORKS.

1. USE "AS3972-1997-PORTLAND AND BLENDED CEMENTS-TYPE GP" CEMENT (UNO).
2. ALL CONCRETE SHALL BE SUBJECT TO PROJECT CONTROL SAMPLE AND TESTING TO AS3600-2001-CONCRETE STRUCTURES.
3. CONSOLIDATE BY VIBRATION. CURE SURFACES AS SHOWN ON THE PLANS OR AS DIRECTED IN THE SPECIFICATION OR AS DIRECTED BY THE SUPERINTENDENT.
4. FIX REINFORCEMENT AS SHOWN ON DRAWINGS. THE TYPE AND GRADE IS INDICATED BY A SYMBOL AS SHOWN BELOW.
   - N HOT ROLLED DEFORMED BAR, GRADE 500
   - R PLAIN ROUND BAR, GRADE 250
   - SL / RL HARD DRAWN WIRE FABRIC SQUARE OR RECTANGULAR FOLLOWING THIS SYMBOL A NUMERAL INDICATES THE SPECIFIED DIAMETER.
5. PROVIDE BAR SUPPORTS OR SPACERS TO PROVIDE CONCRETE COVER AS DETAILED TO ALL REINFORCEMENT.

CONCRETE PAVEMENTS
1. CONCRETE MIX PARAMETERS -
   a) MAXIMUM AGGREGATE SIZE 20mm
   b) FLEXURAL STRENGTH AT 28 DAYS = 3.5 MPa (Fc=32MPa)
   c) FLEXURAL STRENGTH AT 90 DAYS = 3.85 MPa
   d) MAXIMUM WATER/CEMENT RATIO = 0.55
   e) MAXIMUM SHRINKAGE LIMIT = 650 MICRON STRAINS (AS1012 pt 13)
   f) MINIMUM CEMENT CONTENT = 300kg/m³
   g) CEMENT TO BE TYPE "SL" (NORMAL CEMENT) to AS3972
   h) SLUMP = 80mm
2. SAWN JOINTS ARE TO BE CUT NOT SOONER THAN 24 HOURS AND NOT LATER THAN 48 HOURS AFTER CONCRETE POUR TO AVOID DAMAGING THE SURFACE DURING SAWCUT OR AS DIRECTED BY THE SUPINTENDENT.
3. JOINT LAYOUT SHALL BE AS DETAILED ON THE PLANS.
4. PROVIDE 10mm WIDE EXPANSION JOINTS BETWEEN ALL BUILDINGS, OTHER STRUCTURES AND PAVEMENTS.
5. BOND BREAKER TO BE TWO (2) UNIFORM COATS OF BITUMEN EMULSION ALL OVER THE EXPOSED SURFACE AND ON END.
6. DOWELS AND TIE BARS TO MEET STRENGTH REQUIREMENTS OF STRUCTURAL GRADE STEEL IN ACCORDANCE WITH AS ISO 1 302-2005-GEOMETRICAL PRODUCT SPECIFICATIONS. DOWELS AND TIE BARS SHALL BE -
   a) STRAIGHT,
   b) TO LENGTH SPECIFIED,
   c) ALL DOWELS TO BE HOT DIP GALVANISED,
   d) SAWN TO LENGTH NOT CROPPED.
7. DIMENSIONS OF SEALANT RESERVOIR DEPENDANT ON THE SEALANT TYPE ADOPTED. SUPERINTENDENT APPROVAL TO BE OBTAINED FOR SEALANT AND RESERVOIR DIMENSIONS AND DETAIL PROPOSED BY THE CONTRACTOR. REFER TO PLANS FOR TYPICAL ARRANGEMENT AND SEALANT.
8. PRIOR TO THE PLACEMENT OF CONCRETE IN THE ADJACENT SLAB, 'ABLEFLEX' FILLER SHALL BE ADHERED TO THE ALREADY CAST AND CLEANED CONCRETE FACE USING AN APPROVED WATERPROOF ADHESIVE. ADHESIVE SHALL BE LIBERALLY APPLIED TO THE FULL FACE OF THE CONCRETE SLAB TO BE COVERED BY THE FILLER, AND ON THE FULL FACE OF THE FILLER TO BE ADHERED.
9. THE BASE COURSE SHALL BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER IMMEDIATELY PRIOR TO POURING THE CONCRETE.
10. ALL WORK TO BE FINISHED TO SATISFY ITS INTENDED USE AS SHOWN ON THE PLANS, AND / OR IN ACCORDANCE WITH THE SPECIFICATION.

KERBING NOTES
1. ALL CONCRETE KERBS TO HAVE A MINIMUM CHARACTERISTIC COMPRESSIVE STRENGTH F'c=25MPa (UNO).
2. ALL KERBS, DISH DRAINS, etc. TO BE CONSTRUCTED ON 75mm MINIMUM BASE COURSE.
3. KERB EXPANSION JOINTS SHALL BE FORMED FROM 10mm COMPRESSIBLE CORK FILLER BOARD FOR THE FULL DEPTH OF THE SECTION.
4. EXPANSION JOINTS SHALL BE LOCATED AT DRAINAGE PITS, ON TANGENT POINTS OF CURVES AND ELSEWHERE AT 6m MAXIMUM SPACING (UNO).
5. TOOLED JOINTS SHALL BE MIN 3mm WIDE AND LOCATED AT MAXIMUM 3m SPACING.
6. INTEGRAL KERB JOINTS SHALL MATCH THE LOCATION OF THE PAVEMENT JOINTING.

LINEMARKING

1. LINEMARKING MATERIALS, LAYOUT, TYPE & WORKS TO BE IN ACCORDANCE RMS QA SPECIFICATIONS FOR ROADWORKS
2. THE SCOPE OF WORK SHALL INCLUDE ALL PAVEMENT MARKINGS TO ROADS AND CARPARKS.
3. THE WORK CARRIED OUT AND TESTING PERFORMED SHALL COMPLY WITH THE CURRENT, RELEVANT AUS-SPEC SPECIFICATIONS & AUSTRALIAN STANDARDS WHERE NECESSARY.
4. ALL MARKINGS SHALL BE SPOTTED OUT AND APPROVED BY THE SUPERINTENDENT PRIOR TO APPLICATION.
5. PAINT SHALL BE APPLIED AT A WET THICKNESS OF BETWEEN 0.35mm - 0.45mm.
6. UNLESS OTHERWISE SPECIFIED, PERMITTED OR SHOWN ON THE DRAWINGS, PAINT SHALL BE WHITE, WITHOUT GLASS BEADS. EITHER SOLVENT OR WATERBORNE AND COMPLYING WITH THE REQUIREMENTS OF THE AUSTRALIAN STANDARD
7. PAINT SHALL ONLY BE APPLIED TO CLEAN AND DRY SURFACES.
8. ALL LONGITUDINAL LINES SHALL BE APPLIED BY A SELF-PROPELLED MACHINE. LINEMARKING REMOVAL SHALL BE CARRIED OUT BY GRINDING OR SANDBLASTING. REMOVAL BY BURNING WILL NOT BE PERMITTED.
9. THE EXTENT OF LINEMARKING TO BE ERADICATED SHALL BE CONFIRMED ON SITE PRIOR TO REMOVAL. ANY MARKINGS INCORRECTLY REMOVED SHALL BE REINSTATED AT THE CONTRACTOR'S EXPENSE.
10. ALL MARKINGS SHALL BE COMPLETED IN A WORKMAN LIKE MANNER AND BE STRAIGHT, SMOOTH AND WITH EVEN CURVES. ANY NON-CONFORMING WORK SHALL BE REMOVED AND REINSTATED AT THE DIRECTION OF THE SUPERINTENDENT AT THE CONTRACTORS EXPENSE.
11. IF FINAL SEAL LAYER LAID, ALL LINEMARKING SHALL BE THERMOPLASTIC.

Transport Roads & Maritime Services
These plans are accepted for construction
.....
Project Manager
Date 27/08/17

FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
0 5 10 15 20 25 30 35 40 45 50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: X:\1111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MIE\6_3_4 MHT UD\Mid Dural Road Drawings\DS2016-002140-DD-GE-0201-201A.dwg
DESIGN LOT CODE:
DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING:
PLOT DATE / TIME: 29/07/2016 2:21:41 PM
PLOT BY: Aseip

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	A	27-01-17	INCORPORATED BRS COMMENTS DATED 22-12-2016	SK	PE
	B	05-06-17	INCORPORATED RMS COMMENTS DATED 16-05-2017	SK	PE

SCALES ON A3 SIZE DRAWING:
CO-ORDINATE SYSTEM: MGA ZONE 56
HEIGHT DATUM: AHD
DRAWINGS / DESIGN PREPARED BY: Meinhardt Australia Pty Ltd

	NAME	DATE
DRAWN	D.CREARY	
DRG CHECK	M.GRINHAM	
DESIGN	A.PHAM	
DESIGN CHECK	S.DUNSTONE	
DESIGN MNGR	P.ENOCH	
PROJECT MNGR	P.ENOCH	

CLIENT: Transport Roads & Maritime Services
PREPARED FOR: BRANCH NAME, SECTION NAME, DEPARTMENT NAME

HORNSBY SHIRE COUNCIL
MID DURAL ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT
GENERAL NOTES SHEET 2 OF 2
A3
SHEET 03 OF 23
RMS REGISTRATION No. DS2016 / 002140
PART 01
ISSUE STATUS: FC
EDMS No.:
SHEET No. GE-0201A
ISSUE B

Transport Roads & Maritime Services
NSW GOVERNMENT
These plans are accepted for construction
Project Manager
Date 04/08/17

FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
0 5 10 15 20 25 30 35 40 45 50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MIE\6_3_4 MHT UDM\Mid Dural Road Drawings\DS2016-002140-DD-GE-0202.dwg

DESIGN LOT CODE

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING

PLOT DATE / TIME: 29/07/2016 2:21:41 PM
PLOT BY: LShusharina

CLIENT: Transport Roads & Maritime Services (NSW GOVERNMENT)

HORNSBY SHIRE COUNCIL
MID DURAL ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

SITE PLAN

A3

SHEET 04 OF 23

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	A	29-07-16	ISSUED FOR 100% DESIGN DEVELOPMENT		
	B	04-11-16	INCORPORATED RMS COMMENTS DATED 03-08-2016	SK	PE
	C	27-01-17	NO. OF DRAWINGS UPDATED	SK	PE
	D	05-06-17	INCORPORATED RMS COMMENTS DATED 16-05-2017	SK	PE

SCALES ON A3 SIZE DRAWING

CO-ORDINATE SYSTEM: MGA ZONE 56
HEIGHT DATUM: AHD

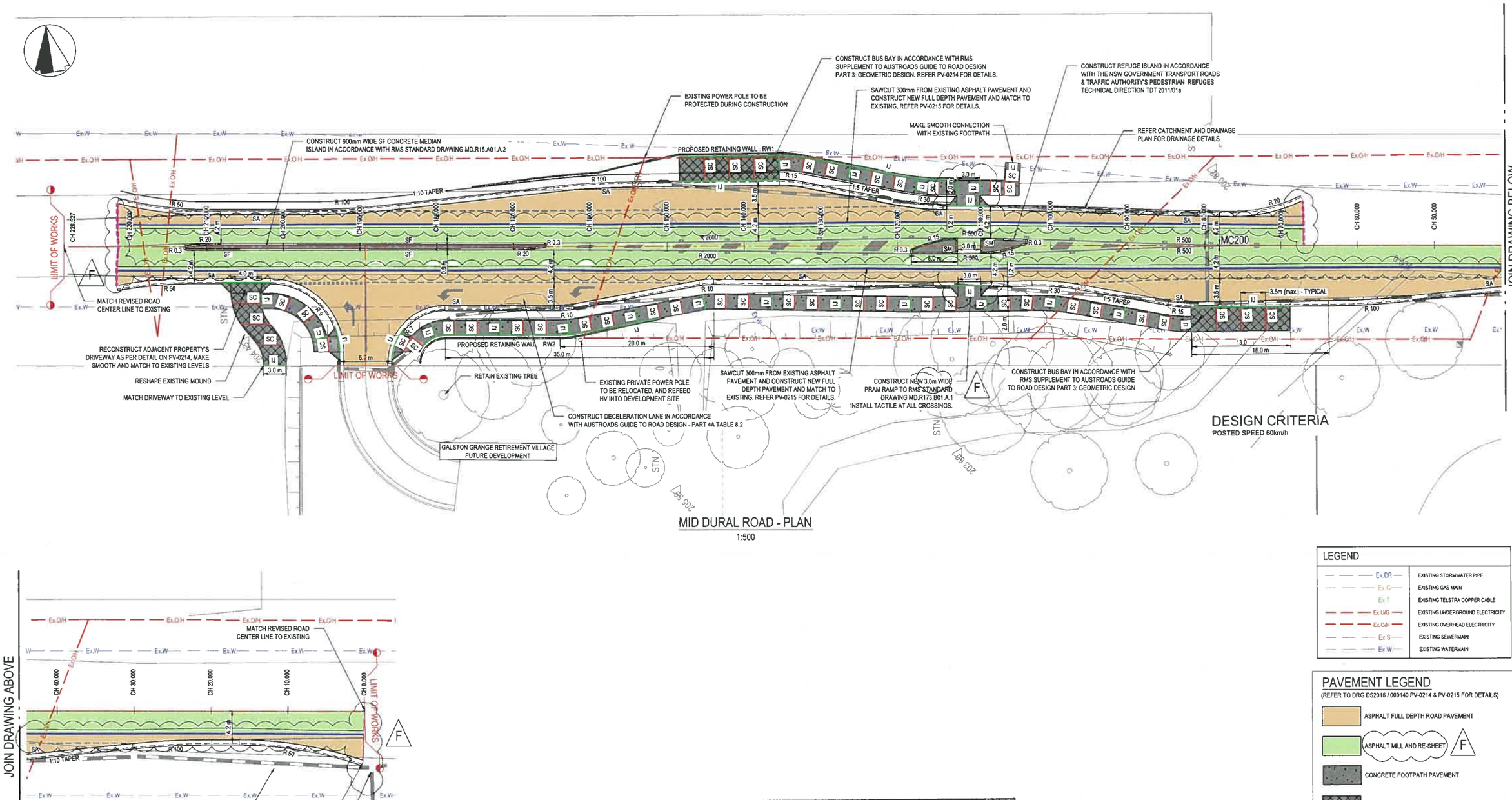
DRAWINGS / DESIGN PREPARED BY: Meinhardt Australia Pty Ltd

	TITLE	NAME	DATE
DRAWN		D.CREARY	
DRG CHECK		M.GRINHAM	
DESIGN		A.PHAM	
DESIGN CHECK		S.DUNSTONE	
DESIGN MNGR		P.ENOCH	
PROJECT MNGR		P.ENOCH	

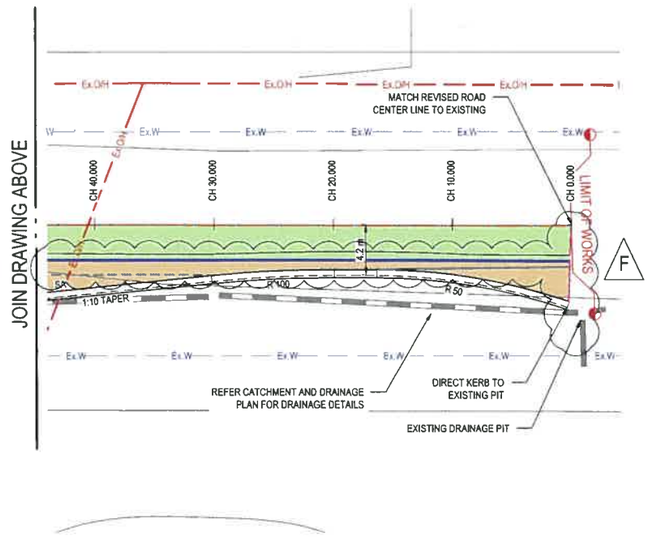
PREPARED FOR
BRANCH NAME
SECTION NAME
DEPARTMENT NAME

RMS REGISTRATION No. DS2016 / 002140 — PART 01

ISSUE STATUS: FC
EDMS No.
SHEET No.: GE-0202
ISSUE: D



MID DURAL ROAD - PLAN
1:500



LEGEND

Ex.DR	EXISTING STORMWATER PIPE
Ex.G	EXISTING GAS MAIN
Ex.T	EXISTING TELSTRA COPPER CABLE
Ex.UG	EXISTING UNDERGROUND ELECTRICITY
Ex.OH	EXISTING OVERHEAD ELECTRICITY
Ex.S	EXISTING SEWERMAIN
Ex.W	EXISTING WATERMAIN

PAVEMENT LEGEND
(REFER TO DRG DS2016 / 000140 PV-0214 & PV-0215 FOR DETAILS)

- ASPHALT FULL DEPTH ROAD PAVEMENT
- ASPHALT MILL AND RE-SHEET (F)
- CONCRETE FOOTPATH PAVEMENT
- VEHICULAR CROSSING / BUS SHELTER PAVEMENT
- MEDIAN ISLAND CONCRETE INFILL
- IJ — ISOLATION JOINT
- SC — SAWCUT JOINT
- LONGITUDINAL CONSTRUCTION JOINT REINSTATEMENT
- TRANSVERSE CONSTRUCTION JOINT REINSTATEMENT

Transport Roads & Maritime Services
These plans are accepted for construction
.....
Project Manager
Date 07/08/17

WARNING
PROPOSED SERVICES
THE LOCATION AND EXTENT OF PROPOSED SERVICES IS INDICATIVE ONLY AND ARE NOT TO BE USED FOR CONSTRUCTION. REFER TO AUTHORISED DOCUMENTATION BY RELEVANT AUTHORITY FOR CONSTRUCTION DETAILS

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

DIAL BEFORE YOU DIG www.1100.com.au

FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
0 5 10 15 20 25 30 35 40 45 50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MIE\6_3_4 MHT UD\Mid Dural Road Drawings\DS2016-002140-DD-RD-0203.dwg
DESIGN LOT CODE:
DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING:
PLOT DATE / TIME: 29/07/2016 2:21:41 PM
PLOT BY: Aseip

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
X-111403-IE-BASE	A	29-07-16	ISSUED FOR 100% DESIGN DEVELOPMENT		
X-111403-IE-BASE PAVE	B	14-11-16	INCORPORATED RMS COMMENTS DATED 03-08-2016	SK	PE
X-111403-IE-BASE TEXT	C	15-12-16	INCORPORATED RMS COMMENTS DATED 03-08-2016	SK	PE
X-111403-IE-BASE DRAI	D	27-01-17	NO. OF DRAWINGS UPDATED	SK	PE
X103976-00-SURVEY	E	07-04-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 13-03-2017	SK	PE
	F	05-06-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 15-05-2017	SK	PE

SCALES ON A3 SIZE DRAWING: 0 2.5 5 7.5 10 12.5m — SCALE 1:500 AT ORIGINAL SIZE
CO-ORDINATE SYSTEM: MGA ZONE 56
HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY: Meinhardt Australia Pty Ltd

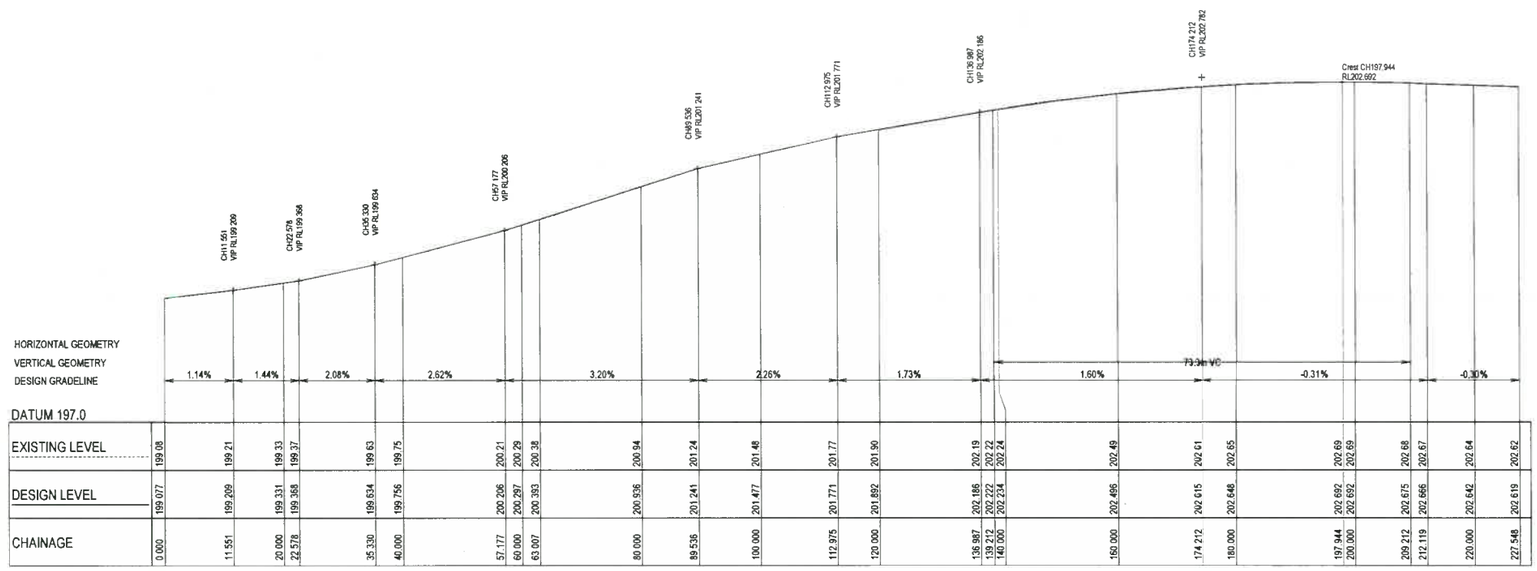
	NAME	DATE
DRAWN	D.CREARY	
DRG CHECK	M.GRINHAM	
DESIGN	A.PHAM	
DESIGN CHECK	S.DUNSTONE	
DESIGN MNGR	P.ENOCH	
PROJECT MNGR	P.ENOCH	

CLIENT: Transport Roads & Maritime Services
PREPARED FOR: BRANCH NAME, SECTION NAME, DEPARTMENT NAME

HORNSBY SHIRE COUNCIL
MID DURAL ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

ROAD AND PAVEMENT DETAIL PLAN

A3
SHEET 05 OF 23
RMS REGISTRATION No. DS2016 / 002140
PART 01
ISSUE STATUS: FC
EDMS No.:
SHEET No.: RD-0203
ISSUE: F



CHAINAGE	EXISTING LEVEL	DESIGN LEVEL
0.000	199.08	199.077
11.551	199.21	199.209
20.000	199.33	199.331
22.578	199.37	199.368
35.330	199.63	199.634
40.000	199.75	199.756
57.177	200.21	200.206
60.000	200.29	200.297
63.007	200.38	200.393
80.000	200.94	200.936
89.536	201.24	201.241
100.000	201.48	201.477
112.975	201.77	201.771
120.000	201.90	201.892
136.987	202.19	202.186
139.212	202.22	202.222
140.000	202.24	202.234
160.000	202.49	202.496
174.212	202.61	202.615
180.000	202.65	202.648
197.944	202.69	202.692
200.000	202.69	202.692
209.212	202.68	202.675
212.119	202.67	202.666
220.000	202.64	202.642
227.548	202.62	202.619

MID DURAL ROAD LONGITUDINAL SECTION
(FOLLOW EXISTING LEVEL)

NSW GOVERNMENT
Transport
Roads & Maritime
Services
These plans are accepted for construction
N. Lukas
....
Project Manager
Date 07/08/17

FOR CONSTRUCTION

DRAWING FILE LOCATION / NAME
X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MIE\6_3_4 MHT UD\Mid Dural Road Drawings\DS2016-002140-DD-RD-0204.dwg

DESIGN LOT CODE

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
LS–ROAD-MID DURAL	A	29-07-16	ISSUED FOR 100% DESIGN DEVELOPMENT		
	B	04-11-16	INCORPORATED RMS COMMENTS DATED 03-08-2016	SK	PE
	C	15-12-16	SCALE BAR UPDATED	SK	PE
	D	27-01-17	NO. OF DRAWINGS UPDATED	SK	PE
	E	05-06-17	INCORPORATED RMS COMMENTS DATED 16-05-2017	SK	PE

SCALES ON A3 SIZE DRAWING
1:1000 H 0 5 10 15 20 25m
1:200 V 0 1 2 3 4 5m
SCALE 1:1000 HORIZONTAL
1:200 VERTICAL
AT ORIGINAL SIZE

CO-ORDINATE SYSTEM: MGA ZONE 56
HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY
MEINHARDT
Meinhardt Australia Pty Ltd

PLOT DATE / TIME: 29/07/2016 2:21:41 PM
PLOT BY: LShusharina

TITLE	NAME	DATE
DRAWN	D.CREARY	
DRG CHECK	M.GRINHAM	
DESIGN	A.PHAM	
DESIGN CHECK	S.DUNSTONE	
DESIGN MNGR	P.ENOCH	
PROJECT MNGR	P.ENOCH	

CLIENT
NSW GOVERNMENT
Transport
Roads & Maritime Services

PREPARED FOR
BRANCH NAME
SECTION NAME
DEPARTMENT NAME

HORNSBY SHIRE COUNCIL
MID DURAL ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

LONGITUDINAL SECTION

A3

SHEET 06 OF 23

RMS REGISTRATION No. DS2016 / 002140
PART 01

ISSUE STATUS: FC
EDMS No.
SHEET No.: RD-0204
ISSUE: E

DATUM RL 198.0						
DESIGN SURFACE LEVEL	198.413	199.263	199.393	199.315		
BOTTOM OF EXCAVATION LEVEL	198.503	198.503	198.693	198.815		199.282
EXISTING SURFACE LEVEL	199.26	199.26	199.29	199.31		199.33
OFFSET	-4.387	-4.207	-3.797	-2.905		0.000

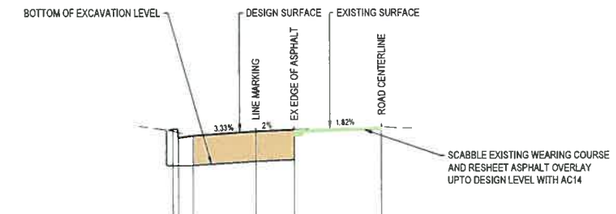
CH 20.000

DATUM RL 198.0						
DESIGN SURFACE LEVEL	199.247	199.097	199.132	199.152	199.162	
BOTTOM OF EXCAVATION LEVEL	198.637	198.637	198.637	198.652	198.662	199.140
EXISTING SURFACE LEVEL	199.08	199.09	199.11	199.16		199.19
OFFSET	-4.732	-4.552	-4.052	-3.020	-2.928	0.000

CH 10.000

DATUM RL 198.0						
DESIGN SURFACE LEVEL	199.046	198.896	198.936	199.029	199.037	
BOTTOM OF EXCAVATION LEVEL	198.436	198.436	198.436	198.529	198.537	199.030
EXISTING SURFACE LEVEL	198.78	198.79	198.83	199.03	199.04	199.06
OFFSET	-6.952	-6.772	-6.272	-3.475	-2.972	0.000

CH 0.010

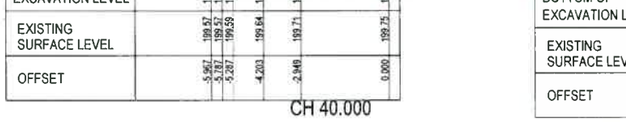


DATUM RL 198.0						
DESIGN SURFACE LEVEL	199.079	199.829	199.889	199.940	199.995	
BOTTOM OF EXCAVATION LEVEL	199.369	199.369	199.369	199.440	199.495	199.960
EXISTING SURFACE LEVEL	199.94	199.92	199.89	199.89	199.97	200.01
OFFSET	-5.995	-5.815	-5.315	-4.202	-2.917	0.000

CH 50.000

DATUM RL 198.0						
DESIGN SURFACE LEVEL	199.256	199.656	199.646	199.682	199.708	
BOTTOM OF EXCAVATION LEVEL	199.146	199.146	199.146	199.182	199.208	199.700
EXISTING SURFACE LEVEL	199.57	199.52	199.59	199.64	199.71	199.75
OFFSET	-5.967	-5.787	-5.287	-4.203	-2.949	0.000

CH 40.000

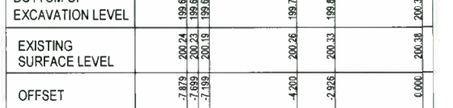


DATUM RL 198.0						
DESIGN SURFACE LEVEL	199.562	199.462	199.472	199.474	199.500	
BOTTOM OF EXCAVATION LEVEL	198.972	198.972	198.972	198.974	199.000	199.470
EXISTING SURFACE LEVEL	199.40	199.37	199.42	199.42	199.50	199.52
OFFSET	-4.927	-4.747	-4.257	-4.204	-2.935	0.000

CH 30.000

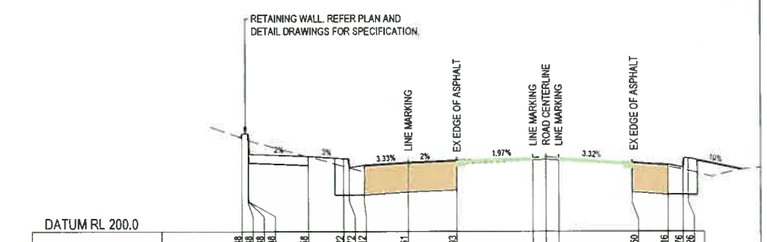
DATUM RL 199.0						
DESIGN SURFACE LEVEL	200.307	200.157	200.197	200.297	200.327	
BOTTOM OF EXCAVATION LEVEL	199.697	199.697	199.697	199.797	199.827	200.330
EXISTING SURFACE LEVEL	200.24	200.23	200.19	200.26	200.33	200.38
OFFSET	-7.879	-7.699	-7.199	-4.200	-2.926	0.000

CH 63.007



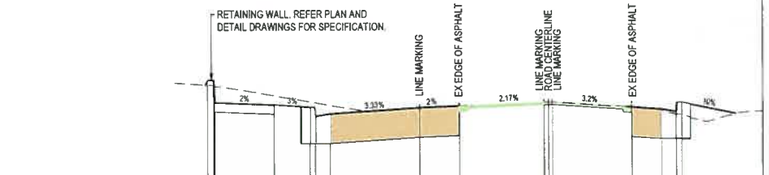
DATUM RL 199.0						
DESIGN SURFACE LEVEL	200.223	200.073	200.113	200.210	200.226	
BOTTOM OF EXCAVATION LEVEL	199.613	199.613	199.613	199.710	199.726	200.240
EXISTING SURFACE LEVEL	200.18	200.17	200.14	200.17	200.24	200.29
OFFSET	-7.813	-7.633	-7.133	-4.200	-2.906	0.000

CH 60.000



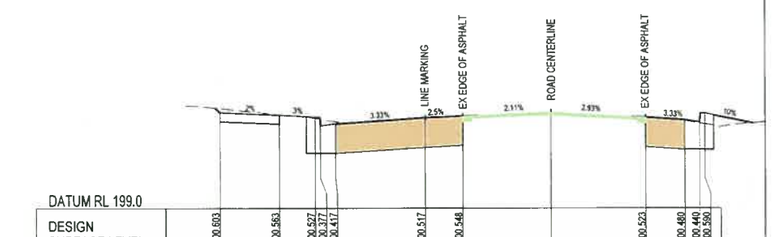
DATUM RL 200.0														
DESIGN SURFACE LEVEL	201.638	201.638	201.538	201.258	201.222	201.122	201.112	201.151	201.183			201.150	201.116	201.076	201.226
BOTTOM OF EXCAVATION LEVEL	201.638	201.638	201.538	201.103	200.612	200.612	200.612	200.661	200.693	201.190	201.200	200.650	200.616	200.616	200.616
EXISTING SURFACE LEVEL	201.57	201.54	201.54	201.25	201.09	201.05	201.00	201.09	201.19	201.24	201.25	201.15	201.08	201.03	201.01
OFFSET	-10.211	-10.011	-10.001	-7.977	-6.477	-6.297	-6.097	-4.625	-3.003	-0.430	0.000	3.118	4.112	4.612	4.792

CH 90.000



DATUM RL 199.0														
DESIGN SURFACE LEVEL	201.320	201.320	201.220	200.901	200.865	200.715	200.755	200.855	200.881			200.847	200.825	200.785	200.955
BOTTOM OF EXCAVATION LEVEL	201.320	201.320	201.220	200.746	200.255	200.255	200.255	200.355	200.381	200.830	200.830	200.347	200.325	200.285	200.325
EXISTING SURFACE LEVEL	201.24	201.22	201.22	201.06	200.96	200.94	200.90	200.80	200.88	200.94	200.94	200.85	200.81	200.74	200.72
OFFSET	-11.431	-11.231	-11.121	-9.193	-7.993	-7.813	-7.313	-4.317	-2.993	-0.136	0.000	2.824	3.804	4.304	4.484

CH 80.000



DATUM RL 199.0														
DESIGN SURFACE LEVEL	200.593	200.563	200.527	200.417	200.517	200.548						200.523	200.480	200.440	200.590
BOTTOM OF EXCAVATION LEVEL	200.448	200.408	199.917	199.917	200.017	200.048	200.580					200.023	199.980	199.980	199.980
EXISTING SURFACE LEVEL	200.88	200.57	200.50	200.45	200.50	200.55	200.61					200.52	200.45	200.42	200.41
OFFSET	-11.083	-9.083	-7.883	-7.203	-4.205	-2.955	0.000					3.210	4.517	5.017	5.197

CH 70.000

Transport Roads & Maritime Services
These plans are accepted for construction
Project Manager
Date 07/08/17

LEGEND

ASPHALT FULL DEPTH ROAD PAVEMENT

ASPHALT PAVEMENT REINSTATEMENT

MID DURAL ROAD CH0.010-90.000

SCALE HORIZONTAL 1:100
VERTICAL 1:50

FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
XS-MID-DURAL-1	A	29-07-16	ISSUED FOR 100% DESIGN DEVELOPMENT		
	B	04-11-16	INCORPORATED RMS COMMENTS DATED 03-08-2016	SK	PE
	C	15-12-16	SCALE BAR UPDATED	SK	PE
	D	27-01-17	NO. OF DRAWINGS UPDATED	SK	PE
	E	07-04-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 13-03-2017	SK	PE
	F	28-04-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 13-03-2017	SK	PE
	G	05-06-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 16-05-2017	SK	PE

DRAWING FILE LOCATION / NAME: X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MIE\6_3_4 MHT UDM\Mid Dural Road Drawings\DS2016-002140-DD-RC-0205-0208.dwg

DESIGN LOT CODE

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING

SCALES ON A3 SIZE DRAWING: 1:200 H 0 1 2 3 4 5m; 1:100 V 0 0.5 1.0 1.5 2.0 2.5m
SCALE 1:200 HORIZONTAL
1:100 VERTICAL
AT ORIGINAL SIZE

CO-ORDINATE SYSTEM: MGA ZONE 56
HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY: Meinhardt Australia Pty Ltd

PLOT DATE / TIME: 29/07/2016 2:21:41 PM
PLOT BY: Aseip

	NAME	DATE
TITLE		
DRAWN	D.CREARY	
DRG CHECK	M.GRINHAM	
DESIGN	A.PHAM	
DESIGN CHECK	S.DUNSTONE	
DESIGN MNGR	P.ENOCH	
PROJECT MNGR	P.ENOCH	

CLIENT: Transport Roads & Maritime Services

PREPARED FOR
BRANCH NAME
SECTION NAME
DEPARTMENT NAME

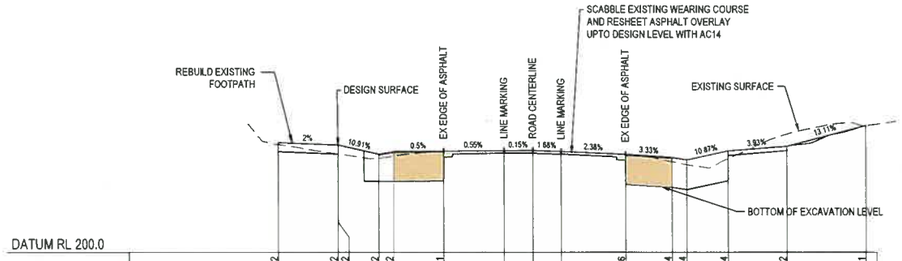
HORNSBY SHIRE COUNCIL
MID DURAL ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

A3

CROSS SECTIONS
SHEET 1 OF 4 / CHAINAGE 0.010-90.000
SHEET 07 OF 23

RMS REGISTRATION No. DS2016 / 002140
PART 02

ISSUE STATUS: FC
EDMS No.
SHEET No. RC-0205
ISSUE G



DATUM RL 200.0

DESIGN SURFACE LEVEL	201.832	201.792	201.792	201.642	201.682	201.691				201.636	201.584	201.544	201.694	201.772	202.121
BOTTOM OF EXCAVATION LEVEL	201.677	201.637	201.637	201.182	201.182	201.191	201.650	201.650	201.640	201.136	201.084	201.044	201.194	201.615	
EXISTING SURFACE LEVEL	201.83	201.79	201.79	201.64	201.68	201.69	201.70	201.70	201.69	201.64	201.58	201.54	201.69	201.77	202.12
OFFSET	-8.564	-6.570	-6.564	-5.191	-4.691	-3.004	-0.966	0.000	0.947	3.111	4.672	5.172	6.549	8.543	11.200

CH 110.000

DATUM RL 200.0

DESIGN SURFACE LEVEL	202.246	202.206	202.170	202.020	202.060	202.068				202.013	201.964	201.904	201.864	202.014	202.050	202.090	203.430	203.530	203.530
BOTTOM OF EXCAVATION LEVEL	202.091	202.051	201.560	201.560	201.560	201.568	202.020	202.020	202.010	201.513	201.464	201.404	201.404	201.404	201.895	201.935	203.430	203.530	203.530
EXISTING SURFACE LEVEL	202.11	202.02	201.99	202.00	202.02	202.07	202.07	202.07	202.06	202.01	201.93	202.34	202.52	202.59	203.02	203.43	203.43	203.43	203.42
OFFSET	-8.382	-6.382	-5.182	-5.002	-4.502	-2.958	-0.808	0.000	0.781	3.005	4.976	7.257	7.757	7.937	9.137	11.137	11.271	11.281	11.481

CH 130.000

DATUM RL 200.0

DESIGN SURFACE LEVEL	201.741	201.701	201.665	201.515	201.555	201.573				201.515	201.465	201.425	201.618	201.804
BOTTOM OF EXCAVATION LEVEL	201.586	201.546	201.055	201.055	201.055	201.073	201.540	201.540	201.530	201.015	200.965	200.965	201.463	201.649
EXISTING SURFACE LEVEL	201.74	201.70	201.66	201.51	201.55	201.57	201.59	201.59	201.58	201.51	201.46	201.42	201.361	201.80
OFFSET	-8.502	-6.502	-5.302	-5.122	-4.622	-2.943	-0.917	0.000	0.900	3.113	4.605	5.105	6.502	10.808

CH 105.000

DATUM RL 200.0

DESIGN SURFACE LEVEL	202.069	202.029	201.993	201.843	201.883	201.892				201.838	201.786	201.779	201.739	201.889	201.925	201.965	202.713	202.813	202.813
BOTTOM OF EXCAVATION LEVEL	201.914	201.874	201.383	201.383	201.383	201.392	201.850	201.850	201.830	201.338	201.286	201.279	201.279	201.279	201.770	201.810	202.713	202.813	202.813
EXISTING SURFACE LEVEL	202.02	201.89	201.80	201.81	201.83	201.89	201.90	201.90	201.88	201.84	201.73	201.71	201.69	201.68	202.00	202.69	202.71	202.72	202.78
OFFSET	-8.560	-6.560	-5.360	-5.180	-4.680	-2.961	-0.957	0.000	0.932	3.093	5.157	5.360	5.860	6.040	7.240	9.240	9.314	9.324	9.524

CH 120.000

Transport
Roads & Maritime
Services
NSW GOVERNMENT
These plans are accepted for construction
....
Project Manager
Date...07/08/17........

