



CIVIL GEOTECHNICAL SERVICES
ABN 26 474 013 724
PO Box 678 Croydon Vic 3136
Telephone: 9723 0744 Facsimile: 9723 0799

20th October 2022

Our Reference: 22735:NB1379

Winslow Constructors Pty Ltd
50 Barry Road
CAMPBELLFIELD VIC 3061

Dear Sirs/Madams,

**RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING
RATHDOWNE – STAGE 37 (WOLLERT)**

Please find attached our Report No 22735/R001 which relates to the field density testing that was conducted within the filled allotments at the above subdivision. The level 1 inspections and associated field density testing was performed in August 2021.

The inspections and testing of the earthworks was undertaken in general accordance with the Level 1 requirements of AS 3798 - Guidelines on Earthworks for Commercial and Residential Developments.

The site inspection and testing was performed by experienced geotechnicians from this office. Any areas that were deemed unsatisfactory were reworked and retested under their supervision. The testing was performed to the relevant Australian Standards and the accompanying test reports carry NATA endorsement. The attached compaction results, which were located randomly throughout the fill profile, are considered to be representative of the bulk fill materials that were placed across the reported allotments by Winslow Constructors during the aforementioned period. The approximate locations of the field density tests can be seen on the attached plan (Figure 1).

We are of the view that the bulk fill materials that have been placed across the reported allotments by Winslow Constructors during the aforementioned period can be considered as having been placed in a controlled manner to a minimum density ratio of 95% (standard compactive effort).

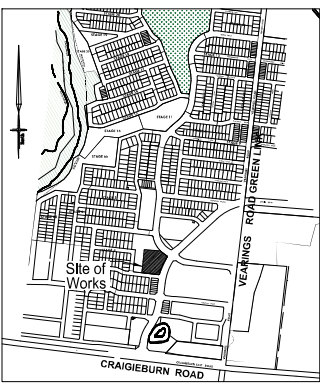
Please contact the undersigned if you require any additional information.

Civil Geotechnical Services

A handwritten signature in blue ink, appearing to be 'Nick Brock', written in a cursive style.

Nick Brock

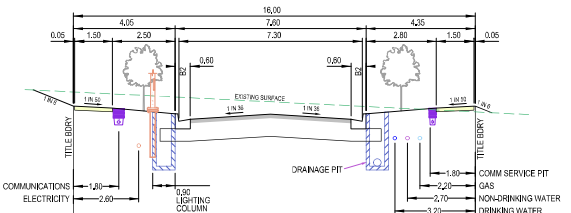
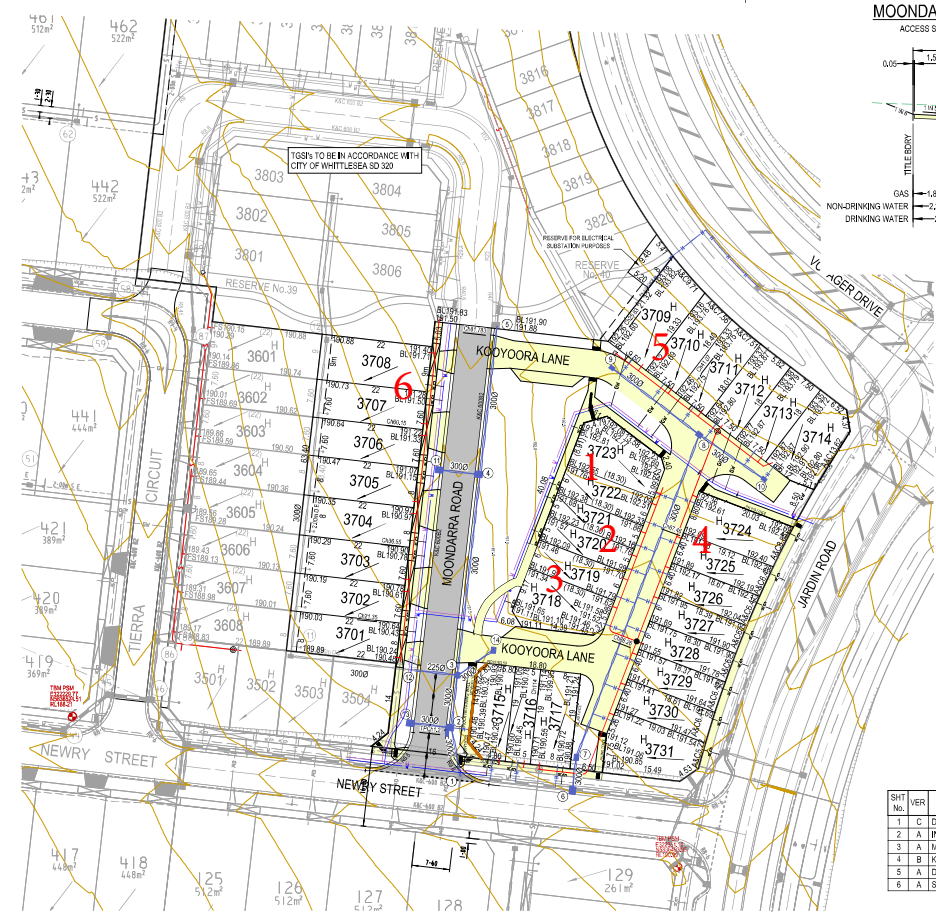
FIGURE 1



