

CIVIL ENGINEERING DESIGN

58 TE KAWA ROAD

GREENLANE

BARFOOT & THOMPSON DISCLAIMER
This document has been obtained on behalf of the client and is made available to customers for general information purposes only. Neither Barfoot & Thompson nor their client warrant the accuracy, completeness or currency of this document nor do they accept liability for any errors or omissions in this document. All customers should obtain and rely on their own documents and legal advice.



GENERAL

1. ALL DRAWINGS TO BE READ IN CONJUNCTION WITH THE SPECIFICATION.
2. THE EXISTING SERVICES ARE SHOWN INDICATIVELY ONLY. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE THE POSITION AND DEPTH, BEFORE THE CONSTRUCTION COMMENCES, OF ALL SERVICES THAT COULD BE ADVERSELY AFFECTED BY THEIR OPERATIONS.
3. ALL WORK TO BE IN ACCORDANCE WITH THE TERRITORIAL AUTHORITY STANDARDS.
4. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
5. CONCRETE TO BE 25 MPa UNLESS OTHERWISE NOTED.
6. CESSPIT POSITIONS AND GRATE LEVELS ARE APPROXIMATE. FINAL POSITIONS ARE TO SUIT SURFACE LEVELS.
7. INSTEAD OF USING SPECIFIED MATERIALS THE CONTRACTOR MAY USE SIMILAR APPROVED LOCALLY AVAILABLE MATERIALS. CONTRACTOR SHALL SUBMIT AN ALTERNATIVE PROPOSAL FOR USING LOCALLY AVAILABLE MATERIALS.
9. COS MEANS "CONFIRM ON SITE", GIS MEANS "FROM COUNCIL GIS"
10. ALL THE EXISTING DRAINAGE INFORMATION ARE IN ACCORDANCE WITH THE INFORMATION FROM THE SURVEYOR OR ARCHITECT OR GIS,, IT IS SUBCONTRACTOR'S RESPONSIBILITY TO CONFIRM THE RELEVANT DRAINAGE INFORMATION ON THE SITE PRIOR TO COMMENCEMENT OF CONSTRUCTION AND LET ENGINEER KNOW PRIOR TO COMMENCEMENT OF CONSTRUCTION IF THERE IS ANY INCONSISTENT INFORMATION

DRAINAGE

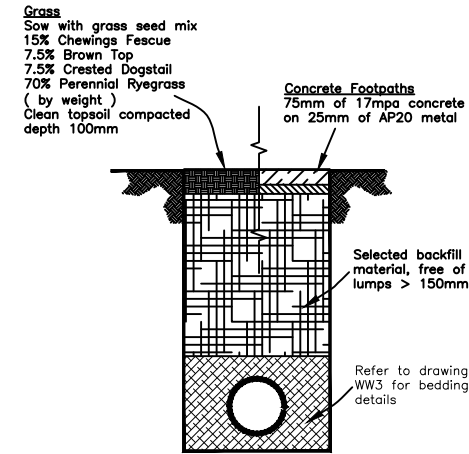
1. ALL DRAINAGE WORK SHALL BE IN ACCORDANCE WITH THE NEW ZEALAND BUILDING CODE AND TERRITORIAL AUTHORITY STANDARDS.
2. ALL NEW CESSPITS FRAME & GRATE TO BE HEAVY DUTY CAST IRON UNLESS OTHERWISE NOTED.
3. ALL PIPES ARE HEAVY DUTY uPVC UNLESS NOTED OTHERWISE.
4. ALL MANHOLE RISERS ARE 1050Ø UNLESS OTHERWISE NOTED.
5. COVER LEVELS FOR MANHOLES ARE APPROXIMATE ONLY. FINAL COVER LEVELS SHALL BE 25mm ABOVE SURROUNDING GROUND IN LANDSCAPED/GRASS AREAS AND FLUSH WITH SURROUNDING GROUND IN PAVED AREAS.
6. HEAVY DUTY NON-ROCK MANHOLE FRAMES & COVERS TO BE USED IN ROADS & PAVED AREAS. MEDIUM DUTY FRAMES AND COVERS MAY BE USED IN LANDSCAPED/GRASS AREAS.
7. ADJUST EXISTING MANHOLE FRAMES & COVERS TO SUIT NEW GROUND/SURFACE LEVELS.
8. BEDDING AND SURROUND MATERIAL SHALL COMPLY WITH NZS 3500, AND HAVE A COMPACTION FRACTION OF 0.1 OR LESS.
9. SUBSOIL DRAINS TO BE WRAPPED IN "FILTERSOK" OR SIMILAR APPROVED AT A FALL OF 1:100 (MIN).
10. 100mm Ø SUBSOIL DRAINS TO BE CONSTRUCTED BENEATH ALL KERB CHANNELS AND CONNECTED TO CESSPITS.
11. BEFORE DRAINAGE CONSTRUCTION COMMENCES CONFIRM INVERT LEVELS TO ALL EXISTING PIPES AND MANHOLES AND INFORM THE ENGINEER FOR APPROVAL.
12. BEDDING DETAILS FOR FLEXIBLE PIPE REFER RELEVANT DETAILS
13. ALL WW Ø100mm LOT CONNECTIONS TO BE min 1.7% GRADE AND FOLLOWING WW15 OF WATERCARE'S STANDARD. Y (WYE)-JUNCTION SHALL BE USED ORDINARILY. TEE JUNCTIONS ARE NOT ALLOWED

STORMWATER CODE OF PRACTICE DRAWINGS

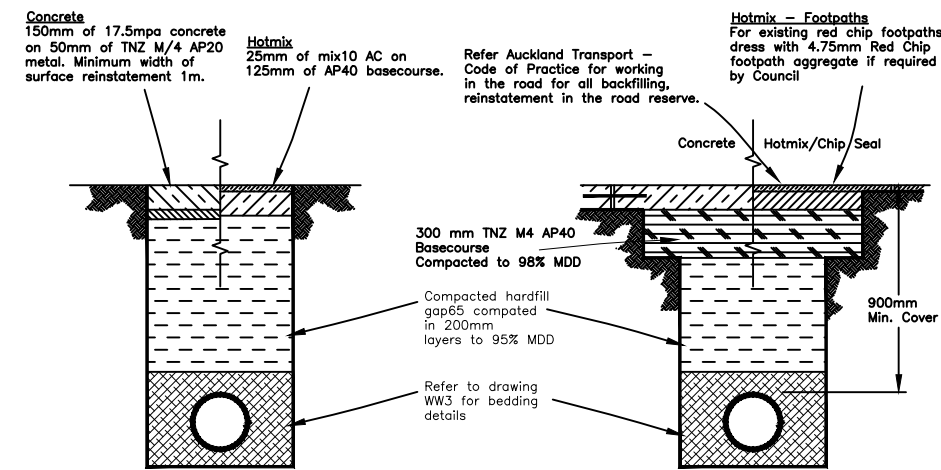
1. SW01-EMBEDMENT & TRENCHFILL
2. SW02-PIPE EMBEDMENTS - STANDARD EMBEDMENT FOR FLEXIBLE PIPES
3. SW04-STORMWATER SERVICE CONNECTIONS
4. SW05-STANDARD STORMWATER MANHOLE
5. SW09-STORMWATER MANHOLE ACCESS
6. SW19-STORMWATER INLET AND OUTLET STRUCTURES
7. SW20-STORMWATER INLET AND OUTLET STRUCTURES (SAFETY FENCES)

WASTEWATER CODE OF PRACTICE DRAWINGS

1. WW2-TRENCH REINSTATEMENT AND BEDDING DETAILS
2. WW3-GENERAL CONSTRUCTION NOTES
3. WW4-DRAINAGE PLAN FORMAT FOR DESIGN
4. WW7-BEDDING DETAILS
5. WW13-MANHOLE UP TO 1.8M DEEP TO OUTLET INVERT
6. WW15-MANHOLE AND PRECAST BASE
7. WW16-PRECAST MANHOLE BASE
8. WW30-STEP RUNG FOR STANDARD PRECAST MANHOLE
9. WW35-MANHOLE THROAT AND COVER DETAILS
10. WW37-600MM DIAMETER HEAVY DUTY MANHOLE COVER AND FRAME
11. WW47-TYPICAL SERVICE CONNECTIONS TO PVC/VC/CONCRETE WASTEWATER SEWERS



GRASS AREA & FOOTPATH
(Not in Road reserve)
REINSTATEMENT



DRIVEWAY REINSTATEMENT
(Not in Road Reserve)

FOOTPATH/VEHICLE CROSSING,
CARRIAGEWAY REINSTATEMENT

- NOTES**
1. All trench surface reinstatement within the road reserve shall comply with Auckland Transport requirements. The details shown are typical expectations for reinstatements.
 2. Backfill shall be compacted in 200mm layers to obtain maximum density as described in Watercare's Construction Standards.
 3. Where concrete or other stabilized layers exist in the roadway, the trench shall be reinstated with similar material or as directed by the roading engineer.