DATUM RL 200.0

DESIGN SURFACE LEVEL	201.613	201.573	201.537	201.387	201.427	201.454				201.394	201.348	201.308	201.458
BOTTOM OF EXCAVATION LEVEL	201.458	201.418	200.927	200.927	200.927	200.954	201.430	201.430	201.420	200.894	200.848	200.808	200.958
EXISTING SURFACE LEVEL	201.56	201.37	201.31	201.32	201.36	201.45	201.48	201.48	201.47	201.39	201.29	201.26	201.21
OFFSET	-8.458	-6.458	-5.258	-5.078	-4.578	-2.930	-0.777	0.000	0.762	3.114	4.488	4.988	5.654

CH 100.000

DATUM RL 200.0

DESIGN SURFACE LEVEL	201.954	201.914	201.878	201.728	201.768	201.777		201.786	201.935	201.926			201.724	201.671	201.631	201.781	201.817	201.857	202.200	202.300	202.300
BOTTOM OF EXCAVATION LEVEL	201.799	201.759	201.268	201.268	201.268	201.277	201.740	201.740	201.740	201.730			201.224	201.171	201.171	201.171	201.662	201.702	202.200	202.300	202.300
EXISTING SURFACE LEVEL	201.89	201.74	201.66	201.67	201.70	201.78	201.79	201.79	201.79	201.78	201.77	201.77	201.72	201.63	201.59	201.57	201.64	202.19	202.20	202.20	202.26
OFFSET	-8.590	-6.590	-5.390	-5.210	-4.710	-3.021	-1.008	-0.998	-0.828	0.587	0.770	0.984	3.108	4.692	5.192	5.372	6.572	8.572	8.606	8.616	8.816

CH 114.000

LEGEND

▨	ASPHALT FULL DEPTH ROAD PAVEMENT
🟩	ASPHALT PAVEMENT REINSTATEMENT

MID DURAL ROAD CH100.000-130.000

SCALE HORIZONTAL 1:200
VERTICAL 1:100

FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
0 5 10 15 20 25 30 35 40 45 50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME
X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MIE\6_3_4 MHT UD\Mid Dural Road Drawings\DS2016-002140-DD-RC-0205-0208.dwg

DESIGN LOT CODE

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
XS-MID-DURAL-2	A	29-07-16	ISSUED FOR 100% DESIGN DEVELOPMENT		
	B	04-11-16	INCORPORATED RMS COMMENTS DATED 03-08-2016	SK	PE
	C	15-12-16	SCALE BAR UPDATED	SK	PE
	D	27-01-17	NO. OF DRAWINGS UPDATED	SK	PE
	E	07-04-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 13-03-2017	SK	PE
	F	28-04-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 13-03-2017	SK	PE
	G	05-06-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 16-05-2017	SK	PE

SCALES ON A3 SIZE DRAWING
1:200 H 0 1 2 3 4 5m
1:100 V 0 0.5 1.0 1.5 2.0 2.5m
SCALE 1:200 HORIZONTAL
1:100 VERTICAL
AT ORIGINAL SIZE

CO-ORDINATE SYSTEM: MGA ZONE 56
HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY
MEINHARDT
Meinhardt Australia Pty Ltd

PLOT DATE / TIME: 29/07/2016 2:21:41 PM
PLOT BY: LShusharina

TITLE	NAME	DATE
DRAWN	D.CREARY	
DRG CHECK	M.GRINHAM	
DESIGN	A.PHAM	
DESIGN CHECK	S.DUNSTONE	
DESIGN MNGR	P.ENOCH	
PROJECT MNGR	P.ENOCH	

CLIENT
NSW GOVERNMENT Transport Roads & Maritime Services

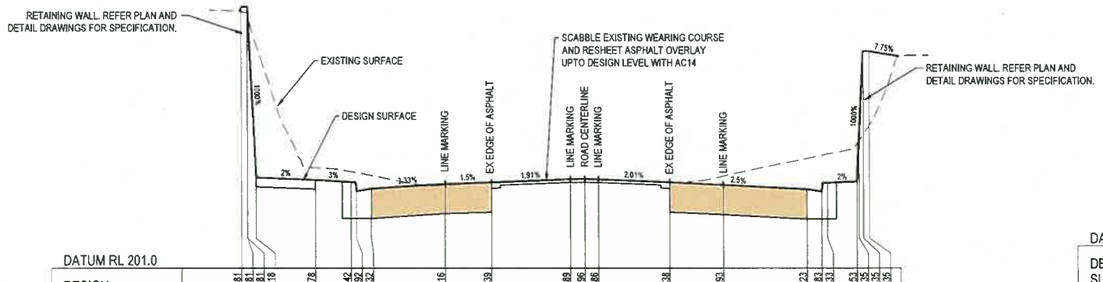
PREPARED FOR
BRANCH NAME
SECTION NAME
DEPARTMENT NAME

HORNSBY SHIRE COUNCIL
MID DURAL ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

A3

CROSS SECTIONS
SHEET 2 OF 4 / CHAINAGE 100.000-130.000
SHEET 08 OF 23

RMS REGISTRATION No. DS2016 / 002140
PART 02
ISSUE STATUS FC
EDMS No.
SHEET No. RC-0206
ISSUE G



DATUM RL 201.0

DESIGN SURFACE LEVEL	205.381	205.381	205.281	202.518	202.478	202.442	202.292	202.332	202.416	202.439	202.489	202.496	202.486	202.438	202.393	202.323	202.283	202.433	202.453	203.135	204.635	204.635
BOTTOM OF EXCAVATION LEVEL	205.381	205.381	205.281	202.363	202.323	201.832	201.832	201.832	201.916	201.939	202.439	202.446	202.436	201.938	201.893	201.823	201.823	201.823	202.950	203.059	203.300	
EXISTING SURFACE LEVEL	205.38	205.38	205.28	202.52	202.48	202.44	202.29	202.33	202.42	202.44	202.49	202.50	202.49	202.44	202.39	202.32	202.28	202.43	202.45	203.13	204.63	204.63
OFFSET	-11.543	-11.343	-11.333	-11.057	-9.057	-7.857	-7.677	-7.177	-4.686	-3.123	-0.487	0.000	0.448	2.843	4.642	7.453	7.953	8.133	9.133	9.201	9.351	9.551

CH 160.000

DATUM RL 201.0

DESIGN SURFACE LEVEL	202.706	202.547	202.571	202.632	202.654		202.815	202.805	202.654		202.598	202.555	202.551	202.511	202.661
BOTTOM OF EXCAVATION LEVEL	202.071	202.071	202.071	202.132	202.154	202.620	202.620	202.610	202.600	202.600	202.098	202.055	202.051	202.051	202.051
EXISTING SURFACE LEVEL	205.17	205.22	205.31	202.62	202.65	202.67	202.67	202.66	202.65	202.65	202.60	202.63	202.63	202.65	202.65
OFFSET	-12.978	-12.470	-11.358	-4.675	-3.090	-0.475	-0.295	0.245	0.424	0.425	2.907	4.625	4.795	5.295	5.475

CH 185.000

DATUM RL 201.0

DESIGN SURFACE LEVEL	202.489	202.449	202.413	202.263	202.303	202.322	202.347	202.379	202.379	202.380	202.322	202.278	202.203	202.163	202.313	202.341	202.378	204.307	204.407	204.407
BOTTOM OF EXCAVATION LEVEL	202.334	202.294	201.803	201.803	201.803	201.822	201.847	202.329	202.329	202.330	201.822	201.778	201.703	201.703	201.703	202.341				
EXISTING SURFACE LEVEL	202.49	202.45	202.41	202.26	202.30	202.32	202.35	202.38	202.38	202.38	202.32	202.28	202.20	202.16	202.31	202.34	202.38	204.31	204.41	204.41
OFFSET	-9.185	-7.185	-5.985	-5.805	-5.305	-4.743	-3.069	-0.544	0.000	0.509	2.936	4.703	7.703	8.203	8.383	9.341	11.164	11.357	11.367	11.567

CH 150.000

DATUM RL 201.0

DESIGN SURFACE LEVEL	205.513	205.521	202.713	202.664	202.625	202.475	202.514	202.608	202.631		202.802	202.786		202.574	202.530	202.512	202.472	202.622
BOTTOM OF EXCAVATION LEVEL	205.513	205.521	202.558	202.664	202.014	202.014	202.014	202.108	202.131	202.600	202.600	202.590	202.590	202.074	202.030	202.012	202.012	202.012
EXISTING SURFACE LEVEL	205.51	205.52	205.54	202.73	202.63	202.62	202.60	202.59	202.63	202.65	202.65	202.64	202.64	202.57	202.60	202.62	202.64	202.64
OFFSET	-12.399	-12.176	-11.859	-9.745	-8.511	-8.327	-7.816	-4.674	-3.119	-0.474	-0.294	0.246	0.425	2.890	4.626	5.345	5.845	6.025

CH 180.000

Transport
Roads & Maritime Services
NSW GOVERNMENT
These plans are accepted for construction
Project Manager
Date 07/08/17

DATUM RL 201.0

DESIGN SURFACE LEVEL	202.400	202.360	202.324	202.174	202.214	202.221				202.169	202.123	202.048	202.008	202.158	202.194	202.234	203.909	204.009	204.009
BOTTOM OF EXCAVATION LEVEL	202.245	202.205	201.714	201.714	201.714	201.721	202.180	202.190	202.170	201.669	201.623	201.548	201.548	201.548	201.894	201.934	203.909	204.009	204.009
EXISTING SURFACE LEVEL	202.47	202.25	202.16	202.16	202.18	202.22	202.23	202.24	202.22	202.17	202.32	202.95	203.14	203.21	203.66	203.92	203.91	203.91	203.90
OFFSET	-8.225	-6.225	-5.025	-4.845	-4.345	-3.014	-0.651	0.000	0.620	2.941	4.814	7.815	8.315	8.495	9.695	11.695	11.862	11.872	12.072

CH 140.000

DATUM RL 201.0

DESIGN SURFACE LEVEL	205.696	205.696	205.596	202.606	202.566	202.530	202.380	202.420	202.520	202.544				202.510	202.467	202.421	202.381	202.531	202.551	202.692	203.942	203.942
BOTTOM OF EXCAVATION LEVEL	205.696	205.696	205.596	202.451	202.411	201.920	201.920	201.920	202.020	202.044	202.530	202.540	202.520	202.010	201.967	201.921	201.921	201.921				
EXISTING SURFACE LEVEL	205.70	205.70	205.60	202.61	202.57	202.53	202.38	202.42	202.52	202.54	202.58	202.59	202.57	202.51	202.47	202.42	202.38	202.53	202.55	202.69	203.94	203.94
OFFSET	-12.061	-11.861	-11.851	-11.552	-9.552	-8.352	-8.172	-7.672	-4.672	-3.044	-0.472	0.000	0.427	2.901	4.628	6.445	6.945	7.125	8.125	8.139	8.264	8.464

CH 170.000

LEGEND

- 🟧 ASPHALT FULL DEPTH ROAD PAVEMENT
- 🟩 ASPHALT PAVEMENT REINSTATEMENT

MID DURAL ROAD CH140.000-185.000

SCALE HORIZONTAL 1:200
VERTICAL 1:100

FOR CONSTRUCTION

DRAWING FILE LOCATION / NAME
X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MIE\6_3_4 MHT UD\Mid Dural Road Drawings\DS2016-002140-DD-RC-0205-0208.dwg

DESIGN LOT CODE

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING

EXTERNAL REFERENCE FILES
XS-MID-DURAL-3

REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
A	29-07-16	ISSUED FOR 100% DESIGN DEVELOPMENT		
B	11-11-16	INCORPORATED RMS COMMENTS DATED 03-08-2016	SK	PE
C	15-12-16	SCALE BAR UPDATED	SK	PE
D	27-01-17	NO. OF DRAWINGS UPDATED	SK	PE
E	07-04-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 13-03-2017	SK	PE
F	28-04-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 13-03-2017	SK	PE
G	05-06-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 16-05-2017	SK	PE

SCALES ON A3 SIZE DRAWING
1:200 H 0 1 2 3 4 5m
1:100 V 0 0.5 1.0 1.5 2.0 2.5m
SCALE 1:200 HORIZONTAL
1:100 VERTICAL
AT ORIGINAL SIZE

CO-ORDINATE SYSTEM: MGA ZONE 56
HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY
MEINHARDT
Meinhardt Australia Pty Ltd

PLOT DATE / TIME: 29/07/2016 2:21:41 PM
PLOT BY: Aseip

TITLE	NAME	DATE
DRAWN	D.CREARY	
DRG CHECK	M.GRINHAM	
DESIGN	A.PHAM	
DESIGN CHECK	S.DUNSTONE	
DESIGN MNGR	P.ENOCH	
PROJECT MNGR	P.ENOCH	

CLIENT
NSW GOVERNMENT
Transport
Roads & Maritime Services

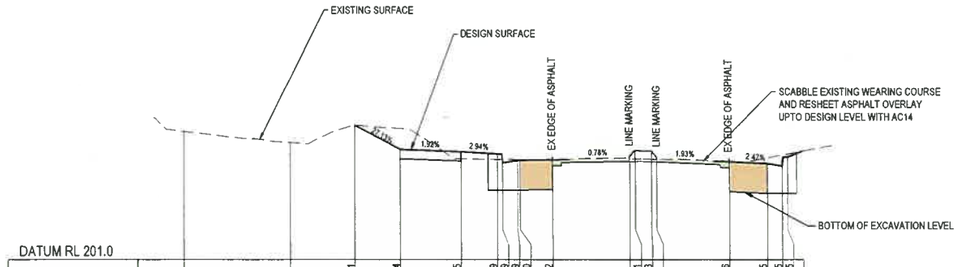
PREPARED FOR
BRANCH NAME
SECTION NAME
DEPARTMENT NAME

HORNSBY SHIRE COUNCIL
MID DURAL ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

CROSS SECTIONS
SHEET 3 OF 4 / CHAINAGE 140.000-185.000
SHEET 09 OF 23

A3

RMS REGISTRATION No. DS2016 / 002140
PART 02
ISSUE STATUS: FC
EDMS No.
SHEET No. RC-0207
ISSUE G



DATUM RL 201.0

DESIGN SURFACE LEVEL			203.251	202.844	202.805	202.769	202.619	202.659	202.660	202.672		202.841	202.833		202.636	202.605	202.565	202.715
BOTTOM OF EXCAVATION LEVEL				202.689	202.805	202.159	202.159	202.159	202.160	202.172	202.640	202.640	202.640	202.630	202.136	202.105	202.105	202.105
EXISTING SURFACE LEVEL	203.15	202.96	203.251	203.19	202.69	202.68	202.67	202.67	202.67	202.67	202.69	202.69	202.69	202.68	202.64	202.70	202.75	202.77
OFFSET	-15.458	-11.893	-9.722	-8.196	-6.159	-4.946	-4.764	-4.259	-4.178	-3.086	-0.478	-0.298	0.242	0.422	2.857	4.124	4.624	4.804

CH 200.000

DATUM RL 201.0

DESIGN SURFACE LEVEL	202.763	202.613	202.653	202.647				202.585	202.536	202.496	202.646
BOTTOM OF EXCAVATION LEVEL	202.153	202.153	202.153	202.147	202.590	202.590	202.590	202.085	202.036	202.036	202.036
EXISTING SURFACE LEVEL	202.62	202.63	202.63	202.65	202.64	202.64	202.64	202.59	202.68	202.71	202.72
OFFSET	-5.502	-5.322	-4.822	-3.094	-0.482	0.000	0.100	2.885	5.329	5.829	6.009

CH 220.000

DATUM RL 201.0

DESIGN SURFACE LEVEL	202.764	202.742	202.593	202.637	202.650	202.669		202.838	202.830		202.630	202.599	202.559	202.709
BOTTOM OF EXCAVATION LEVEL	202.764	202.137	202.137	202.137	202.150	202.169	202.640	202.640	202.630	202.630	202.130	202.099	202.099	202.099
EXISTING SURFACE LEVEL	202.90	202.71	202.69	202.68	202.65	202.67	202.69	202.69	202.68	202.68	202.63	202.64	202.65	202.66
OFFSET	-9.305	-7.445	-7.193	-6.515	-4.677	-3.069	-0.477	-0.297	0.243	0.423	2.881	4.136	4.636	4.816

CH 195.000

DATUM RL 201.0

DESIGN SURFACE LEVEL	202.770	202.620	202.660	202.665		202.823	202.820	202.670		202.624		202.595	202.555	202.705
BOTTOM OF EXCAVATION LEVEL	202.160	202.160	202.160	202.165	202.620	202.620	202.620	202.620	202.620	202.124		202.095	202.095	202.095
EXISTING SURFACE LEVEL	202.66	202.66	202.66	202.67	202.67	202.67	202.67	202.67	202.67	202.62		202.67	202.71	202.72
OFFSET	-4.860	-4.680	-4.180	-3.141	-0.480	-0.300	0.173	0.353	0.399	2.826	3.326	4.133	4.633	4.813

CH 210.000

NSW GOVERNMENT | Transport Roads & Maritime Services

These plans are accepted for construction

Project Manager

Date 07/08/17

DATUM RL 201.0

DESIGN SURFACE LEVEL	202.634	202.644	202.665		202.827	202.820		202.617	202.581	202.541	202.691
BOTTOM OF EXCAVATION LEVEL	202.134	202.144	202.165	202.630	202.630	202.620	202.620	202.117	202.081	202.081	202.081
EXISTING SURFACE LEVEL	205.04	202.65	202.66	202.68	202.68	202.67	202.67	202.62	202.63	202.64	202.65
OFFSET	-15.608	-4.676	-3.073	-0.476	-0.296	0.244	0.423	2.904	4.342	4.842	5.022

CH 190.000

DATUM RL 201.0

DESIGN SURFACE LEVEL	203.000	202.769	202.619	202.659	202.669		202.835	202.828		202.634	202.603	202.563	202.713
BOTTOM OF EXCAVATION LEVEL	202.700	202.269	202.119	202.159	202.169	202.640	202.640	202.630	202.630	202.134	202.103	202.103	202.103
EXISTING SURFACE LEVEL	204.44	202.68	202.67	202.67	202.67	202.69	202.69	202.68	202.68	202.63	202.70	202.75	202.77
OFFSET	-11.532	-6.058	-4.678	-4.178	-3.120	-0.478	-0.298	0.242	0.421	2.839	4.126	4.626	4.806

CH 204.000

DATUM RL 201.0

DESIGN SURFACE LEVEL	202.761	202.611	202.651	202.642				202.580	202.527	202.487	202.637
BOTTOM OF EXCAVATION LEVEL	202.151	202.151	202.151	202.142	202.590	202.590	202.590	202.080	202.027	202.027	202.027
EXISTING SURFACE LEVEL	202.62	202.62	202.63	202.64	202.64	202.64	202.64	202.58	202.69	202.72	202.73
OFFSET	-5.673	-5.493	-4.993	-3.090	-0.482	0.000	0.067	2.898	5.562	6.062	6.242

CH 221.000

LEGEND

🟧 ASPHALT FULL DEPTH ROAD PAVEMENT

🟩 ASPHALT PAVEMENT REINSTATEMENT

MID DURAL ROAD CH190.000-221.000

SCALE HORIZONTAL 1:200
VERTICAL 1:100

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED

50mm ON A3 SIZE ORIGINAL

0 5 10 15 20 25 30 35 40 45 50

FOR CONSTRUCTION

DRAWING FILE LOCATION / NAME
X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MIE\6_3_4 MHT UD\Mid Dural Road Drawings\DS2016-002140-DD-RC-0205-0208.dwg

DESIGN LOT CODE

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
XS-MID-DURAL-4	A	29-07-16	ISSUED FOR 100% DESIGN DEVELOPMENT		
	B	04-11-16	INCORPORATED RMS COMMENTS DATED 03-08-2016	SK	PE
	C	04-11-16	SCALE BAR UPDATED	SK	PE
	D	27-01-17	NO. OF DRAWINGS UPDATED	SK	PE
	E	07-04-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 13-03-2017	SK	PE
	F	28-04-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 13-03-2017	SK	PE
	G	05-06-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 16-05-2017	SK	PE

SCALES ON A3 SIZE DRAWING
1:200 H 0 1 2 3 4 5m
1:100 V 0 0.5 1.0 1.5 2.0 2.5m
SCALE 1:200 HORIZONTAL
1:100 VERTICAL
AT ORIGINAL SIZE

CO-ORDINATE SYSTEM: MGA ZONE 56
HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY
MEINHARDT
Meinhardt Australia Pty Ltd

PLOT DATE / TIME: 29/07/2016 2:21:41 PM
PLOT BY: Aseip

TITLE	NAME	DATE
DRAWN	D.CREARY	
DRG CHECK	M.GRINHAM	
DESIGN	A.PHAM	
DESIGN CHECK	S.DUNSTONE	
DESIGN MNGR	P.ENOCH	
PROJECT MNGR	P.ENOCH	

CLIENT
NSW GOVERNMENT | Transport Roads & Maritime Services

PREPARED FOR
BRANCH NAME
SECTION NAME
DEPARTMENT NAME

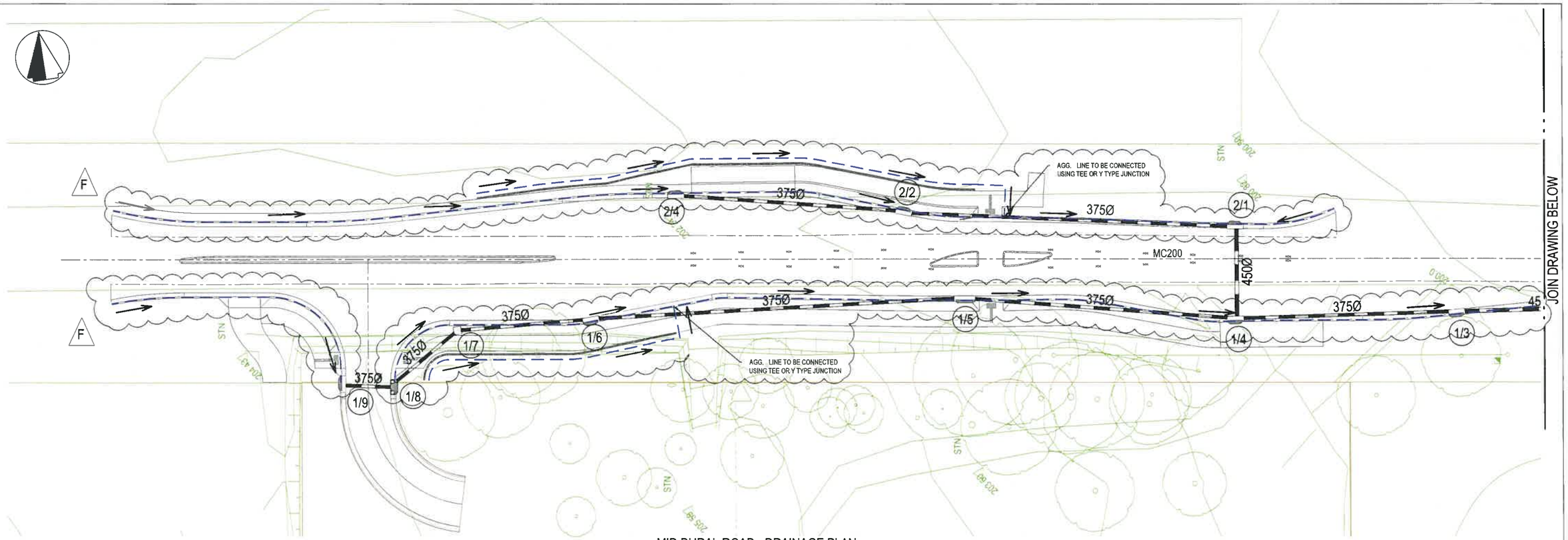
HORNSBY SHIRE COUNCIL
MID DURAL ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

A3

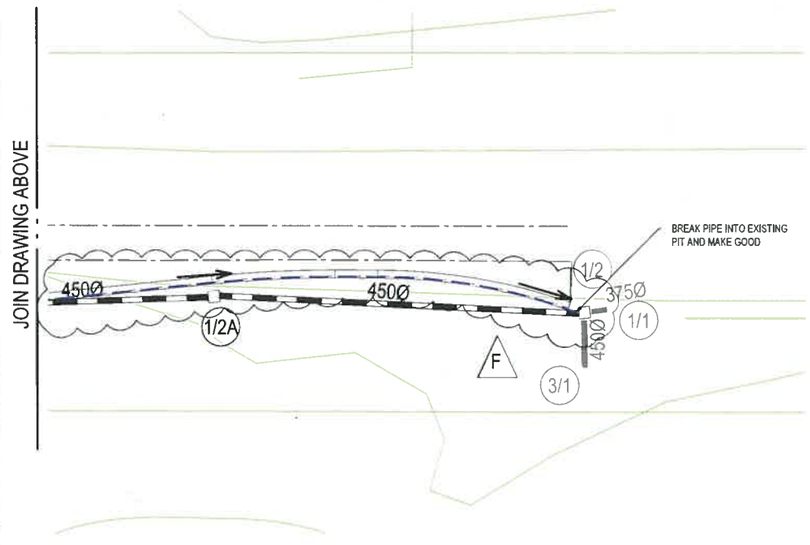
CROSS SECTIONS
SHEET 4 OF 4 / CHAINAGE 190.000-221.000
SHEET 10 OF 23

RMS REGISTRATION No. DS2016 / 002140
PART 02

ISSUE STATUS: FC
EDMS No.
SHEET No.: RC-0208
ISSUE: G



MID DURAL ROAD - DRAINAGE PLAN
1:500



LEGEND

- Ø375 — PROPOSED DRAINAGE PIPE
- PROPOSED PIT
- 1/5 — PROPOSED PIT NUMBER
- F — PROPOSED 100DIA AGG. DRAINAGE

Transport Roads & Maritime Services
These plans are accepted for construction
Project Manager
Date 07/08/17

WARNING
PROPOSED SERVICES
THE LOCATION AND EXTENT OF PROPOSED SERVICES IS INDICATIVE ONLY AND ARE NOT TO BE USED FOR CONSTRUCTION. REFER TO AUTHORISED DOCUMENTATION BY RELEVANT AUTHORITY FOR CONSTRUCTION DETAILS

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

DIAL BEFORE YOU DIG www.1100.com.au

FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
150mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MIE\6_3_4 MHT UD\Mid Dural Road Drawings\DS2016-002140-DD-SM-0200-0201.dwg

DESIGN LOT CODE

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
X-111403-IE-BASE	A	29-07-16	ISSUED FOR 100% DESIGN DEVELOPMENT		
X-111403-IE-BASE DRAI	B	14-11-16	INCORPORATED RMS COMMENTS DATED 03-08-2016	SK	PE
X-111403-IE-BASE CATC	C	15-12-16	INCORPORATED RMS COMMENTS DATED 03-08-2016	SK	PE
X-111403-IE-DESIGN CONTOURS	D	27-01-17	INCORPORATED BRS COMMENTS DATES 22-12-2016	SK	PE
X-111403-Survey	E	07-04-17	REVISED DRAWING PRESENTATION	SK	PE
X103976-00-SURVEY	F	05-06-17	INCORPORATED RMS COMMENTS DATED 16-05-2017	SK	PE

SCALES ON A3 SIZE DRAWING: 0 2.5 5 7.5 10 12.5m — SCALE 1:500 AT ORIGINAL SIZE

CO-ORDINATE SYSTEM: MGA ZONE 56 — HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY: Meinhardt Australia Pty Ltd

PLOT DATE / TIME: 29/07/2016 2:21:41 PM — PLOT BY: Aseip

	NAME	DATE
TITLE		
DRAWN	D.CREARY	
DRG CHECK	M.GRINHAM	
DESIGN	A.PHAM	
DESIGN CHECK	S.DUNSTONE	
DESIGN MNGR	P.ENOCH	
PROJECT MNGR	P.ENOCH	

CLIENT: Transport Roads & Maritime Services

PREPARED FOR: BRANCH NAME / SECTION NAME / DEPARTMENT NAME

HORNSBY SHIRE COUNCIL
MID DURAL ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

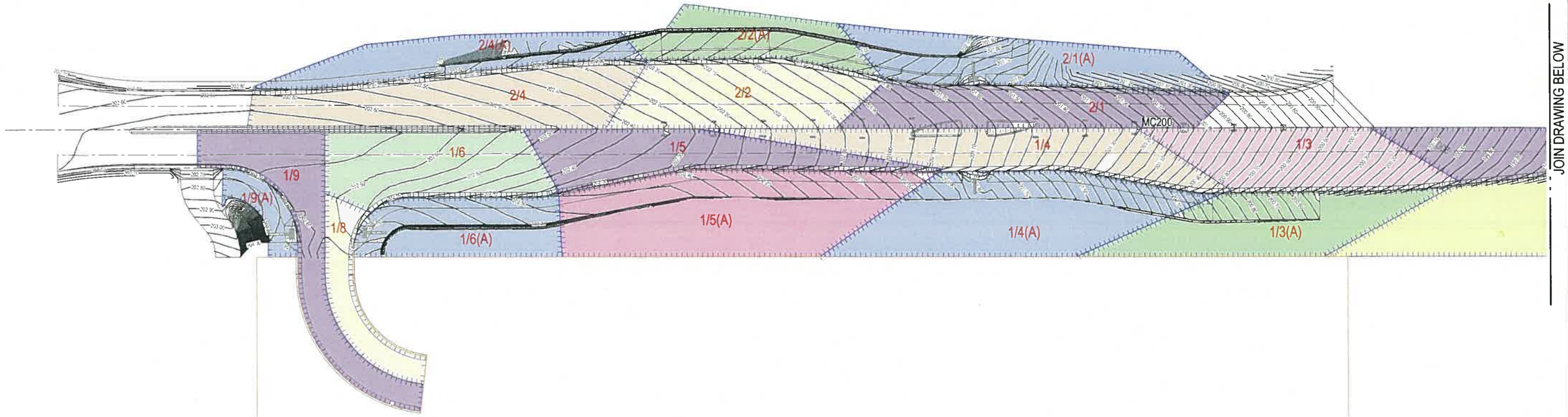
DRAINAGE PLAN

A3

SHEET 11 OF 23

RMS REGISTRATION No.: DS2016 / 002140 — PART 01

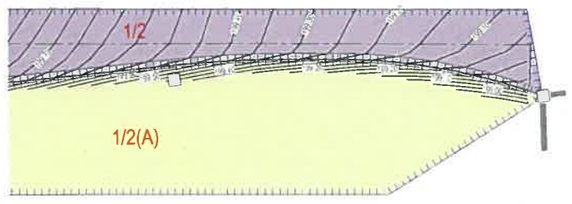
ISSUE STATUS: FC — EDMS No. — SHEET No.: SM-0200 — ISSUE: F



JOIN DRAWING BELOW

MID DURAL ROAD - CATCHMENT PLAN
1:500

JOIN DRAWING ABOVE



CATCHMENT AREAS	
CATCHMENT ID	AREA (ha)
1/2	0.0308
1/2(A)	0.0563
1/3	0.0218
1/3(A)	0.0225
1/4	0.0240
1/4(A)	0.0337
1/5	0.0197
1/5(A)	0.0388
1/6	0.0221
1/6(A)	0.0174
1/8	0.0092
1/9	0.0206
1/9(A)	0.0048
2/1	0.0215
2/1(A)	0.0233
2/2	0.0228
2/2(A)	0.0149
2/4	0.0292
2/4(A)	0.0178

Transport Roads & Maritime Services
These plans are accepted for construction
.....
Project Manager
Date 07/08/17

LEGEND

1/1 CATCHMENT NAME AND CATCHMENT AREA

DIAL BEFORE YOU DIG www.1100.com.au

WARNING
PROPOSED SERVICES
THE LOCATION AND EXTENT OF PROPOSED SERVICES IS INDICATIVE ONLY AND ARE NOT TO BE USED FOR CONSTRUCTION. REFER TO AUTHORISED DOCUMENTATION BY RELEVANT AUTHORITY FOR CONSTRUCTION DETAILS

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
150mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MEV6_3_4 MHT UDM\Mid Dural Road Drawings\DS2016-002140-DD-SM-0200-0201.dwg

DESIGN LOT CODE:

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING:

EXTERNAL REFERENCE FILES
X-111403-IE-BASE
X-111403-IE-BASE DRAI
X-111403-IE-BASE CATC
X-111403-IE-DESIGN CONTOURS
X-111403-Survey
X103976-00-SURVEY

REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
A	14-11-16	INCORPORATED RMS COMMENTS DATED 03-08-2016	SK	PE
B	15-12-16	INCORPORATED RMS COMMENTS DATED 03-08-2016	SK	PE
C	27-01-17	INCORPORATED BRS COMMENTS DATED 22-12-2016	SK	PE
D	05-06-17	INCORPORATED RMS COMMENTS DATED 16-05-2017	SK	PE

SCALES ON A3 SIZE DRAWING: 0 2.5 5 7.5 10 12.5m — SCALE 1:500 AT ORIGINAL SIZE

CO-ORDINATE SYSTEM: MGA ZONE 56 — HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY: Meinhardt Australia Pty Ltd

PLOT DATE / TIME: 29/07/2016 2:21:41 PM — PLOT BY: Aseip

	NAME	DATE
TITLE		
DRAWN	D.CREARY	
DRG CHECK	M.GRINHAM	
DESIGN	A.PHAM	
DESIGN CHECK	S.DUNSTONE	
DESIGN MNGR	P.ENOCH	
PROJECT MNGR	P.ENOCH	

CLIENT: Transport Roads & Maritime Services

PREPARED FOR: BRANCH NAME / SECTION NAME / DEPARTMENT NAME

HORNSBY SHIRE COUNCIL
MID DURAL ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

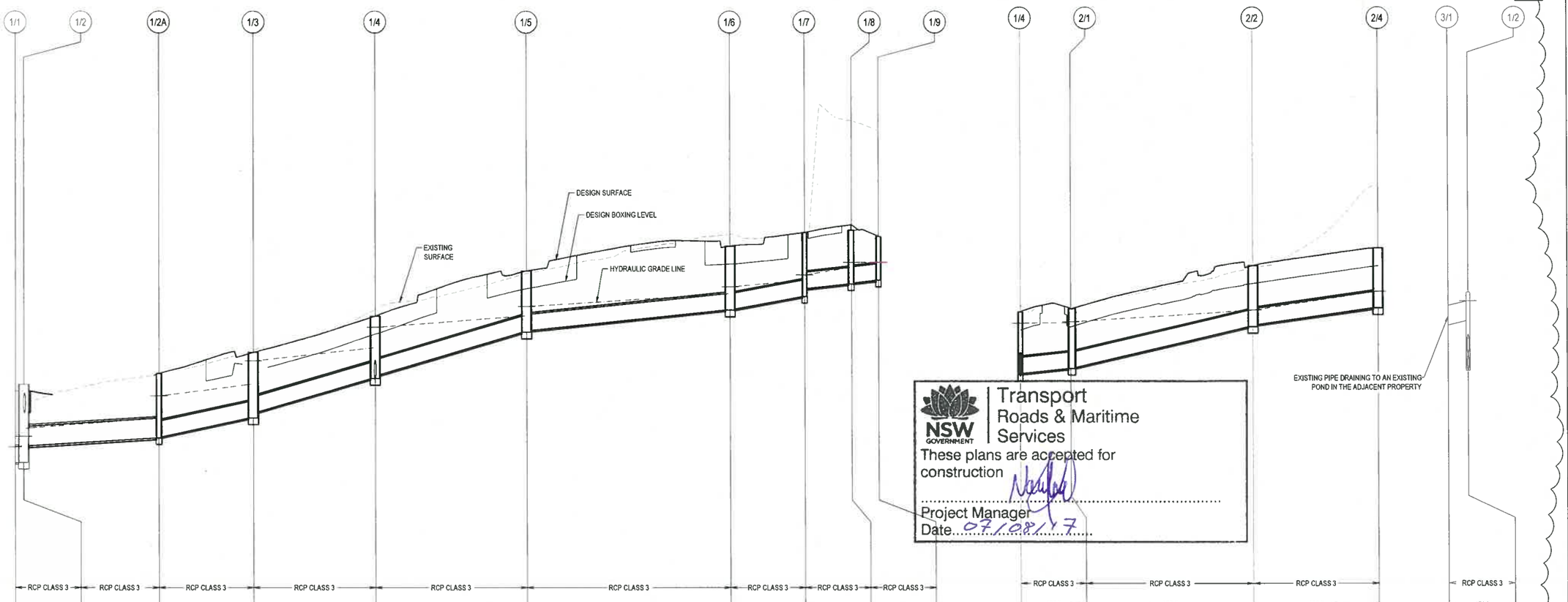
A3

CATCHMENT PLAN

SHEET 12 OF 23

RMS REGISTRATION No. DS2016 / 002140 — PART 01

ISSUE STATUS: FC — EDMS No. — SHEET No. SM-0201 — ISSUE D



Transport
Roads & Maritime
Services
NSW GOVERNMENT
These plans are accepted for construction

Project Manager
Date 07/08/17

	1/1 – 1/2	1/2 – 1/2A	1/2A – 1/3	1/3 – 1/4	1/4 – 1/5	1/5 – 1/6	1/6 – 1/7	1/7 – 1/8	1/8 – 1/9
PIPE CLASS	RCP CLASS 3	RCP CLASS 3	RCP CLASS 3	RCP CLASS 3	RCP CLASS 3	RCP CLASS 3	RCP CLASS 3	RCP CLASS 3	RCP CLASS 3
PIPE SIZE (mm)	375Ø	450Ø	375Ø	375Ø	375Ø	375Ø	375Ø	375Ø	375Ø
PIPE GRADE	1 in 196	1 in 169	1 in 49.5	1 in 36.6	1 in 35.8	1 in 100.0	1 in 58.9	1 in 100	1 in 100.0
FULL PIPE VELOCITY (m/sec)	1.48	1.8	2.93	3.41	3.45	2.06	2.69	2.06	2.06
PARTIAL VELOCITY (m/sec)	3.53	2.24	3.24	3.60	3.30	2.16	2.54	2.09	1.06
FULL PIPE CAPACITY (L/sec)	164	286	324	377	381	228	297	228	228
PEAK DESIGN FLOW (L/sec)	390	357	253	236	160	136	120	120	11
PIPE LENGTH	(1.956)	(30.915)	(21.734)	(27.915)	(34.895)	(46.637)	(17.162)	(10.788)	(6.153)

DATUM (m) 190.00

	1/1	1/2	1/2A	1/3	1/4	1/5	1/6	1/7	1/8	1/9
APPROACH FLOW (L/sec)		37.8		19.2	25.0	25.4	17.1		3.9	10.9
HYDRAULIC GRADE LINE	197.720	197.735 197.959 198.146	198.373 198.887	199.154 199.690	199.990 200.458	200.718 200.933	201.227 201.382	201.538 201.658	201.826 201.946	201.946 201.947
DEPTH TO INVERT	0.375 0.375	1.790 1.410	1.477 1.457	1.499 1.362	1.431 1.343	1.408 1.366	1.465 1.445	1.463 1.283	1.229 1.209	1.005
DESIGN INVERT LEVEL	197.350 197.350	197.360 197.740	197.923 197.943	198.382 198.519	199.281 199.369	200.343 200.385	200.852 200.872	201.163 201.343	201.451 201.471	201.532
DESIGN SURFACE LEVEL	197.725	199.150	199.400	199.881	200.712	201.751	202.317	202.626	202.680	202.537
EXISTING SURFACE LEVEL	199.000	198.955	199.372	199.939	200.869	201.689	202.591	202.625	205.197	204.949
PIPE CHAINAGE	-2.719	-0.763	30.152	51.886	79.802	114.696	161.333	178.495	189.283	195.435

	1/4 – 2/1	2/1 – 2/2	2/2 – 2/4
PIPE CLASS	RCP CLASS 3	RCP CLASS 3	RCP CLASS 3
PIPE SIZE (mm)	375Ø	375Ø	375Ø
PIPE GRADE	1 in 100.0	1 in 44.6	1 in 76.1
FULL PIPE VELOCITY (m/sec)	2.06	3.09	2.37
PARTIAL VELOCITY (m/sec)	1.69	2.01	1.40
FULL PIPE CAPACITY (L/sec)	228	341	261
PEAK DESIGN FLOW (L/sec)	54	36	20
PIPE LENGTH	(11.546)	(41.805)	(28.887)

DATUM (m) 190.00

	1/4	2/1	2/2	2/4
APPROACH FLOW (L/sec)	25.0	19.4	16.3	20.3
HYDRAULIC GRADE LINE	199.990 200.458	200.464 200.489	200.748 200.759	201.179 201.182
DEPTH TO INVERT	1.431 1.411	1.368 1.348	1.401 1.350	1.379
DESIGN INVERT LEVEL	199.281 199.301	199.417 199.437	200.373 200.424	200.804
DESIGN SURFACE LEVEL	200.712	200.785	201.774	202.183
EXISTING SURFACE LEVEL	200.869	200.758	201.721	203.593
PIPE CHAINAGE	0.000	11.546	53.351	82.238

	3/1 – 1/2
PIPE CLASS	RCP CLASS 3
PIPE SIZE (mm)	450Ø
PIPE GRADE	1 in 45.3
FULL PIPE VELOCITY (m/sec)	
PARTIAL VELOCITY (m/sec)	
FULL PIPE CAPACITY (L/sec)	
PEAK DESIGN FLOW (L/sec)	0
PIPE LENGTH	(4.532)

DATUM (m) 188.00

	3/1	1/2
HYDRAULIC GRADE LINE	0.000	0.000 198.955
DEPTH TO INVERT	0.450	0.650 1.790
DESIGN INVERT LEVEL	198.400	198.500 197.360
DESIGN SURFACE LEVEL	198.850	199.150
EXISTING SURFACE LEVEL	198.850	198.955
PIPE CHAINAGE	0.000	4.532

NOTES
ALL RCP PIPES ARE CLASS 3 AND RUBBER RING JOINTED.
DRAINAGE CONSTRUCTED AS PER THE RMS SPECIFICATION R11.

FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
50mm ON A3 SIZE ORIGINAL
0 5 10 15 20 25 30 35 40 45

DRAWING FILE LOCATION / NAME
X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MIE\6_3_4 MHT UD\Mid Dural Road Drawings\DS2016-002140-DD-SM-0209.dwg

DESIGN LOT CODE

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING
FILE NAME ; FILE NAME

EXTERNAL REFERENCE FILES

REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
A	29-07-16	ISSUED FOR 100% DESIGN DEVELOPMENT	XX	XXX
B	04-11-16	INCORPORATED RMS COMMENTS DATED 03-08-2016	SK	PE
C	15-12-16	SCALE BAR UPDATED	SK	PE
D	27-01-17	NO. OF DRAWINGS UPDATED	SK	PE
E	05-06-17	INCORPORATED RMS COMMENTS DATED 16-05-2017	SK	PE
F	14-07-17	INCORPORATED RMS COMMENTS DATED 14-07-2017	SK	PE

SCALES ON A3 SIZE DRAWING
1:1000 H 0 5 10 15 20 25m
1:200 V 0 1 2 3 4 5m
SCALE 1:1000 HORIZONTAL
1:200 VERTICAL
AT ORIGINAL SIZE

CO-ORDINATE SYSTEM: MGA ZONE 56
HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY
MEINHARDT
Meinhardt Australia Pty Ltd

PLOT DATE / TIME: 29/07/2016 2:21:41 PM
PLOT BY: Aseip

TITLE	NAME	DATE
DRAWN	D.CREARY	
DRG CHECK	M.GRINHAM	
DESIGN	A.PHAM	
DESIGN CHECK	S.DUNSTONE	
DESIGN MNGR	P.ENOCH	
PROJECT MNGR	P.ENOCH	

CLIENT
Transport
Roads & Maritime Services
NSW GOVERNMENT

PREPARED FOR
BRANCH NAME
SECTION NAME
DEPARTMENT NAME

HORNSBY SHIRE COUNCIL
MID DURAL ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

STORMWATER LONGITUDINAL SECTIONS

SHEET 13 OF 23

A3

RMS REGISTRATION No. DS2016 / 002140
PART 01
ISSUE STATUS: FC
EDMS No.
SHEET No. SM-0209
ISSUE F

PIT SCHEDULE

F

PIT NAME	TYPE	INTERNAL WD	LEN	INLET DIA	INV LEV	OUTLET DIA	INV LEV	PIT SETOUT RL	DEPTH	REMARKS
1/1	ENDPIPE			375	197.350					EXISTING
1/2	EXISTING			450	197.740	375	197.560	199.160	1.750	EXISTING
						450	198.500	199.160	1.750	EXISTING
1/2A	IP	2000	850	375	197.943	450	197.923	199.400	1.577	
1/3	SA2	2000	850	375	198.519	375	198.382	199.881	1.599	AS PER RMS STANDARD DRAWING R0220-50
1/4	SA2	2000	850	450	199.369	375	199.281	200.712	1.531	AS PER RMS STANDARD DRAWING R0220-50
				375	199.281					
1/5	SA2	2000	850	375	200.385	375	200.343	201.751	1.508	AS PER RMS STANDARD DRAWING R0220-50
1/6	SA2	2000	850	375	200.872	375	200.852	202.317	1.565	AS PER RMS STANDARD DRAWING R0220-50
1/7	IP			375	201.243	375	201.163	202.624	1.561	
1/8	SA2	2000	850	375	201.471	375	201.451	202.680	1.329	AS PER RMS STANDARD DRAWING R0220-50
1/9	SA2	2000	850			375	201.532	202.537	1.105	AS PER RMS STANDARD DRAWING R0220-50
2/1	SA2	2000	850	375	199.437	450	199.417	200.785	1.468	AS PER RMS STANDARD DRAWING R0220-50
2/2	SA2	2000	850	375	200.424	375	200.373	201.774	1.501	AS PER RMS STANDARD DRAWING R0220-50
2/4	SA2	2000	850			375	200.804	202.183	1.479	AS PER RMS STANDARD DRAWING R0220-50
3/1	ENDPIPE			450	198.400					EXISTING

Transport Roads & Maritime Services
These plans are accepted for construction
.....
Project Manager
Date..07/08/17.....

NOTES
ALL RCP PIPES ARE CLASS 3 AND RUBBER RING JOINTED.
DRAINAGE CONSTRUCTED AS PER THE RMS SPECIFICATION R11.

FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
0 5 10 15 20 25 30 35 40 45 50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME
X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MIE\6_3_4 MHT UDM\Mid Dural Road Drawings\DS2016-002140-DD-SM-0210.dwg

DESIGN LOT CODE

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING

PLOT DATE / TIME 29/07/2016 2:21:41 PM
PLOT BY Aseip

CLIENT
Transport Roads & Maritime Services

HORNSBY SHIRE COUNCIL
MID DURAL ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

PIT SCHEDULE

A3

SHEET 14 OF 23

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	A	29-07-16	ISSUED FOR 100% DESIGN DEVELOPMENT		
	B	04-11-16	INCORPORATED RMS COMMENTS DATED 03-08-2016	SK	PE
	C	27-01-17	NO. OF DRAWINGS UPDATED	SK	PE
	D	28-04-17	INCORPORATED RMS COMMENTS DATED 13-03-2017	SK	PE
	E	05-06-17	INCORPORATED RMS COMMENTS DATED 16-05-2017	SK	PE
	F	14-07-17	INCORPORATED RMS COMMENTS DATED 04-07-2017	SK	PE

SCALES ON A3 SIZE DRAWING

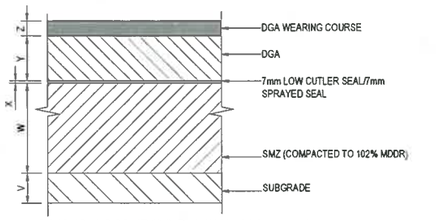
CO-ORDINATE SYSTEM: MGA ZONE 56
HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY
Meinhardt Australia Pty Ltd

	TITLE	NAME	DATE
DRAWN	D.CREARY		
DRG CHECK	M.GRINHAM		
DESIGN	A.PHAM		
DESIGN CHECK	S.DUNSTONE		
DESIGN MNGR	P.ENOCH		
PROJECT MNGR	P.ENOCH		

PREPARED FOR
BRANCH NAME
SECTION NAME
DEPARTMENT NAME

RMS REGISTRATION No. DS2016 / 002140
PART 01
ISSUE STATUS FC
EDMS No.
SHEET No. SM-0210
ISSUE F



MID DURAL ROAD ASPHALT FULL DEPTH ROAD PAVEMENT SPECIFICATION

NOT TO SCALE

DESIGN PARAMETERS

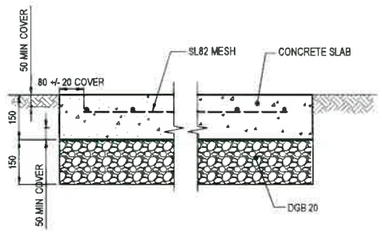
DESA (ESA)	- 7.6×10^5
DSAR 5 (SAR 5)	- 8.66×10^5
DSAR 7 (SAR 7)	- 1.31×10^6
SUBGRADE DESIGN CBR (%)	- 3

LAYER	MATERIAL NAME	THICKNESS (mm)	BINDER TYPE
Z	AC14	50	AR450 BITUMEN
Y	AC20	150	AR450 BITUMEN
X	LOW CUTTER SEAL	7	
W	SMZ	300	
V	SUBGRADE	3% CBR (Min.)	

