CODE COMPLIANCE CERTIFICATE

Section 95 Building Act 2004 [Form 7 – Building (forms) Regulations 2004]

Consent No(s): 240320

The Building			
Street address of building:	198-200 Maungakotukutuku Road, Paraparau	**Building name:**	N/A
Current, Lawfully established, use:	Detached Dwelling	**Location of building within site/block number:**	Centre of section remote from any boundaries
		Intended life of the building if 50 years or less:	-
Level/unit number:	-	**Year first constructed:**	1972
Legal description of land where building is located:	LOT 20 DP 33688		

The Owner			
Name of owner:	Peter Saunders and Usani Saunders	**Street address /registered office:**	198-200 Maungakotukutuku Road, Paraparaumu
Contact person:	As above	**Phone numbers:**	
Mailing address:	200 Maungakotukutuku Road Paraparaumu 5032	**Landline:**	-
		Mobile:	0212420309
		Daytime:	-
Email address:	pjsaunders@live.com	**After hours:**	-
Website:	N/A	**Facsimile number:**	-

First point of contact for communications with the Kapiti Coast District Council:

Agent
craig@seajay.co.nz

Building Work

Building Consent No(s): 240320 **Issued by:** Kapiti Coast District Council

Code Compliance

The building consent authority named below is satisfied, on reasonable grounds, that:

(a) the building work complies with the building consent

Michelle Salmon –
Building Inspections Team Leader
On behalf of **Kapiti Coast District Council** Date: 11/03/2025

Kāpiti Coast DISTRICT COUNCIL
Me Huri Whakamuri, Ka Titiro Whakamua

Seajay Consulting Engineers
PO Box 1713
Paraparaumu 5254

17 June 2024

Dear Building Consent Applicant / Building Owner

Approval of Building Consent – Detached Residential / Outbuilding: 240320

Location: 198-200 Maungakotukutuku Road, Paraparau
Legal Description: LOT 20 DP 33688
Description: The project comprises construction of a new set of internal stairs in the existing two storey house.

I am pleased to inform you that the above building consent application has been approved. The building consent documents have been issued and are enclosed.

The building consent attached to this letter is consent under the Building Act 2004 to undertake building work in accordance with the plans and specifications that accompanied your application. Under section 49 of that Act, Council is satisfied that the provisions of the building code would be met if the proposed building work were completed in accordance with those plans and specifications. This consent does not affect any duty or responsibility under any other Act or permit any breach of any other Act.

This building consent does not give or imply any rights to transgress beyond your legal boundaries. Any work that is required beyond your legal boundaries can only be undertaken with the permission of the affected owner/s.

Before starting any work please read ALL the building consent documents carefully and in full so that you, as the owner, understand the conditions under which the consent has been issued.

Owner responsibilities

The owner is responsible for ensuring:

- building work starts within 12 months of the approval of the building consent and that work progresses at a reasonable pace.

175 Rimu Road, Paraparaumu 5032 | Private Bag 60 601, Paraparaumu 5254 | T: 04 296 4700 F: 04 296 4830 | www.kapiticoast.govt.nz

- written notice of every licensed building practitioner undertaking restricted building work is provided to Council before that work commences, and any changes are advised in writing

- the approved building consent documents are kept on site during construction and available for the District inspector at inspections

- all required inspections are completed and that a Code Compliance Certificate is obtained once the work has been completed. The list of supporting documentation required before issue of the Code Compliance Certificate and information on filling out the application form for code compliance certificate is attached. Failure to obtain a final inspection and a code compliance certificate may affect your insurance cover and could affect future re-sale of your property.

- a Corridor Access Request is made and a Works Access permit is obtained before undertaking work in the legal road/road reserve, including installing a vehicle access crossing from the public road into your property. The process to be followed and the forms can be found on the Council website under Council Services/Roads or Council Services/Frequently asked questions/Access & Transport.

- before any excavations are undertaken a "Before U Dig" inquiry is made to check for locations of any underground services.

- no work with noisy equipment is to be carried out before 7.30 a.m. or after 6 p.m. Monday to Saturday. During the week there may be workers on site from 6.30 a.m. quietly preparing for work. Work with noisy equipment is not permitted on Sundays and public holidays.

- all loose materials that are capable of being carried by the wind are either secured or removed from the site. All activities must be carried out in a manner that keeps to a minimum the dust nuisance to adjacent properties.

- no damage occurs to public property, for example footpaths, water meters or retaining structures. Should damage occur you will be required to pay for any repairs.

- obtaining an amendment to the building consent for any changes to the approved building consent, prior to that work being undertaken.

- meeting the requirements of any easements, consent notices, covenants, and like listings registered on the title.

- the development contributions invoiced, if any, must be paid before a code compliance certificate can be issued.

- all maintenance recommended by the manufacturers is carried out at the required intervals.

General requirements

Note: Your attention is drawn to the notes contained in the ‘Addendum to the Consent’ and guidance documents referred to.

The following information is relevant to this building consent:

1. The Building Inspector is to be given 24 hours' notice before carrying out the inspections on the attached list. To arrange for inspections by the District Inspector, please contact the building inspectorate on 04 296 4700 between the hours of 8.00am and 4.30pm.
2. You are responsible for the safety of visitors to the work site including those undertaking building inspections. You must provide safe access to parts of the construction necessary for inspection. Ladder access must be securely founded and tied. Scaffold access and roof edge protection is generally required.
3. If required inspections, including those by designers of specifically designed elements, are not undertaken you may experience difficulty in obtaining a Code Compliance Certificate for the project. We suggest that at the time of the first inspection you discuss the inspection requirements with the inspecting officer.
4. This building consent will lapse and be of no effect if the building work concerned has not been commenced within 12 calendar months after the date of issue, or within such further period as the territorial authority allows.
5. The contractor is to leave the site clear of all demolition materials and in a tidy state.
6. Easements, consent notices, covenants, and like listings registered on the title are the responsibility of the applicant.
7. Note and comply with endorsements on approved plans.

Please note that the design work and restricted building work must be supervised or carried out by a licensed building practitioner who is licensed to carry out or supervise that kind of building work.

You or your agent will need to provide their details to the Council in writing prior to commencement of the building work. If after the restricted building work commences the named licensed building practitioner(s) ceases to be engaged to carry out or supervise the restricted building work under the building consent, this must also be advised in writing as must also the details of any other licensed building practitioner(s) subsequently engaged to carry out or supervise the restricted building work (Section 87 of the Building Act 2004). A form "Advice of licensed building practitioner(s)" is enclosed for you to use to advise the Council of licensed building practitioner details.

Please also note that it is an offence to engage another person to carry out or supervise restricted building work who is not a licensed building practitioner (Section 86 of the Building Act 2004).

Other reference material

- Guide for completing an application for code compliance, https://www.kapiticoast.govt.nz/your-council/planning/building/code-compliance-certificate/
- A guide to the inspection process https://www.kapiticoast.govt.nz/your-council/planning/building/building-services-inspections/

If you have any questions regarding your building consent or your responsibilities, please contact Kapiti Coast District Council on 04 296 4700 or toll free on 0800 486 486.

Building Consent

[Form 5, Building (Forms) Regulations 2004]

240320

Section 51, Building Act 2004

The building

Street address of building:	198-200 Maungakotukutuku Road, Paraparau
Legal description of land where building is located:	LOT 20 DP 33688
Valuation number:	1540004600
Building name:	
Location of building within site/ block number:	
Level/unit number:	

The owner

Name of owner:	Peter Saunders and Usani Saunders
Contact person:	Peter Saunders
Mailing address:	200 Maungakotukutuku Road, Paraparaumu
Street address/registered office:	
Phone numbers:	
Landline:	*Mobile:* 0212420309
After hours:	*Fax number:*
Email address:	pjsaunders@live.com
Website:	

First point of contact for communications with the council/building consent authority:

Full Name: Seajay Consulting Engineers

Mailing Address: PO Box 1713, Paraparaumu 5254

Phones:: 021 121 4591: (04) 212 5150

Email: craig@seajay.co.nz

Building work

The following building work is authorised by this building consent:

The project comprises construction of a new set of internal stairs in the existing two storey house.

Detached Dwellings

This building consent is issued under section 51 of the Building Act 2004. This building consent does not relieve the owner of the building (or proposed building) of any duty or responsibility under any other Act relating to or affecting the building (or proposed building). This building consent also does not permit the construction, alteration, demolition, or removal of the building (or proposed building) if that construction, alteration, demolition, or removal would be in breach of any other Act.

Conditions of building consent

This building consent is subject to the following conditions:

1. Refer to the list of inspections required. Under section 90 of the Building Act 2004 agents authorised by the Council (acting as a Building Consent Authority) are entitled, at all times during normal working hours or while building work is being done, to inspect–
   a. land on which building work is being or is proposed to be carried out; and
   b. building work that has been or is being carried out on or off that building site; and
   c. any building.

Compliance schedule

A compliance schedule is not required for the building.

Attachments

Copies of the following documents are attached to this building consent:

- List of required inspections and supporting documentation required
- Building Consent Addendum
- Plans and specifications

Note: The cover letter and all attachments to this building consent should be read fully to ensure you understand all conditions of this consent.

Signature

Building Officer

Position

On behalf of: KAPITI COAST DISTRICT COUNCIL

Date: 14/06/24

Relevant Information

Issued in accordance with Building Consent No. 240320

1. Plan notes take precedence over general specifications.

Building Consent Addendum to 240320

Application	Building Consent No. 240320
Seajay Consulting Engineers PO Box 1713 Paraparaumu 5254	

Project	
Description:	Dwellings - Alterations & additions Being Stage 1 of an intended 1 Stages The project comprises construction of a new set of internal stairs in the existing two storey house.
Intended Life:	Indefinite, but not less than 50 years
Intended Use:	Detached Dwellings
Estimated Value:	$20,000
Location:	198-200 Maungakotukutuku Road, Paraparau
Legal Description:	LOT 20 DP 33688
Valuation No:	1540004600

Contractor: Craig McGhie-Seajay Consulting Engineers PO Box 1713, Paraparaumu : 04 2125150

Specific requirements

1. The inspection of all specific design components covered by a producer statement design (PS1), where the designer has recommended construction monitoring, is the responsibility of the Design Engineer who is also required to supply a written report (PS4) to the Council. It is the Design engineer's responsibility to confirm design assumptions.
2. Ground bearing must be reconfirmed on site following excavation but prior to placing of concrete and reinforcing.

KAPITI COAST DISTRICT COUNCIL

Consent No: 240320 Building Category: R1

Site Address: 198-200 Maungakotukutuku Road, Paraparau

Owner/Agent: Seajay Consulting Engineers

Inspections

The following inspections are required:

1 Preline Building

1 Final Inspection

2 Total Inspections

Residential Documentation

1 Application for CCC

1 Construction review PS4 statement for structural engineering

REV:	DESCRIPTION:	ISSUED:	DATE:
2	PRJCT NO. CORRECTED - FOR CONSENT/CONSTR	CJM	JUNE 2024

GENERAL NOTES:

1. CONFIRM EXISTING STRUCTURE ON SITE.
2. DO NOT SCALE OFF DRAWINGS. ALL DIMENSIONS TO BE CONFIRMED ON SITE.
3. MATERIALS AND WORKMANSHIP SHALL BE THE BEST OF THEIR RESPECTIVE KIND COMPLYING WITH ALL RELEVANT NEW ZEALAND STANDARDS AND MANUFACTURERS SPECIFICATIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL MATERIALS AND PREFABRICATED COMPONENTS ARE SUPPLIED, STORED, HANDLED AND ERECTED IN A MANNER THAT DOES NOT DISTORT OR DAMAGE THE MATERIAL OR COMPONENTS OR THEIR CONNECTIONS AND SURFACE COATINGS. THE CONTRACTOR SHALL MAKE GOOD ANY DAMAGE AT THEIR EXPENSE.
4. PRODUCT SUBSTITUTIONS SHALL NOT BE MADE OR ALTERNATIVE DETAILS USED WITHOUT PRIOR APPROVAL FROM THE ENGINEER. WORK SHALL BE CONSTRUCTED STRICTLY IN ACCORDANCE WITH APPROVED DRAWINGS. THE CONTRACTOR SHALL CONTACT THE ENGINEER FOR CLARIFICATION PRIOR TO UNDERTAKING ANY WORK IF THEY CONSIDER THAT THERE ARE ANY ERRORS, DISCREPANCIES OR AMBIGUITIES IN THE DRAWINGS OR UNFORESEEN SITE CONDITIONS MAKE DETAILS IMPRACTICAL TO CONSTRUCT.
5. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THE STRUCTURE IS ADEQUATELY SUPPORTED DURING CONSTRUCTION.
6. ACCESS TO SITE, CONTROL OF SITE ACTIVITIES AND ALL WORK SHALL BE UNDERTAKEN IN A SAFE MANNER COMPLYING WITH THE HEALTH AND SAFETY AT WORK ACT 2015, HEALTH AND SAFETY AT WORK REGULATIONS 2016 AND WORK SAFE NEW ZEALAND APPROVED CODES OF PRACTICE, GOOD PRACTICE GUIDELINES AND FACT SHEETS AS APPLICABLE.
7. CONTRACTOR TO LOCATE ALL UNDERGROUND AND BUILDING SERVICES PRIOR TO COMMENCING AND PROTECT AS NECESSARY.

FOUNDATION NOTES:

8. ENSURE THAT FOOTINGS ARE FOUNDED ON SOLID GROUND HAVING A MINIMUM ULTIMATE BEARING CAPACITY NOT LESS THAN 300kPa UNLESS NOTED OTHERWISE. CONFIRM ON SITE WITH ENGINEER.
9. A MINIMUM OF 150mm FREE DRAINING BASE COURSE SHALL BE PLACED UNDER ANY SLABS. BASECOURSE SHALL BE A WELL GRADED AP20 WITH NOT MORE THAN 5% PASSING A 2.2mm SIEVE. PROVIDE MINIMUM 25mm COMPACTED SAND BLINDING TO PROTECT DPM.
10. EXCAVATIONS SHALL BE KEPT FREE OF WATER AT ALL TIMES.
11. REMOVE SURPLUS MATERIAL FROM SITE.

CONCRETE NOTES:

12. CONCRETE WORK SHALL COMPLY WITH THE REQUIREMENTS OF NZS3109 AND NZS 3604.
13. CONCRETE SHALL BE GRADE N25 (25MPa) AND HAVE A MAXIMUM SLUMP OF 100mm.
14. ALL REINFORCING STEEL SHALL COMPLY WITH AS/NZS4671. BARS DENOTED “HD” SHALL BE GRADE 500E. BARS DENOTED “D” or “R” SHALL BE GRADE 300E. MESH SHALL BE GRADE 500E.
15. MINIMUM CONCRETE COVER SHALL BE:
    - INTERIOR FORMWORK/SLAB 50mm
    - IN CONTACT WITH GROUND 75mm
16. LAPS IN REINFORCING STEEL SHALL BE LOCATED AND DETAILED AS SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL PROVIDE DETAILS OF ANY ADDITIONAL LAPS THEY REQUIRE FOR APPROVAL BY THE ENGINEER PRIOR TO FABRICATING THE STEEL. MINIMUM STEEL LAPS SHALL BE:

	GRADE 300E (D)	GRADE 500E (HD)
• 10mm DIAMETER	500mm	700mm
• 12mm DIAMETER	600mm	850mm

17. REINFORCING BARS BENT OR FABRICATED ON SITE SHALL BE FABRICATED USING APPROPRIATE EQUIPMENT DESIGNED FOR BENDING REINFORCING STEEL. BEND RADIUS SHALL COMPLY WITH NZS3109. HD BARS SHALL NOT BE RE-BENT.
18. SURFACE FINISHES SHALL BE, UNLESS SHOWN OTHERWISE ON THE ARCHITECTURAL DRAWINGS:
    - SLABS U3
    - EXPOSED FORMWORK F4
19. ALL CONCRETE SHALL BE PLACED AND COMPACTED WITH AN EMERSION VIBRATOR OR SIMILAR APPROVED. RODDING CONCRETE IS NOT AN ACCEPTABLE METHOD OF COMPACTION.
20. CONCRETE SHALL BE CURED IN ACCORDANCE WITH NZS3109 FOR A MINIMUM PERIOD OF 7 DAYS.
21. HOLDING DOWN BOLTS, WELD PLATES AND CAST IN ITEMS SHALL BE CAST INTO THE SLABS, FOOTINGS, WALLS AND BEAMS. BOLTS SHALL BE BENT TO PREVENT ROTATION. BOLTS, WELD PLATES AND CAST IN ITEMS SHALL BE LOCATED WITH AN APPROPRIATE TEMPLATE HELD RIGIDLY IN PLACE DURING THE CONCRETE POUR. PROPRIETARY CHEMICAL OR MECHANICAL BOLT FIXING SHALL NOT BE SUBSTITUTED WITHOUT APPROVAL OF THE ENGINEER.
22. CAST IN ITEMS SHALL BE LOCATED WITH ±5mm OF THE DESIGN PLAN POSITION AND HEIGHT.
23. RAMSET EPCON C6 EPOXY GROUT (OR SIMILAR APPROVED) SHALL BE USED FOR ALL DRILLED AND EPOXY GROUTED ITEMS AND FIXINGS WHERE SHOWN ON THE DRAWING OR APPROVED BY THE ENGINEER.

STEEL NOTES:

24. STEELWORK TO BE SUPPLIED, FABRICATED AND INSTALLED IN ACCORDANCE WITH NZS 3404.
25. THE CONTRACTOR SHALL SUPPLY SHOP DRAWINGS FOR REVIEW AND COMMENT BY THE ENGINEER PRIOR TO COMMENCING FABRICATION OF THE STEEL WORK. THESE SHALL INCLUDE ALL PROPOSED WELD PREPARATION AND WELD TYPES.
26. ALL WELDS TO BE 6 FILLET WELDS ALL ROUND UNLESS NOTED OTHERWISE.
27. ALL M12 BOLTS TO BE GRADE 4.6. ALL M16 BOLTS TO BE GRADE 8.8 UNLESS NOTED OTHERWISE.
28. ALL PLATES TO BE 10mm THICK UNLESS NOTED OTHERWISE.
29. ALL STEEL SECTIONS TO BE PROVIDED WITH 14 DIAMETER HOLES AT 800mm CENTRES IN THE FLANGES AND WEBS FOR FIXING TIMBER FRAMING.
30. STEEL GRADES:
    - PLATES 250 MPa
    - HOT ROLLED SECTIONS 300 MPa
    - HOLLOW SECTIONS 350 MPa
31. ALL WELD ELECTRODES ARE E48XX OR W50X. WELDING, PLANT, INSTRUMENTS AND ACCESSORIES SHALL COMPLY WITH AS/NZS1554.1. WELDERS SHALL BE QUALIFIED TO AS/NZS 2980.
32. ALL INTERNAL STRUCTURAL STEEL TO BE PAINTED IN ACCORDANCE WITH SYSTEM DESIGNATION AS/NZS2312/AKL1 BEFORE DELIVERY TO SITE. ANY AREAS DAMAGED TO BE MADE GOOD UPON INSTALLATION AND FOLLOWING SITE WELDING. TOP COAT AND COLOUR TO OWNER REQUIREMENTS
33. WELD INSPECTIONS(IF REQUIRED) SHALL BE CARRIED OUT BY QUALIFIED WELDING INSPECTOR. CONTRACTOR SHALL PROVIDE A WELD INSPECTION CERTIFICATE IF REQUESTED. THE ENGINEER SHALL BE GIVEN THE OPPORTUNITY TO INSPECT WELDING. REJECTED WELDING SHALL BE REMOVED AND RE-WELDED AT THE CONTRACTORS EXPENSE.
34. ALL WELDS VISIBLE IN FINAL STRUCTURE TO BE SMOOTH AND/OR GROUND FLUSH TO ACHIEVE A SMOOTH SURFACE FINISH.

TIMBER NOTES:

35. TIMBER WORK TO BE CARRIED OUT IN ACCORDANCE WITH THE FOLLOWING STANDARDS:

NZS 3602	TIMBER AND WOOD-BASED PRODUCTS FOR USE IN BUILDING
NZS 3603	TIMBER STRUCTURES STANDARD
NZS 3604	TIMBER FRAME BUILDINGS
NZS 3605	TIMBER PILES AND POLES FOR USE IN BUILDING
AS/NZS 1328.1 & 2	GLUED LAMINATED STRUCTURAL TIMBER
AS/NZS 2269.0	PLYWOOD STRUCTURAL PART 0

36. TIMBER SHALL BE MSG8 OR VSG8 UNLESS NOTED OTHERWISE ON THE DRAWINGS.
37. TIMBER SHALL BE INSTALLED WITH A MOISTURE CONTENT WITHIN THE PERMITTED RANGES SHOWN IN NZS 3602 AND THE LIKELY IN-SERVICE MOISTURE CONTENT REQUIRED TO PREVENT EXCESSIVE LONG TERM SHRINKAGE.
38. PROPRIETARY TIMBER PRODUCTS AND GLU LAMINATED TIMBER MEMBERS SHALL BE CLEARLY MARKED ON THE MEMBER WITH MARKINGS DENOTING THE - "MANUFACTURER", "PRESERVATIVE TREATMENT" AND "STRENGTH GRADE". UNIDENTIFIED TIMBER SHALL BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE WITH COMPLIANT TIMBER.
39. ALL TIMBER SHALL BE WORKED AND CUT TO BE TRUE AND SQUARE AND FREE FROM WANE AND WARP WITH ALL JOINTS MATCHING AND MATING TO A PROPER CONTACT FIT.
40. ALL CONNECTIONS WHETHER NAILED, SCREWED, GLUED, MORTICED OR DOVETAILED SHALL BE ACCURATELY MADE AND PROPERLY EXECUTED TO PROVIDE SOUND SATISFACTORY CONNECTIONS FOR THE CLASS OF WORK REQUIRED. TIMBERS CONTAINING DEFECTS OR DISTORTIONS SHALL NOT BE CRAMPED TO PROVIDE MATING AT CONNECTIONS BUT SHALL BE DISCARDED AND REPLACED BY TRUE DEFECT-FREE TIMBERS BEFORE CONNECTIONS ARE MADE.
41. PROVIDE AND INSTALL TO GOOD TRADE PRACTICE ALL NECESSARY FIXINGS AND CONNECTIONS (NAILS, BOLTS, SCREWS, ADHESIVES, PROPRIETARY MECHANICAL FIXINGS ETC) REQUIRED FOR THE FABRICATION AND ERECTION OF ALL TIMBER WORK.TIMBER CONNECTIONS NOT SHOWN TO BE IN ACCORDANCE WITH NZS3604.
42. ALL BOLTED TIMBER CONNECTIONS TO HAVE :
    - 10mm DIA BOLTS TO HAVE 38x38x3 SQUARE WASHER
    - 12mm DIA BOLTS TO HAVE 50x50x3 SQUARE WASHER
    - 16mm DIA BOLTS TO HAVE 65x65x5 SQUARE WASHER
43. WASHER AND BOLT HEADS SHALL NOT BE CHECKED INTO THE TIMBER. CONTRACTOR SHALL COORDINATE BRACKET AND CLEAT ORIENTATION WITH SUB-TRADES TO ENSURE THAT CHECKING IN OF BOLTS AND WASHER IS NOT REQUIRED. TIMBER THAT HAS BEEN CHECKED FOR WASHER AND BOLTS HEADS SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR EXPENSE.
44. TIMBER MEMBERS SHALL NOT BE NOTCHED AT THEIR EDGES UNLESS SHOWN OTHERWISE ON THE DRAWINGS OR APPROVED BY THE ENGINEER.
45. TIMBER TREATMENT TO TCP SPECIFICATIONS, UNLESS SHOWN OTHERWISE ON ARCHITECTURAL DRAWINGS, SHALL BE :
    - EMBEDDED IN GROUND H5
    - IN CONTACT WITH GROUND H4
    - EXTERIOR TIMBER NOT IN CONTACT WITH GROUND H3.2
    - INTERIOR H1.2
46. ALL NAILS, SCREWS , BOLTS, WASHERS, PLATES AND BRACKETS SHALL BE GRADE 304 OR 316 STAINLESS STEEL IN CORROSION ZONE D AND/OR COASTAL ENVIRONMENT WHERE EXPOSED WEATHER OR IN A SUBFLOOR SPACE OR IN ANY ENVIRONMENT WITHIN 300mm OF THE GROUND. LIGHT GAUGE STEEL BRACKETS AND FIXINGS SHALL BE GRADE 304 OR 316 STAINLESS STEEL WHERE EXPOSED WEATHER OR IN A SUBFLOOR SPACE IN ANY ENVIRONMENT.
47. STAIR TREADS TO BE A HARDWOOD TO OWNERS SELECTION. CONFIRM ON SITE.

ENGINEERS DESIGN
This project contains elements specifically designed by an engineer. The owner/builder is required to ensure the engineer inspects the work and provides KCDC with written evidence of the inspection.

ENGINEER STRUCTURAL DESIGN TAKES PRECEDENCE

CAUTION
Plans have been digitally reproduced and may not be to scale.

BC240320
Further Information Received
14/06/2024

SCHEDULE OF INSPECTIONS

SEAJAY CONSULTING ENGINEERS LTD HAVE BEEN ENGAGED TO UNDERTAKE CONSTRUCTION MONITORING OF THE SPECIFIC ENGINEERING DESIGN ITEMS TO A IPENZ /ACENZ CM3 LEVEL AND PROPOSE TO UNDERTAKE THE FOLLOWING SITE INSPECTIONS :

1	EXISTING STRUCTURE	WHEN EXPOSED TO VIEW
2	FOUNDATION SUBGRADE	PRIOR TO PLACING REINFORCING STEEL
3	PAD FOOTINGS	PRE-POUR
4	INTERNAL BEAMS AND CONNECTIONS	PRE-LINE OR PRIOR TO BUILDING IN TO SUCH AN EXTENT THAT REMEDIATION WORK COULD NOT BE CARRIED OUT
5	INTERNAL POSTS AND CONNECTIONS	PRE-LINE OR PRIOR TO BUILDING IN TO SUCH AN EXTENT THAT REMEDIATION WORK COULD NOT BE CARRIED OUT
6	STAIR STRUCTURE	PRE-CLAD OR PRIOR TO BUILDING IN TO SUCH AN EXTENT THAT REMEDIATION WORK COULD NOT BE CARRIED OUT
7	BALUSTRADES	ON COMPLETION AND/OR PROIR TO COVERING CONNECTIONS
8	RELOCATED BRACING	ON COMPLETION

INSPECTION NOTES:

A. INSPECTIONS SHALL NOT BE UNDERTAKEN IF A BUILDING CONSENT HAS NOT BEEN GRANTED BY THE BUILDING CONSENT AUTHORITY.

B. THE ABOVE ITEMS OF INSPECTIONS ARE THE MINIMUM REQUIRED TO ENABLE SEAJAY CONSULTING ENGINEERS LTD TO ISSUE A PS4 - PRODUCER STATEMENT CONSTRUCTION REVIEW FOR THE SPECIFIC ENGINEERING DESIGN ITEMS.

C. THE ABOVE ITEMS OF INSPECTION DO NOT COVER WORK CONSTRUCTED IN ACCORDANCE WITH NZS 3604:2011, FOR WHICH INSPECTIONS ARE TO BE UNDERTAKEN BY THE BUILDING CONSENT AUTHORITY.

D. SPECIFIC DESIGN WORK IS TO BE INSPECTED BY THE ENGINEER PRIOR TO CLOSING IN OR BUILDING IN TO THE POINT WHERE REMEDIAL WORK CANNOT BE CARRIED OUT. THE ENGINEER REQUIRES 48 HOURS NOTICE BEFORE ANY INSPECTIONS.. THE ABOVE TIMEFRAME IS INDICATIVE, THE ENGINEER AND CONTRACTOR ARE TO AGREE THE TIMING OF INSPECTION PRIOR TO WORK COMMENCING ON SITE.

6. THE CONTRACTOR SHALL PROVIDE SAFE AND REASONABLE ACCESS TO THE SITE AND STRUCTURAL ELEMENTS TO BE INSPECTED. THE ENGINEER SHALL BE SOLELY RESPONSIBLE FOR DEEMING COMPLIANCE WITH THIS REQUIREMENT AND WILL NOT UNDERTAKE INSPECTIONS IF THEY DEEM IT NOT SAFE TO DO SO.

E. THE ABOVE SCHEDULE DOES NOT NECESSARILY REPRESENT THE ACTUAL NUMBER OF INSPECTIONS TO BE UNDERTAKEN. THE NUMBER OF INSPECTIONS WILL DEPEND ON THE CONSTRUCTION METHOD, SEQUENCE OF THE WORKS AND WHETHER OR NOT UNFORESEEN CONDITIONS OR DIFFICULTIES ARE ENCOUNTERED ON SITE.

F. THE BUILDING CONSENT AUTHORITY SHALL BE NOTIFIED OF THE REQUIREMENT FOR AN INSPECTION OF SPECIFIC DESIGN ITEMS AND AFFORDED THE OPPORTUNITY TO INSPECT.

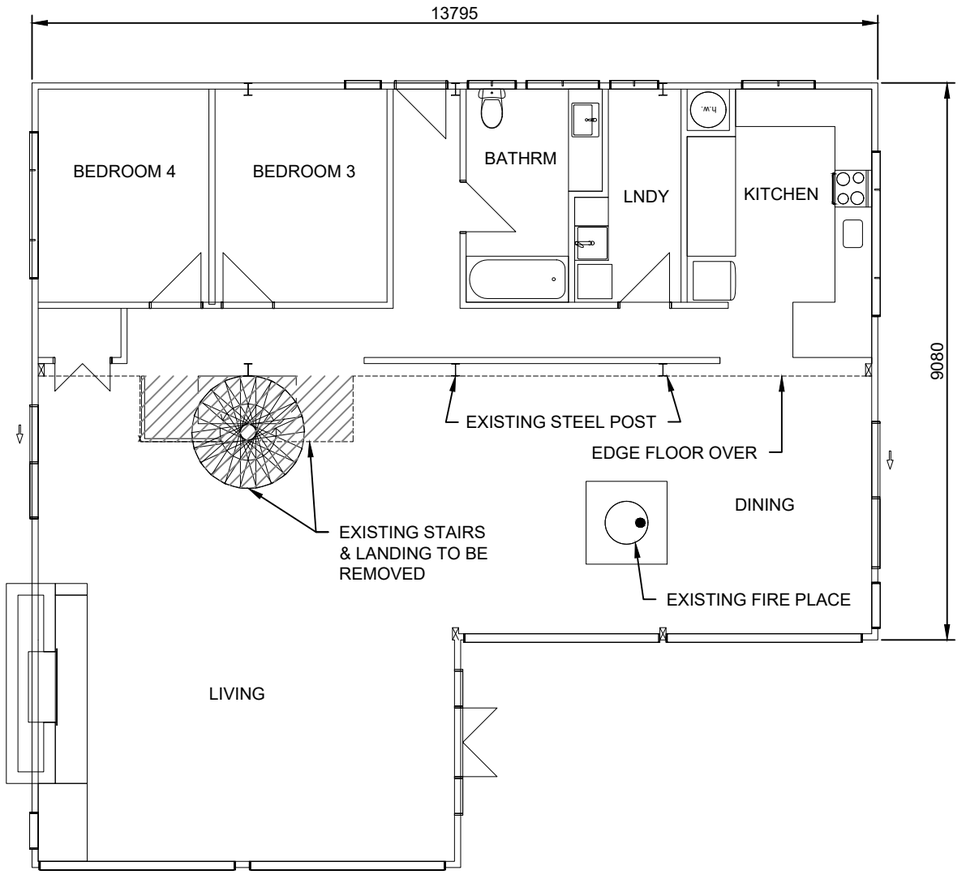
G. THE CONTRACTOR/BUILDER SHALL SEEK WRITTEN APPROVAL TO USE ALTERNATIVE DETAILS OR PRODUCTS PRIOR TO UNDERTAKING THE WORK. WORK FOUND ON SITE NOT COMPLYING EXACTLY WITH THE APPROVED DRAWINGS AND SPECIFICATIONS WILL FAIL THE INSPECTION AND A PRODUCER STATEMENT PS4 WILL NOT BE ISSUED UNTIL REMEDIAL WORK IS COMPLETED. COST OF REDESIGN AND/OR RE-INSPECTION SHALL BE CHARGED AS A VARIATION AS NECESSARY.

APPROVED BY
BUILDING
simonc
OFFICER
14/06/2024

Seajay CONSULTING ENGINEERS
CIVIL • STRUCTURAL • FIRE
42 MICHAEL, ROAD, PO BOX 1713, PARAPARAUMU 5252 PH (04) 212 5150 - M: 021 121 4591 - craig@seajay.co.nz

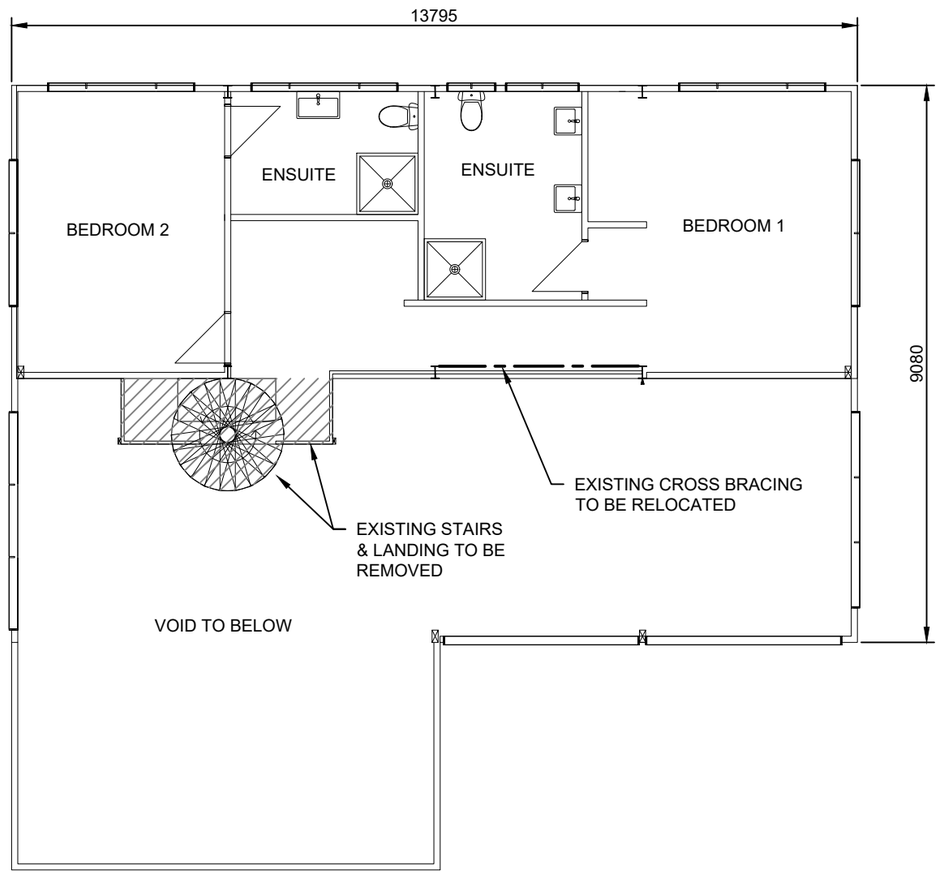
CLIENT: PETER SAUNDERS	DRAWN: CJM	DATE: FEB 2024	SCALE: AS SHOWN
PROJECT: 200 MAUNGAKOTUKUTUKU ROAD PARAPARAUMU	PROJECT NO. 23020		
TITLE: NEW STAIRS GENERAL NOTES	SHEET NO. S1	REV: 2	
	23020.dwg		

REV:	DESCRIPTION:	ISSUED:	DATE:
2	PRJCT NO. CORRECTED - FOR CONSENT/CONSTR	CJM	JUNE 2024



EXISTING GROUND FLOOR PLAN

1:100



EXISTING 1ST FLOOR PLAN

1:100

BC240320
Further Information Received
14/06/2024

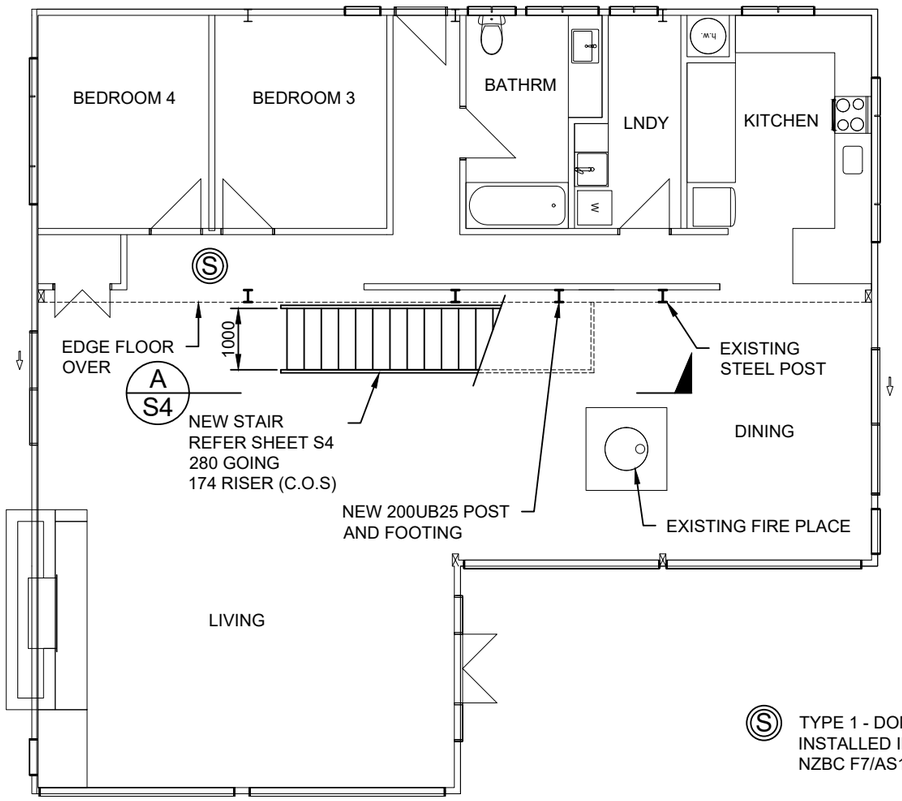
NOTES:

1. REFER SHEET S1 FOR GENERAL NOTES
2. CONFIRM ALL DIMENSIONS ON SITE

Seajay
CONSULTING ENGINEERS
CIVIL • STRUCTURAL • FIRE
42 MICHAEL, ROAD, PO BOX 1713, PARAPARAUMU 5252 PH (04) 212 5150 - M: 021 121 4591 - craig@seajay.co.nz

CLIENT: PETER SAUNDERS	DRAWN: CJM	DATE: FEB 2024	SCALE: AS SHOWN
PROJECT: 200 MAUNGAKOTUKUTUKU ROAD PARAPARAUMU	PROJECT NO. 23020		
TITLE: NEW STAIRS EXISTING PLANS	SHEET NO. S2	REV: 2	
	23020.dwg		

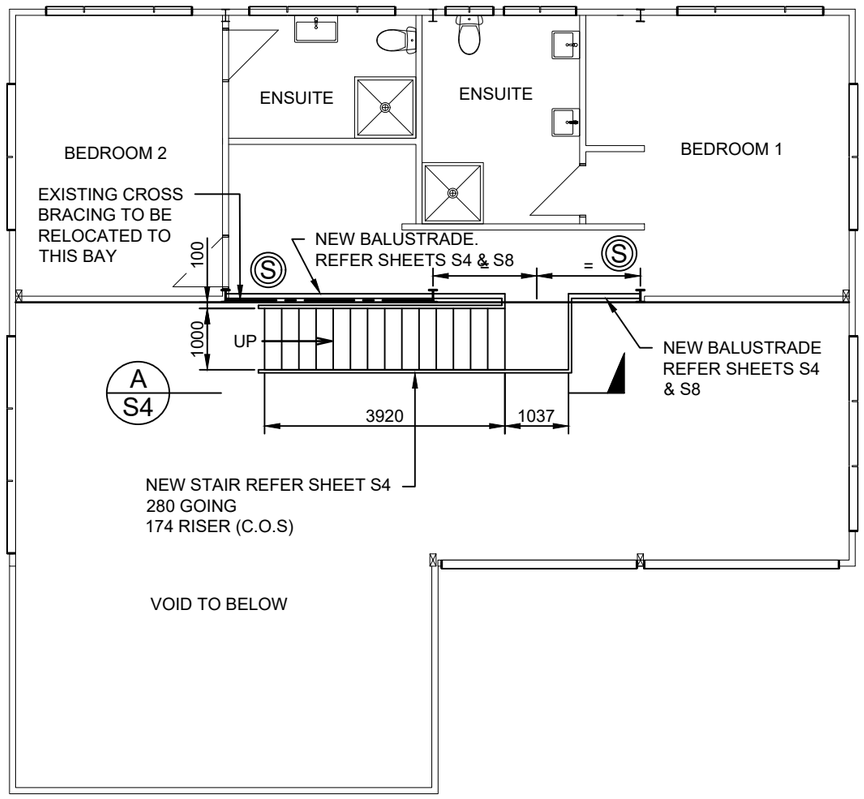
REV:	DESCRIPTION:	ISSUED:	DATE:
2	PRJCT NO. CORRECTED - FOR CONSENT/CONSTR	CJM	JUNE 2024