PERMISSABLE TRENCH WIDTHS								
NORMAL INTERNAL PIPE DIAMETER (mm)	150	225	300	375	450	525	600	675
MINIMUM TRENCH WIDTH (mm)	500	600	675	750	825	925	1000	1100
MAXIMUM TRENCH WIDTH (mm)	600	600	700	800	900	1000	1100	1200

PERMISSABLE TRENCH WIDTHS							
NORMAL INTERNAL PIPE DIAMETER (mm)	750	825	900	975	1050	1200	>1200
MINIMUM TRENCH WIDTH (mm)	1175	1250	1350	1450	1525	1675	OD+500
MAXIMUM TRENCH WIDTH (mm)	1300	1400	1500	1600	1800	1800	OD+700

THE COPYRIGHT OF THESE DRAWINGS AND ALL PARTS THERE OF REMAIN THE PROPERTY OF CSE CONSULTANTS LTD
DO NOT SCALE THIS DRAWING
PLEASE REFER ALL QUERIES TO
CSE CONSULTANTS LTD

NOTE:

1. VERIFY ALL DIMENSIONS ON SITE PRIOR TO COMMENCING ANY WORKS.
2. READ THESE DRAWINGS IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS AND SPECIFICATION.
3. ALL DIMENSIONS & LEVELS ARE SUBJECT TO CONFIRMATION BY ARCHITECT.
4. ALL EXISTING DRAINAGE INFORMATION ARE IN ACCORDANCE WITH THE INFORMATION FROM THE SURVEYOR OR ARCHITECT OR ASSUMPTION. IT IS SUBCONTRACTOR'S RESPONSIBILITY TO CONFIRM ALL RELEVANT DRAINAGE INFORMATION ON THE SITE PRIOR TO COMMENCEMENT OF CONSTRUCTION
5. COS MEANS "CONFIRM ON SITE" GIS MEANS "INFORMATION FROM GIS"
6. IT IS CONTRACTOR/OWNER'S RESPONSIBILITY TO CONFIRM WITH ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION IF THERE IS ANY INCONSISTENT INFORMATION



CSE CONSULTANTS LTD

T: 021-1062 911
E: engineer@hotmail.com

A	BA	210120	CONSENT
REV.	BY	DATE	DESCRIPTION
REVISIONS			

ADDRESS:
58 TE KAWA ROAD
GREENLANE
AUCKLAND

DRAWING:
OVERALL DRAINAGE
SITE PLAN

DRAWN	CHECKED	
BA	EL	
SCALE	DATE	
1:125	210120	
JOB No.	DRAWING No.	REV.
2011051	C001	A

THE COPYRIGHT OF THESE DRAWINGS AND ALL PARTS THERE OF REMAIN THE PROPERTY OF CSE CONSULTANTS LTD
DO NOT SCALE THIS DRAWING
PLEASE REFER ALL QUERIES TO CSE CONSULTANTS LTD

NOTE:

1. VERIFY ALL DIMENSIONS ON SITE PRIOR TO COMMENCING ANY WORKS.
2. READ THESE DRAWINGS IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS AND SPECIFICATION.
3. ALL DIMENSIONS & LEVELS ARE SUBJECT TO CONFIRMATION BY ARCHITECT.
4. ALL EXISTING DRAINAGE INFORMATION ARE IN ACCORDANCE WITH THE INFORMATION FROM THE SURVEYOR OR ARCHITECT OR ASSUMPTION. IT IS SUBCONTRACTOR'S RESPONSIBILITY TO CONFIRM ALL RELEVANT DRAINAGE INFORMATION ON THE SITE PRIOR TO COMMENCEMENT OF CONSTRUCTION
5. COS MEANS "CONFIRM ON SITE" GIS MEANS "INFORMATION FROM GIS"
6. IT IS CONTRACTOR/OWNER'S RESPONSIBILITY TO CONFIRM WITH ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION IF THERE IS ANY INCONSISTENT INFORMATION



CSE CONSULTANTS LTD

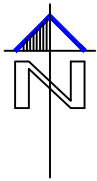
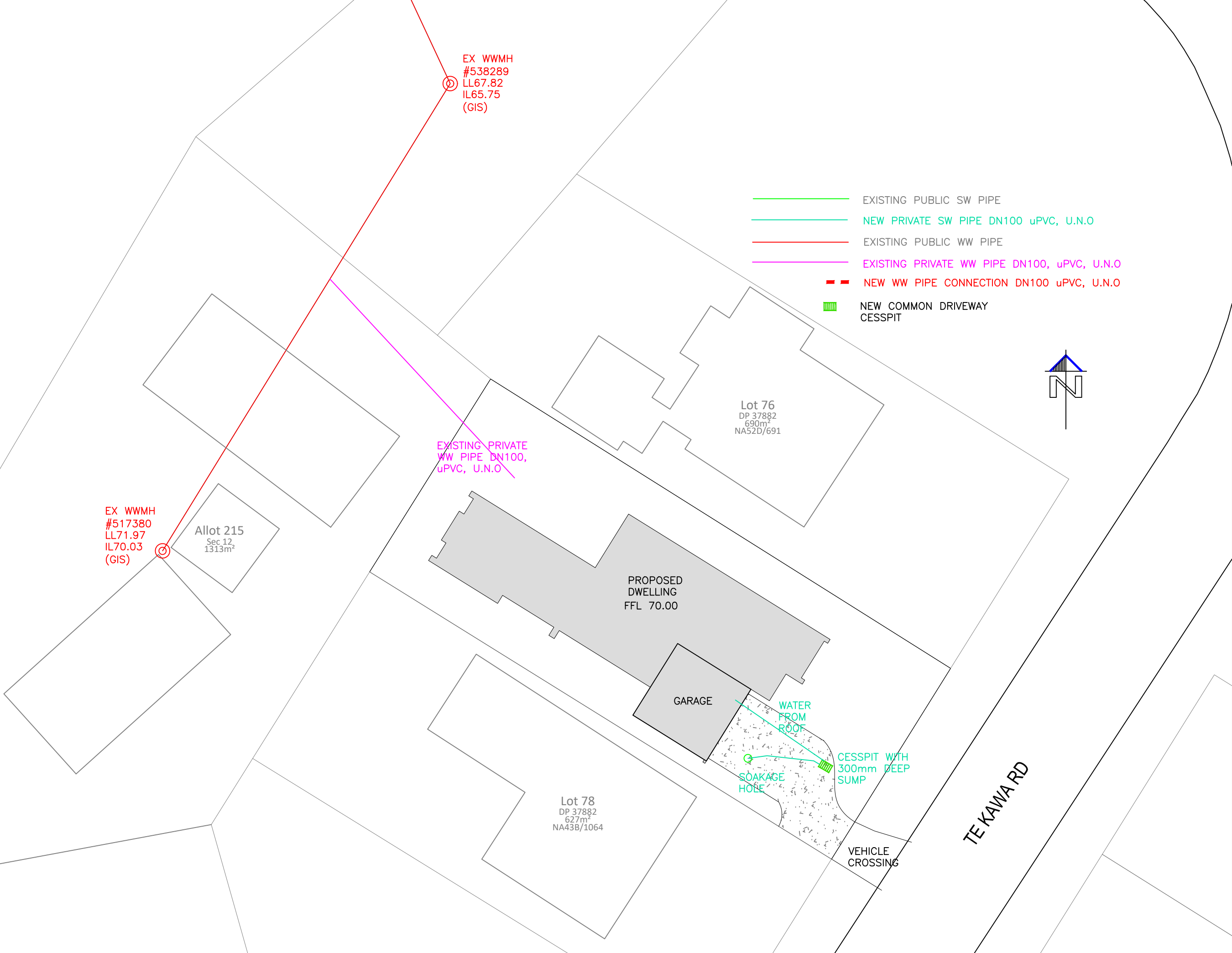
T: 021-1062 911
E: engineer@hotmail.com

A	BA	210120	CONSENT
REV.	BY	DATE	DESCRIPTION
REVISIONS			

ADDRESS:
58 TE KAWA ROAD
GREENLANE
AUCKLAND

DRAWING:
OVERALL DRAINAGE
SITE PLAN

DRAWN	CHECKED	
BA	EL	
SCALE	DATE	
1:250	210120	
JOB No.	DRAWING No.	REV.
2011051	C011	A





LEGEND

150mm CONCRETE WITH SE62 MESH WITH ON MIN.100 COMPACTED SUBBASE
 PRIVATE PAVING AREA

THE COPYRIGHT OF THESE DRAWINGS AND ALL PARTS THERE OF REMAIN THE PROPERTY OF CSE CONSULTANTS LTD
 DO NOT SCALE THIS DRAWING
 PLEASE REFER ALL QUERIES TO CSE CONSULTANTS LTD

NOTE:

- Verify all dimensions on site prior to commencing any works.
- Read these drawings in conjunction with architectural drawings and specification.
- All dimensions & levels are subject to confirmation by architect.