H

FLEXIBLE PAVEMENT NOTES:

1. ALL EARTHWORKS INCLUDING SUBGRADE PREPARATION SHALL BE AS PER RMS SPECIFICATION R44
2. THE PAVEMENT THICKNESS SHALL BE SUBJECT TO SUBGRADE TESTING BY REGISTERED NATA LABRATORY
3. THE SMZ LAYER IS A STANDARD REQUIREMENT IN RMS PAVEMENTS AND SHOULD COMPLY TO THE RMS QA SPECIFICATION 3071



CONCRETE VEHICULAR CROSSING / BUS SHELTER PAVEMENT

NOT TO SCALE

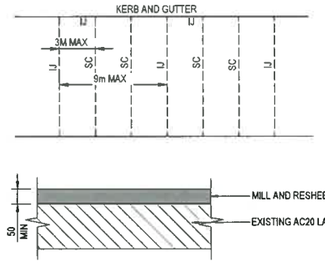
(TO BE CONSTRUCTED SIMILAR TO RMS STANDARD DRAWING DS 2012/00293 SHEET 3)

CROSSING & BUS SHELTER PAVING NOTES :

1. ISOLATION JOINTS MUST BE PROVIDED AT THE FIRST JOINT AWAY FROM JUNCTIONS WITH FLEXIBLE PAVEMENTS AND STRUCTURES, AND AT (max.) INTERMEDIATE CENTRES OF 17.5m (EG. THREE SHEETS OF 6m LENGTH MESH, LESS LAPS.
2. ISOLATION JOINTS CAN BE CONSTRUCTED AS FORMED JOINTS (BY CHEQUERBOARD PAVING SEQUENCE), OR BY FULL DEPTH SAWCUT.
3. PLACE A FULL DEPTH ISOLATION JOINT AROUND ALL ABUTTING STRUCTURES SUCH AS PITS, UTILITY SERVICES, POWER POLES, KERBS.
4. THE OPTIONS FOR END-OF-DAY CONSTRUCTION JOINTS ARE AS FOLLOWS
   (i) TRANSVERSE CONSTRUCTION/FORMED/TIED JOINTS MAY BE USED. THEY MUST BE LOCATED EITHER MIDWAY BETWEEN ISOLATION JOINTS OR IN LIEU OF A TRANSVERSE HINGE/TIED/SAWN JOINT. THEY MUST NOT BE USED IN LIEU OF A ISOLATION JOINT.
   (ii) PAVING MAY BE TERMINATED AT A ISOLATION JOINT.
5. COMPLY WITH RMS SPECIFICATIONS R53 AND R173. CONCRETE MUST BE IN ACCORDANCE WITH RMS R53 BUT WITH A MINIMUM COMPRESSIVE STRENGTH OF 32.0 MPa.
6. SELF-EXPANDING CORK SEALANTS MUST FILL THE FULL JOINT CAVITY TO PREVENT THE INGRESS OF INCOMPRESSIBLE MATERIALS.
7. SUB BASE MUST BE 150mm THICK TRAFFIC CATEGORY D MATERIAL IN ACCORDANCE WITH RMS SPECIFICATION 3051, COMPACTED IN ACCORDANCE WITH RMS R173. MOISTEN THE SUB BASE WITH WATER BEFORE PLACING THE CONCRETE.
8. DEBOND TYPE TRANSVERSE CONSTRUCTION/FORMED/TIED JOINTS TO PREVENT CHEMICAL BONDING.
9. ENSURE REINFORCING STEEL IS PLACED TO PROVIDE 30mm MINIMUM COVER BELOW THE SAWCUT.
10. WHERE FILLING UNDER PROPOSED BUS BAY AND VEHICULAR CROSSING IS NECESSARY, SUCH FILLING SHALL CONSIST OF GRANULAR MATERIAL OF 20mm MAXIMUM SIZE AND SHALL BE SPREAD IN LAYERS OF A MAXIMUM THICKNESS OF 150mm AND CONSOLIDATED TO PROVIDE A 95% COMPACTION WHEN TESTED UNDER THE MODIFIED PROCTOR METHOD AS PER HORNSBY SHIRE COUNCIL'S VEHICULAR CROSSING SPECIFICATION

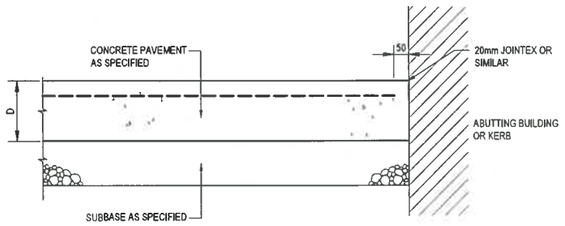
TYPICAL CONCRETE FOOTPATH PAVEMENT JOINTING NOTES :

1. ALL FOOTPATH PAVEMENTS TO BE JOINTED AS SHOWN ON DRAWINGS.
2. SAWN JOINTS (SC) SHOULD GENERALLY BE LOCATED AT A MAXIMUM OF 3M. CENTRES.
3. PROVIDE 20MM WIDE FULL DEPTH ISOLATION JOINTS (IJ) BETWEEN BUILDINGS, SERVICE PITS AND ALL CONCRETE OR UNIT PAVERS.
4. SET OUT FOOTPATH PAVEMENT JOINTING GENERALLY AS FOLLOWS.
5. PROVIDE 2N12 TRIMMER BARS AT ALL RE-ENTRANT CORNERS.
6. WHERE FILLING UNDER PROPOSED CONCRETE FOOTPATH IS NECESSARY; SUCH FILLING SHALL CONSIST OF GRANULAR MATERIAL OF 20mm MAXIMUM SIZE AND SHALL BE SPREAD IN LAYERS OF A MAXIMUM THICKNESS OF 150mm AND CONSOLIDATED TO PROVIDE A 95% COMPACTION WHEN TESTED UNDER THE MODIFIED PROCTOR METHOD AS PER HORNSBY SHIRE COUNCIL'S VEHICULAR CROSSING SPECIFICATION



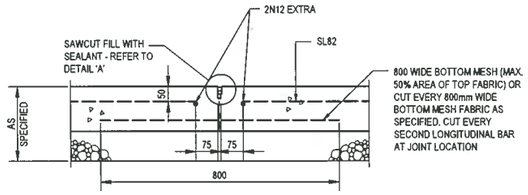
MID DURAL ROAD ASPHALT MILL AND RESHEET SPECIFICATION

NOT TO SCALE



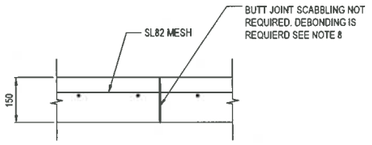
ISOLATION JOINT (IJ)

SCALE 1:40



SAWCUT JOINT (SC)

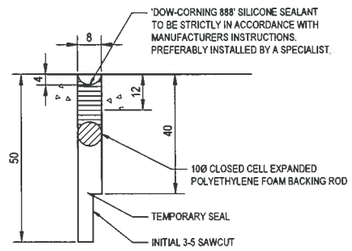
SCALE 1:40



TRANSVERSE CONSTRUCTION/FORMED/TIED JOINT OF CONCRETE VEHICULAR CROSSING/BUS SHELTER PAVEMENT

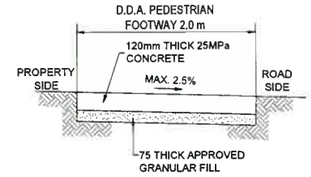
AT START AND END OF DAILY PAVING OPERATIONS. SEE NOTE 4

SCALE NTS



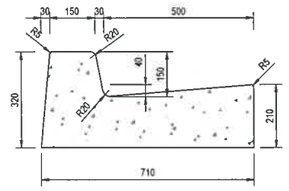
DETAIL A

NTS



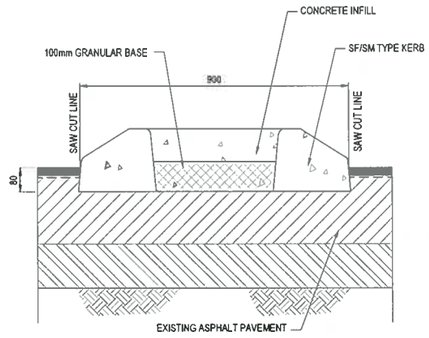
TYPICAL SECTION PEDESTRIAN FOOTWAY

SCALE 1:40



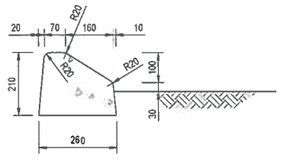
SA TYPE KERB (SA)

N.T.S.

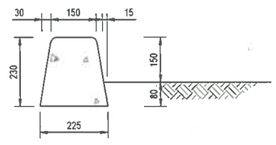


MEDIAN ISLAND DETAIL

SCALE 1:40



SF TYPE KERB (SF)



SM TYPE KERB (SM)

NSW GOVERNMENT Transport Roads & Maritime Services

These plans are accepted for construction

Project Manager

Date 07/08/17

FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED

0 5 10 15 20 25 30 35 40 45 50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MIE\6_3_4 MHT UD\Mid Dural Road Drawings\DS2016-002140-DD-PV-0214-0215.dwg

DESIGN LOT CODE:

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING:

PLOT DATE / TIME: 29/07/2016 2:21:41 PM PLOT BY: Aseip

EXTERNAL REFERENCE FILES:

REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
A	29-07-16	ISSUED FOR 100% DESIGN DEVELOPMENT		
B	14-11-16	INCORPORATED RMS COMMENTS DATED 03-08-2016	SK	PE
C	14-12-16	INCORPORATED RMS COMMENTS DATED 03-08-2016	SK	PE
D	27-01-17	INCORPORATED BRS COMMENTS DATED 22-12-2016	SK	PE
E	07-04-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 13-03-2017	SK	PE
F	24-04-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 13-03-2017	SK	PE
G	05-05-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 16-05-2017	SK	PE
H	14-07-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 04-07-2017	SK	PE

SCALES ON A3 SIZE DRAWING:

CO-ORDINATE SYSTEM: MGA ZONE 56 HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY: Meinhardt Australia Pty Ltd

	NAME	DATE
DRAWN	D.CREARY	
DRG CHECK	M.GRINHAM	
DESIGN	A.PHAM	
DESIGN CHECK	S.DUNSTONE	
DESIGN MNGR	P.ENOCH	
PROJECT MNGR	P.ENOCH	

CLIENT: NSW GOVERNMENT Transport Roads & Maritime Services

PREPARED FOR: BRANCH NAME, SECTION NAME, DEPARTMENT NAME

HORNSBY SHIRE COUNCIL
MID DURAL ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

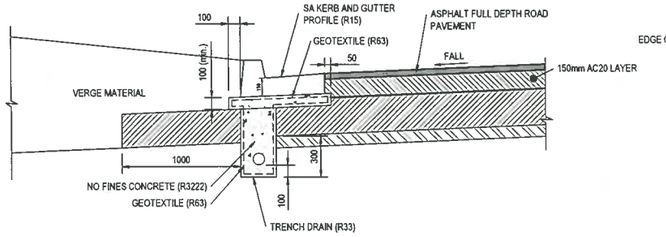
TYPICAL DETAILS SHEET

SHEET 15 OF 23

A3

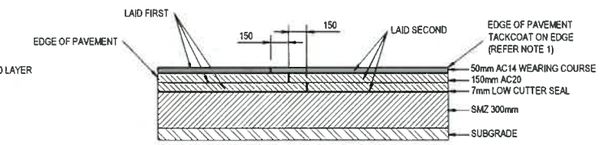
RMS REGISTRATION No.: DS2016 / 002140 PART: 01

ISSUE STATUS: FC EDMS No.: SHEET No.: PV-0214 ISSUE: H



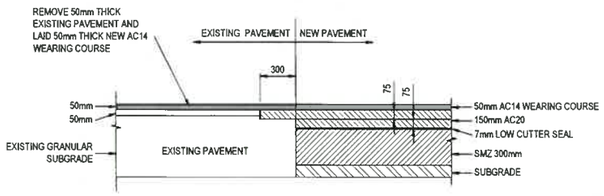
EDGE DETAIL TO SHOW PAVEMENT/KERB INTERFACE

SCALE 1:50



LONGITUDINAL CONSTRUCTION JOINT NEW CONSTRUCTION - CONFINED

SCALE 1:50

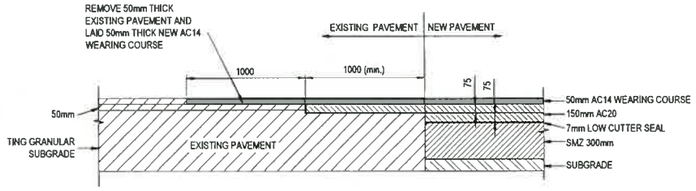


LONGITUDINAL CONSTRUCTION JOINT REINSTATEMENT

SCALE 1:50

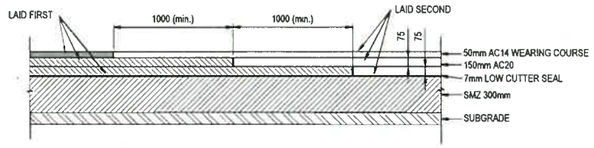
NOTES.

1. THE TACKCOAT MUST BE APPLIED AT AN APPLICATION RATE OF BETWEEN 0.15 l/m^2 AND 0.30 l/m^2 OF RESIDUAL BITUMEN FOR JOINTS THE APPLICATION RATE MUST BE DOUBLED ON VERTICAL FACES
2. ASPHALT COMPACTION SHOULD COMPLY WITH RMS R116 SPECIFICATION



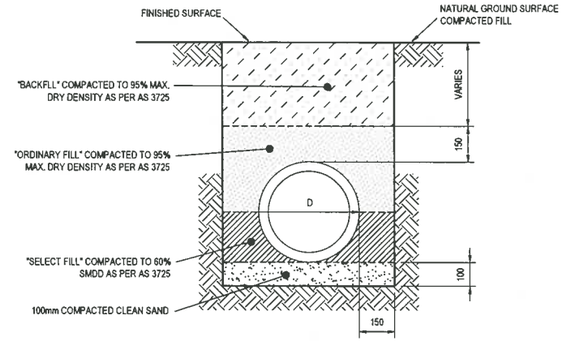
TRANSVERSE CONSTRUCTION JOINT REINSTATEMENT

SCALE 1:50



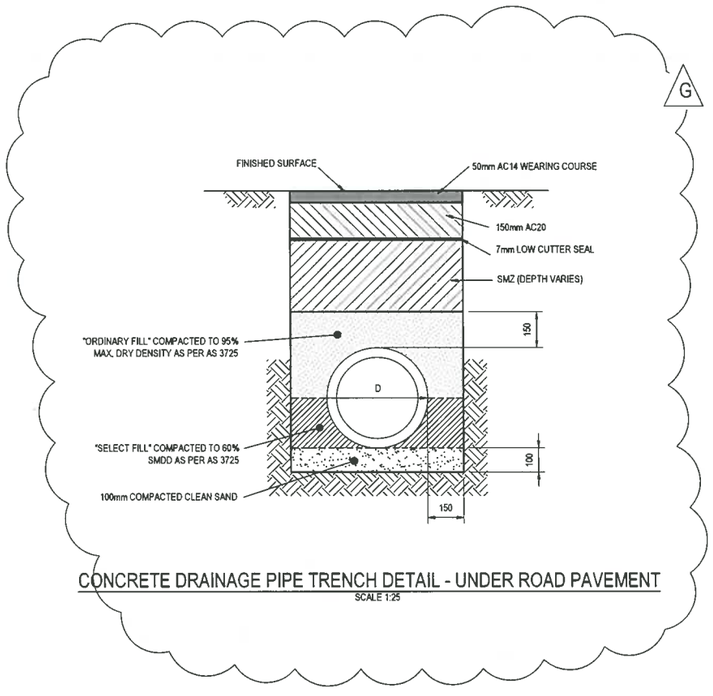
TRANSVERSE CONSTRUCTION JOINT NEW CONSTRUCTION

SCALE 1:50



CONCRETE DRAINAGE PIPE TRENCH DETAIL - NON PAVED AREAS

SCALE 1:25



CONCRETE DRAINAGE PIPE TRENCH DETAIL - UNDER ROAD PAVEMENT

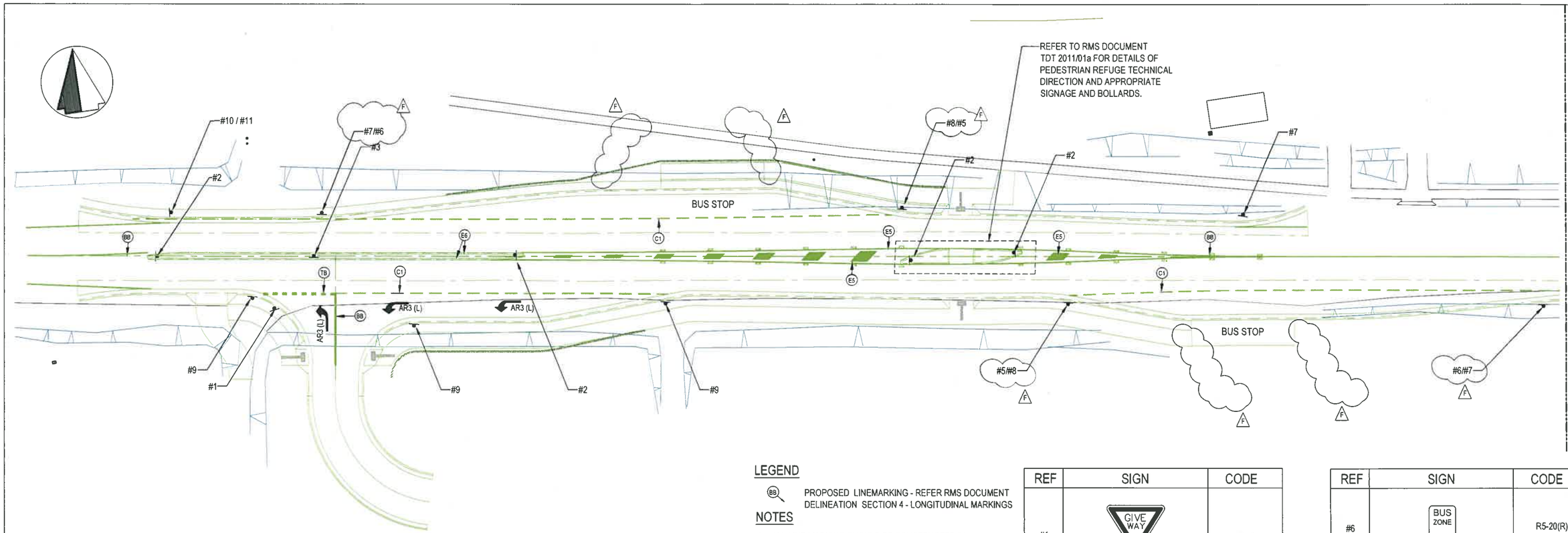
SCALE 1:25

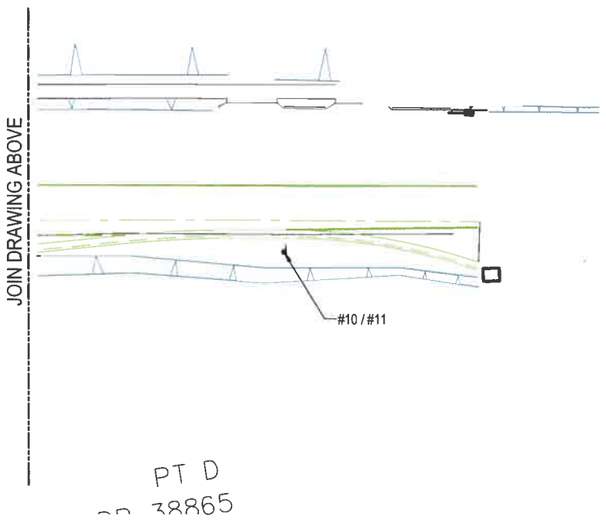
Transport Roads & Maritime Services
These plans are accepted for construction
Project Manager
Date 07/08/17

FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED 50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME				DESIGN LOT CODE		DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING		PLOT DATE / TIME		PLOT BY	CLIENT		A3
X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MIE\6_3_4 MHT UDM\Mid Dural Road Drawings\DS2016-002140-DD-PV-0214-0215.dwg								29/07/2016 2:21:41 PM		syenikapati	Transport Roads & Maritime Services	HORNSBY SHIRE COUNCIL MID DURAL ROAD ROAD WORKS IN ASSOCIATION WITH 392 GALSTON ROAD, GALSTON GALSTON GRANGE DEVELOPMENT	
EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL	SCALES ON A3 SIZE DRAWING	DRAWINGS / DESIGN PREPARED BY	TITLE	NAME	DATE		TYPICAL DETAILS SHEET	
	A	04-11-16	INCORPORATED RMS COMMENTS DATED 03-08-2016	SK	PE		MEINHARDT Meinhardt Australia Pty Ltd	DRAWN	D.CREARY				SHEET 16 OF 23
	B	14-12-16	INCORPORATED RMS COMMENTS DATED 03-08-2016	SK	PE			DRG CHECK	M.GRINHAM				
	C	27-01-17	INCORPORATED BRS COMMENTS DATED 22-12-2016	SK	PE			DESIGN	A.PHAM				
	D	07-04-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 13-03-2017	SK	PE			DESIGN CHECK	S.DUNSTONE				
	E	05-06-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 16-05-2017	SK	PE			DESIGN MNGR	P.ENOCH				
	F	14-07-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 04-07-2017	SK	PE			PROJECT MNGR	P.ENOCH				
	G	02.08.17	INCORPORATED RMS PAVEMENT COMMENTS DATED 02-08-2017	AS	KW	CO-ORDINATE SYSTEM: MGA ZONE 56	HEIGHT DATUM: AHD				PREPARED FOR BRANCH NAME SECTION NAME DEPARTMENT NAME	RMS REGISTRATION No. DS2016 / 002140	PART 01
												ISSUE STATUS: FC / EDMS No. / SHEET No. PV-0215	ISSUE G





PT D
38865

LEGEND

(BB) PROPOSED LINEMARKING - REFER RMS DOCUMENT DELINEATION SECTION 4 - LONGITUDINAL MARKINGS

NOTES

1. ALL LINE MARKING SHOULD BE CONSTRUCTED IN ACCORDANCE TO RMS STANDARDS.
2. ALL SIGNS TO BE LOCATED IN ACCORDANCE WITH RMS STANDARDS.

REF	SIGN	CODE
#1	GIVE WAY	R1-2
#2	KEEP LEFT	R2-3
#3	ONLY	R2-14
#5	BUS ZONE	R5-20(L)
#6	BUS ZONE	R5-20(R)
#5	BUS ZONE	R5-20(L)

REF	SIGN	CODE
#6	BUS ZONE	R5-20(R)
#7	NO STOPPING	R5-400(L)
#8	NO STOPPING	R5-400(R)
#9	NO STOPPING	R5-400(L+R)
#10		W6-1B
#11	REFUGE ISLAND	W8-25B

Transport Roads & Maritime Services
These plans are accepted for construction
Project Manager
Date 27/08/17

MID DURAL ROAD - LINE MARKING AND SIGNAGE PLAN
1:500

FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
0 5 10 15 20 25 30 35 40 45 50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME
X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MIE\6_3_4 MHT UD\Mid Dural Road Drawings\DS2016-002140-DD-RF-0216.dwg

EXTERNAL REFERENCE FILES
X 103976 -00-Survey
X - 111403-IE-BASE

REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
A	29-06-16	ISSUED FOR 100% DESIGN DEVELOPMENT		
B	14-11-16	INCORPORATED RMS COMMENTS DATED 03-08-2016	SK	PE
C	15-12-16	UPDATED SCALE BAR	SK	PE
D	27-01-17	INCORPORATED BRS COMMENTS DATED 22-12-2016	SK	PE
E	28-04-17	INCORPORATED BRS COMMENTS DATED 13-03-2017	SK	PE
F	05-06-17	INCORPORATED RMS COMMENTS DATED 16-05-2017	SK	PE

DESIGN LOT CODE

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING

SCALES ON A3 SIZE DRAWING
0 2.5 5 7.5 10 12.5m
SCALE 1:500 AT ORIGINAL SIZE

CO-ORDINATE SYSTEM: MGA ZONE 56
HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY
Meinhardt Australia Pty Ltd

PLOT DATE / TIME	PLOT BY
29/07/2016 2:21:41 PM	Aseip

TITLE	NAME	DATE
DRAWN	D.CREARY	
DRG CHECK	M.GRINHAM	
DESIGN	A.PHAM	
DESIGN CHECK	S.DUNSTONE	
DESIGN MNGR	P.ENOCH	
PROJECT MNGR	P.ENOCH	

CLIENT
Transport Roads & Maritime Services

PREPARED FOR
BRANCH NAME
SECTION NAME
DEPARTMENT NAME

HORNSBY SHIRE COUNCIL
MID DURAL ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

LINE MARKING AND SIGN POSTING PLAN

A3

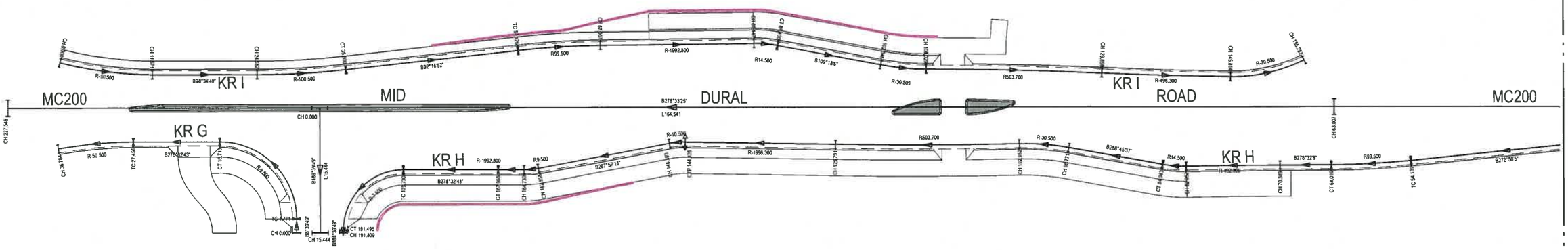
SHEET 17 OF 23

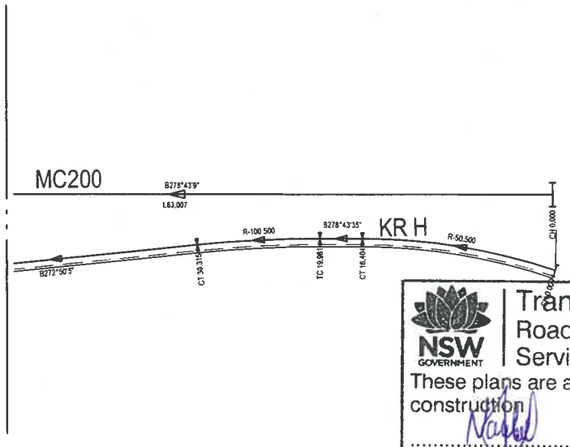
RMS REGISTRATION No. DS2016 / 002140
PART 01
ISSUE STATUS: FC
EDMS No.
SHEET No. RF-0216
ISSUE F

WARNING
PROPOSED SERVICES
THE LOCATION AND EXTENT OF PROPOSED SERVICES IS INDICATIVE ONLY AND ARE NOT TO BE USED FOR CONSTRUCTION. REFER TO AUTHORISED DOCUMENTATION BY RELEVANT AUTHORITY FOR CONSTRUCTION DETAILS

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

DIAL BEFORE YOU DIG www.1100.com.au





SETOUT ROAD CL - MC 200				
Pt	Chainage	Easting	Northing	Bearing
IP1	0.000	318265.273	6274681.607	278°43'09.08"
IP2	63.007	318202.993	6274691.158	
IP3	227.548	318040.284	6274715.640	278°33'24.74"

SETOUT TABLE - KERB KR I							
Pt	Chainage	Easting	Northing	Bearing	Rad/Spiral	A.Length	D.Angle
IP1	0.000	318047.495	6274720.204	112°2'33.01"			
IP2	5.786	318052.868	6274717.992		-50.5	11.571	13°07'41.85"
IP3	11.571	318058.604	6274717.058				
IP4	24.612	318071.499	6274715.113				
IP5	30.106	318076.937	6274714.296		-100.5	10.988	6°15'51.02"
CT	35.600	318082.432	6274714.077	92°16'52.15"			
TC	57.126	318103.941	6274713.220	92°16'52.15"			
IP6	62.247	318109.062	6274713.016		99.5	10.241	5°53'49.71"
IP7	67.367	318114.135	6274712.287				
IP8	76.907	318123.578	6274710.930		-1992.8	19.079	0°32'54.80"
IP9	86.447	318133.033	6274709.663				
IP10	87.923	318134.502	6274709.467		14.5	2.954	11°40'18.98"
CT	89.400	318135.901	6274708.977	109°18'06.04"			
IP11	102.346	318148.119	6274704.697				
IP12	105.188	318150.809	6274703.756		-30.5	5.683	10°40'31.44"
IP13	108.029	318153.626	6274703.328				
IP14	118.943	318164.419	6274701.691		503.7	21.829	2°28'58.78"
IP15	129.858	318175.130	6274699.588				
IP16	137.836	318182.959	6274698.050		-496.3	15.956	1°50'31.31"
IP17	145.814	318190.834	6274696.765				
IP18	150.548	318195.591	6274695.989		-20.5	9.468	26°27'43.92"
IP19	155.282	318200.195	6274697.414	72°48'18.16"			

SETOUT TABLE - KERB KR G							
Pt	Chainage	Easting	Northing	Bearing	Rad/Spiral	A.Length	D.Angle
IP1	0.000	318073.389	6274695.018	8°39'48.67"			
TC	1.771	318073.656	6274696.769	8°39'48.67"			
IP2	9.242	318075.090	6274706.180		-9.5	14.942	90°07'05.50"
CT	16.713	318065.676	6274707.595	278°32'43.17"			
TC	27.456	318055.052	6274709.191	278°32'43.17"			
IP3	32.120	318050.427	6274709.886		-50.5	9.328	10°35'00.11"
IP4	36.784	318045.752	6274709.720	267°57'43.06"			

SETOUT TABLE - KERB KR H							
Pt	Chainage	Easting	Northing	Bearing	Rad/Spiral	A.Length	D.Angle
IP1	0.000	318264.527	6274675.298	297°20'14.54"			
IP2	8.202	318257.177	6274679.098		-50.5	16.404	18°36'39.95"
CT	16.404	318248.998	6274680.353	278°43'34.59"			
TC	19.981	318245.462	6274680.896	278°43'34.59"			
IP3	25.148	318240.350	6274681.681		-100.5	10.334	5°53'29.55"
CT	30.315	318235.185	6274681.936	272°50'05.04"			
TC	54.139	318211.391	6274683.115	272°50'05.04"			
IP4	59.089	318206.442	6274683.360		99.5	9.901	5°42'04.07"
CT	64.039	318201.543	6274684.095	278°32'09.10"			
IP5	70.389	318195.263	6274685.038				
IP6	76.221	318189.496	6274685.903		-492.8	11.663	1°21'21.46"
IP7	82.052	318183.710	6274686.632				
IP8	83.517	318182.251	6274686.816		14.5	2.931	11°34'48.90"
CT	84.983	318180.859	6274687.289	288°45'36.54"			
IP9	96.771	318169.697	6274691.080				
IP10	99.861	318166.761	6274692.077		-30.5	6.181	11°36'39.45"
IP11	102.952	318163.684	6274692.463				
IP12	114.371	318152.351	6274693.884		503.7	22.84	2°35'52.81"
IP13	125.791	318141.094	6274695.818				
IP14	135.109	318131.911	6274697.396		-1996.3	18.635	0°32'05.43"
CC	144.426	318122.714	6274698.887	279°12'44.47"			
IP15	145.409	318121.740	6274699.045		-10.5	1.967	10°43'55.65"
IP16	146.393	318120.754	6274699.019				
IP17	162.958	318104.200	6274698.428				
IP18	163.844	318103.312	6274698.396		9.5	1.771	10°41'02.59"
IP19	164.730	318102.434	6274698.530				
IP20	166.349	318100.833	6274698.773		-1992.8	3.238	0°05'35.16"
CT	167.968	318099.232	6274699.013	278°32'43.17"			
TC	179.730	318087.601	6274700.761	278°32'43.17"			
IP21	185.612	318080.199	6274701.873		-7.5	11.766	89°52'54.50"
CT	191.495	318079.072	6274694.474	188°39'48.67"			
IP22	191.809	318079.024	6274694.184	188°39'48.67"			

Transport Roads & Maritime Services
These plans are accepted for construction
Project Manager
Date 27/02/17

FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED 50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME	DESIGN LOT CODE	DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING	PLOT DATE / TIME	PLOT BY	CLIENT
X:\111403 - Galston-Grange Retirement-Village\5BIM\5_3 MHT MIE\5_3_4 MHT UD\Mid Dural Road Drawings\DS2016-002140-DD-SO-0217.dwg			29/07/2016 2:21:41 PM	Aseip	Transport Roads & Maritime Services

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
X - 111403 - SetoutGR	A	29-07-16	ISSUED FOR 100% DESIGN DEVELOPMENT		
X - 111403 - IE - BASE	B	14-11-16	INCORPORATED RMS COMMENTS DATED 03-08-2016	SK	PE
X - 111403 - IE - BASE PAVE	C	15-12-16	INCORPORATED RMS COMMENTS DATED 03-08-2016	SK	PE
X - 111403 - IE - DESIGN CONTOURS	D	27-01-17	NO. OF DRAWINGS UPDATED	SK	PE
	E	07-04-17	REVISED DRAWING PRESENTATION	SK	PE
	F	05-06-17	INCORPORATED RMS COMMENTS DATED 16-05-2017	SK	PE

SCALES ON A3 SIZE DRAWING: 0 2.5 5 7.5 10 12.5m — SCALE 1:500 AT ORIGINAL SIZE
CO-ORDINATE SYSTEM: MGA ZONE 56 | HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY: Meinhardt Australia Pty Ltd

	TITLE	NAME	DATE
DRAWN	D.CREARY		
DRG CHECK	M.GRINHAM		
DESIGN	A.PHAM		
DESIGN CHECK	S.DUNSTONE		
DESIGN MNGR	P.ENOCH		
PROJECT MNGR	P.ENOCH		

PREPARED FOR: BRANCH NAME / SECTION NAME / DEPARTMENT NAME

HORNSBY SHIRE COUNCIL
MID DURAL ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

SETOUT PLAN
SHEET 1 OF 2 — SHEET 18 OF 23

A3

RMS REGISTRATION No. DS2016 / 002140 — PART 01
ISSUE STATUS: FC | EDMS No. | SHEET No. SO-0217 | ISSUE F

WARNING

PROPOSED SERVICES

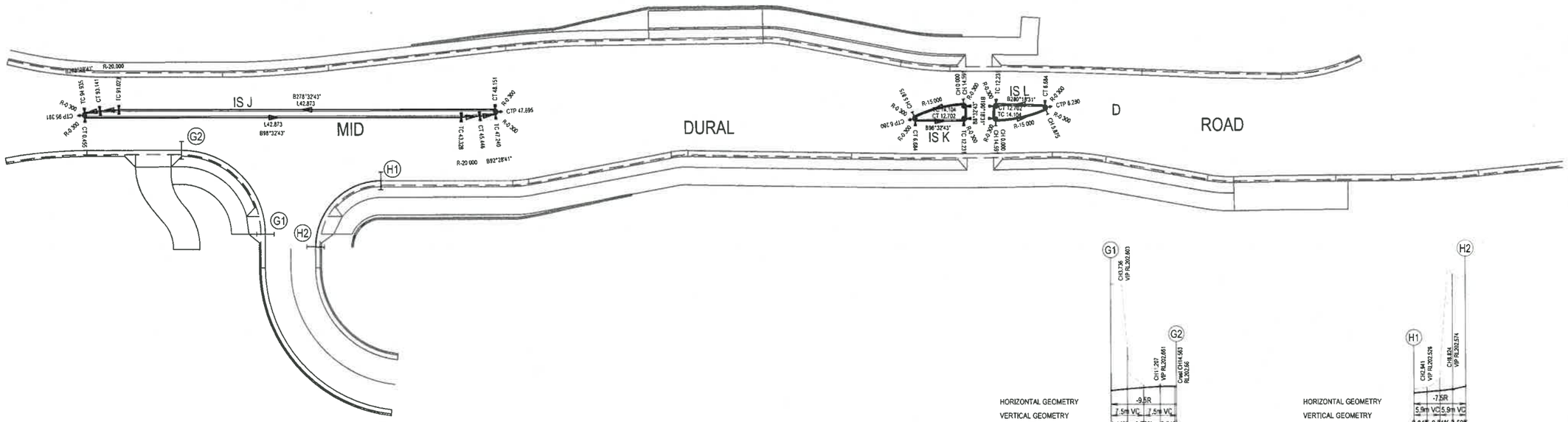
THE LOCATION AND EXTENT OF PROPOSED SERVICES IS INDICATIVE ONLY AND ARE NOT TO BE USED FOR CONSTRUCTION. REFER TO AUTHORISED DOCUMENTATION BY RELEVANT AUTHORITY FOR CONSTRUCTION DETAILS

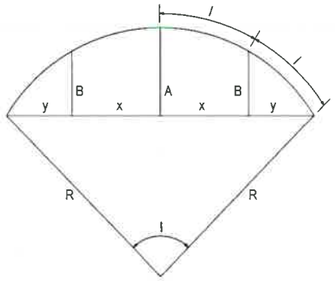
WARNING

BEWARE OF UNDERGROUND SERVICES

THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

DIAL BEFORE YOU DIG www.1100.com.au





LIP PROFILE SETOUT

KERB ALIGNMENTS

ALIGNMENT G

Point no	Easting	Northing	RL
G1	318073.656	6274696.769	202.560
G2	318065.676	6274707.595	202.660

Curve no	I	Radius	Arc	A	B	X	Y	I	Mid point RL
G1 - G2	90.118	9.5	14.942	2.789	2.064	3.640	3.084	3.736	202.632

ALIGNMENT H

Point no	Easting	Northing	RL
H1	318087.601	6274700.761	202.501
H2	318079.072	6274694.474	202.650

Curve no	I	Radius	Arc	A	B	X	Y	I	Mid point RL
H1 - H2	89.882	7.5	11.766	2.191	1.622	2.867	2.431	2.941	202.550

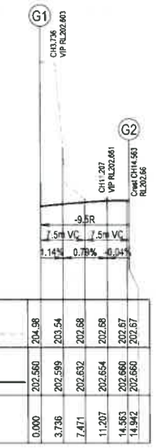
NSW GOVERNMENT Transport Roads & Maritime Services

These plans are accepted for construction

.....

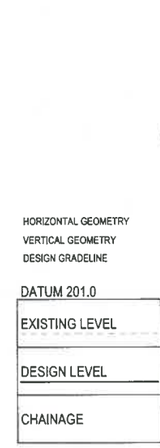
Project Manager

Date..07/08/17.....



DATUM 201.0							
EXISTING LEVEL	204.98	203.54	202.68	202.68	202.67	202.67	
DESIGN LEVEL	202.560	202.599	202.632	202.654	202.660	202.660	
CHAINAGE	0.000	3.736	7.471	11.207	14.563	14.942	

LIP PROFILE G-G



DATUM 201.0							
EXISTING LEVEL	202.59	202.63	202.84	205.21	205.15		
DESIGN LEVEL	202.501	202.526	202.550	202.587	202.650		
CHAINAGE	0.000	2.941	5.883	8.824	11.766		

LIP PROFILE H-H

SETOUT KERB ISLAND - IS J

Pt	Chainage	Easting	Northing	Bearing	Rad/Spiral	A.Length	D.Angle
CC	0.000	318055.106	6274713.212	185°30'42.12"			
IP2	0.228	318055.079	6274712.929		-0.3	0.455	86°57'58.95"
CT	0.455	318055.360	6274712.886	98°32'43.17"			
TC	43.328	318097.757	6274706.516	98°32'43.17"			
IP3	44.387	318098.805	6274706.358		-20	2.118	6°04'02.11"
CT	45.446	318099.864	6274706.312	92°28'41.06"			
TC	47.240	318101.656	6274706.235	92°28'41.06"			
IP4	47.468	318101.941	6274706.223		-0.3	0.455	86°57'58.95"
CC	47.695	318101.968	6274706.506	5°30'42.12"			
IP5	47.923	318101.995	6274706.789		-0.3	0.455	86°57'58.95"
CT	48.151	318101.714	6274706.831	278°32'43.17"			
TC	91.023	318059.317	6274713.202	278°32'43.17"			
IP6	92.082	318058.269	6274713.359		-20	2.118	6°04'02.11"
CT	93.141	318057.210	6274713.405	272°28'41.06"			
TC	94.935	318055.417	6274713.483	272°28'41.06"			
IP1	95.163	318055.133	6274713.495		-0.3	0.455	86°57'58.95"
CC	95.391	318055.106	6274713.212	185°30'42.12"			

SETOUT KERB ISLAND - IS K

Pt	Chainage	Easting	Northing	Bearing	Rad/Spiral	A.Length	D.Angle
IP1	0.000	318154.614	6274699.443	275°34'39.13"			
IP2	2.937	318151.652	6274699.732		-15	5.875	22°26'26.30"
IP3	5.875	318148.805	6274698.869				
IP4	6.077	318148.575	6274698.799		-0.3	0.405	77°17'43.36"
CC	6.280	318148.593	6274698.560	175°50'26.53"			
IP5	6.482	318148.610	6274698.321		-0.3	0.405	77°17'43.36"
CT	6.684	318148.847	6274698.285	98°32'43.17"			
TC	12.231	318154.332	6274697.461	98°32'43.17"			
IP6	12.466	318154.628	6274697.417		-0.3	0.471	90°00'00.00"
CT	12.702	318154.673	6274697.713	8°32'43.17"			
TC	14.104	318154.881	6274699.100	8°32'43.17"			
IP7	14.348	318154.928	6274699.412		-0.3	0.487	92°58'10.06"
IP8	14.591	318154.614	6274699.443	275°34'33.11"			

SETOUT KERB ISLAND - IS L

Pt	Chainage	Easting	Northing	Bearing	Rad/Spiral	A.Length	D.Angle
IP1	0.000	318157.896	6274696.912	97°20'27.09"			
IP2	2.937	318160.847	6274696.531		-15	5.875	22°26'26.30"
IP3	5.875	318163.720	6274697.307				
IP4	6.077	318163.952	6274697.369		-0.3	0.405	77°17'43.36"
CC	6.280	318163.942	6274697.609	357°35'14.49"			
IP5	6.482	318163.932	6274697.848		-0.3	0.405	77°17'43.36"
CT	6.684	318163.696	6274697.891	280°18'31.13"			
TC	12.231	318158.239	6274696.884	280°18'31.13"			
IP6	12.466	318157.944	6274696.938		-0.3	0.471	90°00'00.00"
CT	12.702	318157.890	6274698.642	190°18'31.13"			
TC	14.104	318157.639	6274697.263	190°18'31.13"			
IP7	14.348	318157.583	6274696.952		-0.3	0.487	92°58'10.06"
IP8	14.591	318157.896	6274696.911	97°20'21.07"			

FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED

0 5 10 15 20 25 30 35 40 45 50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MIE\6_3_4 MHT UDMid Dural Road Drawings\DS2016-002140-DD-SO-0218.dwg

DESIGN LOT CODE

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING

PLOT DATE / TIME: 29/07/2016 2:21:41 PM

PLOT BY: Aseip

CLIENT: NSW GOVERNMENT Transport Roads & Maritime Services

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
X - 111403 - Setout	A	29-07-16	ISSUED FOR 100% DESIGN DEVELOPMENT		
X - 111403 - IE - BASE	B	14-11-16	INCORPORATED RMS COMMENTS DATED 03-08-2016	SK	PE
X - 111403 - IE - BASE PAVE	C	27-01-17	NO. OF DRAWINGS UPDATED	SK	PE
X - 111403 - IE - DESIGN CONTOURS	D	07-04-17	REVISED DRAWING PRESENTATION	SK	PE
	E	05-06-17	INCORPORATED RMS COMMENTS DATED 16-05-2017	SK	PE

SCALES ON A3 SIZE DRAWING: 0 5 10 15 20 25m — SCALE 1:500 AT ORIGINAL SIZE

CO-ORDINATE SYSTEM: MGA ZONE 56

HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY: Meinhardt Australia Pty Ltd

	NAME	DATE
TITLE		
DRAWN	D.CREARY	
DRG CHECK	M.GRINHAM	
DESIGN	A.PHAM	
DESIGN CHECK	S.DUNSTONE	
DESIGN MNGR	P.ENOCH	
PROJECT MNGR	P.ENOCH	

PREPARED FOR: BRANCH NAME, SECTION NAME, DEPARTMENT NAME

HORNSBY SHIRE COUNCIL
MID DURAL ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