TYPE 1 - DOMESTIC SMOKE ALARMS INSTALLED IN ACCORDANCE WITH NZBC F7/AS1 WARNING SYSTEMS

PROPOSED GROUND FLOOR PLAN

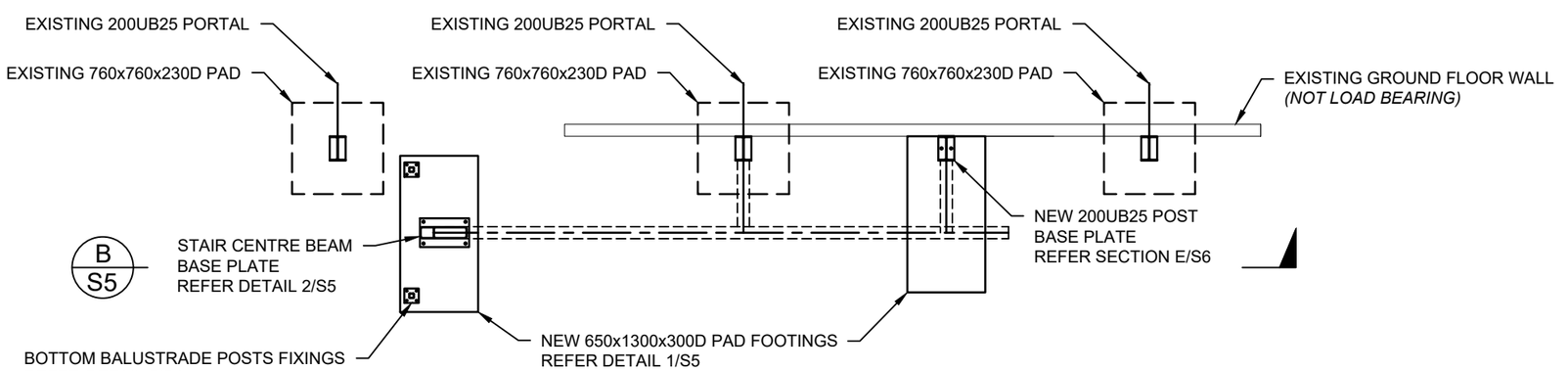
1:100



PROPOSED 1ST FLOOR PLAN

1:100

BC240320
Further Information Received
14/06/2024



STAIR FOUNDATION PLAN

1:50

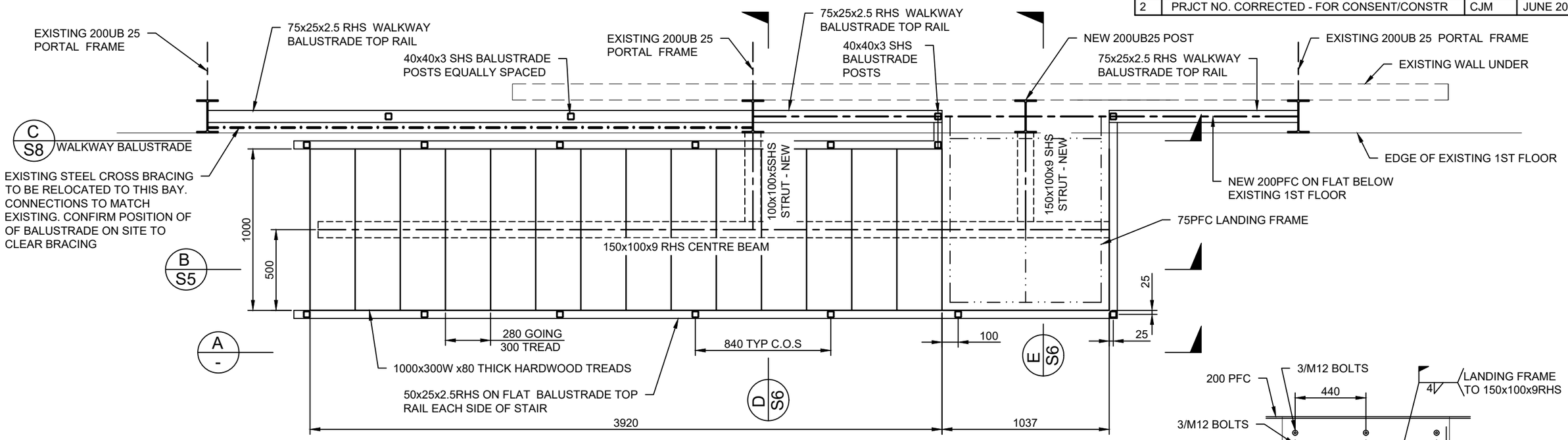
NOTES:

1. REFER SHEET S1 FOR GENERAL NOTES
2. CONFIRM ALL DIMENSIONS ON SITE

Seajay
CONSULTING ENGINEERS
CIVIL • STRUCTURAL • FIRE
42 MICHAEL ROAD, PO BOX 1713, PARAPARAUMU 5252 PH (04) 212 5150 - M: 021 121 4591 - craig@seajay.co.nz

CLIENT: PETER SAUNDERS	DRAWN: CJM	DATE: FEB 2024	SCALE: AS SHOWN
PROJECT: 200 MAUNGAKOTUKUTUKU ROAD PARAPARAUMU	PROJECT NO. 23020		
TITLE: NEW STAIRS PROPOSED PLAN	SHEET NO. S3	REV: 2	
	23020.dwg		

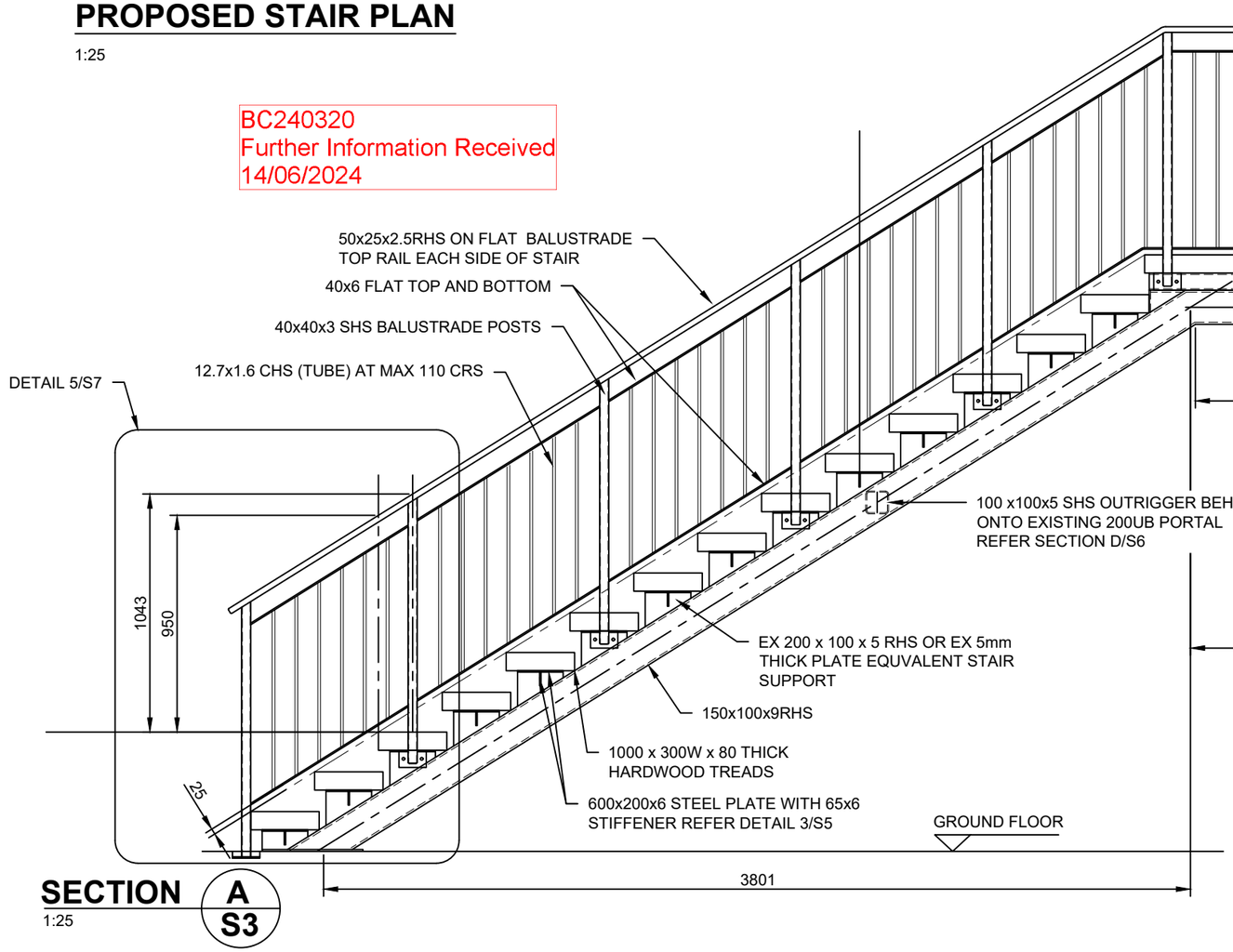
REV:	DESCRIPTION:	ISSUED:	DATE:
2	PRJCT NO. CORRECTED - FOR CONSENT/CONSTR	CJM	JUNE 2024



PROPOSED STAIR PLAN

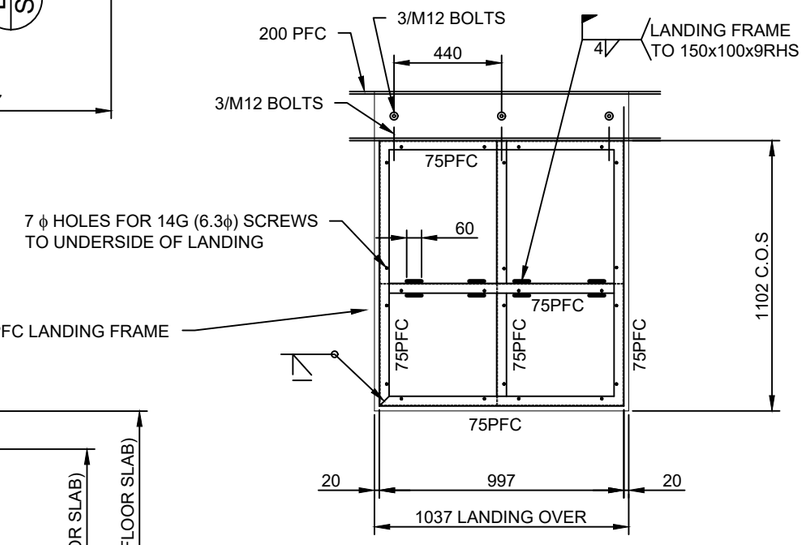
1:25

BC240320
Further Information Received
14/06/2024



SECTION A S3

1:25



LANDING FRAME PLAN

1:25

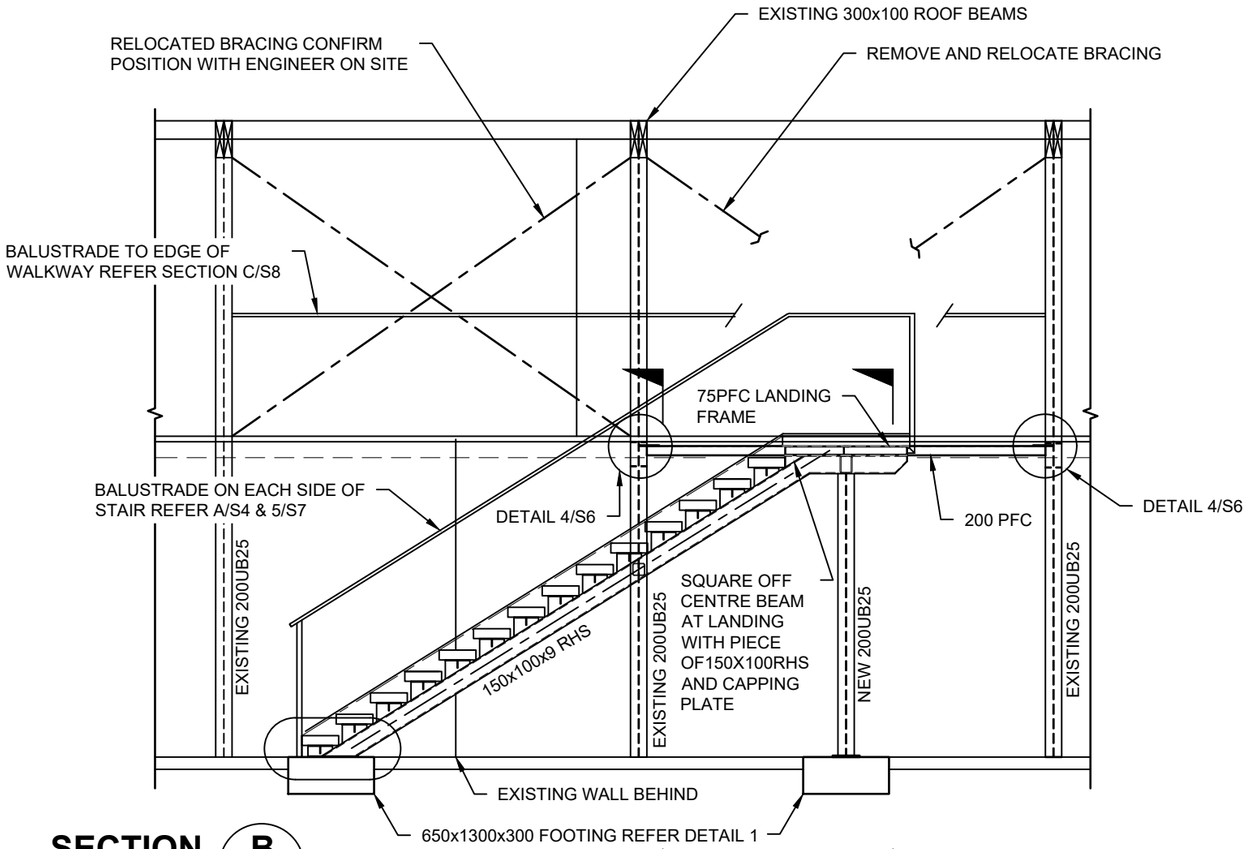
NOTES:

1. REFER SHEET S1 FOR GENERAL NOTES
2. CONFIRM ALL DIMENSIONS ON SITE
3. THE TOP RAIL OF THE WALKWAY BALUSTRADE IS 75x25x2.5RHS ON FLAT SPANNING BETWEEN PORTALS. THE STAIR BALUSTRADE REQUIRES 50x25x2.5RHS ON FLAT TO MEET STAIR HAND RAIL REQUIREMENTS.

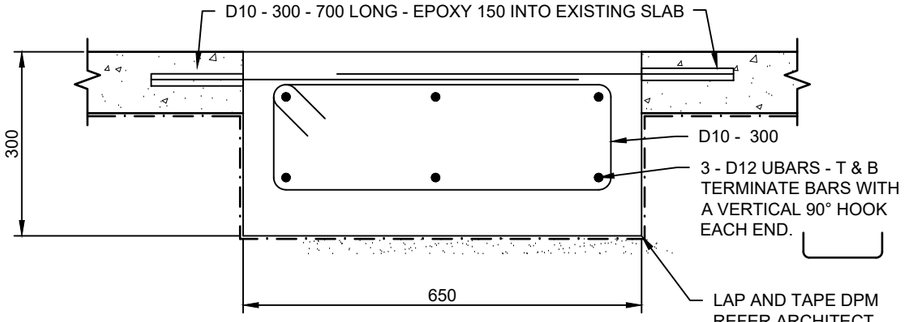
Seajay CONSULTING ENGINEERS CIVIL • STRUCTURAL • FIRE
42 MICHAEL ROAD, PO BOX 1713, PARAPARAUMU 5252 PH (04) 212 5150 - M: 021 121 4591 - craig@seajay.co.nz

CLIENT: PETER SAUNDERS	DRAWN: CJM	DATE: FEB 2024	SCALE: AS SHOWN
PROJECT: 200 MAUNGAKOTUKUTUKU ROAD PARAPARAUMU	PROJECT NO. 23020		
TITLE: NEW STAIRS STAIR PLAN AND SECTION A	SHEET NO. S4	REV: 2	
	23020.dwg		

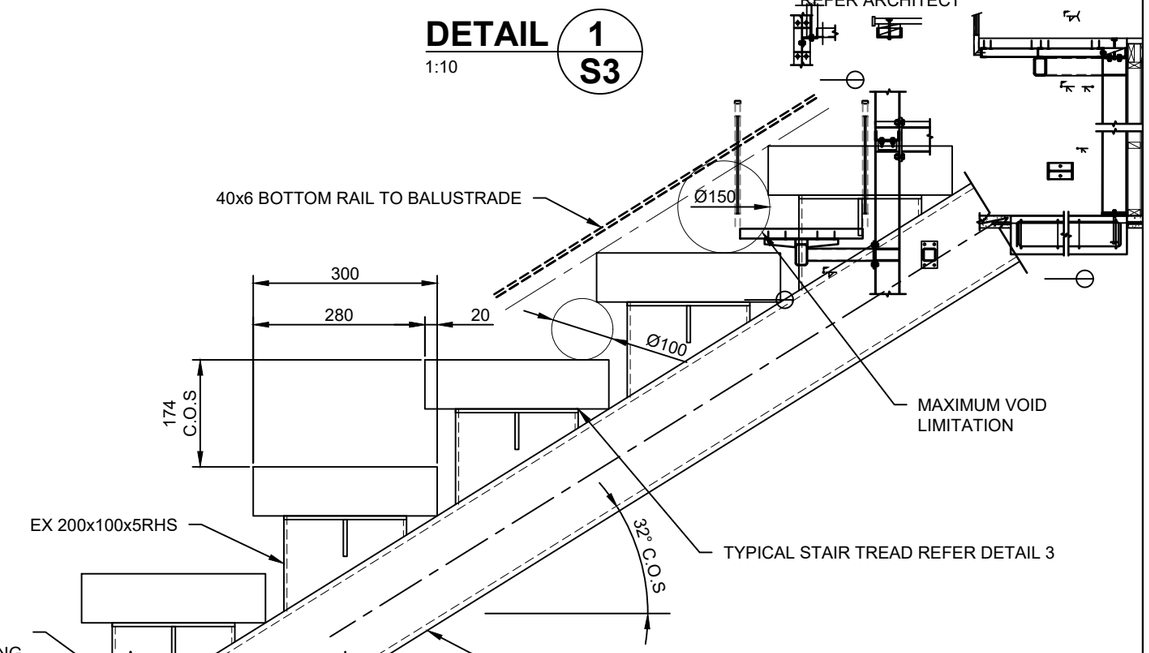
REV:	DESCRIPTION:	ISSUED:	DATE:
2	PRJCT NO. CORRECTED - FOR CONSENT/CONSTR	CJM	JUNE 2024

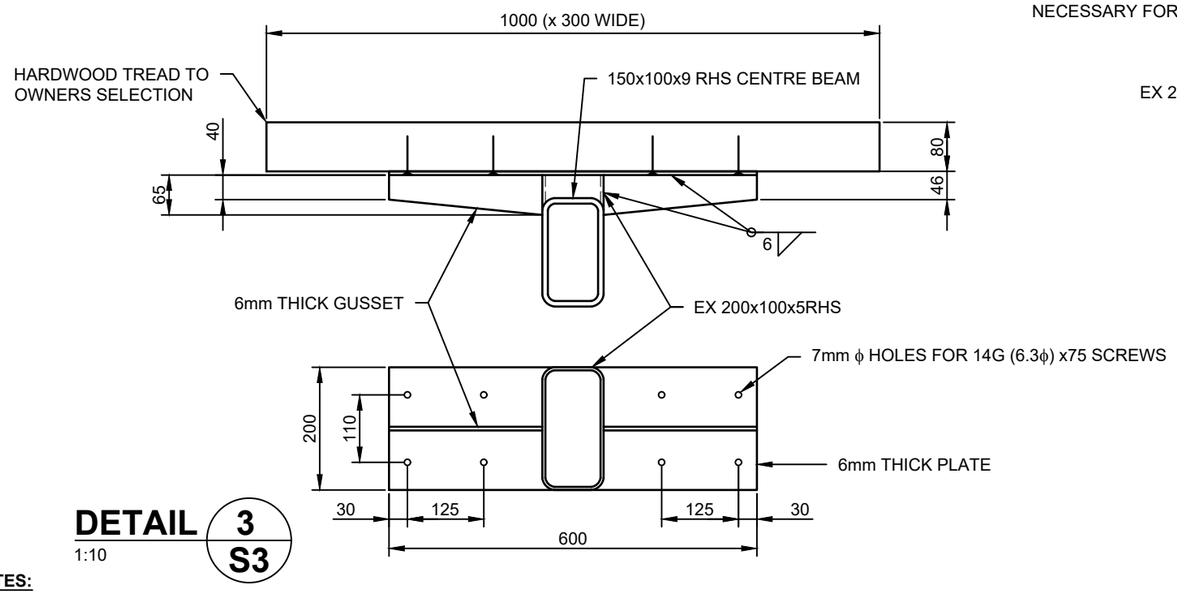


SECTION B S3
1:50

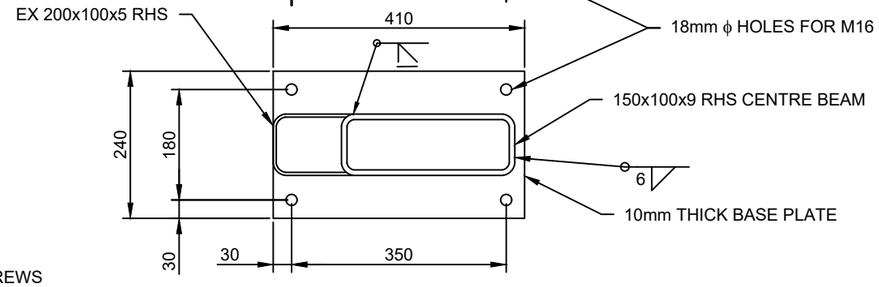


DETAIL 1 S3
1:10





DETAIL 3 S3
1:10



DETAIL 2 S3
1:10

BC240320
Further Information Received
14/06/2024

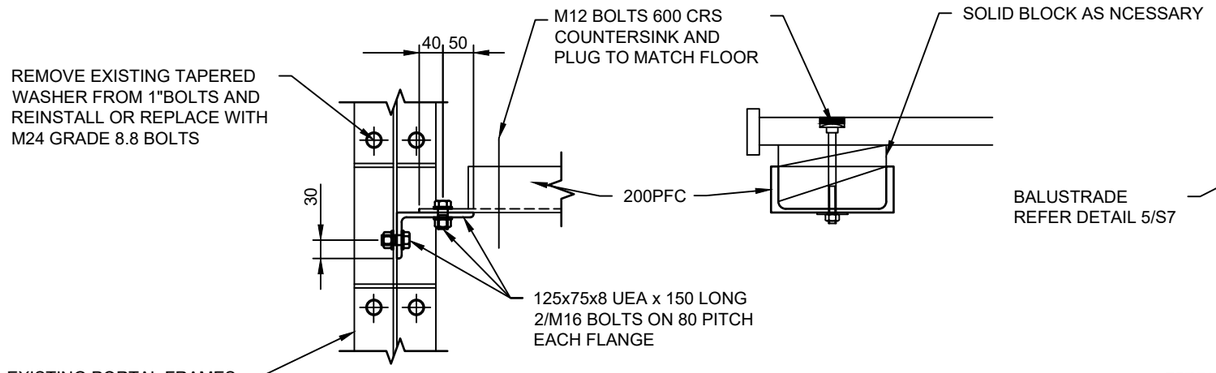
NOTES:

1. REFER SHEET S1 FOR GENERAL NOTES
2. CONFIRM ALL DIMENSIONS ON SITE

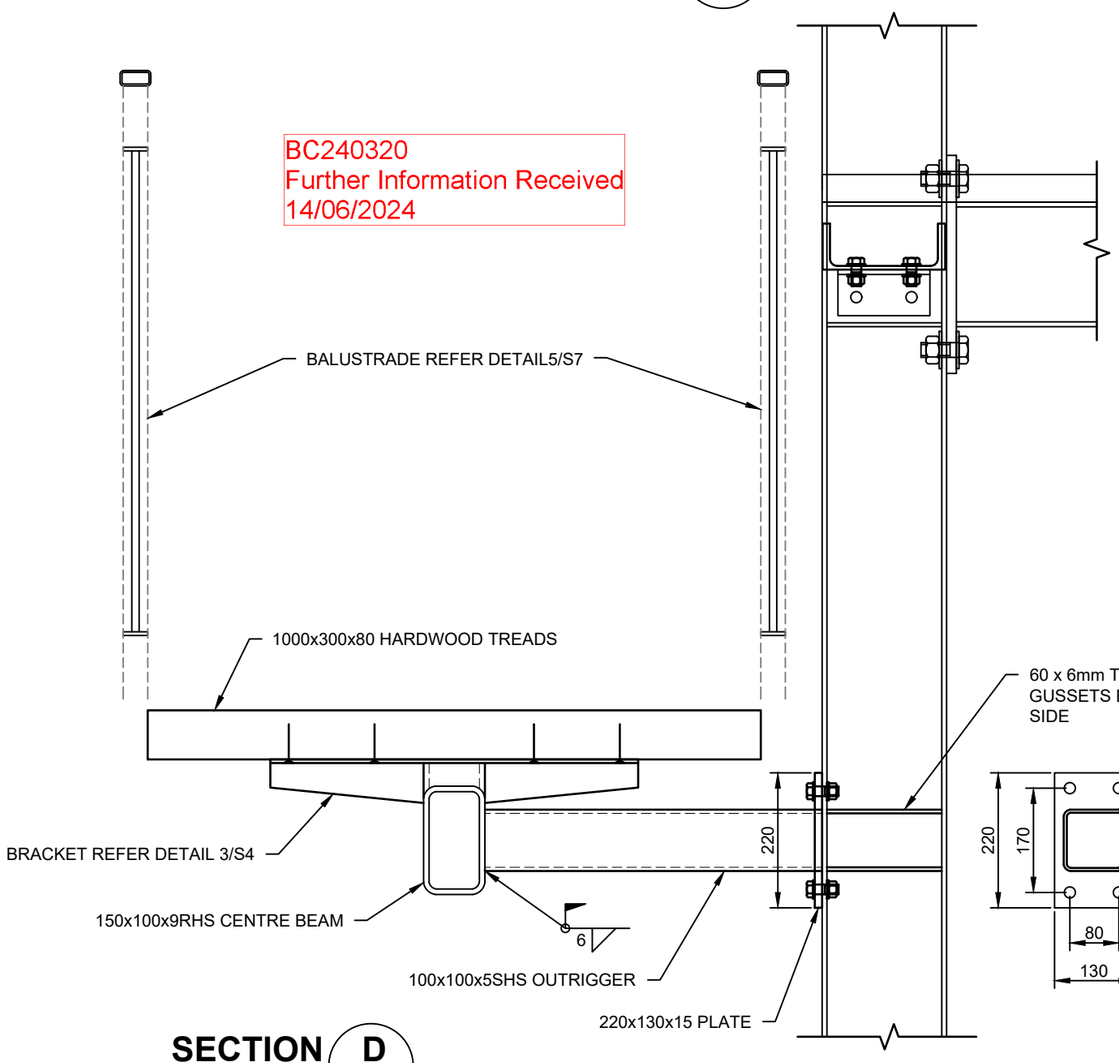
Seajay CONSULTING ENGINEERS CIVIL • STRUCTURAL • FIRE
42 MICHAEL, ROAD, PO BOX 1713, PARAPARAUMU 5252 PH (04) 212 5150 - M: 021 121 4591 - craig@seajay.co.nz

CLIENT: PETER SAUNDERS	DRAWN: CJM	DATE: FEB 2024	SCALE: AS SHOWN
PROJECT: 200 MAUNGAKOTUKUTUKU ROAD PARAPARAUMU	PROJECT NO. 23020		
TITLE: NEW STAIRS DETAILS 1	SHEET NO. S5	REV: 2	
	23020.dwg		

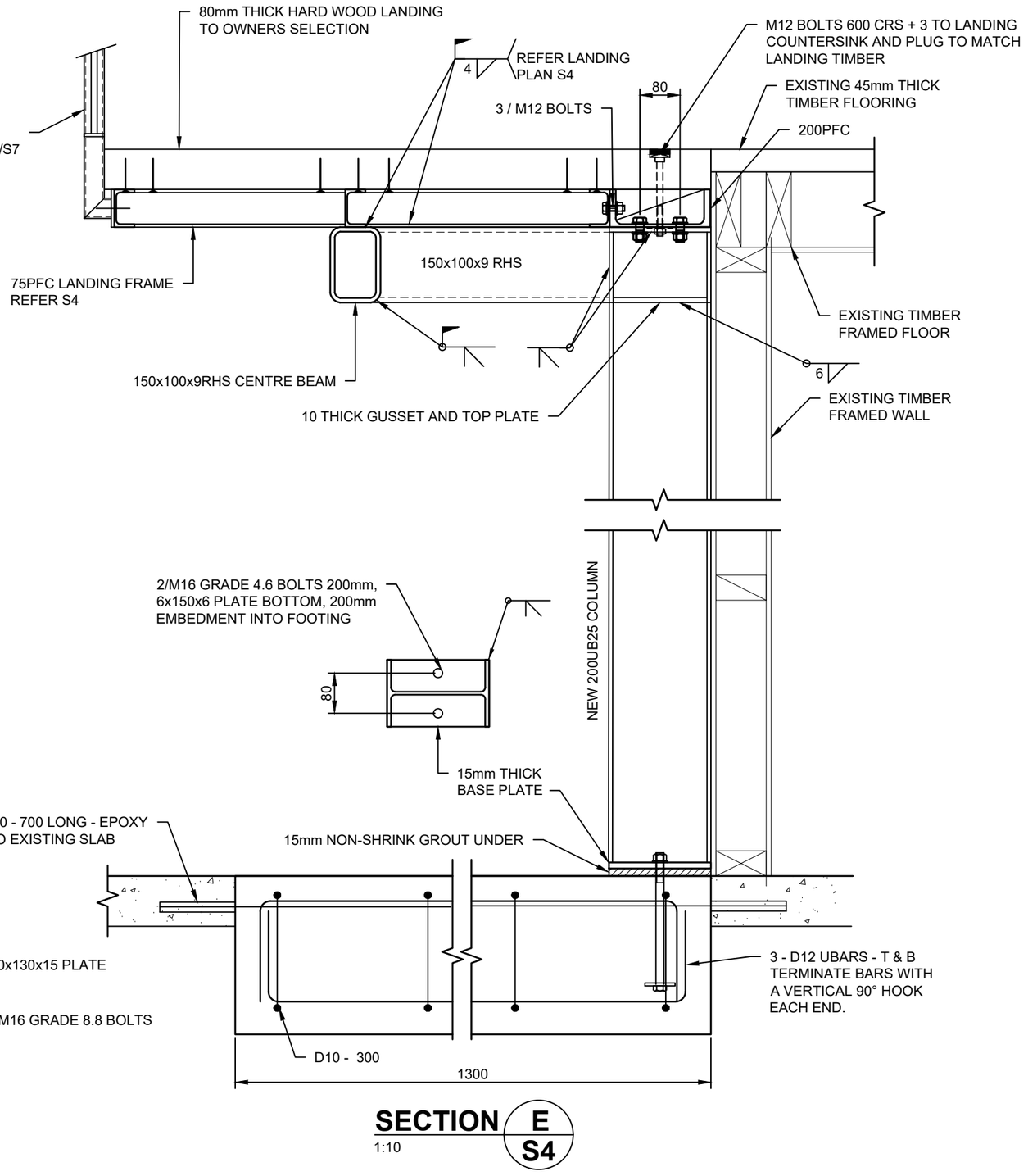
REV:	DESCRIPTION:	ISSUED:	DATE:
2	PRJCT NO. CORRECTED - FOR CONSENT/CONSTR	CJM	JUNE 2024



DETAIL 4
1:10



SECTION D S4
1:10



SECTION E S4
1:10

NOTES:

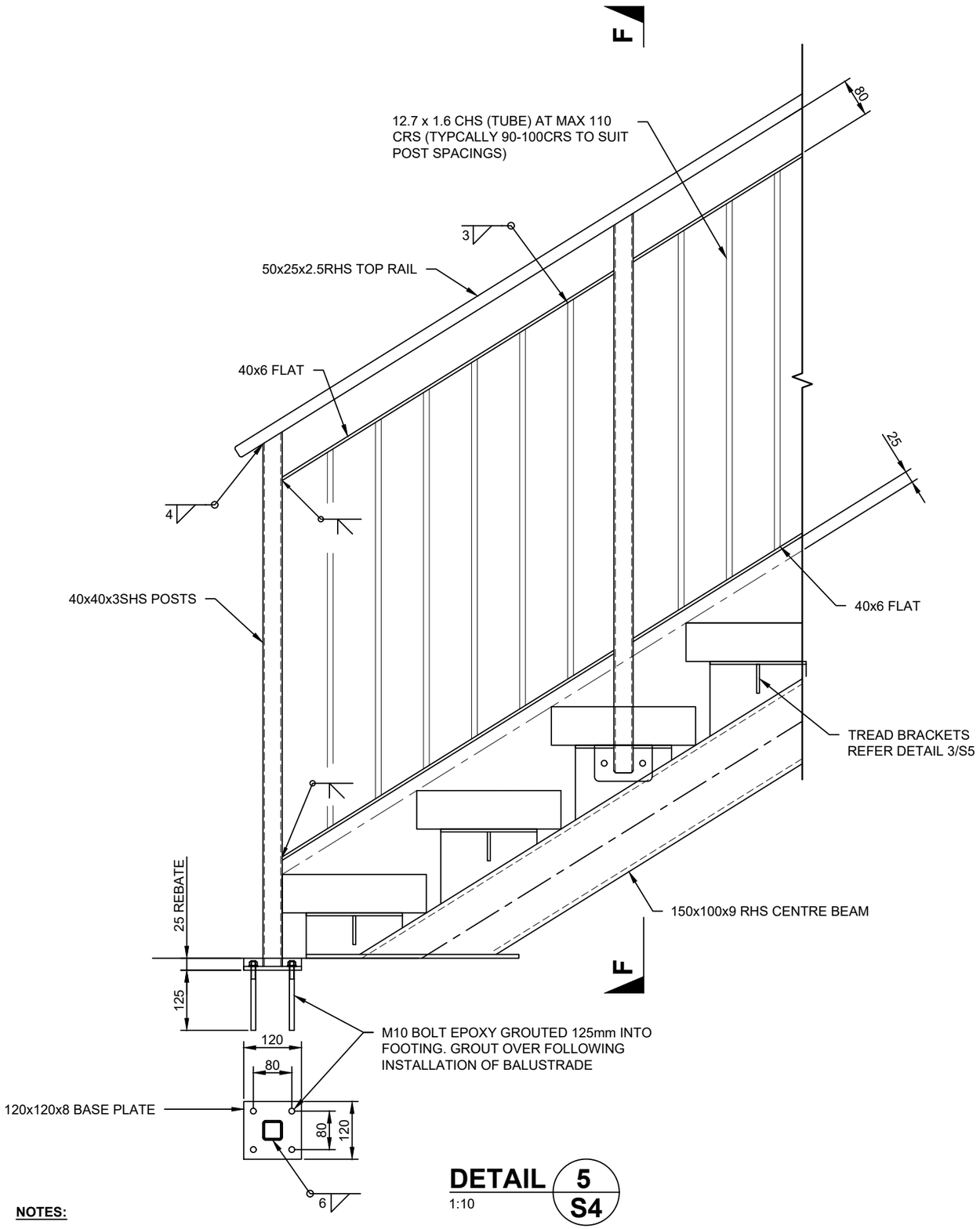
1. REFER SHEET S1 FOR GENERAL NOTES
2. CONFIRM ALL DIMENSIONS ON SITE

Seajay
CONSULTING ENGINEERS
CIVIL • STRUCTURAL • FIRE
42 MICHAEL, ROAD, PO BOX 1713, PARAPARAUMU 5252 PH (04) 212 5150 - M: 021 121 4591 - craig@seajay.co.nz

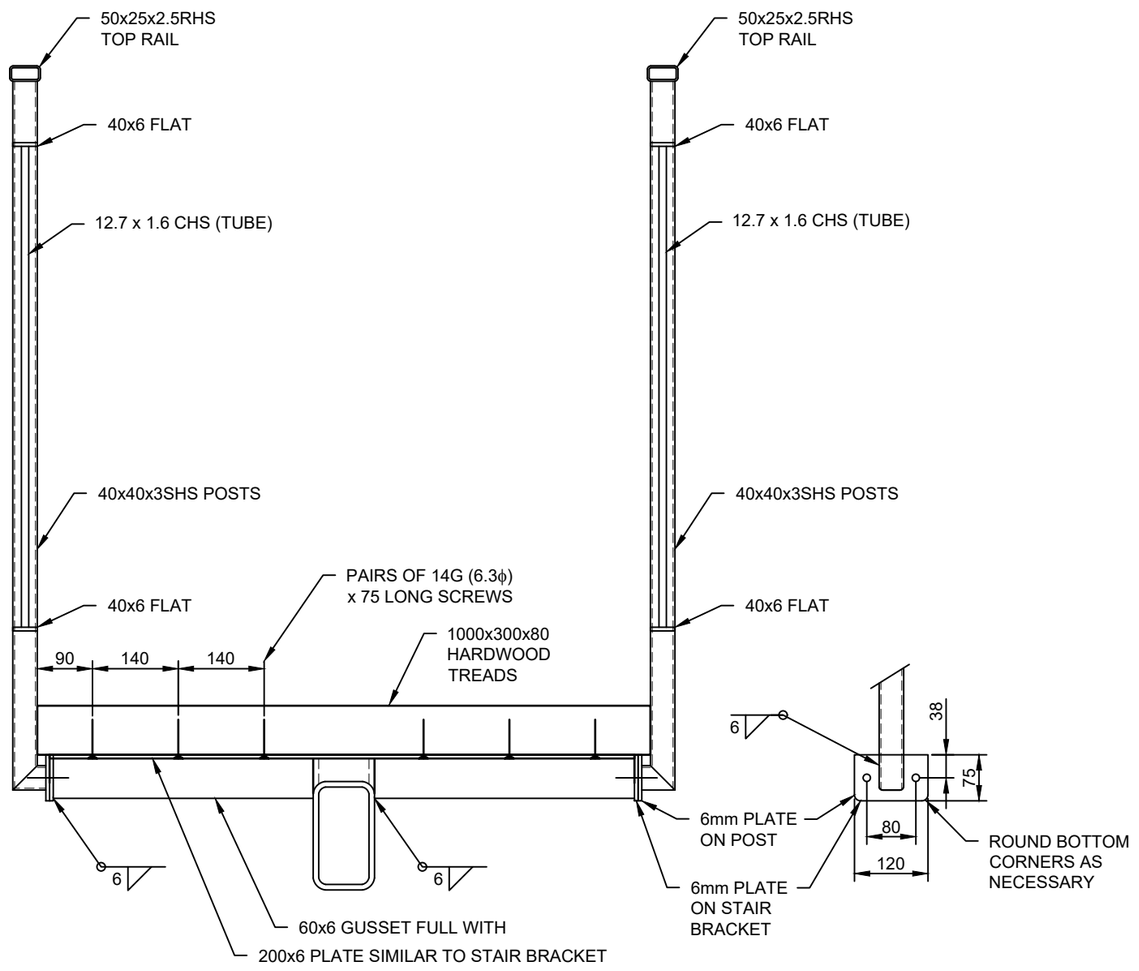
CLIENT: PETER SAUNDERS	DRAWN: CJM	DATE: FEB 2024	SCALE: AS SHOWN
PROJECT: 200 MAUNGAKOTUKUTUKU ROAD PARAPARAUMU	PROJECT NO. 23020		
TITLE: NEW STAIRS DETAILS 2	SHEET NO. S6	REV: 2	
	23020.dwg		

REV:	DESCRIPTION:	ISSUED:	DATE:
2	PRJCT NO. CORRECTED - FOR CONSENT/CONSTR	CJM	JUNE 2024

BC240320
Further Information Received
14/06/2024



DETAIL 5/S4
1:10



SECTION F/-
1:10

NOTES:

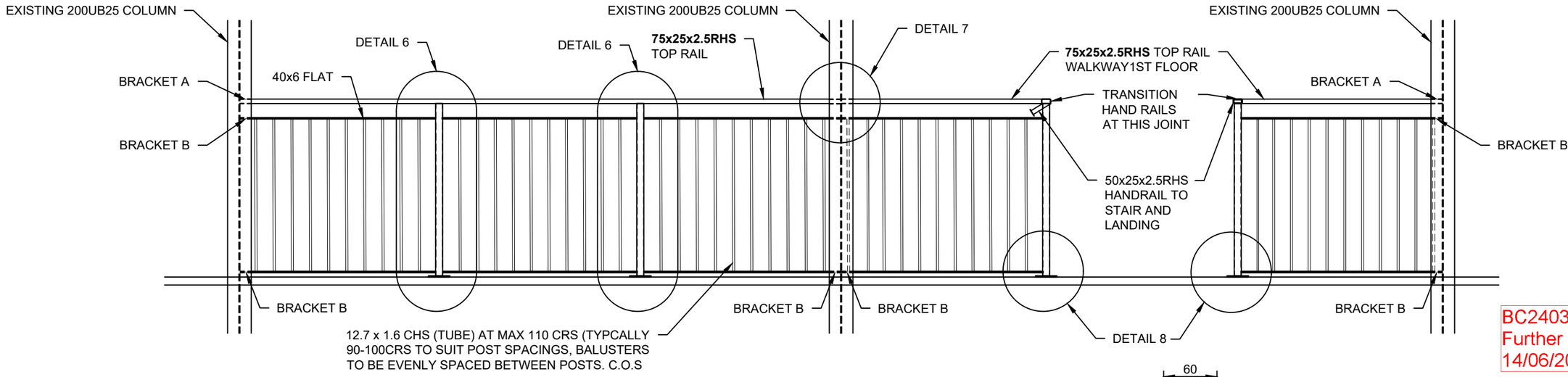
1. REFER SHEET S1 FOR GENERAL NOTES
2. CONFIRM ALL DIMENSIONS ON SITE

Seajay CONSULTING ENGINEERS CIVIL • STRUCTURAL • FIRE
42 MICHAEL, ROAD, PO BOX 1713, PARAPARAUMU 5252 PH (04) 212 5150 - M: 021 121 4591 - craig@seajay.co.nz

CLIENT: PETER SAUNDERS	DRAWN: CJM	DATE: FEB 2024	SCALE: AS SHOWN
PROJECT: 200 MAUNGAKOTUKUTUKU ROAD PARAPARAUMU	PROJECT NO. 23020		
TITLE: NEW STAIRS DETAILS 3	SHEET NO. S7	REV: 2	
	23020.dwg		

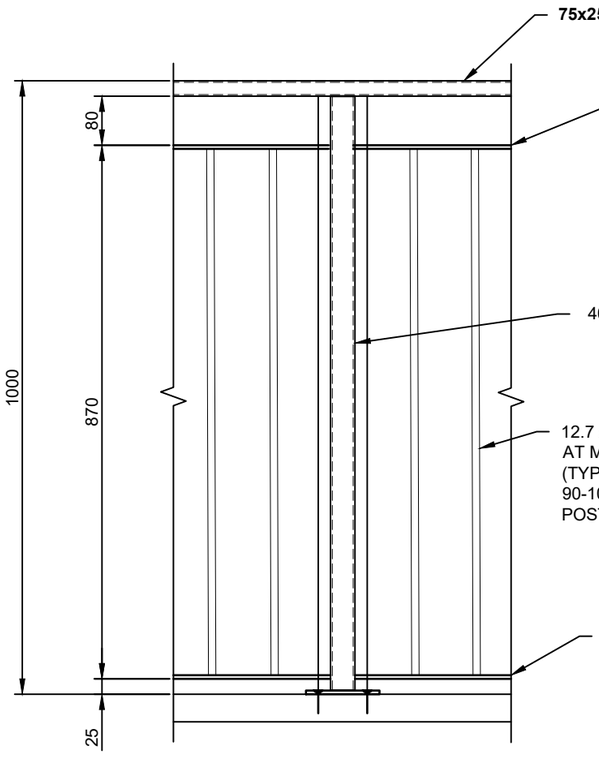
REV:	DESCRIPTION:	ISSUED:	DATE:
2	PRJCT NO. CORRECTED - FOR CONSENT/CONSTR	CJM	JUN 2024

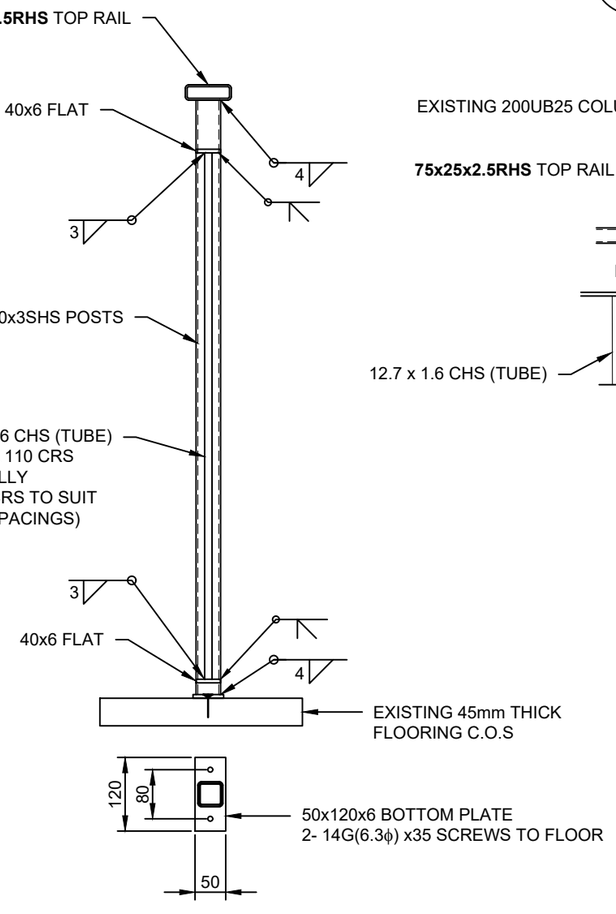
RELOCATED CROSS BRACING IN FRONT OF BALUSTRADE NOT SHOWN FOR CLARITY



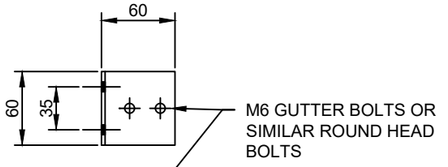
BC240320
Further Information Received
14/06/2024

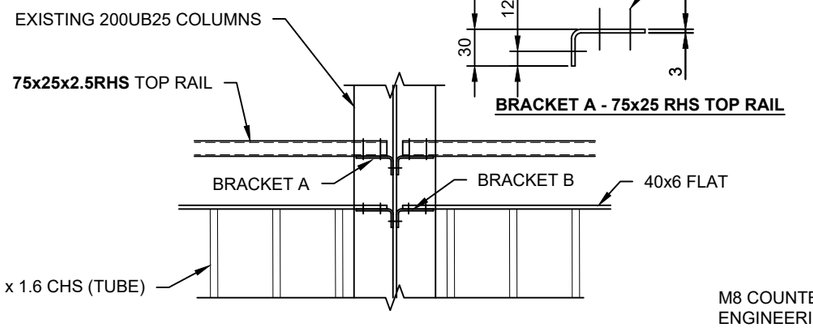
SECTION C / S3
1:25



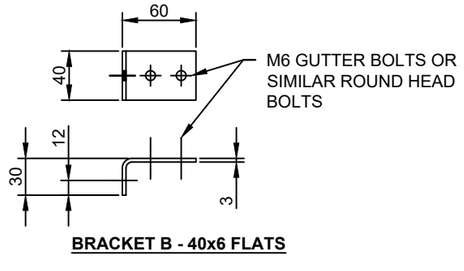


DETAIL 6 / S4
1:10



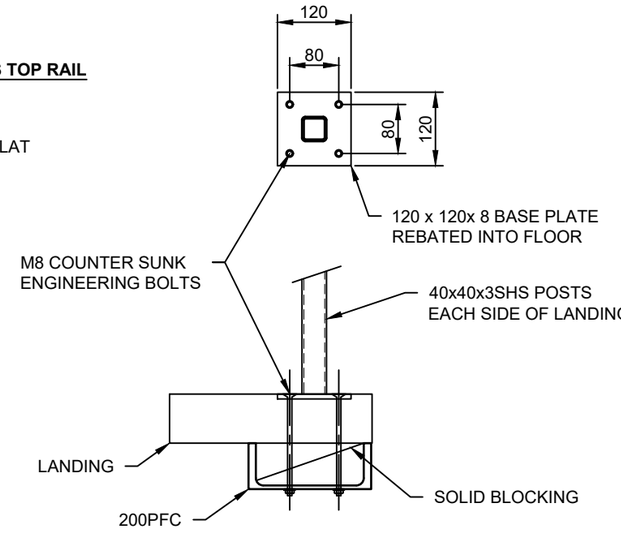


BRACKET A - 75x25 RHS TOP RAIL



BRACKET B - 40x6 FLATS

DETAIL 7 / S4
1:10



DETAIL 8 / S4
1:10

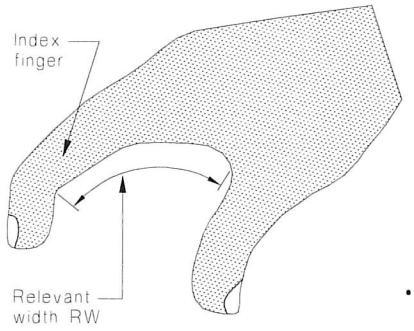
NOTES:

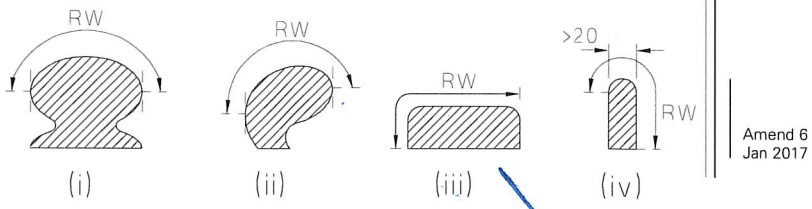
1. REFER SHEET S1 FOR GENERAL NOTES
2. CONFIRM ALL DIMENSIONS ON SITE
3. SELF TAPPING TEC SCREWS MAY BE USED IN LIEU OF GUTTER BOLTS FOR BRACKETS A & B CONNECTIONS.