CSE
 CSE CONSULTANTS LTD
 T 021-1062 911
 E CSEngineer@hotmail.com

B	EL	200723	CONSENT
A	EL	210122	CONSENT
REV.	BY	DATE	DESCRIPTION
REVISIONS			

ADDRESS:
 58 TE KAWA ROAD
 GREENLANE
 AUCKLAND

DRAWING:
 EXCAVATION CUT & FILL
 SITE PLAN

DRAWN	EL	CHECKED	EL
SCALE	1:300 A3	DATE	210122
JOB No.	2011051	DRAWING No.	C311
		REV.	B

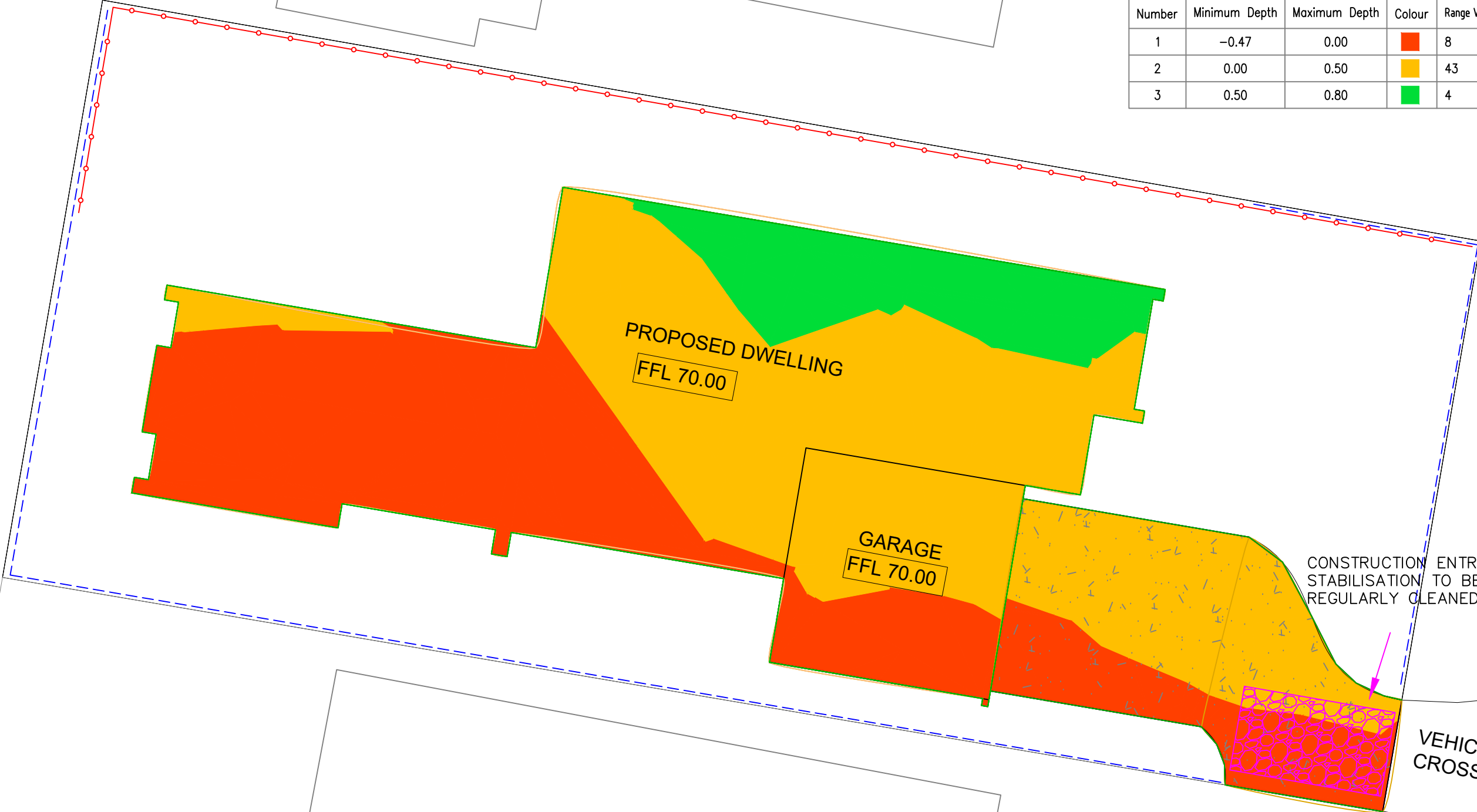


DP 37882
690m²
NA52D/691

Number	Minimum Depth	Maximum Depth	Colour	Range Volume
1	-0.47	0.00	Red	8
2	0.00	0.50	Yellow	43
3	0.50	0.80	Green	4

THE COPYRIGHT OF THESE DRAWINGS AND ALL PARTS THERE OF REMAIN THE PROPERTY OF CSE CONSULTANTS LTD
DO NOT SCALE THIS DRAWING
PLEASE REFER ALL QUERIES TO
CSE CONSULTANTS LTD

NOTE:
 • Verify all dimensions on site prior to commencing any works.
 • Read these drawings in conjunction with architectural drawings and specification.
 • All dimensions & levels are subject to confirmation by architect.



CSE
 CSE CONSULTANTS LTD
 T 021-1062 911
 E CSEngineer@hotmail.com

REV.	BY	DATE	DESCRIPTION
B	EL	200723	CONSENT
A	EL	210122	CONSENT

REVISIONS
ADDRESS:
 58 TE KAWA ROAD
 GREENLANE
 AUCKLAND

DRAWING:
 EXCAVATION CUT & FILL
 SITE PLAN

DRAWN EL	CHECKED EL
SCALE 1:150 A3	DATE 210122
JOB No. 2011051	DRAWING No. REV. C911 B

Cut/Fill Summary

Name	Cut Factor	Fill Factor	2d Area	Cut	Fill	Net
VO	1.000	1.000	286.6sq.m	8 Cu. M.	46 Cu. M.	38 Cu. M.<Fill>
Totals			286.6sq.m	8 Cu. M.	46 Cu. M.	38 Cu. M.<Fill>

LEGEND
 - - - - - CLEAN WATER BUND
 - o - o - o - SILT FENCE

DP 37882
627m²
NA43B/1064

THE COPYRIGHT OF THESE DRAWINGS AND ALL PARTS THERE OF REMAIN THE PROPERTY OF CSE CONSULTANTS LTD
DO NOT SCALE THIS DRAWING
PLEASE REFER ALL QUERIES TO CSE CONSULTANTS LTD

NOTE:

- Verify all dimensions on site prior to commencing any works.
- Read these drawings in conjunction with architectural drawings and specification.
- All dimensions & levels are subject to confirmation by architect.



CSE CONSULTANTS LTD
T 021-1062 911
E CSEngineer@hotmail.com

A	EL	210122	CONSENT
REV.	BY	DATE	DESCRIPTION

REVISIONS

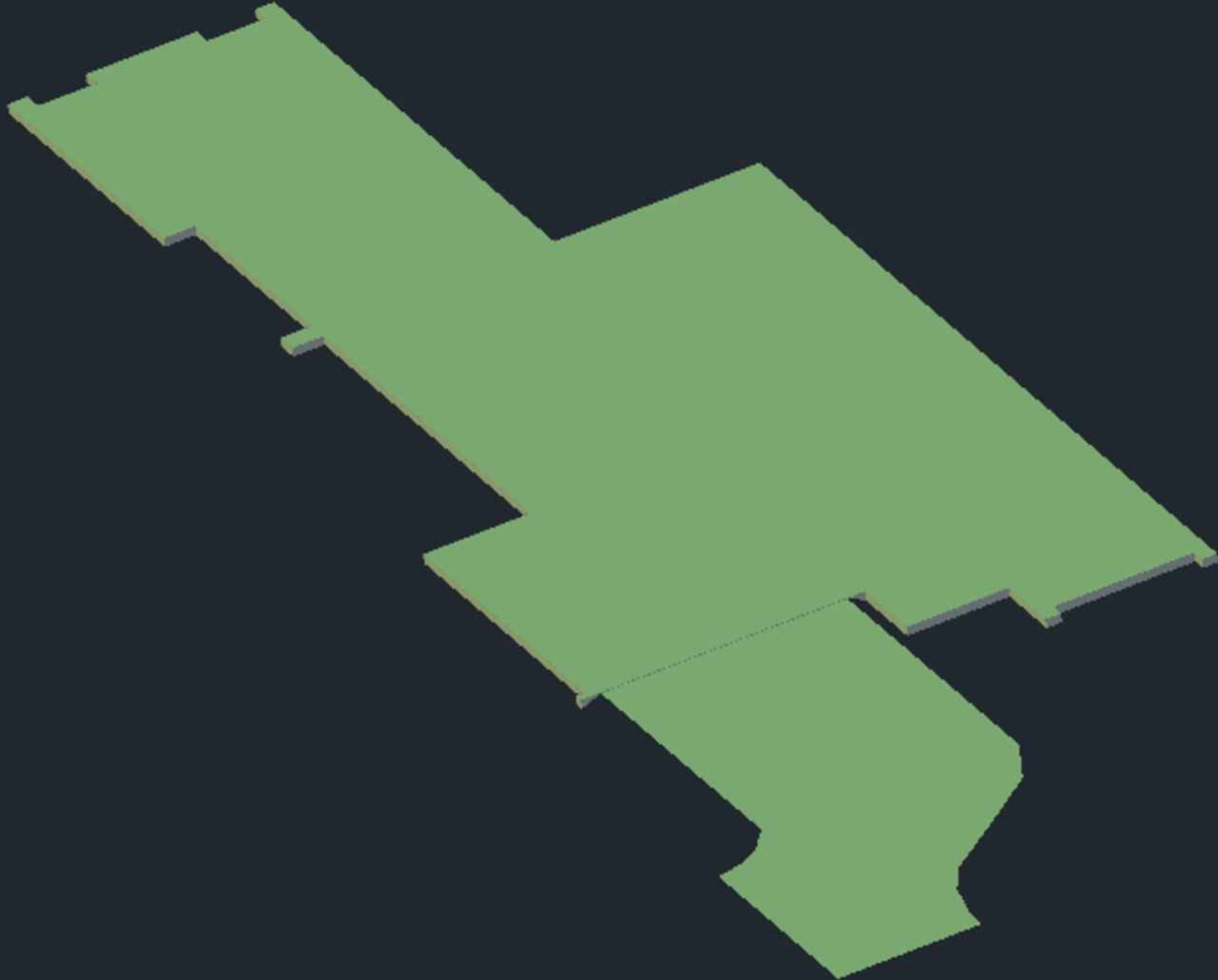
ADDRESS:

58 TE KAWA ROAD
GREENLANE
AUCKLAND

DRAWING:

EXCAVATION CUT & FILL
3D VIEW

DRAWN	CHECKED	
EL	EL	
SCALE	DATE	
1:300 A3	210122	
JOB No.	DRAWING No.	REV.
2011051	C912	A



SUVDIVISION DEVELOPMENT

**58 TE KAWA ROAD
GREENLANE
AUCKLAND**

**SITE INFRASTRUCTURE
REPORT**

**Eric Li – BE
Civil Engineer
CSE Consultants LTD
AUCKLAND**

**JOB -2011051
JAN. 2021**

CONTENTS

PART 1 : INTRODUCTION

PART 2 : WASTEWATER

PART 3 : STORMWATER

PART 4 : FLOODINIG ANALYSIS

PART 5 : WATER SUPPLY

PART 6 : UTILITY SERVICES

PART 7 : EARTHWORKS

PART 8 : CONCLUSIONS

APPENDIX

Calculations

Drawings

1.0 INTRODUCTION

The purpose of this report is to discuss the provision of services and utility services supporting the Resource Consent application for the proposed subdivision 58 Te Kawa Road Greenlane. The report addresses storm water disposal, waste water disposal, the water supply and provision of power and telecommunications and illustrates that adequate provision has been made for these services and that existing infrastructure can support the development.



Figure 1. Aerial photo showing the site location, flood hazards and services

58 Te Kawa Road Greenlane occupies a 645 m² site. The existing dwelling will be demolished. The subject site is sloping down towards the east with an average grade of 4%.

2.0 WASTEWATER

The existing waste water reticulation, in the vicinity of the site, is described on the Auckland GeoMap (refer to Figure 1). A 150mm diameter waste water line is running outside of the site between existing manhole #538289 and #517380. It runs North and join a manhole #517351 at 76 Te Kawa Road Greenlane.

The existing private waste water connection is connecting on existing waste water pipe#835992 to the site.

The peak discharge from the proposed development is approximately 0.04 litre/sec. The 150mm diameter pipes downstream have gradient about 11% which gives capacity ranging from 51 l/s. The increased peak discharge takes up to approximately 0.08% of the pipe capacity.

It is proposed to remain the existing waste water connection to the site from existing waste water pipe#835992 to satisfy one proposed lot. Considering all effects from the proposed development, upstream and downstream catchments the pipes have capacity to cater for the increase in waste water discharge. The existing pipes have capacity to cater for the increase in waste water discharge.

3.0 STORMWATER

There is no existing public stormwater reticulation indicated on the GeoMap (refer to Figure 1). It is soakage area, the borehole test has been arranged with 19.8l/s rate which is sufficient for the proposed development.

4.0 FLOODING ANALYSIS

There is a minor overland flow path generates from the proposed site, which will runs at the front of the proposed building, so the proposed development will not affect the existing overland flow path, the depth of the overland flow path is about 30mm, so the proposed development will be min 70.20m floor level will supply min 150mm freeboard.

5.0 WATER SUPPLY

A 100mm diameter GS water main is located within the road reserve. The immediate area is well serviced by street hydrants. The closest fire hydrant is in front of 56 Te Kawa Road Greenlane. The distance to the furthest development point is less than 135m. New meters will be applied for the new lot.

6.0 UTILITY SERVICES

Power and telecommunication services are available in the road reserve of Te Kawa Road Greenlane. Applications will be made to the utility service providers to provide plinths for services. Services will be ducted under the common driveway. All utility services reticulation will be in accordance with the New Zealand Building Code and the network supplier's requirements.

7.0 EARTHWORKS

The subject site is naturally sloping down towards the south boundary. Forming of building platform and driveway area involves approximately 286.6m² and 8m³ cut and 46m³ fill of earthwork for the entire site.

Standard sediment control measures are to be implemented as part of an overall construction management scheme. The sediment control plan includes cut off drain around the perimeter of the site, sediment control measures at downstream of the construction site such as silt fence and additionally a stabilized entrance with wheel wash at the vehicle crossing where soil deposition may occur. All sediment control measures are to be constructed in accordance with the Auckland Council TP 90 (GD05) and regularly maintained.

The disposal of all excavated material would be retained within silt fences and stockpiled with cover until transported off site and ground disturbance contained within the fences.

8.0 CONCLUSIONS

The proposed development will be serviced by the existing wastewater connection which is extended from the neighbour site of 17B Kawau Road, The stormwater runoff from the roof and paving area will be collected and discharged to the soakage hole through a cesspit which has 0.3m deep settlement sump. The immediate area is well serviced by street hydrants.

The proposed development will not affect the existing overland flow path, and the proposed house floor should be 70.20m which supplies 150mm freeboard as required.

Power and telecommunication supply for the development will be connected from the existing supply along Te Kawa Road. All services reticulation design will be in accordance with the New Zealand Building Code and the network supplier's requirements.

The total earthwork is approximately 286.6m² and 8m³ cut and 46m³ fill. Sediment control measures are proposed to meet the Auckland Council TP90 (GD05) requirements.

Appendix



DISCLAIMER:
This map/plan is illustrative only and all information should be independently verified on site before taking any action. Copyright Auckland Council. Land Parcel Boundary information from LINZ (Crown Copyright Reserved). Whilst due care has been taken, Auckland Council gives no warranty as to the accuracy and plan completeness of any information on this map/plan and accepts no liability for any error, omission or use of the information.
Height datum: Auckland 1946.

58 TE KAWA ROAD GREENLANE



Scale @ A3
= 1:1,000

Date Printed:
2/02/2021



Auckland Council
Te Kaunihera o Tāmaki Makaurau

Calculations

Location: 58 Te kawa
Job No. 2011051

date: February 2021

Worksheet 4 - Rockbore Soakhole - W4

Equivalent Impervious Area

total site area =	645 m ²	with detention tank
	ratio (Re)	area x Re
roof	230	1 230 m ²
paving	60	1 60 m ²
pervious	355	0.3 106.5 m ²
equivalent impervious area AE =		396.5 m ²