A3

SETOUT PLAN

SHEET 2 OF 2

SHEET 19 OF 23

RMS REGISTRATION No: DS2016 / 002140

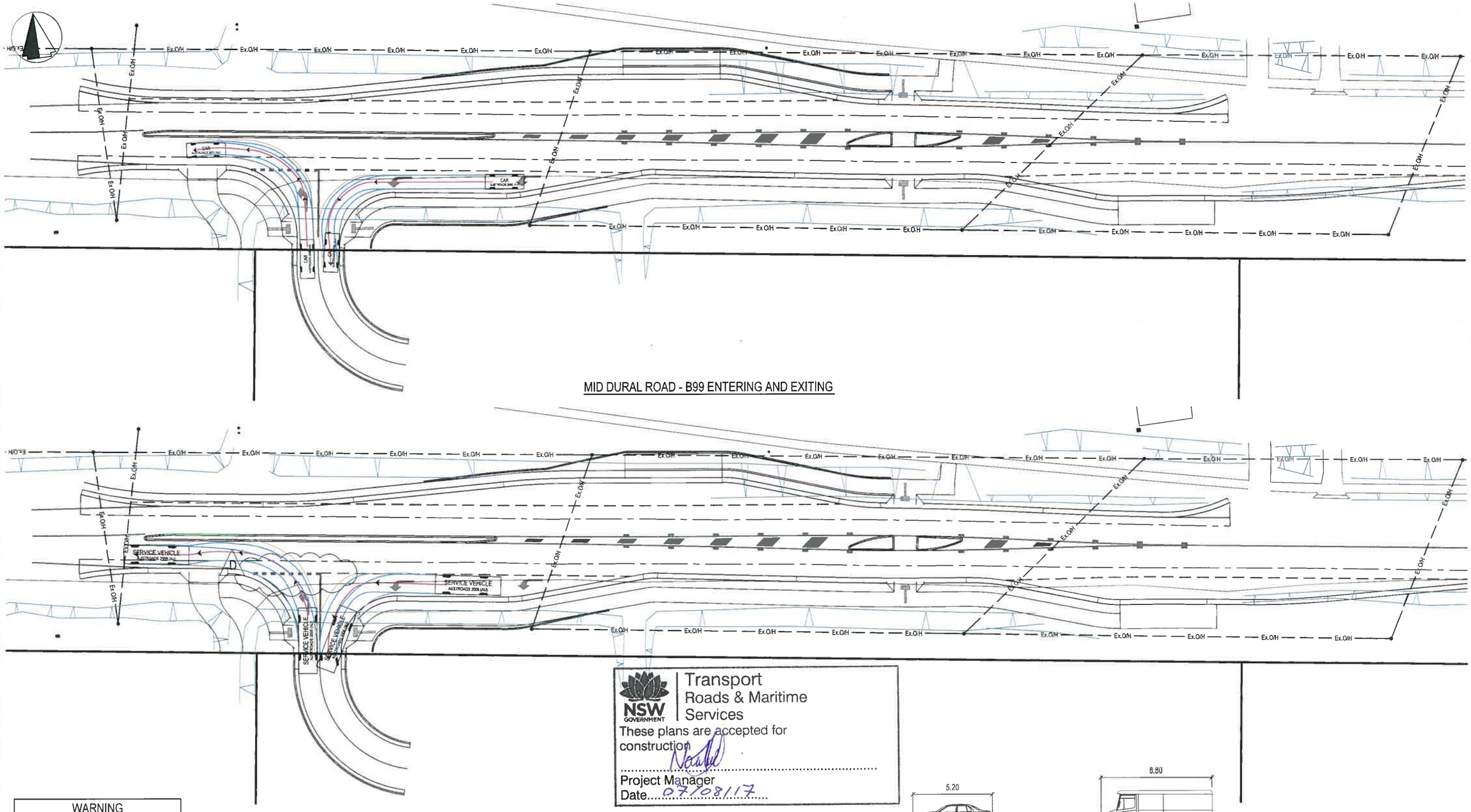
PART: 01

ISSUE STATUS: FC

EDMS No.:

SHEET No.: SO-0218

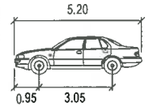
ISSUE: E



MID DURAL ROAD - B99 ENTERING AND EXITING

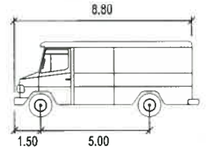
MID DURAL ROAD - 8.8m SERVICE VEHICLE ENTERING AND EXITING

Transport Roads & Maritime Services
These plans are accepted for construction
.....
Project Manager
Date 07/08/17



CAR meters

Width	:	1.94
Track	:	1.84
Lock to Lock Time	:	6.0
Steering Angle	:	33.5



SERVICE VEHICLE meters

Width	:	2.50
Track	:	2.50
Lock to Lock Time	:	6.0
Steering Angle	:	38.7

WARNING
PROPOSED SERVICES
THE LOCATION AND EXTENT OF PROPOSED SERVICES IS INDICATIVE ONLY AND ARE NOT TO BE USED FOR CONSTRUCTION. REFER TO AUTHORISED DOCUMENTATION BY RELEVANT AUTHORITY FOR CONSTRUCTION DETAILS

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

DIAL BEFORE YOU DIG www.1100.com.au

FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED 50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME
X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MIE\6_3_4 MHT UD\Mid Dural Road Drawings\DS2016-002140-DD-MS-0219.dwg

DESIGN LOT CODE

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
X - 103976 - 00 - Survey	A	22-07-16	ISSUED FOR 100% DESIGN DEVELOPMENT		
X - 111403-IE - BASE	B	14-11-16	INCORPORATED RMS COMMENTS DATED 03-08-2016	SK	PE
X - 111403 - IE - TURNING	C	15-12-16	INCORPORATED RMS COMMENTS DATED 03-08-2016	SK	PE
	D	27-01-17	INCORPORATED BRS COMMENTS DATED 22-12-2016	SK	PE
	E	05-06-17	INCORPORATED RMS COMMENTS DATED 16-05-2017	SK	PE

SCALES ON A3 SIZE DRAWING
0 2.5 5 7.5 10 12.5m
SCALE 1:500 AT ORIGINAL SIZE

CO-ORDINATE SYSTEM: MGA ZONE 56
HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY
Meinhardt Australia Pty Ltd

PLOT DATE / TIME: 3/11/2014 2:21:41 PM
PLOT BY: Aseip

TITLE	NAME	DATE
DRAWN	D.CREARY	
DRG CHECK	M.GRINHAM	
DESIGN	A.PHAM	
DESIGN CHECK	S.DUNSTONE	
DESIGN MNGR	P.ENOCH	
PROJECT MNGR	P.ENOCH	

CLIENT
Transport Roads & Maritime Services

PREPARED FOR
BRANCH NAME
SECTION NAME
DEPARTMENT NAME

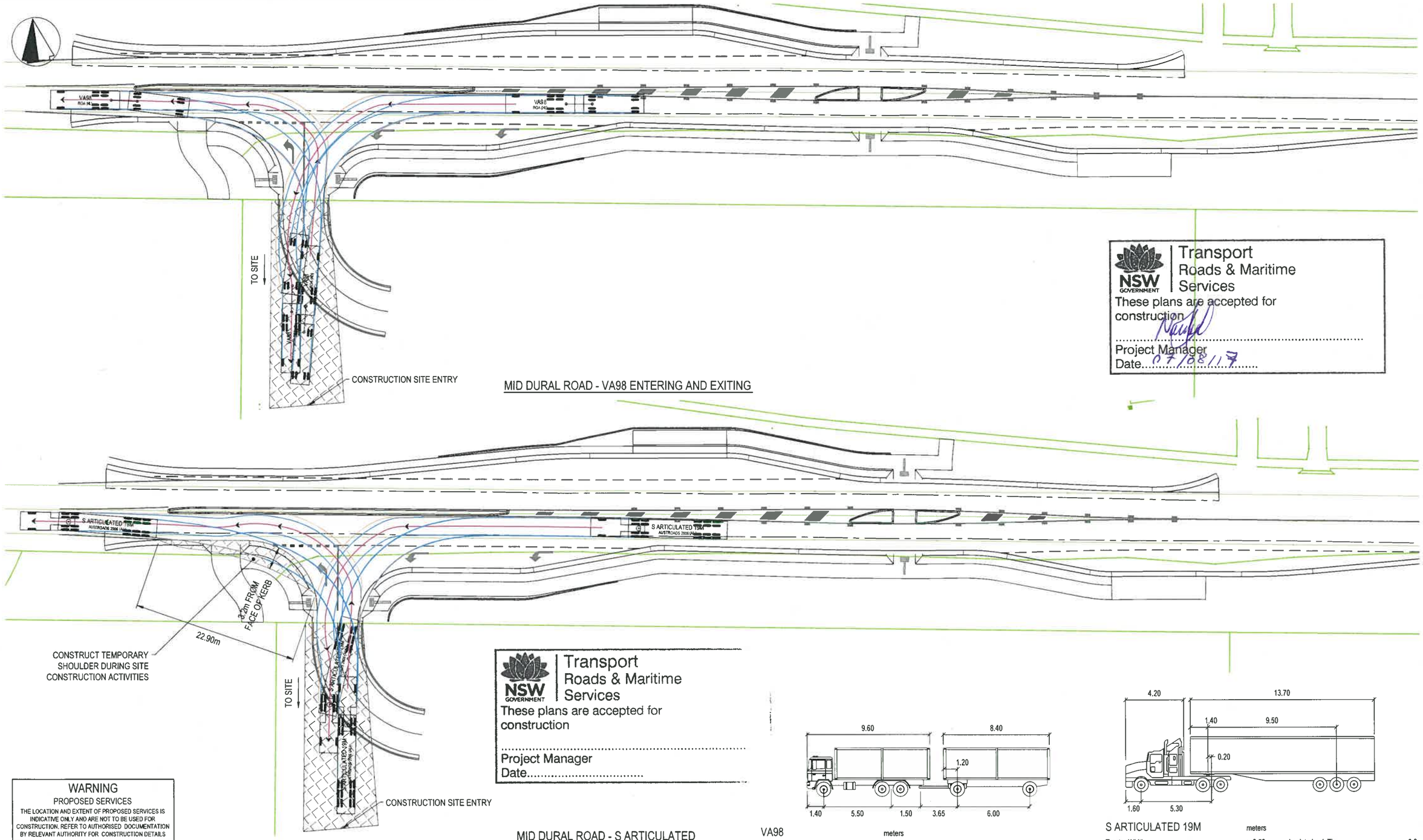
HORNSBY SHIRE COUNCIL
MID DURAL ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

TURNING PATHS PLAN

A3

SHEET 20 OF 23

RMS REGISTRATION No. DS2016 / 002140
PART 01
ISSUE STATUS: FC
EDMS No.
SHEET No. MS-0219
ISSUE E



MID DURAL ROAD - VA98 ENTERING AND EXITING

MID DURAL ROAD - S ARTICULATED 19m ENTERING AND EXITING

Transport Roads & Maritime Services
These plans are accepted for construction
.....
Project Manager
Date.....

Transport Roads & Maritime Services
These plans are accepted for construction
Project Manager
Date 07/08/17

VA98

	meters		
First Part Width	: 2.62	Lock to Lock Time	: 6.0
Trailer Width	: 2.65	Steering Angle	: 37.7
First Part Track	: 2.45	Articulating Angle	: 70.0
Trailer Track	: 2.35		

S ARTICULATED 19M

	meters		
Tractor Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 27.7
Tractor Track	: 2.50	Articulating Angle	: 70.0
Trailer Track	: 2.50		

FOR CONSTRUCTION

WARNING
PROPOSED SERVICES
THE LOCATION AND EXTENT OF PROPOSED SERVICES IS INDICATIVE ONLY AND ARE NOT TO BE USED FOR CONSTRUCTION. REFER TO AUTHORISED DOCUMENTATION BY RELEVANT AUTHORITY FOR CONSTRUCTION DETAILS

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

DIAL BEFORE YOU DIG www.1100.com.au

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED 50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MIE\6_3_4 MHT UD\Mid Dural Road Drawings\DS2016-002140-DD-MS-0220.dwg

DESIGN LOT CODE:

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING:

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
X - 111403 - Survey	A	22-07-16	ISSUED FOR 100% DESIGN DEVELOPMENT		
X - 111403-IE - BASE	B	14-11-16	INCORPORATED RMS COMMENTS DATED 03-08-2016	SK	PE
X - 111403 - IE - TURNING	C	15-12-16	INCORPORATED RMS COMMENTS DATED 03-08-2016	SK	PE
B1418-DETAIL modify	D	27-01-17	INCORPORATED BRS COMMENTS DATED 27-01-2017	SK	PE
3306	E	05-06-17	INCORPORATED RMS COMMENTS DATED 16-05-2017	SK	PE

SCALES ON A3 SIZE DRAWING: 0 5 10 15 20 25m — SCALE 1:500 AT ORIGINAL SIZE

CO-ORDINATE SYSTEM: MGA ZONE 56 | HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY: MEINHARDT — Meinhardt Australia Pty Ltd

PLOT DATE / TIME: 3/11/2014 2:21:41 PM | PLOT BY: Aseip

	TITLE	NAME	DATE
DRAWN	D.CREARY		
DRG CHECK	M.GRINHAM		
DESIGN	A.PHAM		
DESIGN CHECK	S.DUNSTONE		
DESIGN MNGR	P.ENOCH		
PROJECT MNGR	P.ENOCH		

CLIENT: Transport Roads & Maritime Services

PREPARED FOR: BRANCH NAME / SECTION NAME / DEPARTMENT NAME

HORNSBY SHIRE COUNCIL
MID DURAL ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

TURNING PATHS PLAN

A3

SHEET 21 OF 23

RMS REGISTRATION No. DS2016 / 002140 | PART 01

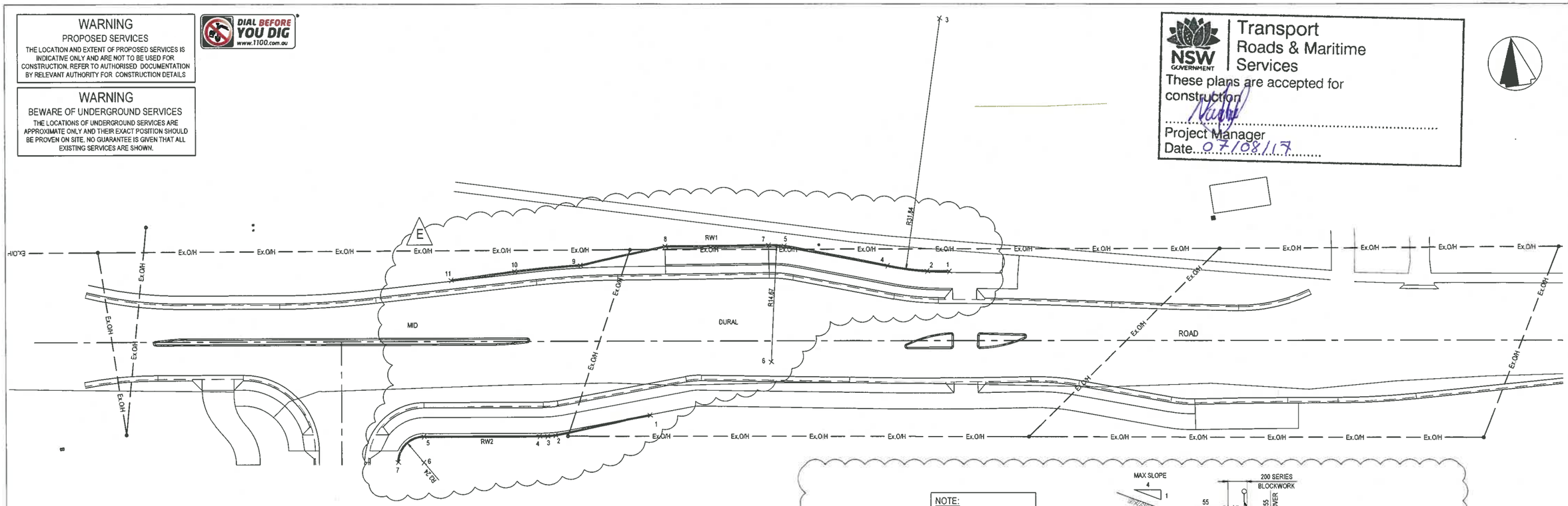
ISSUE STATUS: FC | EDMS No. | SHEET No. MS-0220 | ISSUE E

WARNING
PROPOSED SERVICES
THE LOCATION AND EXTENT OF PROPOSED SERVICES IS INDICATIVE ONLY AND ARE NOT TO BE USED FOR CONSTRUCTION. REFER TO AUTHORISED DOCUMENTATION BY RELEVANT AUTHORITY FOR CONSTRUCTION DETAILS

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

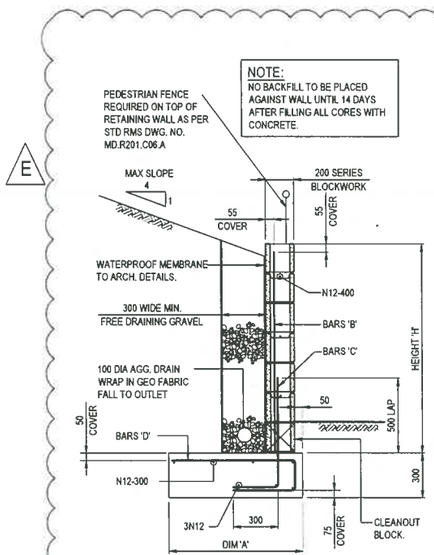
DIAL BEFORE YOU DIG www.1100.com.au

NSW GOVERNMENT Transport Roads & Maritime Services
These plans are accepted for construction
Project Manager
Date 07/08/17



RW1 SETOUT			
No.	NORTHING	EASTING	CHAINAGE
1	318155.6276	6274707.0878	63.449
2	318152.8764	6274707.5465	60.650
3	318159.3283	6274738.7290	N/A
4	318148.0183	6274708.9623	55.590
5	318135.5422	6274713.3665	42.360
6	318131.6529	6274699.2213	N/A
7	318133.5918	6274713.7658	40.344
8	318120.7333	6274715.5679	27.380
9	318109.7555	6274714.8171	16.386
10	318101.4645	6274715.3118	8.070
11	318093.3906	6274715.4190	0.000

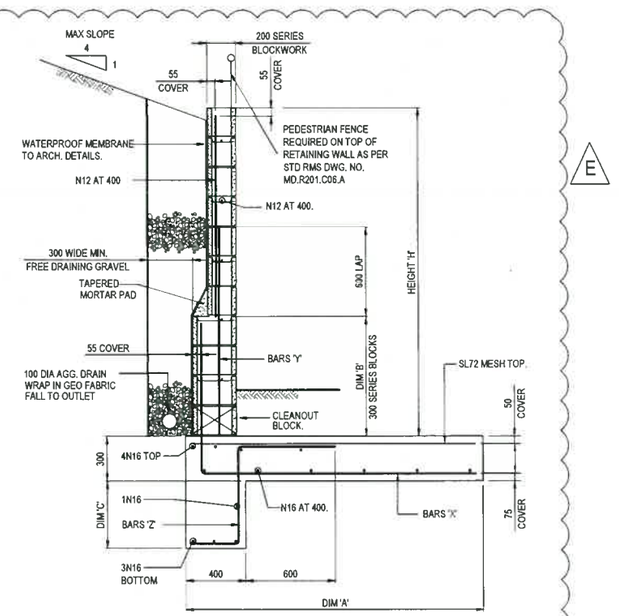
RW2 SETOUT			
No.	NORTHING	EASTING	CHAINAGE
1	318115.5644	6274694.8918	33.534
2	318103.3287	6274694.1970	21.274
3	318102.3183	6274694.2211	20.274
4	318101.3459	6274694.3670	19.300
5	318086.9639	6274696.5244	4.763
6	318086.4532	6274693.3266	N/A
7	318083.2534	6274693.8368	0.000



DIM 'H'	DIM 'A'	BARS 'B'	BARS 'C'	BARS 'D'
800	600	N12-400	N12-400	N12-400
1200	800	N12-400	N12-400	N12-400
1600	1000	N12-400	N16-400	N16-400
2000	1400	N16-400	N16-200	N16-400

DESIGN LOADS
5.0 kPa SURCHARGE MAXIMUM.
20 kN/m³ BACKFILL DENSITY
MAX 1:4 SLOPE BEHIND WALL
MIN ALLOWABLE BEARING CAPACITY 700kPa SHALE
fc = 32 MPa CONCRETE STRENGTH

RETAINING WALL - RW1
SCALE 1:20



DIM 'H'	DIM 'A'	DIM 'B'	DIM 'C'	BARS 'X'	BARS 'Y'	BARS 'Z'
2200	1650	800	450	N16-400	N16-400	N16-400
2600	1950	1000	550	N16-200	N16-200	N16-200
3000	2250	1200	700	N16-200	N16-200	N16-200
3400	2550	1400	800	N20-200	N20-200	N16-200

DESIGN LOADS
5.0 kPa SURCHARGE MAXIMUM.
20 kN/m³ BACKFILL DENSITY
MAX 1:4 SLOPE BEHIND WALL
MIN ALLOWABLE BEARING CAPACITY 700 kPa SHALE
fc = 32 MPa CONCRETE STRENGTH

RETAINING WALL - RW2
SCALE 1:20

FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
0 5 10 15 20 25 30 35 40 45 50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME
X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MIE\6_3_4 MHT UDM\Mid Dural Road Drawings\DS2016-002140-DD-MS-0221-0222.dwg

EXTERNAL REFERENCE FILES: X - 111403 - SetoutGR; X - 103976-00-Survey; X - 111403 - IE - BASE; X - 111403 - IE - BASE PAVE; X - 111403 - IE - DESIGN CONTOURS

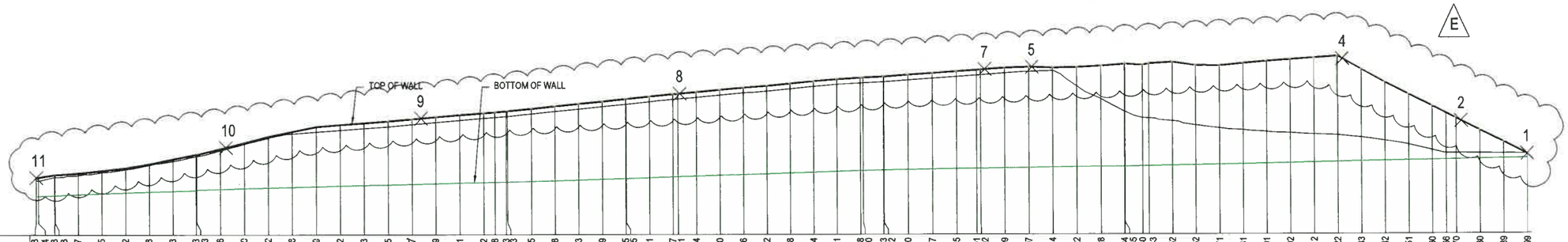
REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
A	14-11-16	INCORPORATED RMS COMMENTS DATED 03-08-2016	SK	PE
B	14-12-16	INCORPORATED RMS COMMENTS DATED 03-08-2016	SK	PE
C	27-01-16	NO. OF DRAWINGS UPDATED	SK	PE
D	28-04-17	INCORPORATED RMS COMMENTS DATED 13-03-2017	SK	PE
E	05-06-17	INCORPORATED RMS COMMENTS DATED 16-05-2017	SK	PE

DESIGN LOT CODE
DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING
SCALES ON A3 SIZE DRAWING: 0 2.5 5 7.5 10 12.5m — SCALE 1:500 AT ORIGINAL SIZE
CO-ORDINATE SYSTEM: MGA ZONE 56
HEIGHT DATUM: AHD
DRAWINGS / DESIGN PREPARED BY: Meinhardt Australia Pty Ltd
PLOT DATE / TIME: 29/07/2016 2:21:41 PM
PLOT BY: Aseip

TITLE	NAME	DATE
DRAWN	D.CREARY	
DRG CHECK	M.GRINHAM	
DESIGN	A.PHAM	
DESIGN CHECK	S.DUNSTONE	
DESIGN MNGR	P.ENOCH	
PROJECT MNGR	P.ENOCH	

CLIENT: NSW GOVERNMENT Transport Roads & Maritime Services
PREPARED FOR: BRANCH NAME, SECTION NAME, DEPARTMENT NAME

A3
HORNSBY SHIRE COUNCIL
MID DURAL ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT
RETAINING WALL PLAN & SETOUTS
SHEET 22 OF 23
RMS REGISTRATION No. DS2016 / 002140
PART 01
ISSUE STATUS: FC
EDMS No.
SHEET No. MS-0221
ISSUE E



DATUM 201.0

BOTTOM OF WALL	201.818	201.824	201.838	201.838	201.857	201.875	201.892	201.908	201.923	201.953	201.953	201.966	201.979	201.992	202.005	202.019
EXISTING LEVEL	202.15	202.15	202.22	202.22	202.26	202.32	202.38	202.47	202.56	202.65	202.66	202.78	202.91	203.04	203.14	203.17
TOP OF WALL	202.212	202.214	202.270	202.270	202.300	202.351	202.410	202.491	202.596	202.690	202.692	202.813	202.943	203.071	203.178	203.280
CHAINAGE	0.000	0.091	0.760	0.785	1.785	2.786	3.788	4.793	5.802	6.798	6.817	7.836	8.857	9.877	10.896	11.916

BOTTOM OF WALL	202.032	202.043	202.055	202.067	202.079	202.091	202.102	202.108	202.113	202.113	202.125	202.138	202.153	202.169	202.185	202.185
EXISTING LEVEL	203.21	203.25	203.28	203.33	203.37	203.42	203.46	203.48	203.50	203.50	203.55	203.60	203.65	203.70	203.75	203.76
TOP OF WALL	203.324	203.361	203.398	203.442	203.486	203.530	203.568	203.586	203.605	203.608	203.660	203.712	203.761	203.812	203.862	203.863
CHAINAGE	12.934	13.953	14.971	15.989	17.008	18.026	19.045	19.529	20.000	20.063	21.075	22.079	23.079	24.079	25.067	25.079

BOTTOM OF WALL	202.201	202.217	202.221	202.234	202.250	202.266	202.282	202.298	202.314	202.331	202.348	202.350	202.363	202.362	202.370	202.377
EXISTING LEVEL	203.81	203.85	203.86	203.90	203.94	203.99	204.03	204.08	204.12	204.17	204.20	204.20	204.22	204.22	204.26	204.30
TOP OF WALL	203.914	203.963	203.973	204.009	204.053	204.099	204.139	204.187	204.234	204.279	204.309	204.312	204.334	204.335	204.371	204.407
CHAINAGE	26.080	27.080	27.291	28.080	29.080	30.080	31.080	32.080	33.080	34.080	35.080	35.189	36.064	36.080	37.103	38.126

BOTTOM OF WALL	202.385	202.391	202.392	202.399	202.407	202.414	202.422	202.428	202.434	202.435	202.440	202.443	202.452	202.462	202.471	202.481
EXISTING LEVEL	204.33	204.36	204.37	204.40	204.44	204.45	204.13	203.86	203.59	203.59	203.46	203.45	203.39	203.30	203.24	203.20
TOP OF WALL	204.443	204.473	204.479	204.515	204.531	204.516	204.526	204.553	204.597	204.598	204.569	204.604	204.635	204.560	204.557	204.607
CHAINAGE	39.148	40.000	40.171	41.193	42.216	43.240	44.266	45.294	46.307	46.323	47.068	47.340	48.342	49.345	50.349	51.353

BOTTOM OF WALL	202.491	202.502	202.512	202.522	202.533	202.542	202.551	202.560	202.566	202.570	202.580	202.589	202.599
EXISTING LEVEL	203.16	203.13	203.11	203.08	203.03	202.97	202.88	202.76	202.70	202.70	202.69	202.69	202.69
TOP OF WALL	204.650	204.686	204.722	204.758	204.475	204.196	203.942	203.689	203.542	203.437	203.184	202.932	202.679
CHAINAGE	52.358	53.363	54.369	55.375	56.385	57.394	58.403	59.413	60.000	60.422	61.431	62.440	63.449

RETAINING WALL 1 (RW1) LONG SECTION

DATUM 201

BOTTOM OF WALL	202.486	202.486	202.486	202.487	202.489	202.489	202.490	202.490	202.492	202.494	202.495	202.497	202.499	202.504	202.508	202.514
TOP OF WALL	202.620	202.623	202.623	202.650	202.682	202.682	202.714	202.714	202.747	202.910	203.187	203.539	203.759	203.899	204.127	204.427
DEPTH	0.135	0.137	0.137	0.163	0.193	0.193	0.224	0.224	0.255	0.277	0.692	1.042	1.260	1.395	1.618	1.913
CHAINAGE	0.000	0.089	0.089	0.919	1.936	1.936	2.953	2.953	3.971	4.988	6.005	7.023	8.040	9.058	10.075	11.092

BOTTOM OF WALL	202.514	202.518	202.518	202.523	202.528	202.536	202.546	202.558	202.566	202.574	202.574	202.583	202.585	202.595	202.606	202.616
TOP OF WALL	204.427	204.741	204.741	205.080	205.351	205.391	205.423	205.453	205.483	205.500	205.500	205.524	205.529	205.559	205.590	205.620
DEPTH	1.913	2.223	2.223	2.556	2.822	2.855	2.876	2.895	2.917	2.926	2.926	2.941	2.944	2.964	2.984	3.004
CHAINAGE	11.092	12.110	12.110	13.127	14.144	15.150	16.150	17.150	18.150	19.150	19.150	20.000	20.150	21.150	22.150	23.150

BOTTOM OF WALL	202.627	202.637	202.648	202.658	202.669	202.678	202.685	202.687	202.696	202.704	202.712	202.721	202.729	202.736
TOP OF WALL	205.651	205.682	205.712	205.743	205.771	205.742	205.681	205.651	205.621	205.586	205.547	205.504	205.478	205.438
DEPTH	3.024	3.044	3.064	3.084	3.102	3.064	2.996	2.963	2.925	2.882	2.834	2.784	2.749	2.701
CHAINAGE	24.150	25.150	26.150	27.150	28.150	29.150	30.150	30.694	31.177	31.659	32.142	32.625	33.107	33.534

RETAINING WALL 2 (RW2) LONG SECTION

NSW GOVERNMENT | Transport Roads & Maritime Services
These plans are accepted for construction
Project Manager
Date 07/08/17

FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
50mm ON A3 SIZE ORIGINAL
0 5 10 15 20 25 30 35 40 45

DRAWING FILE LOCATION / NAME
X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MIE\6_3_4 MHT UD\Mid Dural Road Drawings\DS2016-002140-DD-MS-0221-0222.dwg

DESIGN LOT CODE

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
X - 111403 - SetoutGR	A	14-11-16	INCORPORATED RMS COMMENTS DATED 03-08-2016	SK	PE
X - 103976-00-Survey	B	15-12-16	INCORPORATED RMS COMMENTS DATED 03-08-2016	SK	PE
X - 111403 - IE - BASE	C	27-01-16	NO. OF DRAWINGS UPDATED	SK	PE
X - 111403 - IE - BASE PAVE	D	28-04-17	INCORPORATED RMS COMMENTS DATED 13-03-2017	SK	PE
X - 111403 - IE - DESIGN CONTOURS	E	05-06-17	INCORPORATED RMS COMMENTS DATED 16-05-2017	SK	PE

SCALES ON A3 SIZE DRAWING
1:200 H 0 1 2 3 4 5m
1:100 V 0 0.5 1.0 1.5 2.0 2.5m
SCALE 1:200 HORIZONTAL
1:100 VERTICAL
AT ORIGINAL SIZE

CO-ORDINATE SYSTEM: MGA ZONE 56
HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY
MEINHARDT
Meinhardt Australia Pty Ltd

PLOT DATE / TIME: 29/07/2016 2:21:41 PM
PLOT BY: Aseip

TITLE	NAME	DATE
DRAWN	D.CREARY	
DRG CHECK	M.GRINHAM	
DESIGN	A.PHAM	
DESIGN CHECK	S.DUNSTONE	
DESIGN MNGR	P.ENOCH	
PROJECT MNGR	P.ENOCH	

CLIENT
NSW GOVERNMENT | Transport Roads & Maritime Services

PREPARED FOR
BRANCH NAME
SECTION NAME
DEPARTMENT NAME

HORNSBY SHIRE COUNCIL
MID DURAL ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

RETAINING WALL LONG SECTONS

A3

SHEET 23 OF 23

RMS REGISTRATION No. DS2016 / 002140
PART 01
ISSUE STATUS: FC
EDMS No.
SHEET No.: MS-0222
ISSUE: E

WARNING
PROPOSED SERVICES
THE LOCATION AND EXTENT OF PROPOSED SERVICES IS INDICATIVE ONLY AND ARE NOT TO BE USED FOR CONSTRUCTION. REFER TO AUTHORISED DOCUMENTATION BY RELEVANT AUTHORITY FOR CONSTRUCTION DETAILS

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

DIAL BEFORE YOU DIG www.1100.com.au

NSW GOVERNMENT | Transport Roads & Maritime Services

HORNSBY SHIRE COUNCIL, MR 161 GALSTON ROAD
ROAD WORKS IN ASSOCIATION WITH

392 GALSTON ROAD, GALSTON

GALSTON GRANGE DEVELOPMENT

DETAILED DESIGN

SHEET INDEX

CODE	NAME
GE	GENERAL
RD	ROAD ALIGNMENT AND DETAIL
UT	UTILITIES
SM	STORMWATER MANAGEMENT
PV	PAVEMENT
RF	ROADSIDE FURNITURE AND LINEMARKING
LS	LANDSCAPING
RC	ROAD CROSS SECTIONS
PW	PROPERTY WORKS
MS	MISCELLANEOUS
SO	SETOUT DETAILS

LOCALITY PLAN
N.T.S.

DRAWING LIST

DS2014-000149-DD-GE-0100	COVER SHEET, INDEX & LEGEND
DS2014-000149-DD-GE-0101	GENERAL NOTES SHEET 1 OF 2
DS2014-000149-DD-GE-101A	GENERAL NOTES SHEET 2 OF 2
DS2014-000149-DD-GE-0102	SITE PLAN
DS2014-000149-DD-RD-0103	ROAD & PAVEMENT DETAIL PLAN
DS2014-000149-DD-RD-0104	LONGITUDINAL SECTION
DS2014-000149-DD-RC-0105	CROSS SECTIONS SHEET 1 OF 4
DS2014-000149-DD-RC-0106	CROSS SECTIONS SHEET 2 OF 4
DS2014-000149-DD-RC-0107	CROSS SECTIONS SHEET 3 OF 4
DS2014-000149-DD-RC-0108	CROSS SECTIONS SHEET 4 OF 4
DS2014-000149-DD-PV-0109	TYPICAL DETAILS SHEET 1 OF 2
DS2014-000149-DD-PV-0110	TYPICAL DETAILS SHEET 2 OF 2
DS2014-000149-DD-UT-0110	EXISTING SERVICES PLAN
DS2014-000149-DD-RF-0111	LINE MARKING AND SIGNAGE PLAN
DS2014-000149-DD-SO-0112	SETOUT PLAN SHEET 1 OF 2
DS2014-000149-DD-SO-0113	SETOUT PLAN SHEET 2 OF 2
DS2014-000149-DD-MS-0114	TURNING PATHS PLAN
DS2014-000149-DD-MS-0115	CONSTRUCTION VEHICLE TURNING PATHS PLAN
DS2014-000149-DD-MS-0120	MISCELLANEOUS DETAILS
DS2014-000149-DD-SM-0130	DRAINAGE PLAN
DS2014-000149-DD-SM-0131	CATCHMENT PLAN

D

NSW GOVERNMENT | Transport Roads & Maritime Services
These plans are accepted for construction
NOUHAD FARAH, Nouhad
Project Manager
Date 07/08/17

GENERAL LEGEND

SYMBOL	DESCRIPTION
PROPOSED WORKS	
	KERB INLET PIT (KIP)
	GRATED PIT (GP)
	JUNCTION PIT (JP)
	SAG KERB INLET PIT (KIP)
1.1	PIT NUMBER
Ø375	STORMWATER PIPE
D AGG.DRAIN	AGG.DRAIN
X FS.207.35	FINISHED SURFACE LEVELS
X BE.206.95	BULK EARTHWORKS LEVEL
KR01	KERB RETURN REFERENCE NUMBER
RW	RETAINING WALL (RW)
KO	KERB ONLY
KG	KERB AND GUTTER (STD 150mm HIGH)
SM	RTA SM TYPE KERB
SF	RTA SF TYPE KERB
DD	DISH DRAIN
R15.0	RADIUS TO FACE OF KERB
45.50	EXISTING CONTOUR
45.50	PROPOSED CONTOUR
TOP OF BATTER / BATTER 1in2 / BOTTOM OF BATTER	BATTERS
10.000	DIMENSION (UNITS - METRES)
	PROPOSED GUARD RAIL
EXISTING WORKS	
	EXISTING GUARD RAIL
	FENCE
	EXISTING PIT
	GAS MAIN
	SEWER MAIN
	WATER MAIN
	ELECTRICITY SUPPLY
	TELECOMMUNICATION CABLES
	STORMWATER PIPE
X X X	SERVICE TO BE DECOMMISSIONED

ABBREVIATIONS

IL	INVERT LEVEL
RL	RELATIVE LEVEL (AHD)
FFL	FINISHED FLOOR LEVEL
VC	VEHICULAR CROSSING
PR	PRAM RAMP
DR	DRIVEWAY
FP	FOOTPATH
CH	CHAINAGE
UNO	UNLESS NOTED OTHERWISE
DP	DOWNPIPE

FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME
X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT ME\6_3_4 MHT UD\Galston Road - drawings\DS2014-000149-DD-GE-0100.dwg

LINEAR REFERENCING
START: 0000, 0000, XX, 00.000 FINISH: 0000, 0000, XX, 00.000

PLOT DATE / TIME 3/11/2014 2:14:27 PM PLOT BY Aseip

PREPARED BY
MEINHARDT

DESIGNED
SIGNED
NAME ANH PHAM
TITLE CIVIL ENGINEER
DATE

REVIEWED
SIGNED
NAME STEVE DUNSTONE
TITLE ASSOCIATE DIRECTOR
DATE

VERIFIED
SIGNED
NAME PAUL ENOCH
TITLE ASSOCIATE
DATE

RMS PROJECT MANAGER
NAME NOUHAD FARAH
TITLE PROJECT ENGINEER

VALIDATION AND ACCEPTANCE OF THESE DRAWINGS AND THE DESIGN SHOWN THEREON IS TO BE CARRIED OUT UNDER SEPARATE PROCESS

CLIENT
NSW GOVERNMENT | Transport Roads & Maritime Services

PREPARED FOR
BRANCH NAME
SECTION NAME
DEPARTMENT NAME

HORNSBY SHIRE COUNCIL
MR 161 - GALSTON ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

A3

RMS PROJECT No. 000149
DESIGN PROJECT No. 111403 SHEET 1 OF 21
RMS REGISTRATION No. DS2014 / 000149
PART 01
ISSUE STATUS FC
EDMS No.
SHEET No. GE-0100
ISSUE D

GENERAL

1. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL, SERVICES AND OTHER CONSULTANTS DRAWINGS THE SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE TENDER AND CONTRACT.
2. IF ANY DISCREPANCY OCCURS ON THE DRAWINGS OR BETWEEN DRAWINGS AND SPECIFICATION,THE CONTRACTOR SHALL REFER THE DISCREPANCY TO MEINHARDT FOR WRITTEN CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
3 ALL WORKMANSHIP AND MATERIALS SHALL COMPLY WITH THE RMS QA SPECIFICATION FOR ROADWORKS AND THE RELEVANT CURRENT AUSTRALIAN STANDARDS AS APPROPRIATE.
4. ALL DIMENSIONS SHOWN SHALL BE VERIFIED ON SITE. DRAWINGS MUST NOT BE SCALED.
5. ONLY SUBSTITUTIONS APPROVED IN WRITING BY MEINHARDT SHALL BE ACCEPTED.
6 DURING CONSTRUCTION THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL STRUCTURES AND WORKS IN A STABLE CONDITION AND SHALL ENSURE NO PART SHALL BE OVER STRESSED DURING CONSTRUCTION ACTIVITIES.

PRELIMINARIES

1. THE CONTRACTOR SHALL ALLOW FOR PROVIDING MATERIALS AND WORK WHICH IS INCIDENTAL TO THE ITEMS SPECIFIED AND WHICH WOULD BE NECESSARY TO ACHIEVE THE RESULTS REQUIRED BY THE DRAWINGS.
2. THE CONTRACTOR WILL BE DEEMED TO HAVE INSPECTED THE SITE OF THE WORKS, ASSESSED AVAILABLE ACCESS, INQUIRED INTO THE LOCATION OF AUTHORITIES UNDERGROUND ASSETS, EXAMINED THE GEOTECHNICAL REPORT AND THE NATURE OF THE GROUND AND OBTAINED THE LOCAL CLIMATE AND RAINFALL INFORMATION.
3. SAFETY REQUIREMENTS
   THE CONTRACTOR SHALL ENSURE THAT AT ALL TIMES, THE MEANS AND METHODS OF CARRYING OUT THE WORK TO BE
   UNDERTAKEN CONFORM WITH THE STANDARDS AND REQUIREMENTS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT AND ANY
   OTHER APPLICABLE LEGISLATION, CODES OF PRACTICE AND STANDARDS.
   ALL PERSONNEL WORKING ADJACENT TO A TRAFFICABLE ROAD OR FORMATION SHALL WEAR RED SAFETY VESTS.
   THE CONTRACTOR SHALL PROTECT THE PUBLIC FROM DANGERS INHERENT IN EXCAVATIONS, OBSTRUCTIONS WORKING PLANT AND FALLING OBJECTS. SUCH MEASURES THAT ARE TAKEN SHALL BE ADEQUATE TO MAINTAIN THE SAFETY OF THE PUBLIC DURING PERIODS OUTSIDE NORMAL WORKING HOURS ON SITE.
   THE CONTRACTOR SHALL ENSURE THAT ALL TRENCH EXCAVATION FOR INSTALLATION OF PIPEWORKS (OR OTHER WORKS) OF DEPTHS GREATER THAN 1.5 METRES MUST BE CONTINUOUSLY SUPERVISED AND AT ALL TIMES BE ADEQUATELY SUPPORTED.
4. ALL WORK WITHIN ROAD RESERVES, PUBLIC PROPERTY OR PRIVATE PROPERTY - SHALL BE EXECUTED STRICTLY IN ACCORDANCE WITH THE REQUIREMENTS OF THE RELEVANT AUTHORITY OR LAND OWNER.
5. CONTRACTOR SHALL OBTAIN FROM THE RELEVANT AUTHORITIES DETAILS OF ALL EXISTING SERVICES WITHIN THE VICINITY OF THE WORKS AND SHALL BE HELD SOLELY RESPONSIBLE FOR ANY DAMAGE CAUSED TO EXISTING SERVICES DURING THE EXECUTION OF THE WORKS.
6. THE CONTRACTOR SHALL COMPLY WITH AND GIVE NOTICES REQUIRED BY ANY ACT OF PARLIAMENT, ORDINANCE REGULATION OR BY-LAW OF ANY AUTHORITY HAVING JURISDICTION OVER THE WORKS AND SHALL PAY ALL FEES OR CHARGES LEGALLY DEMANDABLE UNDER ANY SUCH ACT OF PARLIAMENT, ORDINANCE, REGULATION OR BY-LAW.
7. PRIOR TO WORKS, THE CONTRACTOR SHALL UNDERTAKE AN EXISTING DEFECTS INSPECTION AND REPORT TO LIST ANY EXISTING DAMAGE TO ROADS, FOOTPATHS, KERBS CROSSINGS CHANNELS NATURE STRIPS, ETC. SUCH LISTS SHALL BE PREPARED IN DUPLICATE BY THE CONTRACTOR AND A COPY SENT TO THE SUPERINTENDENT.

SITEWORKS NOTES

1. THE CONTRACTOR SHALL LIAISE DIRECTLY WITH ALL SERVICE AUTHORITIES INVOLVED AND SHALL COMPLY WITH ALL THEIR REGULATIONS AND REQUIREMENTS.
2. ALL LEVELS SHOWN ARE TO AUSTRALIAN HEIGHT DATUM, UNLESS STATED OTHERWISE. ALL COORDINATES SHOWN ARE TO AUSTRALIAN MAP GRID, UNLESS STATED OTHERWISE. BASE SURVEY & SETOUT HAS BEEN SUPPLIED BY OTHERS & SHALL BE CONFIRMED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION.
3. SERVICE INFORMATION SHOWN IS BASED ON PLANS SUPPLIED AND IS APPROXIMATE ONLY. ACTUAL LOCATION CAN ONLY BE DETERMINED BY EXCAVATION. THE CONTRACTOR SHALL LIAISE WITH SERVICE AUTHORITIES FOR SERVICE LOCATIONS. THE CONTRACTOR SHALL PROTECT ALL SERVICES AND SHALL RECTIFY ANY DAMAGE AT HIS EXPENSE.
4. ALL WORKS IN PUBLIC LANDS SHALL BE TO THE APPROVAL AND SATISFACTION OF THE RELEVANT AUTHORITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND OBTAINING RELEVANT AUTHORITY WRITTEN APPROVAL OF THE WORKS.
5. EXISTING SURFACE CONTOURS SHOWN ARE INTERPOLATED FROM SPOT HEIGHTS AND ARE APPROXIMATE ONLY.
6. THE CONTRACTOR MUST VERIFY ALL DIMENSIONS AND EXISTING LEVELS ON SITE PRIOR TO COMMENCEMENT OF WORK, AND REPORT ANY DISCREPANCIES TO THE SUPERINTENDENT.
7. ALL EXISTING SERVICES (INCLUDING ANY NOT SHOWN ON THE PLANS) MUST BE ACCURATELY LOCATED IN POSITION AND LEVEL PRIOR TO ANY EXCAVATION. ANY DISCREPANCIES SHALL BE REPORTED TO THE SUPERINTENDENT. MINIMUM SERVICE CLEARANCES SHALL BE MAINTAINED FROM THE RELEVANT SERVICE AUTHORITY.
8. ALL DIMENSIONS AND SET OUTS SHOWN ARE EITHER TO FACE OF BUILDING, GRID LINES OR LIP OF KERB, UNLESS SHOWN OTHERWISE.
9. CONTRACTOR SHALL BE ISSUED AN ELECTRONIC COPY OF THE CIVIL DETAIL PLANS IN AUTOCAD DWG FORMAT FOR SET OUT PURPOSES. ALL DIMENSIONS SHOWN ON PLAN SHALL OVER RIDE SETOUT POINTS SELECTED FROM ELECTRONIC FILE PROVIDED.
10. THE CONTRACTOR SHALL ARRANGE FOR ALL SETTING OUT BY A REGISTERED SURVEYOR.
11. THE CONTRACTOR SHALL OBTAIN ALL REGULATORY AUTHORITY APPROVALS .
12. WHERE NEW WORKS ABUT EXISTING, THE CONTRACTOR MUST ENSURE THAT A SMOOTH AND EVEN PROFILE, FREE FROM ABRUPT CHANGES IS OBTAINED.
13. SAWCUT EXISTING KERB/KERB & CHANNEL AND PAVING WHERE NEW WORKS ARE TO MATCH EXISTING WORKS.
14. BUILDING AND SITE MAINTENANCE PROGRAM IS TO INCORPORATE REGULAR FLUSHING OF ALL STORMWATER PITS, PIPES, DOWNPIPES, SUB-SOIL DRAINS AND ASSOCIATED FITTINGS TO AVOID BLOCKAGES WITHIN THE SYSTEM.
15. ALL DISTURBED AREAS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION, UNLESS SPECIFIED OTHERWISE.
16. EXCAVATED TRENCHES SHALL BE COMPACTED TO THE SAME DENSITY AS THE ADJACENT NATURAL MATERIAL. ANY SUBSIDENCES DURING THE PERIOD TO BE RECTIFIED AS DIRECTED BY THE SUPERINTENDENT.
17. THE CONTRACTOR SHALL KEEP THE SITE WELL DRAINED AND COMPLETELY FREE OF STANDING WATER AT ALL TIMES.
18. GRADE EVENLY BETWEEN FINISHED SURFACE SPOT LEVELS. (FINISHED SURFACE CONTOURS ARE SHOWN FOR CLARITY ONLY.) WHERE FINISHED SURFACE SPOT LEVELS ARE NOT SHOWN THE SURFACE SHALL BE GRADED SMOOTHLY SO THAT IT WILL DRAIN FREELY, AND TO MATCH THE LEVELS OF ADJACENT SURFACES OR STRUCTURES.
19. ANY EXISTING TREES WHICH FORM PART OF THE FINAL LANDSCAPING PLAN WILL BE PROTECTED FROM CONSTRUCTION ACTIVITIES IN ACCORDANCE WITH THE LANDSCAPE ARCHITECT'S DETAILS AND/OR BY .
    a) PROTECTING THEM WITH BARRIER FENCING OR SIMILAR MATERIALS INSTALLED OUTSIDE THE DRIP LINE,
    b) ENSURING THAT NOTHING IS NAILED TO THEM,
    c) PROHIBITING PAVING, GRADING, SEDIMENT WASH OR PLACING OF STOCKPILES WITHIN THE DRIP LINE EXCEPT AS ADVISED BY A QUALIFIED ARBORIST.
20. RECEPTORS FOR CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT-WEIGHT WASTE MATERIALS AND LITTER ARE TO BE EMPTIED AS NECESSARY. DISPOSAL OF WASTE SHALL BE IN A MANNER APPROVED BY THE SUPERINTENDENT OR AS SPECIFIED IN THE WASTE MANAGEMENT PLAN.