Seajay
CONSULTING ENGINEERS
CIVIL • STRUCTURAL • FIRE
42 MICHAEL, ROAD, PO BOX 1713, PARAPARAUMU 5252 PH (04) 212 5150 - M: 021 121 4591 - craig@seajay.co.nz

CLIENT: PETER SAUNDERS	DRAWN: CJM	DATE: FEB 2024	SCALE: AS SHOWN
PROJECT: 200 MAUNGAKOTUKUTUKU ROAD PARAPARAUMU	PROJECT NO. 23020		
TITLE: NEW STAIRS DETAILS 4	SHEET NO. S8	REV: 2	
	23020.dwg		

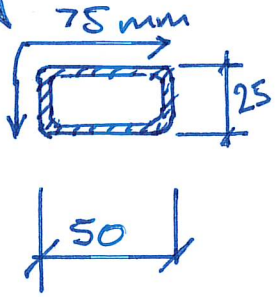
Figure 26: Handrail Profiles and Clearances
Paragraphs 6.0.8 and 6.0.9





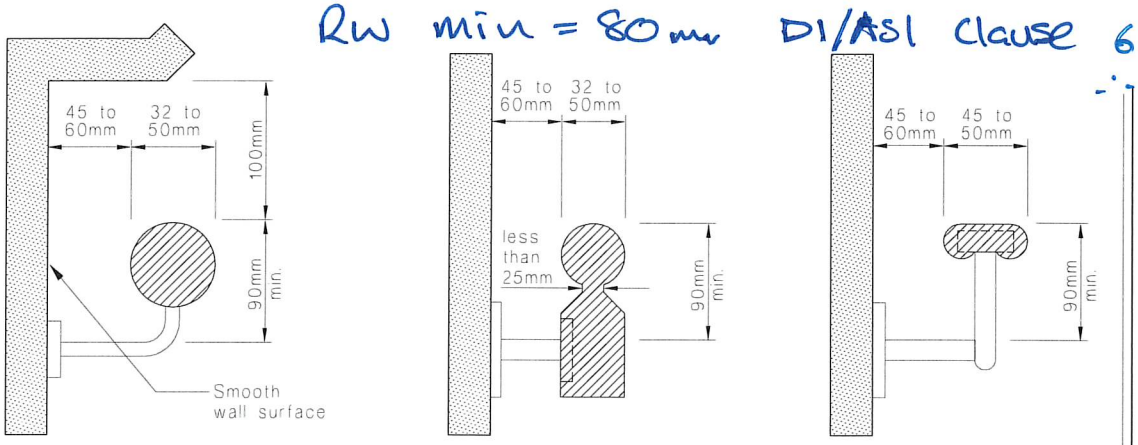
Amend 6
Jan 2017

- RW shall not exceed 80 mm.
- RW (relevant width) is measured around the upper surface perimeter of the handrail section between the vertical tangents on either side.
- Variations in shape are acceptable provided the effective grip is not reduced. For example, the side faces shown as vertical in details (iii) and (iv) are still acceptable even if slightly curved or sloped up to 5° from vertical.
- See fig. 26 (b) for wall clearances.



(a) Determination of relevant width for private and common stairways

Detail 5/S7 & Section F/S7
Show 50 x 25 x 2.5 RHS HANDRAIL
RW min = 80 mm D1/AS1 Clause 6.0.8
∴ Ok.



The profiles shown comply with the provisions for accessible handrails.

The clearances apply to all handrails and the maximum dimension must be used for rough textured wall surfaces.

(b) Acceptable profiles and clearances for accessible stairways

BC240320
Further Information Received
14/06/2024

6.0.2 Any *stairway* which exceeds 2.0 m in width shall:

a) Have *handrails* on both sides and, where the width exceeds 4.0 m, shall also have an intermediate *handrail* provided at the centre of the *stairway*, or

b) If the *stairway* is essentially an outdoor architectural feature and not required to be an *accessible stairway,* have at least one *handrail.* Examples of such *stairways* are those leading to civic areas, or to decks on *Housing.*

COMMENT:

A central rail gives all users a rail to use for safety purposes. On *stairways* in public *buildings,* such as sports stadia, intermediate rails are also effective for crowd control. The 2.0 m width is a comfortable width for three people, two of whom can grasp a rail if anyone trips.

6.0.3 Accessible stairways and accessible ramps – *Handrails* shall be provided on both sides of *accessible stairways* and on both sides of *accessible* ramps where the ramp slope is steeper than 1 in 20. The *handrails* shall be continuous except where doors are located on landings (see Figures 9 and 25).

6.0.4 Slope of handrails – *Handrails* shall have the same slope as the *pitch line*, begin no further than the second riser from the lower end of the *stairway*, and extend the full length of the *stairway* they serve. Except that, where the *handrail* serves an *accessible stairway* or *accessible* ramp, a 300 mm (minimum) horizontal extension shall be provided at each end of the *handrail*, as shown in Figures 9 and 25.

6.0.5 The first riser shall be located a sufficient distance back from the corner where the two walls meet, to accommodate the extended *handrail*, as shown in Figure 25.

6.0.6 Height of handrails – *Handrails* shall be positioned between 900 mm and 1 m above the *pitchline* (see Figure 25) measured to the top of the *handrail.*

COMMENT:

Where a *handrail* is located on top of the barrier of a stairway flight it may transition to a height of 1100 mm on an intermediate landing..

Amend 6 Jan 2017

6.0.7 Handrail profiles – *Handrails* shall have a profile which can be readily grasped by an adult hand and shall be installed in a way that avoids the likelihood of personal injury. An acceptable *handrail* shall be shaped and located to ensure that, under normal usage, a person's hand will not contact adjacent walls, supporting brackets or fixings, or any other obstruction.

COMMENT:

It is important that in the event of stumbling on a *stairway* or ramp an adult, even with a small hand, can firmly grasp the *handrail* to prevent a fall.

Amends 4 and 5

6.0.8 A graspable *handrail* profile shall have:

a) A flat or convex upper surface,

b) Arrised or radiused edges,

c) A minimum cross section width of 20 mm, and

d) A "relevant width" (as illustrated in Figure 26 (a)) across the top surface of no greater than 80 mm. Figure 26 (a) and (b) indicates some acceptable profiles but others may also be acceptable.

6.0.9 Acceptable *handrail* profiles for *accessible stairways* and *accessible* ramps are shown in Figure 26 (b).

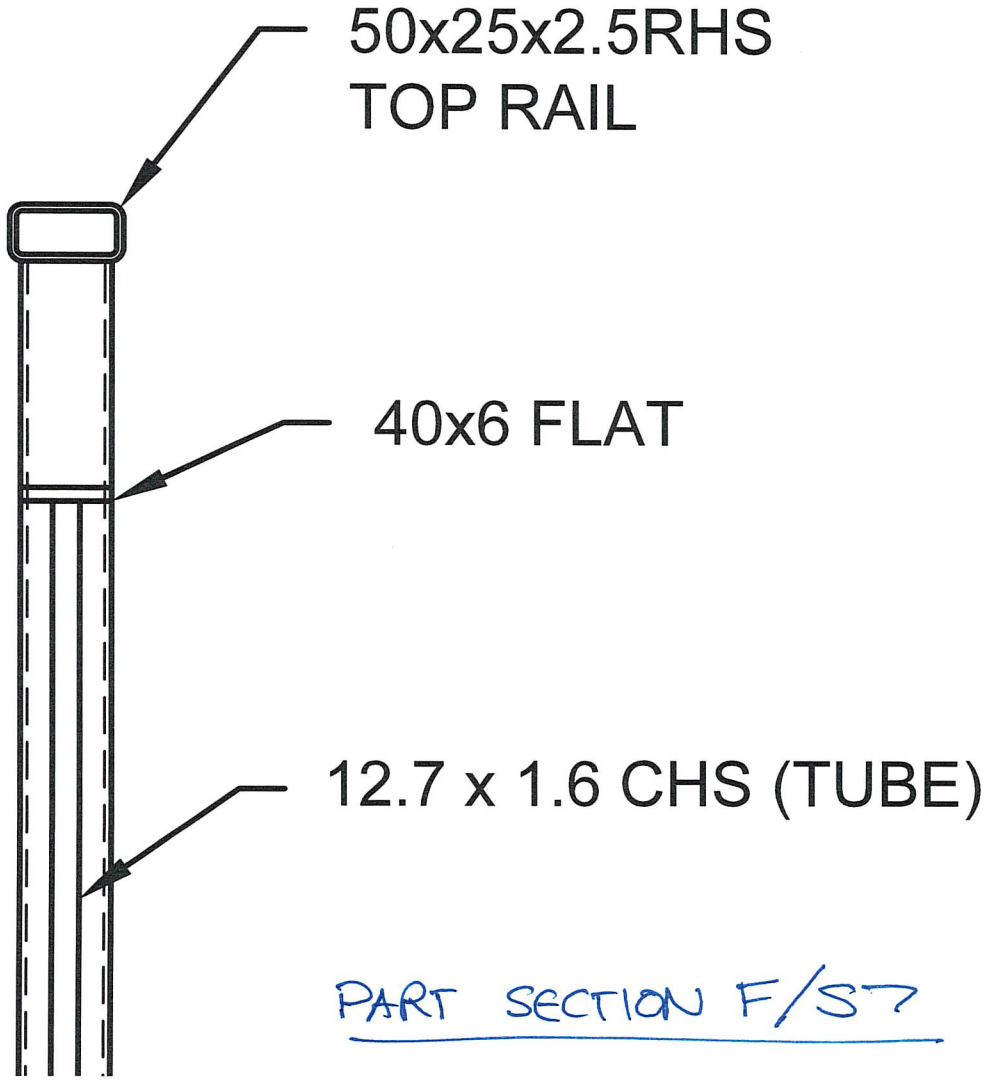
COMMENT:

In most circumstances a *handrail* is used with a light grip to steady the user of a *stairway* or ramp. Ambulant *people with disabilities* use *handrails* for both leverage and support, and wheelchair users often need to firmly grip the rails to pull themselves along, particularly on ramps. In those circumstances a profile offering an adequate grip is important.

6.0.10 *Handrails* are not required on the steps between tiers of seating rows such as in cinemas and stadiums where the steps take the form of two risers with a tread between leading onto a landing alongside a row of seats. However, a *handrail* shall be provided alongside the steps that give access to the end of a row of seats. Steps shall have a *common stairway* or *accessible stairway* dimensions (see Figure 11).

Amend 6 Jan 2017

BC240320
Further
Information
Received
14/06/2024



PART SECTION F/S7

Seajay
CONSULTING ENGINEERS
CIVIL • STRUCTURAL • FIRE
42 Michael Rd, PO Box 1713, Paraparaumu 5252
Phone: (04) 212 5150 • Cell: 021 121 4591
craig@seajay.co.nz

STRUCTURAL CALCULATIONS

For:

NEW STAIRS
200 MAUNGAKOTUKUTUKU ROAD
PARAPARAUMU

Preamble:

The project comprises constructing new internal stairs. These calculations pertain to the design of:

a)	Foundations	:	Pad footings to support stair posts
b)	Stairs	:	Structural frame and treads
c)	Balustrade	:	Structural support for metal balustrade

Note: Calculations are provided for Building Consent Authority information only. Construction details shown on the drawings and in the specification shall take precedence. Contractors/Builders shall follow the drawings and specification unless directed otherwise by the Engineer.

Project:	*23020*	***Date:***	*6 February 2024*
Report No:	*SC01*	***Prepared:***	*C. McGhie*
Revision:	*1*		*NZCE, BE (Civil) Hon, ME (Fire) CPEng, CMEngNZ*

engineering new zealand

New Zealand Institute of Architects Incorporated

ACENZ

Building Code Clause(s) B1

PRODUCER STATEMENT – PS1 – DESIGN

(Guidance on use of Producer Statements (formerly page 2) is available at www.engineeringnz.org)

ISSUED BY: Seajay Consulting Engineers Ltd
(Design Firm)

TO: Peter Saunders
(Owner/Developer)

TO BE SUPPLIED TO: Kapiti Coast District Council
(Building Consent Authority)

IN RESPECT OF: New stairs
(Description of Building Work)

AT: 200 Maungakotukutuku Road, Paraparaumu
(Address)

Town/City: Paraparaumu **LOT** 20 **DP** 33688 **SO**
(Address)

We have been engaged by the owner/developer referred to above to provide:

structural design services and construction monitoring of specifically designed elements - Concrete pad footings, Structural frame and treads for new stairs, structural support for metal balustrade and relocate existing cross bracing
(Extent of Engagement)

services in respect of the requirements of Clause(s) B1 of the Building Code for:

☐ All or ■ Part only (as specified in the attachment to this statement), of the proposed building work.

The design carried out by us has been prepared in accordance with:

■ Compliance Documents issued by the Ministry of Business, Innovation & Employment B1/VM1 & VM4 or
(verification method/acceptable solution)

☐ Alternative solution as per the attached schedule

The proposed building work covered by this producer statement is described on the drawings titled:

200 Maungakotukutuku Rd,Paraparaumu, New stairs and numbered 23020 - S1 to S8;
together with the specification, and other documents set out in the schedule attached to this statement.

On behalf of the Design Firm, and subject to:
(i) Site verification of the following design assumptions Existing structure, ground bearing capacity of 300kPa
(ii) All proprietary products meeting their performance specification requirements;

I believe on reasonable grounds that a) the building, if constructed in accordance with the drawings, specifications, and other documents provided or listed in the attached schedule, will comply with the relevant provisions of the Building Code and that b), the persons who have undertaken the design have the necessary competency to do so. I also recommend the following level of construction monitoring/observation:

☐ CM1 ☐ CM2 ■ CM3 ☐ CM4 ☐ CM5 (Engineering Categories) or ☐ as per agreement with owner/developer (Architectural)

I, Craig McGhie (Name of Design Professional) am: ■ CPEng 173345 # ☐ Reg Arch ..... #

I am a member of: ■ Engineering New Zealand ☐ NZIA and hold the following qualifications: NZCE, BE(Civil)Hon, ME(Fire)
The Design Firm issuing this statement holds a current policy of Professional Indemnity Insurance no less than $200,000*.
The Design Firm is a member of ACENZ: ☐

SIGNED BY Craig McGhie (Name of Design Professional) (Signature)

ON BEHALF OF Seajay Consulting Engineers Ltd (Design Firm) Date 6/2/2024

Note: This statement shall only be relied upon by the Building Consent Authority named above. Liability under this statement accrues to the Design Firm only. The total maximum amount of damages payable arising from this statement and all other statements provided to the Building Consent Authority in relation to this building work, whether in contract, tort or otherwise (including negligence), is limited to the sum of $200,000.*

This form is to accompany **Form 2 of the Building (Forms) Regulations 2004** for the application of a Building Consent.

Project: 23020

Seajay
CONSULTING ENGINEERS
CIVIL • STRUCTURAL • FIRE
42 Michael Rd, PO Box 1713, Paraparaumu 5252
Phone: (04) 212 5150 • Cell: 021 121 4591
craig@seajay.co.nz

Memorandum from licensed building practitioner: Certificate of design work

Section 45 and Section 30C, Building Act 2004

OWNER: Peter Saunders

BUILDING: 200 Maungakotukutuku Road
Paraparaumu

BASIS FOR PROVIDING THIS MEMORANDUM

I am providing this memorandum in my role as the Specialist designer who supervised and/or undertook specific elements of Restricted Building Work (RBW) design work as outlined in this memorandum – other designers will be providing a memorandum covering the remaining RBW design work.

IDENTIFICATION OF DESIGN WORK THAT IS RESTRICTED BUILDING WORK

I, Craig McGhie, supervised/undertook the following design work that is restricted building work:

PRIMARY STRUCTURE: B1

Design work that is Restricted Building Work		**Description** (Specific Engineering Design outside of the scope of NZS 3604:2011, unless noted otherwise).
Foundations	✓	*Pad footings to support stairs*
Walls	x	
Retaining Walls	x	
Beams	x	
Columns	x	
Bracing	✓	*Relocated existing steel bracing*
Other (Stairs)	✓	*Structural stair frame, treads and associated connections*
Other (Balustrade)	✓	*Balustrade and associated connections*

WAIVERS AND MODIFICATIONS

No waivers or modifications of the building code are required.

BC240320
Received by
Kapiti Coast District Council
31/05/2024

ISSUED BY

Design Entity/Company : Seajay Consulting Engineers Limited
Name: Craig McGhie

CPEng number: 173345

DECLARATION

I, Craig McGhie, LBP, state that I have applied the skill and care reasonably required of a competent design professional in supervising the Restricted Building Work (RBW) described in this form, and that based on this, I also state that the RBW:

- Complies with the building code; or
- Complies with the building code subject to any waiver or modification of the building code recorded on this form.

Signature:  Date: 6/2/2024

CALCULATIONS

Project No.: 23070	Date:	Eng:	Page:
Project: 200 Maungakotukutuku Road			
Description: New Stairs			

Seajay
CONSULTING ENGINEERS
CIVIL • STRUCTURAL • FIRE
42 Michael Road, PO Box 1713, Paraparaumu 5252
Phone: (04) 212 5150 • Cell: 021 121 4591
craig@seajay.co.nz

INDEX

Job No.:	23020	Page:	1
Project :	200 Maungakotukutuku Road	Date :	11/10/2023
Description :	New Stair	Eng:	CJM

Seajay CONSULTING ENGINEERS CIVIL • STRUCTURAL • FIRE

1.0 GENERAL

1.1 Scope

The project comprises construction of a new set of stairs in the existing two storey house at 200 Maungakotukutuku Road, Paraparaumu. The existing house was designed and constructed in 1972.

These calculations pertain to the design of:

a) Stair structural frame
b) Stair treads
c) Balustrade
d) Design check existing structure and foundations to support new stair

BC240320
Received by
Kapiti Coast District Council
31/05/2024

1.2 Reference Codes and Standards

Building Code Clauses: ☑ B1/VM1 ☐ B1/VM2 ☐ B1/VM3 ☑ B1/VM4 ☐ E1/VM1

Design Standards:

☑ AS/NZS 1170 Structural; Design
☑ NZS 3101 Concrete Structures Standard
☑ NZS 3404 Steel Structures Standard
☑ NZS 3603 Timber Structures Standard
☑ NZS 3604 Timber Framed Building Standard
☐ NZS 4230 Design of Reinforced Concrete Masonry Structures Standard
☐ NZS 4229 Concrete Masonry Structure not requiring SED

Other _____

1.3 Structural Systems

Gravity: ☑ Light Timber Frame ☑ Steel Frame/Members ☐ Concrete /Masonry Frame ☐ Concrete /Masonry Wall

Other _____

Lateral Load Resisting Systems:

	Along	Across
	☑ Sheet Bracing Walls	☑ Sheet Bracing Walls
	☐ Steel Portals	☑ Steel Portals
	☑ Steel X or K Braced Frames	☐ Steel X or K Braced Frames
	☐ Concrete/Masonry MRF	☐ Concrete/Masonry MRF
	☐ Concrete/Masonry Walls	☐ Concrete/Masonry Walls
	☑ Floor Diaphragms	☑ Floor Diaphragms
	☐ Roof Plane Bracing	☐ Roof Plane Bracing
	☐ Roof Diaphragm	☐ Roof Diaphrgam
Other	Diagonal sarking to roof plane	Diagonal sarking to roof plane

Foundation Systems:

☐ Timber Piles and Subfloor	☑ Concrete Slab and Footings (on Piles if needed)
☐ Driven Piles	☐ Concrete Piles and Footing
☐ Augured Piles	☐ Concrete Ribbed Raft Slab

Other _____

1.4 Safety By Design Assessment

Project No. :	23020	SBD No.:	SBD01	Date:	11-Oct-23
Project:	New Stair			Page	2
Site Address:	200 Maungakotukutuku Road				

Seajay CONSULTING ENGINEERS CIVIL•STRUCTURAL•FIRE

Project Description:	The project comprises construction of a new set of stairs in the existing two storey house at 200 Maungakotukutuku Road, Paraparaumu. The existing house was designed and constructed in 1972.
Engineering Scope:	Stair structural frame
	Balustrade
	Stair treads
	Design check existing structure and foundations to support new stair

Safety/Risk Assessment

Items		Description	Score	Risk	Proposed Action
Foundation works	Likelihood	N/A			The overal risks are low and considered normal construction practice and risk. These risk are expected to be mitigated by: *Compliance with Work safe Codes of Practice. *Use of qualified and experienced employees. *Use of suitable/correct plant and tools. *Contractor providing safe working environment. Therefore there are NO PROJECT SPECIFIC risks above and beyond normal design/construction practices that warrant SPECIFIC SAFETY DESIGN DETAILING.
	Consequence				
Internal structural	Likelihood	Tripping hazards, height and noise risks typical. Unlikely to occur to an extent to cause harm if managed.	2	L	
	Consequence	Generally minor with appropriate construction precaution undertaken	2		
External structural works and decks	Likelihood	N/A			
	Consequence				
Soak pit	Likelihood				
	Consequence				
Other	Likelihood	Demolition of existing stairs by experienced contractor unlikely to result in incident	2	M	
	Consequence	Moderate risk of harm if accident involves a fall from height or collapse of structure on to person	3		
In use	Likelihood	Rare as construction will comply with Building Regulations	1	L	The building is a two storey house and as such the greatest risk pertaining to maintenance of building elements at height. The building owner will need to manage these risk by employing appropriate contractors and/or methods.
	Consequence	Consequence could range from trival to Severe depending on how the home owner uses and/or maintans the property	4		
Decomissioning	Likelihood	Rare as building is a light weight structure that can easily be demolished with mobile plant	1	L	The structure would be expected to be demolished by an experienced contractor with appropriate mobile plant. Therefore there is a low risk.
	Consequence	Consequence could range from trival to Severe depending on how the structure is demolished.	4		
Exceptional Risk	A				
	B				

Risk Matrix:

Likelihood	Score	Trivial (Consequence) 1	Minor 2	Moderate 3	Major 4	Severe 5	
Almost Certain	5	M	H	H	E	E	H
Likely	4	L	M	H	H	E	
Possible	3	L	M	M	H	E	M
Unlikely	2	L	L	M	M	H	
Rare	1	L	L	L	L	M	L

Extreme Safety Risk Issue - Eliminate from design and/or notify Principal/Contractor for an agreed solution.

High Safety Risk Issue - Modify design where practicable and/or notify Principal/Contractor for an agreed solution.

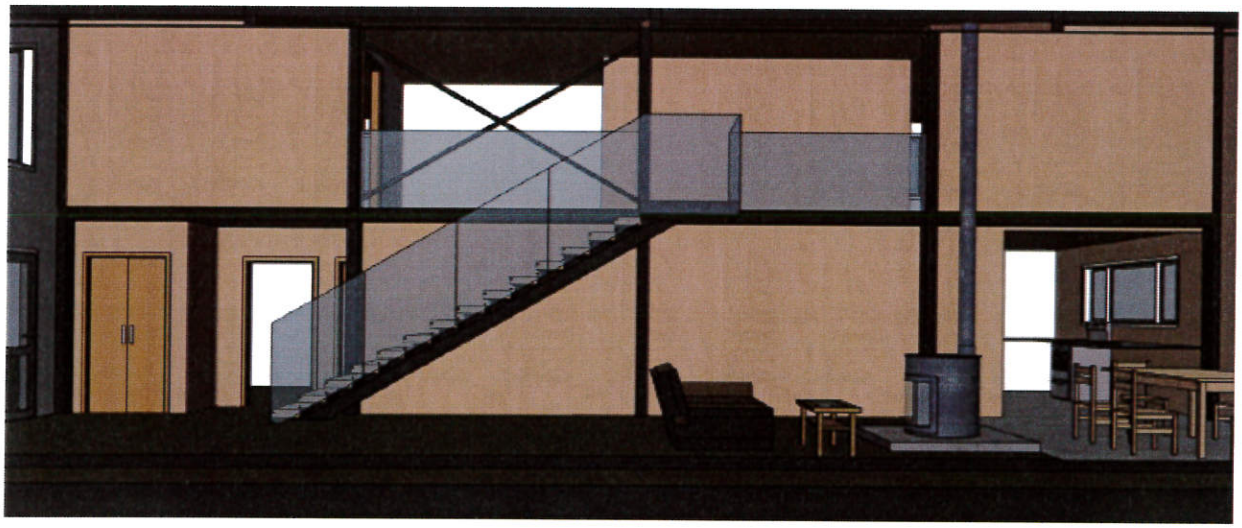
Moderate Safety Risk Issue - Consider and/or implement design changes.

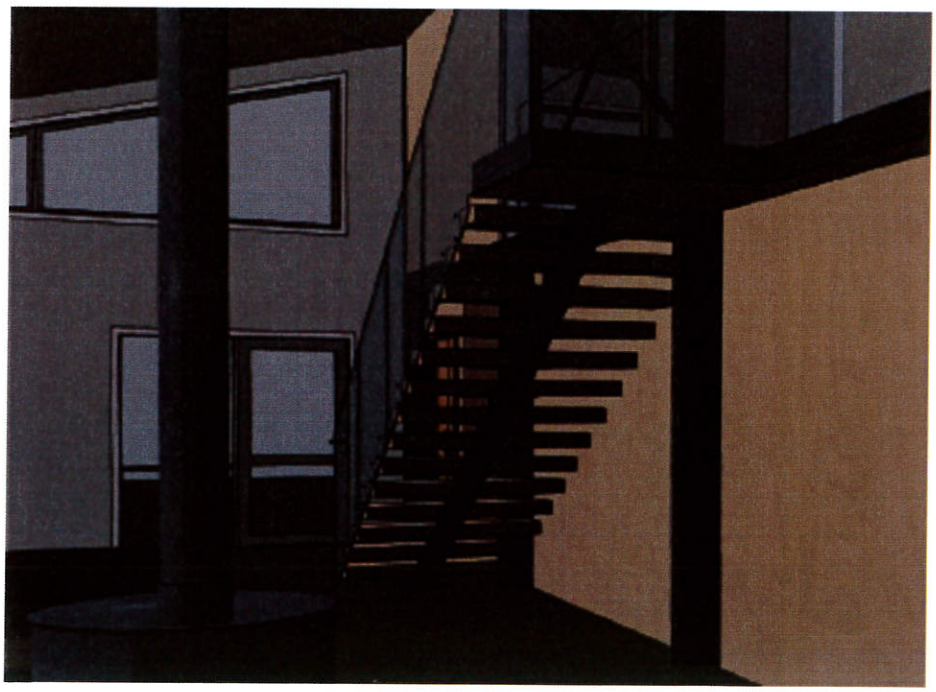
Low Safety Risk - Consider and/or mitigate as necessary within normal design practices.

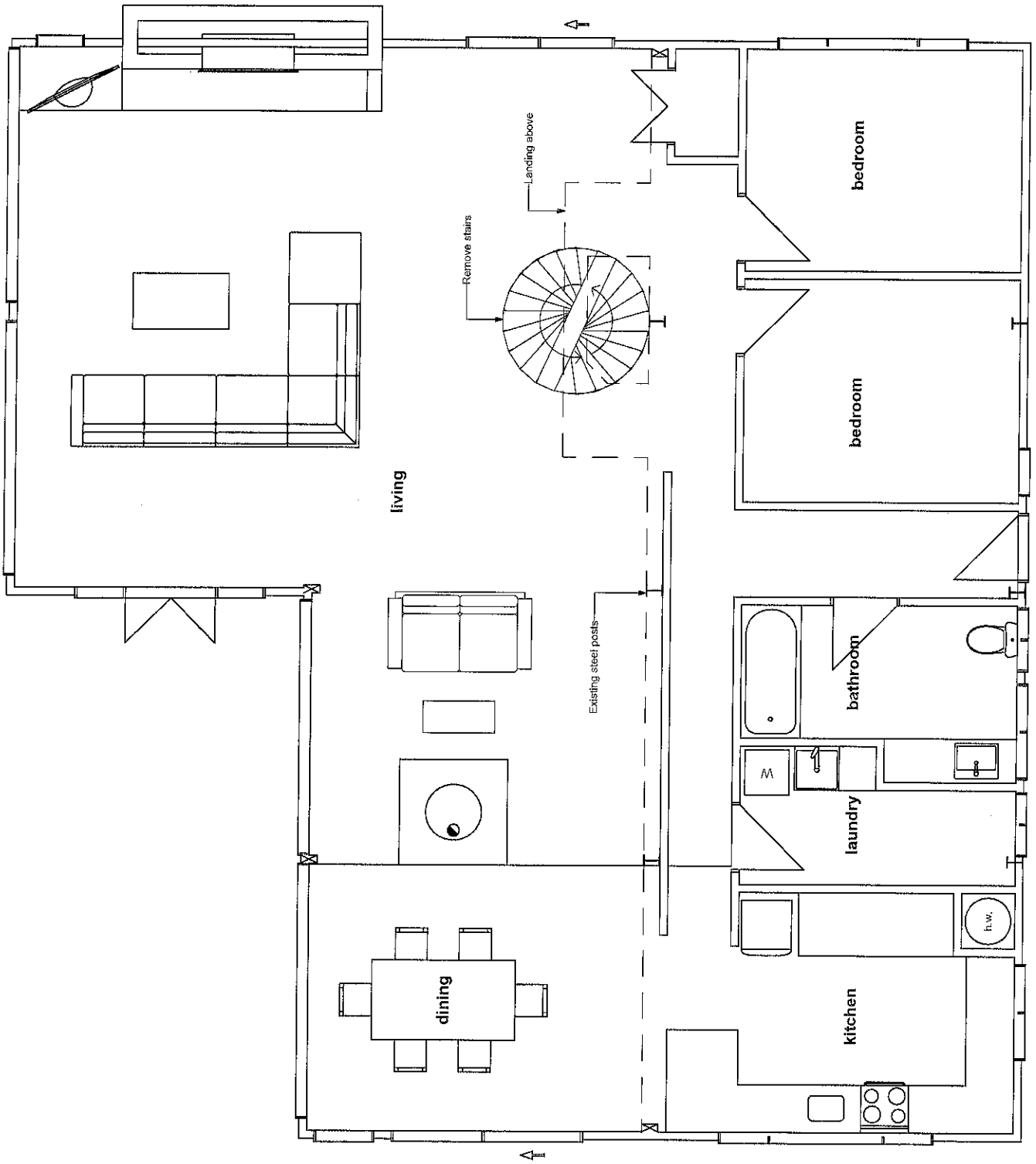
Job No.:	23020	Page:	3
Project :	200 Maungakotukutuku Road	Date :	11/10/2023
Description :	New Stair	Eng:	CJM