Determine Soakhole Area

Flowrate from test Flowrate = 19.8 litre/s
 Constant - head flow P2= Flowrate / 1.3 = 15.23 litre/s
 Maxmum area can be served by bore =(P2 x 60)/1.1 = 830.77 m²
 if Maxmum area > AE, no storage is needed

if Maxmum area <= AE, storage is needed as below

No storage Required

catchment soakage ratio

$$P3=(P2 \times 60)/AE= 2.305$$

Read off storage require- chart 2

$$R2= 0.018$$

Calculate storage required

$$V1 = R2 \times AE = 7.137 \text{ m}^3$$

Compare to available storage

$$V2= 7.137 \text{ m}^3$$

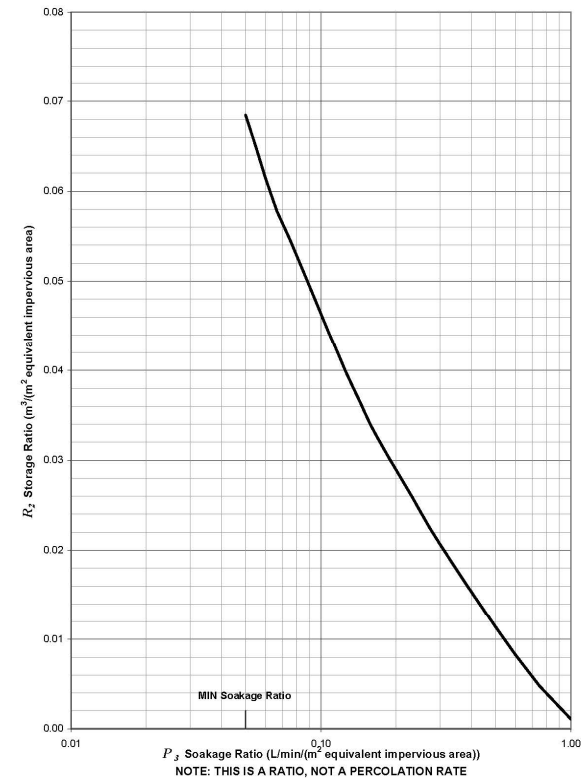
Additional storage required

$$V3 = V1 - V2 = 0 \text{ m}^3$$

OK

CHART2 -Storage Requirements for all Soakholes

C2



Drawings

CIVIL ENGINEERING DESIGN

58 TE KAWA ROAD

GREENLANE



GENERAL

1. ALL DRAWINGS TO BE READ IN CONJUNCTION WITH THE SPECIFICATION.
2. THE EXISTING SERVICES ARE SHOWN INDICATIVELY ONLY. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE THE POSITION AND DEPTH, BEFORE THE CONSTRUCTION COMMENCES, OF ALL SERVICES THAT COULD BE ADVERSELY AFFECTED BY THEIR OPERATIONS.
3. ALL WORK TO BE IN ACCORDANCE WITH THE TERRITORIAL AUTHORITY STANDARDS.
4. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.
5. CONCRETE TO BE 25 MPa UNLESS OTHERWISE NOTED.
6. CESSPIT POSITIONS AND GRATE LEVELS ARE APPROXIMATE. FINAL POSITIONS ARE TO SUIT SURFACE LEVELS.
7. INSTEAD OF USING SPECIFIED MATERIALS THE CONTRACTOR MAY USE SIMILAR APPROVED LOCALLY AVAILABLE MATERIALS. CONTRACTOR SHALL SUBMIT AN ALTERNATIVE PROPOSAL FOR USING LOCALLY AVAILABLE MATERIALS.
9. COS MEANS "CONFIRM ON SITE", GIS MEANS "FROM COUNCIL GIS"
10. ALL THE EXISTING DRAINAGE INFORMATION ARE IN ACCORDANCE WITH THE INFORMATION FROM THE SURVEYOR OR ARCHITECT OR GIS,, IT IS SUBCONTRACTOR'S RESPONSIBILITY TO CONFIRM THE RELEVANT DRAINAGE INFORMATION ON THE SITE PRIOR TO COMMENCEMENT OF CONSTRUCTION AND LET ENGINEER KNOW PRIOR TO COMMENCEMENT OF CONSTRUCTION IF THERE IS ANY INCONSISTENT INFORMATION

DRAINAGE

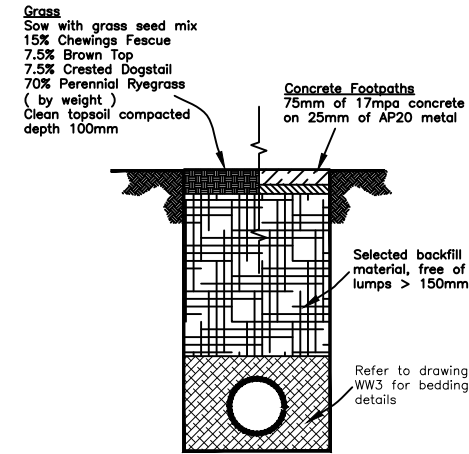
1. ALL DRAINAGE WORK SHALL BE IN ACCORDANCE WITH THE NEW ZEALAND BUILDING CODE AND TERRITORIAL AUTHORITY STANDARDS.
2. ALL NEW CESSPITS FRAME & GRATE TO BE HEAVY DUTY CAST IRON UNLESS OTHERWISE NOTED.
3. ALL PIPES ARE HEAVY DUTY uPVC UNLESS NOTED OTHERWISE.
4. ALL MANHOLE RISERS ARE 1050Ø UNLESS OTHERWISE NOTED.
5. COVER LEVELS FOR MANHOLES ARE APPROXIMATE ONLY. FINAL COVER LEVELS SHALL BE 25mm ABOVE SURROUNDING GROUND IN LANDSCAPED/GRASS AREAS AND FLUSH WITH SURROUNDING GROUND IN PAVED AREAS.
6. HEAVY DUTY NON-ROCK MANHOLE FRAMES & COVERS TO BE USED IN ROADS & PAVED AREAS. MEDIUM DUTY FRAMES AND COVERS MAY BE USED IN LANDSCAPED/GRASS AREAS.
7. ADJUST EXISTING MANHOLE FRAMES & COVERS TO SUIT NEW GROUND/SURFACE LEVELS.
8. BEDDING AND SURROUND MATERIAL SHALL COMPLY WITH NZS 3500, AND HAVE A COMPACTION FRACTION OF 0.1 OR LESS.
9. SUBSOIL DRAINS TO BE WRAPPED IN "FILTERSOK" OR SIMILAR APPROVED AT A FALL OF 1:100 (MIN).
10. 100mm Ø SUBSOIL DRAINS TO BE CONSTRUCTED BENEATH ALL KERB CHANNELS AND CONNECTED TO CESSPITS.
11. BEFORE DRAINAGE CONSTRUCTION COMMENCES CONFIRM INVERT LEVELS TO ALL EXISTING PIPES AND MANHOLES AND INFORM THE ENGINEER FOR APPROVAL.
12. BEDDING DETAILS FOR FLEXIBLE PIPE REFER RELEVANT DETAILS
13. ALL WW Ø100mm LOT CONNECTIONS TO BE min 1.7% GRADE AND FOLLOWING WW15 OF WATERCARE'S STANDARD. Y (WYE)-JUNCTION SHALL BE USED ORDINARILY. TEE JUNCTIONS ARE NOT ALLOWED

STORMWATER CODE OF PRACTICE DRAWINGS

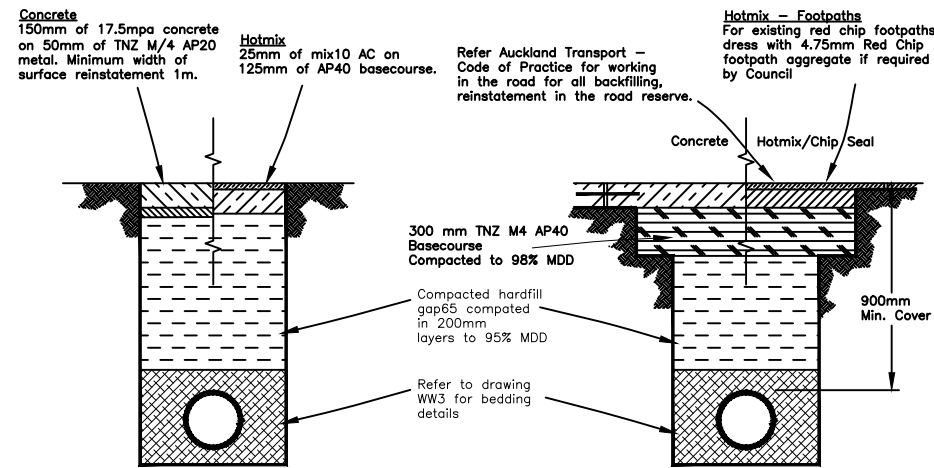
1. SW01-EMBEDMENT & TRENCHFILL
2. SW02-PIPE EMBEDMENTS - STANDARD EMBEDMENT FOR FLEXIBLE PIPES
3. SW04-STORMWATER SERVICE CONNECTIONS
4. SW05-STANDARD STORMWATER MANHOLE
5. SW09-STORMWATER MANHOLE ACCESS
6. SW19-STORMWATER INLET AND OUTLET STRUCTURES
7. SW20-STORMWATER INLET AND OUTLET STRUCTURES (SAFETY FENCES)

WASTEWATER CODE OF PRACTICE DRAWINGS

1. WW2-TRENCH REINSTATEMENT AND BEDDING DETAILS
2. WW3-GENERAL CONSTRUCTION NOTES
3. WW4-DRAINAGE PLAN FORMAT FOR DESIGN
4. WW7-BEDDING DETAILS
5. WW13-MANHOLE UP TO 1.8M DEEP TO OUTLET INVERT
6. WW15-MANHOLE AND PRECAST BASE
7. WW16-PRECAST MANHOLE BASE
8. WW30-STEP RUNG FOR STANDARD PRECAST MANHOLE
9. WW35-MANHOLE THROAT AND COVER DETAILS
10. WW37-600MM DIAMETER HEAVY DUTY MANHOLE COVER AND FRAME
11. WW47-TYPICAL SERVICE CONNECTIONS TO PVC/VC/CONCRETE WASTEWATER SEWERS



GRASS AREA & FOOTPATH
(Not in Road Reserve)
REINSTATEMENT



DRIVEWAY REINSTATEMENT
(Not in Road Reserve)

FOOTPATH/VEHICLE CROSSING,
CARRIAGEWAY REINSTATEMENT

- NOTES**
1. All trench surface reinstatement within the road reserve shall comply with Auckland Transport requirements. The details shown are typical expectations for reinstatements.
 2. Backfill shall be compacted in 200mm layers to obtain maximum density as described in Watercare's Construction Standards.
 3. Where concrete or other stabilized layers exist in the roadway, the trench shall be reinstated with similar material or as directed by the roading engineer.