PROVISION FOR TRAFFIC

1. UNLESS OTHERWISE SPECIFIED, THE CONTRACTOR SHALL MAKE PROVISION FOR TRAFFIC, IN ACCORDANCE WITH RMS QA SPECIFICATION FOR ROADWORKS OR AUSTRALIAN STANDARD AS1742 "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES".
2. THE CONTRACTOR SHALL ASCERTAIN AND COMPLY WITH THE REQUIREMENTS OF THE AUTHORITY RESPONSIBLE FOR PUBLIC ROADS.
3. THE CONTRACTOR SHALL SO CONDUCT THE OPERATIONS AS TO MINIMISE OBSTRUCTION AND INCONVENIENCE TO THE PUBLIC, AND SHALL NOT HAVE UNDER CONSTRUCTION A GREATER LENGTH OR AMOUNT OF WORK THAN CAN BE MANAGED PROPERLY WITH DUE REGARD TO THE CONVENIENCE OF THE PUBLIC.

EARTHWORKS (CONTINUED)

5. WHEN A SURFACE IS UNABLE TO SUPPORT CONSTRUCTION EQUIPMENT OR IT IS NOT POSSIBLE TO COMPACT THE OVERLYING MATERIALS BECAUSE OF HIGH MOISTURE CONTENT, THEN ONE OR MORE OF THE FOLLOWING ALTERNATIVE ACTIONS MAY BE TAKEN
   (I) ALLOW THE MATERIAL TO DRY TO A MOISTURE CONTENT WHICH ALLOW IT TO BE COMPACTED AND ALLOW THE PLACEMENT AND COMPACTION OF
   OVERLYING MATERIAL
   (II) SCARIFY THE MATERIAL TO A DEPTH OF 200MM AND WORK AS NECESSARY TO ACCELERATE DRYING. RECOMPACT AS SPECIFIED WHEN MOISTURE
   CONTENT APPROXIMATES OPTIMUM
   (III) EXCAVATE AND REPLACE THE SOFT MATERIAL.
   THE ACTION TO BE ADOPTED SHALL BE AT THE CONTRACTOR'S DISCRETION AND EXPENSE, BUT SHALL BE ADVISED TO THE SUPERINTENDENT BEFORE ACTION COMMENCES.
   IF THE CONTRACTOR ELECTS PURSUANT TO (I) ABOVE TO ALLOW THE MATERIAL TO DRY, RESULTING DELAYS, IF ANY, SHALL NOT CONSTITUTE GROUNDS FOR AN EXTENSION OF CONTRACT PERIOD OR DATE OF PRACTICAL COMPLETION.
6. THE FINISHED SUBGRADE SHALL NOT BE DISTURBED BY TRAFFIC OR OTHER OPERATIONS, AND SHALL BE PROTECTED AND MAINTAINED BY THE CONTRACTOR UNTIL THE FIRST LAYER OF FILL OR SUB-BASE IS PLACED THEREON. THE SUBGRADE SHALL BE KEPT DRAINED AND COMPLETELY FREE OF STANDING WATER AT ALL TIMES.
   THE CONTRACTOR SHALL PLAN AND CARRY OUT THE WHOLE OF THE WORKS TO MINIMISE THE EFFECTS OF RUN-OFF AND EROSION ON THE SITE AND ON DOWNSTREAM AREAS. HE SHALL AVOID UNNECESSARY GROUND DISTURBANCE AND PROVIDE AS NECESSARY FOR THE PROPER CONTROL OF STORMWATER RUN-OFF AT EVERY STAGE OF THE WORKS ALL IN ACCORDANCE WITH "MANAGING URBAN STORMWATER / SOIL AND CONSTRUCTION" (LANDCOM "BLUE BOOK")
7. PRIOR TO THE COMMENCEMENT OF EARTHWORKS TOPSOIL IS TO BE STRIPPED WITHIN THE LIMITS OF THE EARTHWORKS AND FROM ANY AREAS TO BE COVERED BY PAVING, STRUCTURES OR FILL, AND ALL AREAS WHICH ARE TO SUPPORT PAVEMENTS, EMBANKMENTS, STRUCTURES AND THE LIKE OR FILLING UNDER SUCH WORKS, SHALL BE STRIPPED CLEAR OF ALL TREES, LOGS, STUMPS, SCRUB, GRASS, ROOT GROWTH, CULTIVATED SOIL, WET OR SPONGY NATURAL SOIL, DECAYED VEGETABLE MATTER AND ANY OTHER DELETERIOUS SUBSTANCE. THE CONTRACTOR SHALL BREAK UP AND REMOVE ALL ASPHALT AND CONCRETE MATERIAL UPON WHICH FILL OR PAVEMENT SHALL BE PLACED.
   ALL MATERIAL WITHIN THE LIMIT OF THE EARTHWORKS SHALL BE WHOLLY REMOVED.
   FILL ALL HOLES WITH APPROVED MATERIAL IN MAXIMUM 150MM COMPACTED THICKNESS LAYERS COMPACTED TO THE DENSITY TO THE ADJOINING UNDISTURBED SOIL AND TO THE APPROVAL OF THE SUPERINTENDENT.
8. MOISTURE CONDITION THE NATURAL SUBGRADE TO WITHIN THE RANGE 97% TO 103% OF STANDARD OPTIMUM MOISTURE CONTENT AND COMPACT TO ACHIEVE A MINIMUM STANDARD DRY DENSITY RATIO TO A MINIMUM DEPTH OF 200MM. IF REQUIRED THE AREA SHOULD BE TYNED AND SCARIFIED FULL DEPTH TO FACILITATE THIS PROCESS.
   ANY SOFT, WEAK OR UNSTABLE AREAS EXPOSED BY THE COMPACTION PROCESS, OR DURING TEST ROLLING, AND WHICH DO NOT RESPOND TO FURTHER COMPACTION OR MOISTURE CONDITIONING SHALL BE EXCAVATED AND REPLACED.
   THE CONTRACTOR SHALL BE DEEMED TO HAVE ASSESSED THE EXTENT OF UNSTABLE AREAS AND SHALL BE DEEMED TO HAVE INCLUDED IN THE CONTRACT SUM FOR ALL ACTIVITIES REQUIRED FOR UNSTABLE AREA RECTIFICATION INCLUDING THE DELIVERY, PLACING AND COMPACTING OF APPROVED MATERIAL AS WELL AS THE EXCAVATION AND DISPOSAL OF REPLACED MATERIAL.
9. EXCAVATION TO THE LINES, LEVELS AND GRADES AS REQUIRED FOR UNDERGROUND SERVICES SPECIFIED IN THE RELEVANT SERVICES SECTIONS, INCLUDING DRAINAGE, HYDRAULIC, ELECTRICAL AND THE LIKE. UNLESS OTHERWISE SPECIFIED MAKE THE TRENCHES STRAIGHT BETWEEN MANHOLES, INSPECTION POINTS, JUNCTIONS AND THE LIKE, WITH VERTICAL SIDES AND UNIFORM GRADES. DEPTH SHALL BE AS REQUIRED BY THE RELEVANT SERVICES AND ITS BEDDING. CUT BACK ROOTS ENCOUNTERED IN TRENCHES TO LESS THAN 600mm CLEAR OF THE RELEVANT SERVICE. REMOVE SUCH OTHER OBSTRUCTIONS INCLUDING ROOTS, STUMPS, BOULDERS AND THE LIKE WHICH MAY, IN THE OPINION OF THE SUPERINTENDENT, INTERFERE WITH THE PROPER FUNCTIONING OF THE SERVICE. LAY AND BED SERVICES IN ACCORDANCE WITH THE RELEVANT SERVICES SPECIFICATION SECTION.
10. BACKFILL AND COMPACT SERVICE TRENCHES AS SOON AS POSSIBLE AFTER APPROVAL OF LAID AND BEDDED SERVICE. COMPACT BACKFILL IN PIPE TRENCHES SO THAT THE PIPE IS BUTTRESSED BY THE WALLS OF THE TRENCH.
11. WHERE FILLING IS DESIGNATED BY THE CONTRACT OR IS SHOWN ON THE DRAWINGS AS STRUCTURAL OR CONTROLLED FILL THE CONTRACTOR SHALL ENGAGE AN INDEPENDENT GEOTECHNICAL TESTING AUTHORITY TO SUPERVISE SUBGRADE PREPARATION, FILL PLACEMENT, COMPACTION AND TO UNDERTAKE SAMPLING AND TESTING AND REPORTING TO SATISFY THE REQUIREMENTS OF THIS SPECIFICATION AND THOSE OF AS 2870 AND AS 3798, FOR CONTROLLED FILL.
12. NO FILL SHALL BE PLACED OVER LAYERS NOT TESTED AND HAVING SATISFACTORY RESULTS. WHERE EXCAVATED MATERIAL IS NOT SUITABLE FOR FILLING, FILL MATERIAL, AS SPECIFIED IN THIS SPECIFICATION SECTION "IMPORTED FILL" SHALL BE USED. ALL FILL MATERIAL SHALL BE PLACED IN MAXIMUM 200mm THICK LAYERS AND COMPACTED AT OPTIMUM MOISTURE CONTENT (+ OR - 2%) TO ACHIEVE A DRY DENSITY DETERMINED IN ACCORDANCE WITH AS1289.5.1.1-2003-METHODS OF TESTING SOILS FOR ENGINEERING PURPOSES OF NOT LESS THAN THE FOLLOWING STANDARD MINIMUM DRY DENSITY -

LOCATION	STANDARD DRY DENSITY
UNDER BUILDING SLABS	98%
VEHICULAR PAVED AREAS	98%
NON-VEHICULAR PAVED AREAS	95%
LANDSCAPED AREAS	95%

13. UNLESS OTHERWISE PERMITTED, NO FILLING SHALL BE PLACED AGAINST ANY STRUCTURES, WING WALLS OR RETAINING WALLS WITHIN FOURTEEN DAYS OF CASTING. STRUT WALLS AS NECESSARY TO PREVENT MOVEMENT DURING PLACING AND COMPACTION. PLACE AND COMPACT FILLING OVER AND AROUND PIPES, CULVERTS, BRIDGES AND OTHER STRUCTURES SO AS TO AVOID UNBALANCED LOADING OR MOVEMENT. UNLESS OTHERWISE DETAILED BACKFILL AT STRUCTURES SHALL BE FILLED AS FOLLOWS
    WHERE THE GAP BETWEEN THE STRUCTURE AND UNDISTURBED GROUND EXCEEDS 2m, BACKFILL THE ZONE WITHIN 2m OF THE STRUCTURE WITH DGS20 SUBBASE FINE CRUSHED ROCK AND BACKFILL IN THE ZONE BEYOND 2m OF THE STRUCTURE WITH SELECT FILL TO THE APPROVAL OF THE SUPERINTENDENT OR DGS20 SUBBASE FINE CRUSHED ROCK.
    UNLESS OTHERWISE DETAILED, MATERIAL WITHIN 300mm OF WEEPHOLES SHALL BE AN APPROVED GRANULAR FILTER MEDIUM OF COARSE SAND OR CRUSHED STONE WRAPPED AND SURROUNDED WITH AN APPROVED GEOTEXTILE SEPARATION LAYER.
14. HORIZONTAL
    NO POINT SHALL BE GREATER THAN + OR - 100mm FROM THE DESIGN LOCATION.
    VERTICAL
    SUBGRADE LEVEL: +0, -25mm
    PAVEMENT DESIGN SUBGRADE
    LEVEL: +0, -25mm
    OTHER: +50, -50mm
    STRAIGHTNESS (EXCLUDES ROCK) MAXIMUM 20MM DEPARTURE FROM 3M STRAIGHT EDGE LAID
    - PARALLEL TO ROAD CENTER LINE
    - NORMAL TO INTENDED CONTOURS
15. AREAS UPON WHICH FILLS ARE TO BE CONSTRUCTED, ALL LAYERS OF FILLING, AND MATERIALS LESS THAN 150mm BELOW PERMANENT SUBGRADE LEVEL IN CUTTINGS, SHALL BE COMPACTED SO AS TO BE CAPABLE OF WITHSTANDING TEST ROLLING, WITHOUT VISIBLE DEFORMATION OR SPRINGING, WITH A PNEUMATIC TYRED ROLLER OR HIGHWAY TRUCK BALLASTED TO COMPLY WITH THE FOLLOWING
    PNEUMATIC TYRED - NOT LESS THAN 3 T PER TYRE WITH TYRES INFLATED TO 550 KPa.
    HIGHWAY TRUCK - WITH REAR AXLE OR AXLES LOADED TO NOT LESS THAN 8 T EACH WITH TYRES INFLATED TO 550KPa
    TEST ROLLING SHALL BE CARRIED OUT IMMEDIATELY BEFORE OVERLYING LAYERS ARE PLACED.
    WHERE TEST ROLLING IS REQUIRED AT SOME LATER DATE, THE SURFACE SHALL BE MOISTURE CONDITIONED AS AND GIVEN NOT LESS THAN FOUR
    COVERAGES OF THE TEST ROLLER BEFORE TEST ROLLING COMMENCES.
16. THE WORK SHALL NOT BE ACCEPTED AS COMPLETE UNLESS ALL TEST RESULTS ARE PROVIDED TO THE SUPERINTENDENT. THE CONTRACTOR SHALL PROVIDE ALL MATERIAL PROPERTY AND QUALITY TEST RESULTS TO THE SUPERINTENDENT.
17. THE CONTRACTOR SHALL PROGRAM THE EARTHWORKS OPERATION SO THAT THE WORKING AREAS ARE ADEQUATELY DRAINED DURING THE PERIOD OF CONSTRUCTION. THE SURFACE SHALL BE GRADED AND SEALED OFF TO REMOVE DEPRESSIONS, ROLLER MARKS AND SIMILAR WHICH WOULD ALLOW WATER TO POND AND PENETRATE THE UNDERLYING MATERIAL. ANY DAMAGE RESULTING FROM THE CONTRACTOR NOT OBSERVING THESE REQUIREMENTS SHALL BE RECTIFIED BY THE CONTRACTOR AT THEIR OWN EXPENSE.
18. TESTING OF THE FILL MATERIAL SHALL BE CARRIED OUT BY AN APPROVED NATA REGISTERED LABORATORY AT THE CONTRACTORS EXPENSE.

EARTHWORKS

1. THE CONTRACTOR SHALL COMPLY WITH RMS QA SPECIFICATIONS FOR ROADWORKS AND THE CURRENT EDITIONS OF THE AUSTRALIAN STANDARDS
   AS 1289 TESTING SOILS FOR ENGINEERING PURPOSES
   AS 3798 GUIDELINES ON EARTHWORKS FOR COMMERCIAL AND RESIDENTIAL DEVELOPMENTS
2. ALL WORK SHALL COMPLY WITH THE PROJECT GEOTECHNICAL REPORT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CARRYING OUT ALL CONTROL AND COMPLIANCE EXAMINATION AND TESTING OF MATERIALS AND WORK.UNLESS OTHERWISE SPECIFIED, ALL TESTS SHALL BE UNDERTAKEN IN ACCORDANCE WITH THE APPROPRIATE AUSTRALIAN STANDARD TEST METHOD. WHERE THERE IS NO RELEVANT AUSTRALIAN STANDARD TEST METHOD THEN THE CURRENT APPROPRIATE RTA TEST METHOD OR OTHER SPECIFIED TEST METHOD SHALL BE USED. ALL TESTS SHALL BE CONDUCTED BY EXPERIENCED TESTING OFFICERS IN A LABORATORY ACCREDITED BY THE NATIONAL ASSOCIATION OF TESTING AUTHORITIES-NATA.
4. DETERMINATION OF THE NATURE AND QUANTITY(IES) OF THE EXISTING SITE MATERIALS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. WHERE INCLUDED IN THE DOCUMENTS, GEOTECHNICAL REPORTS ARE INCLUDED FOR INFORMATION ONLY. INTERPRETATION OF THE REPORT/S SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
   USE OF ON-SITE MATERIAL WITHIN THE WORKS SHALL ONLY BE PERMITTED WHERE THE MATERIAL EITHER.
   I. IS SPECIALLY STATED WITHIN THE DOCUMENTS AS BEING USED IN THE WORKS, OR
   II. IS PERMITTED BY THE SUPERINTENDENT & GEOTECHNICAL TESTING / ENGINEER
   ALL FILL MATERIAL SHALL BE FROM A SOURCE APPROVED BY THE SUPERINTENDENT AND SHALL COMPLY WITH THE FOLLOWING -
   a) FREE FROM ORGANIC AND PERISHABLE MATTER,
   b) MAXIMUM PARTICLE SIZE 75mm, AND
   c) PLASTICITY INDEX - BETWEEN 2% AND 15%.

STORMWATER DRAINAGE

1. THE CONTRACTOR SHALL COMPLY WITH RMS QA SPECIFICATIONS FOR ROADWORKS FOR ALL STORMWATER DRAINAGE WORKS.
2. ALL DRAINAGE PIPES Ø375mm AND ABOVE SHALL BE SPIGOT AND SOCKET REINFORCED CONCRETE PIPES WITH RUBBER RING JOINTS (UNO).
3. ALL DRAINAGE PIPES LESS THAN OR EQUAL TO Ø225mm SHALL BE uPVC DWV GRADE CLASS SN8 IN ACCORDANCE WITH AS/NZS1260:2009-PVC-U PIPES AND FITTINGS FOR DRAIN, WASTE AND VENT APPLICATION WITH SOLVENT WELDED JOINTS (UNO).
4. ALL PIPE JUNCTIONS UP TO AND INCLUDING Ø450mm AND TAPERS, SHALL BE VIA PURPOSE MADE FITTINGS (UNO).
5. MINIMUM GRADE TO STORMWATER LINES TO BE 1%(UNO).
6. EQUIVALENT STRENGTH FIBROUS REINFORCED CONCRETE AND/OR VITRIFIED CLAY PIPE MAY BE USED SUBJECT TO APPROVAL BY THE SUPERINTENDENT AND CONSENT AUTHORITY.
7. TRENCHES MUST BE KEPT CLEAR OF WATER AT ALL TIMES AND TIMBERED WHERE NECESSARY TO PREVENT COLLAPSE.
8. WHERE STORMWATER LINES PASS UNDER FLOOR SLABS DWV GRADE uPVC RUBBER RING JOINTS ARE TO BE USED (UNO).
9. PIPES SHALL BEAR EVENLY ON THE BED PREPARED AS SPECIFIED ABOVE AND LAID WITH THE SOCKETS POINTED UPGRADE. ALL PIPES SHALL BE LAID IN STRAIGHT LINES, TO TRUE INVERT LEVELS AND GRADES AS SHOWN ON PLANS. EACH PIPE SHALL BE SEPARATELY BONED BETWEEN ACCURATELY ESTABLISHED GRADE POINTS. THE CONTRACTOR SHALL ADHERE TO THE SUPERINTENDENT'S WRITTEN APPROVAL.
10. UNLESS NOTED OTHERWISE, BEDDING SHALL BE TYPE H2 FOR PIPES NOT UNDER PAVEMENTS AND TYPE HS3 FOR PIPES UNDER PAVEMENTS IN ACCORDANCE WITH AS/NZS3725 (2007) - DESIGN FOR INSTALLATION OF BURIED CONCRETE PIPES.
11. BACKFILL TRENCH WITH SAND OR APPROVED GRANULAR BACKFILL TO 300mm (MIN) ABOVE THE PIPE. WHERE THE PIPE IS UNDER PAVEMENTS BACKFILL REMAINDER OF TRENCH TO PAVEMENT SUBGRADE WITH SAND OR APPROVED GRAVEL SUB-BASE COMPACTED IN 150mm LAYERS TO 98% STANDARD MAXIMUM DRY DENSITY. THE CONTRACTOR IS TO ENSURE COMPACTION EQUIPMENT IS APPROPRIATE FOR THE PIPE CLASS USED.
12. ALL PIPE JOINTING SHALL BE CARRIED OUT IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN SPECIFICATIONS FOR THE TYPE OF PIPE BEING USED.
13. CONTRACTOR TO SUPPLY AND INSTALL ALL FITTINGS AND SPECIALS INCLUDING VARIOUS PIPE ADAPTORS TO ENSURE PROPER CONNECTION BETWEEN DISSIMILAR PIPEWORK.
14. ALL CONNECTIONS TO EXISTING DRAINAGE PITS SHALL BE MADE IN A TRADESMAN-LIKE MANNER AND THE INTERNAL WALL OF THE PIT AT THE POINT OF ENTRY SHALL BE CEMENT RENDERED TO ENSURE A SMOOTH FINISH WITH NO PROTRUSION.
15. WHERE ANY PIPE IS CUT INTO A LARGER PIPE, SUCH CONNECTION SHALL BE NEATLY MADE AND NO PART OF THE PIPE OR DOWNPIPE SHALL BE ALLOWED TO PROJECT. ANY CUT-IN JUNCTION SHALL BE MADE IN THE TOP HALF OF THE LARGER PIPE. SUCH JUNCTION TO CONCRETE PIPES SHALL BE SURROUNDED WITH A NEAT COLLAR OF CEMENT MORTAR AS DIRECTED OR AS DETAILED ON THE DRAWINGS. JUNCTIONS BETWEEN PVC PIPES SHALL USE PROPRIETY FITTINGS INTENDED FOR THE PURPOSE.
16. THE ENDS OF PIPES WHICH CONNECT WITH SIDE ENTRY, JUNCTION OR OTHER PITS SHALL BE NEATLY CUT TO FIT THE INNER FACE OF THE CONCRETE. WHERE UPVC PIPES ENTER/LEAVE PITS A RUBBER RING JOINT MANHOLE COUPLING SHALL BE CAST INTO THE PIT WALL.BEDDING, HAUNCH AND OVERLAY MATERIALS SHALL CONFORM TO THE DETAILS SHOWN ON THE DRAWINGS.
17. ALL PITS AND ENDWALLS SHALL BE CONSTRUCTED IN THE POSITIONS AND TO THE LEVELS SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE SUPERINTENDENT. LOCATION OF ALL IAD PITS TO BE CONFIRMED WITH SUPERINTENEND & LANDSCAPE ARCHITECT BEFORE CONSTRUCTION.
    COUNCIL'S CONSTRUCTION PIT DETAILS TO TAKE PRECEDENCE TO THE CONSTRUCTION DETAILS SHOWN IN THIS DOCUMENTATION. PRECAST PITS OR ALTERNATIVE DESIGN TYPES CAN BE USED SUBJECT TO COUNCIL / PCA APPROVAL. (IAD ONLY)
    PIT COVERS SHALL BE PLACED IN ACCORDANCE WITH THE DETAIL SITE PLANS AND PIT SCHEDULE (IF PROVIDED) IN REGARD TO TYPE, SIZE, LOCATION AND LEVEL. THE BASE OF EACH PIT SHALL BE INFILLED AND SHAPED WITH CONCRETE OR CEMENT MORTAR TO PROVIDE A SMOOTH FLOW PATH.
18. PITS DEEPER THAN 1000mm SHALL HAVE STEP IRONS INSTALLED IN ACCORDANCE WITH THE LOCAL OR STATUTORY AUTHORITY REQUIREMENTS.
19. ALL DOWNPIPES SHALL BE CONNECTED TO AT THE END OF A PIPE OR ELBOW AND WHICH THEY SHALL ENTER CENTRALLY WHERE PVC DOWNPIPES AND UNDERGROUND DRAINAGE ARE USED, THE DOWNPIPES SHALL BE CONNECTED TO THE UNDERGROUND DRAINS WITH SUITABLE STANDARD FITTINGS, BENDS ETC AND WITH SOLVENT JOINTS. THE CONTRACTOR SHALL LAY AND GRADE DRAINS FROM DOWNPIPES TO COMPLY WITH THE REQUIREMENTS FOR PIPE MATERIAL AND COVER REQUIRED BY AS3500.3. WHERE THE REQUIREMENTS OF AS3500.3 CANNOT BE MET THE CONTRACTOR SHALL REFER THE MATTER TO THE SUPERINTENDENT.
20. SUPPLY APPARATUS AND MATERIALS NECESSARY FOR, AND CARRY OUT THE TESTS REQUIRED BY THE SPECIFICATION OR REGULATORY AUTHORITIES, IN THE PRESENCE OF THE SUPERINTENDENT AND THE RELEVANT AUTHORITY. LEAVE PIPE JOINTS EXPOSED TO ENABLE OBSERVATION DURING THE TESTS. ENSURE PVC SOLVENT CEMENT JOINTS HAVE BEEN CURED FOR AT LEAST 24 HOURS BEFORE TESTING.
21. THE CONTRACTOR SHALL PRESSURE TEST WITH WATER, ALL STORMWATER PIPEWORK IN OR UNDER ANY STRUCTURES, IN ACCORDANCE WITH AS 3500.3.
22. WHERE SHOWN IN THE DOCUMENTS OR WHERE THE GRADE OF THE PIPELINE IS ≥15%, CONCRETE BULKHEADS SHALL BE CONSTRUCTED AT EVERY SECOND JOINT. THE AXIS OF THE BULKHEAD SHALL BE VERTICAL WITH A MINIMUM TOP WIDTH OF 200mm. UNLESS OTHERWISE DIRECTED THE TOP OF BULKHEADS SHALL EXTEND TO WITHIN 300mm OF FINISHED SURFACE LEVEL OR TO THE SUBGRADE LEVEL WHERE THE PIPELINE IS UNDER A ROAD PAVEMENT. ON EACH SIDE OF THE PIPE AT THE LEVEL OF THE TRENCH INVERT 100mm DIA PIPES SHALL PASS THROUGH THE BULKHEAD. SUCH PIPES SHALL BE FILLED WITH FIBREGLASS WOOL OR OTHER APPROVED FILTER MATERIAL. THE BULKHEAD SHALL BE LOCATED DIRECTLY BEHIND THE DOWNSTREAM COLLAR SO AS NOT TO ENCASE THE JOINT. REFER TO DETAILS SHEET.

NSW GOVERNMENT | Transport Roads & Maritime Services
These plans are accepted for construction
NOUHAD FARAH, Nouhad
Project Manager
Date 07/08/17

EXISTING SERVICES

1. EXISTING SERVICES HAVE BEEN PLOTTED FROM SUPPLIED DATA AND AS SUCH THEIR ACCURACY CANNOT BE GUARANTEED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH THE LOCATION AND LEVEL OF ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE SUPERINTENDENT.
2. THE CONTRACTOR SHALL ALLOW FOR THE CAPPING OFF, EXCAVATION AND REMOVAL IF REQUIRED OF ALL REDUNDANT EXISTING SERVICES IN AREAS AFFECTED BY WORKS WITHIN THE CONTRACT AREA, AS SHOWN ON THE DRAWINGS UNLESS DIRECTED OTHERWISE BY THE SUPERINTENDENT.
3. THE CONTRACTOR SHALL ENSURE THAT AT ALL TIMES SERVICES TO ALL BUILDINGS NOT AFFECTED BY THE WORKS ARE NOT DISRUPTED.
4. IF REQUIRED, THE CONTRACTOR SHALL CONSTRUCT TEMPORARY SERVICES TO MAINTAIN EXISTING SUPPLY TO BUILDINGS REMAINING IN OPERATION DURING WORKS TO THE SATISFACTION AND APPROVAL OF THE SUPERINTENDENT. ONCE DIVERSION IS COMPLETE AND COMMISSIONED THE CONTRACTOR SHALL REMOVE ALL SUCH TEMPORARY SERVICES AND MAKE GOOD TO THE SATISFACTION OF THE SUPERINTENDENT AND THE RELEVANT SERVICE AUTHORITY.
5. INTERRUPTION TO SUPPLY OF EXISTING SERVICES SHALL BE DONE SO AS NOT TO CAUSE ANY INCONVENIENCE TO THE PRINCIPAL. THE CONTRACTOR IS TO GAIN APPROVAL FROM THE SUPERINTENDENT FOR TIME OF INTERRUPTION - THE CONTRACTOR IS RESPONSIBLE FOR ALL LIAISON.
6. ALL BRANCH GAS AND WATER SERVICES UNDER DRIVEWAYS AND BRICK PAVING SHALL BE LOCATED IN 80mm DIA uPVC SEWER GRADE CONDUITS EXTENDING A MINIMUM OF 500mm BEYOND THE EDGE OF PAVING.
7. CLEARANCE AND COVER REQUIREMENTS SHALL BE OBTAINED FROM THE RELEVANT SERVICE AUTHORITY BEFORE COMMENCEMENT OF WORKS AND SHALL BE ADHERED TO AT ALL TIMES.
8. CARE IS TO BE TAKEN WHEN EXCAVATING NEAR EXISTING SERVICES. NO MECHANICAL EXCAVATIONS ARE TO BE UNDERTAKEN OVER TELECOM OR ELECTRICAL SERVICES. HAND EXCAVATE IN THESE AREAS ONLY.

SERVICE TRENCHES AND CONDUITS

1. MATERIAL SHALL COMPLY WITH RMS QA SPECIFICATIONS FOR ROADWORKS AND THE CURRENT EDITIONS OF THE FOLLOWING AUSTRALIAN STANDARDS.
   AS 2053 NON-METALLIC CONDUITS AND FITTINGS.
   AS 2032 CODE OF PRACTICE FOR UPVC PIPE SYSTEMS.
   AS 3500.3 NATIONAL PLUMBING AND DRAINAGE CODE, PART 3 STORMWATER DRAINAGE.
2. ELECTRICAL, WATER & GAS DUCTING CONDUITS SHALL BE IN ACCORDANCE WITH THE RELEVANT AUTHORITY REQUIREMENTS.
3. CONTRACTOR TO COORDINATE SHARED TRENCH AND LIASE WITH NBN Co / GAS / TELSTRA FOR SUPPLY AND PLACEMENT OF CONDUIT AND GIVE MINIMUM 14 DAYS PRIOR TO THE NEED FOR DUCTING TO BE INSTALLED.
4. DRAW WIRES SHALL BE 2.8mm HIGH TENSILE GALVANISED DRAW WIRE.
5. ALL EXCAVATION AND BACKFILL SHALL BE IN ACCORDANCE WITH THE STORMWATER DRAINAGE AND BASE AND SUBBASE-CRUSHED ROCK SECTION.
6. BEDDING AND HAUNCHING SHALL COMPLY WITH THE REQUIREMENTS OF AS2032 UNLESS OVERRIDEN BY THE REQUIREMENTS OF THE RELEVANT AUTHORITY OR THE RELEVANT SERVICES SECTIONS OF THE SPECIFICATION. LOW PERMEABILITY BEDDING AND BACKFILL SHALL BE PROVIDED, WHERE SHOWN ON THE PLAN OR OTHERWISE DIRECTED.
7. WHERE SERVICES OR CONDUITS ARE PLACED UNDER PAVEMENT THE COVER FROM TOP OF THE SERVICE OR CONDUIT TO THE PAVEMENT SURFACE SHALL, UNLESS SHOWN OTHERWISE ON THE DRAWINGS OR REQUIRED BY SERVICE AUTHORITIES, BE NOT LESS THAN 750MM AND TO THE INVERT LEVEL OF OPEN DRAINS SHALL BE NOT LESS THAN 600mm.
   UNLESS OTHERWISE APPROVED BY THE SUPERINTENDENT, CROSSING OF PAVEMENT SHALL BE MADE SQUARE OR NEAR SQUARE WITH THE DIRECTION OF TRAFFIC.
   WHERE IT IS NECESSARY FOR EXISTING ASPHALT OR CONCRETE PAVEMENTS TO BE CUT THEY SHALL BE SAWN FOR THE FULL DEPTH OF ASPHALT OR CONCRETE.
8. CONDUITS SHALL BE PLACED UNDER LANDSCAPE OR NON-PAVED AREAS WITH NOT LESS THAN 450mm COVER UNLESS A GREATER DEPTH IS REQUIRED BY THE RELEVANT AUTHORITY OR SERVICES SECTION OF THE SPECIFICATION.
9. END DUCT CROSSINGS 500mm BEHIND KERBS UNLESS SHOWN OTHERWISE ON THE DRAWINGS. END DUCT CROSSINGS 1000mm CLEAR OF THE PAVEMENT WHERE THERE IS NO KERB, UNLESS SHOWN OTHERWISE ON THE DRAWINGS.
   LOCATE DUCTS TO AVOID OTHER SERVICES AND WITH STRAIGHT LINES AND GRADES UNLESS DIRECTED OTHERWISE.
   EACH UNUSED CONDUIT IN EACH CONDUIT BANK SHALL BE FITTED WITH A SINGLE UNJOINED LENGTH OF DRAW WIRE OF A LENGTH EQUAL TO THE LENGTH OF THE DUCT PLUS 2 METERS.
   CAP BOTH ENDS OF ALL UNUSED CONDUITS WITH STANDARD UPVC CAPS OR APPROVED WATERTIGHT CAP.
   LEAVE ENDS OF CONDUITS EXPOSED UNTIL THEIR LOCATIONS HAVE BEEN RECORDED BY THE RELEVANT AUTHORITIES.

SUBSOIL DRAINAGE

1. THE CONTRACTOR SHALL COMPLY WITH RMS QA SPECIFICATIONS FOR ROADWORKS FOR ALL SUBSOIL DRAINAGE WORKS.
2. WHERE SUBSOIL DRAINAGE LINES PASS UNDER FLOOR SLABS AND VEHICULAR PAVEMENTS, UNSLOTTED uPVC DWV GRADE CLASS SN8 PIPE SHALL BE USED.
3 PROVIDE SUBSOIL DRAINAGE IN ACCORDANCE WITH COUNCIL SPECIFICATIONS WITH CONTINUOUS FALL TO DOWNSTREAM PITS LOCATED AS SHOWN ON PLAN AND AS MAYBE DIRECTED BY COUNCIL / SUPERINTENDENT.
4. ALL SUBSOIL DRAINAGE PIPES SHALL BE Ø100mm CLASS 400 PERFORATED DRAINAGE PIPE LAID AT 1.0%MIN GRADE WRAPPED IN GEOFABRIC (UNO) AND BE LAID AT A MIN DEPTH OF 400mm BELOW PAVEMENT SUB-BASE COURSE.

BASE AND SUBBASE-CRUSHED ROCK

1. ALL WORKMANSHIP AND MATERIALS SHALL COMPLY WITH RMS QA SPECIFICATIONS FOR ROADWORKS AND THE CURRENT EDITIONS OF THE AUS-SPEC AND RELEVANT AUSTRALIAN STANDARDS .
2 WHERE IT IS SPECIFIED THAT WATER SHALL BE ADDED TO THE CRUSHED ROCK PRIOR TO DELIVERY, SUCH WATER SHALL BE CLEAR AND SUBSTANTIALLY FREE FROM DETRIMENTAL IMPURITIES SUCH AS SOILS, SALTS, ACIDS, ALKALIS AND VEGETABLE SUBSTANCES.
3. WHERE SPECIFIED CEMENT SHALL COMPLY WITH THE REQUIREMENTS OF EITHER AUSTRALIAN STANDARD SPECIFICATION AS1315-PORTLAND CEMENT OR AS1317-BLENDED CEMENT.
4. THE SUBGRADE, OR PREVIOUS PAVEMENT COURSE, SHALL HAVE BEEN TESTED AND ACCEPTANCE CRITERIA MET BEFORE THE PLACING OF THE NEXT COURSE WILL BE PERMITTED. CRUSHED ROCK MATERIAL SHALL NOT BE PLACED ON A WATERLOGGED SUBGRADE OR LOWER COURSE.
5. THE MOISTURE CONTENT OF THE CRUSHED ROCK SHALL BE MAINTAINED WITHIN -2%, +2% OF OPTIMUM MOISTURE CONTENT AT ALL TIMES DURING SPREADING AND COMPACTION.
6. EACH LAYER SHALL BE COMPACTED AS SOON AS POSSIBLE AFTER SPREADING AND WHILE THE MOISTURE CONTENT IS WITHIN THE SPECIFIED RANGE TO ACHIEVE A UNIFORM DENSITY IN THE LAYER.
7. AT THE COMPACTION OF EACH LAYER WITHIN THE COURSE, THE CONTRACTOR SHALL ARRANGE FOR THE LAYER TO BE TESTED FOR COMPLIANCE WITH THE REQUIRED DENSITY. ALL TEST RESULTS SHALL BE SUBMITTED TO THE SUPERINTENDENT FOR APPROVAL PRIOR TO CONSTRUCTION OF THE NEXT COURSE OR SURFACE TREATMENT.
8. WHERE TEST RESULTS INDICATE THE AREA FAILS TO COMPLY WITH THE REQUIRED DENSITY CRITERIA, THE CONTRACTOR SHALL RE-ROLL, LOOSEN, RE-WATER, RE-COMPACT, OR REMOVE AND REPLACE THE LAYER AS DIRECTED BY THE SUPERINTENDENT, TO ACHIEVE A LAYER COMPLYING IN FULL WITH THIS SPECIFICATION. COSTS OF RECTIFICATION AND RETESTS SHALL BE BORNE BY THE CONTRACTOR.

FOR CONSTRUCTION

DRAWING FILE LOCATION / NAME
X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MIE\6_3_4 MHT UD\Galston Road - drawings\DS2014-000149-DD-GE-0101.dwg

DESIGN LOT CODE
DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	A	08-07-16	ISSUED FOR 100% DESIGN DEVELOPMENT		
	B	02-11-16	INCORPORATED RMS COMMENTS DATED 21-07-2016	SK	PE
	C	27-01-17	INCORPORATED BRS COMMENTS DATED 22-12-2017	SK	PE
	D	05-06-17	INCORPORATED BRS COMMENTS DATED 16-05-2017	SK	PE

SCALES ON A3 SIZE DRAWING
CO-ORDINATE SYSTEM: MGA ZONE 56
HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY
MEINHARDT
Meinhardt Australia Pty Ltd

PLOT DATE / TIME: 3/11/2014 2:21:41 PM
PLOT BY: Aseip

TITLE	NAME	DATE
DRAWN	D.CREARY	
DRG CHECK	M.GRINHAM	
DESIGN	A.PHAM	
DESIGN CHECK	S.DUNSTONE	
DESIGN MNGR	P.ENOCH	
PROJECT MNGR	P.ENOCH	

CLIENT
NSW GOVERNMENT | Transport Roads & Maritime Services

PREPARED FOR
BRANCH NAME
SECTION NAME
DEPARTMENT NAME

HORNSBY SHIRE COUNCIL
MR 161 - GALSTON ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

A3

GENERAL NOTES SHEET 1 OF 2

SHEET 02 OF 21

RMS REGISTRATION No. DS2014 / 000149
PART 01
ISSUE STATUS: FC
EDMS No.
SHEET No. GE-0101
ISSUE D

ASPHALTIC CONCRETE NOTES

GENERAL
ASPHALTIC CONCRETE MIX DESIGN, MANUFACTURE, PLACING AND COMPACTION SHALL BE IN ACCORDANCE WITH RMS QA SPECIFICATIONS FOR ROADWORKS.

PAVEMENT PREPARATION
2. THE EXISTING SURFACE TO BE SEALED, SHALL BE DRY AND BROOMED BEFORE COMMENCEMENT OF WORK TO ENSURE COMPLETE REMOVAL OF ALL FOREIGN AND LOOSE MATTER.
3. ALL DEPRESSIONS OR UNEVEN AREAS ARE TO BE TACK-COATED AND BROUGHT UP TO GENERAL LEVEL OF PAVEMENT WITH ASPHALTIC CONCRETE BEFORE LAYING OF MAIN COURSE.

TACK COAT
4. THE WHOLE OF THE AREA TO BE SHEETED WITH ASPHALTIC CONCRETE SHALL BE LIGHTLY AND EVENLY COATED WITH RAPID SETTING BITUMEN. APPLICATION SHALL BE BY MEANS OF A MECHANICAL SPRAYER WITH SPRAY BAR.

SPREADING
5. ALL ASPHALTIC CONCRETE SHALL BE SPREAD WITH A SELF PROPELLED PAVING MACHINE.
6. THE ASPHALTIC CONCRETE SHALL BE LAID AT A MIX TEMPERATURE AS SHOWN BELOW -

ROAD SURFACE TEMP IN SHADE (°C)	MIX TEMPERATURES(°C)
5 - 10	NOT PERMITTED
10 - 15	150
15 - 25	145
25+	140

7. ASPHALTIC CONCRETE SHALL NOT BE LAID WHEN THE ROAD SURFACE IS WET OR WHEN COLD WINDS CHILL THE MIX TO ADVERSELY AFFECT TEMPERATURE OF MIX DURING SPREADING AND COMPACTION OPERATIONS.

JOINTS
8. THE NUMBER OF JOINTS BOTH LONGITUDINAL AND TRANSVERSE SHALL BE KEPT TO A MINIMUM.
9. THE DENSITY AND SURFACE FINISH AT JOINTS SHALL BE SIMILAR TO THOSE OF THE REMAINDER OF THE LAYER.

COMPACTION
10 ALL COMPACTION SHALL BE UNDERTAKEN USING SELF PROPELLED ROLLERS.
11. INITIAL ROLLING SHALL BE COMPLETED BEFORE THE MIX TEMPERATURE FALLS BELOW 11.5°C.
12. SECONDARY ROLLING SHALL BE COMPLETED BEFORE THE MIX TEMPERATURE FALLS BELOW 60°C.

FINISHED PAVEMENT PROPERTIES
12. FINISHED SURFACES SHALL BE SMOOTH, DENSE AND TRUE TO SHAPE AND SHALL NOT VARY MORE THAN 10mm FROM THE SPECIFIED PLAN LEVEL AT ANY POINT AND SHALL NOT DEVIATE FROM THE BOTTOM OF A 3m STRAIGHT EDGE LAID IN ANY DIRECTION BY MORE THAN 5mm.

CONCRETE NOTES

GENERAL
CONCRETE MIX DESIGN, MANUFACTURE, PLACING AND COMPACTION SHALL BE IN ACCORDANCE WITH RMS QA SPECIFICATIONS FOR ROADWORKS.

1. USE "AS3972-1997-PORTLAND AND BLENDED CEMENTS-TYPE GP" CEMENT (UNO).
2. ALL CONCRETE SHALL BE SUBJECT TO PROJECT CONTROL SAMPLE AND TESTING TO AS3600-2001-CONCRETE STRUCTURES.
3. CONSOLIDATE BY VIBRATION. CURE SURFACES AS SHOWN ON THE PLANS OR AS DIRECTED IN THE SPECIFICATION OR AS DIRECTED BY THE SUPERINTENDENT.
4. FIX REINFORCEMENT AS SHOWN ON DRAWINGS. THE TYPE AND GRADE IS INDICATED BY A SYMBOL AS SHOWN BELOW
   - N — HOT ROLLED DEFORMED BAR, GRADE 500
   - R — PLAIN ROUND BAR, GRADE 250
   - SL / RL — HARD DRAWN WIRE FABRIC SQUARE OR RECTANGULAR FOLLOWING THIS SYMBOL A NUMERAL INDICATES THE SPECIFIED DIAMETER.
5. PROVIDE BAR SUPPORTS OR SPACERS TO PROVIDE CONCRETE COVER AS DETAILED TO ALL REINFORCEMENT.