Seajay CONSULTING ENGINEERS CIVIL • STRUCTURAL • FIRE

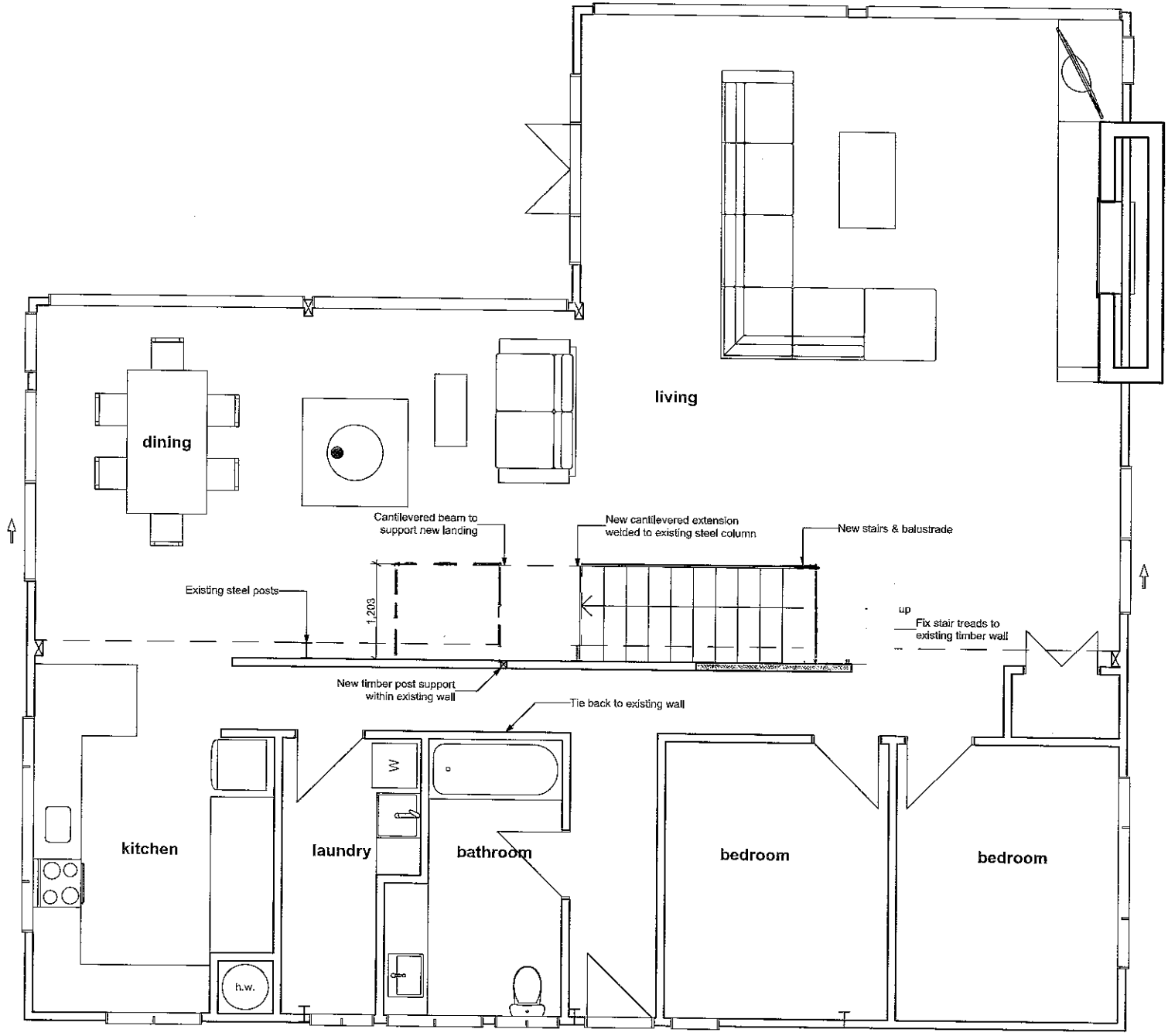
2.0 GEOMETRY



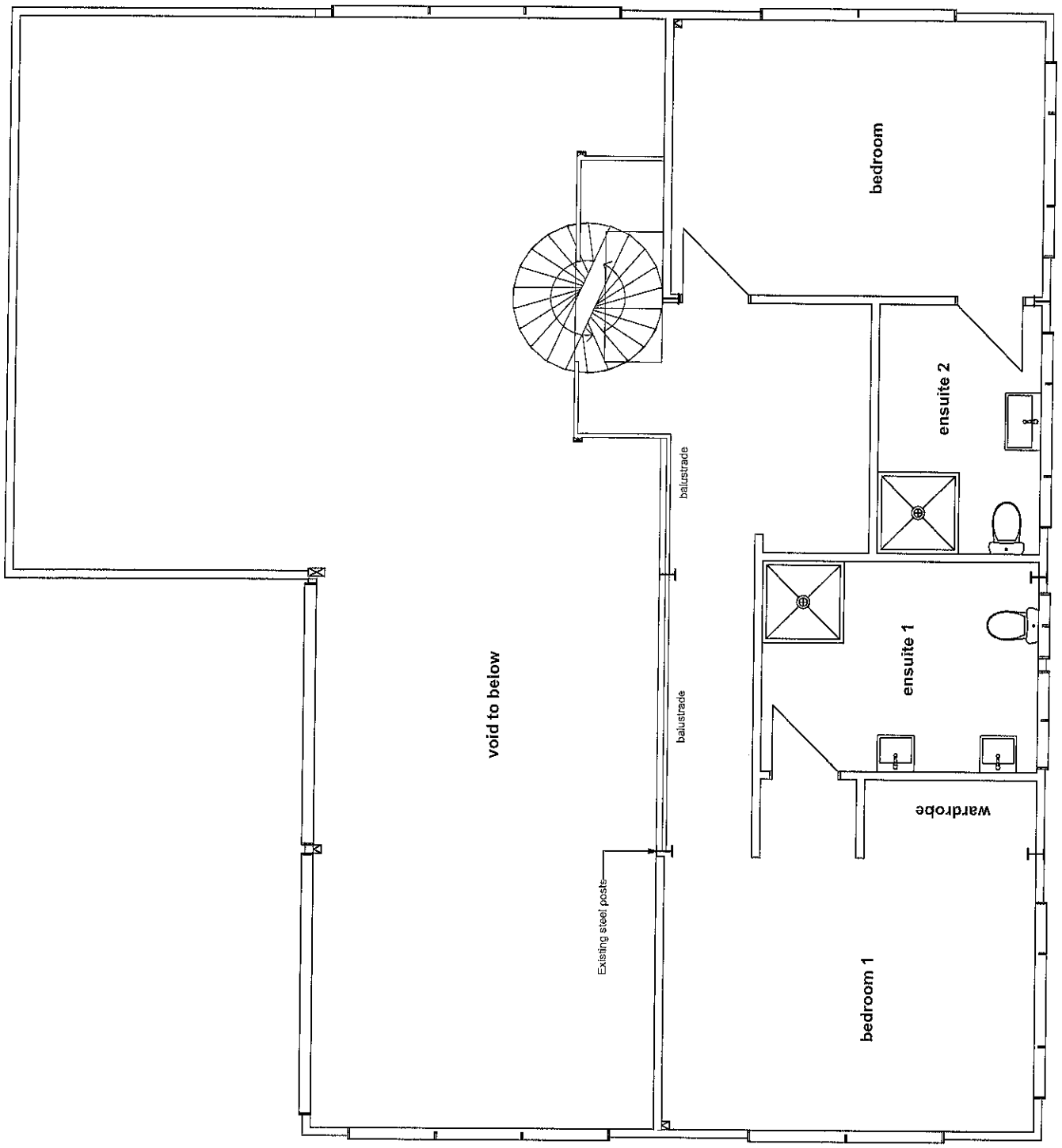




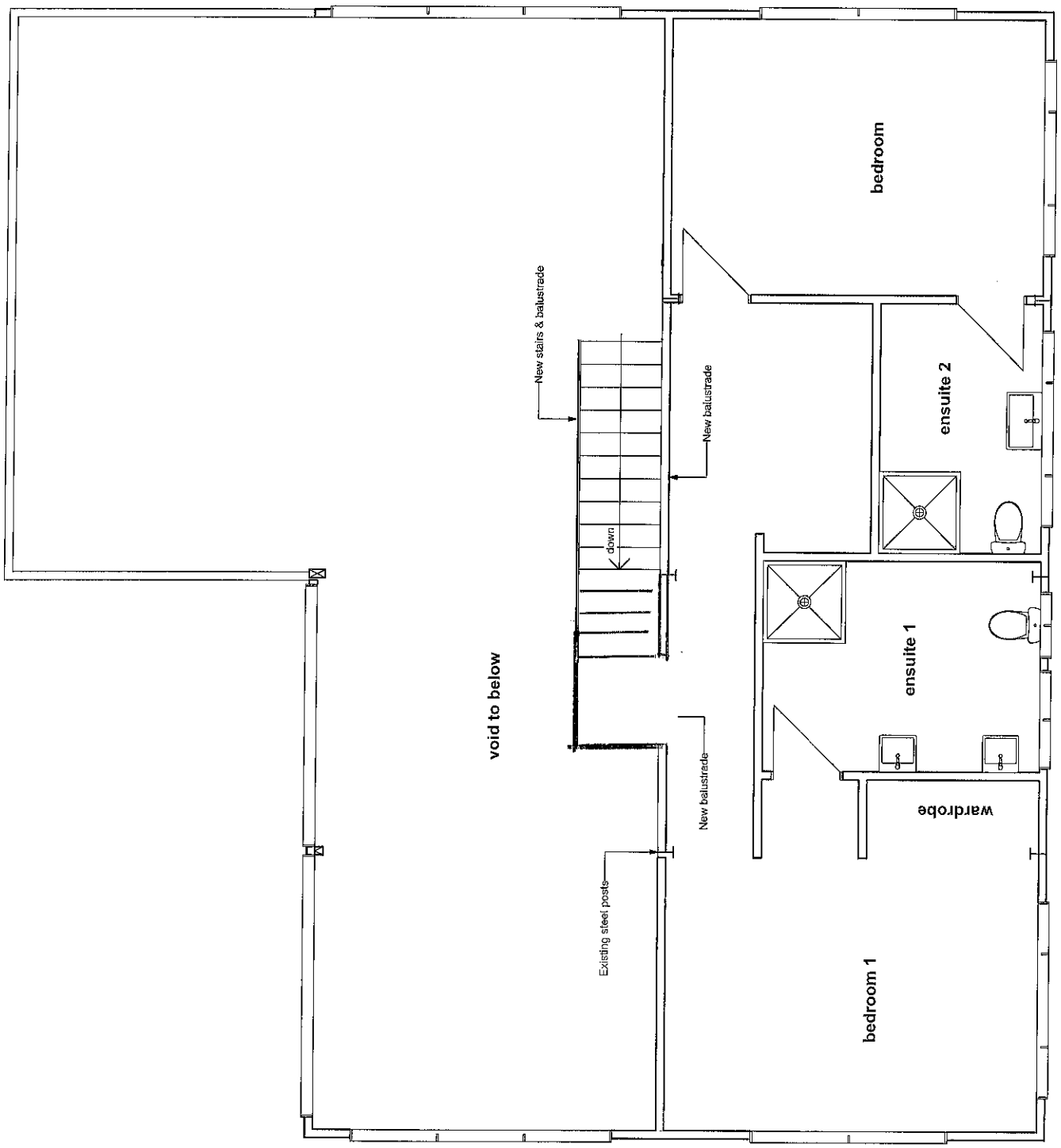
Existing Lower Plan 1:50



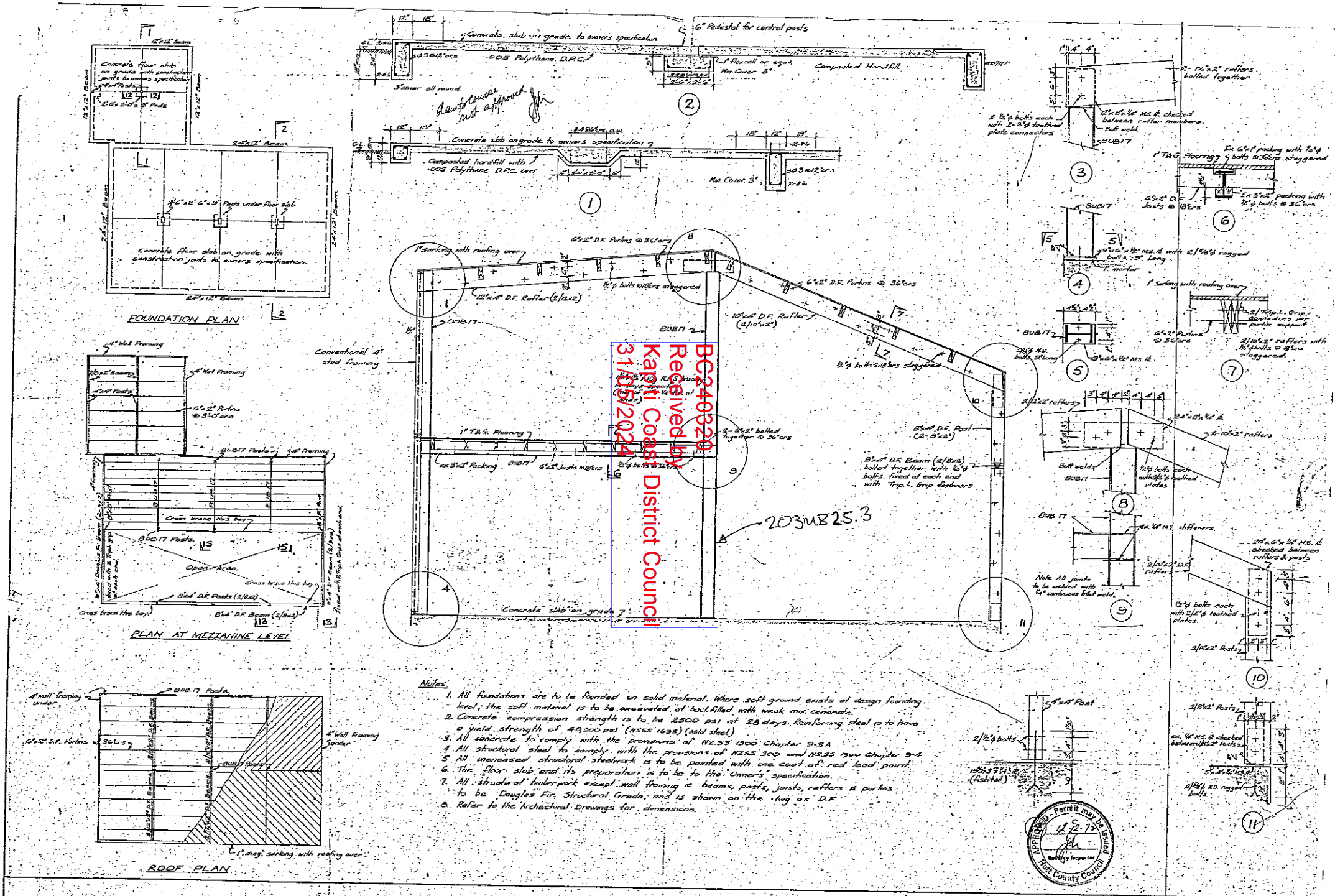
Proposed Lower Plan 1:50



Existing Upper Plan 1:50



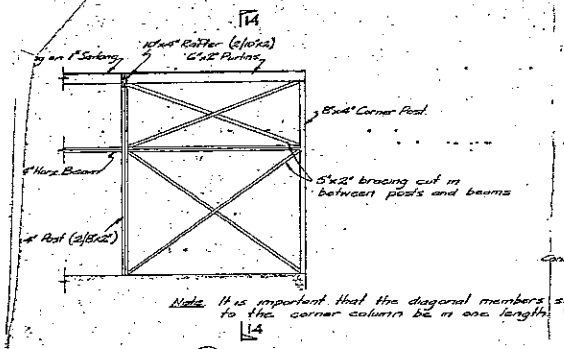
Proposed Upper Plan 1:50

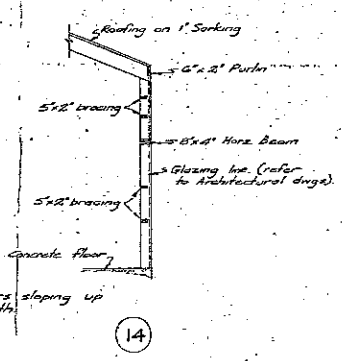


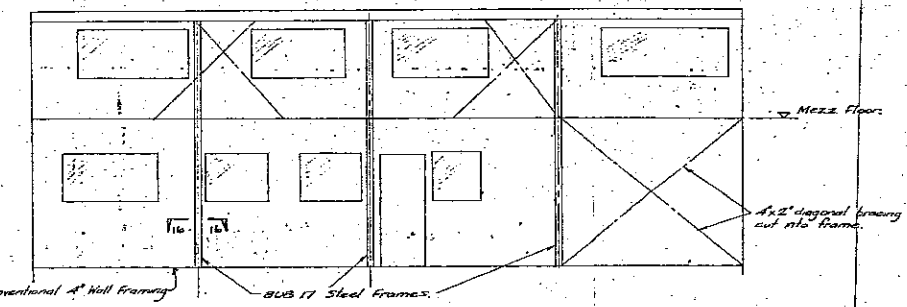
PROPOSED HOUSE FOR MR BERG ~ PARAPARAUMU ~

Scale	1/8", 1/2" & 1"=1'-0"
Drawn	J.A.H. Nov. 1972
Designed	N.J. Morgain Nov. 1972
SHEET	1.

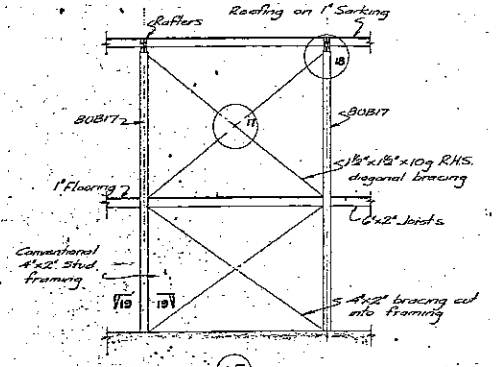
31
8

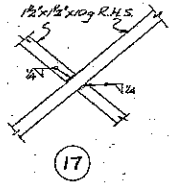


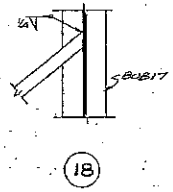


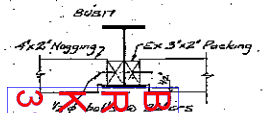


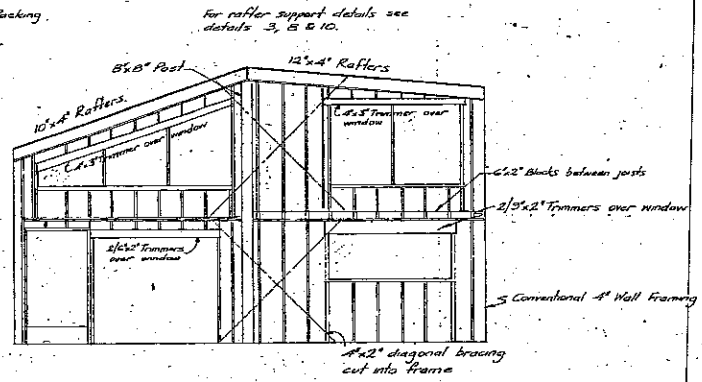
ELEVATION ON REAR WALL



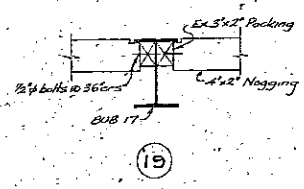








ELEVATION ON END WALL



PROPOSED HOUSE FOR MR. BERG. ~ PARAPARAUMU ~

Scale	¼" & 1½" = 1'-0"
Drawn	J.A.Wells — NOV 197
Designed	N.J. Morgan. Nov. 197
SHEET	2

Job No.:	23020	Page:	10
Project :	200 Maungakotukutuku Road	Date :	11/10/2023
Description :	New Stair	Eng:	CJM

Seajay CONSULTING ENGINEERS CIVIL•STRUCTURAL•FIRE

3.0 DESIGN LOADINGS

a) General *[Refer AS/NZS 1170.0]*

Importance Level: **Normal Structures** 2

Design Life: 50Years

Annual Probability of Exceedance:

Loadcase	ULS			SLS1	SLS2
	Wind	Snow	EQ	All	EQ
APE:	500	250	500	25	N/A

b) Gravity *[Refer AS/NZS 1170.1]*

Occupancy: Domestic

		G	Q	PL
House floors		0.4 kPa	1.5 kPa	1.8 kN
Walls	Timber	0.4 kPa		
Roofs		0.3 kPa	0.25 kPa	1.4 kN
Stair Structure & Treads			2.0 kPa	2.7 kN
Stair tread additional load case			2.2 kN/m	

Balustrades:	H	V	$P_{H\ or\ V}$
Top Rail	0.35 kN/m	0.35 kN/m	0.6 kN
Infill	0.5 kPa		0.25 kN

c) Wind *[Refer AS/NZS 1170.2]*

Site Wind Speed: Wind Region W

Wind Direction NW

BC240320
Received by
Kapiti Coast District Council
31/05/2024

Vsit,β =Vr Md ($M_{z,cat}$ Ms Mt)

Vr_{ULS} = 51 m/s Vr_{SLS} = 43 m/s

Md = 0.95

Ms = 1.0 Sheilding Multiplier (in range of 0.7 - 1.0)

Topographical Multipliers:

E = 300 m Site Elevation above Mean Sea Level

Mh = 1.36 Hill Shape Multiplier

M_{Lee} = 1

Me = 1.00

Mt = 1.36

Cat 2 Terrain Category

Z 7 m

$M_{z,Cat}$ 0.95

Vsit,β 62.71 m/s Vsit,β 52.9 m/s

V_{ULS}	62.71 m/s	V_{SLS}	52.9 m/s
Pzu	2359 Pa	Pzs	1677 Pa

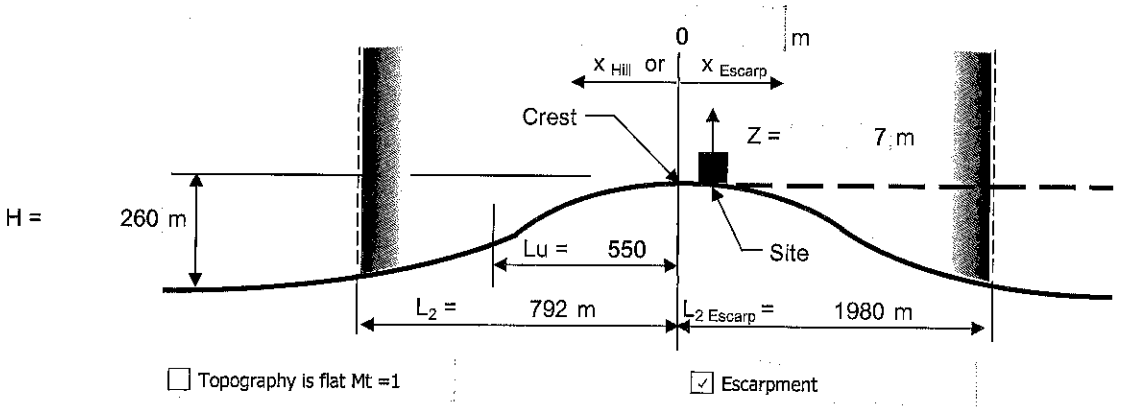
NZS3604 Wind Zone Specific Design

Job No.:	23020	Page:	11
Project :	200 Maungakotukutuku Road	Date :	11/10/2023
Description :	New Stair	Eng:	CJM

Seajay CONSULTING ENGINEERS CIVIL • STRUCTURAL • FIRE

NORTHERLY WIND DIRECTION GOVERN Md = 1.0 (Pg 12)

Hill Shape Multiplier:



L1 = 198 m

H/2Lu = 0.24 H/4= 65 H/10 = 26

Mh = 1.0 Where: H/2Lu <0.05

$= 1 + \{\frac{H}{[3.5(z+L1)]}\}\{1-\frac{|x|}{L_2}\}$ 1.362 Where: 0.05< H/2Lu < 0.45

$= 1 + 0.71\{1-\frac{|x|}{L_2}\}$ 1.710 Where: 0.45< H/2Lu within separation zone

Mh = 1.362

BC240320
Received by
Kapiti Coast District Council
31/05/2024

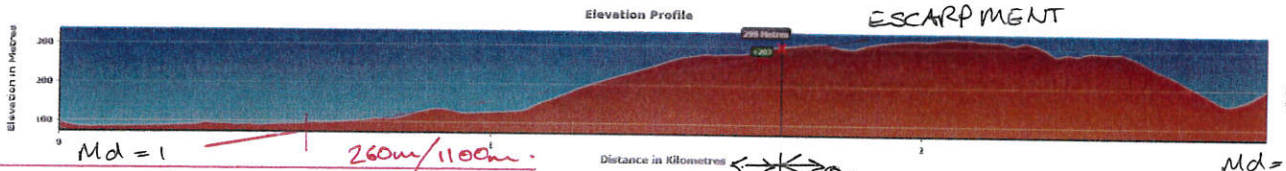
Terrain Category:

Height of structure	z	7 m
Averaging Distance	x_T	500 m
Lag Distance	xi	140 m

Zone	Zone 1	Zone 2	Zone 3	Zone 4		
Terrain Category (Cat)	2	2	0	0		
Distance x_t	200	300	0	0	500	OK

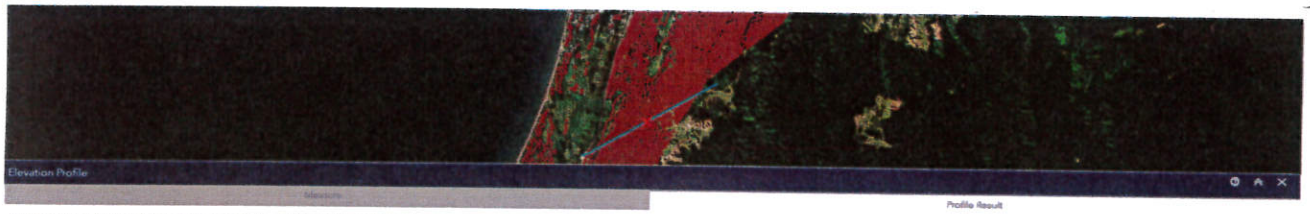
Effective Terrain Category 2.00

Hover over or touch the Elevations Profile chart to display elevations and show location on map.

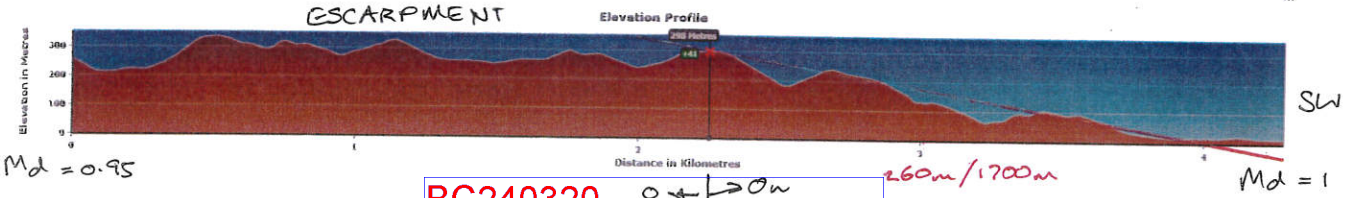


North – South

(Site is on crest all wind Directions)

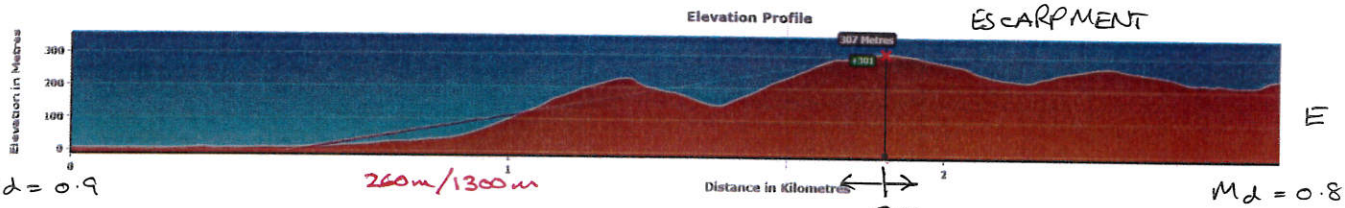


Hover over or touch the Elevations Profile chart to display elevations and show location on map.



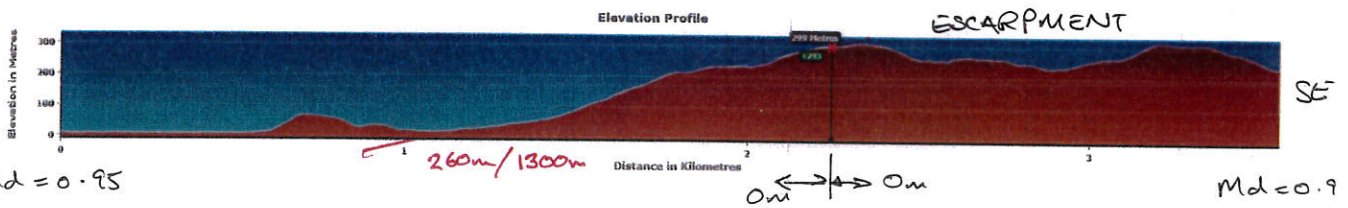
Northeast – Southwest

Hover over or touch the Elevations Profile chart to display elevations and show location on map.



West – East

Hover over or touch the Elevations Profile chart to display elevations and show location on map.



Northwest – Southeast

Job No.:	23020	Page:	13
Project :	200 Maungakotukutuku Road	Date :	11/10/2023
Description :	New Stair	Eng:	CJM

Seajay CONSULTING ENGINEERS CIVIL • STRUCTURAL • FIRE

DESIGN LOADINGS cont

c) Seismic *[Refer NZS 1170.5]*

Elastic Site Spectra: C(T) = Ch(T) Z R N(T,D)

Soil Category	Rock	B	
Structure Period	T1	0.4	sec
Analysis Method		Equivalent Static	
Spectral Shape Factor C(T)		1.89	
Region/Town		Paraparaumu	
Zone Factor Z		0.4	
Nearest fault		Wellington	
Distance to Fault D		20	km

Limit State:	ULS	SLS	SLS II
APE:	500	25	N/A
R	1	0.25	N/A
Near fault factor required:	No	No	N/A
Nmax (T)	1.00	1.00	N/A
N(T,D)	1.00	1.00	N/A
C(T) = Ch(T) Z R N(T,D)	**0.756**	**0.189**	**N/A**

Horizontal Force Coefficent: Cd(T) = C(T) Sp/kμ

Ductility	μ	3.5	1	1
Struct.Perf.Factor	Sp	0.7	0.7	0.7
Scale factor	kμ	2.429	1	1
Cd(T) = C(T) Sp/kμ		**0.22**	**0.13**	**N/A**

NOTE: For equivalent static analysis deflections must be scaled in accordance with Section 6.2.3, NZS 1170.5

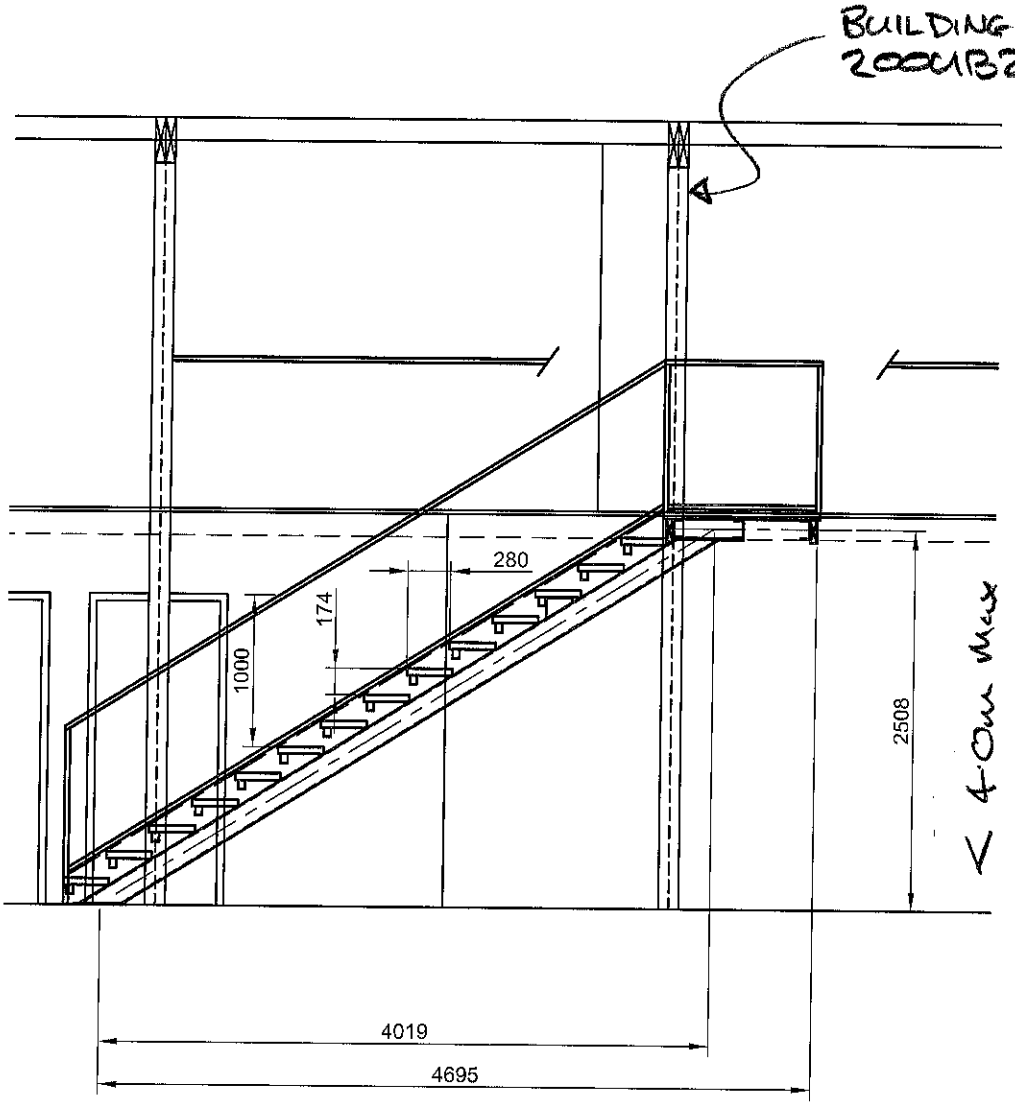
Summary of Horizontal Seismic Coefficients for Levels of Ductility:

μ_{ULS}	1.0	1.25	1.5	2	3	4	5	6
Cd(T)	0.76	0.61	0.50	0.34	0.25	0.19	0.16	0.14

4.0 STAIR STRUCTURE

4.1 GEOMETRY

a) OVER ALL GEOMETRY



V 4.0m max
Tbl 7 D1/AS1

Stair to meet 'main private' stair requirements of D1/AS1 being:

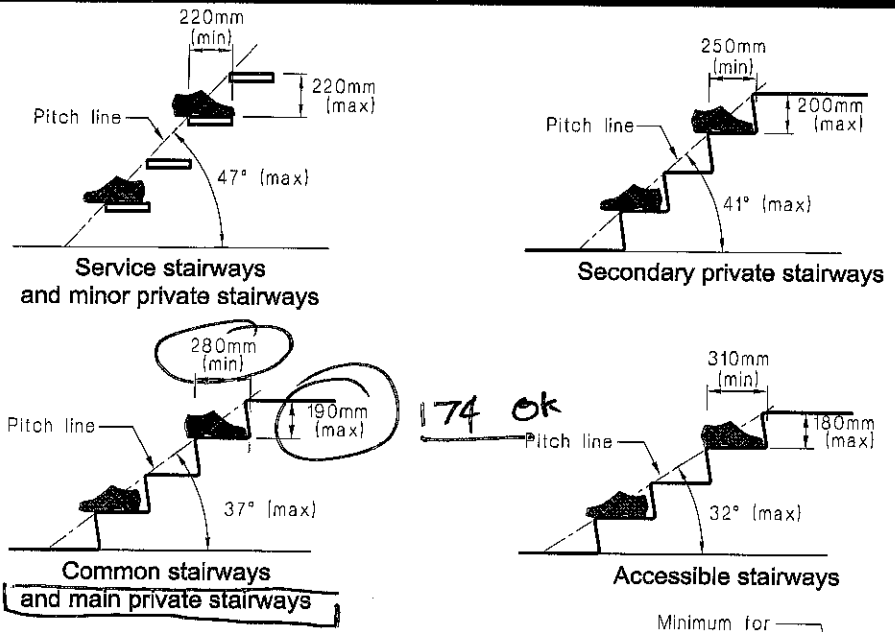
Going	≥	280mm
Riser	≤	190mm
Nosing		0 – 25mm

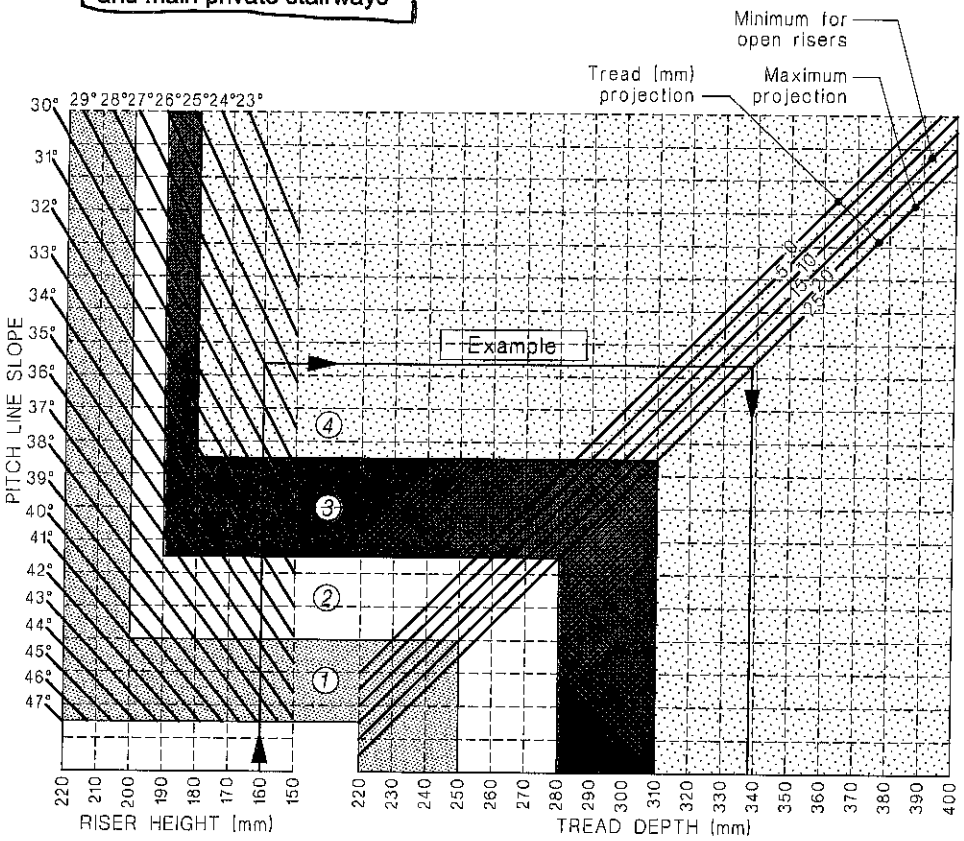
[FIG 11 & Table 6 D1/AS1 Pg 15]

Use 300 Tread + 20mm Nosing = 280 Going.

15

Figure 11: Pitch, Risers and Treads for Stairs
Paragraphs 4.1.1, 4.1.4, 4.4.2, 4.5.1 a) and Figure 17





KEY

① Service stairways & minor private stairways

② Minor & secondary private stairways & service stairways only

③ Common, private & service stairways permitted

④ All stairways permitted

Example of accessible stairway
For a riser height of 160mm, pitch line slope of 27° and tread projection of 25mm, the design tread depth is 340mm.

b) TREAD GEOMETRY

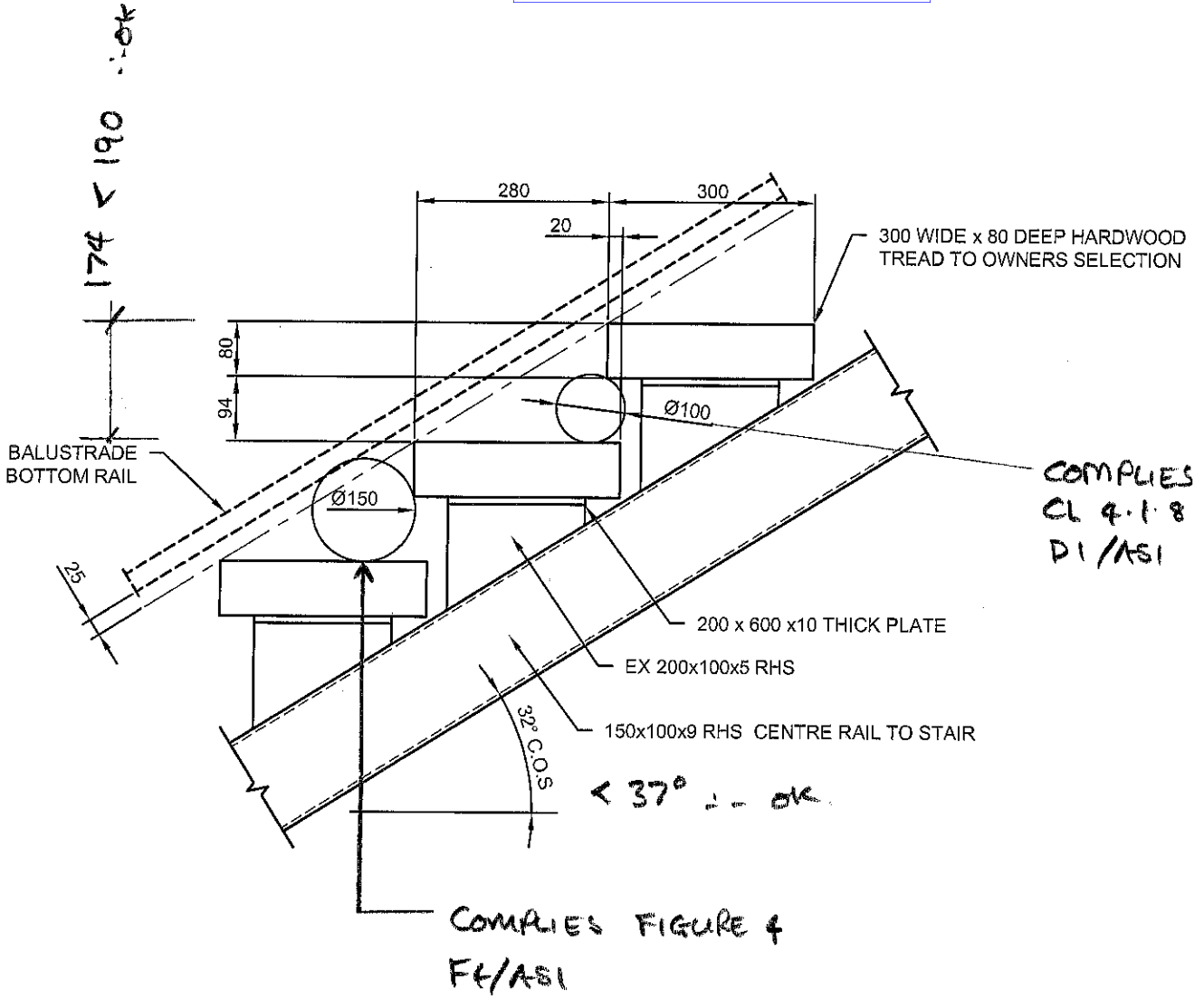


Figure 3: Barriers in areas likely to be frequented by children under 6 years of age – glass or other solid material
Paragraph 1.2.1 a)

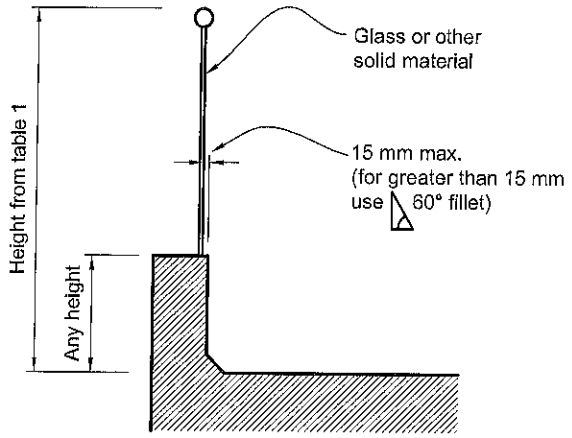
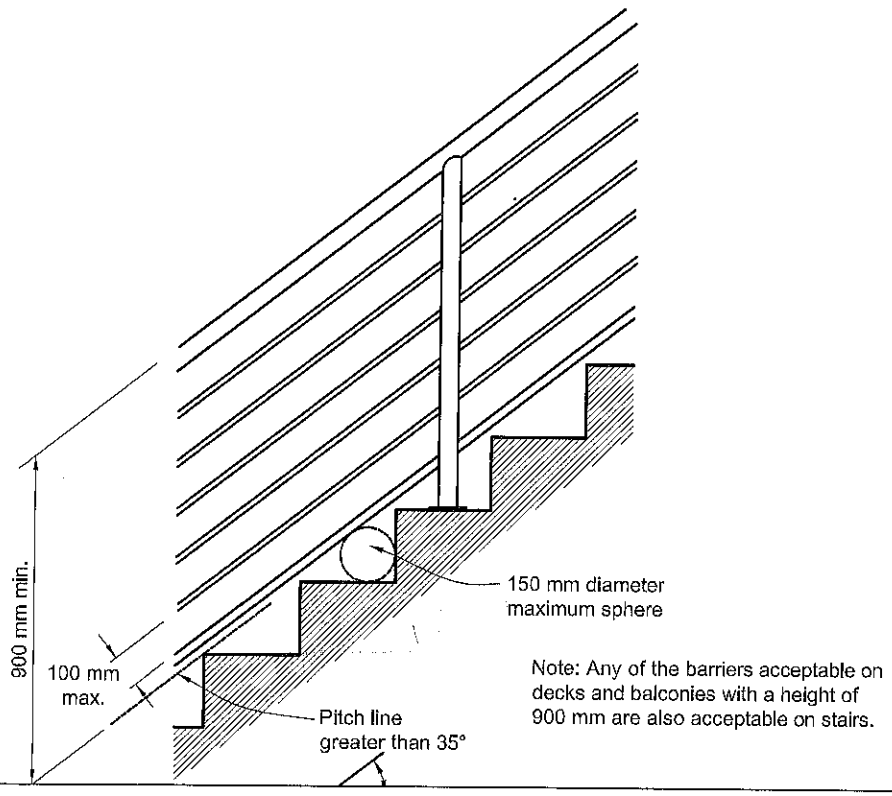
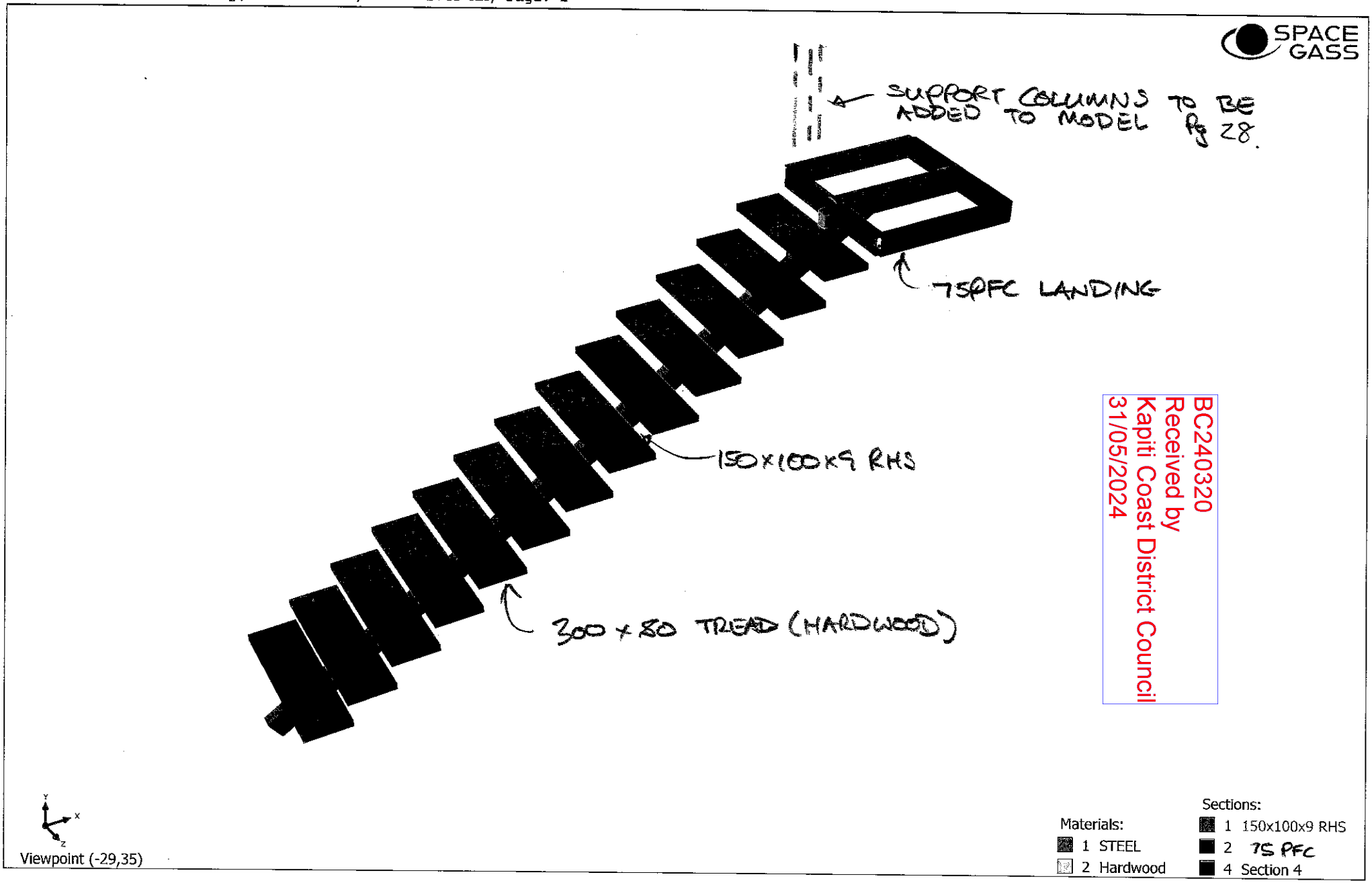