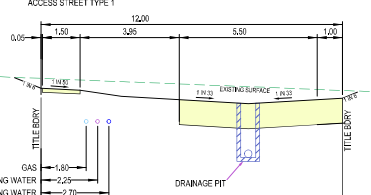
SERVICES OFFSETS AND LOCATIONS

Location	Water			Communications			Electricity			BOK	Road Width	Joint Trenching	Street Classification
	Gas	NDW	OW	Cables	Fits	Cables	Poles	Cables	Poles				
MOONDARRA ROAD	2,20W	2,70W	3,20W	1,80E	1,80E/W	2,60E	1,20 BOK	4,35W/H/0,0E	16	G/W.FT/HE	Level 1		
MOONDARRA ROAD (RESERVE)	1,70E	2,10E	2,60E				1,20 BOK		8	G/W.FT/HE	ACCESS LANE		
KOYOORA LANE (8m)		1,70S	2,10S	2,60S	3,20S		1,20 BOK		8	G/W.FT/HE	ACCESS LANE		
KOYOORA LANE (12m)		1,70S	2,10S	2,60S	3,20S		1,20 BOK		8	G/W.FT/HE	ACCESS LANE		

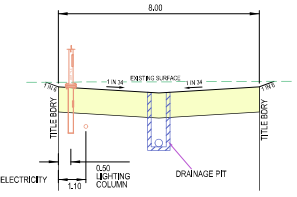
LOCALITY PLAN
N.T.S.
MELWAYS: 388 C 10



MOONDARRA ROAD
ACCESS STREET TYPE 1



KOYOORA LANE LOTS 3709-3714
ACCESS LANE



KOYOORA LANE LOTS 3724-3730 & 3715-1717
ACCESS LANE

CROSSOVERS TO LOTS 3709-3714 TO BE CONSTRUCTED TO EACH STD DRG 501

SHEET INDEX

SHT No.	VER	DESCRIPTION
1	C	DETAIL PLAN, SHEET INDEX, NOTES, LOCALITY
2	A	INTERSECTION DETAILS
3	A	MOONDARRA ROAD LONG AND CROSS SECTIONS
4	B	KOYOORA LANE LONG AND CROSS SECTIONS
5	A	DRAINAGE LONG SECTIONS - FIT SCHEDULE
6	A	SERVICES AND LINEMARKING PLAN