CONCRETE PAVEMENTS
1. CONCRETE MIX PARAMETERS -
   - a) MAXIMUM AGGREGATE SIZE 20mm
   - b) FLEXURAL STRENGTH AT 28 DAYS = 3.5 MPa (F'c=32MPa)
   - c) FLEXURAL STRENGTH AT 90 DAYS = 3.85 MPa
   - d) MAXIMUM WATER/CEMENT RATIO = 0.55
   - e) MAXIMUM SHRINKAGE LIMIT = 650 MICRON STRAINS (AS1012 pt 13)
   - f) MINIMUM CEMENT CONTENT = 300kg/m³
   - g) CEMENT TO BE TYPE "SL" (NORMAL CEMENT) to AS3972
   - h) SLUMP = 80mm
2. SAWN JOINTS ARE TO BE CUT NOT SOONER THAN 24 HOURS AND NOT LATER THAN 48 HOURS AFTER CONCRETE POUR TO AVOID DAMAGING THE SURFACE DURING SAWCUT OR AS DIRECTED BY THE SUPINTENDENT.
3. JOINT LAYOUT SHALL BE AS DETAILED ON THE PLANS.
4. PROVIDE 10mm WIDE EXPANSION JOINTS BETWEEN ALL BUILDINGS, OTHER STRUCTURES AND PAVEMENTS.
5. BOND BREAKER TO BE TWO (2) UNIFORM COATS OF BITUMEN EMULSION ALL OVER THE EXPOSED SURFACE AND ON END.
6. DOWELS AND TIE BARS TO MEET STRENGTH REQUIREMENTS OF STRUCTURAL GRADE STEEL IN ACCORDANCE WITH AS ISO
1 302-2005-GEOMETRICAL PRODUCT SPECIFICATIONS. DOWELS AND TIE BARS SHALL BE -
   - a) STRAIGHT,
   - b) TO LENGTH SPECIFIED,
   - c) ALL DOWELS TO BE HOT DIP GALVANISED,
   - d) SAWN TO LENGTH NOT CROPPED.
7. DIMENSIONS OF SEALANT RESERVOIR DEPENDANT ON THE SEALANT TYPE ADOPTED. SUPERINTENDENT APPROVAL TO BE OBTAINED FOR SEALANT AND RESERVOIR DIMENSIONS AND DETAIL PROPOSED BY THE CONTRACTOR. REFER TO PLANS FOR TYPICAL ARRANGEMENT AND SEALANT.
8. PRIOR TO THE PLACEMENT OF CONCRETE IN THE ADJACENT SLAB, 'ABLEFLEX' FILLER SHALL BE ADHERED TO THE ALREADY CAST AND CLEANED CONCRETE FACE USING AN APPROVED WATERPROOF ADHESIVE. ADHESIVE SHALL BE LIBERALLY APPLIED TO THE FULL FACE OF THE CONCRETE SLAB TO BE COVERED BY THE FILLER, AND ON THE FULL FACE OF THE FILLER TO BE ADHERED.
9. THE BASE COURSE SHALL BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER IMMEDIATELY PRIOR TO POURING THE CONCRETE.
10. ALL WORK TO BE FINISHED TO SATISFY ITS INTENDED USE AS SHOWN ON THE PLANS, AND / OR IN ACCORDANCE WITH THE SPECIFICATION.

KERBING NOTES
1. ALL CONCRETE KERBS TO HAVE A MINIMUM CHARACTERISTIC COMPRESSIVE STRENGTH F'c=25MPa (UNO).
2. ALL KERBS, DISH DRAINS, etc. TO BE CONSTRUCTED ON 75mm MINIMUM BASE COURSE.
3. KERB EXPANSION JOINTS SHALL BE FORMED FROM 10mm COMPRESSIBLE CORK FILLER BOARD FOR THE FULL DEPTH OF THE SECTION.
4. EXPANSION JOINTS SHALL BE LOCATED AT DRAINAGE PITS, ON TANGENT POINTS OF CURVES AND ELSEWHERE AT 6m MAXIMUM SPACING (UNO).
5. TOOLED JOINTS SHALL BE MIN 3mm WIDE AND LOCATED AT MAXIMUM 3m SPACING.
6. INTEGRAL KERB JOINTS SHALL MATCH THE LOCATION OF THE PAVEMENT JOINTING.

LINEMARKING

1. LINEMARKING MATERIALS, LAYOUT, TYPE & WORKS TO BE IN ACCORDANCE RMS QA SPECIFICATIONS FOR ROADWORKS
2. THE SCOPE OF WORK SHALL INCLUDE ALL PAVEMENT MARKINGS TO ROADS AND CARPARKS.
3 THE WORK CARRIED OUT AND TESTING PERFORMED SHALL COMPLY WITH THE CURRENT, RELEVANT AUS-SPEC SPECIFICATIONS & AUSTRALIAN STANDARDS WHERE NECESSARY.
4 ALL MARKINGS SHALL BE SPOTTED OUT AND APPROVED BY THE SUPERINTENDENT PRIOR TO APPLICATION.
5. PAINT SHALL BE APPLIED AT A WET THICKNESS OF BETWEEN 0.35mm - 0.45mm.
6. UNLESS OTHERWISE SPECIFIED, PERMITTED OR SHOWN ON THE DRAWINGS, PAINT SHALL BE WHITE, WITHOUT GLASS BEADS, EITHER SOLVENT OR WATERBORNE AND COMPLYING WITH THE REQUIREMENTS OF THE AUSTRALIAN STANDARD
7. PAINT SHALL ONLY BE APPLIED TO CLEAN AND DRY SURFACES.
8. ALL LONGITUDINAL LINES SHALL BE APPLIED BY A SELF-PROPELLED MACHINE. LINEMARKING REMOVAL SHALL BE CARRIED OUT BY GRINDING OR SANDBLASTING. REMOVAL BY BURNING WILL NOT BE PERMITTED.
9. THE EXTENT OF LINEMARKING TO BE ERADICATED SHALL BE CONFIRMED ON SITE PRIOR TO REMOVAL. ANY MARKINGS INCORRECTLY REMOVED SHALL BE REINSTATED AT THE CONTRACTOR'S EXPENSE.
10. ALL MARKINGS SHALL BE COMPLETED IN A WORKMAN LIKE MANNER AND BE STRAIGHT, SMOOTH AND WITH EVEN CURVES. ANY NON-CONFORMING WORK, SHALL BE REMOVED AND REINSTATED AT THE DIRECTION OF THE SUPERINTENDENT AT THE CONTRACTORS EXPENSE.
10. IF FINAL SEAL LAYER LAID, ALL LINEMARKING SHALL BE THERMOPLASTIC.

NSW GOVERNMENT | Transport Roads & Maritime Services
These plans are accepted for construction
Project Manager
Date 07/08/17

FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MIE\6_3_4 MHT UD\Galston Road - drawings\DS2014-000149-DD-GE-0101.dwg

DESIGN LOT CODE:
DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING:

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	A	27-01-2017	INCORPORATED BRS COMMENT DATED 22-12-2016	SK	PE
	B	05-06-2017	INCORPORATED BRS COMMENT DATED 16-05-2016	SK	PE

SCALES ON A3 SIZE DRAWING
CO-ORDINATE SYSTEM: MGA ZONE 56
HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY: MEINHARDT — Meinhardt Australia Pty Ltd

PLOT DATE / TIME: 3/11/2014 2:21:41 PM
PLOT BY: Aseip

TITLE	NAME	DATE
DRAWN	D.CREARY	
DRG CHECK	M.GRINHAM	
DESIGN	A.PHAM	
DESIGN CHECK	S.DUNSTONE	
DESIGN MNGR	P.ENOCH	
PROJECT MNGR	P.ENOCH	

CLIENT: NSW GOVERNMENT | Transport Roads & Maritime Services

PREPARED FOR
BRANCH NAME
SECTION NAME
DEPARTMENT NAME

HORNSBY SHIRE COUNCIL
MR 161 - GALSTON ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT
A3

GENERAL NOTES SHEET 2 OF 2

SHEET 03 OF 21

RMS REGISTRATION No. DS2014 / 000149 — PART 01

ISSUE STATUS: FC | EDMS No.: | SHEET No.: GE-0101A | ISSUE: B

Transport Roads & Maritime Services
These plans are accepted for construction
Project Manager
Date 07/08/17

FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
0 5 10 15 20 25 30 35 40 45 150mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME
X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MIE\6_3_4 MHT UDI\Galston Road - drawings\DS2014-000149-DD-GE-0102.dwg

DESIGN LOT CODE

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	A	08-07-12	ISSUED FOR 100% DESIGN DEVELOPMENT		
	B	02-11-16	INCORPORATED RMS COMMENTS DATED 21-07-2016	SK	PE
	C	27-01-17	NO. OF DRAWINGS UPDATED	SK	PE
	D	07-04-17	DRAWING NUMBER UPDATED	SK	PE
	E	05-05-17	INCORPORATED RMS COMMENTS DATED 16-05-2017	SK	PE

SCALES ON A3 SIZE DRAWING

CO-ORDINATE SYSTEM: MGA ZONE 56
HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY
Meinhardt Australia Pty Ltd

PLOT DATE / TIME	PLOT BY
3/11/2014 2:21:41 PM	Aseip

	TITLE	NAME	DATE
	DRAWN	D.CREARY	
	DRG CHECK	M.GRINHAM	
	DESIGN	A.PHAM	
	DESIGN CHECK	S.DUNSTONE	
	DESIGN MNGR	P.ENOCH	
	PROJECT MNGR	P.ENOCH	

CLIENT
Transport Roads & Maritime Services

PREPARED FOR
BRANCH NAME
SECTION NAME
DEPARTMENT NAME

HORNSBY SHIRE COUNCIL
MR 161 - GALSTON ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

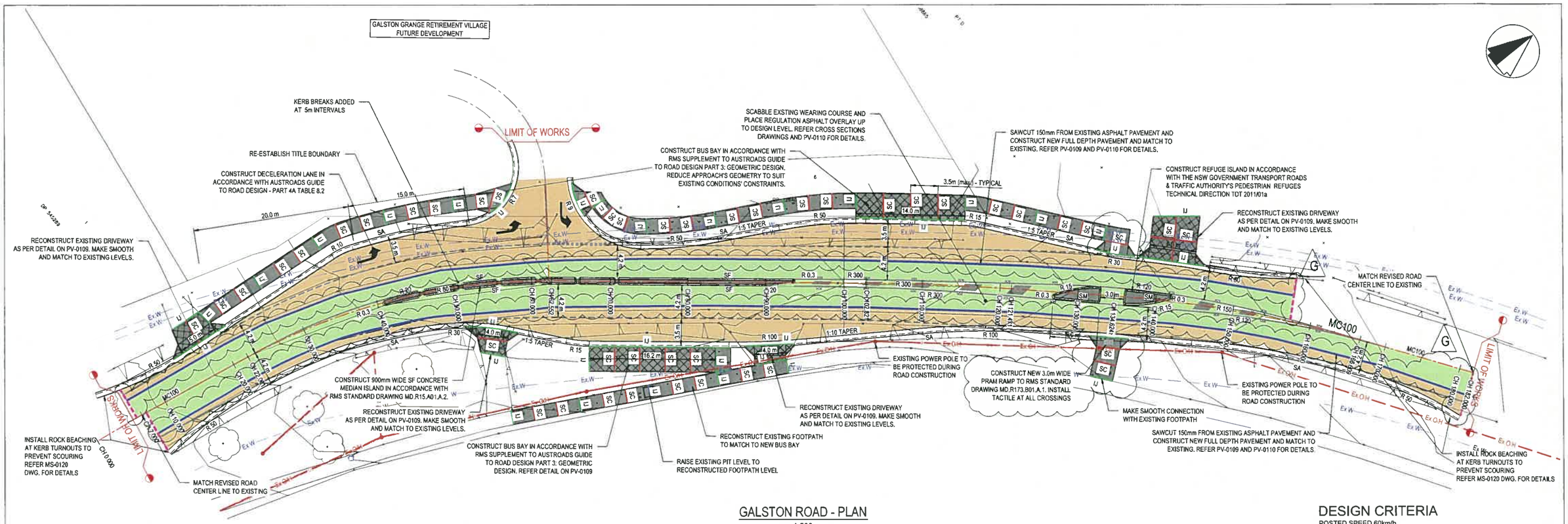
A3

SITE PLAN

SHEET 04 OF 21

RMS REGISTRATION No. DS2014 / 000149 — PART 01

ISSUE STATUS	EDMS No.	SHEET No.	ISSUE
FC		GE-0102	E



GALSTON ROAD - PLAN
1:500

DESIGN CRITERIA

POSTED SPEED 60km/h
SOUTHERN CURVE R80 < 60km/h
APPROXIMATE 55km/h

LEGEND

Ex.DR	EXISTING STORMWATER PIPE
Ex.G	EXISTING GAS MAIN
Ex.T	EXISTING TELSTRA COPPER CABLE
Ex.UG	EXISTING UNDERGROUND ELECTRICITY
Ex.O/H	EXISTING OVERHEAD ELECTRICITY
Ex.S	EXISTING SEWERMAIN
Ex.W	EXISTING WATERMAIN

PAVEMENT LEGEND
(REFER TO DRG DS2014 / 000149 PV-0109 FOR DETAILS)

- ASPHALT FULL DEPTH ROAD PAVEMENT
- ASPHALT MILL AND RE-SHEET (G)
- CONCRETE FOOTPATH PAVEMENT
- VEHICULAR CROSSING / BUS SHELTER PAVEMENT
- MEDIAN ISLAND CONCRETE INFILL
- IJ ISOLATION JOINT
- SC SAWCUT JOINT
- LONGITUDINAL CONSTRUCTION JOINT REINSTATEMENT (G)
- TRANSVERSE CONSTRUCTION JOINT REINSTATEMENT

WARNING
PROPOSED SERVICES
THE LOCATION AND EXTENT OF PROPOSED SERVICES IS INDICATIVE ONLY AND ARE NOT TO BE USED FOR CONSTRUCTION. REFER TO AUTHORISED DOCUMENTATION BY RELEVANT AUTHORITY FOR CONSTRUCTION DETAILS

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

DIAL BEFORE YOU DIG www.1100.com.au

NSW GOVERNMENT Transport Roads & Maritime Services
These plans are accepted for construction
.....
Project Manager
Date 07/08/17

FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
0 5 10 15 20 25 30 35 40 45 50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: X:\111403 - Galston-Grange Retirement-Village\BIM\6_3 MHT MIE\6_3_4 MHT UD\Galston Road - drawings\DS2014-000149-DD-RD-0103.dwg
DESIGN LOT CODE:
DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING:

EXTERNAL REFERENCE FILES
X-111403-IE-BASE
X-111403-IE-BASE PAVE
X-111403-IE-BASE TEXT
B1418-DETAIL modify
X103976-00-SURVEY

REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
A	08-07-16	ISSUED FOR 100% DESIGN DEVELOPMENT		
B	02-11-16	INCORPORATED RMS COMMENTS DATED 21-07-2016	SK	PE
C	15-12-16	SCALE BAR UPDATED	SK	PE
D	27-01-17	INCORPORATED BRS COMMENTS DATED 22-12-2016	SK	PE
E	07-04-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 13-03-2017	SK	PE
F	28-04-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 13-03-2017	SK	PE
G	05-06-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 16-05-2017	SK	PE

SCALES ON A3 SIZE DRAWING: 0 2.5 5 7.5 10 12.5m — SCALE 1:500 AT ORIGINAL SIZE
CO-ORDINATE SYSTEM: MGA ZONE 56 | HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY: Meinhardt Australia Pty Ltd

PLOT DATE / TIME: 3/11/2014 2:21:41 PM | PLOT BY: Aseip

TITLE	NAME	DATE
DRAWN	D.CREARY	
DRG CHECK	M.GRINHAM	
DESIGN	A.PHAM	
DESIGN CHECK	S. DUNSTONE	
DESIGN MNGR	P.ENOCH	
PROJECT MNGR	P.ENOCH	

CLIENT: NSW GOVERNMENT Transport Roads & Maritime Services
PREPARED FOR: BRANCH NAME / SECTION NAME / DEPARTMENT NAME

HORNSBY SHIRE COUNCIL
MR 161 - GALSTON ROAD ROAD WORKS IN ASSOCIATION WITH 392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

ROAD AND PAVEMENT DETAIL PLAN

A3
SHEET 05 OF 21
RMS REGISTRATION No. DS2014 / 000149 | PART 01
ISSUE STATUS: FC | EDMS No. | SHEET No. RD-0103 | ISSUE G

WARNING

PROPOSED SERVICES

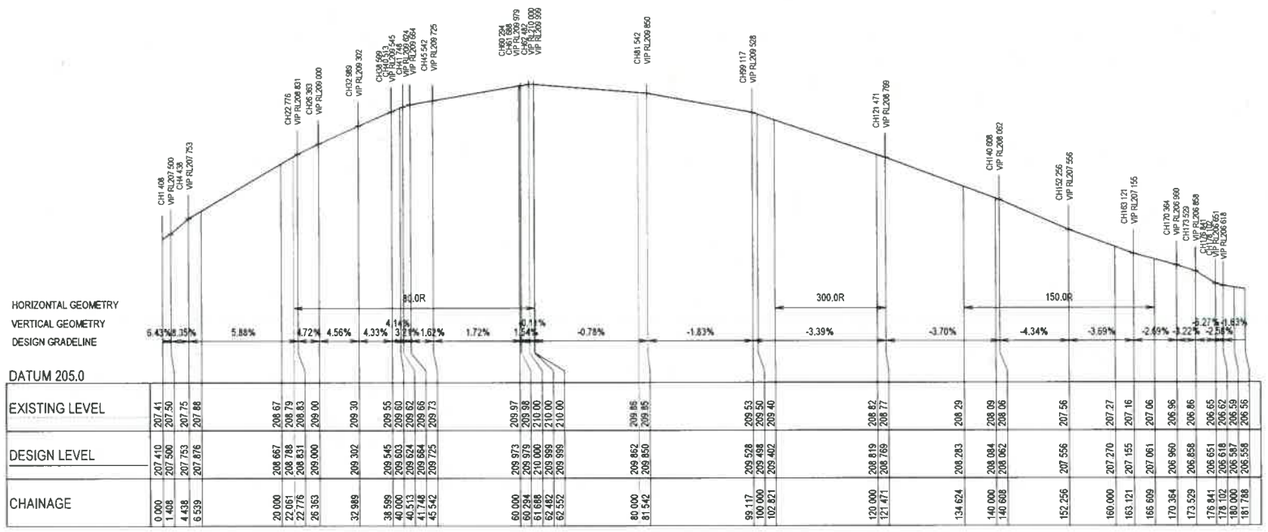
THE LOCATION AND EXTENT OF PROPOSED SERVICES IS INDICATIVE ONLY AND ARE NOT TO BE USED FOR CONSTRUCTION. REFER TO AUTHORISED DOCUMENTATION BY RELEVANT AUTHORITY FOR CONSTRUCTION DETAILS

WARNING

BEWARE OF UNDERGROUND SERVICES

THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

DIAL BEFORE YOU DIG www.1100.com.au



DATUM 205.0

CHAINAGE	0.000	1.408	4.438	6.539	20.000	22.061	22.776	26.353	32.989	38.599	40.000	40.513	41.748	45.542	60.000	60.294	61.688	62.482	62.552	80.000	81.542	99.117	100.000	102.821	120.000	121.471	134.624	140.000	140.668	152.256	160.000	163.121	165.609	170.364	173.529	176.841	178.102	180.000	181.788
EXISTING LEVEL	207.41	207.50	207.75	207.88	208.67	208.79	208.83	209.00	209.30	209.55	209.60	209.62	209.65	209.73	209.97	209.98	210.00	210.00	210.00	209.85	209.85	209.53	209.50	209.40	208.82	208.77	208.29	208.09	208.06	207.56	207.27	207.16	207.06	206.96	206.86	206.65	206.62	206.59	206.55
DESIGN LEVEL	207.410	207.500	207.753	207.878	208.667	208.788	208.831	209.000	209.302	209.545	209.603	209.624	209.664	209.725	209.973	209.979	210.000	209.999	209.999	209.862	209.850	209.528	209.498	209.402	208.819	208.769	208.283	208.084	208.062	207.556	207.270	207.155	207.061	206.960	206.858	206.651	206.618	206.567	206.558

GALSTON ROAD LONGITUDINAL SECTION MC100

FOLLOW EXISTING ROADS LEVELS

NSW GOVERNMENT Transport Roads & Maritime Services

These plans are accepted for construction

Project Manager

Date 07/08/17

FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED

0 5 10 15 20 25 30 35 40 45 50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MIE\6_3_4 MHT UDI\Galston Road - drawings\DS2014-000149-DD-RD-0104.dwg

DESIGN LOT CODE:

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING:

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
LS--ROAD-GALSTON	A	08-07-16	ISSUED FOR 100% DESIGN DEVELOPMENT		
	B	02-11-16	INCORPORATED RMS COMMENTS DATED 21-07-2016	SK	PE
	C	15-12-16	SCALE BAR UPDATED	SK	PE
	D	27-01-17	INCORPORATED BRS COMMENTS DATED 22-12-2016	SK	PE
	E	05-06-17	INCORPORATED RMS COMMENTS DATED 16-05-2016	SK	PE

SCALES ON A3 SIZE DRAWING: 1:1000 H 0 5 10 15 20 25m; 1:200 V 0 1 2 3 4 5m; SCALE 1:1000 HORIZONTAL 1:200 VERTICAL AT ORIGINAL SIZE

CO-ORDINATE SYSTEM: MGA ZONE 56 HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY: Meinhardt Australia Pty Ltd

PLOT DATE / TIME: 3/11/2014 2:21:41 PM PLOT BY: Aseip

	TITLE	NAME	DATE
DRAWN	D.CREARY		
DRG CHECK	M.GRINHAM		
DESIGN	A.PHAM		
DESIGN CHECK	S.DUNSTONE		
DESIGN MNGR	P.ENOCH		
PROJECT MNGR	P.ENOCH		

CLIENT: NSW GOVERNMENT Transport Roads & Maritime Services

PREPARED FOR: BRANCH NAME, SECTION NAME, DEPARTMENT NAME

HORNSBY SHIRE COUNCIL
MR 161 - GALSTON ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

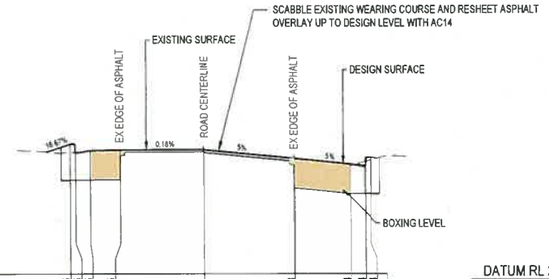
LONGITUDINAL SECTION

A3

SHEET 06 OF 21

RMS REGISTRATION No. DS2014 / 000149 PART 01

ISSUE STATUS: FC EDMS No. SHEET No. RD-0104 ISSUE E



NSW GOVERNMENT Transport Roads & Maritime Services
These plans are accepted for construction
Project Manager
Date 07/08/17

CH 50.000

CH 10.000

CH 22.061

CH 40.000

CH 6.539

CH 20.000

CH 30.000

LEGEND

🟧	ASPHALT FULL DEPTH ROAD PAVEMENT
🟩	ASPHALT PAVEMENT REINSTATEMENT

GALSTON ROAD CH6.539-50.000

SCALE HORIZONTAL 1:200
VERTICAL 1:100

FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME
X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MIE\6_3_4 MHT UD\Galston Road - drawings\DS2014-000149-DD-RC-0105-108.dwg

DESIGN LOT CODE

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING

EXTERNAL REFERENCE FILES
XS-GALSTON-1

REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
A	08-07-16	ISSUED FOR 100% DESIGN DEVELOPMENT		
B	02-11-16	INCORPORATED RMS COMMENTS DATED 21-07-2016	SK	PE
C	15-12-16	SCALE BAR UPDATED	SK	PE
D	27-01-17	NO. OF DRAWINGS UPDATED	SK	PE
E	07-04-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 13-03-2017	SK	PE
F	24-04-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 13-03-2017	SK	PE
G	05-06-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 16-05-2017	SK	PE

SCALES ON A3 SIZE DRAWING
1:200 H 0 1 2 3 4 5m
1:100 V 0 0.5 1.0 1.5 2.0 2.5m
SCALE 1:200 HORIZONTAL
1:100 VERTICAL
AT ORIGINAL SIZE

CO-ORDINATE SYSTEM: MGA ZONE 56
HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY
MEINHARDT
Meinhardt Australia Pty Ltd

PLOT DATE / TIME: 3/11/2014 2:21:41 PM
PLOT BY: Aseip

TITLE	NAME	DATE
DRAWN	D.CREARY	
DRG CHECK	M.GRINHAM	
DESIGN	A.PHAM	
DESIGN CHECK	S.DUNSTONE	
DESIGN MNGR	P.ENOCH	
PROJECT MNGR	P.ENOCH	

CLIENT
NSW GOVERNMENT Transport Roads & Maritime Services

PREPARED FOR
BRANCH NAME
SECTION NAME
DEPARTMENT NAME

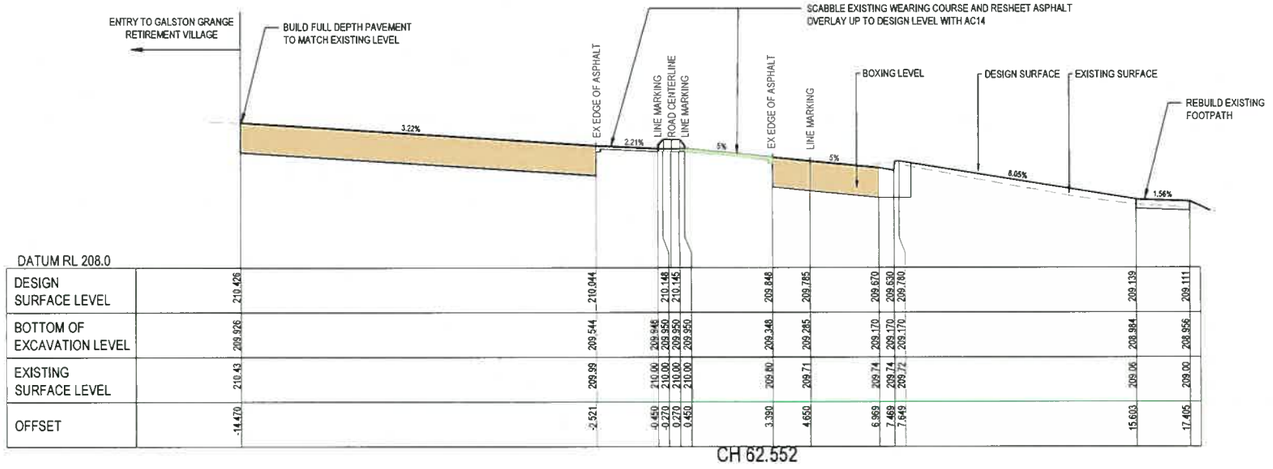
HORNSBY SHIRE COUNCIL
MR 161 - GALSTON ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

A3

CROSS SECTIONS
CHAINAGE 6.539 - 50.000 SHEET 1 OF 4
SHEET 07 OF 21

RMS REGISTRATION No. DS2014 / 000149
PART 02

ISSUE STATUS: FC
EDMS No.
SHEET No. RC-0105
ISSUE G



NSW GOVERNMENT Transport Roads & Maritime Services
These plans are accepted for construction
Nadhel
Project Manager
Date 07/08/17

DATUM RL 208.0

DESIGN SURFACE LEVEL	210.426	210.044		210.148	210.145		209.848	209.785	209.670	209.630	209.780	209.139	209.111
BOTTOM OF EXCAVATION LEVEL	209.926	209.544	209.946	209.950	209.950	209.950	209.348	209.285	209.170	209.170	209.170	208.984	208.956
EXISTING SURFACE LEVEL	210.43	209.99	210.00	210.00	210.00	210.00	209.80	209.71	209.74	209.74	209.72	209.06	209.00
OFFSET	-14.470	-2.521	-0.450	-0.270	0.270	0.450	3.390	4.650	6.969	7.469	7.649	15.603	17.405

CH 62.552

DATUM RL 208.0

DESIGN SURFACE LEVEL	210.517	210.033		209.981	210.130	210.115	209.965		209.806	209.756	209.666	209.626	209.776	209.076	209.050
BOTTOM OF EXCAVATION LEVEL	210.017	209.533	209.930	209.930	209.930	209.920	209.918	209.916	209.306	209.256	209.166	209.166	209.166	208.921	208.895
EXISTING SURFACE LEVEL	210.52	210.00	209.98	209.98	209.98	209.97	209.97	209.97	209.76	209.68	209.68	209.71	209.73	209.03	208.99
OFFSET	-16.592	-2.381	-0.450	-0.440	-0.270	0.270	0.450	0.456	3.655	4.655	6.462	6.962	7.142	15.964	17.756

CH 60.000

DATUM RL 208.0

DESIGN SURFACE LEVEL	209.891	209.851	209.815	209.665	209.705	209.718	209.752	209.796	209.946	209.930	209.780	209.651	209.570	209.420	209.380	209.530	209.436	209.434	209.419
BOTTOM OF EXCAVATION LEVEL	209.736	209.696	209.205	209.205	209.205	209.218	209.252	209.746	209.750	209.740	209.730	209.151	209.070	208.920	208.920	208.920	209.136	209.279	209.264
EXISTING SURFACE LEVEL	210.08	210.04	210.02	210.02	209.87	209.70	209.75	209.80	209.80	209.79	209.78	209.65	209.55	209.49	209.45	209.44	209.31	209.31	209.31
OFFSET	-9.015	-7.015	-5.815	-5.635	-5.135	-4.650	-2.948	-0.450	-0.270	0.270	0.450	3.025	4.650	7.650	8.150	8.330	11.469	11.530	13.272

CH 84.000

DATUM RL 208.0

DESIGN SURFACE LEVEL	209.963	209.923	209.887	209.737	209.777	209.812		210.008	209.986		209.705	209.626	209.476	209.436	209.586	209.490	209.423	209.402
BOTTOM OF EXCAVATION LEVEL	209.808	209.768	209.277	209.277	209.277	209.312	209.808	209.810	209.800	209.786	209.205	209.126	208.976	208.976	208.976	209.190	209.268	209.247
EXISTING SURFACE LEVEL	210.17	210.11	209.95	209.89	209.77	209.81	209.86	209.86	209.85	209.84	209.69	209.60	209.54	209.50	209.49	209.30	209.27	
OFFSET	-8.379	-6.379	-5.179	-4.999	-4.499	-2.930	-0.450	-0.270	0.270	0.450	3.067	4.650	7.650	8.150	8.330	11.530	12.240	14.043

CH 80.000

DATUM RL 208.0

DESIGN SURFACE LEVEL	210.283	210.153	210.091	209.938	209.971	209.951		210.085	210.077		209.787	209.717	209.567	209.527	209.677	209.581	209.317	209.296
BOTTOM OF EXCAVATION LEVEL	210.128	210.153	209.471	209.471	209.471	209.451	209.885	209.890	209.890	209.877	209.287	209.217	209.067	209.067	209.067	209.281	209.162	209.141
EXISTING SURFACE LEVEL	210.30	210.16	210.09	210.07	210.01	209.93	209.94	209.94	209.94	209.93	209.76	209.68	209.66	209.61	209.59	209.33	209.16	
OFFSET	-9.689	-7.156	-5.782	-5.581	-5.027	-2.782	-0.450	-0.270	0.270	0.450	3.244	4.650	7.650	8.150	8.330	11.530	14.167	15.970

CH 70.000

LEGEND

🟫	ASPHALT FULL DEPTH ROAD PAVEMENT
🟩	ASPHALT PAVEMENT REINSTATEMENT

GALSTON ROAD CH60.000-84.000

SCALE HORIZONTAL 1:200
VERTICAL 1:100

FOR CONSTRUCTION

DRAWING FILE LOCATION / NAME
X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MIE\6_3_4 MHT UD\Galston Road - drawings\DS2014-000149-DD-RC-0105-108.dwg

DESIGN LOT CODE

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
XS-GALSTON-2	A	08-07-16	ISSUED FOR 100% DESIGN DEVELOPMENT		
	B	02-11-16	INCORPORATED RMS COMMENTS DATED 21-07-2016	SK	PE
	C	15-12-16	SCALE BAR UPDATED	SK	PE
	D	27-01-17	NO. OF DRAWINGS UPDATED	SK	PE
	E	07-04-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 13-03-2017	SK	PE
	F	24-04-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 13-03-2017	SK	PE
	G	05-06-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 16-05-2017	SK	PE

SCALES ON A3 SIZE DRAWING
1:200 H 0 1 2 3 4 5m
1:100 V 0 0.5 1.0 1.5 2.0 2.5m
SCALE 1:200 HORIZONTAL
1:100 VERTICAL
AT ORIGINAL SIZE

CO-ORDINATE SYSTEM: MGA ZONE 56
HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY
MEINHARDT
Meinhardt Australia Pty Ltd

PLOT DATE / TIME: 3/11/2014 2:21:41 PM
PLOT BY: Aseip

TITLE	NAME	DATE
DRAWN	D.CREARY	
DRG CHECK	M.GRINHAM	
DESIGN	A.PHAM	
DESIGN CHECK	S.DUNSTONE	
DESIGN MNGR	P.ENOCH	
PROJECT MNGR	P.ENOCH	

CLIENT
NSW GOVERNMENT Transport Roads & Maritime Services

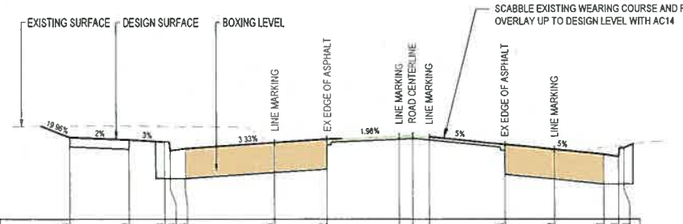
PREPARED FOR
BRANCH NAME
SECTION NAME
DEPARTMENT NAME

HORNSBY SHIRE COUNCIL
MR 161 - GALSTON ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

A3

CROSS SECTIONS
CHAINAGE 60.000 - 84.000 SHEET 2 OF 4 SHEET 08 OF 21

RMS REGISTRATION No. DS2014 / 000149
PART 02
ISSUE STATUS FC
EDMS No.
SHEET No. RC-0106
ISSUE G



SCABBLE EXISTING WEARING COURSE AND RESHEET ASPHALT OVERLAY UP TO DESIGN LEVEL WITH AC14

DATUM RL 208.0

DESIGN SURFACE LEVEL	209.369	209.329	209.293	209.143	209.183	209.283	209.342				209.253	209.170	209.088	209.048	209.196
BOTTOM OF EXCAVATION LEVEL	209.214	209.174	208.683	208.683	208.683	208.783	208.842	209.340	209.350	209.330	208.753	208.670	208.588	208.588	208.588
EXISTING SURFACE LEVEL	209.56	209.57	209.55	209.55	209.55	209.29	209.34	209.39	209.40	209.38	209.25	209.14	209.20	209.23	209.24
OFFSET	-11.530	-9.530	-8.330	-8.150	-7.650	-4.649	-2.887	-0.449	0.000	0.558	3.101	4.756	6.402	6.902	7.082

CH 102.821

SCABBLE EXISTING WEARING COURSE AND RESHEET ASPHALT OVERLAY UP TO DESIGN LEVEL WITH AC14

DATUM RL 207.0

DESIGN SURFACE LEVEL	208.723	208.683	208.647	208.497	208.537	208.601	208.664				208.615	208.526	208.507	208.486	208.636
BOTTOM OF EXCAVATION LEVEL	208.568	208.528	208.037	208.037	208.037	208.101	208.164	208.700	208.720	208.667	208.115	208.026	208.026	208.026	208.026
EXISTING SURFACE LEVEL	208.76	208.76	208.72	208.71	208.68	208.57	208.66	208.75	208.77	208.72	208.61	208.48	208.45	208.46	208.48
OFFSET	-10.698	-8.698	-7.498	-7.318	-6.818	-4.914	-3.014	-0.711	0.000	0.931	2.968	4.763	5.131	5.263	5.443

CH 121.471

Transport
Roads & Maritime
Services
These plans are accepted for construction
Naidu
Project Manager
Date 07/08/17

SCABBLE EXISTING WEARING COURSE AND RESHEET ASPHALT OVERLAY UP TO DESIGN LEVEL WITH AC14

DATUM RL 208.0

DESIGN SURFACE LEVEL	209.450	209.410	209.374	209.224	209.264	209.363	209.421				209.347	209.265	209.167	209.127	209.277
BOTTOM OF EXCAVATION LEVEL	209.295	209.255	208.764	208.764	208.764	208.863	208.921	209.440	209.450	209.427	208.847	208.765	208.667	208.667	208.667
EXISTING SURFACE LEVEL	209.64	209.63	209.61	209.61	209.61	209.35	209.42	209.49	209.50	209.48	209.32	209.22	209.25	209.28	209.29
OFFSET	-11.508	-9.508	-8.308	-8.128	-7.628	-4.650	-2.907	-0.450	0.000	0.477	3.082	4.712	6.684	7.184	7.364

CH 100.000

SCABBLE EXISTING WEARING COURSE AND RESHEET ASPHALT OVERLAY UP TO DESIGN LEVEL WITH AC14

DATUM RL 207.0

DESIGN SURFACE LEVEL	208.768	208.728	208.692	208.542	208.582	208.656	208.718			208.772	208.667	208.576	208.562	208.536	208.586
BOTTOM OF EXCAVATION LEVEL	208.613	208.573	208.082	208.082	208.082	208.156	208.218	208.750	208.770	208.720	208.167	208.076	208.076	208.076	208.076
EXISTING SURFACE LEVEL	208.81	208.81	208.79	208.78	208.75	208.62	208.72	208.80	208.82	208.77	208.66	208.53	208.51	208.51	208.54
OFFSET	-10.938	-8.938	-7.738	-7.556	-7.058	-4.856	-2.971	-0.653	0.000	0.909	3.020	4.826	5.109	5.326	5.506

CH 120.000

SCABBLE EXISTING WEARING COURSE AND RESHEET ASPHALT OVERLAY UP TO DESIGN LEVEL WITH AC14

DATUM RL 207.0

DESIGN SURFACE LEVEL	208.476	208.436	208.400	208.250	208.290	208.298	208.369			208.591	208.577	208.556			208.306	208.215	208.175	208.325
BOTTOM OF EXCAVATION LEVEL	208.321	208.281	207.790	207.790	207.790	207.798	207.869	208.390	208.390	208.390	208.400	208.385	208.355	208.349	207.806	207.715	207.715	207.715
EXISTING SURFACE LEVEL	208.50	208.39	208.32	208.31	208.28	208.26	208.37	208.44	208.44	208.44	208.45	208.42	208.41	208.40	208.30	208.17	208.24	208.29
OFFSET	-9.360	-7.360	-6.160	-5.980	-5.480	-5.236	-3.109	-1.043	-0.684	-0.500	0.000	0.773	0.953	1.039	2.935	4.739	5.239	5.419

CH 130.000

SCABBLE EXISTING WEARING COURSE AND RESHEET ASPHALT OVERLAY UP TO DESIGN LEVEL WITH AC14

REBUILD EXISTING FOOTPATH

DATUM RL 208.0

DESIGN SURFACE LEVEL	209.750	209.710	209.674	209.524	209.564	209.612	209.646						209.541	209.461	209.316	209.276	209.426	209.358	209.340
BOTTOM OF EXCAVATION LEVEL	209.595	209.555	209.064	209.064	209.064	209.112	209.146	209.630	209.640	209.630	209.620	209.620	209.041	208.961	208.816	208.776	208.926	209.203	209.185
EXISTING SURFACE LEVEL	209.97	209.90	209.87	209.86	209.85	209.57	209.65	209.68	209.69	209.68	209.67	209.67	209.52	209.47	209.39	209.39	209.37	209.36	209.36
OFFSET	-10.215	-8.215	-7.015	-6.835	-6.335	-4.650	-2.947	-0.450	-0.270	0.264	0.444	0.450	3.047	4.650	7.543	8.043	9.425	10.311	12.114

CH 90.000

SCABBLE EXISTING WEARING COURSE AND RESHEET ASPHALT OVERLAY UP TO DESIGN LEVEL WITH AC14

DATUM RL 207.0

DESIGN SURFACE LEVEL	209.108	209.068	209.032	208.882	208.922	209.022	209.081				209.023	208.935	208.901	208.861	209.011
BOTTOM OF EXCAVATION LEVEL	208.953	208.913	208.422	208.422	208.422	208.522	208.581	209.100	209.110	209.097	208.523	208.435	208.401	208.401	208.401
EXISTING SURFACE LEVEL	209.23	209.25	209.27	209.27	209.27	209.02	209.08	209.15	209.16	209.15	209.00	208.91	208.92	208.98	208.99
OFFSET	-11.530	-9.530	-8.330	-8.150	-7.650	-4.650	-2.857	-0.450	0.000	0.692	3.185	4.931	5.619	6.119	6.299

CH 110.000

SCABBLE EXISTING WEARING COURSE AND RESHEET ASPHALT OVERLAY UP TO DESIGN LEVEL WITH AC14

DATUM RL 207.0

DESIGN SURFACE LEVEL	208.621	208.581	208.545	208.395	208.435	208.476	208.542				208.489	208.400	208.376	208.360	208.510
BOTTOM OF EXCAVATION LEVEL	208.466	208.426	207.935	207.935	207.935	207.976	208.042	208.570	208.590	208.536	207.989	207.900	207.900	207.900	207.900
EXISTING SURFACE LEVEL	208.63	208.63	208.55	208.54	208.51	208.44	208.54	208.62	208.64	208.59	208.48	208.35	208.33	208.34	208.36
OFFSET	-10.145	-8.145	-6.945	-6.765	-6.265	-5.062	-3.078	-0.858	0.000	0.975	2.914	4.689	5.176	5.189	5.369

CH 125.000

LEGEND

🟧	ASPHALT FULL DEPTH ROAD PAVEMENT
🟩	ASPHALT PAVEMENT REINSTATEMENT

GALSTON ROAD CH90.000-130.000

SCALE HORIZONTAL 1:200
VERTICAL 1:100

FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
50mm ON A3 SIZE ORIGINAL
0 5 10 15 20 25 30 35 40 45

DRAWING FILE LOCATION / NAME
X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MIE\6_3_4 MHT UD\Galston Road - drawings\DS2014-000149-DD-RC-0105-108.dwg

DESIGN LOT CODE

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
XS-GALSTON-3	A	08-07-16	ISSUED FOR 100% DESIGN DEVELOPMENT		
	B	02-11-16	INCORPORATED RMS COMMENTS DATED 21-07-2016	SK	PE
	C	15-12-16	SCALE BAR UPDATED	SK	PE
	D	27-01-17	NO. OF DRAWINGS UPDATED	SK	PE
	E	07-04-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 13-03-2017	SK	PE
	F	24-04-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 13-03-2017	SK	PE
	G	05-06-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 16-05-2017	SK	PE

SCALES ON A3 SIZE DRAWING
1:200 H 0 1 2 3 4 5m
1:100 V 0 0.5 1.0 1.5 2.0 2.5m
SCALE 1:200 HORIZONTAL
1:100 VERTICAL
AT ORIGINAL SIZE

CO-ORDINATE SYSTEM: MGA ZONE 56
HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY
MEINHARDT
Meinhardt Australia Pty Ltd

PLOT DATE / TIME: 3/11/2014 2:21:41 PM
PLOT BY: Aseip

TITLE	NAME	DATE
DRAWN	D.CREARY	
DRG CHECK	M.GRINHAM	
DESIGN	A.PHAM	
DESIGN CHECK	S.DUNSTONE	
DESIGN MNGR	P.ENOCH	
PROJECT MNGR	P.ENOCH	

CLIENT
Transport
Roads & Maritime
Services

PREPARED FOR
BRANCH NAME
SECTION NAME
DEPARTMENT NAME

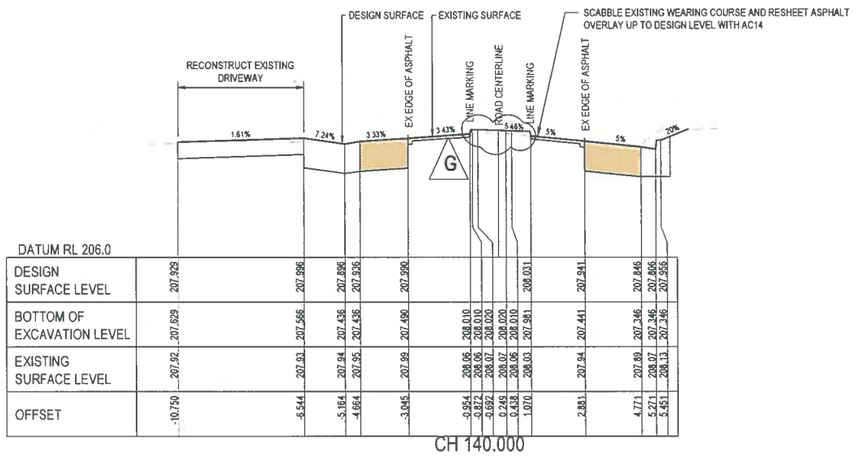
HORNSBY SHIRE COUNCIL
MR 161 - GALSTON ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