Figure 4: Stair barrier in an area likely to be frequented by children under 6 years of age
Paragraph 1.2.1 a)



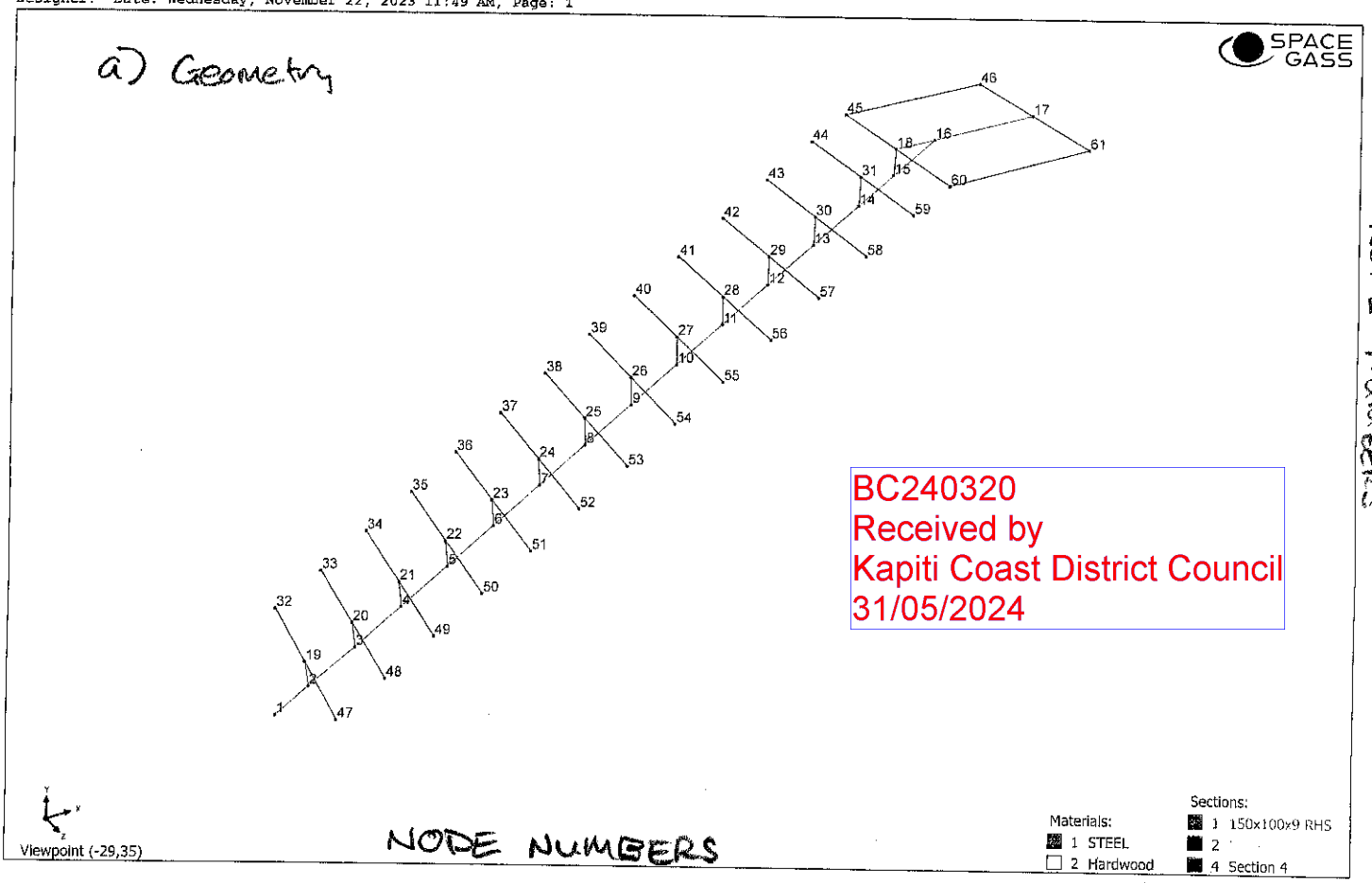
4.2 STAIR MODEL & LOADS



19

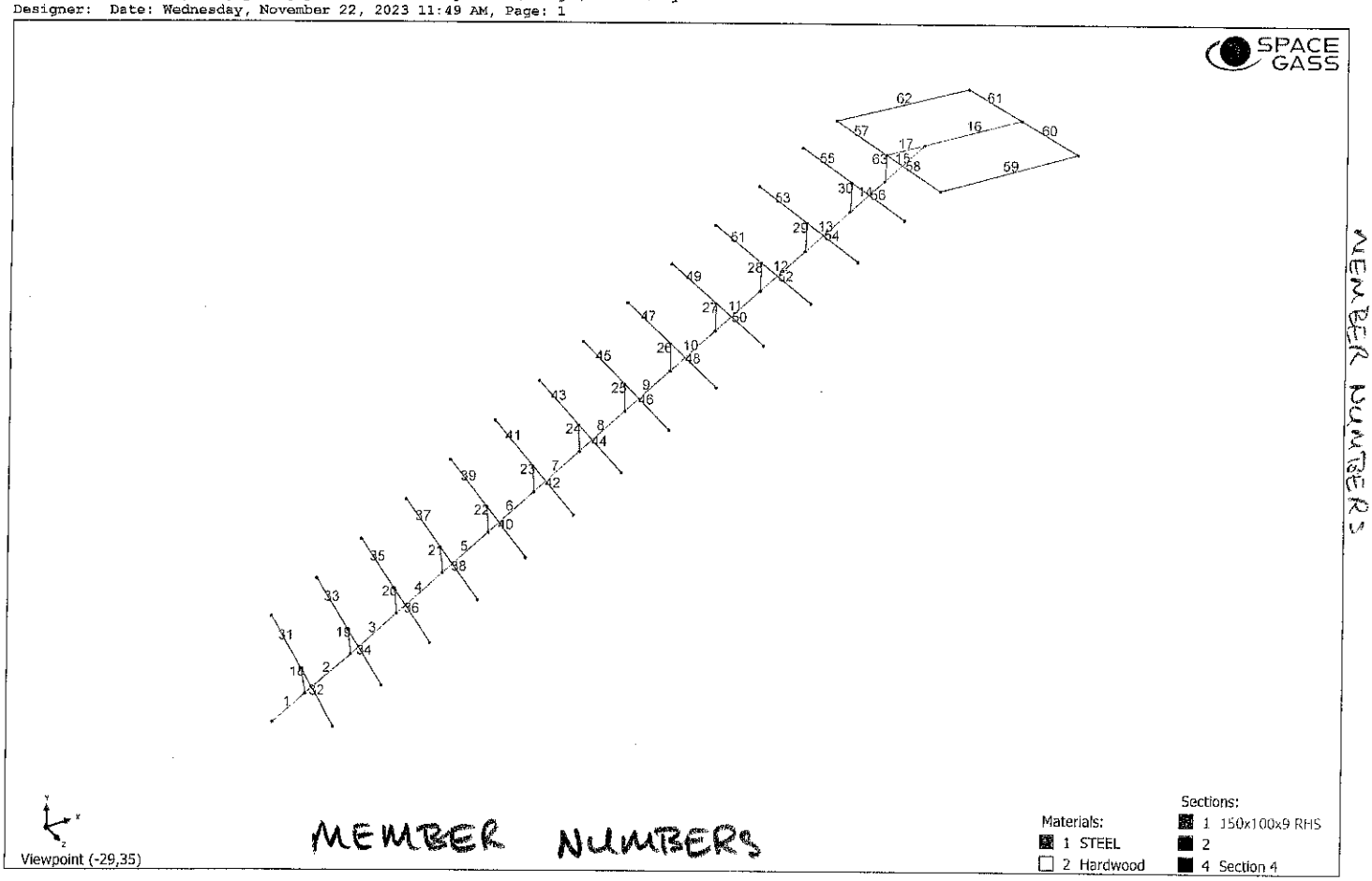
SPACE GASS 14.11 - SEAJAY CONSULTING ENGINEERS LIMITED
Path: C:\Users\Craig\Seajay\Seajay - Documents\Project...\Design\Stairs only
Designer: Date: Wednesday, November 22, 2023 11:49 AM, Page: 1

a) Geometry



NODE NUMBERS

SPACE GASS 14.11 - SEAJAY CONSULTING ENGINEERS LIMITED
Path: C:\Users\Craig\Seajay\Seajay - Documents\Project...\Design\Stairs only
Designer: Date: Wednesday, November 22, 2023 11:49 AM, Page: 1



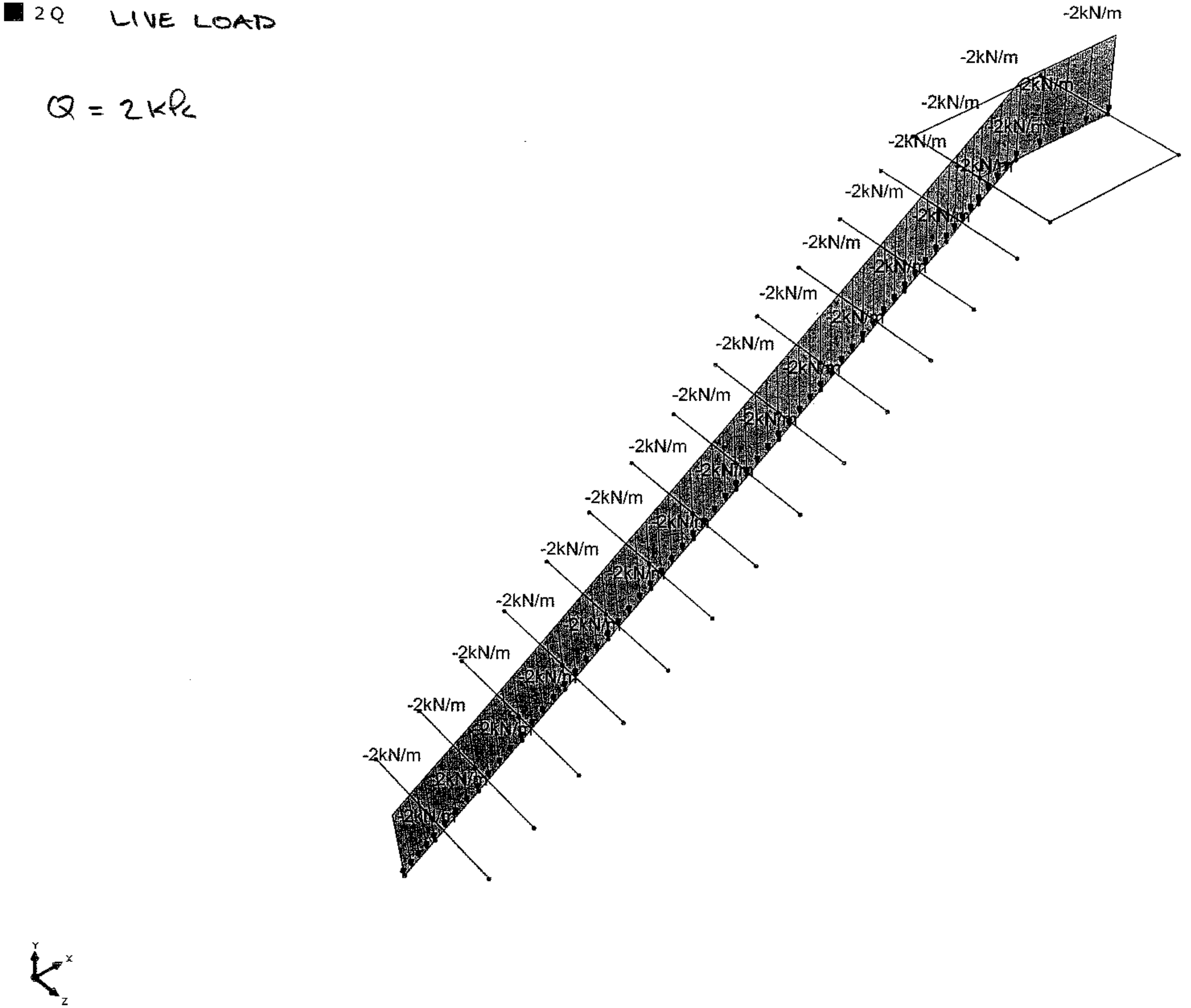
MEMBER NUMBERS

SPACE GASS 14.11 - SEAJAY CONSULTING ENGINEERS LIMITED
Path: C:\Users\Craig\Seajay\Seajay - Documents\Project...\Design\Stairs only
Designer: Date: Wednesday, November 22, 2023 11:53 AM, Page: 1

b) Loads.

Load case 2
2 Q LIVE LOAD

Q = 2kPa



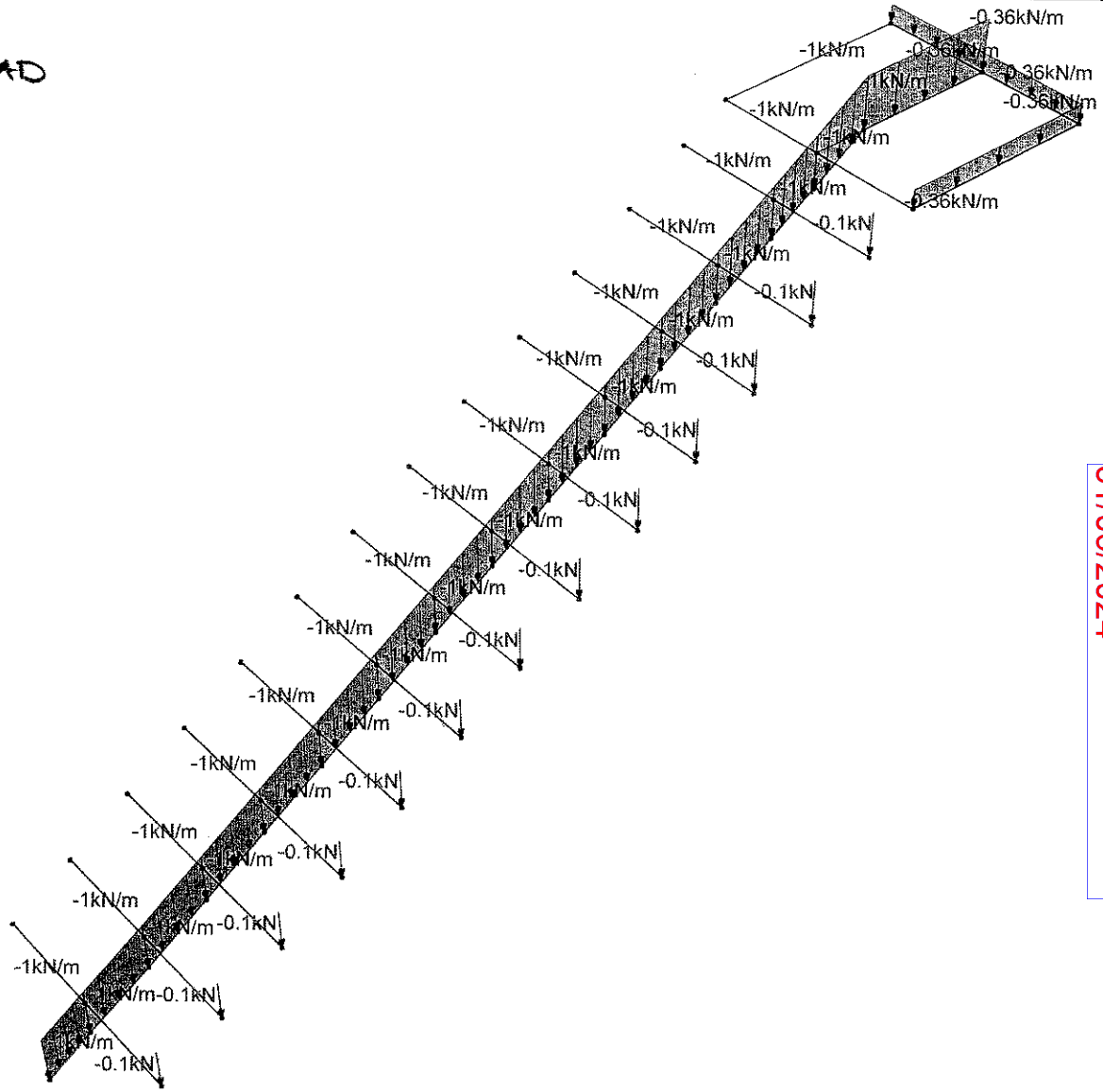
Materials:
1 STEEL
2 Hardwood

Sections:
1 150x100x9 RHS
2
4 Section 4

20

43

Load case 1
1 G – GRAVITY LOAD



Viewpoint (-41,42), Loads

Materials:
1 STEEL
2 Hardwood

Sections:
1 150x100x9 RHS
2
4 Section 4

Load cases 3-8
(1) Point loads
- 3 P1
- 4 P2
- 5 P3
- 6 P4
- 7 P5
- 8 P6

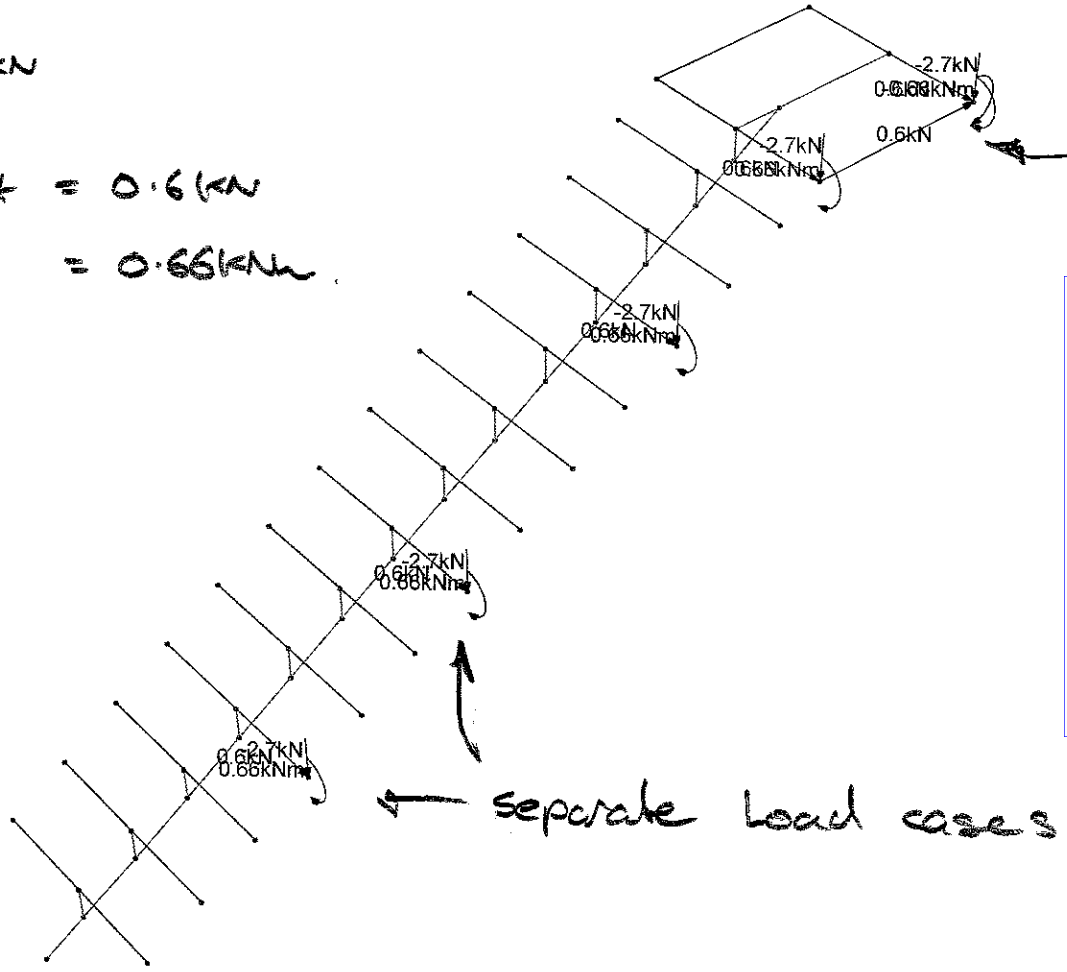
Point Live Load

P = 2.7kN

$P_{H\ Balust}$ = 0.6kN

M_{H} " = 0.66kNm

(Pg 24)



2.7kN

P6 Balustrade

P5 Balustrade

← separate load cases

Viewpoint (-41,42), Loads

Materials:
- 1 STEEL
- 2 Hardwood

Sections:
- 1 150x100x9 RHS
- 4 Section 4

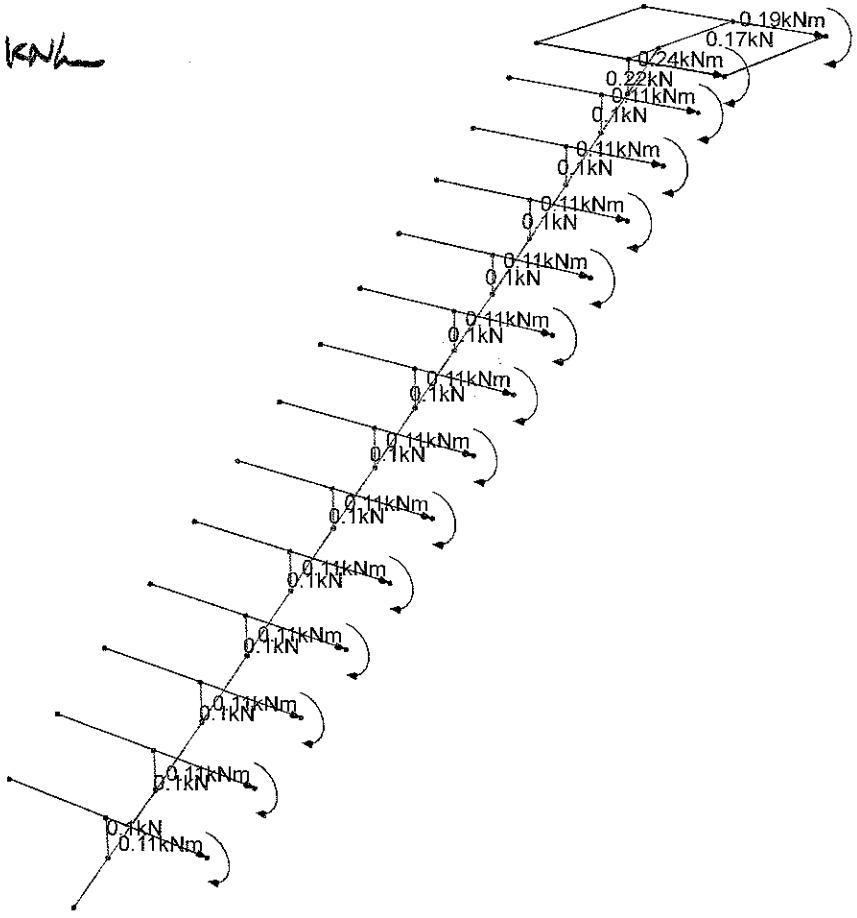
Load case 9
9 B1

Balustrade Load

H = 0.35 kN/m

M_H = 0.385 kN/m

(Pg 24)



Viewpoint (-56,22), Loads

Materials:
1 STEEL
2 Hardwood

Sections:
1 150x100x9 RHS
2
4 Section 4

CALCULATIONS			
Project No. :	Date:	Eng:	Page: 24
Project:			
Description:			

Seajay
CONSULTING ENGINEERS
CIVIL • STRUCTURAL • FIRE
42 Michael Road, PO Box 1713, Paraparaumu 5252
Phone: (04) 212 5150 • Cell: 021 121 4591
craig@seajay.co.nz

Balustrade Loads

Per Tread. : Apply with UDL. & Point Loads

$H = 0.28m \times 0.35 kN/m = 0.098 kN$

$V = 0.28m \times 0.35 kN/m = 0.098 kN$

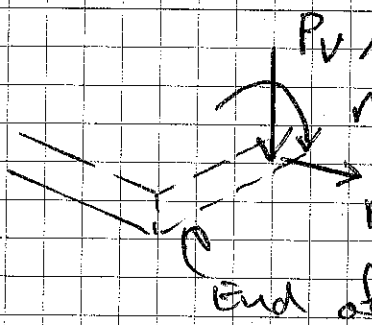
$M_H = 0.098 \times 1.1m = 0.107 kNm$

Point Loads

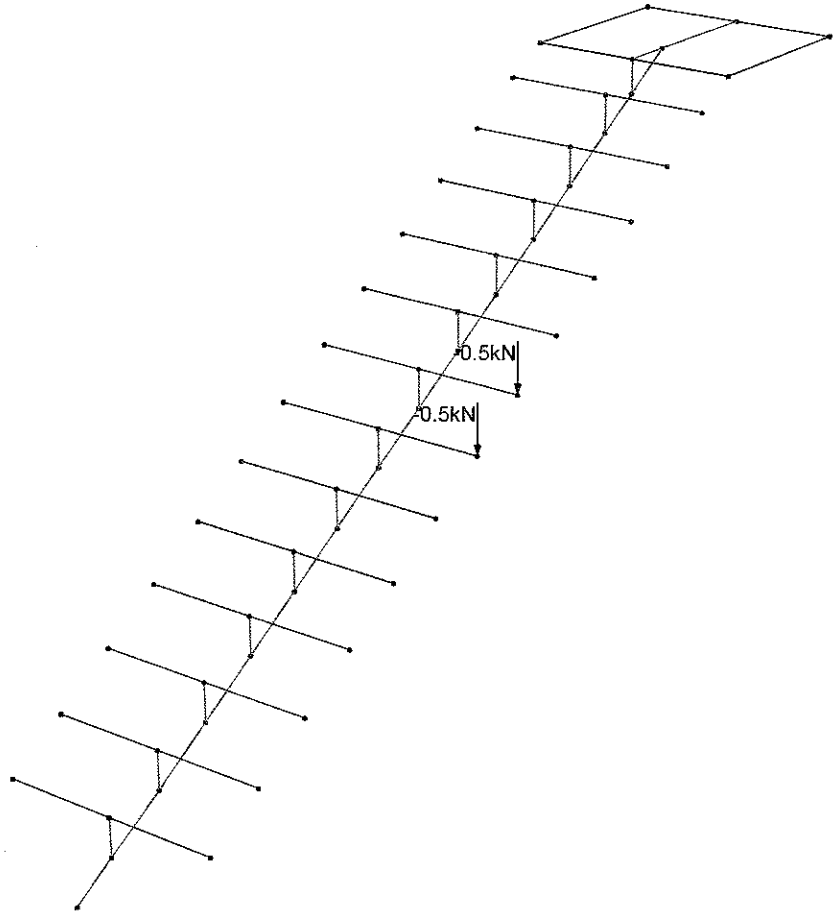
$P_H = 0.6 kN$

$P_V = 0.6 kN$

$M_H = 1.1 \times 0.6 = 0.66 kNm$



Load case 10
10 1kN Vibration Check



Viewpoint (-56,22), Loads

Materials:
1 STEEL
2 Hardwood

Sections:
1 150x100x9 RHS
2
4 Section 4

COMBINATION LOAD CASES

Load case 100: 1.2G&1.5Q

1.200 * Load case 1: G
1.500 * Load case 2: Q
1.500 * Load case 9: B1

Load case 101: 1.2G&1.5P1

1.200 * Load case 1: G
1.500 * Load case 3: P1

Load case 102: 1.2G&1.5P2

1.200 * Load case 1: G
1.500 * Load case 4: P2

Load case 103: 1.2G&1.5P3

1.200 * Load case 1: G
1.500 * Load case 5: P3

Load case 104: 1.2G&1.5P4

1.200 * Load case 1: G
1.200 * Load case 6: P4

Load case 105: 1.2G&1.5P5

1.200 * Load case 1: G
1.500 * Load case 7: P5

Load case 106: 1.2G&1.5P6

1.200 * Load case 1: G
1.500 * Load case 8: P6

Load case 200: G&0.7Q

1.000 * Load case 1: G
0.700 * Load case 2: Q

Load case 201: G&0.7P1

1.000 * Load case 1: G
0.700 * Load case 3: P1

Load case 202: G&0.7P2

1.000 * Load case 1: G
0.700 * Load case 4: P2

Load case 203: G&0.7P3

1.000 * Load case 1: G
0.700 * Load case 5: P3

Load case 204: G&0.7P4

1.000 * Load case 1: G
0.700 * Load case 6: P4

Load case 205: G&0.7P5

1.000 * Load case 1: G
0.700 * Load case 7: P5

Load case 206: G&0.7P6

1.000 * Load case 1: G
0.700 * Load case 8: P6

SPACE GASS 14.11 - SEAJAY CONSULTING ENGINEERS LIMITED
Path: C:\Users\Craig\Seajay\Seajay - Documents\Project...\Design\Stairs only

LOAD CASE TITLES

Load Case	Title
1	G
2	Q
3	P1
4	P2
5	P3
6	P4
7	P5
8	P6
9	B1
10	1kN Vibration Check
100	1.2G&1.5Q
101	1.2G&1.5P1
102	1.2G&1.5P2
103	1.2G&1.5P3
104	1.2G&1.5P4
105	1.2G&1.5P5
106	1.2G&1.5P6
200	G&0.7Q
201	G&0.7P1
202	G&0.7P2
203	G&0.7P3
204	G&0.7P4
205	G&0.7P5
206	G&0.7P6

CALCULATIONS			
Project No. :	Date:	Eng:	Page: 27
Project:			
Description:			

Seajay CONSULTING ENGINEERS CIVIL • STRUCTURAL • FIRE
42 Michael Road, PO Box 1713, Paraparaumu 5252
Phone: (04) 212 5150 • Cell: 021 121 4591
craig@seajay.co.nz

Portal Frame Loads => S = 3.38m

FLOOR: [Beam 69]

G = 0.4kPa x 3.38m = 1.35 kN/m

GSID = 0.25kPa x 3.38m = 0.84 kN/m

2.20 kN/m

Use G = 1.35 kN/m Deflection

G = 2.20 kN/m Strength

Q = 1.5kPa x 3.38m = 5.07 kN/m

Use only for strength

Roof: [Bm 70]

G = 0.3kPa x 3.38m = 1.01 kN/m

Q = 0.25kPa x 3.38m = 0.84 kN/m

Use only for Strength

Front Lounge Roof Beam Reactions [Node 66]

Beam L = 4.30m

S = 3.38m

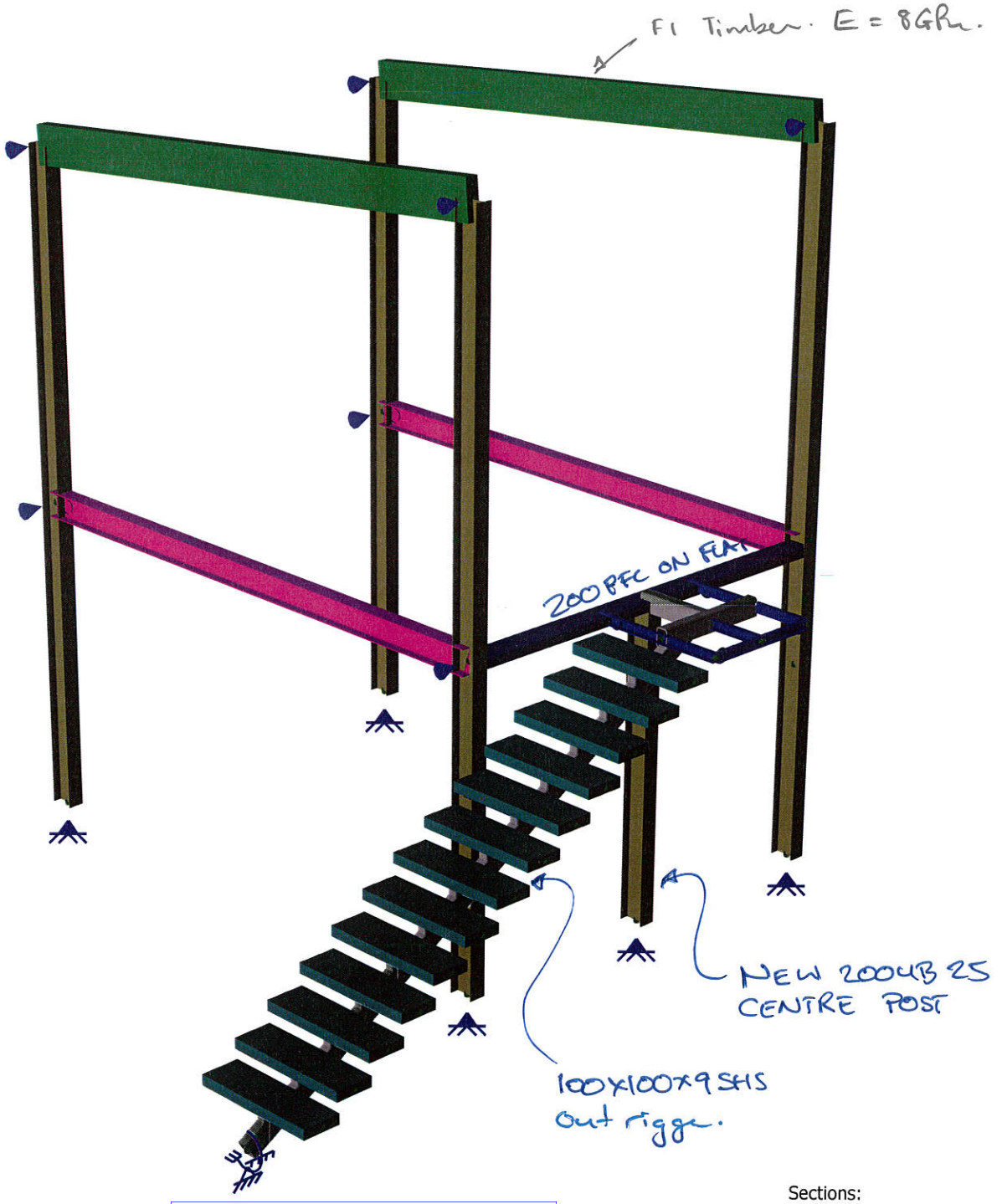
A = 4.3 x 3.38/2 = 7.27m²

N_G = 0.3kPa x 7.27m² = 2.20 kN

N_Q = 0.25kPa x 7.27m² = 1.82 kN

SPACE GASS 14.11 - SEAJAY CONSULTING ENGINEERS LIMITED
Path: ...ign\Stairs and central landing with PFC and landing - pin back span
Designer: Date: Thursday, February 1, 2024 1:36 PM, Page: 1

REVISED MODEL TO INCLUDE SUPPORTING STRUCTURE



4.3 DEFLECTIONS

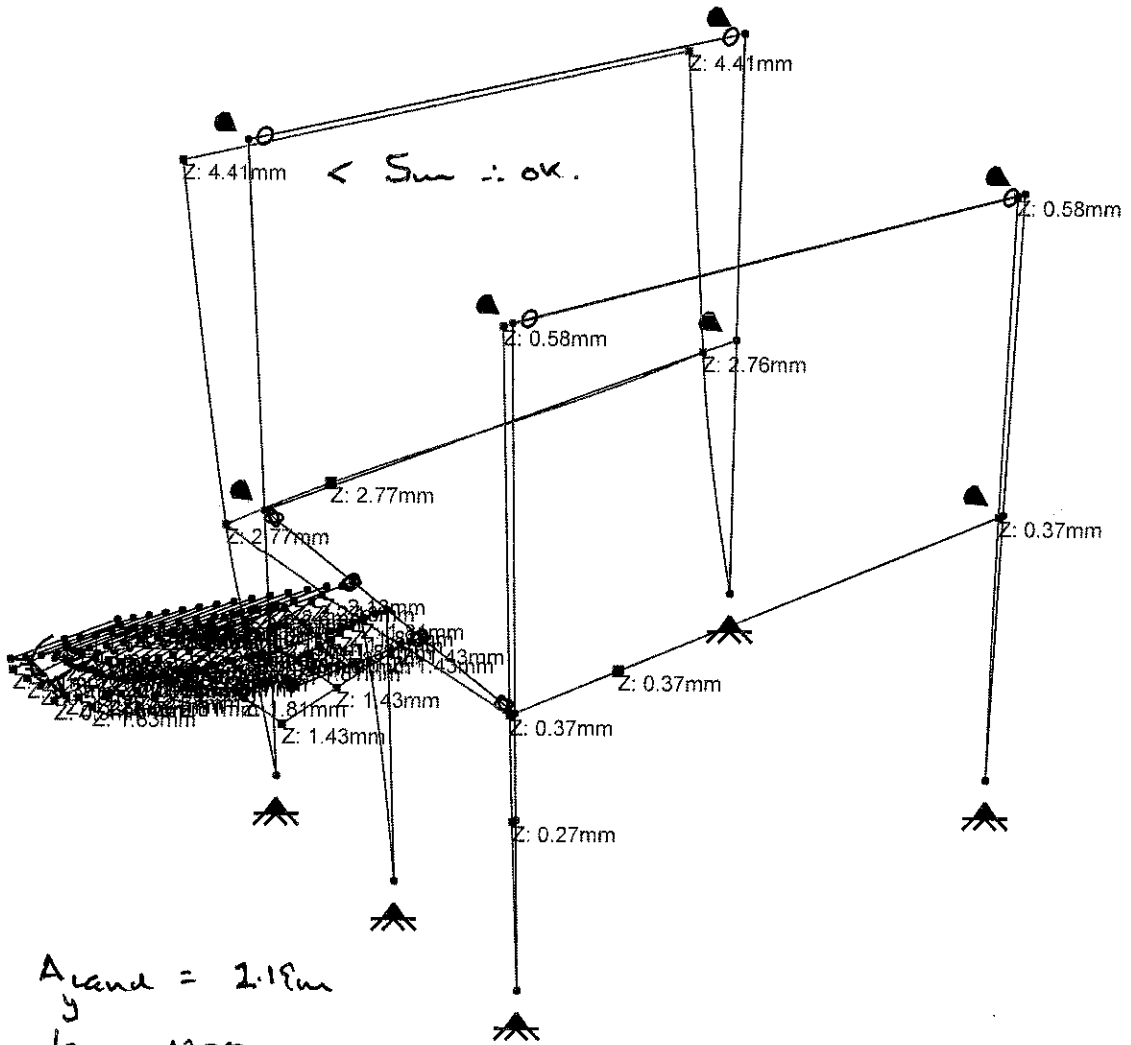
SPACE GASS 14.11 - SEAJAY CONSULTING ENGINEERS LIMITED
Path: C:\Use...\Design\Stairs FW\SLS Model - Mid Span Outrigger - Full Portal
Designer: Date: Thursday, February 1, 2024 3:18 PM, Page: 1

Envelope of absolute maximums for Load cases 10,200-206
(1) SLS
Max

a) Deflection Check - Stair loads only.

Δ_z = 4.41mm < 5mm ok. (4.48mm with 100x5 SHS Outrigger ∴ ok)

$\frac{h}{\Delta_z} = \frac{5700}{4.41mm} = 1292$ ok.



< 5mm ∴ ok.

$\Delta_{y_{Land}}$ = 2.19mm

$\frac{h}{\Delta_y} = \frac{1200}{2.19mm} = 547mm$. ∴ ok

1 kN on Landing

Δ_{Top_H} = 0.4mm.

Δ_{LAND_V} = 0.36mm < 1mm ∴ ok

Materials:
1 STEEL
2 Hardwood
4 F1

Sections:
1 150x100x9 RHS
2 75 PFC
3 203x133 UB 25
5 203x133 UB 25
6 300X100 Roof Beam
7 200 PFC
8 300x80 Treads
16 100*9 SHS

Viewpoint (54,31), Displacements

SPACE GASS 14.11 - SEAJAY CONSULTING ENGINEERS LIMITED
Path: C:...\Design\Stairs Final ULS Model - Mid Span Outrigger - Full Portal
Designer: Date: Thursday, February 1, 2024 5:13 PM, Page: 1

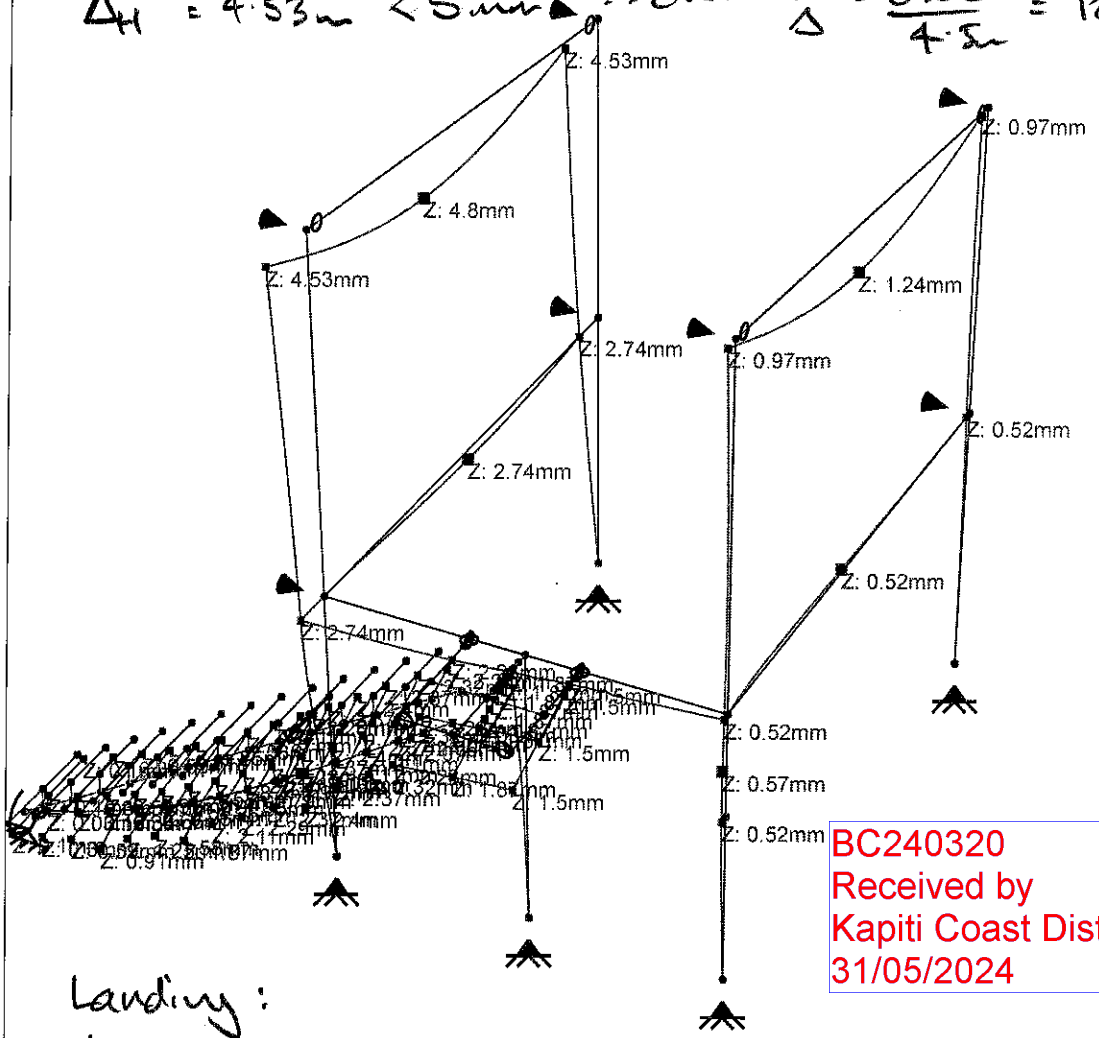
Envelope of absolute maximums for Load cases 10,200-206
(1) SLS
Max

SPACE GASS

b) Deflection Check - Stair + Frame Gravity

(Note Q Live loads on frame reduce overall deflections on stair ∴ have been ignored)

$\Delta_H = 4.53mm < 5mm$ ∴ OK $\quad \frac{h}{\Delta} = \frac{5700}{4.5} = 1260$



Landing:

$\Delta_{y\,L} = 2.23mm$

$\frac{L}{\Delta_y} = \frac{1200}{2.23} = 538$ ∴ OK.