NO.	DATE	REMARKS
B	08.09.21	CONCRETE AREAS IN RESERVE UPDATED
A	16.06.21	ISSUE FOR APPROVAL

breese pitt dixon pty. ltd.
land surveyors civil engineers

MELWAY REF. 388-C-10
SURVEY BPD
DESIGN RGW
DRAWN RGW

RATHDOWNE ESTATE
STAGE 37
DETAIL PLAN

MUNICIPALITY WHITTLESEA
REFERENCE 9365 E/37
SHEET 1 OF 6

1/19 cato street hawthorn east, 3123 telephone 8823 2300 fax no. 8823 2310

NOTES

- ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH PLANS AND CURRENT CITY OF WHITTLESEA SPECIFICATIONS AND STANDARD DRAWINGS APPROVED BY COUNCIL AND TO THE SATISFACTION OF THE ENGINEER.
- CUNING TO BE NOTIFIED 2 CLEAR DAYS PRIOR TO COMMENCEMENT OF WORKS.
- DRAINAGE AND FITS TO BE SETOUT FROM OFFSETS SHOWN RATHER THAN FROM CENTRELINE PIPE CHANGES, REFER EDCOM4-068 FOR FURTHER DETAILS.
- ALL PIPES TO BE CLASS 2 UNLESS OTHERWISE SPECIFIED AND SHALL BE FLUSH UP TO AND INCLUDING 750mm DIAMETER. PIPES ABOVE THIS SIZE MUST BE JOINED WITH EXTERNAL SEALING BANDS. ALL DRAINS THAT CROSS UNDER ROAD PAVEMENTS ARE TO BE CLASS 4 R.C.P.
- JOINING FOR CURVED PIPE ALIGNMENT SHALL CONFORM TO MANUFACTURERS SPECIFICATIONS (I.R.S.'S FOR MINOR DEVIATIONS OR COMPLETE R.C. BANDAGES).
- PROPERTY INLETS ARE TO BE PLACED 1.0m FROM THE LOW CORNER OF LOT UNLESS OTHERWISE SHOWN.
- LOTS DENOTED THIS 416H ARE TO BE PROVIDED WITH A 100mm HOUSE DRAIN PLACED 5.0m FROM THE LOW CORNER OF THE LOT UNLESS OTHERWISE SHOWN, HOUSE DRAINS TO BE CONNECTED TO STREET DRAINAGE WITH 27x & CAP. CLEAR OF ANY PAVING, IF CONNECTION IS WITHIN PAVING A FIT MUST BE USED.
- APPROVED GRANULAR BACKFILL TO BE PROVIDED WHERE PIPE TRENCHES ENCROUGH UNDER ROADWAY DUE TO DEEP EXCAVATIONS IN ROCK.
- SHALLOW CUT OFF DRAINS ARE TO BE PROVIDED ON SUBSIDION BOUNDARY WHERE NECESSARY.
- PRIOR TO COMMENCEMENT OF WORKS ON SITE, THE CONTRACTOR MUST ENSURE THAT ALL MATTERS RELATING TO THE OCCUPATIONAL HEALTH AND SAFETY ACT 2004, INCLUDING ALL RELEVANT REGULATIONS, HAVE BEEN ADDRESSED. IN PARTICULAR, THE REQUIRED NOTIFICATIONS MUST BE CONVEYED TO THE VICTORIAN WORKCOVER AUTHORITY - HEALTH & SAFETY DIVISION WITH RESPECT TO TRENCHING OPERATIONS. DETAILS OF THE CONTRACTORS OCCUPATIONAL HEALTH & SAFETY PROCEDURES MUST BE LOGGED WITH THE SUPERINTENDENT PRIOR TO COMMENCEMENT OF WORKS.
- AGRICULTURAL PIPE DRAINS TO BE PLACED BEHIND ALL KERB AND CHANNEL AND BUFFER PATCHES AND WHERE DIRECTED BY THE ENGINEER TO STD DRG EDCOM04.
- ALL DRAINAGE TRENCHES UNDER ROAD PAVEMENTS, KERB & CHANNEL, PARKING BAYS (DRIVEWAYS, FOOTPATHS AND BENCHING) AND CHANNEL SHALL BE BACKFILLED WITH CRUSHED ROCK.
- BATTERS SHALL BE 1 IN 4 FOR CUT & FILL UNLESS OTHERWISE SHOWN, BATTERS EXCEEDING 1 IN 8 MUST BE STABILISED AS PER COUNCIL REQUIREMENTS.
- ALL NATIVE TREES AND SHRUBS TO BE RETAINED UNLESS ROAD CONSTRUCTION NECESSITATES THEIR REMOVAL OR REMOVAL IS DIRECTED BY THE ENGINEER.