A3

CROSS SECTIONS
CHAINAGE 90.000 - 130.000 SHEET 3 OF 4 SHEET 09 OF 21

RMS REGISTRATION No. DS2014 / 000149
PART 02

ISSUE STATUS: FC
EDMS No.
SHEET No. RC-0107
ISSUE G



DATUM RL 205.0

DESIGN SURFACE LEVEL		206.597	206.607	206.567	206.717
BOTTOM OF EXCAVATION LEVEL		206.097	206.107	206.107	206.107
EXISTING SURFACE LEVEL	206.59	206.60	206.62	206.66	206.68
OFFSET	0.000	2.924	5.276	5.776	5.956

CH 180.000

DATUM RL 206.0

DESIGN SURFACE LEVEL	207.929	207.996	207.896	207.936	207.990						208.031	207.941	207.846	207.806	207.956
BOTTOM OF EXCAVATION LEVEL	207.629	207.566	207.436	207.436	207.490	208.010	208.010	208.020	208.020	208.010	207.981	207.441	207.346	207.346	207.346
EXISTING SURFACE LEVEL	207.92	207.93	207.94	207.95	207.99	208.06	208.06	208.07	208.07	208.06	208.03	207.94	207.89	208.07	208.13
OFFSET	-10.750	-6.544	-5.164	-4.664	-3.045	-0.954	-0.872	-0.692	0.249	0.438	1.070	2.881	4.771	5.271	5.451

CH 140.000

DATUM RL 206.0

DESIGN SURFACE LEVEL		207.268	207.195	207.157	207.117	207.267
BOTTOM OF EXCAVATION LEVEL	207.224	207.218	206.695	206.657	206.657	206.657
EXISTING SURFACE LEVEL	207.27	207.26	207.16	207.12	207.13	207.18
OFFSET	0.000	0.211	2.625	3.906	4.406	4.586

CH 160.000

DATUM RL 206.0

DESIGN SURFACE LEVEL	206.970	206.946	206.932	206.892	207.042
BOTTOM OF EXCAVATION LEVEL	206.920	206.446	206.432	206.432	206.432
EXISTING SURFACE LEVEL	206.97	206.98	206.96	206.91	206.89
OFFSET	0.000	2.461	3.779	4.279	4.459

CH 170.000

DATUM RL 207.0

DESIGN SURFACE LEVEL	208.294	208.254	208.104	208.144	208.202			208.230	208.137	208.045	208.005	208.155	208.464
BOTTOM OF EXCAVATION LEVEL	208.139	208.099	207.644	207.644	207.702	207.210	208.240	208.180	207.637	207.545	207.505	208.000	208.309
EXISTING SURFACE LEVEL	208.21	208.15	208.10	208.12	208.20	208.26	208.29	208.23	208.13	208.00	208.15	208.32	208.46
OFFSET	-8.718	-6.718	-5.330	-4.830	-3.093	-1.053	0.000	1.098	2.954	4.798	5.298	6.678	10.773

CH 134.624

DATUM RL 206.0

DESIGN SURFACE LEVEL	207.613	207.463	207.503	207.552			207.630	207.531	207.446	207.406	207.556
BOTTOM OF EXCAVATION LEVEL	207.003	207.003	207.003	207.052	207.600	207.610	207.577	207.031	206.946	206.946	206.946
EXISTING SURFACE LEVEL	207.43	207.47	207.49	207.55	207.65	207.66	207.63	207.52	207.44	207.48	207.49
OFFSET	-5.168	-4.988	-4.488	-3.197	-0.626	0.000	0.615	2.608	4.313	4.813	4.993

CH 150.000

DATUM RL 206.0

DESIGN SURFACE LEVEL			207.020	207.001	206.961	207.111
BOTTOM OF EXCAVATION LEVEL	207.010	207.010	206.520	206.501	206.501	206.501
EXISTING SURFACE LEVEL	207.06	207.06	207.00	206.97	206.96	206.95
OFFSET	0.000	0.040	2.566	3.728	4.228	4.408

CH 166.609

Transport
Roads & Maritime
Services
NSW GOVERNMENT
These plans are accepted for construction
Project Manager
Date. 07/08/17

LEGEND

🟧	ASPHALT FULL DEPTH ROAD PAVEMENT
🟩	ASPHALT PAVEMENT REINSTATEMENT

GALSTON ROAD CH134.624 - 180.000

SCALE HORIZONTAL 1:200
VERTICAL 1:100

FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
0 5 10 15 20 25 30 35 40 45 50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME
X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MIE\6_3_4 MHT UD\Galston Road - drawings\DS2014-000149-DD-RC-0105-108.dwg

DESIGN LOT CODE

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
XS-GALSTON-4	A	08-07-16	ISSUED FOR 100% DESIGN DEVELOPMENT		
	B	02-11-16	INCORPORATED RMS COMMENTS DATED 21-07-2016	SK	PE
	C	15-12-16	SCALE BAR UPDATED	SK	PE
	D	27-01-17	NO. OF DRAWINGS UPDATED	SK	PE
	E	07-04-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 13-03-2017	SK	PE
	F	24-04-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 13-03-2017	SK	PE
	G	05-06-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 16-05-2017	SK	PE

SCALES ON A3 SIZE DRAWING
1:200 H 0 1 2 3 4 5m
1:100 V 0 0.5 1.0 1.5 2.0 2.5m
SCALE 1:200 HORIZONTAL
1:100 VERTICAL
AT ORIGINAL SIZE

CO-ORDINATE SYSTEM: MGA ZONE 56
HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY
MEINHARDT
Meinhardt Australia Pty Ltd

PLOT DATE / TIME: 3/11/2014 2:21:41 PM
PLOT BY: Aseip

TITLE	NAME	DATE
DRAWN	D.CREARY	
DRG CHECK	M.GRINHAM	
DESIGN	A.PHAM	
DESIGN CHECK	S.DUNSTONE	
DESIGN MNGR	P.ENOCH	
PROJECT MNGR	P.ENOCH	

CLIENT
NSW GOVERNMENT
Transport
Roads & Maritime
Services

PREPARED FOR
BRANCH NAME
SECTION NAME
DEPARTMENT NAME

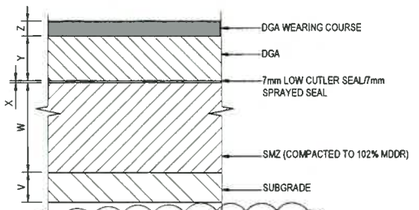
HORNSBY SHIRE COUNCIL
MR 161 - GALSTON ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

A3

CROSS SECTIONS
CHAINAGE 134.624 - 180.000 SHEET 4 OF 4 SHEET 10 OF 21

RMS REGISTRATION No. DS2014 / 000149
PART 02

ISSUE STATUS	EDMS No.	SHEET No.	ISSUE
FC		RC-0108	G



GALSTON ROAD ASPHALT FULL DEPTH ROAD PAVEMENT SPECIFICATION

NOT TO SCALE

H

DESIGN PARAMETERS

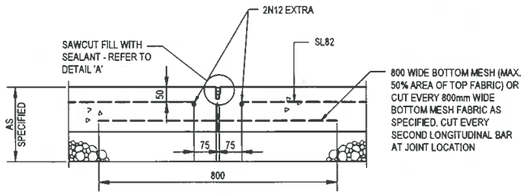
DESA (ESA) - 7.6×10^5
DSAR 5 (SAR 5) - 8.66×10^5
DSAR 7 (SAR 7) - 1.31×10^6
SUBGRADE DESIGN CBR (%) - 3

LAYER	MATERIAL NAME	THICKNESS (mm)	BINDER TYPE
Z	AC14	50	AR450 BITUMEN
Y	AC20	150	AR450 BITUMEN
X	LOW CUTTER SEAL	7	
W	SMZ	300	
V	SUBGRADE	3% CBR (MIN.)	

H

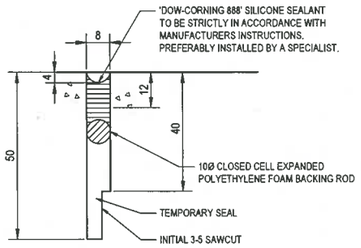
FLEXIBLE PAVEMENT NOTES:

1. ALL EARTHWORKS INCLUDING SUBGRADE PREPARATION SHALL BE AS PER RMS SPECIFICATION R44
2. THE PAVEMENT THICKNESS SHALL BE SUBJECT TO SUBGRADE TESTING BY REGISTERED NATA LABRATORY
3. THE SMZ LAYER IS A STANDARD REQUIREMENT IN RMS PAVEMENTS AND SHOULD COMPLY TO THE RMS QA SPECIFICATION 3071



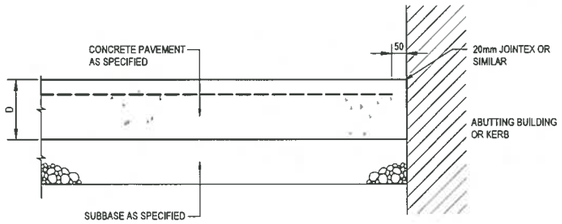
SAWCUT JOINT (SC)

SCALE 1 40



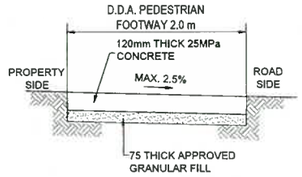
DETAIL A

NTS



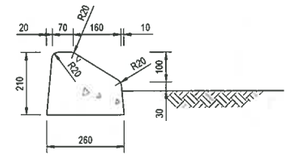
ISOLATION JOINT (IJ)

SCALE 1 40

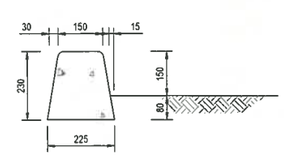


TYPICAL SECTION PEDESTRIAN FOOTWAY

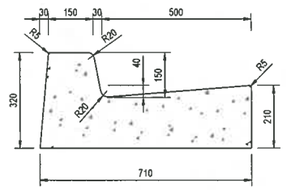
SCALE 1:40



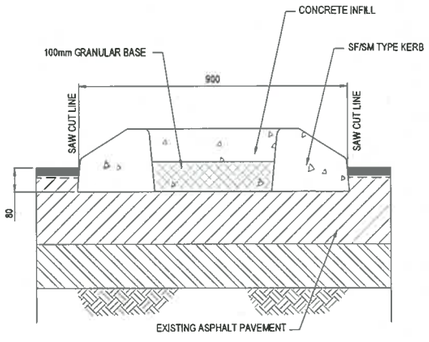
SF TYPE KERB (SF)



SM TYPE KERB (SM)

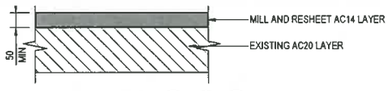


SA TYPE KERB (SA)



MEDIAN ISLAND DETAIL

SCALE 1 40



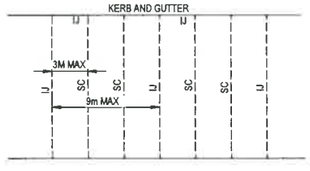
GALSTON ROAD ASPHALT MILL AND RESHEET SPECIFICATION

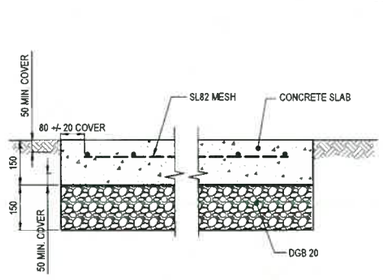
NOT TO SCALE

H

TYPICAL CONCRETE FOOTPATH PAVEMENT JOINTING NOTES :

1. ALL FOOTPATH PAVEMENTS TO BE JOINTED AS SHOWN ON DRAWINGS.
2. SAWN JOINTS (SC) SHOULD GENERALLY BE LOCATED AT A MAXIMUM OF 3M. CENTRES.
3. PROVIDE 20MM WIDE FULL DEPTH ISOLATION JOINTS (IJ) BETWEEN BUILDINGS, SERVICE PITS AND ALL CONCRETE OR UNIT PAVERS.
4. SET OUT FOOTPATH PAVEMENT JOINTING GENERALLY AS FOLLOWS.
5. PROVIDE 2N12 TRIMMER BARS AT ALL RE-ENTRANT CORNERS.
6. WHERE FILLING UNDER PROPOSED CONCRETE FOOTPATH IS NECESSARY, SUCH FILLING SHALL CONSIST OF GRANULAR MATERIAL OF 20mm MAXIMUM SIZE AND SHALL BE SPREAD IN LAYERS OF A MAXIMUM THICKNESS OF 150mm AND CONSOLIDATED TO PROVIDE A 95% COMPACTION WHEN TESTED UNDER THE MODIFIED PROCTOR METHOD AS PER HORNSBY SHIRE COUNCIL'S VEHICULAR CROSSING SPECIFICATION



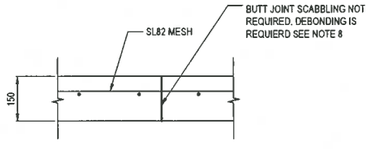


CONCRETE VEHICULAR CROSSING / BUS SHELTER PAVEMENT

NOT TO SCALE
(TO BE CONSTRUCTED SIMILAR TO RMS STANDARD DRAWING DS 2012/00293 SHEET 3)

CROSSING & BUS SHELTER PAVING NOTES :

1. ISOLATION JOINTS MUST BE PROVIDED AT THE FIRST JOINT AWAY FROM JUNCTIONS WITH FLEXIBLE PAVEMENTS AND STRUCTURES, AND AT (max.) INTERMEDIATE CENTRES OF 17.5m (EG. THREE SHEETS OF 6m LENGTH MESH, LESS LAPS.
2. ISOLATION JOINTS CAN BE CONSTRUCTED AS FORMED JOINTS (BY CHEQUERBOARD PAVING SEQUENCE), OR BY FULL DEPTH SAWCUT.
3. PLACE A FULL DEPTH ISOLATION JOINT AROUND ALL ABUTTING STRUCTURES SUCH AS PITS, UTILITY SERVICES, POWER POLES, KERBS.
4. THE OPTIONS FOR END-OF-DAY CONSTRUCTION JOINTS ARE AS FOLLOWS
   (i) TRANSVERSE CONSTRUCTION/FORMED/TIED JOINTS MAY BE USED. THEY MUST BE LOCATED EITHER MIDWAY BETWEEN ISOLATION JOINTS OR IN LIEU OF A TRANSVERSE HINGE/TIED/SAWN JOINT. THEY MUST NOT BE USED IN LIEU OF A ISOLATION JOINT.
   (ii) PAVING MAY BE TERMINATED AT A ISOLATION JOINT.
5. COMPLY WITH RMS SPECIFICATIONS R53 AND R173. CONCRETE MUST BE IN ACCORDANCE WITH RMS R53 BUT WITH A MINIMUM COMPRESSIVE STRENGTH OF 32.0 MPa.
6. SELF-EXPANDING CORK SEALANTS MUST FILL THE FULL JOINT CAVITY TO PREVENT THE INGRESS OF INCOMPRESSIBLE MATERIALS.
7. SUB BASE MUST BE 150mm THICK TRAFFIC CATEGORY D MATERIAL IN ACCORDANCE WITH RMS SPECIFICATION 3051, COMPACTED IN ACCORDANCE WITH RMS R173. MOISTEN THE SUB BASE WITH WATER BEFORE PLACING THE CONCRETE.
8. DEBOND TYPE TRANSVERSE CONSTRUCTION/FORMED/TIED JOINTS TO PREVENT CHEMICAL BONDING.
9. ENSURE REINFORCING STEEL IS PLACED TO PROVIDE 30mm MINIMUM COVER BELOW THE SAWCUT.
10. WHERE FILLING UNDER PROPOSED BUS BAY AND VEHICULAR CROSSING IS NECESSARY; SUCH FILLING SHALL CONSIST OF GRANULAR MATERIAL OF 20mm MAXIMUM SIZE AND SHALL BE SPREAD IN LAYERS OF A MAXIMUM THICKNESS OF 150mm AND CONSOLIDATED TO PROVIDE A 95% COMPACTION WHEN TESTED UNDER THE MODIFIED PROCTOR METHOD AS PER HORNSBY SHIRE COUNCIL'S VEHICULAR CROSSING SPECIFICATION



TRANSVERSE CONSTRUCTION/FORMED/TIED JOINT OF CONCRETE VEHICULAR CROSSING/BUS SHELTER PAVEMENT

AT START AND END OF DAILY PAVING OPERATIONS. SEE NOTE 4
SCALE : NTS

Transport Roads & Maritime Services
These plans are accepted for construction
Project Manager
Date 07/08/17

FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED 150mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MIE\6_3_4 MHT UDI\Galston Road - drawings\DS2014-000149-DD-PV-0109-110.dwg

EXTERNAL REFERENCE FILES:

REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
A	08-07-16	ISSUED FOR 100% DESIGN DEVELOPMENT		
B	02-11-16	INCORPORATED RMS COMMENTS DATED 21-07-2016	SK	PE
C	14-12-16	INCORPORATED RMS COMMENTS DATED 21-07-2016	SK	PE
D	27-01-17	NO. OF DRAWINGS UPDATED	SK	PE
E	07-04-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 13-03-2017	SK	PE
F	24-04-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 13-03-2017	SK	PE
G	05-06-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 16-05-2017	SK	PE
H	14-07-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 04-07-2017	SK	PE

DESIGN LOT CODE

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING

SCALES ON A3 SIZE DRAWING

CO-ORDINATE SYSTEM: MGA ZONE 56
HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY: Meinhardt Australia Pty Ltd

PLOT DATE / TIME: 3/11/2014 2:21:41 PM
PLOT BY: Aseip

TITLE	NAME	DATE
DRAWN	D.CREARY	
DRG CHECK	M.GRINHAM	
DESIGN	A.PHAM	
DESIGN CHECK	S.DUNSTONE	
DESIGN MNGR	P.ENOCH	
PROJECT MNGR	P.ENOCH	

CLIENT: Transport Roads & Maritime Services

PREPARED FOR: BRANCH NAME, SECTION NAME, DEPARTMENT NAME

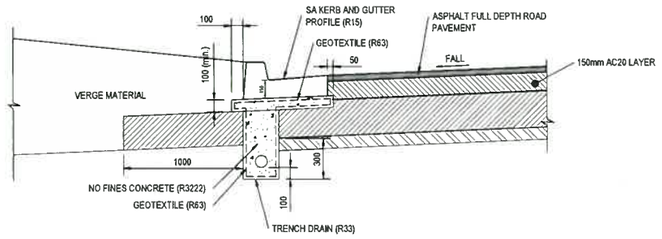
HORNSBY SHIRE COUNCIL
MR 161 - GALSTON ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

TYPICAL DETAILS SHEET

SHEET 11 OF 21

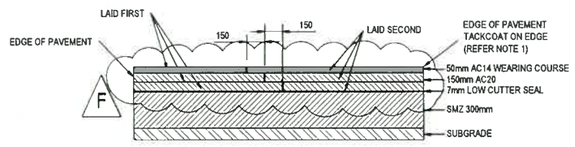
A3

RMS REGISTRATION No.: DS2014 / 000149
PART: 01
ISSUE STATUS: FC
EDMS No.:
SHEET No.: PV-0109
ISSUE: H



EDGE DETAIL TO SHOW PAVEMENT/KERB INTERFACE

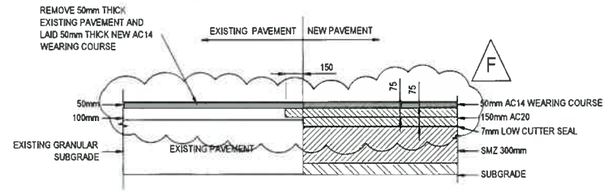
SCALE 1:50



LONGITUDINAL CONSTRUCTION JOINT NEW CONSTRUCTION - CONFINED

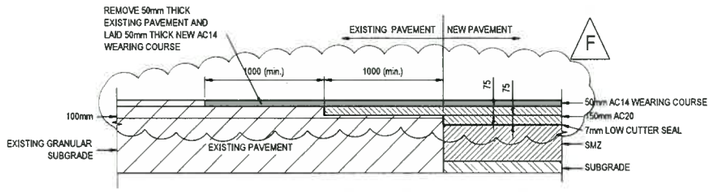
SCALE 1:50

NOTES:
1. THE TACKCOAT MUST BE APPLIED AT AN APPLICATION RATE OF BETWEEN 0.15 l/m^2 AND 0.30 l/m^2 OF RESIDUAL BITUMEN. FOR JOINTS THE APPLICATION RATE MUST BE DOUBLED ON VERTICAL FACES.
2. ASPHALT COMPACTION SHOULD COMPLY WITH RMS R116 SPECIFICATION



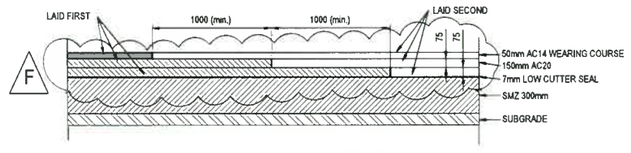
LONGITUDINAL CONSTRUCTION JOINT REINSTATEMENT

SCALE 1:50



TRANSVERSE CONSTRUCTION JOINT REINSTATEMENT

SCALE 1:50



TRANSVERSE CONSTRUCTION JOINT NEW CONSTRUCTION

SCALE 1:50

Transport Roads & Maritime Services
These plans are accepted for construction
.....
Project Manager
Date 07/08/17

FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: X:\111403 - Galston-Grange Retirement-Village\BIM\6_3 MHT MIE\6_3_4 MHT UDI\Galston Road - drawings\DS2014-000149-DD-PV-0109-110.dwg

DESIGN LOT CODE:

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING:

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	A	02-11-16	INCORPORATED RMS COMMENTS DATED 21-07-2016	SK	PE
	B	14-12-16	INCORPORATED RMS COMMENTS DATED 21-07-2016	SK	PE
	C	27-01-17	NO. OF DRAWINGS UPDATED	SK	PE
	D	07-04-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 13-03-2017	SK	PE
	E	05-06-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 16-05-2017	SK	PE
	F	14-06-17	INCORPORATED RMS PAVEMENT COMMENTS DATED 04-07-2017	SK	PE

SCALES ON A3 SIZE DRAWING

CO-ORDINATE SYSTEM: MGA ZONE 56 | HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY: Meinhardt Australia Pty Ltd

PLOT DATE / TIME: 3/11/2014 2:21:41 PM | PLOT BY: Aseip

	NAME	DATE
TITLE		
DRAWN	D.CREARY	
DRG CHECK	M.GRINHAM	
DESIGN	A.PHAM	
DESIGN CHECK	S.DUNSTONE	
DESIGN MNGR	P.ENOCH	
PROJECT MNGR	P.ENOCH	

CLIENT: Transport Roads & Maritime Services

PREPARED FOR: BRANCH NAME, SECTION NAME, DEPARTMENT NAME

HORNSBY SHIRE COUNCIL
MR 161 - GALSTON ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

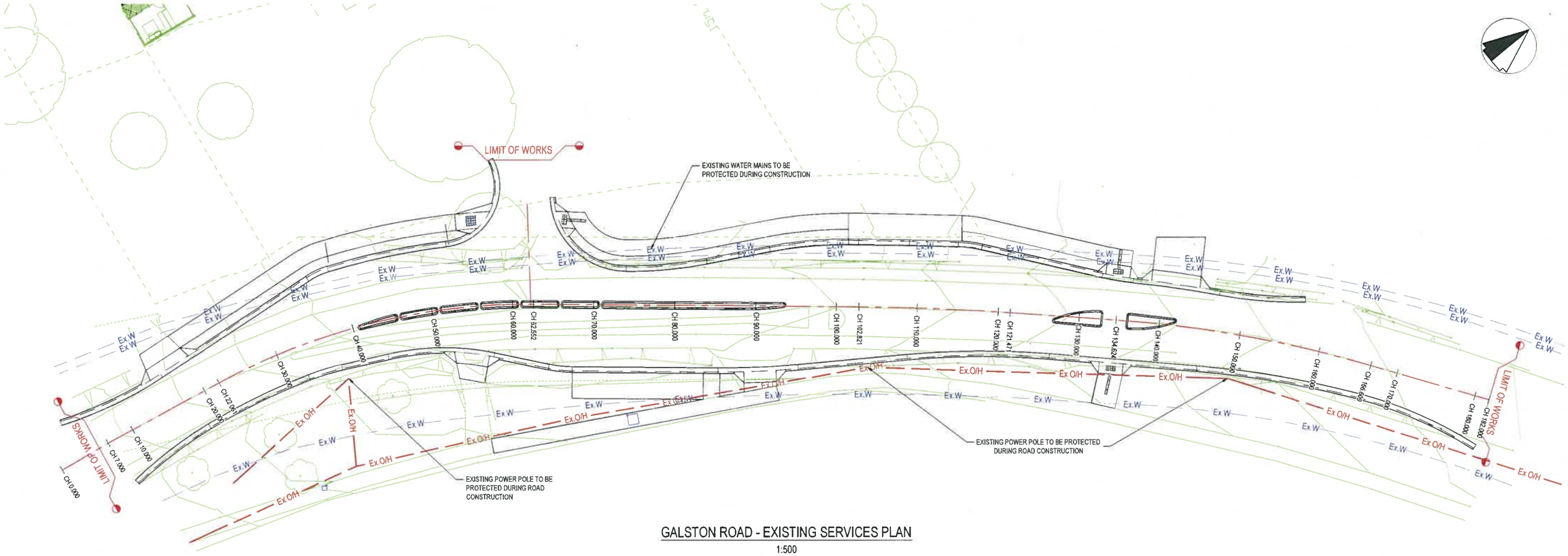
A3

TYPICAL DETAILS SHEET

SHEET 12 OF 21

RMS REGISTRATION No. DS2014 / 000149 | PART 01

ISSUE STATUS: FC | EDMS No. | SHEET No. PV-0110 | ISSUE F



GALSTON ROAD - EXISTING SERVICES PLAN

1:500

WARNING
PROPOSED SERVICES
THE LOCATION AND EXTENT OF PROPOSED SERVICES IS INDICATIVE ONLY AND ARE NOT TO BE USED FOR CONSTRUCTION. REFER TO AUTHORISED DOCUMENTATION BY RELEVANT AUTHORITY FOR CONSTRUCTION DETAILS

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

DIAL BEFORE YOU DIG www.1100.com.au

LEGEND

EXISTING	PROPOSED	DESCRIPTION
Ex.DR		STORMWATER PIPE
Ex.G	G G	GAS MAIN
Ex.T	T T	TELSTRA COPPER CABLE
	E U/G	UNDERGROUND ELECTRICITY
	E O/H	OVERHEAD ELECTRICITY
Ex.S	S S	SEWERMAIN
Ex.W	W W	WATERMAIN
		STREET LIGHTING

NSW GOVERNMENT Transport Roads & Maritime Services
These plans are accepted for construction
Project Manager
Date 07/08/17

FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
0 5 10 15 20 25 30 35 40 45 50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME
X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MIE\6_3_4 MHT UDI\Galston Road - drawings\DS2014-000149-DD-UT-0110.dwg

DESIGN LOT CODE

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING

PLOT DATE / TIME 3/11/2014 2:21:41 PM
PLOT BY Aseip

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
X-111403-IE-BASE	A	08-07-16	ISSUED FOR 100% DESIGN DEVELOPMENT		
X-111403-IE-BASE TEXT	B	02-11-16	INCORPORATED RMS COMMENTS DATED 21-07-2016	SK	PE
X-111403-Existing services	C	15-12-16	SCALE BAR UPDATED	SK	PE
gal da-02c modify	D	27-01-17	NO. OF DRAWINGS UPDATED	SK	PE
B1418-DETAIL modify	E	28-04-17	INCORPORATED RMS COMMENTS DATED 13-03-17	SK	PE
	F	05-06-17	INCORPORATED RMS COMMENTS DATED 16-05-17	SK	PE

SCALES ON A3 SIZE DRAWING
0 2.5 5 7.5 10 12.5m
SCALE 1:500 AT ORIGINAL SIZE

CO-ORDINATE SYSTEM MGA ZONE 56
HEIGHT DATUM AHD

DRAWINGS / DESIGN PREPARED BY
MEINHARDT
Meinhardt Australia Pty Ltd

	NAME	DATE
TITLE		
DRAWN	D.CREARY	
DRG CHECK	M.GRINHAM	
DESIGN	A.PHAM	
DESIGN CHECK	S.DUNSTONE	
DESIGN MNGR	P.ENOCH	
PROJECT MNGR	P.ENOCH	

CLIENT
NSW GOVERNMENT Transport Roads & Maritime Services

PREPARED FOR
BRANCH NAME
SECTION NAME
DEPARTMENT NAME

HORNSBY SHIRE COUNCIL
MR 161 - GALSTON ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

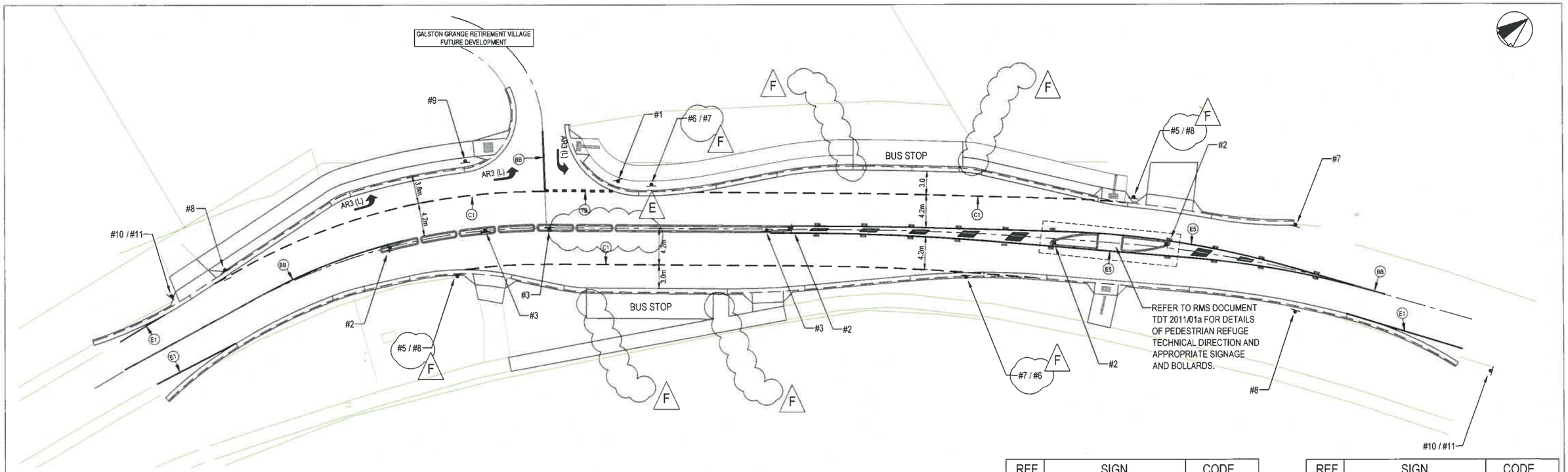
EXISTING SERVICES PLAN

A3

SHEET 13 OF 21

RMS REGISTRATION No. DS2014 / 000149
PART 01

ISSUE STATUS FC
EDMS No.
SHEET No. UT-0110
ISSUE F



GALSTON ROAD - LINE MARKING AND SIGNAGE PLAN
SCALE 1:500

REF	SIGN	CODE
#1	GIVE WAY	R1-2
#2	KEEP LEFT	R2-3
#3	ONLY	R2-14
#5	BUS ZONE	R5-20(L)
#6	BUS ZONE	R5-20(R)
#5	BUS ZONE	R5-20(L)

REF	SIGN	CODE
#6	BUS ZONE	R5-20(R)
#7	NO STOPPING	R5-400(L)
#8	NO STOPPING	R5-400(R)
#9	NO STOPPING	R5-400(L+R)
#10		W6-1B
#11	REFUGE ISLAND	W8-25B

Transport Roads & Maritime Services
These plans are accepted for construction
Project Manager
Date 07/08/17

LEGEND

(BB) PROPOSED LINEMARKING - REFER RMS DOCUMENT DELINEATION SECTION 4 - LONGITUDINAL MARKINGS

NOTES

1. ALL LINE MARKING SHOULD BE CONSTRUCTED IN ACCORDANCE TO RMS STANDARDS.
2. ALL SIGNS TO BE LOCATED IN ACCORDANCE WITH RMS STANDARDS.

FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
0 5 10 15 20 25 30 35 40 45 50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MIE\6_3_4 MHT UDI\Galston Road - drawings\DS2014-000149-DD-RF-0111.dwg

EXTERNAL REFERENCE FILES: X - 111403 - Survey; X - 111403 - IE - BASE; 3306

REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
A	08-07-16	ISSUED FOR 100% DESIGN DEVELOPMENT		
B	02-11-16	INCORPORATED RMS COMMENTS DATED 21-07-2016	SK	PE
C	15-12-16	INCORPORATED RMS COMMENTS DATED 21-07-2016	SK	PE
D	27-01-16	INCORPORATED BRS COMMENTS DATED 22-12-2016	SK	PE
E	28-04-17	INCORPORATED BRS COMMENTS DATED 13-03-2017	SK	PE
F	05-06-17	INCORPORATED RMS COMMENTS DATED 16-05-2017	SK	PE

DESIGN LOT CODE:

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING:

SCALES ON A3 SIZE DRAWING: 0 2.5 5 7.5 10 12.5m — SCALE 1:500 AT ORIGINAL SIZE

CO-ORDINATE SYSTEM: MGA ZONE 56 | HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY: Meinhardt Australia Pty Ltd

	NAME	DATE
PLOT DATE / TIME	3/11/2014 2:21:41 PM	
PLOT BY	Aseip	
TITLE		
DRAWN	D.CREARY	
DRG CHECK	M.GRINHAM	
DESIGN	A.PHAM	
DESIGN CHECK	S.DUNSTONE	
DESIGN MNGR	P.ENOCH	
PROJECT MNGR	P.ENOCH	

CLIENT: Transport Roads & Maritime Services

PREPARED FOR: BRANCH NAME, SECTION NAME, DEPARTMENT NAME

HORNSBY SHIRE COUNCIL
MR 161 - GALSTON ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

LINE MARKING & SIGNAGE PLAN

A3

SHEET 14 OF 21

RMS REGISTRATION No. DS2014 / 000149 | PART 01

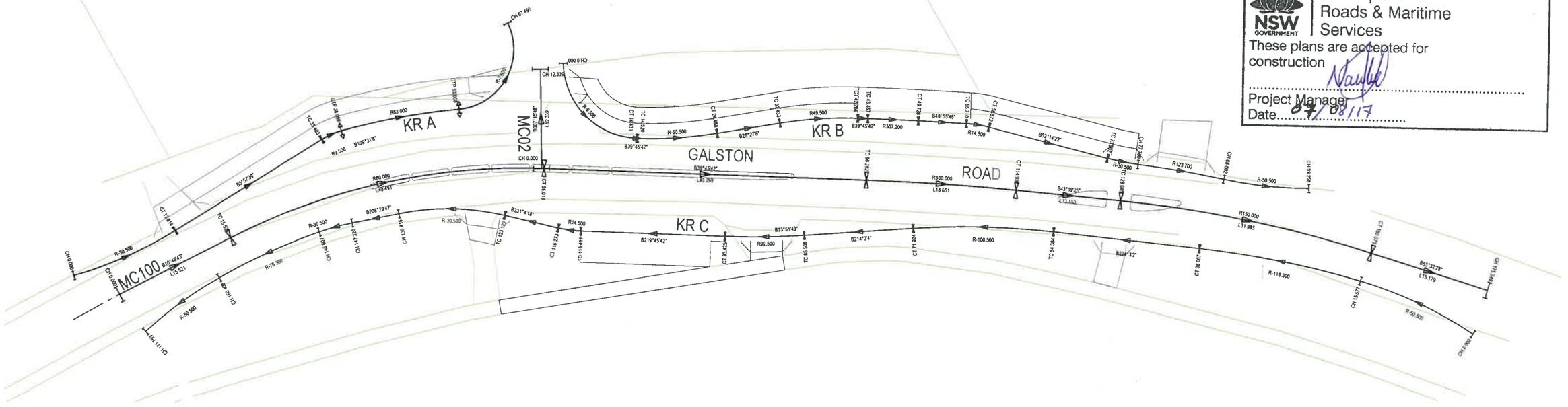
ISSUE STATUS: FC | EDMS No. | SHEET No. RF-0111 | ISSUE F

DIAL BEFORE YOU DIG www.1100.com.au

WARNING
PROPOSED SERVICES
THE LOCATION AND EXTENT OF PROPOSED SERVICES IS INDICATIVE ONLY AND ARE NOT TO BE USED FOR CONSTRUCTION. REFER TO AUTHORISED DOCUMENTATION BY RELEVANT AUTHORITY FOR CONSTRUCTION DETAILS

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

NSW GOVERNMENT | Transport Roads & Maritime Services
These plans are accepted for construction
Project Manager
Date 24/08/17



SETOUT ROAD CL - MC 100

Pt	Chainage	Easting	Northing	Bearing	Rad/Spiral	A.Length	D.Angle
IP1	0.000	318238.721	6274408.140	10°45'43.25"			
TC	15.521	318241.619	6274423.389	10°45'43.25"			
IP2	35.767	318245.483	6274443.714		80	40.491	28°59'58.82"
CT	56.013	318258.715	6274459.618	39°45'42.07"			
TC	96.282	318284.471	6274490.573	39°45'42.07"			
IP3	105.607	318290.438	6274497.744		300	18.651	3°33'43.26"
CT	114.932	318296.838	6274504.530	43°19'25.33"			
TC	128.085	318305.862	6274514.099	43°19'25.33"			
IP4	144.077	318316.877	6274525.777		150	31.985	12°13'02.33"
CT	160.070	318330.113	6274534.861	55°32'27.66"			
IP5	175.249	318342.629	6274543.449	55°32'27.66"			

SETOUT TABLE - KERB KR A (LIP OF KERB)

Pt	Chainage	Easting	Northing	Bearing	Rad/Spiral	A.Length	D.Angle
IP1	0.000	318233.419	6274405.084	21°38'03.34"			
IP2	6.907	318235.981	6274411.545		-50.5	13.814	15°40'24.54"
CT	13.814	318236.703	6274418.458	5°57'38.80"			
TC	35.403	318238.945	6274439.930	5°57'38.80"			
IP3	36.746	318239.085	6274441.275		9.5	2.687	16°12'14.43"
CC	38.089	318239.596	6274442.527	22°09'53.23"			
IP4	45.549	318242.417	6274449.454		83	14.918	10°17'53.38"
CC	53.008	318246.432	6274455.764	32°27'46.61"			
IP5	60.251	318252.254	6274464.915		-7.5	14.487	110°40'19.94"
IP6	67.495	318241.636	6274467.132	281°47'26.67"			

SETOUT TABLE - KERB KR B (LIP OF KERB)

Pt	Chainage	Easting	Northing	Bearing	Rad/Spiral	A.Length	D.Angle
IP1	0.000	318249.846	6274469.531	126°47'51.43"			
IP2	7.216	318257.069	6274464.128		-9.5	14.431	87°02'09.36"
CT	14.431	318262.839	6274471.063	39°45'42.07"			
TC	14.520	318262.896	6274471.131	39°45'42.07"			
IP3	19.504	318266.094	6274474.975		-50.5	9.968	11°18'35.76"
CT	24.488	318268.476	6274479.371	28°27'06.31"			
TC	32.433	318272.261	6274486.356	28°27'06.31"			
IP4	37.319	318274.596	6274490.666		49.5	9.771	11°18'35.76"
CT	42.204	318277.731	6274494.434	39°45'42.07"			
TC	43.467	318278.539	6274495.404	39°45'42.07"			
IP5	46.598	318280.542	6274497.811		307.2	6.261	1°10'04.16"
CT	49.728	318282.593	6274500.176	40°55'46.22"			
TC	55.710	318286.511	6274504.695	40°55'46.22"			
IP6	57.141	318287.452	6274505.780		14.5	2.862	11°18'35.76"
CT	58.572	318288.587	6274506.659	52°14'21.98"			
TC	73.902	318300.707	6274516.047	52°14'21.98"			
IP7	75.841	318302.242	6274517.236		-30.5	3.878	7°17'03.86"
IP8	77.780	318303.613	6274518.610				
IP9	83.191	318307.439	6274522.441		123.7	10.821	5°00'44.38"
IP10	88.602	318311.584	6274525.924				
IP11	93.930	318315.679	6274529.364		-50.5	10.656	12°05'25.10"
IP12	99.258	318318.963	6274533.585	37°52'37.43"			

SETOUT TABLE - KERB KR C (LIP OF KERB)

Pt	Chainage	Easting	Northing	Bearing	Rad/Spiral	A.Length	D.Angle
IP1	0.000	318345.817	6274538.671	251°49'05.80"			
IP2	7.788	318338.358	6274536.221		-50.5	15.577	17°40'21.89"
IP3	15.577	318331.995	6274531.623				
IP4	25.822	318323.670	6274525.606		-116.3	20.491	10°05'41.55"
CT	36.067	318316.527	6274518.223	224°03'02.42"			
TC	54.384	318303.792	6274505.059	224°03'02.42"			
IP5	63.154	318297.679	6274498.739		-100.5	17.54	9°59'58.49"
CT	71.924	318292.756	6274491.455	214°03'03.93"			
TC	85.508	318285.149	6274480.200	214°03'03.93"			
IP6	90.467	318282.371	6274476.088		99.5	9.917	5°42'38.14"
CT	95.425	318279.197	6274472.273	219°45'42.07"			
TC	113.411	318267.693	6274458.448	219°45'42.07"			
IP7	114.842	318266.775	6274457.344		14.5	2.862	11°18'35.76"
CT	116.273	318265.658	6274456.442	231°04'17.82"			
TC	123.129	318260.325	6274452.134	231°04'17.82"			
IP8	129.772	318255.073	6274447.892		-30.5	13.287	24°57'38.77"
IP9	136.416	318252.102	6274441.830				
IP10	142.320	318249.468	6274436.547				
IP11	144.463	318248.510	6274434.625		-30.5	4.287	8°03'13.21"
IP12	146.607	318247.831	6274432.588				
IP13	153.507	318245.642	6274426.024		-76.3	13.801	10°21'50.05"
IP14	160.408	318244.669	6274419.173				
IP15	166.084	318243.868	6274413.530		-50.5	11.351	12°52'42.30"
IP16	171.759	318244.345	6274407.851	175°12'01.27"			

FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED | 50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MIE\6_3_4 MHT UD\Galston Road - drawings\DS2014-000149-DD-SO-0112-113.dwg

DESIGN LOT CODE:

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING:

EXTERNAL REFERENCE FILES
X - 111403 - SetoutGR
X - 111403 - Survey
X - 111403 - IE - BASE
3306
X - 111403 - IE - DESIGN CONTOURS

REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
A	08-07-16	ISSUED FOR 100% DESIGN DEVELOPMENT		
B	02-11-16	INCORPORATED RMS COMMENTS DATED 21-07-2016	SK	PE
C	15-12-16	SCALE BAR UPDATED	SK	PE
D	27-01-17	NO. OF DRAWINGS UPDATED	SK	PE
E	07-04-17	REVISED DRAWING PRESENTATION	SK	PE
F	28-04-17	INCORPORATED RMS COMMENTS DATED 13-03-17	SK	PE
G	05-06-17	INCORPORATED RMS COMMENTS DATED 16-05-17	SK	PE

SCALES ON A3 SIZE DRAWING: 0 2.5 5 7.5 10 12.5m — SCALE 1:500 AT ORIGINAL SIZE

CO-ORDINATE SYSTEM: MGA ZONE 56 | HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY: Meinhardt Australia Pty Ltd

PLOT DATE / TIME: 3/11/2014 2:21:41 PM | PLOT BY: Aseip

	NAME	DATE
DRAWN	D.CREARY	
DRG CHECK	M.GRINHAM	
DESIGN	A.PHAM	
DESIGN CHECK	S.DUNSTONE	
DESIGN MNGR	P.ENOCH	
PROJECT MNGR	P.ENOCH	

CLIENT: NSW GOVERNMENT Transport Roads & Maritime Services

PREPARED FOR: BRANCH NAME / SECTION NAME / DEPARTMENT NAME

HORNSBY SHIRE COUNCIL
MR 161 - GALSTON ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

A3

SETOUT PLAN
SHEET 1 OF 2 — SHEET 15 OF 21

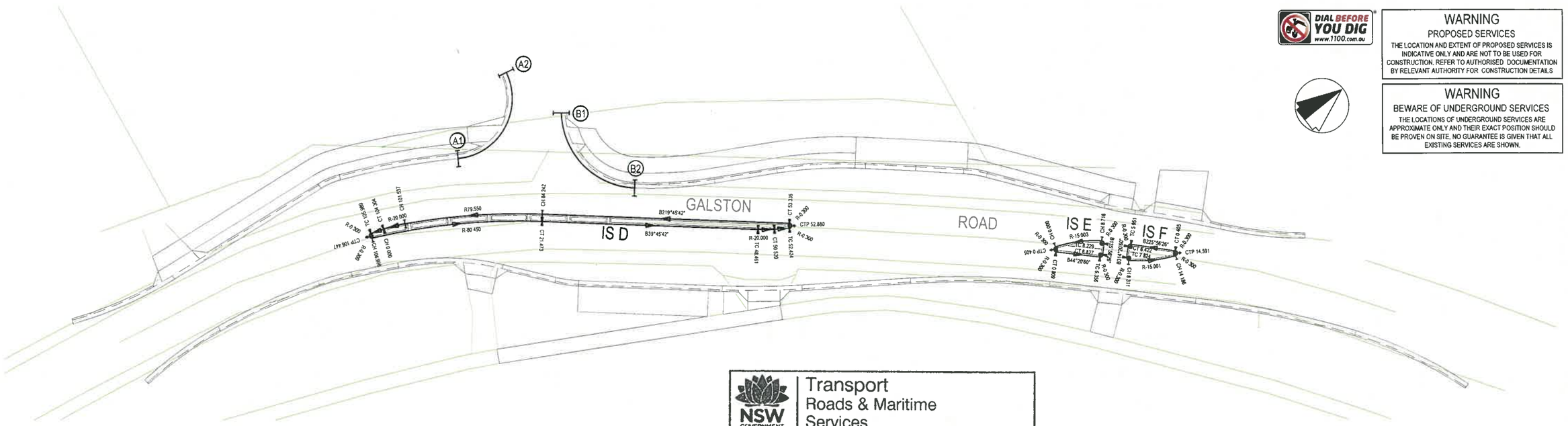
RMS REGISTRATION No. DS2014 / 000149 — PART 01

ISSUE STATUS: FC | EDMS No. | SHEET No. SO-0112 | ISSUE G

DIAL BEFORE YOU DIG www.1100.com.au

WARNING
PROPOSED SERVICES
THE LOCATION AND EXTENT OF PROPOSED SERVICES IS INDICATIVE ONLY AND ARE NOT TO BE USED FOR CONSTRUCTION. REFER TO AUTHORISED DOCUMENTATION BY RELEVANT AUTHORITY FOR CONSTRUCTION DETAILS

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.