Δ_{1KN} landing $= 0.2mm$ ∴ OK

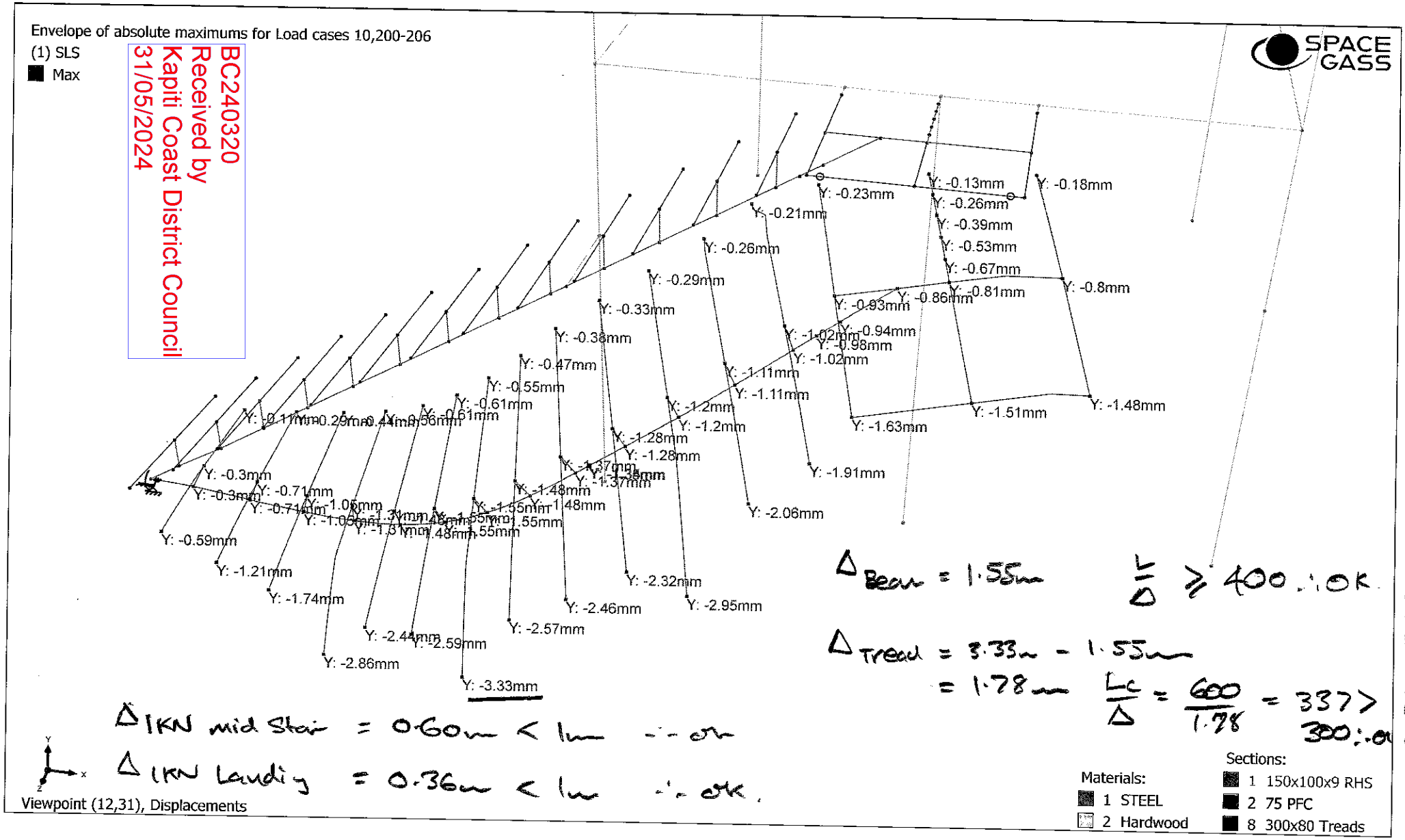
Δ_{1KN} Stair $= 0.25mm$ ∴ OK

Sections:
1 150x100x9 RHS
2 75 PFC
3 203x133 UB 25
5 203x133 UB 25
6 300X100 Roof Beam
7 200 PFC
8 300x80 Treads
16 100*9 SHS

Materials:
1 STEEL
2 Hardwood
4 F1 Timber

Viewpoint (26,34), Displacements

SPACE GASS 14.11 - SEAJAY CONSULTING ENGINEERS LIMITED
Path: C:...\Design\Stairs Final SLS Model - Mid Span Outrigger - Full Portal
Designer: Date: Thursday, February 1, 2024 5:23 PM, Page: 1
Filter: Unnamed Filter



BC240320
Received by
Kapiti Coast District Council
31/05/2024

$\Delta_{Beam} = 1.55m$ $\frac{L}{\Delta} \geq 400$ ∴ OK.

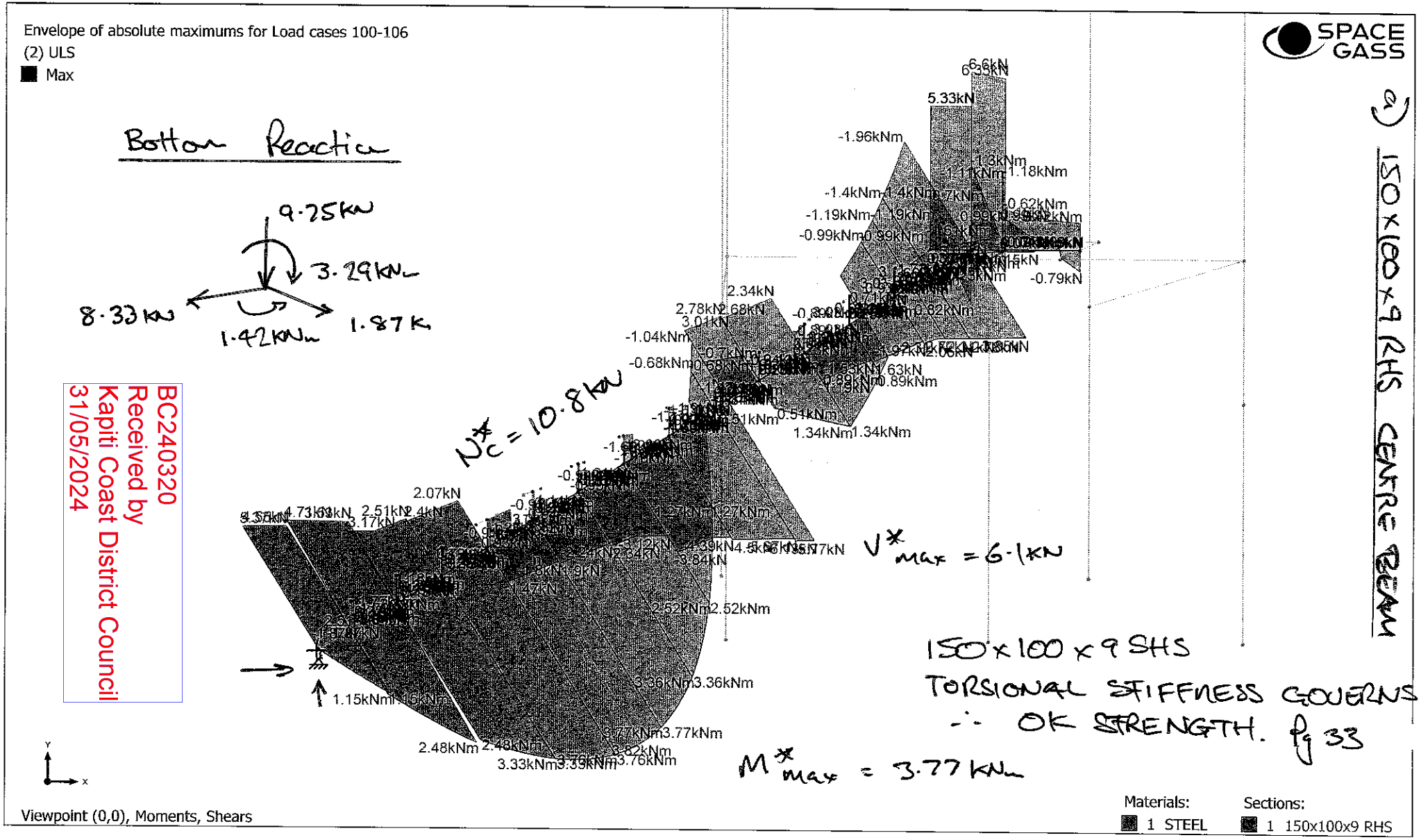
$\Delta_{Tread} = 3.33m - 1.55m$
$= 1.78m$ $\frac{L_c}{\Delta} = \frac{600}{1.78} = 337 > 300$ ∴ OK

$\Delta_{1KN\ mid\ Stair} = 0.60m < 1m$ ∴ OK

$\Delta_{1KN\ Landing} = 0.36m < 1m$ ∴ OK.

C) STAIR CENTRE BEAM & TREAD DEFLECTION SLS

SPACE GASS 14.11 - SEAJAY CONSULTING ENGINEERS LIMITED
Path: C:...\Design\Stairs Final ULS Model - Mid Span Outrigger - Full Portal
Designer: Date: Thursday, February 1, 2024 5:53 PM, Page: 1
Filter: Unnamed Filter



4.4 MEMBER STRENGTH

a) 150x100x9 RHS CENTRE BEAM

SESOC

Project 200 Maungakotukutuku Road Date 1/02/2024

Description Stair Beam

Reference

MemDes/V4.2

Designer CJM Page No 1 of

MemDes Calculations @ 18:01:49 01-02-2024 by CJM

Project : 200 Maungakotukutuku Road

Description : Stair Beam

Segment : S1

Section : 150x100x9.0 RHS Grade 350

Major Axis Bending

Design Action M^*_x = 3.8 kNm

User provided value for α_m = 1.00

α_s = 1.01

$\alpha_m * \alpha_s >= 1.0$, => Segment Fully Restrained

$M_{bx} = M_{sx}$ = 64.8 kNm

Major axis capacity Ratio = $M^*_x / \varphi M_{bx}$

= 0.06, ---- OK ----

Shear Calculations (Unstiffened Web)

Design Action V^*_x = 6.1 kN

Nominal Shear Yield capacity V_w = 499.0 kN

α_v = 22.33 >= 1.0 => full web shear capacity

$V_u = V_w$ = 499.0 kN

Shear capacity ratio = $V^*_x / \varphi V_u$

= 0.01, ---- OK ----

Axial Calculations

Design Action N_d = 10.8 kN [Comp], LeAxx = 4.74 m, LeAyy = 2.90 m

= 1365.0 kN

Major axis buckling : Minor axis buckling : Minimum Capac. $N_c$min = 759.6 kN

Axial buckling capac. Ratio = $N_d / \varphi N_c$min

= 0.016, ---- OK ----

Combined Actions Checks

Loading PASSES Cl 8.1.4, => Combined Actions Checks are not required

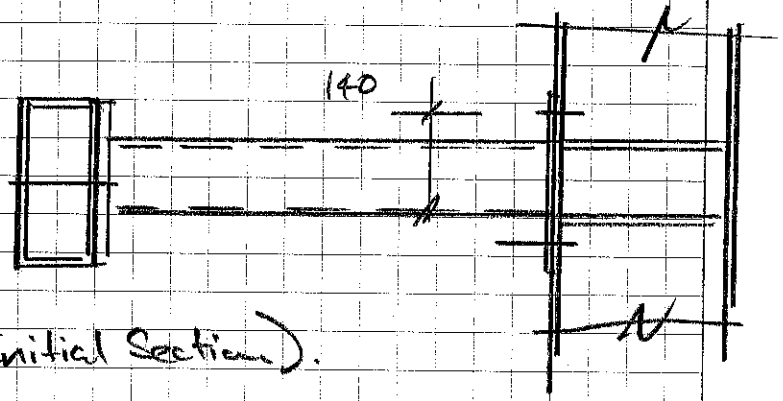
========== SUMMARY ==========

**** U.L.S. Capacity Check Passed, Load Cap. Ratio = 0.06 ---- OK ----

CALCULATIONS			
Project No. :	Date:	Eng:	Page: 34
Project:			
Description:			

Seajay
CONSULTING ENGINEERS
CIVIL • STRUCTURAL • FIRE
42 Michael Road, PO Box 1713, Paraparaumu 5252
Phone: (04) 212 5150 • Cell: 021 121 4591
craig@seajay.co.nz

b) 100x100x5SHS Outrigger.



100x100x9SHS (Initial Section).

From Spaceges: 100x100x9SHS

$M^* = 6.4$ kNm — $\phi M_{sx} = 31$ kNm

$V^* = 10.63$ kN — $\phi V_x = 280$ kN

$N^* = 3.10$ kN — $\phi N_s = 900$ kN

ok by inspection.

Try 100x100x5SHS.

$\Delta_y = 1.57$m ~ $\Delta_{y\ 100x100x5SHS} = 1.37$m.

∴ Short stiff element ok.

$\phi M_{sx} = 20$ kNm > $M^* = 6.4$ kNm ∴ ok

$\phi V_{sx} = 170$ kN > $V^* = 10.63$ kN ∴ ok.

$\phi N_{sx} = 570$ kN > $N^* = 3.10$ kN ∴ ok

Use 100x100x5SHS Outrigger

CALCULATIONS			
Project No. :	Date:	Eng:	Page: 35
Project:			
Description:			

Seajay
CONSULTING ENGINEERS
CIVIL·STRUCTURAL·FIRE
42 Michael Road, PO Box 1713, Paraparaumu 5252
Phone: (04) 212 5150 • Cell: 021 121 4591
craig@seajay.co.nz

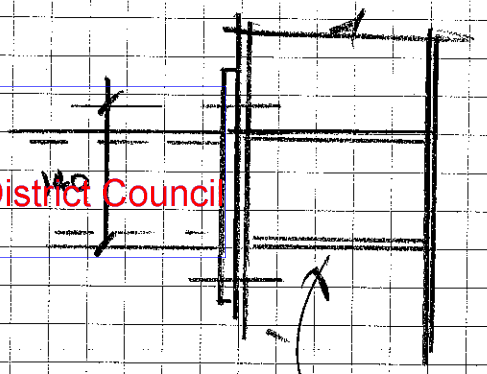
Connections :

(i) Outrigger to Stair Beam

$V^* = 10.3\,kN$

∴ 6mm or greater plate o/k by inspection
M12 or greater bolt o/k by inspection

(ii) Outrigger to UB moment Connection



Bolts

$N^*_{Bolt} = \frac{6.4\,kNm}{0.14}$

$= 45.7\,kN$

$V^* = 10.3\,kN$ (Bottom Bolts o/k).

Need Min 2-M12

$N^* = 1.25 \times 45.7\,kN/2$ Allowing for Prying

$= 28.5\,kN$

AISC Tables $\phi N_t = 27\,kN$ ∴ use 2-M16 Bolts.

Weld

6mm Fillet Weld around / V Butt

$N^*_F = 6.4\,kNm / (0.1 - 0.05)$

$= 67.3\,kN$

AISC Table $\phi V_{FW} = 0.557\,kN/mm \times 100 = 65.7\,kN$ ∴ NG

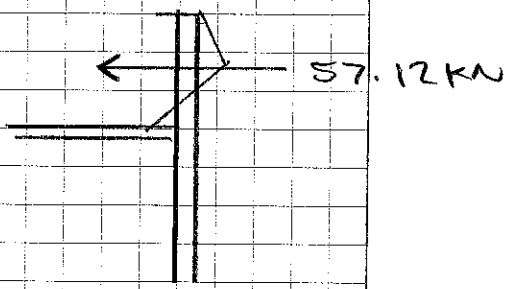
Use V Butt Welds + Fillet weld ..

CALCULATIONS			
Project No. :	Date:	Eng:	Page: 36
Project:			
Description:			

Seajay
CONSULTING ENGINEERS
CIVIL • STRUCTURAL • FIRE
42 Michael Road, PO Box 1713, Paraparaumu 5252
Phone: (04) 212 5150 • Cell: 021 121 4591
craig@seajay.co.nz

Outrigger (Continued)

End Plate



$M^* = 57.12\ kN \times 0.040\ m / 2$

$= 1.14\ kN.m$

Section at Bolts will Govern

$b_e = 130\ mm - 2 \times 18 = 94\ mm$

$t_e = \sqrt{\frac{4 M^*}{0.9 f_y b_e}}$

$= \sqrt{\frac{4 \times 1.14 \times 10^6\ N.mm}{0.9 \times 250 MPa \times 94\ mm}}$

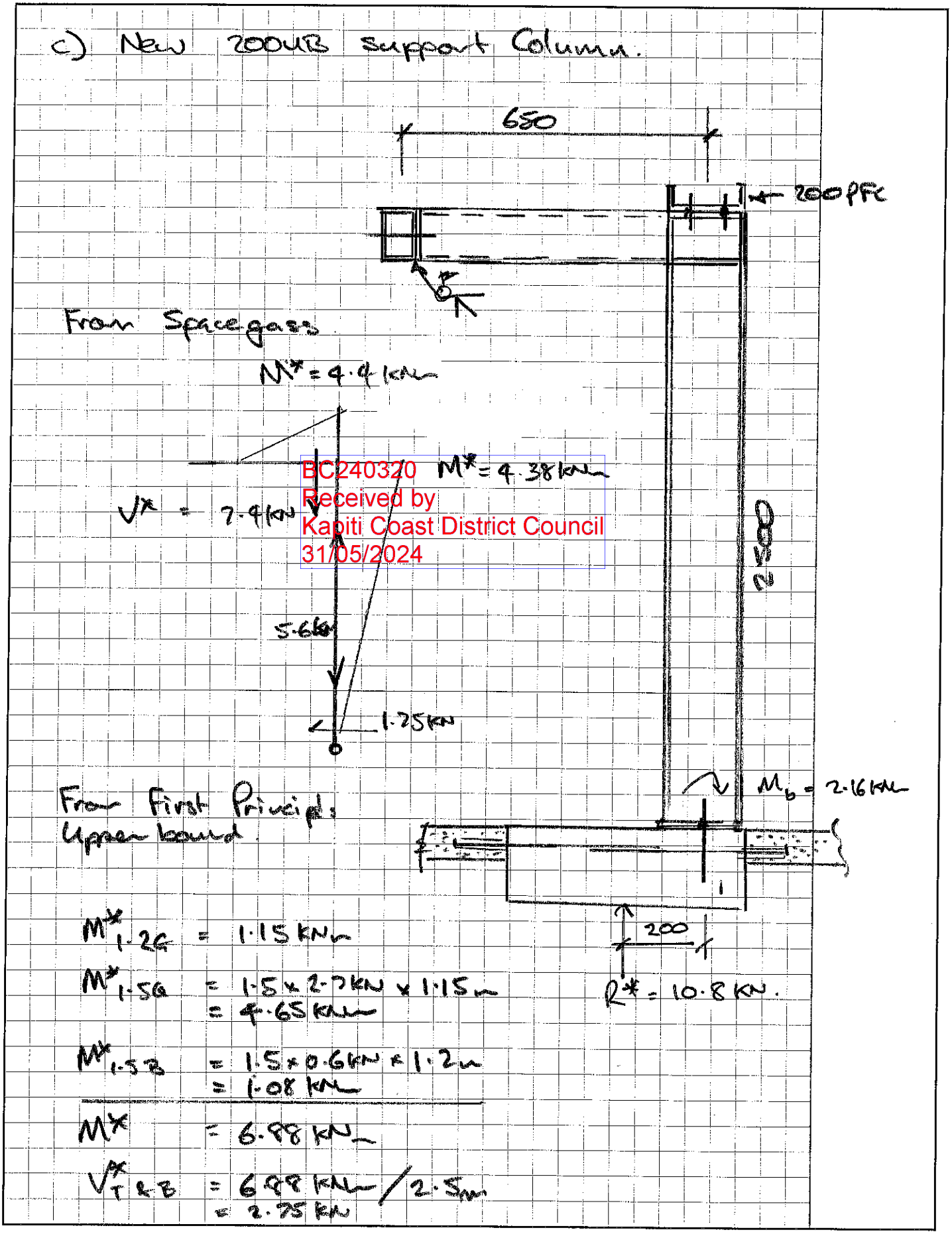
$= 14.6\ mm$ Say 15mm Plate.

CALCULATIONS

Project No. :	Date:	Eng:	Page: 37
Project:			
Description:			

Seajay
CONSULTING ENGINEERS
CIVIL • STRUCTURAL • FIRE
42 Michael Road, PO Box 1713, Paraparaumu 5252
Phone: (04) 212 5150 • Cell: 021 121 4591
craig@seajay.co.nz

c) New 200UB support Column.



From First Principles
Upper bound.

$M^*_{1.2G}$ = 1.15 kNm

$M^*_{1.5G}$ = 1.5 × 2.7 kN × 1.15 m
= 4.65 kNm

$M^*_{1.5Q}$ = 1.5 × 0.6 kN × 1.2 m
= 1.08 kNm

M^* = 6.88 kNm

$V^*_{T\&B}$ = 6.88 kNm / 2.5 m
= 2.75 kN

SESOC

MemDes/V4.2

Project 200 Maungakotukutuku Road Date 2/02/2024

Description Stair Column

Reference

Designer CJM Page No 38 of

MemDes Calculations @ 07:48:58 02-02-2024 by CJM

Project : 200 Maungakotukutuku Road

Description : Stair Column

Segment : S1

Section : 200UB25 Grade 300+

Major Axis Bending

Design Action M^*_x = 6.9 kNm

α_m = 1.89

α_s = 0.68

$\alpha_m * \alpha_s$ >= 1.0, => Segment Fully Restrained

$M_{bx} = M_{sx}$ = 82.9 kNm

Major axis capacity Ratio = $M^*_x / \phi M_{bx}$

= 0.09, ---- OK ----

Shear Calculations (Unstiffened Web)

Design Action V^*_x = 2.8 kN

Nominal Shear Yield capacity V_w = 226.1 kN

α_v = 5.03 >= 1.0 => full web shear capacity

$V_u = V_w$ = 226.1 kN

Shear capacity ratio = $V^*_x / \phi V_u$

= 0.01, ---- OK ----

Axial Calculations

Design Action N_d = 5.7 kN [Comp], LeAxx = 2.50 m, LeAyy = 2.50 m

= 1033.6 kN

Major axis buckling : Minor axis buckling : Minimum Capac. $N_c$min = 617.1 kN

Axial buckling capac. Ratio = $N_d / \phi N_c$min

= 0.010, ---- OK ----

Combined Actions Checks

Loading PASSES Cl 8.1.4, => Combined Actions Checks are not required

========== SUMMARY ==========

**** U.L.S. Capacity Check Passed, Load Cap. Ratio = 0.09 ---- OK ----

SESOC

Project 200 Maungakotukutuku Road Date 2/02/2024

Description Stair Cantilever Beam

Reference

MemDes/V4.2

Designer CJM Page No 39 of

MemDes Calculations @ 07:50:51 02-02-2024 by CJM

Project : 200 Maungakotukutuku Road

Description : Stair Cantilever Beam

Segment : S1

Section : 150x100x9.0 RHS Grade 350

Major Axis Bending

Design Action M^*_x = 6.9 kNm

α_m = 1.89

α_s = 1.03

$\alpha_m * \alpha_s >= 1.0$, => Segment Fully Restrained

$M_{bx} = M_{sx}$ = 64.8 kNm

Major axis capacity Ratio = $M^*_x / \phi M_{bx}$

= 0.12, ---- OK ----

Shear Calculations (Unstiffened Web)

Design Action V^*_x = 2.8 kN

Nominal Shear Yield capacity V_w = 499.0 kN

α_v = 22.33 >= 1.0 => full web shear capacity

$V_u = V_w$ = 499.0 kN

Shear capacity ratio = $V^*_x / \phi V_u$

= 0.01, ---- OK ----

Axial Calculations

Design Action N_d = 3.0 kN [Comp], LeAxx = 0.65 m, LeAyy = 0.65 m

= 1365.0 kN

Major axis buckling : Minor axis buckling : Minimum Capac. $N_c$min = 1349.9 kN

Axial buckling capac. Ratio = $N_d / \phi N_c$min

= 0.002, ---- OK ----

Combined Actions Checks

Loading PASSES Cl 8.1.4, => Combined Actions Checks are not required

========== SUMMARY ==========

**** U.L.S. Capacity Check Passed, Load Cap. Ratio = 0.12 ---- OK ----

CALCULATIONS

Project No. :	Date:	Eng:	Page: 40
Project:			
Description:			

Seajay
CONSULTING ENGINEERS
CIVIL • STRUCTURAL • FIRE
42 Michael Road, PO Box 1713, Paraparaumu 5252
Phone: (04) 212 5150 • Cell: 021 121 4591
craig@seajay.co.nz

Pad:

$P^* = 5.6\ kN$

$A_b = 5.6\ kN / 300\ kPa \times 0.5$.

$= 0.0373\ m^2 \equiv 200\ mm$ □

Provide 600 x 600 x 300 Thick
Use 650 □ Pad to match front pad.

$W_T = 0.6^2 \times 0.3 \times 24\ kN/m^3$

$= 4.32\ kN$

$\therefore 1.2G + 1.5Q$

$R^* = 5.6\ kN + 1.2 \times 4.32\ kN$
$= 10.8\ kN$.

$Q^*_b = 10.8\ kN / 0.36\ m^2 = 30\ kPa < \phi Q = 150\ kPa$

$M^*_{Base\ Plate} = 10.8\ kN \times 0.2\ m$ eccentricity
$= 2.16\ kNm$

HD BOLTS:

$N^*_t = \frac{2.16\ kNm}{0.10\ m} = 21.6\ kN$ / 2 bolts.

2 - M16 bolts OK by inspection

$\phi N_t = 50\ kN$ each.

Provide 15mm base plate.

Use 650 x 1300 Pad to match front pad and Utilise bending capacity of base connection. B4PA

Pad Footing Design

Job No.:	23020	Date :	5/02/2024
Project Title :	200 Maungakotukutuku Road, PPM		
Description :	New Stair		
Pad No:	Post Footing	Engineer :	CJM

Seajay CONSULTING ENGINEERS CIVIL • STRUCTURAL • FIRE

Pad Geometry:

Length	0.65	m	*Density*	24	kN/m^3
Width	1.30	m	Pad Mass	6	kN
Depth underside pad	0.300	m	Pad Modulus	0.18	m^3
Shear Depth	0.200	m (thickness of buried pad)			

Soil Properties:

Bearing Pressure Capacity	qb	300	kPa
Capacity Reduction Factor	ϕs	0.5	
Hardfill Int. Angle Friction	ϕ	32	°
Hardfill Density	γs	18	kN/m^3
Base Adhesion	α	0	kPa
Passive Pressure Coeff.	Kp	3.25	

Pad Loading:

Utilise Bending Capacity in Post Connection

Over Turning Moment	M*	8	kNm
Axial Load	P*	3.7	kN
Shear	V*	1.75	kN
Load Eccentricity	e	-0.5	m
Base Overturning Moment	Mb	6.675	kNm

Stabilising Actions:

Width Bearing	be	0.09 m
Effective gravity load eccentricity	ef	-0.19
Lever Arm	le	0.79 m
Over Turning Moment	**ϕMo**	**7 kNm**
Sliding	**ϕVo**	**4 kN**

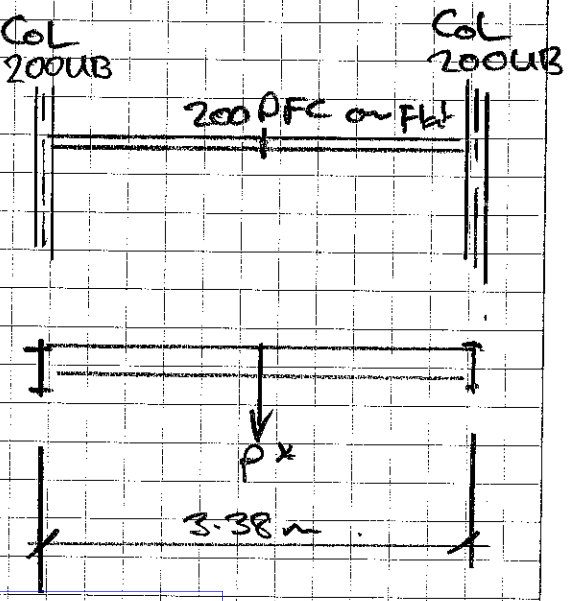
Results:

Reaction Load Eccentricty	**0.68 m**
Middle Third Reaction	**0.22 m**
Reaction inside middle third	**No**
Minimum Bearing Pressure	**0.0 kPa**
Maximum Bearing Pressure	**-311 kPa**
Maximum Allow Bearing Pressure	**150 kPa**
Bearing Length	**-0.10 m**
Factor of Safety Against Overturning	**1.05**
Factor of Safety Against Sliding	**2.18**

CALCULATIONS			
Project No. :	Date:	Eng:	Page: 41
Project:			
Description:			

Seajay
CONSULTING ENGINEERS
CIVIL • STRUCTURAL • FIRE
42 Michael Road, PO Box 1713, Paraparaumu 5252
Phone: (04) 212 5150 • Cell: 021 121 4591
craig@seajay.co.nz

d) 200PFC Tranfer Beam



P* = 2.25kN Stairs

= 2.16 kN / 2.5m

= 0.86 kN Induced by footing

= 3.61 kN.

M* = 3.61 x 3.38 / 4

= 3.05 kNm.

V* = 3.61 / 2

= 1.80 kN

From Spacegass (taking into account torsion).

M^*_x = 4.9kNm

M^*_y = 0.55 kNm

V^* = 3.91kN.

Provide 2/M16 Bolts @ each end ok strength by inspection.

200PFC Strength ok pg's 42 & 43

SESOC

Project 200 Maungakotukutuku Road Date 2/02/2024

Description Stair Transfer Beam

Reference

MemDes/V4.2

Designer CJM Page No 4-2 of

MemDes Calculations @ 08:27:21 02-02-2024 by CJM

Project : 200 Maungakotukutuku Road

Description : Stair Transfer Beam

Segment : S1

Section : 200PFC Grade 300+

Major Axis Bending

Design Action M^*_x = 5.0 kNm

α_m = 1.48

α_s = 0.50

$\alpha_m * \alpha_s < 1.0$, => Segment NOT Fully Restrained

M_{bx} = 1.48 * 0.50 * 66.3 = 48.7 kNm

Major axis capacity Ratio = $M^*_x / \phi M_{bx}$

= 0.11, ---- OK ----

BC240320
Received by
Kapiti Coast District Council
31/05/2024

Minor Axis Bending

Design Action M^*_y = 0.6 kNm

$M_{by} = M_{sy}$ = 14.01 kNm

Minor axis capacity ratio = $M^*_y / \phi M_{by}$

= 0.04, ---- OK ----

Shear Calculations (Unstiffened Web)

Design Action V^*_x = 3.6 kN

Nominal Shear Yield capacity V_w = 230.4 kN

α_v = 5.35 >= 1.0 => full web shear capacity

$V_u = V_w$ = 230.4 kN

Shear capacity ratio = $V^*_x / \phi V_u$

= 0.02, ---- OK ----

Axial Calculations

Design Action N_d = 3.0 kN [Comp], LeAxx = 3.38 m, LeAyy = 1.69 m

= 898.4 kN

Major axis buckling : Minor axis buckling : Minimum Capac. $N_c$min = 557.6 kN

Axial buckling capac. Ratio = $N_d / \phi N_c$min

= 0.006, ---- OK ----

Combined Actions Checks

Clause 8.3.3/4 :

$M_{ry} = M_{sy}\ (1 - (N^*/\varphi\ N_s))$ =< M_{sy} [Alt. Prov. NOK]

= 14.0 kNm

Clause 8.3.4 : Capac. Ratio = $[N_d/N_s + M^*_x/M_{sx} + M^*_y/M_{sy}]/\varphi$

= 0.131, ---- OK ----

Clause 8.4.2.2 : Major : M_{ix} = 66.0 kNm

Load / Capacity Ratio = $M^*_m/\varphi\ M_i$

= 0.084 ---- OK ----

Clause 8.4.2.2 : Minor : M_{iy} = 13.9 kNm

Load / Capacity Ratio = $M^*_m/\varphi\ M_i$

= 0.044 ---- OK ----

Clause 8.4.4.1 :

$M_{ox} = M_{bx}\ (1- N^*/\varphi\ Ncy)$ =< M_{rx}

= 48.4 kNm

Load / Capacity Ratio = $M^*_x/\varphi\ M_{ox}$

= 0.115, ---- OK ----

Clause 8.4.5.1 :

Load / Capacity Ratio = $[M^*_x/\varphi\ M_{cx}]^{1.4} + (M^*_y/Phi/M_{iy})^{1.4}$

= 0.061, ---- OK ----

========== SUMMARY ==========

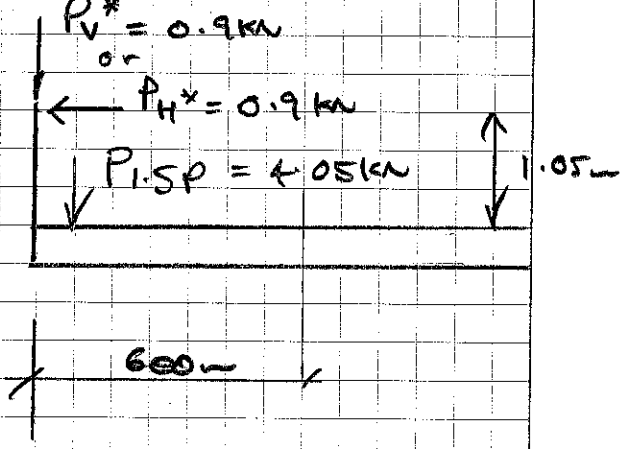
**** U.L.S. Capacity Check Passed, Load Cap. Ratio = 0.13 ---- OK ----

==========

CALCULATIONS			
Project No. :	Date:	Eng:	Page: 44
Project:			
Description:			

Seajay CONSULTING ENGINEERS CIVIL • STRUCTURAL • FIRE
42 Michael Road, PO Box 1713, Paraparaumu 5252
Phone: (04) 212 5150 • Cell: 021 121 4591
craig@seajay.co.nz

e) Landing Frame



$M^* = 4.05\,kN \times 0.6m + 0.9\,kN \times 1.05m$

$= 3.375\,kNm$

$V^* = 4.05\,kN + 0.9kN$

$= 4.95\,kN$

$l_{ey} = 2 \times 600m = 1200m$

$\phi M_{bx} = 4.46\,kNm$ $l_{ey} \leq 1500m$ AS Table

$\phi V_v = 55\,kN$ ∴ ok Strength.

f) Stair Tread

300 × 80 Hardwood. (Species to be selected)

Same design actions as PFC. above

Hardwood typical SG12 equivalent or better

∴ conservatively use SG8

$f_b = 14.4\,MPa$ $f_s = 3.8\,MPa$ & $E = 8GPa$

$\phi M_b = \phi k_1 k_4 f_b Z$ Stair loads short Duration ∴ $k_1 = 1.0$

$= 0.8 \times 1.0 \times 1.0 \times 14.4 \times 300 \times 80^2/6 / 1 \times 10^6$

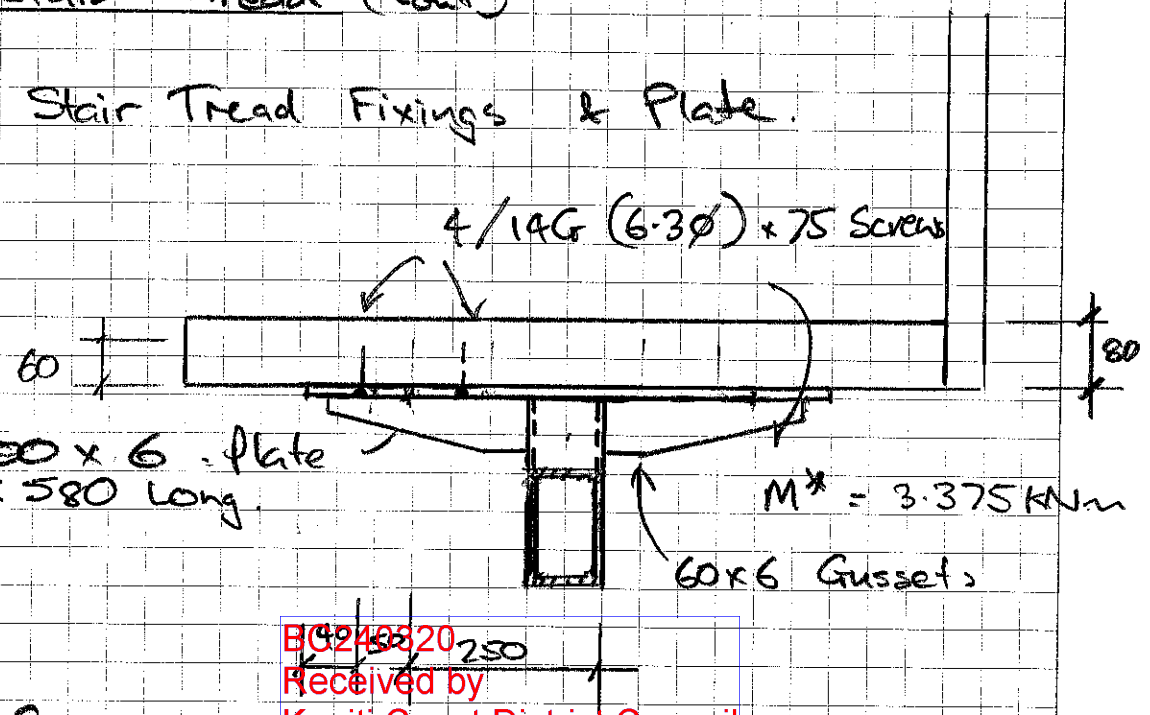
$= 3.68\,kNm > M^* = 3.375\,kNm$ ∴ ok Strength.

CALCULATIONS			
Project No. :	Date:	Eng:	Page: 45
Project:			
Description:			

Seajay CONSULTING ENGINEERS CIVIL • STRUCTURAL • FIRE
42 Michael Road, PO Box 1713, Paraparaumu 5252
Phone: (04) 212 5150 • Cell: 021 121 4591
craigr@seajay.co.nz

f) Stair Tread (cont)

Stair Tread Fixings & Plate.



Two Screws:

N^*_{screw} = 3.375 kNm / 0.25m / 2 Screws
= 6.75 kN.

Four Screws:

N^*_{screw} = 3.375 kNm / 0.20m / 4 Screws
= 4.21 kN.

10 Gauge 4.88ø Screws. min 60m penetration

$\phi Q_n = \phi n k_1 k_{green} k_{end} p Q_k$ [Eq 4.9 NZS 3603]

ϕ = 0.7

n = 1

k_1 = 1.0 Short term load

k_{green} = 1.0 Dry & k_{end} = 1.0 Not in end grain

p = 60mm Q_k = 61.7 N/mm

ϕQ_n = 0.7 x 1 x 1 x 1 x 60 x 61.7 N/m = 2.59 kN ∴ N.G.

CALCULATIONS

Project No. :	Date:	Eng:	Page: 46
Project:			
Description:			

Seajay
CONSULTING ENGINEERS
CIVIL • STRUCTURAL • FIRE
42 Michael Road, PO Box 1713, Paraparaumu 5252
Phone: (04) 212 5150 • Cell: 021 121 4591
craig@seajay.co.nz

Try 14 Guage 6.3 Ø Screw

$Q_{k\,max} = 5.44\ kN$

$\phi Q_k = 0.7 \times 5.44\ kN = 3.8\ kN < Q^* = 4.21\ kN$ ∴ NG.

∴ Need min = 6.75 kN × 2 / 3.8 kN.

= 4 screws centred 250 from edge of sapper.

$Q_k = 79.5\ N/mm$

∴ $\phi Q_u = 0.7 \times 79.5\ N/mm \times 60mm$

$= 3.34\ kN$

$\phi M_u = 3.34\ kN \times 4 \times 0.25m$

$= 3.34\ kNm < 3.375\ kNm$ ∴ NG.

If use 75m Screw will get 65mm penetration

∴ $\phi Q_u = 0.7 \times 79.5\ N/mm \times 65mm$

$= 3.617\ kN$

$\phi M_u = 3.617\ kN \times 4$ screws $\times 0.25m$

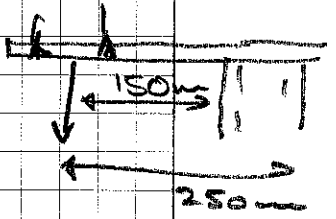
$= 3.617\ kNm > 3.375\ kNm$ ∴ OK

Steel Plate.

$N^*_{screws} = 4 \times 3.617\ kN = 14.4\ kN$

∴ $M^*_p = 14.4\ kN \times 0.15m$

$= 2.16\ kNm$



$t_p = \sqrt{\frac{4M^*}{0.9 f_y b_e}} = \sqrt{\frac{4 \times 2.16 \times 10^6}{0.9 \times 250 \times 200}}$

$= 13.8mm > 10mm$ Plate ∴ NG

(Cont Pg 47)

CALCULATIONS			
Project No. :	Date:	Eng:	Page: 47
Project:			
Description:			

Seajay
CONSULTING ENGINEERS
CIVIL • STRUCTURAL • FIRE
42 Michael Road, PO Box 1713, Paraparaumu 5252
Phone: (04) 212 5150 • Cell: 021 121 4591
craig@seajay.co.nz

Use 6mm Plate & Provide 6mm Stiffener

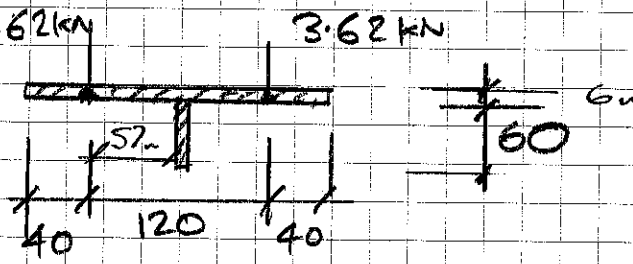
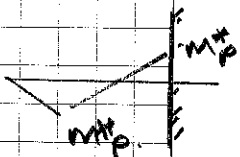


Plate Thickness : be = 80mm (2 x edge dist).