- LOTS TO BE GRADED AND LEFT CLEAN TO THE SATISFACTION OF THE ENGINEER.
- ON COMPLETION THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF RUBBISH AND SPILL FROM SITE.
- WHERE WORKS ARE IN THE VICINITY OF EXISTING SERVICES, THESE SERVICES ARE TO BE LOCATED AND THE VARIOUS AUTHORITIES NOTIFIED PRIOR TO COMMENCEMENT OF WORKS.
- ALL MATERIAL SURROUNDING SERVICE AUTHORITY PITS LOCATED IN FOOTPATHS MUST BE ADEQUATELY COMPACTED IN 150mm LAYERS AND TESTED TO THE SATISFACTION OF THE CITY OF WHITTLESEA PRIOR TO THE CONSTRUCTION OF FOOTPATH BAYS ADJACENT TO THESE PITS.
- THE WATER CONDUIT OFFSET FROM THE LOT BOUNDARY IS GIVEN ON THE WATER RETICULATION PLAN, THE CONTRACTOR MUST CONSTRUCT CONDUITS TO ACCORD WITH THE GIVEN OFFSET AND ENSURE THAT THE CONCRETE MARKS THE KERB AND FOOTPATH EXACTLY ABOVE THE CONDUIT.
- ALL GAS AND WATER CONDUITS FOR RESIDENTIAL LOTS TO BE PVC CLASS 12, 50mm DIAMETER, (DUAL WATER MAINS ONLY)
- ALL GAS AND WATER CONDUITS FOR RESIDENTIAL LOTS TO BE PVC CLASS 12, 50mm DIAMETER & 100mm DIAMETER RESPECTIVELY.
- TELSTRAN GO TO BE NOTIFIED 7 DAYS PRIOR TO CONCRETE BEING PLACED.
- CONDUITS ARE TO BE EXTENDED 450mm BEHIND FACE OF KERB AND TO BE REFERENCED TO FACE OF KERB.
- ALL STREET SIGNS TO BE CONSTRUCTED AND ERECTED TO CURRENT CITY OF WHITTLESEA STANDARDS. STREET NAME PLATES TO BE IN ACCORDANCE WITH STANDARD DRAWING SD85, INCLUDING 'NO THROUGH ROAD' NOMINATION WHERE APPLICABLE.
- TRAFFIC CONTROL SIGNS, MARKINGS & DELINEATORS TO BE INSTALLED IN ACCORDANCE WITH AS1742.2. ALL LINE MARKINGS IS TO BE LONG LIFE ROAD MARKING WITH LONGER LINES IN THERMOPLASTIC TRANSVERSE MARKINGS IN COOL APPLIED.
- ALL DRIVEWAYS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH EDCOM4 & 502 AND ARE TO BE OFFSET 0.75m FROM SIDE BOUNDARY OR OTHERWISE NOTIFIED OTHERWISE SHOWN.
- ALL DRIVEWAY RAMPS INTO PROPERTIES ARE TO BE CUT IN AT A MAXIMUM GRADE OF 1 IN 11.
- ALL PEDESTRIAN CROSSINGS ARE TO BE CONSTRUCTED GENERALLY IN ACCORDANCE WITH EDCOM4. ALL PRAM CROSSING SPLAYS MUST BE 600mm WIDE AND NO GREATER.
- FILL AREAS ARE TO BE STRIPPED OF TOPSOIL, FILLED AND TOPSOIL REPLACED TO OBTAIN FINAL FILL LEVELS AS SHOWN ON PLANS, FILLING TO BE CLEAN CLAY COMPACTED TO A DRY DENSITY NOT LESS THAN 95% OF THE MAXIMUM DRY DENSITY VALUE DETERMINED BY THE STANDARD COMPACTION TEST IN ACCORDANCE WITH AUSTRALIAN STANDARD AS1289.5.2-2003. CONTROL TESTING TO COMPLY WITH AS3798-2007 APPENDIX B LEVEL 1.
- THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL IMPORTED FILL MATERIAL, INCLUDING TOPSOIL, SATISFIES THE DESCRIPTION FOR CLEAN FILL MATERIAL IN EPA BULLETIN PUBLICATION No. 46 (DEPT 90) AND IS SUBJECT TO CONTROL TESTING. THE CONTRACTOR SHALL PROVIDE VERIFICATION INCLUDING TEST CERTIFICATES TO THE SUPERVISING ENGINEER.