PERMISSABLE TRENCH WIDTHS								
NORMAL INTERNAL PIPE DIAMETER (mm)	150	225	300	375	450	525	600	675
MINIMUM TRENCH WIDTH (mm)	500	600	675	750	825	925	1000	1100
MAXIMUM TRENCH WIDTH (mm)	600	600	700	800	900	1000	1100	1200

PERMISSABLE TRENCH WIDTHS							
NORMAL INTERNAL PIPE DIAMETER (mm)	750	825	900	975	1050	1200	>1200
MINIMUM TRENCH WIDTH (mm)	1175	1250	1350	1450	1525	1675	OD+500
MAXIMUM TRENCH WIDTH (mm)	1300	1400	1500	1600	1800	1800	OD+700

THE COPYRIGHT OF THESE DRAWINGS AND ALL PARTS THERE OF REMAIN THE PROPERTY OF CSE CONSULTANTS LTD
DO NOT SCALE THIS DRAWING
PLEASE REFER ALL QUERIES TO
CSE CONSULTANTS LTD

NOTE:

1. VERIFY ALL DIMENSIONS ON SITE PRIOR TO COMMENCING ANY WORKS.
2. READ THESE DRAWINGS IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS AND SPECIFICATION.
3. ALL DIMENSIONS & LEVELS ARE SUBJECT TO CONFIRMATION BY ARCHITECT.
4. ALL EXISTING DRAINAGE INFORMATION ARE IN ACCORDANCE WITH THE INFORMATION FROM THE SURVEYOR OR ARCHITECT OR ASSUMPTION. IT IS SUBCONTRACTOR'S RESPONSIBILITY TO CONFIRM ALL RELEVANT DRAINAGE INFORMATION ON THE SITE PRIOR TO COMMENCEMENT OF CONSTRUCTION
5. COS MEANS "CONFIRM ON SITE" GIS MEANS "INFORMATION FROM GIS"
6. IT IS CONTRACTOR/OWNER'S RESPONSIBILITY TO CONFIRM WITH ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION IF THERE IS ANY INCONSISTENT INFORMATION



CSE CONSULTANTS LTD

T: 021-1062 911
E: engineer@hotmail.com

A	BA	210120	CONSENT
REV.	BY	DATE	DESCRIPTION
REVISIONS			

ADDRESS:
58 TE KAWA ROAD
GREENLANE
AUCKLAND

DRAWING:
OVERALL DRAINAGE
SITE PLAN

DRAWN	CHECKED	
BA	EL	
SCALE	DATE	
1:125	210120	
JOB No.	DRAWING No.	REV.
2011051	C001	A

THE COPYRIGHT OF THESE DRAWINGS AND ALL PARTS THERE OF REMAIN THE PROPERTY OF CSE CONSULTANTS LTD
DO NOT SCALE THIS DRAWING
PLEASE REFER ALL QUERIES TO
CSE CONSULTANTS LTD

NOTE:

1. VERIFY ALL DIMENSIONS ON SITE PRIOR TO COMMENCING ANY WORKS.
2. READ THESE DRAWINGS IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS AND SPECIFICATION.
3. ALL DIMENSIONS & LEVELS ARE SUBJECT TO CONFIRMATION BY ARCHITECT.
4. ALL EXISTING DRAINAGE INFORMATION ARE IN ACCORDANCE WITH THE INFORMATION FROM THE SURVEYOR OR ARCHITECT OR ASSUMPTION. IT IS SUBCONTRACTOR'S RESPONSIBILITY TO CONFIRM ALL RELEVANT DRAINAGE INFORMATION ON THE SITE PRIOR TO COMMENCEMENT OF CONSTRUCTION
5. COS MEANS "CONFIRM ON SITE"
GIS MEANS "INFORMATION FROM GIS"
6. IT IS CONTRACTOR/OWNER'S RESPONSIBILITY TO CONFIRM WITH ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION IF THERE IS ANY INCONSISTENT INFORMATION



CSE CONSULTANTS LTD

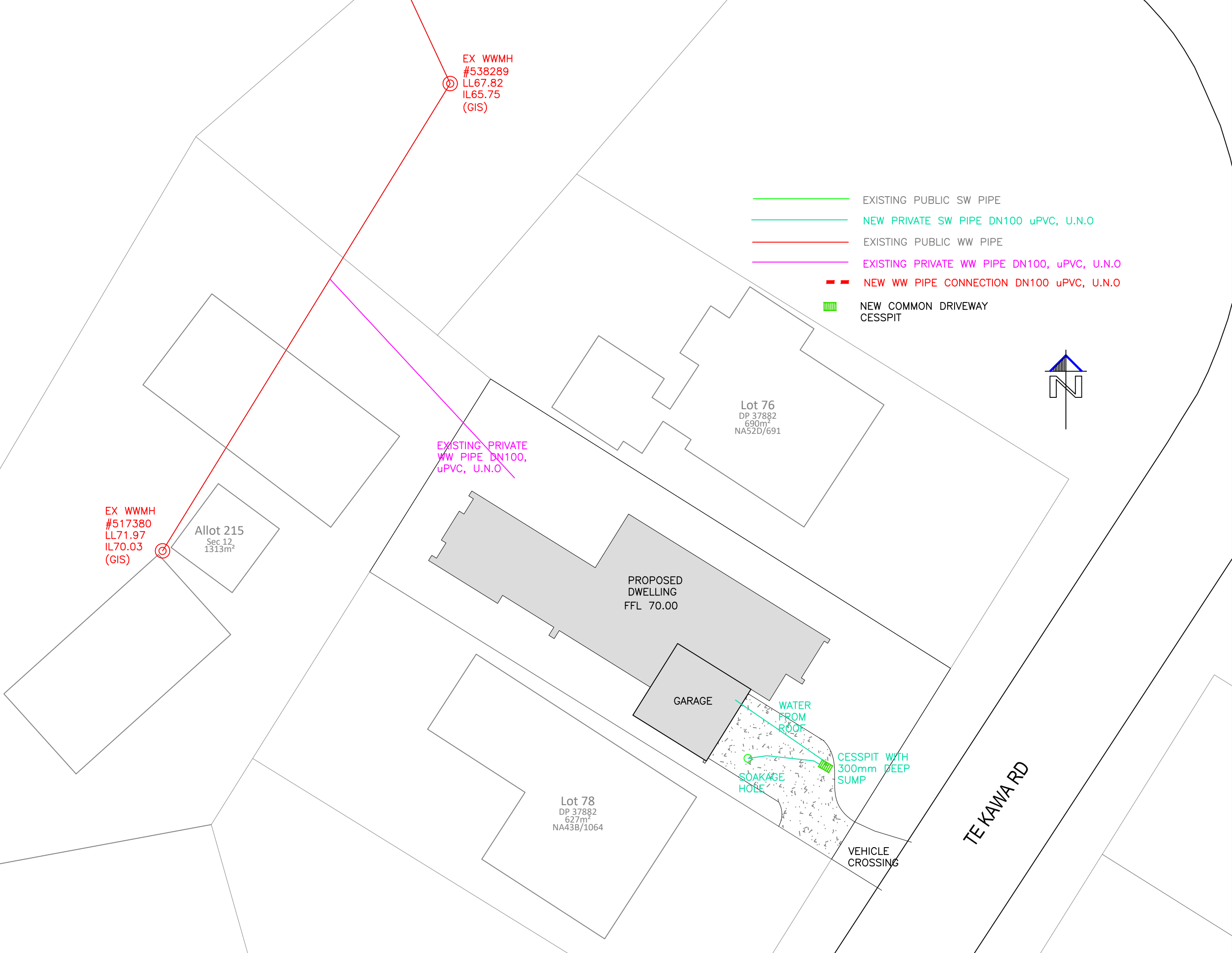
T: 021-1062 911
E: engineer@hotmail.com

A	BA	210120	CONSENT
REV.	BY	DATE	DESCRIPTION
REVISIONS			

ADDRESS:
58 TE KAWA ROAD
GREENLANE
AUCKLAND

DRAWING:
OVERALL DRAINAGE
SITE PLAN

DRAWN	CHECKED	
BA	EL	
SCALE	DATE	
1:250	210120	
JOB No.	DRAWING No.	REV.
2011051	C011	A



- EXISTING PUBLIC SW PIPE
- NEW PRIVATE SW PIPE DN100 uPVC, U.N.O
- EXISTING PUBLIC WW PIPE
- EXISTING PRIVATE WW PIPE DN100, uPVC, U.N.O
- NEW WW PIPE CONNECTION DN100 uPVC, U.N.O
- ▨ NEW COMMON DRIVEWAY CESSPIT