$N^* = 3.62$ kN

$M^* = 3.62\text{kN} \times 0.057\text{m} / 2$

$= 0.103$ kNm



$$t_p = \sqrt{\frac{4M^*}{0.9 f_y b_e}}$$

$$= \sqrt{\frac{4 \times 0.103 \times 10^6}{0.9 \times 250 \times 80\text{mm}}}$$

$= 4.78$ mm

Use 6mm Plate. Section Remains Elastic.

Tee Section :

$\phi M_u = 3.80$kNm > $M^* = 2.16$kNm ∴ OK

Pg 48

Stair Tread Bracket

Design in Accordance with Section 5.0 - NZS 3404:1997 Steel Structures Standard

Section Properties: (To analyse a plate set flange dimensions to zero)

Flange Width	**200 mm**	P.N.A	5.90 mm
Flange Thickness	**10 mm**	E.N.A (Must be in ste	10.34 mm
Stem Depth	**60 mm**	Ix	498,409 mm^4
Stem Thickness	**6 mm**	Zx (Flange)	48,207 mm^3
Flange Area	2000 mm^2	Zx (Stem)	8,354 mm^3
Stem Area	360 mm^2	Sx	17,438 mm^3
Overall Depth	70 mm	Iy	6,667,747 mm^4
Section Area A	2360 mm^2	J	70,987 mm^3

Section Slenderness: CL 5.2.2

Member Type	**HR** (SR,HR,LW,CF,HW)		
Flange λef	9.7	Stem λew	10
FL Elastic Limit λey	16	FL Elastic Limit λey	25
FL Plastic Limit λep	9	FL Plastic Limit λep	9
Flange Must Be Compact		**Non Compact Stem**	
Zex (Flange)	17438 mm^3	Zex (Stem)	16870 mm^3

Material Properties:

Yield Strength fy	**250 MPa**	**Elastic Modulus E**	**200000 Mpa**
Shear Modulus G	**80000 MPa**		

Member Capacity: CL 5.6

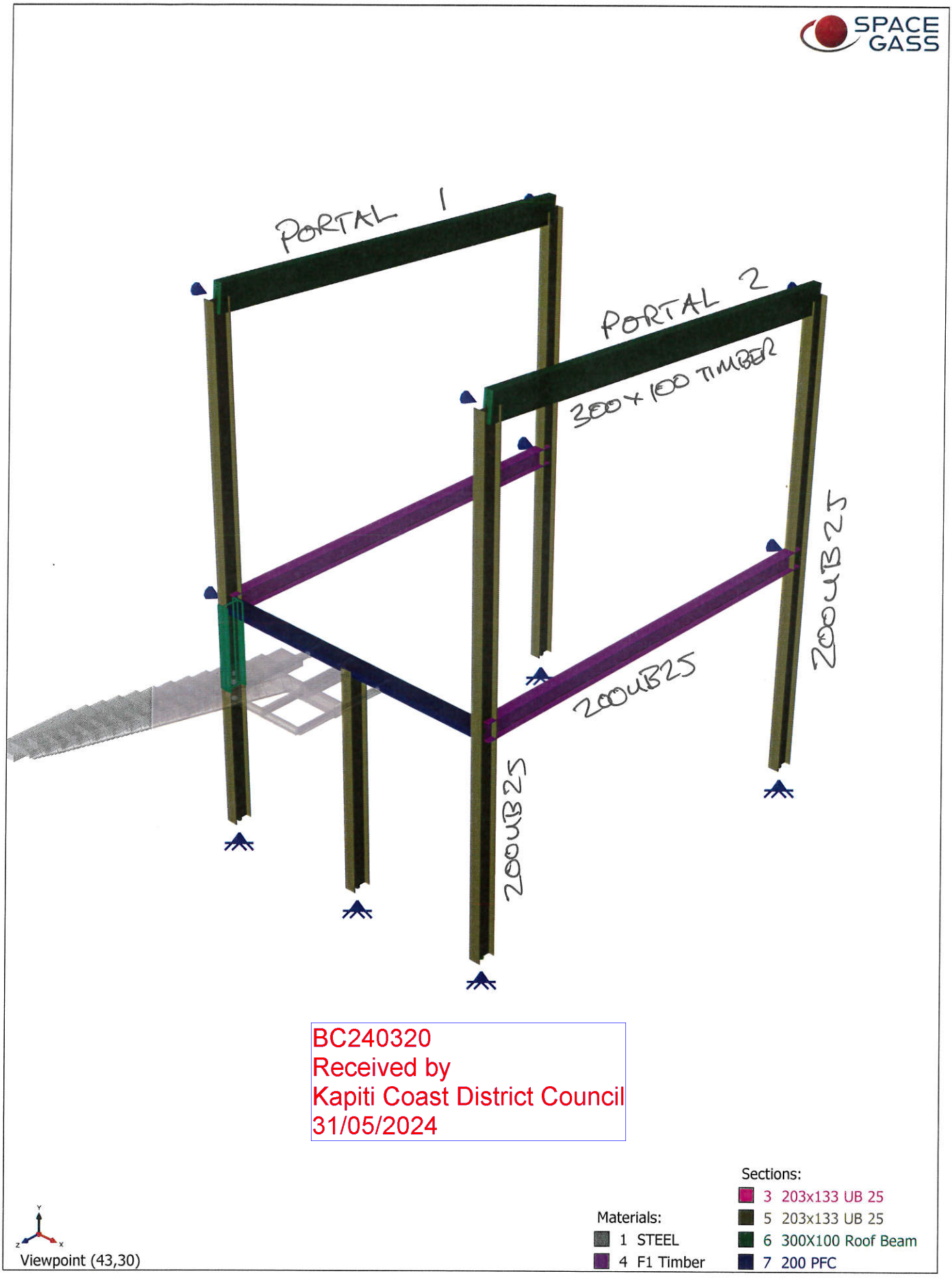
Section Capacity	$\phi Ms = 0.9\ fy\ Zex$	Flange	3.9 kNm
	$\phi Ms = 0.9\ fy\ Zex$	Stem	3.80 kNm
Member Length			**300** mm
Length Coeff. ΣKe			**1.00**
Effective Length			300 mm
Buckling Moment	$Moa = \pi\ sqrt\ (E\ Iy\ G\ J)/Le * sqrt(1+k^2)$		911 kNm
	$k = sqrt(\pi^2\ E\ Iw/G\ J\ Le^2)$		Iw =0
Moment Mod. Factor	αm (To be assigned)		**1.00**
Slenderness Factor	$\alpha s = 0.6\{ sqrt[(Msx/Moa)^2+3]-(Msx/Moa)\}$		1.00

Design Actions:

$M^*_{Flange\ in\ Comp}$	**2.16 kNm**	
$\phi.Mbx$	3.92 kNm	
$M^*_{Stem\ in\ Comp}$	**2.16 kNm**	Stem in Compression
$\phi.Mbx$	3.80 kNm	**OK**
V*	**14.40** kN	
$\phi.Vv = 0.9 * 0.6\ fy\ Aw$	57 kN	**OK**

4-9

5.0 EXISTING STRUCTURE TO SUPPORT STAIRS

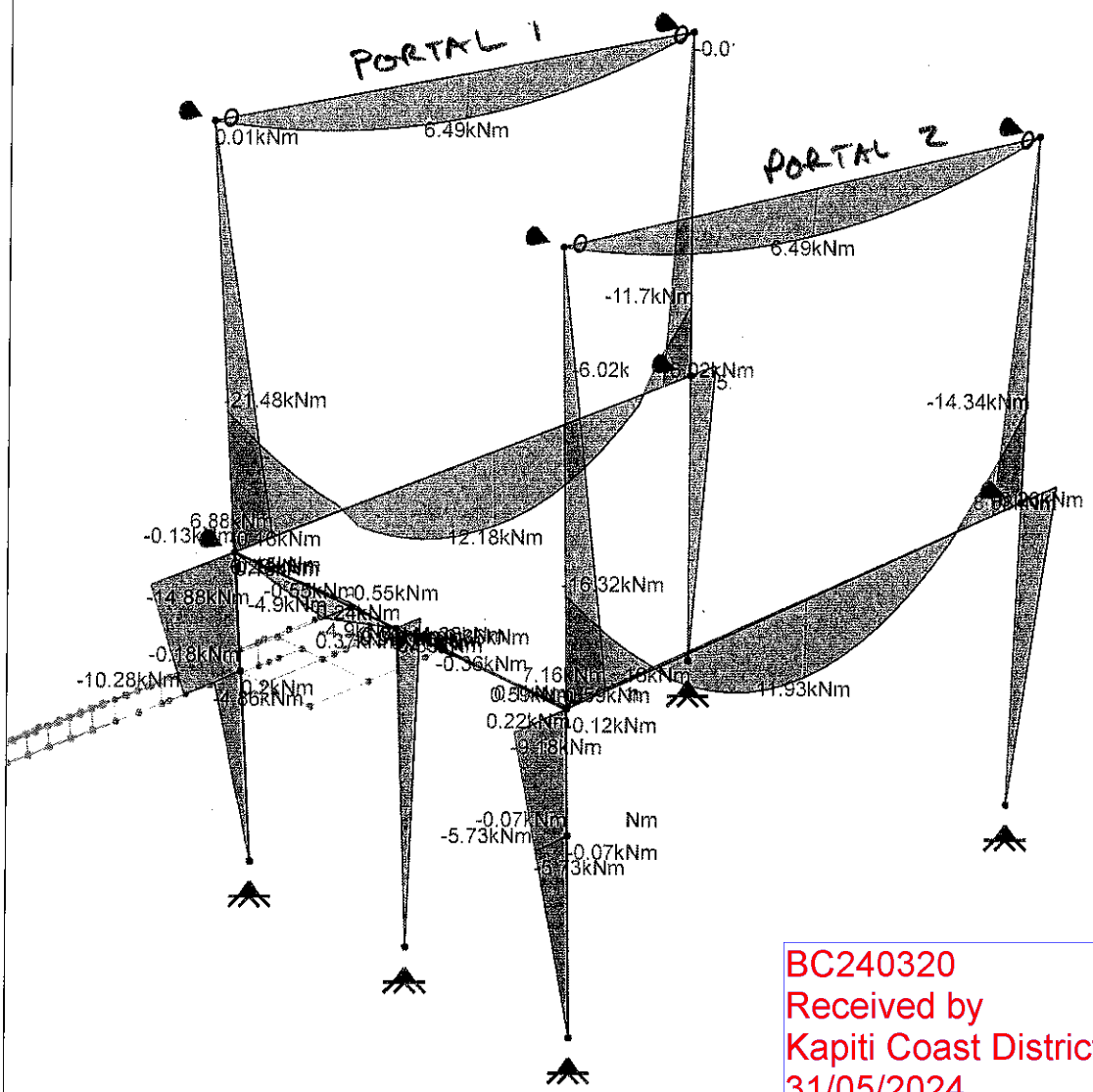


50

SPACE GASS 14.11 - SEAJAY CONSULTING ENGINEERS LIMITED
Path: C:...\Design\Stairs Final ULS Model - Mid Span Outrigger - Full Portal
Designer: Date: Friday, February 2, 2024 10:28 AM, Page: 1
Filter: Unnamed Filter

Envelope of absolute maximums for Load cases 100-106
(2) ULS
Max

BENDING MOMENTS



Portal 1 Governs by Inspection.

Sections:
3 203x133 UB 25
5 203x133 UB 25
6 300X100 Roof Beam
7 200 PFC

Materials:
1 STEEL
4 F1 Timber

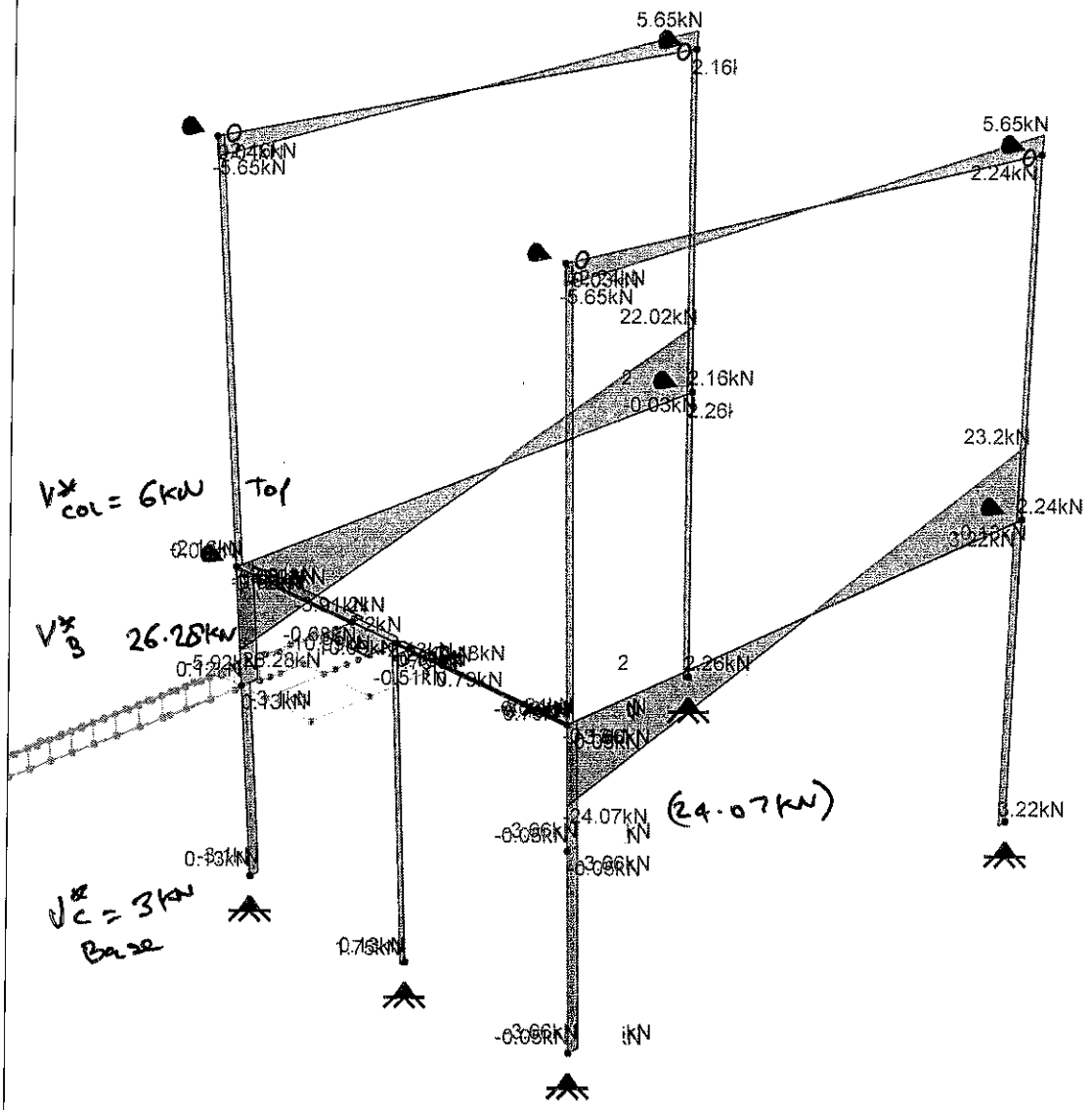
Viewpoint (45,26), Moments

S1

SPACE GASS 14.11 - SEAJAY CONSULTING ENGINEERS LIMITED
Path: C:...\Design\Stairs Final ULS Model - Mid Span Outrigger - Full Portal
Designer: Date: Friday, February 2, 2024 10:29 AM, Page: 1
Filter: Unnamed Filter

Envelope of absolute maximums for Load cases 100-106
(2) ULS
Max

SHEAR FORCES



Viewpoint (45,26), Shears

Materials:
1 STEEL
4 F1 Timber

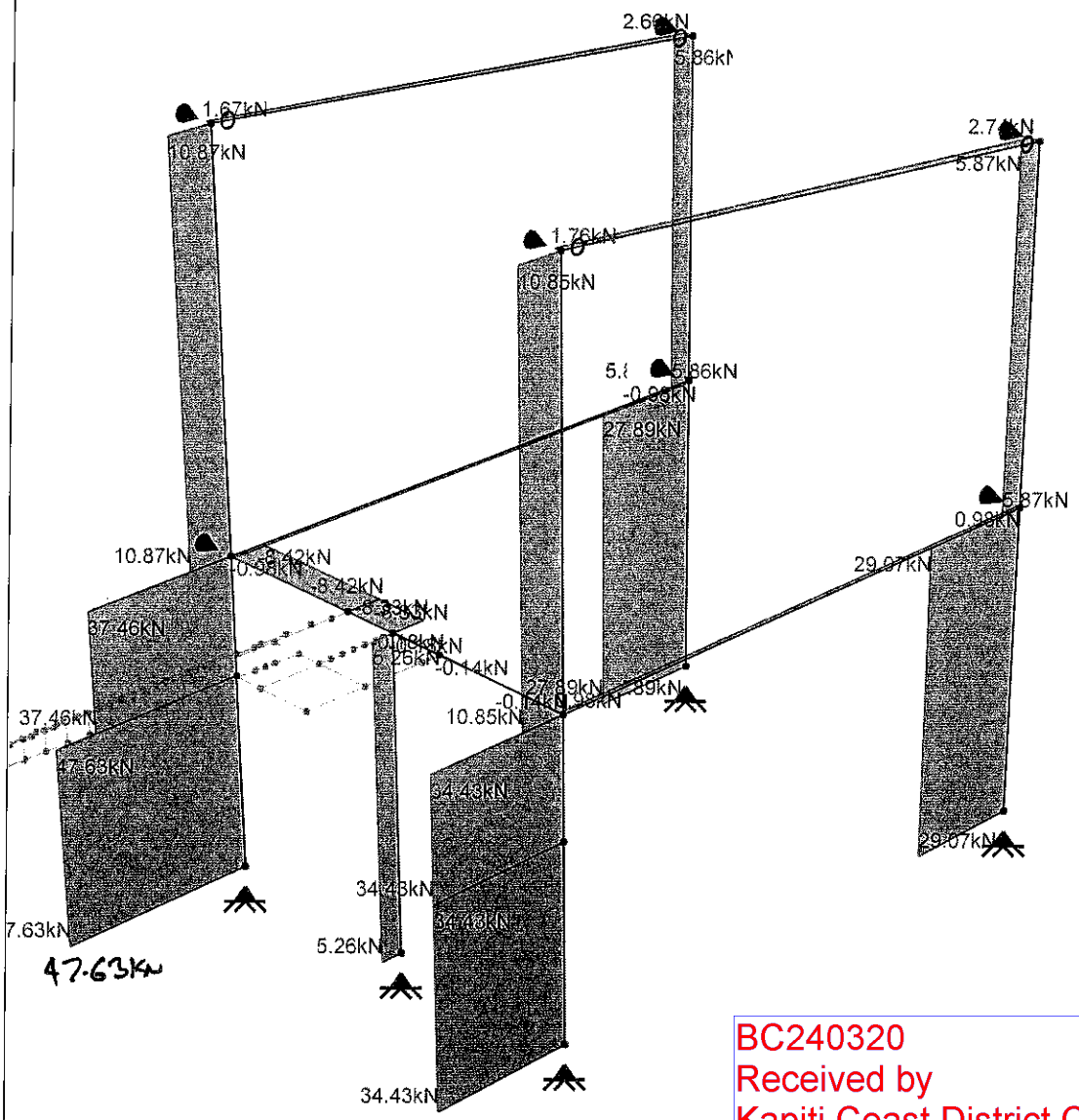
Sections:
3 203x133 UB 25
5 203x133 UB 25
6 300X100 Roof Beam
7 200 PFC

52

SPACE GASS 14.11 - SEAJAY CONSULTING ENGINEERS LIMITED
Path: C:...\Design\Stairs Final ULS Model - Mid Span Outrigger - Full Portal
Designer: Date: Friday, February 2, 2024 10:29 AM, Page: 1
Filter: Unnamed Filter

Envelope of absolute maximums for Load cases 100-106
(2) ULS
Max

AXIAL LOADS



47.63kN

BC240320
Received by
Kapiti Coast District Council
31/05/2024

Sections:
3 203x133 UB 25
5 203x133 UB 25
6 300X100 Roof Beam
7 200 PFC

Materials:
1 STEEL
4 F1 Timber

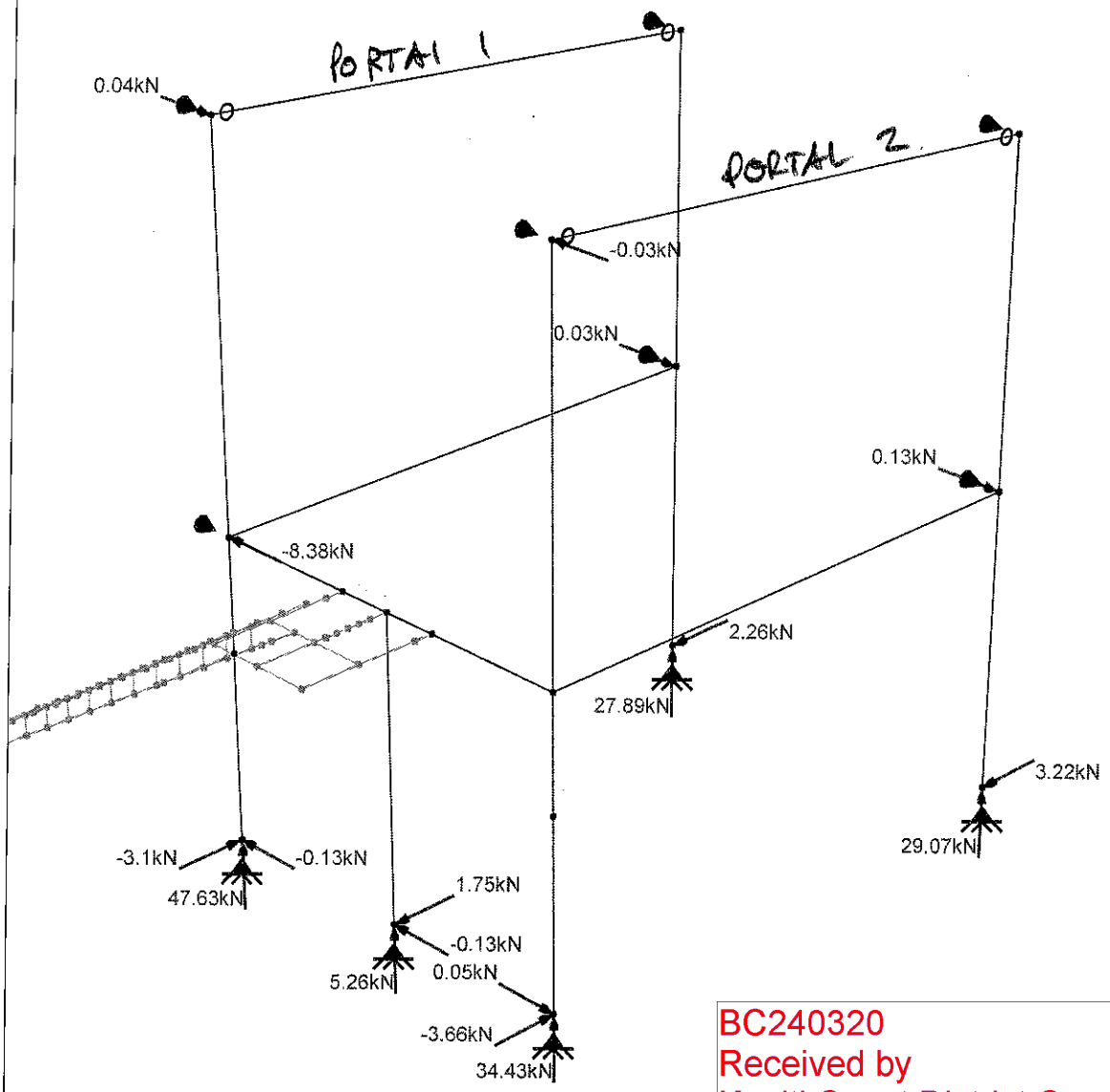
Viewpoint (45,26), Axial forces

53

SPACE GASS 14.11 - SEAJAY CONSULTING ENGINEERS LIMITED
Path: C:...\Design\Stairs Final ULS Model - Mid Span Outrigger - Full Portal
Designer: Date: Friday, February 2, 2024 10:29 AM, Page: 1
Filter: Unnamed Filter

Envelope of absolute maximums for Load cases 100-106
(2) ULS
Max

BASE REACTIONS



Sections:
3 203x133 UB 25
5 203x133 UB 25
6 300X100 Roof Beam
7 200 PFC

Materials:
1 STEEL
4 F1 Timber

Viewpoint (45,26), Reactions

CALCULATIONS

Project No. :	Date:	Eng:	Page: 54

Project:

Description:

Seajay
CONSULTING ENGINEERS
CIVIL • STRUCTURAL • FIRE
42 Michael Road, PO Box 1713, Paraparaumu 5252
Phone: (04) 212 5150 • Cell: 021 121 4591
craig@seajay.co.nz

Portal Strength.

Design Action :		Column	Beam
Size		200UB22	200UB25
$M^*_{TOP/End}$	Pg 50	14.9 kNm	21.5 kNm
$M^*_{BOT/MID}$	Pg 50	0 kNm	12.2 kNm
Effective Length		2.5m	4.6m Conservative. (Leg = 1.2m P.of C)
V^*	Pg 50	6.0 kN	26.3 kN
N^*		47.6 kN Comp.	3.9 kN Tension
SR =		0.36 < 1.0	0.39 < 1.0
		∴ OK	∴ OK
		Pg 56	Pg 58.

BOLTED JOINT STRENGTH Refer Pg .59.

ϕM_b = 62 kNm × 249 kN / 251 kN

= 60 kNm > M^* = 21 kNm ∴

SESOC

Project 200 Maungakotukutuku Road Date 2/02/2024

Description Exiting Portals - Portal 1 Column

Reference

MemDes/V4.2

Designer CJM Page No 55 of

MemDes Calculations @ 10:46:47 02-02-2024 by CJM

Project : 200 Maungakotukutuku Road

Description : Exiting Portals - Portal 1 Column

Segment : S1

Section : 200UB25 Grade 250

Major Axis Bending

Design Action M^*_x = 14.9 kNm

User provided value for α_m = 1.00 ← conservative. → PP Fixity.

α_s = 0.74

$\alpha_m * \alpha_s < 1.0$, => Segment NOT Fully Restrained

M_{bx} = 1.00 * 0.74 * 67.6 = 49.8 kNm

Major axis capacity Ratio = $M^*_x / \varphi M_{bx}$

= 0.33, ---- OK ----

BC240320
Received by
Kapiti Coast District Council
31/05/2024

Shear Calculations (Unstiffened Web)

Design Action V^*_x = 6.0 kN

Nominal Shear Yield capacity V_w = 184.9 kN

α_v = 6.28 >= 1.0 => full web shear capacity

$V_u = V_w$ = 184.9 kN

Shear capacity ratio = $V^*_x / \varphi V_u$

= 0.04, ---- OK ----

Axial Calculations

Design Action N_d = 47.6 kN [Comp], LeAxx = 2.50 m, LeAyy = 2.50 m

= 839.8 kN

Major axis buckling : Minor axis buckling : Minimum Capac. $N_c$min = 558.4 kN

Axial buckling capac. Ratio = $N_d / \varphi N_c$min

= 0.095, ---- OK ----

Combined Actions Checks

Clause 8.3.3/4 :

$M_{ry} = M_{sy} (1 - (N^*/\varphi N_s)^2) * 1.19$, =< M_{sy} [Alt. Prov. OK]

= 18.1 kNm

Load / Capacity Ratio = $M^*_x / (0.9 M_{rx})$

= 0.24, ---- OK ----

Clause 8.4.2.2 : Major : M_{ix} = 63.1 kNm

Load / Capacity Ratio = $M^*_m/\varphi M_i$

= 0.262 ---- OK ----

Clause 8.4.4.1 :

$M_{ox} = M_{bx}\ (1- N^*/\varphi Ncy) =< M_{rx}$

= 45.1 kNm

Load / Capacity Ratio = $M^*_x/\varphi M_{ox}$

= 0.367, ---- OK ----

========== SUMMARY ==========

**** U.L.S. Capacity Check Passed, Load Cap. Ratio = 0.37 ---- OK ----

==========

SESOC

MemDes/V4.2

Project 200 Maungakotukutuku Road Date 2/02/2024

Description Exiting Portals - Portal 1 Beam

Reference

Designer CJM Page No 57 of

MemDes Calculations @ 10:52:31 02-02-2024 by CJM

Project : 200 Maungakotukutuku Road

Description : Exiting Portals - Portal 1 Beam

Segment : S1

Section : 200UB25 Grade 250

d = 203 mm b = 133 mm t_f = 7.8 mm t_w = 5.8 mm

Area = 3230 mm^2 f_{yf} = 260 MPa f_{yw} = 260 MPa f_u = 410 MPa

I_{xx} = 23.60 $E^6 mm^4$ S_x = 260.00 $E^3 mm^3$ Z_x = 232.00 $E^3 mm^3$ r_x = 85.40 mm

I_{yy} = 3.10 $E^6 mm^4$ S_y = 71.40 $E^3 mm^3$ Z_y = 46.40 $E^3 mm^3$ r_y = 31.00 mm

I_w = 29.50 $E^9 mm^6$ J = 61.20 $E^3 mm^4$ k_f = 1.000 Manufact. Type = HR

Compactness(x,y) = C, C

Z_{ex} = 260.00 $E^3 mm^3$ Z_{ey} = 69.70 $E^3 mm^3$

Member Effective Length Calcs

Torsional End Restraint Conds (TERC) are given as FF

=> k_t = 1.00

User provided value of k_l = 1.40 → JOIST SIT ON TOP FLANGE

User provided value of k_r = 1.00

Eff. Len L_e = L * k_t * k_l * k_r = 4.60 * 1.00 * 1.40 * 1.00 = 6.44 m

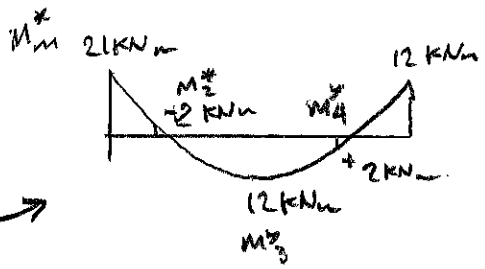
Major Axis Bending

Design Action M^*_x = 21.5 kNm

Section Bending Capacity M_{sx} = f_{yf} Z_{ex} = 67.60 kNm

α_m = 1.7 * M^*_m / [$(M^*_2)^2$ + $(M^*_3)^2$ + $(M^*_4)^2$]$^{0.5}$ [Eq 5.6.1.1(2)]

= 1.7 * 21.0 / [(-2.0)^2 + (12.0)^2 + (2.0)^2]$^{0.5}$ = 2.500



Reference Buckling Moment Calculation : M_b

Temp. variable Pi2_E_Le2 = π^2 x E / L_e^2 = 3.142^2 x 205 E6 / 6.440^2 = 48.8 E06

M_o = [(Pi2_E_Le2 * I_y) * (G J +(Pi2_E_Le2 * I_w))]$^{0.5}$

M_o = 31.0 kNm (Eqtn 5.6.1.1(4))

α_s = 0.6*[$(M_s/M_o)^2$+3)$^{0.5}$ - (M_s/M_o)] = 0.36 [(M_s/M_o) = 67.6 / 31.0 = 2.184]

α_m * α_s < 1.0, => Segment NOT Fully Restrained

M_{bx} = 2.50 * 0.36 * 67.6 = 61.2 kNm

Major axis capacity Ratio = M^*_x / φ M_{bx}

= 0.39, ---- OK ----

BC240320
Received by
Kapiti Coast District Council
31/05/2024

Shear Calculations (Unstiffened Web)

Design Action V^*_x = 26.3 kN

V_w = 0.6 * F_{yw} * d * t_w = 0.6 * 260000 * 0.203 * 0.006

Nominal Shear Yield capacity V_w = 184.9 kN
α_v = 6.28 >= 1.0 => full web shear capacity
$V_u = V_w$ = 184.9 kN
Mom-Shear Interaction Check : Moment ratio <= 0.75 => Clause 5.12.2 N/A
Shear capacity ratio = $V^*_x / \varphi V_u$
= 0.16, ---- OK ----

Axial Calculations

Design Action N_d = 3.9 kN [Tens], LeAxx = 4.60 m, LeAyy = 4.60 m
Net area of section A_n
= 3230 - 0
= 3230 mm^2
Section Tension Capacity $N_t = A_g f_y comb =< 0.85 * k_{te} * A_n * f_u$
= 3.23.E-3 * 260.0 =< 0.85 * 1.00 * 3.23.E-3 * 410
= 839.8 kN
Tension capacity Ratio = $N_d / \varphi N_t$
= 0.005, ---- OK ----

Combined Actions Checks

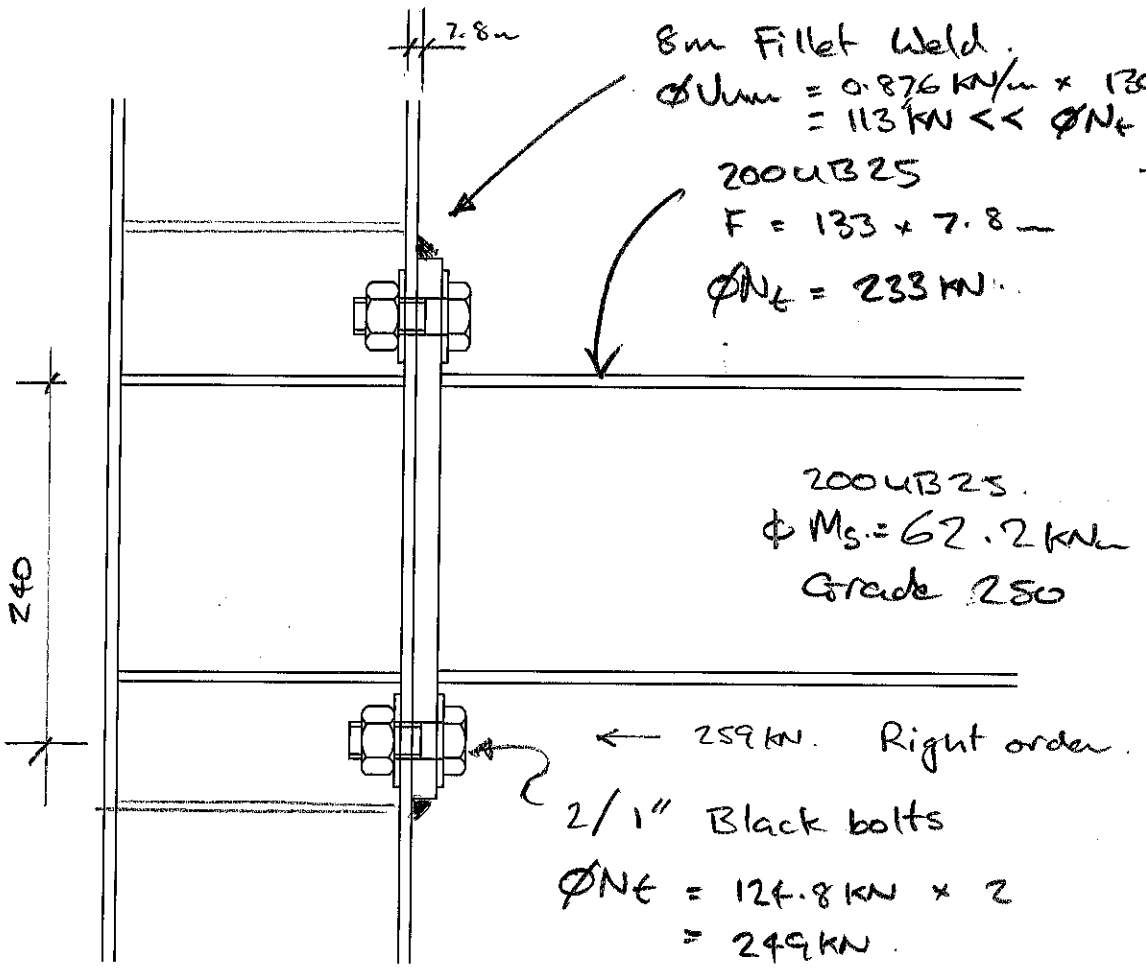
Cl 8.1.1.1 : Have axial load, in conjunction with flexure, => check Cl 8.1.4
Significant Axial Load test (Cl 8.1.4(b)) IS Satisfied ---- OK ----
Loading PASSES Cl 8.1.4, => Combined Actions Checks are not required

========== SUMMARY ==========

**** U.L.S. Capacity Check Passed, Load Cap. Ratio = 0.39 ---- OK ----

==========

Strengthening of Bolted Joints



M25 Bolts ~ strength of Section.

- Remove & reinstall existing bolts on
- Remove & replace with M24 Grade 8.8 Bolts

M^*_{max} = 21.5 kNm Pg 54.

			M24		1"
Shank	Area	A_o	$452mm^2$		$506m^2$
Stress	Area	A_s	$353m^2$		$390m^2$
Core	Area	A_c	$324m^2$		$355m^2$

Grade 4.6 Bolts

ϕN_{tf}	113 kN	<	124.8 kN
ϕV_{fn}	69.3 kN	<	70.4 kN
ϕV_{fsc}	89.7 kN	<	100.4 kN

Grade 8.8 Bolts

ϕN_t	234 kN	>	124.8 K
ϕV_{fn}	133 kN	>	70.4 kN
ϕV_{fx}	186 kN	>	100.4 kN

Use M24 Grade 8.8 Bolts if existing bolts to be replaced C.O.S

CALCULATIONS

Project No. :	Date:	Eng:	Page: 61
Project:			
Description:			

Seajay
CONSULTING ENGINEERS
CIVIL·STRUCTURAL·FIRE
42 Michael Road, PO Box 1713, Paraparaumu 5252
Phone: (04) 212 5150 • Cell: 021 121 4591
craig@seajay.co.nz

Existing Footing Portal (2) Column

$N^* = 50$ kN from Spacegass

$b = 2'6''$ □

$= 760$ □

$\phi Q_b \sim 0.5 \times 300$ kPa $\times 0.76^2$

$= 86.6$ kN $> N^* = 50$ kN ∴ ok

Pad #4 bars @ 6" Crs

= ½" bars @ 150 crs

$d = 9'' = 228$ mm thick

$M^*_{pad} = (50kN/4 \times 0.76/4)/0.76m$ 2 way Action

$= 3.12$ kNm/m

$V^* = 50kN/4/0.76m$

$= 16.4$ kN/m

228 pad D12 – 150.

$\phi M_u = 26.7$ kNm/m $> M^* = 3.12$ kNm/m ∴ ok

$\phi V_u = 98.0$ kN/m $> V^* = 16.4$ kN/m ∴ ok

Existing Pad footing ok.