- FILL REQUIRED UNDER ROADWAY KERBS AND CHANNEL AND FOOTPATH IS TO BE UNDERTAKEN AS PER COUNCIL'S CONSTRUCTION SPECIFICATION FOR ROAD & DRAINAGE WORKS 2016 (TYPE A MATERIAL AS PER VARIOUS STANDARD SPECIFICATION) AND COMPACTED.
- PAVEMENT DEPTH MAY NOT BE ALTERED WITHOUT WRITTEN APPROVAL FROM CITY OF WHITTLESEA DEVELOPMENT ENGINEERING UNIT PRIOR TO THE COMMENCEMENT OF WORKS. ADDITIONAL COSTS WILL NOT BE CONSIDERED POST TENDER.
- THE CONTRACTOR IS TO ORGANISE AND PAY FOR TESTING OF PAVEMENT BASE COURSE MATERIAL AND FINAL LAYER OF GRUSED ROCK. A COPY OF RESULTS IS TO BE FORWARDED TO THE DIRECTOR OF ENGINEERING OR HIS REPRESENTATIVE. THE RESULTS MUST MEET THE REQUIREMENTS OF THE CITY OF WHITTLESEA SPECIFICATION BEFORE ANY FURTHER WORKS ARE REQUIRED.
- THE CONTRACTOR MUST COMPLETE A LEVEL CHECK BETWEEN ALL TIRMS TO VERIFY LEVEL VALUES BEFORE COMMENCEMENT OF WORKS. ALL TIRMS AND CONTROL POINTS ARE TO BE MAINTAINED AND PROTECTED AT ALL TIMES DURING CONSTRUCTION, SHOULD ANY MARKS BE DISTURBED, THE CONTRACTOR WILL IMMEDIATELY NOTIFY THE DEVELOPERS CONSULTANT TO ARRANGE REPLACEMENT AT THE CONTRACTORS EXPENSE.
- PRIOR TO COMMENCEMENT OF WORKS, THE CONTRACTOR MUST SUBMIT A SWP TO THE DEVELOPERS CONSULTANT FOR APPROVAL. THE CONTRACTOR MUST COMPLY WITH THE RECOMMENDATIONS OF THE ENVIRONMENT PROTECTION AUTHORITY PUBLICATION No.275 'CONSTRUCTION TECHNIQUES FOR SEDIMENT POLLUTION CONTROL' AND MW SITE ENVIRONMENTAL MANAGEMENT POLICY 3.6.2. APPROPRIATE SEDIMENT CONTROLS TO BE MAINTAINED THROUGHOUT THE CONSTRUCTION AND MAINTENANCE PERIOD OF THE WORKS, THE SWP SHALL BE APPROVED BY CITY OF WHITTLESEA DEVELOPMENT ENGINEERING UNIT PRIOR TO THE COMMENCEMENT OF WORKS.
- ALL FOOTPATHS IN ROADS TO BE OFFSET 10m FROM PROPERTY BOUNDARY. FOOTPATHS CONSTRUCTED ABOVE EXISTING LEVEL TO BE CONSTRUCTED ON APPROVED FILL (TO AS-3798) OF F.C.R. INTO NATURAL GROUND.
- PRIOR TO COMMENCEMENT OF WORKS TREE PROTECTION ZONES (TPZ) ARE TO BE REINSTALLED AS SPECIFIED IN THE ANNOTATED DETAILS FORMING PART OF THE PLANNING PERMIT. TO TREES NOTED TO BE RETAINED, THIS INCLUDES THE FOLLOWING:
 - RING LOCK WIRE MESH MINIMUM 1.20m HIGH (STD DRG SDL.202)
 - MAIN POSTS 100mm TREATED PINE (TP), MINIMUM 1.80m HIGH
 - INTERMEDIATE POSTS STEEL SIAK PIPES 57mm MINIMUM 1.80m HIGH
 - THE CORNER POSTS TO BE TIP WITH TP STAYS
 - EVERY THIRD POST TO BE TIP
 - SP TO BE PLACED INTERMITTENTLY BETWEEN THE TP AT MAX 3.0m INTERVALS
 - THE RING LOCK MESH TO ENCLOSE THE STRUCTURE AND BE FIRMLY SECURED AT EACH POST
 - POSTS MUST BE BALK INTO THE GROUND BY 450mm (THERE IS TO BE NO CONCRETE TO SECURE POSTS AS THIS WILL AFFECT PH LEVELS)
 - HIGH VISIBILITY HAZARD MARKER TAPE SECURELY FIXED TO TOP OF WIRE MESH FENCE WITH WIRE NAIL
 - THE TREE PROTECTION ZONE IS TO BE CLEARLY SIGN POSTED IN ACCORDANCE WITH CONDITION 20 OF THE PLANNING PERMIT (STD DRG SDL.2.03)