NSW GOVERNMENT
Transport
Roads & Maritime
Services
These plans are accepted for construction
.....
Project Manager
Date..07/08/17.....

ALIGNMENT A

Point no	Easting	Northing	RL
A1	318246.432	6274455.764	210.115
A2	318241.636	6274467.132	210.56

CURVE NO	I	RADIUS	ARC	A	B	X	Y	L	MID POINT RL
A1 - A2	110.672	7.5	14.487	3.234	2.377	3.483	2.686	3.622	210.34

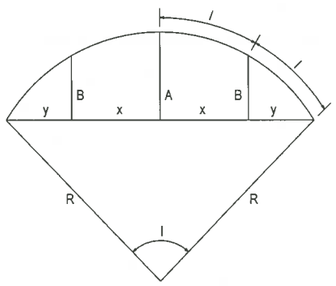
ALIGNMENT B

POINT NO	EASTING	NORTHING	RL
B1	318249.846	6274469.531	210.313
B2	318262.839	6274471.063	209.880

CURVE NO	I	RADIUS	ARC	A	B	X	Y	L	MID POINT RL
B1 - B2	87.036	9.5	14.431	2.611	1.934	3.522	3.02	3.608	210.085

SETOUT KERB ISLAND - IS D

Pt	Chainage	Easting	Northing	Bearing	Rad/Spiral	A.Length	D.Angle
IP1	0.000	318247.708	6274441.181	24°17'46.08"			
IP2	10.736	318252.152	6274451.027		79.55	21.473	15°27'55.99"
CT	21.473	318259.061	6274459.330	39°45'42.07"			
TC	48.461	318276.323	6274480.077	39°45'42.07"			
IP3	49.491	318276.982	6274480.869		-20	2.059	5°53'59.33"
CT	50.520	318277.556	6274481.725	33°51'42.73"			
TC	52.424	318278.617	6274483.305	33°51'42.73"			
IP4	52.652	318278.776	6274483.542		-0.3	0.456	87°03'00.33"
CC	52.880	318278.548	6274483.713	306°48'42.40"			
IP5	53.107	318278.319	6274483.883		-0.3	0.456	87°03'00.33"
CT	53.335	318278.137	6274483.664	219°45'42.07"			
IP6	84.242	318258.369	6274459.906				
IP7	92.890	318252.817	6274453.233		-80.45	17.295	12°19'02.60"
IP8	101.537	318248.816	6274445.529				
IP9	102.920	318248.178	6274444.299		-20	2.767	7°55'31.94"
CT	104.304	318247.715	6274442.993	199°31'07.53"			
TC	105.989	318247.152	6274441.405	199°31'07.53"			
IP10	106.218	318247.056	6274441.134		-0.3	0.459	87°36'40.72"
CC	106.447	318247.323	6274441.027	111°54'26.80"			
IP11	106.677	318247.589	6274440.919		-0.3	0.459	87°36'40.72"
IP12	106.906	318247.708	6274441.181	24°17'46.08"			



LIP PROFILE SETOUT

LIP PROFILE A-A

LIP PROFILE B-B

SETOUT KERB ISLAND - IS E

Pt	Chainage	Easting	Northing	Bearing	Rad/Spiral	A.Length	D.Angle
IP1	0.000	318300.814	6274508.270				
IP2	0.202	318300.736	6274508.043		-0.3	0.405	77°17'43.36"
CC	0.405	318300.940	6274507.917	121°38'43.09"			
IP3	0.607	318301.145	6274507.791		-0.3	0.405	77°17'43.36"
CT	0.809	318301.312	6274507.963	44°20'59.72"			
TC	6.356	318305.189	6274511.929	44°20'59.72"			
IP4	6.591	318305.399	6274512.143		-0.3	0.471	90°00'00.00"
CT	6.827	318305.185	6274512.353	314°20'59.72"			
TC	8.229	318304.182	6274513.333	314°20'59.72"			
IP5	8.473	318303.956	6274513.554		-0.3	0.487	92°58'10.06"
IP6	8.716	318303.747	6274513.317				
IP7	11.654	318301.780	6274511.084		-15.003	5.875	22°26'08.44"

SETOUT KERB ISLAND - IS F

Pt	Chainage	Easting	Northing	Bearing	Rad/Spiral	A.Length	D.Angle
CC	0.000	318310.641	6274519.818	303°14'09.33"			
IP2	0.202	318310.440	6274519.950		-0.3	0.405	77°17'43.36"
CT	0.405	318310.268	6274519.783	225°56'25.97"			
TC	5.951	318306.282	6274515.926	225°56'25.97"			
IP3	6.187	318306.066	6274515.717		-0.3	0.471	90°00'00.00"
CT	6.422	318306.275	6274515.502	135°56'25.97"			
TC	7.824	318307.250	6274514.494	135°56'25.97"			
IP4	8.068	318307.470	6274514.267		-0.3	0.487	92°58'03.98"
IP5	8.311	318307.685	6274514.498				
IP6	11.249	318309.713	6274516.676		-15.001	5.875	22°26'20.42"
IP7	14.186	318310.757	6274519.462				
IP1	14.389	318310.841	6274519.687		-0.3	0.405	77°17'43.36"
CC	14.591	318310.641	6274519.818	303°14'09.33"			

FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
0 5 10 15 20 25 30 35 40 45 50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME
X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MIE\6_3_4 MHT UD\Galston Road - drawings\DS2014-000149-DD-SO-0112-113.dwg

DESIGN LOT CODE

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING

PLOT DATE / TIME: 3/11/2014 2:21:41 PM
PLOT BY: Aseip

CLIENT: NSW GOVERNMENT Transport Roads & Maritime Services

HORNSBY SHIRE COUNCIL
MR 161 - GALSTON ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

SETOUT PLAN
SHEET 2 OF 2
SHEET 16 OF 21

A3

EXTERNAL REFERENCE FILES
X - 111403 - SetoutGR
X - 111403 - Survey
X - 111403 - IE - BASE
3306
LS--KR-A1
LS--KR-B2

REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
A	08-07-16	ISSUED FOR 100% DESIGN DEVELOPMENT		
B	02-11-16	INCORPORATED RMS COMMENTS DATED 21-07-2016	SK	PE
C	15-12-16	SCALE BAR UPDATED	SK	PE
D	27-01-17	NO. OF DRAWINGS UPDATED	SK	PE
E	07-04-17	REVISED DRAWING PRESENTATION	SK	PE
F	28-04-17	INCORPORATED RMS COMMENTS DATED 13-03-17	SK	PE
G	05-06-17	INCORPORATED RMS COMMENTS DATED 16-05-17	SK	PE

SCALES ON A3 SIZE DRAWING
0 2.5 5 7.5 10 12.5m
SCALE 1:500 AT ORIGINAL SIZE

CO-ORDINATE SYSTEM: MGA ZONE 56
HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY
MEINHARDT
Meinhardt Australia Pty Ltd

	NAME	DATE
TITLE		
DRAWN	D.CREARY	
DRG CHECK	M.GRINHAM	
DESIGN	A.PHAM	
DESIGN CHECK	S.DUNSTONE	
DESIGN MNGR	P.ENOCH	
PROJECT MNGR	P.ENOCH	

PREPARED FOR
BRANCH NAME
SECTION NAME
DEPARTMENT NAME

RMS REGISTRATION No. DS2014 / 000149
PART 01

ISSUE STATUS: FC
EDMS No.:
SHEET No.: SO-0113
ISSUE: G

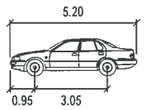
GALSTON ROAD - B99 ENTERING AND EXITING

GALSTON ROAD - 8.8m SRV ENTERING AND EXITING

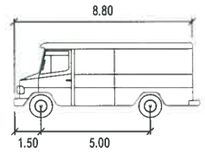
WARNING
PROPOSED SERVICES
THE LOCATION AND EXTENT OF PROPOSED SERVICES IS INDICATIVE ONLY AND ARE NOT TO BE USED FOR CONSTRUCTION. REFER TO AUTHORISED DOCUMENTATION BY RELEVANT AUTHORITY FOR CONSTRUCTION DETAILS

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

DIAL BEFORE YOU DIG www.1100.com.au



CAR	meters
Width	: 1.94
Track	: 1.84
Lock to Lock Time	: 6.0
Steering Angle	: 33.5



SERVICE VEHICLE	meters
Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 38.7

NSW GOVERNMENT Transport Roads & Maritime Services
These plans are accepted for construction
.....
Project Manager
Date. 07/03/17

FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED 50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MIE\6_3_4 MHT UD\Galston Road - drawings\DS2014-000149-DD-MS-0114.dwg

DESIGN LOT CODE:

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING:

PLOT DATE / TIME: 3/11/2014 2:21:41 PM PLOT BY: LShusharina

CLIENT: NSW GOVERNMENT Transport Roads & Maritime Services

HORNSBY SHIRE COUNCIL
MR 161 - GALSTON ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

TURNING PATHS PLAN

A3

SHEET 17 OF 21

EXTERNAL REFERENCE FILES
X - 111403 - Survey
X - 111403-IE - BASE
X - 111403 - IE - TURNING
B1418-DETAIL modify
3306

REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
A	08-07-16	ISSUED FOR 100% DESIGN DEVELOPMENT		
B	02-11-16	INCORPORATED RMS COMMENTS DATED 21-07-2016	SK	PE
C	15-12-16	SCALE BAR UPDATED	SK	PE
D	27-01-17	INCORPORATED BRS COMMENTS DATED 22-12-2016	SK	PE
E	28-04-17	INCORPORATED BRS COMMENTS DATED 13-03-2017	SK	PE
F	05-06-17	INCORPORATED RMS COMMENTS DATED 16-05-2017	SK	PE

SCALES ON A3 SIZE DRAWING: 0 2.5 5 7.5 10 12.5m — SCALE 1:500 AT ORIGINAL SIZE

CO-ORDINATE SYSTEM: MGA ZONE 56 HEIGHT DATUM: AHD

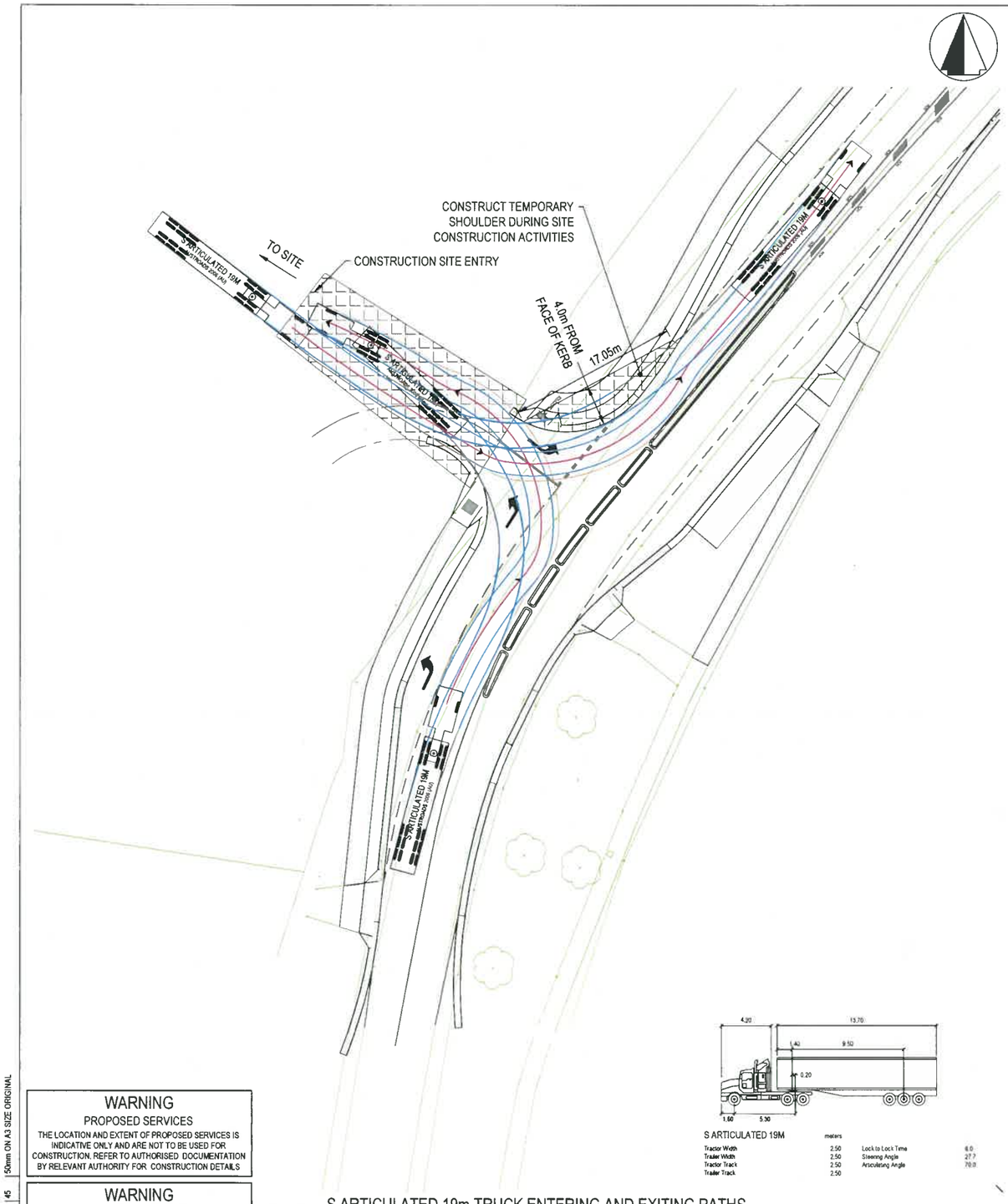
DRAWINGS / DESIGN PREPARED BY: MEINHARDT Meinhardt Australia Pty Ltd

	NAME	DATE
DRAWN	D.CREARY	
DRG CHECK	M.GRINHAM	
DESIGN	A.PHAM	
DESIGN CHECK	S.DUNSTONE	
DESIGN MNGR	P.ENOCH	
PROJECT MNGR	P.ENOCH	

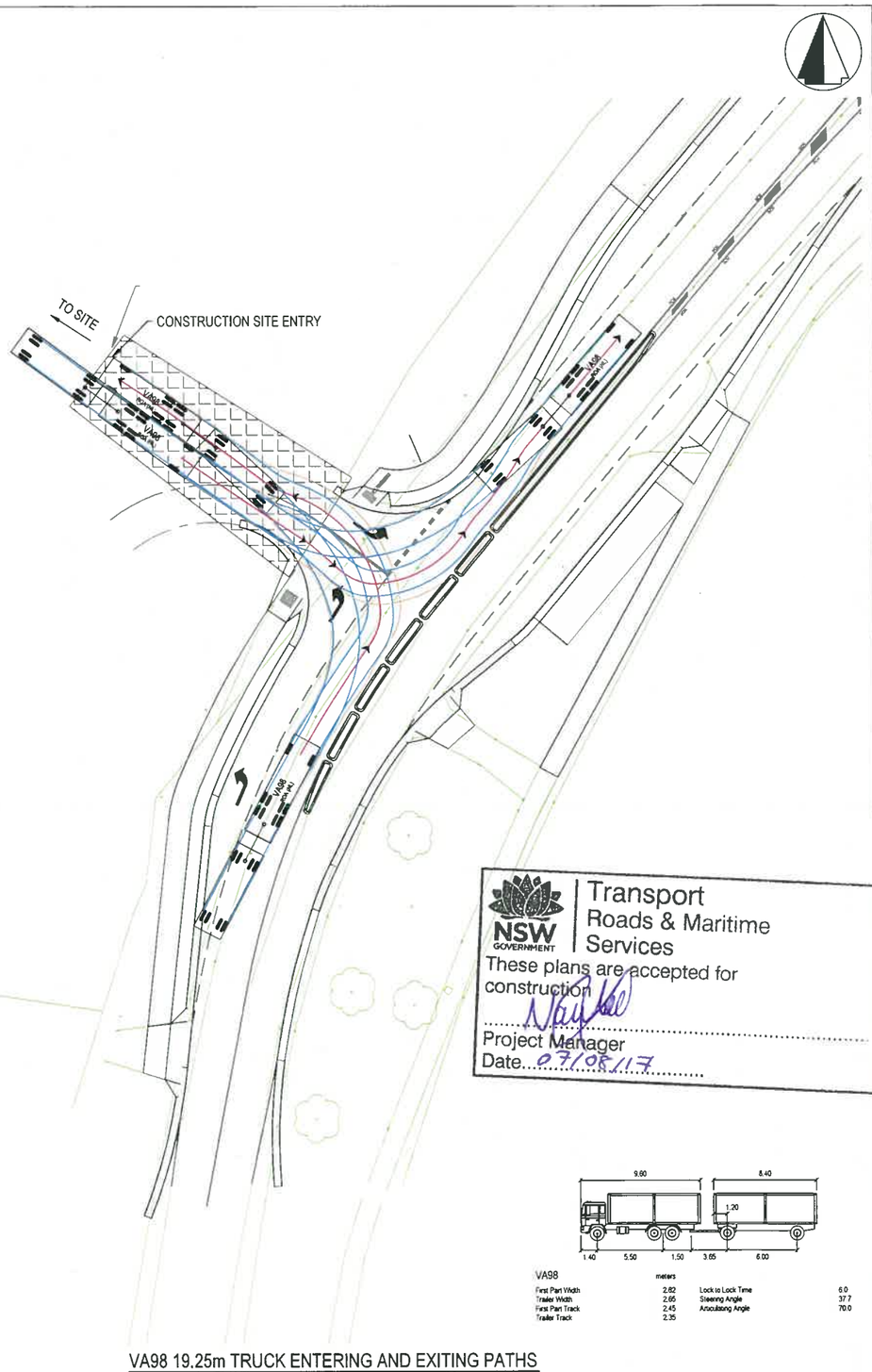
PREPARED FOR: BRANCH NAME, SECTION NAME, DEPARTMENT NAME

RMS REGISTRATION No. DS2014 / 000149 PART 01

ISSUE STATUS: FC EDMS No. SHEET No. MS-0114 ISSUE F



S ARTICULATED 19m TRUCK ENTERING AND EXITING PATHS



VA98 19.25m TRUCK ENTERING AND EXITING PATHS

Transport Roads & Maritime Services
These plans are accepted for construction
Project Manager
Date...07/05/17

S ARTICULATED 19M

meters			
Tractor Width	2.50	Lock to Lock Time	6.0
Trailer Width	2.50	Steering Angle	27.7
Tractor Track	2.50	Articulating Angle	70.0
Trailer Track	2.50		

VA98

meters			
First Part Width	2.82	Lock to Lock Time	6.0
Trailer Width	2.65	Steering Angle	37.7
First Part Track	2.45	Articulating Angle	70.0
Trailer Track	2.35		

WARNING
PROPOSED SERVICES
THE LOCATION AND EXTENT OF PROPOSED SERVICES IS INDICATIVE ONLY AND ARE NOT TO BE USED FOR CONSTRUCTION. REFER TO AUTHORISED DOCUMENTATION BY RELEVANT AUTHORITY FOR CONSTRUCTION DETAILS

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

DIAL BEFORE YOU DIG www.1100.com.au

FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
0 5 10 15 20 25 30 35 40 45 50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MIE\6_3_4 MHT UD\Galston Road - drawings\DS2014-000149-DD-MS-0115.dwg

DESIGN LOT CODE

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING

PLOT DATE / TIME: 3/11/2014 2:21:41 PM PLOT BY: Aseip

CLIENT: Transport Roads & Maritime Services

HORNSBY SHIRE COUNCIL
MR 161 - GALSTON ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

CONSTRUCTION VEHICLE TURNING PATHS PLAN

SHEET 18 OF 21

A3

EXTERNAL REFERENCE FILES
X - 111403 - Survey
3306
X - 111403-IE - BASE
X - 111403-IE TURNING
B1418-DETAIL modify

REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
A	08-07-16	ISSUED FOR 100% DESIGN DEVELOPMENT		
B	02-11-16	INCORPORATED RMS COMMENTS DATED 21-07-2016	SK	PE
C	15-12-16	SCALE BAR UPDATED	SK	PE
D	27-01-17	INCORPORATED BRS COMMENTS DATED 22-12-2016	SK	PE
E	28-04-17	INCORPORATED BRS COMMENTS DATED 13-03-2017	SK	PE
F	05-06-17	INCORPORATED RMS COMMENTS DATED 16-05-2017	SK	PE

SCALES ON A3 SIZE DRAWING: 0 2.5 5 7.5 10 12.5m — SCALE 1:500 AT ORIGINAL SIZE

CO-ORDINATE SYSTEM: MGA ZONE 56 HEIGHT DATUM: AHD

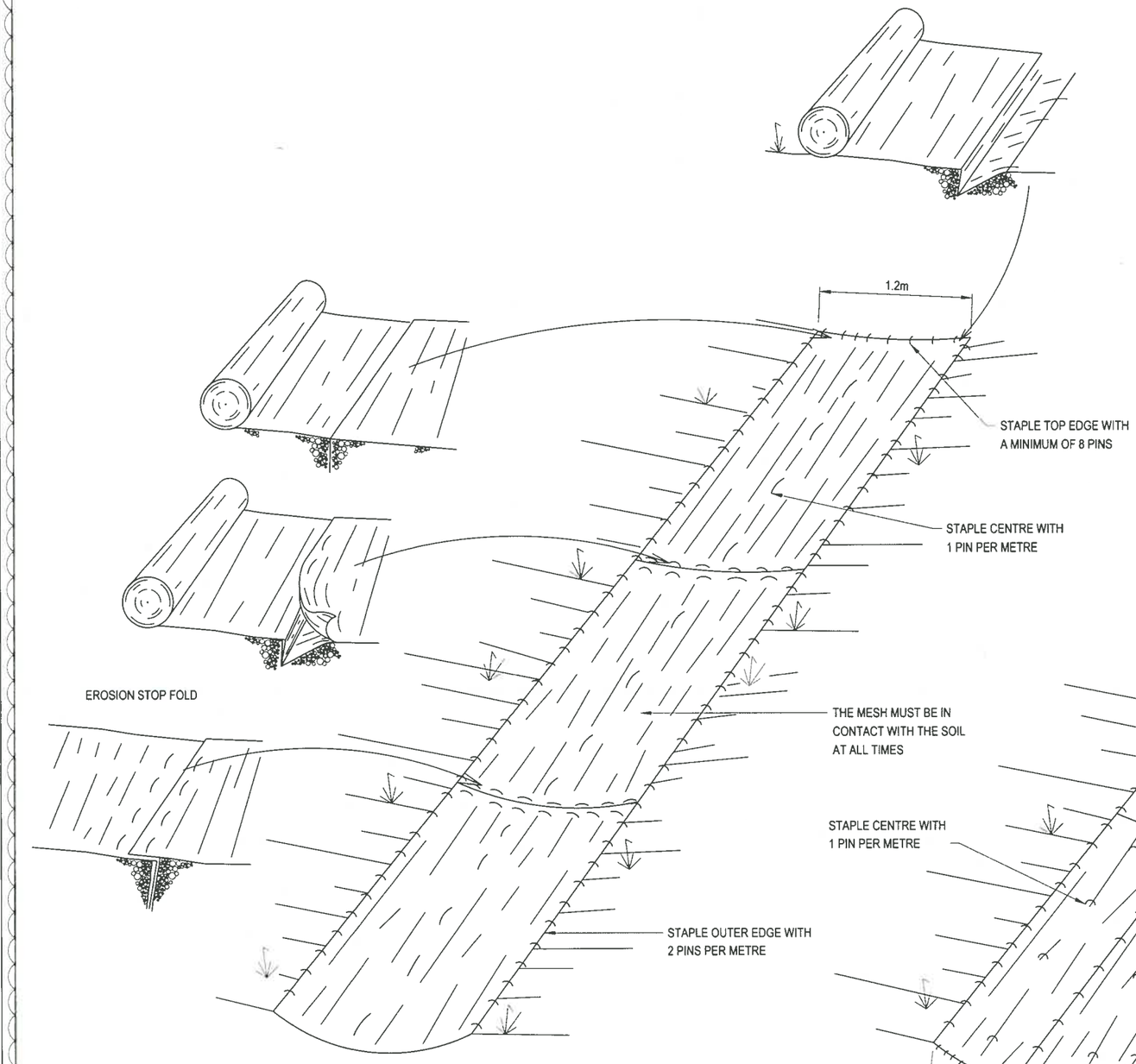
DRAWINGS / DESIGN PREPARED BY: Meinhardt Australia Pty Ltd

	NAME	DATE
TITLE		
DRAWN	D.CREARY	
ORG CHECK	M.GRINHAM	
DESIGN	A.PHAM	
DESIGN CHECK	S.DUNSTONE	
DESIGN MNGR	P.ENOCH	
PROJECT MNGR	P.ENOCH	

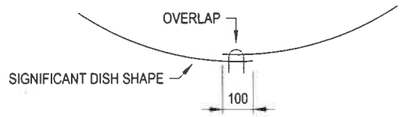
PREPARED FOR
BRANCH NAME
SECTION NAME
DEPARTMENT NAME

RMS REGISTRATION No. DS2014 / 000149 PART 01

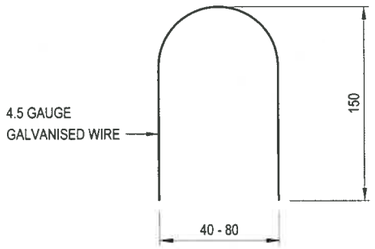
ISSUE STATUS: FC EDMS No. SHEET No.: MS-0115 ISSUE: F



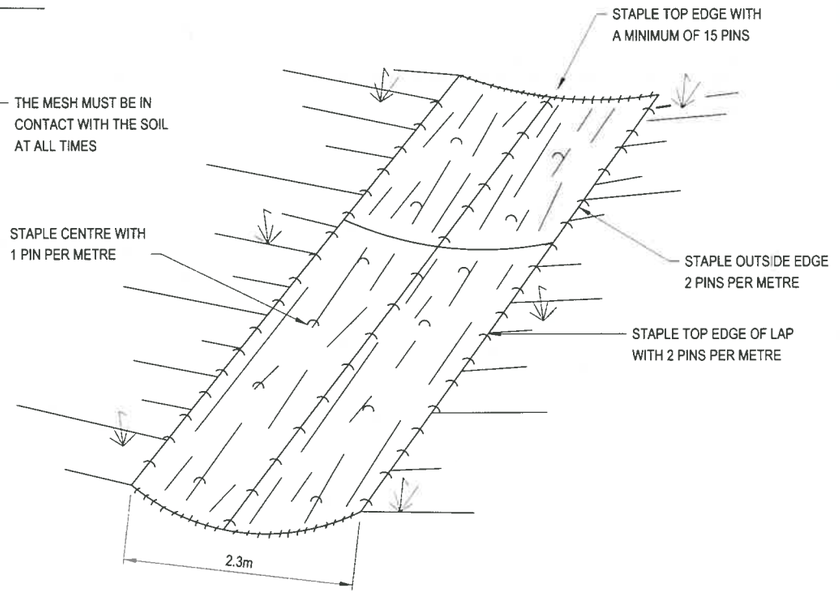
SINGLE LAYER



OVERLAP DETAIL



PIN DETAIL



MULTIPLE LAYER

D

Transport Roads & Maritime Services

These plans are accepted for construction

Project Manager

Date 07/08/17

A. SINGLE STRIP METHOD

1. BURY THE TOP END OF THE ORGANIC FIBRE REINFORCED MESH STRIP (JUTE MESH) IN A TRENCH 150 OR MORE IN DEPTH.
2. TAMP THE TRENCH FULL OF SOIL. SECURE WITH A ROW OF PINS - MINIMUM NUMBER 8.
3. LAY MESH ALONG DRAIN WITHOUT STRETCHING THE MESH.
4. OVERLAP-BURY UPPER END OF LOWER STRIP AS IN 1 AND 2. OVERLAP END OF TOP STRIP 150 AND STAPLE.
5. EROSION STOP FOLD OF MESH BURIED IN SLIT TRENCH AND TAMPED; DOUBLE ROW OF STAPLES.
6. STAPLE THE MESH ALONG EACH EDGE AND CENTRE WITH TWO PINS ON EACH EDGE AND 1 IN CENTRE PER METRE OF MESH.
7. AFTER SEEDING AND LAYING JUTE MESH, APPLY A SLOW-BREAKING MEDIUM SETTING ANIONIC BITUMEN EMULSION AT A RATE IN ACCORDANCE WITH THE ROADS AND MARITIME SERVICES SPECIFICATION R111 SPRAYED BITUMINOUS SURFACING (WITH BITUMEN EMULSION). A HEAVIER APPLICATION IS TO BE MADE ON OUTER EDGES AND JOINTS.
8. ANIONIC BITUMEN TO BE APPLIED IN ALL INSTANCES EXCEPT UPON THE SUPERINTENDENTS DISCRETION FOR ENVIRONMENTAL REASONS.

B. TWO OR MORE STRIPS METHOD

1. PROCEED AS FOR SINGLE STRIP FOR EACH ROW. PROVIDE 150 OVERLAP BETWEEN ADJOINING STRIPS AND STAPLE ALONG TOP EDGE BETWEEN STRIPS.
2. AFTER SEEDING AND LAYING JUTE MESH, APPLY A SLOW-BREAKING MEDIUM SETTING ANIONIC BITUMEN EMULSION AT A RATE IN ACCORDANCE WITH THE SPECIFICATION. A HEAVIER APPLICATION IS TO BE MADE ON OUTER EDGES AND JOINTS.
3. ANIONIC BITUMEN TO BE APPLIED IN ALL INSTANCES EXCEPT UPON THE SUPERINTENDENTS DISCRETION FOR ENVIRONMENTAL REASONS.

NOTES

1. PRIOR TO PLACING THE ORGANIC FIBRE REINFORCED MESH (JUTE MESH), THE DRAIN SHALL BE PREPARED IN ACCORDANCE WITH ROADS AND MARITIME SERVICES SPECIFICATION R11 STORMWATER DRAINAGE.

FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
0 5 10 15 20 25 30 35 40 45 50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MIE\6_3_4 MHT UDI\Galston Road - drawings\DS2014-000149-DD-MS-0120.dwg

DESIGN LOT CODE:

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING:

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
	A	02-11-16	INCORPORATED RMS COMMENTS DATED 21-07-2016	SK	PE
	B	27-01-17	NO. OF DRAWINGS UPDATED	SK	PE
	C	28-04-17	INCORPORATED RMS COMMENTS DATED 13-03-2017	SK	PE
	D	05-06-17	INCORPORATED RMS COMMENTS DATED 16-05-2017	SK	PE

SCALES ON A3 SIZE DRAWING

CO-ORDINATE SYSTEM: MGA ZONE 56

HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY: Meinhardt Australia Pty Ltd

PLOT DATE / TIME: 3/11/2014 2:21:41 PM

PLOT BY: Aseip

TITLE	NAME	DATE
DRAWN	D.CREARY	
DRG CHECK	M.GRINHAM	
DESIGN	A.PHAM	
DESIGN CHECK	S.DUNSTONE	
DESIGN MNGR	P.ENOCH	
PROJECT MNGR	P.ENOCH	

CLIENT: Transport Roads & Maritime Services

PREPARED FOR: BRANCH NAME, SECTION NAME, DEPARTMENT NAME

HORNSBY SHIRE COUNCIL
MR 161 - GALSTON ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

MISCELLANEOUS DETAILS

A3

SHEET 19 OF 21

RMS REGISTRATION No. DS2014 / 000149

PART 01

ISSUE STATUS: FC

EDMS No.

SHEET No. MS-0120

ISSUE D

WARNING

PROPOSED SERVICES

THE LOCATION AND EXTENT OF PROPOSED SERVICES IS INDICATIVE ONLY AND ARE NOT TO BE USED FOR CONSTRUCTION. REFER TO AUTHORISED DOCUMENTATION BY RELEVANT AUTHORITY FOR CONSTRUCTION DETAILS

WARNING

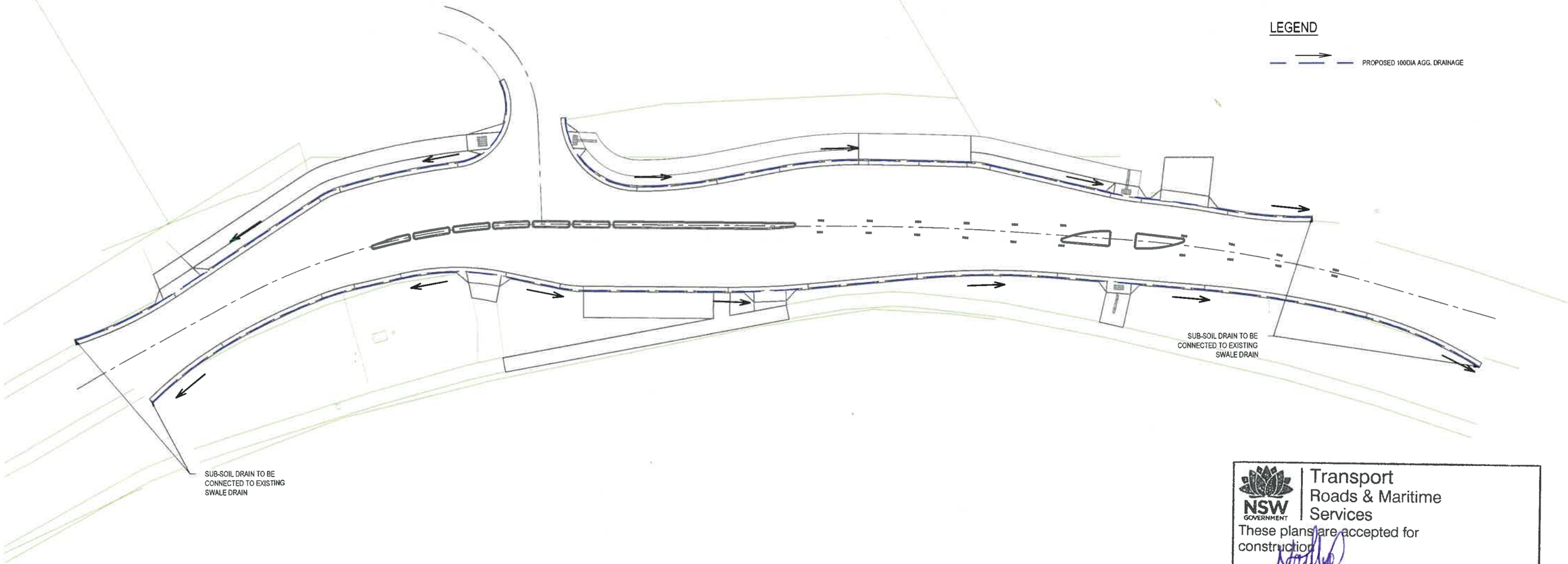
BEWARE OF UNDERGROUND SERVICES

THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

DIAL BEFORE YOU DIG www.1100.com.au

LEGEND

PROPOSED 100DIA AGG. DRAINAGE



Transport Roads & Maritime Services

These plans are accepted for construction

.....

Project Manager

Date 07/08/17

GALSTON ROAD - DRAINAGE PLAN

SCALE 1:500

FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED

150mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME	DESIGN LOT CODE	DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING	PLOT DATE / TIME	PLOT BY	CLIENT	A3
X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MIE\6_3_4 MHT UDI\Galston Road - drawings\DS2014-000149-DD-SM-0130.dwg			3/11/2014 2:21:41 PM	Aseip	Transport Roads & Maritime Services	HORNSBY SHIRE COUNCIL MR 161 - GALSTON ROAD ROAD WORKS IN ASSOCIATION WITH 392 GALSTON ROAD, GALSTON GALSTON GRANGE DEVELOPMENT

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
X - 111403 - Survey 3306 X - 111403 - IE - BASE	A	05-06-17	INCORPORATED RMS COMMENTS DATED 16-05-2017	SK	PE

SCALES ON A3 SIZE DRAWING: 0 2.5 5 7.5 10 12.5m — SCALE 1:500 AT ORIGINAL SIZE

CO-ORDINATE SYSTEM: MGA ZONE 56 — HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY: Meinhardt Australia Pty Ltd

	NAME	DATE
TITLE		
DRAWN	L.SHUSHARINA	
DRG CHECK	M.GRINHAM	
DESIGN	A.PHAM	
DESIGN CHECK	S.DUNSTONE	
DESIGN MNGR	P.ENOCH	
PROJECT MNGR	P.ENOCH	

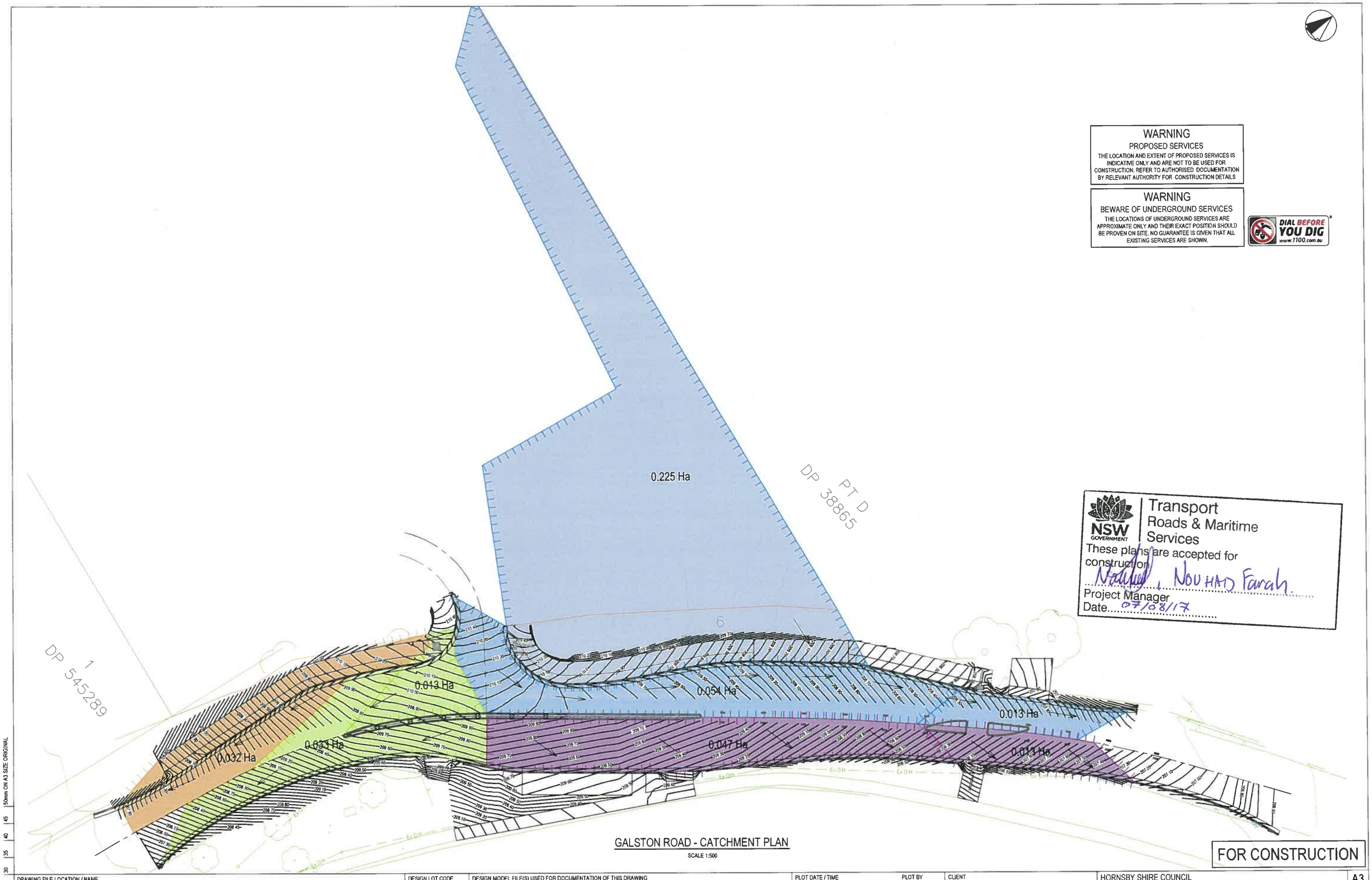
PREPARED FOR: BRANCH NAME / SECTION NAME / DEPARTMENT NAME

DRAINAGE PLAN

SHEET 20 OF 21

RMS REGISTRATION No. DS2014 / 000149 — PART 01

ISSUE STATUS: FC — EDMS No. — SHEET No. SM-0130 — ISSUE A



WARNING

PROPOSED SERVICES

THE LOCATION AND EXTENT OF PROPOSED SERVICES IS INDICATIVE ONLY AND ARE NOT TO BE USED FOR CONSTRUCTION. REFER TO AUTHORISED DOCUMENTATION BY RELEVANT AUTHORITY FOR CONSTRUCTION DETAILS

WARNING

BEWARE OF UNDERGROUND SERVICES

THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

DIAL BEFORE YOU DIG www.1100.com.au

Transport Roads & Maritime Services
These plans are accepted for construction
Nadine L Nou HMD Farah
Project Manager
Date 07/08/17

GALSTON ROAD - CATCHMENT PLAN

SCALE 1:500

FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED

0 5 10 15 20 25 30 35 40 45 50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME
X:\111403 - Galston-Grange Retirement-Village\6BIM\6_3 MHT MIE\6_3_4 MHT UDI\Galston Road - drawings\DS2014-000149-DD-SM-0131.dwg

DESIGN LOT CODE

DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
X - 111403 - Survey	A	02-11-16	INCORPORATED RMS COMMENTS DATED 21-07-2016	SK	PE
3306	B	15-12-16	SCALE BAR UPDATED	SK	PE
X - 111403 - IE - BASE CATC	C	27-01-17	NO. OF DRAWINGS UPDATED	SK	PE
X - 111403 - IE DESIGN CONTOURS	D	07-04-17	REVISED DRAWING PRESENTATION	SK	PE
X - 111403 - IE - BASE	E	28-04-17	INCORPORATED RMS COMMENTS DATED 13-03-2017	SK	PE
	F	05-06-17	INCORPORATED RMS COMMENTS DATED 16-05-2017	SK	PE

SCALES ON A3 SIZE DRAWING

0 2.5 5 7.5 10 12.5m

SCALE 1:500 AT ORIGINAL SIZE

CO-ORDINATE SYSTEM: MGA ZONE 56
HEIGHT DATUM: AHD

DRAWINGS / DESIGN PREPARED BY

MEINHARDT
Meinhardt Australia Pty Ltd

PLOT DATE / TIME: 3/11/2014 2:21:41 PM
PLOT BY: Aseip

TITLE	NAME	DATE
DRAWN	D.CREARY	
DRG CHECK	M.GRINHAM	
DESIGN	A.PHAM	
DESIGN CHECK	S.DUNSTONE	
DESIGN MNGR	P.ENOCH	
PROJECT MNGR	P.ENOCH	

CLIENT
Transport Roads & Maritime Services

PREPARED FOR
BRANCH NAME
SECTION NAME
DEPARTMENT NAME

HORNSBY SHIRE COUNCIL
MR 161 - GALSTON ROAD ROAD WORKS IN ASSOCIATION WITH
392 GALSTON ROAD, GALSTON
GALSTON GRANGE DEVELOPMENT

CATCHMENT PLAN

A3

SHEET 21 OF 21

RMS REGISTRATION No. DS2014 / 000149
PART 01
ISSUE STATUS: FC
EDMS No.
SHEET No. SM-0131
ISSUE F