EX WWMH
#538289
LL67.82
IL65.75
(GIS)

EX WWMH
#517380
LL71.97
IL70.03
(GIS)

Allot 215
Sec 12
1313m²

Lot 76
DP 37882
690m²
NA52D/691

EXISTING PRIVATE
WW PIPE DN100,
uPVC, U.N.O

PROPOSED
DWELLING
FFL 70.00

GARAGE

WATER
FROM
ROOF

SOAKAGE
HOLE

CESSPIT WITH
300mm DEEP
SUMP

VEHICLE
CROSSING

Lot 78
DP 37882
627m²
NA43B/1064

TE KAWA RD



LEGEND

150mm CONCRETE WITH SE62 MESH WITH ON MIN.100 COMPACTED SUBBASE
 PRIVATE PAVING AREA

THE COPYRIGHT OF THESE DRAWINGS AND ALL PARTS THERE OF REMAIN THE PROPERTY OF CSE CONSULTANTS LTD
 DO NOT SCALE THIS DRAWING
 PLEASE REFER ALL QUERIES TO CSE CONSULTANTS LTD

NOTE:

- Verify all dimensions on site prior to commencing any works.
- Read these drawings in conjunction with architectural drawings and specification.
- All dimensions & levels are subject to confirmation by architect.

CSE
 CSE CONSULTANTS LTD
 T 021-1062 911
 E CSEngineer@hotmail.com

B	EL	200723	CONSENT
A	EL	210122	CONSENT
REV.	BY	DATE	DESCRIPTION
REVISIONS			

ADDRESS:
 58 TE KAWA ROAD
 GREENLANE
 AUCKLAND

DRAWING:
 EXCAVATION CUT & FILL
 SITE PLAN

DRAWN	EL	CHECKED	EL
SCALE	1:300 A3	DATE	210122
JOB No.	2011051	DRAWING No.	C311
		REV.	B

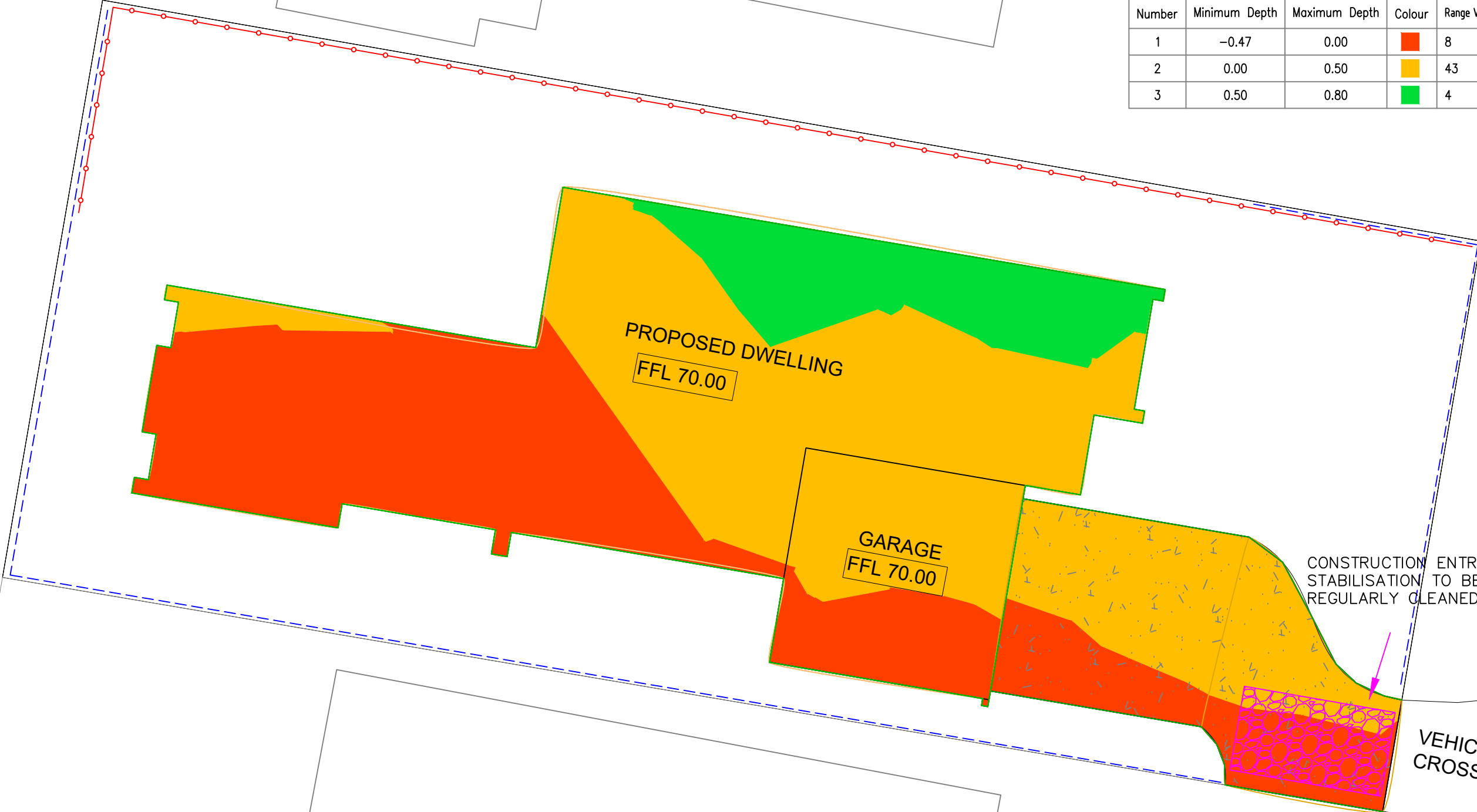


DP 37882
690m²
NA52D/691

Number	Minimum Depth	Maximum Depth	Colour	Range Volume
1	-0.47	0.00	Red	8
2	0.00	0.50	Yellow	43
3	0.50	0.80	Green	4

THE COPYRIGHT OF THESE DRAWINGS AND ALL PARTS THERE OF REMAIN THE PROPERTY OF CSE CONSULTANTS LTD
DO NOT SCALE THIS DRAWING
PLEASE REFER ALL QUERIES TO
CSE CONSULTANTS LTD

NOTE:
 • Verify all dimensions on site prior to commencing any works.
 • Read these drawings in conjunction with architectural drawings and specification.
 • All dimensions & levels are subject to confirmation by architect.



CSE CONSULTANTS LTD
T 021-1062 911
E CSEngineer@hotmail.com

REV.	BY	DATE	DESCRIPTION
B	EL	200723	CONSENT
A	EL	210122	CONSENT

REVISIONS
ADDRESS:
 58 TE KAWA ROAD
 GREENLANE
 AUCKLAND

DRAWING:
 EXCAVATION CUT & FILL
 SITE PLAN

DRAWN EL	CHECKED EL
SCALE 1:150 A3	DATE 210122
JOB No. 2011051	DRAWING No. REV. C911 B

LEGEND
 - - - - - CLEAN WATER BUND
 - o - o - o - SILT FENCE

Cut/Fill Summary

Name	Cut Factor	Fill Factor	2d Area	Cut	Fill	Net
VO	1.000	1.000	286.6sq.m	8 Cu. M.	46 Cu. M.	38 Cu. M.<Fill>
Totals			286.6sq.m	8 Cu. M.	46 Cu. M.	38 Cu. M.<Fill>

DP 37882
627m²
NA43B/1064

THE COPYRIGHT OF THESE DRAWINGS AND ALL PARTS THERE OF REMAIN THE PROPERTY OF CSE CONSULTANTS LTD
DO NOT SCALE THIS DRAWING
PLEASE REFER ALL QUERIES TO CSE CONSULTANTS LTD

NOTE:

- Verify all dimensions on site prior to commencing any works.
- Read these drawings in conjunction with architectural drawings and specification.
- All dimensions & levels are subject to confirmation by architect.