Approximate field density test location

SYMBOL LEGEND

Drains	Stop	Top Stage	Ex Natural FS Level
Sewer < 3000	FS on Building Line		FS on Building Line
Sewer > 3000	Top of Face of Batter		Top of Face of Batter
Water (DN)	Top Rel. Wall Level		Top Rel. Wall Level
Water (UP)	100yr Flood Level		100yr Flood Level
House Drain	Street Sign		Street Sign
Proposed Wall	PSM		PSM
Sheep Ret Wall	Sheep Ret Wall		Sheep Ret Wall
Concrete 100mm	Concrete 100mm		Concrete 100mm
Street Tree without/with	Street Tree without/with		Street Tree without/with
Ex Drains	Ex Drains		Ex Drains
Ex Water DW/DWD	Ex Water DW/DWD		Ex Water DW/DWD
Ex Sewer/Gas	Ex Sewer/Gas		Ex Sewer/Gas
Ex Electric/Telecom	Ex Electric/Telecom		Ex Electric/Telecom



COMPACTION ASSESSMENT

Job No 22735
 Report No 22735/R001
 Date Issued 15/12/2021

CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Tested by AC
 Date tested 20/08/21
 Checked by JHF

Client WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)
 Project RATHDOWNNE - STAGE 37
 Location WOLLERT

Feature **EARTHWORKS** Layer thickness 200 mm Time: 13:04

Test procedure AS 1289.2.1.1 & 5.8.1

Test No	1	2	3	4	5	6
Location	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1	REFER TO FIGURE 1
Approximate depth below FSL						
Measurement depth mm	175	175	175	175	175	175
Field wet density t/m ³	2.02	2.05	2.02	2.03	2.02	2.05
Field moisture content %	19.7	23.1	20.1	21.9	19.2	22.0

Test procedure AS 1289.5.7.1

Test No	1	2	3	4	5	6
Compactive effort	Standard					
Oversize rock retained on sieve mm	19.0	19.0	19.0	19.0	19.0	19.0
Percent of oversize material wet	0	0	0	0	0	0
Peak Converted Wet Density t/m ³	2.10	2.10	2.10	2.06	2.12	2.10
Adjusted Peak Converted Wet Density t/m ³	-	-	-	-	-	-
Optimum Moisture Content %	22.0	23.0	22.0	23.5	21.0	24.0

Moisture Variation From Optimum Moisture Content	2.0% dry	0.0%	1.5% dry	1.5% dry	2.0% dry	2.0% dry
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density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

Density Ratio (R_{HD})	%	96.5	97.5	96.0	99.0	95.5	97.5
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Material description

No 1 - 6 Clay Fill

AVRLOT HILF V1.10 MAR 13



NATA Accredited Laboratory No 9909
 Accredited for compliance with
 ISO/IEC 17025 - Testing

Approved Signatory : Justin Fry