CSE CONSULTANTS LTD
T 021-1062 911
E CSEngineer@hotmail.com

A	EL	210122	CONSENT
REV.	BY	DATE	DESCRIPTION

REVISIONS

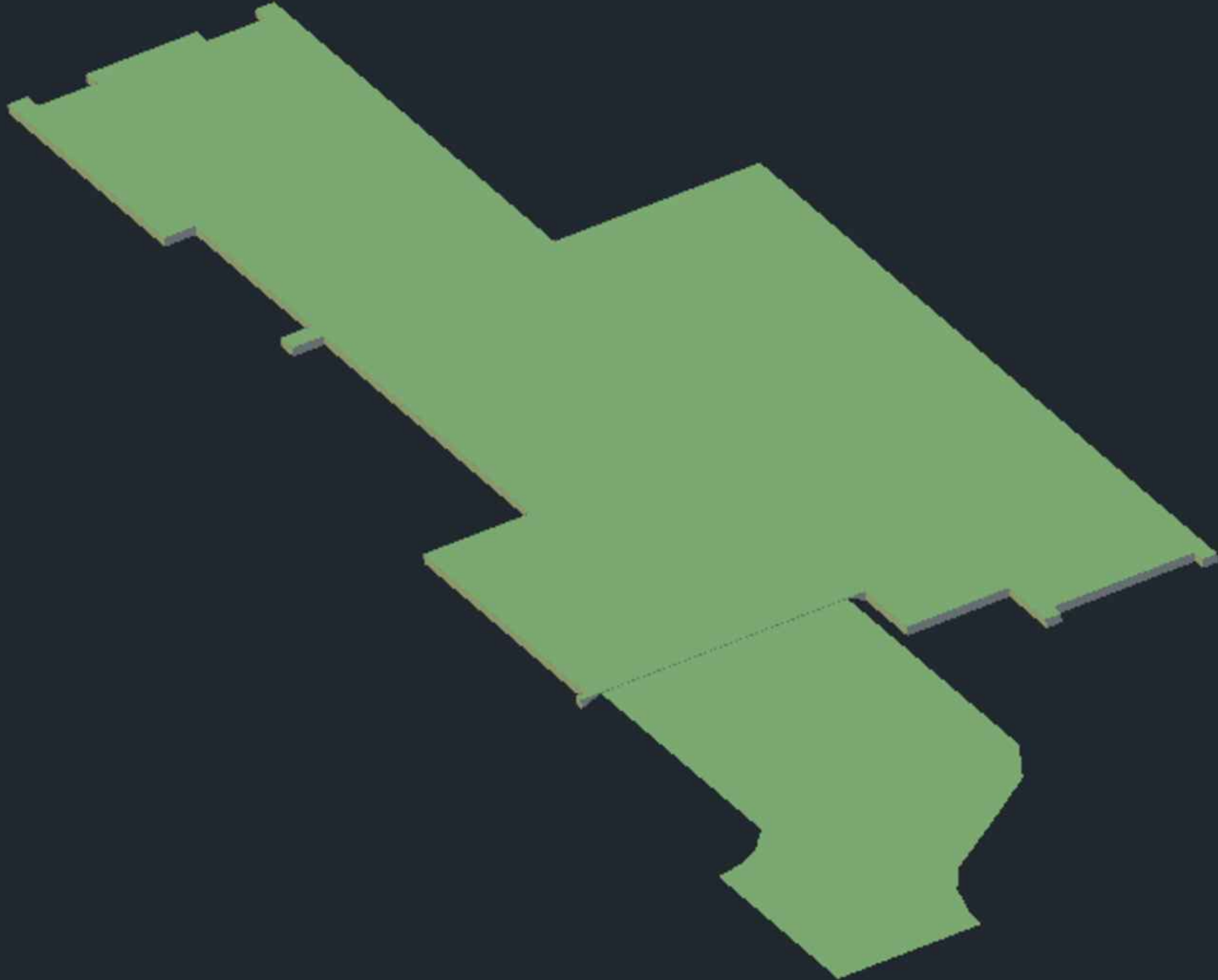
ADDRESS:

58 TE KAWA ROAD
GREENLANE
AUCKLAND

DRAWING:

EXCAVATION CUT & FILL
3D VIEW

DRAWN	CHECKED	
EL	EL	
SCALE	DATE	
1:300 A3	210122	
JOB No.	DRAWING No.	REV.
2011051	C912	A



WingC

From: Delilah McIntyre <delilah@civix.co.nz>
Sent: Tuesday, 4 May 2021 10:52 am
To: WingC
Subject: RE: Resource consent granted for 58 Te Kawa Road Greenlane (LUC60374224)
Attachments: Appendix 4 - Infrastructure Report.pdf

Follow Up Flag: Follow up
Flag Status: Completed

Hi Wing,

They didn't stamp the engineering plans – technically there were no consent matters relating to servicing so they don't include them in the approved plan set. But as there were no s92 matters the approved engineering plans are as per the original IR, as attached.

Kind Regards,

Delilah McIntyre | **civix** | **Intermediate Planner** | **M** +64 27 650 2280 | **W** www.civix.co.nz

From: WingC <wingc@ptga.co.nz>
Sent: Tuesday, 4 May 2021 8:25 AM
To: Delilah McIntyre <delilah@civix.co.nz>
Subject: RE: Resource consent granted for 58 Te Kawa Road Greenlane (LUC60374224)

Hi Delilah,

I'm emailing in regards to 58 Te Kawa as I only just realised I don't have a copy of a stamped engineering plan? Was there one provided by council that we could have for our records?

Thanks,
Ngā Mihi
WING CHAN
architectural graduate
m.arch{prof}

t 09 5291588
e wingc@ptga.co.nz
w www.ptga.co.nz

PO Box 25198 st heliers, auckland
unit G, 383 khyberpass road, newmarket

Disclaimer : The information and attachments in this electronic communication are the views of the author and may not reflect the views of PTGa. Any attached files are provided on the basis that the recipient and the end user assumes full responsibility for any consequence or damage (directly or indirectly) as a result of this communication or any of its attachments.
Confidentiality : Information contained with this electronic communication is confidential. Any electronic communication and its attachments may not be forwarded on to any third party without the expressed permission of PTGa. If you have received this communication in error, please delete it and contact us by return email.
P Please consider the environment before printing this email

From: Delilah McIntyre <delilah@civix.co.nz>
Sent: Friday, 23 April 2021 9:05 am
To: WingC <wingc@ptga.co.nz>

Cc: Henry Lin <hlin@ptga.co.nz>; Duncan Ross <duncan@civix.co.nz>; Juliet Graham <juliet@civix.co.nz>
Subject: FW: Resource consent granted for 58 Te Kawa Road Greenlane (LUC60374224)

Hi Wing,

Good news, this application has been approved, please see decision documents attached.

Any queries let me know, otherwise all the best for the next stages of the development.

Kind Regards,

Delilah McIntyre | **CIVIX** | **Intermediate Planner** | **M** +64 27 650 2280 | **W** www.civix.co.nz

From: Irene Wing Man Ho <IreneWingMan.Ho@aucklandcouncil.govt.nz>

Sent: Thursday, 22 April 2021 5:49 PM

To: Delilah McIntyre <delilah@civix.co.nz>

Subject: Resource consent granted for 58 Te Kawa Road Greenlane (LUC60374224)

Good Afternoon Delilah,

Following an assessment of your resource consent application under the Resource Management Act 1991 (RMA), a decision has been made to approve your application, subject to conditions of consent.

Please take the time to read and understand the conditions of consent. Council officers will undertake inspections of your project to check compliance with these resource consents. For your reference, a copy of the decisions are attached. They outline the basis for the decisions and the conditions.

If you disagree with the decision(s), or parts of them including the conditions, you can lodge an objection with us or file an appeal with the Environment Court within 15 working days of receiving these decisions.

Objections should be addressed to the Principal Specialist Planner – Central, Auckland Council at Private Bag 92300, Victoria Street West, Auckland 1142. Information on the objection process can be found on our website at www.aucklandcouncil.govt.nz/building-and-consents/understanding-building-consents-process/receive-decision-consent-application/Pages/resource-consent-appeals-objections.aspx

Information on the appeal process can be found on the Environment Court website www.justice.govt.nz/courts/environment-court

Please note that there is no right of appeal under section 120 of the Resource Management Act 1991 where the decision relates to 1 or more of the following, but no other, activities:

- (a) a boundary activity, unless the boundary activity is a non-complying activity;
- (b) a subdivision, unless the subdivision is a non-complying activity; and/or
- (c) a residential activity as defined in section 95A(6) of the RMA, unless the residential activity is a non-complying activity.

A final invoice will be arranged and sent to the person identified on the application form.

If you have any queries, please contact Irene Ho IreneWingMan.Ho@aucklandcouncil.govt.nz.

Kind regards

Irene Ho | Intermediate Planner

Ph 09 353 9346 | e-mail: irene.ho@aucklandcouncil.govt.nz

Auckland Council, Level 1, 35 Graham Street, Auckland

Visit our website: www.aucklandcouncil.govt.nz



CAUTION: This email message and any attachments contain information that may be confidential and may be LEGALLY PRIVILEGED. If you are not the intended recipient, any use, disclosure or copying of this message or attachments is strictly prohibited. If you have received this email message in error please notify us immediately and erase all copies of the message and attachments. We do not accept responsibility for any viruses or similar carried with our email, or any effects our email may have on the recipient computer system or network. Any views expressed in this email may be those of the individual sender and may not necessarily reflect the views of Council.