CONCRETE SLABS AND WALLS

(Capacities shown are per metre width of slab)

General Parameters

Type		Slab on Grade	
Depth	D	228	mm
Concrete Cover To Outside of Reinf. Bars		50	mm
Concrete Compressive Strength	f'c or fm	20	MPa
Material Type		Concrete	

Shear Capacity

Capacity Reduction Factor	ϕ	0.75	
Concrete Shear Stress	vc = $0.17\sqrt{f'c}$ or 0.8Vbm or vb	0.76	MPa
Shear Capacity	***$\phi Vu = \phi$. vc . d . B***	***98.07***	***kN***

Flexural Capacity

Reinforcement

Nomination		D12	
Bar Diameter	db	12	(mm)
Bar Spacing	s	180 (150)	(mm)
Reinforcement Area	As	628	(mm^2)
Steel Yield Strength	fy	300 (250MPa)	(MPa)
Reinforcement Ratio	μ	0.0037	

Adjusted

Ultimate Moment Capacity

Capacity Reduction Factor	ϕ	0.85	Flexture only
Steel Tension	T = As . fy	188	(kN)
Compression Stress Block Depth	a = T/(0.85 f'c . B)	11	(mm)
Depth to Steel	d	172	(mm)
Ultimate Moment Capacity	***$\phi Mu = \phi$. T . (d - a/2)***	***26.67***	***(kNm)***

Cracking Moment

Capacity Reduction Factor	ϕ	0.6	Flexture only
Concrete Rupture Stress	fr = $0.6\sqrt{(f'c)}$	2.68	MPa
Section Modulus	$Z = BD^2/6$	8.7E+6	(mm^3)
Cracking Moment Capacity	***$\phi Mcr = \phi$. fr . Z***	***13.95***	***(kNm)***

Minimum Steel

Slabs and Footings (Cl 7.3.30 & 8.4.3.4 NZS 3101:1995)

Cl 7.3.30.1	As min = 0.0014 BD	319	mm^2
or	As min = 0.7/fy BD	532	mm^2
Cl 7.3.30.2	As min	1000	mm^2
=> *Minimum Steel Required in Slabs & Footings*		*532*	*mm^2* <=

Concrete Walls With Grade 300 Steel(Cl 7.3.31.2 NZS 3101:1995)

Minimum Horizontal Steel	As min = 0.0025 BD	*570*	*mm^2*
Minimum Vertical Steel	As min = 0.0015 BD	*342*	*mm^2*

Concrete Walls With Mesh or Grade 500 Steel

Minimum Horizontal Steel	As min = 0.0020 BD	*456*	*mm^2*
Minimum Vertical Steel	As min = 0.0012 BD	*274*	*mm^2*

Masonry Walls (Cl10.3.4.1 NZS 4230:1990)

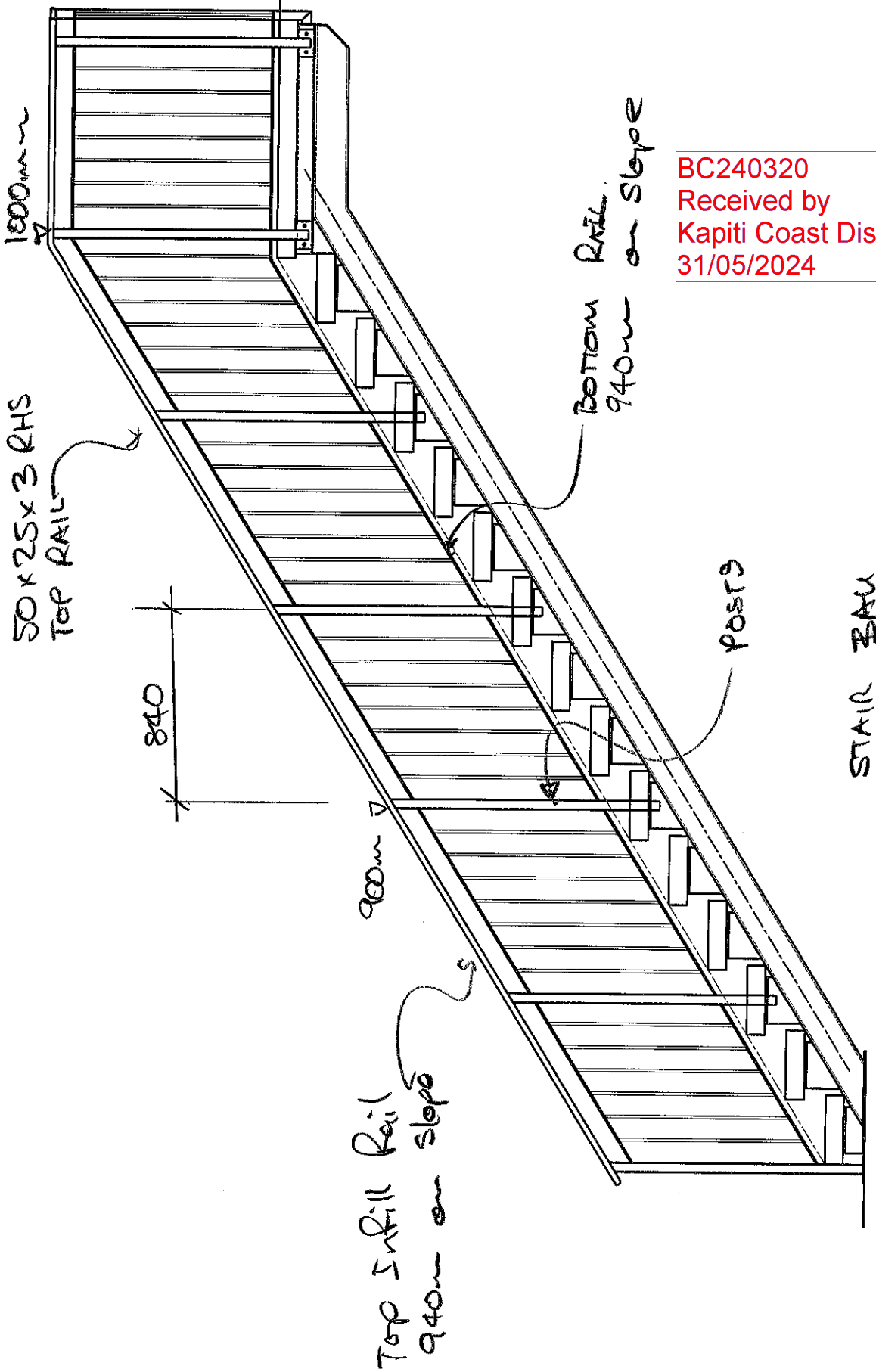
Minimum Hori. and Vert. Steel	As min = 0.0007 BD	*160*	*mm^2*
Minimum Total Steel	As min = 0.0020 BD	*456*	*mm^2*

Maximum Steel

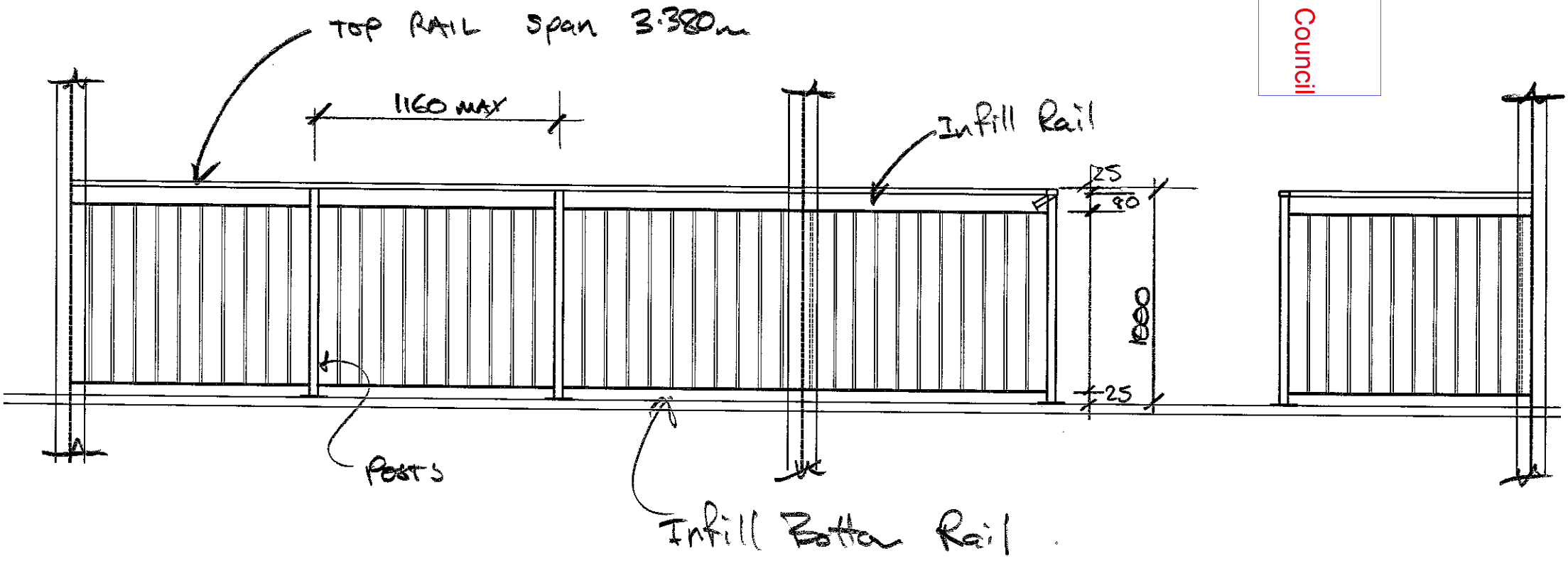
Balanced Steel Ratio	$\rho b = \frac{0.85\, f'c\, \beta_1 .\, \varepsilon Es}{fy.(\varepsilon Es + fy)}$.	0.0321	
	β_1 =	0.85	
	Es=	200000	MPa
Maximum Steel	**As max = 0.75 ρb B d**	***4142***	***mm^2***

6.0 BALUSTRADES

6.1 STAIR BALUSTRADE GEOMETRY



6.2 1ST FLOOR WALKWAY BALUSTRADE GEOMETRY



CALCULATIONS			
Project No. :	Date:	Eng:	Page: 65
Project:			
Description:			

Seajay
CONSULTING ENGINEERS
CIVIL·STRUCTURAL·FIRE
42 Michael Road, PO Box 1713, Paraparaumu 5252
Phone: (04) 212 5150 • Cell: 021 121 4591
craig@seajay.co.nz

6.3 Balustrade Loadings

Use Loadcase 1.5Q ULS

Q SLS

Deflection Limits $\frac{H}{60}$ + $\frac{L}{240}$

Post Top Rail.

TABLE 3.3

MINIMUM IMPOSED ACTIONS FOR BARRIERS

	Type of occupancy for part of the building or structure	Specific uses	Top edge: Horizontal kN/m	Top edge: Vertical kN/m	Top edge: Inwards, outwards or downwards kN	Infill: Horizontal kPa	Infill: Any direction (see Note 2) kN
A	Domestic and residential activities	All areas within or serving exclusively one dwelling including stairs, landings, etc. but excluding external balconies and edges of roofs (see C3)	0.35	0.35	0.6	0.5	0.25
		Other residential (see					

Note 2: Infill Point Load on any two balusters.

6.4 Infill Design (Stair & Landing).

h_{max} = 870mm

S_{max} = 110mm (98 gap < 100mm ∴ ok). Target 90 gap.

W^* = 0.5kPa × 1.5 × 0.11m × 0.87 = 0.07 kN.

P^* = 0.25kN/2 × 1.5 = 0.188 kN

∴ P^* governs.

CALCULATIONS			
Project No. :	Date:	Eng:	Page: 66
Project:			
Description:			

Seajay
CONSULTING ENGINEERS
CIVIL • STRUCTURAL • FIRE
42 Michael Road, PO Box 1713, Paraparaumu 5252
Phone: (04) 212 5150 • Cell: 021 121 4591
craig@seajay.co.nz

6.4 Infill Design (Cont)

$M^* = \frac{PL}{4} = 0.188\,kN \times 0.87/4$

$= 0.041\,kNm$

$V^* = 0.188\,kN$ (Point load Top or Bot)

Try 12Ø Steel Tube.

(12.7Ø × 1.6mm Thick)

$Z = 138\,mm^3$ $A = 55\,mm^2$

$S = 198\,mm^3$

$I = 877\,mm^4$

$f_y = 275\,MPa$

$\phi M_n = 0.9 \times 275MPa \times 198mm^4/1\times10^6 = 0.049\,kNm > M^* = 0.041\,kNm$ ∴ ok

$\phi V_n = 0.9\,f_y\,0.36\,A_g$

$= 0.9 \times 275MPa \times 0.36 \times 55mm^2/1000$

$= 4.9\,kN > V^* = 0.188\,kN$ ∴ ok.

$\Delta = \frac{188N \times 870^3}{48 \times 200000 \times 877}$

$= 14.7mm \equiv \frac{h}{\Delta} = 60$ ∴ ok.

Use 12.7mm Ø × 1.6 wall Steel Tube.

CALCULATIONS

Project No. :	Date:	Eng:	Page: 67

Project:

Description:

Seajay
CONSULTING ENGINEERS
CIVIL·STRUCTURAL·FIRE
42 Michael Road, PO Box 1713, Paraparaumu 5252
Phone: (04) 212 5150 • Cell: 021 121 4591
craig@seajay.co.nz

6.5 Top & Bottom Infill Rail

$L_{max} = 1160mm$

$S = \frac{870}{2} = 435mm$

$w^*_Q = 1.5 \times 0.5kR \times 1.16 \times 0.435m = 0.379\ kN$

$P^* = 1.5 \times 0.25kN = 0.375\ kN.$

Point Load will Govern by inspection.!

$M^* = 0.375kN \times 1.16m / 4$
$= 0.108\ kNm$

$V^* = 0.375\ kN.$

40 wide flat. $d = 40mm$

$t = 4 \times M^* / 0.9 f_y d^2$
$= 4 \times 0.108 \times 10^6 / 0.9 \times 250MPa \times 40^2$
$= 1.2mm$ Use 40 x 5m Flat.

$\phi M_u = 0.9 \times 250MPa \times 5 \times 40^2/4$
$= 0.45\ kNm > 0.108\ kNm$ ∴ ok

$\Delta = \frac{250N \times 1160^3}{48 \times 200000 \times 5 \times 40^3/12}$

$= 1.52mm \quad \frac{L}{\Delta} = \frac{1160}{1.52} = 760 > 240$ ∴ ok.

CALCULATIONS			
Project No. :	Date:	Eng:	Page: 68
Project:			
Description:			

Seajay
CONSULTING ENGINEERS
CIVIL · STRUCTURAL · FIRE
42 Michael Road, PO Box 1713, Paraparaumu 5252
Phone: (04) 212 5150 • Cell: 021 121 4591
craig@seajay.co.nz

6.6 Top Rail

$W_H^* = 0.35\,kN/m \times 1.5 = 0.52\,kN/m$

$W_V = 0.35\,kN/m \times 1.5 = 0.52\,kN/m$

$P = 0.6\,kN \times 1.5 = 0.90\,kN$

a) Walkway.

$L = 3.38\,m$.

$M_Q^* = 0.52\,kN/m \times 3.38^2/8 = 0.74\,kNm$

$M_P^* = 0.90\,kN \times 3.38/4 = 0.76\,kNm$

$V_Q^* = 0.52\,kN/m \times 3.38/2 = 0.87\,kN$

$V_P^* = = 0.9\,kN$

50 x 25 x 3 RHS on Flat.

$A_g = 391\,mm^2$

$I_x = 112\,000\,mm^4$ $\quad I_y = 36\,700\,mm^4$

$S_x = 5860\,mm^3$ $\quad S_y = 3560\,mm^3$

$f_y = 350\,MPa$

$\phi M_u = 0.9 f_y S_x$

$= 0.9 \times 350\,MPa \times 5860\,mm^3/1\times10^6$

$= 1.84\,kNm > M^* = 0.76\,kNm$ ∴ ok

Shear ok by inspection

CALCULATIONS			
Project No. :	Date:	Eng:	Page: 69
Project:			
Description:			

Seajay CONSULTING ENGINEERS CIVIL·STRUCTURAL·FIRE
42 Michael Road, PO Box 1713, Paraparaumu 5252
Phone: (04) 212 5150 • Cell: 021 121 4591
craig@seajay.co.nz

6.6 Top Rail (Cont) 50 x 25 x 3 RHS

$$\Delta = \frac{600N \times 3380^3}{48 \times 200000 \times 112000 mm^4}$$

$= 21 mm \equiv \frac{L}{\Delta} = 160 < 240 \therefore$ No

Try 75 x 25 x 2.5 RHS

$$\Delta = \frac{600 \times 3380^3}{48 \times 200000 \times 285000 mm^4}$$

$= 8.25 mm \equiv \frac{L}{\Delta} = 409 > 240 \therefore$ OK

Check Top Rail Stairs

50 x 25 x 2.5 RHS

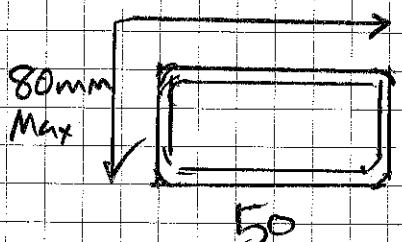
L = 840 x 2
= 1680 mm to Spread Point load between 2 Points

$$\Delta = \frac{600N \times 1680^3}{48 \times 200000 \times 98900 mm^4}$$

$= 3.0 mm \therefore$ OK

Use: 75 x 25 x 2.5 RHS Landing Top Rail

50 x 25 x 2.5 RHS Stair Top Rail (To meet grip requirement.



= 75mm OK

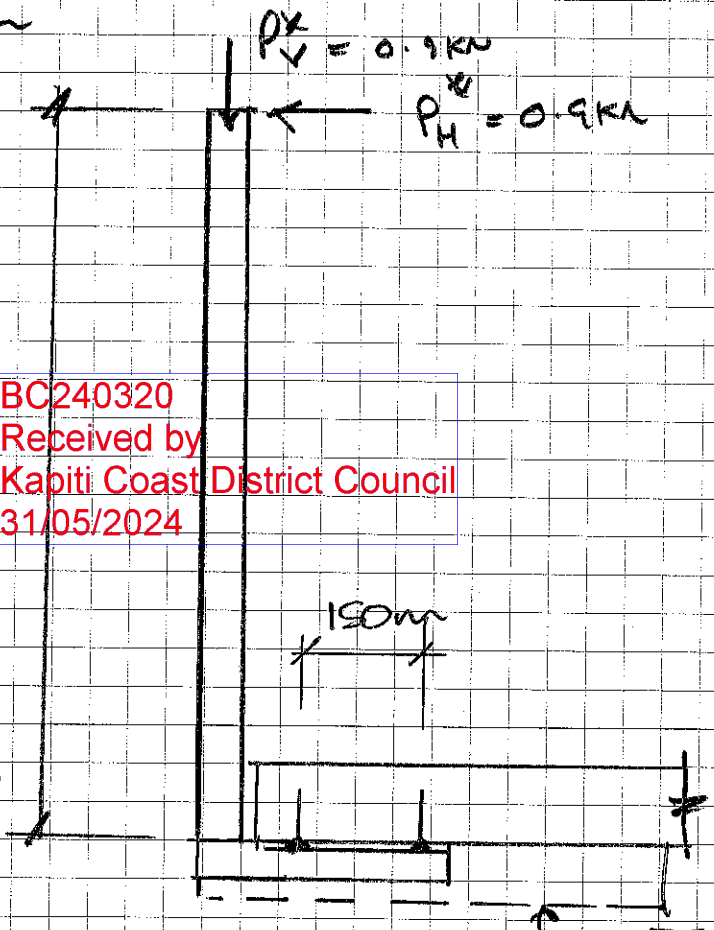
CALCULATIONS			
Project No. :	Date:	Eng:	Page: 70
Project:			
Description:			

Seajay
CONSULTING ENGINEERS
CIVIL • STRUCTURAL • FIRE
42 Michael Road, PO Box 1713, Paraparaumu 5252
Phone: (04) 212 5150 • Cell: 021 121 4591
craig@seajay.co.nz

6.7 Posts

Stair Governs as posts on landing
span, Floor - Top Rail. From Pg 68
Point load Governs

S = 840mm



Design Actions:

M^*_{post} = 0.9kN × 1.144m
= 1.03 kN_

V^*_{post} = 0.9 kN

CALCULATIONS			
Project No. :	Date:	Eng:	Page: 71
Project:			
Description:			

Seajay
CONSULTING ENGINEERS
CIVIL • STRUCTURAL • FIRE
42 Michael Road, PO Box 1713, Paraparaumu 5252
Phone: (04) 212 5150 • Cell: 021 121 4591
craig@seajay.co.nz

40 x 40 x 3 SHS Posts

$\phi M_u = 0.9 f_y S_x$

$S_x = 5720 mm^3$ 3mm Thick

$= 6740 mm^3$ 4mm Thick.

$\therefore \phi M_u = 0.9 \times 350 MPa \times 5720 mm^3 / 1 \times 10^6$

$= 1.80 kNm > M^* = 1.03 kNm$ ∴ ok.

Top Rail will spread load to adjacent Posts.

Deflection

$\Delta = \frac{PL^3}{3EI}$

$P_{SLS} = 600N / 2$ Posts
$= 300N$

$P_{SLS} = 0.360 kN/m \times 0.84m \times 1000$
$= 302N$

$\Delta = \frac{302 \times 1144^3}{3 \times 200000 \times 93200 mm^4}$

$= 8.08mm = \frac{L}{\Delta} = \frac{1144}{8.08} = 141 > 60$

∴ ok.

CALCULATIONS

Project No. :	Date:	Eng:	Page: 72

Project:

Description:

Seajay
CONSULTING ENGINEERS
CIVIL • STRUCTURAL • FIRE
42 Michael Road, PO Box 1713, Paraparaumu 5252
Phone: (04) 212 5150 • Cell: 021 121 4591
craig@seajay.co.nz

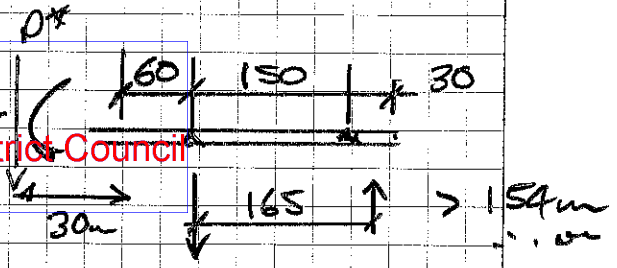
Post Connection 14 Guage 6.3Ø Screws

ϕQ_n = 3.34 kN. Pg 46.

∴ Two Screws

ϕQ = 3.34 kN × 2
= 6.68 kN.

$S_{screws} = \frac{1.03\ kN}{6.62\ kN} = 0.154\ m$



Check Vertical Load.

P^* = 0.9 kN

Q^* = 0.9 kN × (150 + 60 + 10 + 40/2)/150

= 1.44 kN < ϕQ_n = 6.68 kN ∴ ok

Post to 75 PFC

2 - M10 Bolts.

N^*_{Bolt} = 1.03 kNm /(0.075m/2)/2 bolts
= 13.7 kN.

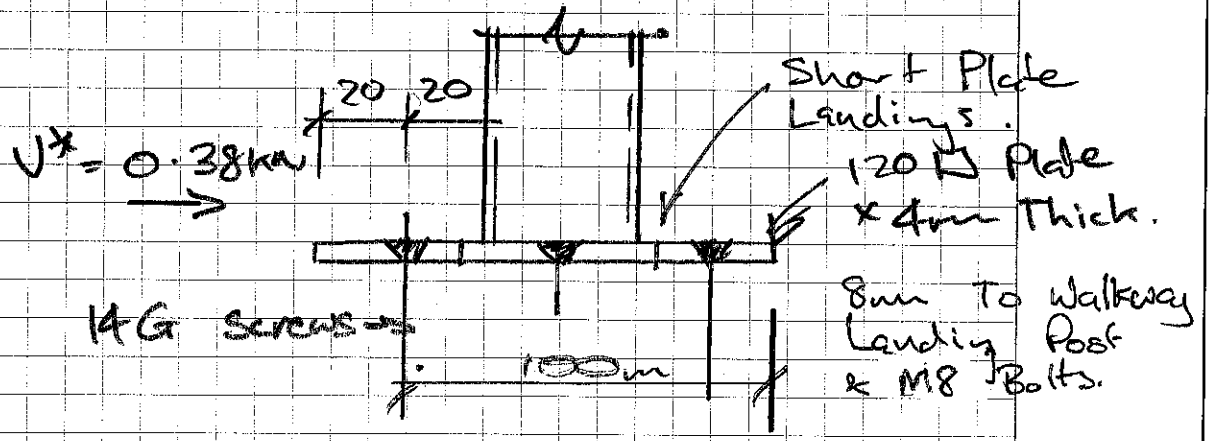
ϕN_t = 0.8 × 22.2 kN
= 18.5 kN > N^* = 13.7 kN ∴ ok

ϕV_{fn} = 10.4 kN > V^* = 0.9 kN ∴ ok

CALCULATIONS			
Project No. :	Date:	Eng:	Page: 73
Project:			
Description:			

Seajay
CONSULTING ENGINEERS
CIVIL • STRUCTURAL • FIRE
42 Michael Road, PO Box 1713, Paraparaumu 5252
Phone: (04) 212 5150 • Cell: 021 121 4591
craig@seajay.co.nz

Nominal Fixings To Timber Floor.



$\phi M_u = 6.68\,kN \times 0.1m$

$= 0.668\,kNm$ OK ~ 2/3 Moment

4/14G Screws

$\phi Q_{sk} = 0.7 \times k_1 k_2 k_e Q_{sk}$

$= 0.7 \times 1.0 \times 1.0 \times 1.0 \times 2.663 \times 2$

$= 3.7\,kN$)) $V^* = 0.38\,kN$ ∴ OK

PRODUCER STATEMENT – PS4
CONSTRUCTION REVIEW

BUILDING CODE CLAUSE(S): B1 **JOB NUMBER:** 23020

ISSUED BY: Seajay Consulting Engineers Ltd
(Construction Monitoring Firm)
TO: Peter Saunders
(Owner/Developer)
TO BE SUPPLIED TO: Kapiti Coast District Council
(Building Consent Authority)
IN RESPECT OF: New Internal Stairs
(Description of Building Work)
AT: 200 Maungakotukutuku Road, Paraparaumu
(Address, Town/City)
LEGAL DESCRIPTION: Lot 20 DP 33688 **N/A** ☐

We have been engaged by the owner/developer referred to above to provide CM 3 **level of construction monitoring relating to** the Clause(s) named above of the Building Code for the building work which is covered by PS1(s) issued by Seajay Consulting Engineers Limited (*Engineering Design Firm*) and which is described in the documents relating to the Building Consent No. BC 240320 and those relating to Building Consent Amendment(s) No. Nil issued during the course of the works, .

We have sighted these Building Consents and the conditions attached to them.
If any of the fields above are too small, please write "refer the Schedule".

Authorised instructions/variation(s) detailed/listed in the Schedule have been issued during the course of the works.

On the basis of these review(s) and information supplied by the contractor during the course of the works and **on behalf of the engineering firm** undertaking this Construction Monitoring, **I believe on reasonable grounds** that the building works covered by the above-mentioned PS1(s) have been completed in accordance with the relevant requirements of the Building Consent and Building Consent Amendments identified above or in the Schedule on page 2, with respect to Clause(s) B1/VM1 & VM4 of the Building Code. I also believe on reasonable grounds that the persons who have undertaken this construction review have the necessary competency to do so.

I, *(Name of Construction Monitoring Professional)* Craig McGhie , am:

- CPEng number 173345
- I hold the following qualifications NZCE, BE (Civil) Hon, ME (Fire)

The Construction Monitoring Firm holds a current policy of Professional Indemnity Insurance no less than $200,000. Is

SIGNED BY *(Name of Construction Monitoring Professional)*: Craig McGhie
(Signature below):

ON BEHALF OF *(Construction Monitoring Firm)*: Seajay Consulting Engineers Ltd Date: 10/1/25

Note: This statement has been prepared solely for the Building Consent Authority named above and shall not be relied upon by any other person or entity. Any liability in relation to this statement accrues to the Construction Monitoring Firm only. As a condition of reliance on this statement, the Building Consent Authority accepts that the total maximum amount of liability of any kind arising from this statement and all other statements provided to the Building Consent Authority in relation to this building work, whether in tort or otherwise, is limited to the sum of $200,000.

This form is to accompany **Forms 6 or 8 of the Building (Forms) Regulations 2004** for the issue of a Code Compliance Certificate.

SCHEDULE to PS4

Please include an itemised list of all referenced documents, drawings, or other supporting materials in relation to this producer statement below:

Site Reports:

23020 - SR01 - Foundations
23020 - SR02 - Steel Structure
23020 - SR03 - Completed stairs

GUIDANCE ON USE OF PRODUCER STATEMENTS

Information on the use of Producer Statements and Construction Monitoring Guidelines can be found on the Engineering New Zealand website
https://www.engineeringnz.org/engineer-tools/engineering-documents/producer-statements/

Producer statements were first introduced with the Building Act 1991. The producer statements were developed by a combined task committee consisting of members of the New Zealand Institute of Architects (NZIA), Institution of Professional Engineers New Zealand (now Engineering New Zealand), Association of Consulting and Engineering New Zealand (ACE NZ) in consultation with the Building Officials Institute of New Zealand (BOINZ). The original suite of producer statements has been revised at the date of this form to ensure standard use within the industry.

The producer statement system is intended to provide Building Consent Authorities (BCAs) with part of the reasonable grounds necessary for the issue of a Building Consent or a Code Compliance Certificate, without necessarily having to duplicate review of design or construction monitoring undertaken by others.

PS1 DESIGN Intended for use by a suitably qualified independent engineering design professional in circumstances where the BCA accepts a producer statement for establishing reasonable grounds to issue a Building Consent;

PS2 DESIGN REVIEW Intended for use by a suitably qualified independent engineering design review professional where the BCA accepts an independent design professional's review as the basis for establishing reasonable grounds to issue a Building Consent;

PS3 CONSTRUCTION Forms commonly used as a certificate of completion of building work are Schedule 6 of NZS 3910:2013 or Schedules E1/E2 of NZIA's SCC 2011[2]

PS4 CONSTRUCTION REVIEW Intended for use by a suitably qualified independent engineering construction monitoring professional who either undertakes or supervises construction monitoring of the building works where the BCA requests a producer statement prior to issuing a Code Compliance Certificate.

This must be accompanied by a statement of completion of building work (Schedule 6).

The following guidelines are provided by ACE New Zealand and Engineering New Zealand to interpret the Producer Statement.

Competence of Engineering Professional
This statement is made by an engineering firm that has undertaken a contract of services for the services named, and is signed by a person authorised by that firm to verify the processes within the firm and competence of its personnel.

The person signing the Producer Statement on behalf of the engineering firm will have a professional qualification and proven current competence through registration on a national competence-based register such as a Chartered Professional Engineer (CPEng).

Membership of a professional body, such as Engineering New Zealand provides additional assurance of the designer's standing within the profession. If the engineering firm is a member of ACE New Zealand, this provides additional assurance about the standing of the firm.

Persons or firms meeting these criteria satisfy the term "suitably qualified independent engineering professional".

Professional Indemnity Insurance
As part of membership requirements, ACE New Zealand requires all member firms to hold Professional Indemnity Insurance to a minimum level.

The PI Insurance minimum stated on the front of this form reflects standard practice for the relationship between the BCA and the engineering firm.

Professional Services during Construction Phase
There are several levels of service that an engineering firm may provide during the construction phase of a project (CM1-CM5 for engineers[3]). The building Consent Authority is encouraged to require that the service to be provided by the engineering firm is appropriate for the project concerned.

Requirement to provide Producer Statement PS4
Building Consent Authorities should ensure that the applicant is aware of any requirement for producer statements for the construction phase of building work at the time the building consent is issued as no design professional should be expected to provide a producer statement unless such a requirement forms part of the Design Firm's engagement.

Refer Also:

1 Conditions of Contract for Building & Civil Engineering Construction NZS 3910: 2013
2 NZIA Standard Conditions of Contract SCC 2011
3 Guideline on the Briefing & Engagement for Consulting Engineering Services (ACE New Zealand/Engineering New Zealand 2004)
4 PN01 Guidelines on Producer Statements

www.acenz.org.nz
www.engineeringnz.org

SITE INSPECTION REPORT

Job No.: 23020	Report No.: SRD1
Date: 16/7/2024	Sheet 1 of 1
Project: 200 Maunga Kotukutuku Rd. New Stair	

Seajay
CONSULTING ENGINEERS
CIVIL • STRUCTURAL • FIRE
42 Michael Rd, PO Box 1713, Paraparaumu 5252
Phone: (04) 212 5150 • Cell: 021 121 4591
craig@seajay.co.nz

Area Inspected: Footings & Bolts	BC Number:
Inspected by: Craig McGlue	Contractors Rep:

Observations:

(1) 650W x 1300 long x 300D Footings ok
- 3/HD12 long - T&B ok
- HD10 Stirrups - 300 ok
- HD10 Starters to floor ok

(2) Portal frame bolts replaced with new M24 grade 8-8 bolts ok.

Instructions Given:

(1) ok to pour footings

Next Inspection: Stair Structure

Approved: *(Signed:)*		**Not approved – Hold Point:** *(Signed:)*					
Work may proceed: *(Subject to completing above instructions)*	✓	**Work may not proceed.** *(Further design/instruction and re-inspection required.)*		**Re-inspection required** *(Following completion of above instructions.)*		**Contractor to supply photographs** *(For approval following completion of above instructions. Work not to proceed until approval given.)*	

Note that the above approval does not include statutory inspections and approval which may be required by the Building Consent Authority. Similarly Building Consent Authority approval does not preclude re-inspection or implementation of further instructions directed herewith where the inspection was "Not Approved".

SITE INSPECTION REPORT

Job No.: 23020	Report No.: SR07
Date: 28/8/2024	Sheet 1 of 2
Project: 200 Maungakotukutuku Road New Stairs	

Seajay CONSULTING ENGINEERS
CIVIL • STRUCTURAL • FIRE
42 Michael Rd, PO Box 1713, Paraparaumu 5252
Phone: (04) 212 5150 • Cell: 021 121 4591
craig@seajay.co.nz

Area Inspected: Stair Structure.	BC Number:
Inspected by: Craig McGhie	Contractors Rep: Peter Saunders

Observations:

(1) Stair structure fabricated in accordance with drawing 23020-S4, S5, S6 & S7.

- 150x100x9 RHS Centre Beam ok
- 6m steel plates to treads ok
- 75 PFC Landing Frame ok

(2) Stair Balustrade fabricated in accordance with Detail 5 & Section F Drawing S7

- 50x25x2.5 RHS Top rail ok
- 40x6 FB Intermediate & bottom Rail ok
- 12 ø ok

(3) Landing Support Column installed as per Section E/S6

- 200UB25 Column ok
- 150x100x9 RHS Outrigger Beam ok
- 200PFC transom beam ok
- Connections as per details. ok

(4) Mid Height outrigger beam installed as per Section D/S6

- 100x100x5 SHS out rigger ok
- 6mm Stiffners to existing 200UB25 Column ok
- M16 Bolts to existing column ok

Next Inspection: Stair Treads

Approved: *(Signed:)*		**Not approved – Hold Point:** *(Signed:)*					
Work may proceed: *(Subject to completing above instructions)*	✓	**Work may not proceed.** *(Further design/instruction and re-inspection required.)*		**Re-inspection required** *(Following completion of above instructions.)*		**Contractor to supply photographs** *(For approval following completion of above instructions. Work not to proceed until approval given.)*	✓

Note that the above approval does not include statutory inspections and approval which may be required by the Building Consent Authority. Similarly Building Consent Authority approval does not preclude re-inspection or implementation of further instructions directed herewith where the inspection was "Not Approved".

SITE INSPECTION REPORT

Job No.: 23020	Report No.: SR02
Date:	Sheet 2 of 2
Project: 200 Maunga Kotukutuku Rd. New Stairs	

Seajay
CONSULTING ENGINEERS
CIVIL • STRUCTURAL • FIRE
42 Michael Rd, PO Box 1713, Paraparaumu 5252
Phone: (04) 212 5150 • Cell: 021 121 4591
craig@seajay.co.nz

Area Inspected: Stair Structure.	BC Number:
Inspected by: Craig McGhie	Contractors Rep: Peter Saunders

Observations:

(5) The landing balustrade has been installed as per the details on drawing S8

- 75 x 25 x 2.5 RHS Top Rail. ok
- 40 x 6 Flat intermediate & botton Rail ok
- 12 ø balusters ok
- Fixings as per drawings ok

Instructions Given:

(1) Complete installation of stair treads.

(2) Plywood stair treads (80mm thick) ok.

Next Inspection: Stair treads

Approved: (Signed:)	Not approved – Hold Point: (Signed:) Peter to supply photos of installed treads						
Work may proceed: *(Subject to completing above instructions)*		**Work may not proceed.** *(Further design/instruction and re-inspection required.)*		**Re-inspection required** *(Following completion of above instructions.)*		**Contractor to supply photographs** *(For approval following completion of above instructions. Work not to proceed until approval given.)*	✓

Note that the above approval does not include statutory inspections and approval which may be required by the Building Consent Authority. Similarly Building Consent Authority approval does not preclude re-inspection or implementation of further instructions directed herewith where the inspection was "Not Approved".

SITE INSPECTION REPORT

Job No.: 23020	**Report No.:** SR03
Date: 10/1/2025	**Sheet** 1 **of** 2
Project: 200 Maungakotukutuku Road Paraparaumu	

Seajay
CONSULTING ENGINEERS
CIVIL • STRUCTURAL • FIRE
42 Michael Rd, PO Box 1713 Paraparaumu 5252
Phone: (04) 212 5150 • Cell: 021 121 4591
craig@seajay.co.nz

Area Inspected: Stair Final	**BC Number:**
Inspected by: (Photos by Client)	**Contractors Rep:** Peter Saunders

Observations:

The client has installed 80mm thick plywood treads and landings as per the design drawings.

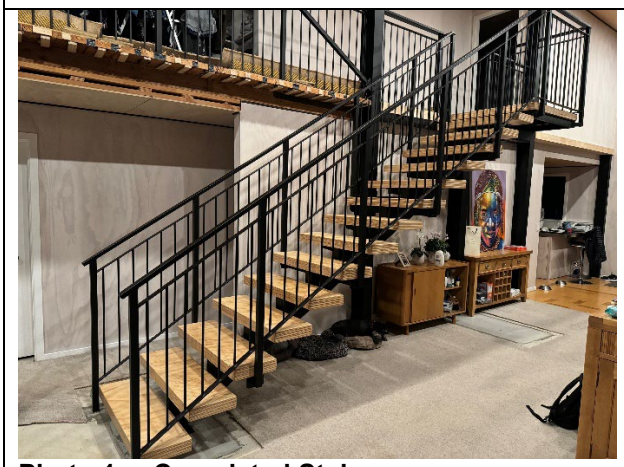


Photo 1 – Completed Stairs

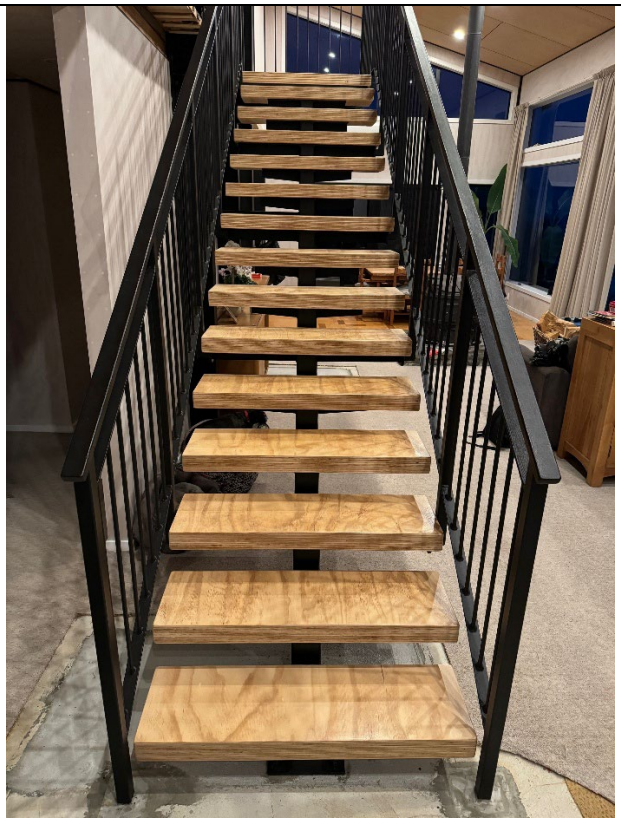


Photo 2 – Completed stairs and treads

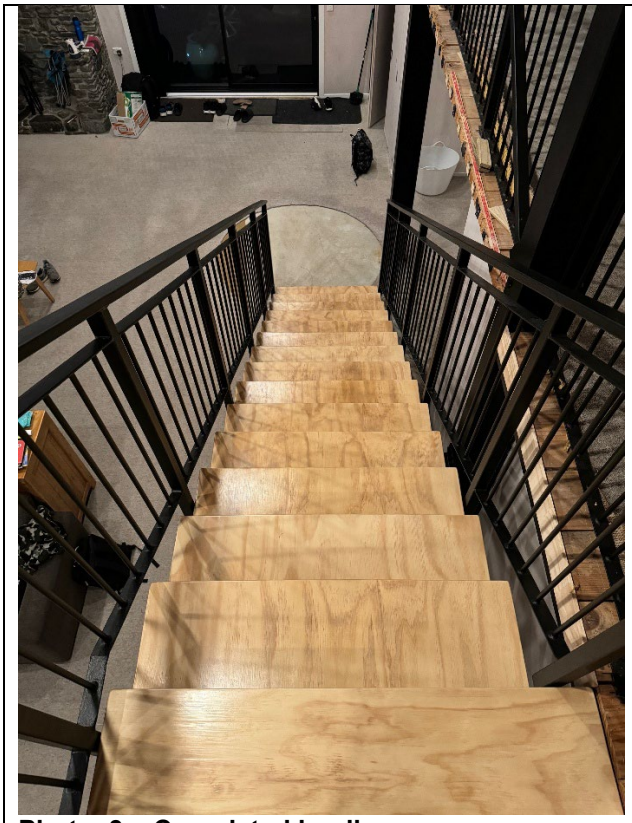


Photo 3 – Completed landing

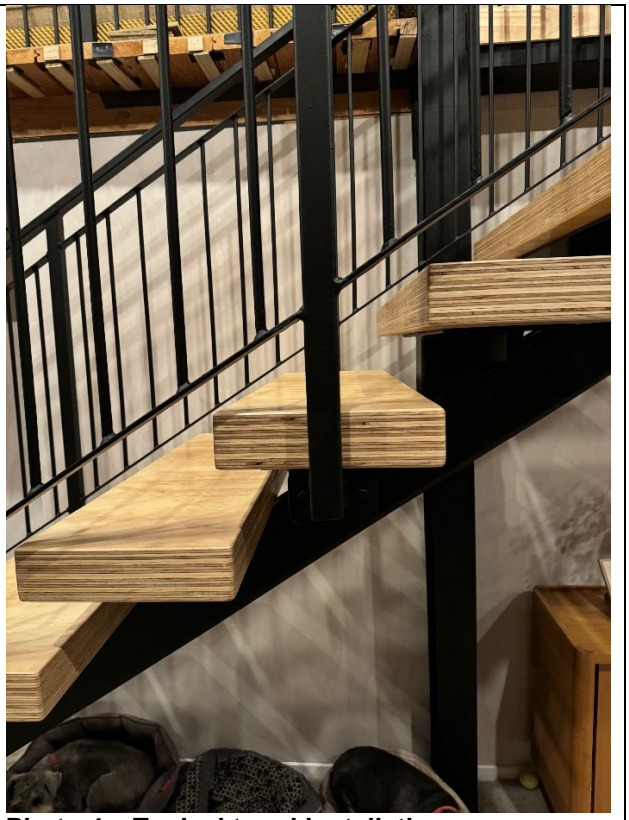


Photo 4 – Typical tread installation

Instructions Given:

Nil

Next Inspection:

Approved: *(Signed:)*		**Not approved – Hold Point:** *(Signed:)*					
Work may proceed: *(Subject to completing above instructions)*	✓	**Work may not proceed**. *(Further design/instruction and re-inspection required.)*		**Re-inspection required** *(Following completion of above instructions.)*		**Contractor to supply photographs** *(For approval following completion of above instructions. Work not to proceed until approval given.)*	

Note that the above approval does not include statutory inspections and approval which may be required by the Building Consent Authority. Similarly Building Consent Authority approval does not preclude re-inspection or implementation of further instructions directed herewith where the inspection was "Not Approved".

Disclaimer:
This document has been prepared solely for Peter Saunders name. The use of and reliance upon the information or opinions contained in this document by others without prior written consent from Seajay Consulting Engineers will be at such person's sole risk. Seajay Consulting Engineers accepts no responsibility or liability for the consequences of the unauthorised use of this document.

PRODUCER STATEMENT – PS4
CONSTRUCTION REVIEW

BUILDING CODE CLAUSE(S): B1 **JOB NUMBER:** 23020

ISSUED BY: Seajay Consulting Engineers Ltd
(Construction Monitoring Firm)
TO: Peter Saunders
(Owner/Developer)
TO BE SUPPLIED TO: Kapiti Coast District Council
(Building Consent Authority)
IN RESPECT OF: New Internal Stairs
(Description of Building Work)
AT: 200 Maungakotukutuku Road, Paraparaumu
(Address, Town/City)
LEGAL DESCRIPTION: Lot 20 DP 33688 **N/A** ☐

BC240320
Received by
Kapiti Coast District Council
10/01/25
via email

We have been engaged by the owner/developer referred to above to provide CM 3 **level of construction monitoring relating to** the Clause(s) named above of the Building Code for the building work which is covered by PS1(s) issued by Seajay Consulting Engineers Limited (*Engineering Design Firm*) and which is described in the documents relating to the Building Consent No. BC 240320 and those relating to Building Consent Amendment(s) No. Nil issued during the course of the works, .

We have sighted these Building Consents and the conditions attached to them.
If any of the fields above are too small, please write "refer the Schedule".

Authorised instructions/variation(s) detailed/listed in the Schedule have been issued during the course of the works.

On the basis of these review(s) and information supplied by the contractor during the course of the works and **on behalf of the engineering firm** undertaking this Construction Monitoring, **I believe on reasonable grounds** that the building works covered by the above-mentioned PS1(s) have been completed in accordance with the relevant requirements of the Building Consent and Building Consent Amendments identified above or in the Schedule on page 2, with respect to Clause(s) B1/VM1 & VM4 of the Building Code. I also believe on reasonable grounds that the persons who have undertaken this construction review have the necessary competency to do so.

I, *(Name of Construction Monitoring Professional)* Craig McGhie , am:

- CPEng number 173345
- I hold the following qualifications NZCE, BE (Civil) Hon, ME (Fire)

The Construction Monitoring Firm holds a current policy of Professional Indemnity Insurance no less than $200,000. Is

SIGNED BY *(Name of Construction Monitoring Professional)*: Craig McGhie
(Signature below):

ON BEHALF OF *(Construction Monitoring Firm)*: Seajay Consulting Engineers Ltd Date: 10/1/25

Note: This statement has been prepared solely for the Building Consent Authority named above and shall not be relied upon by any other person or entity. Any liability in relation to this statement accrues to the Construction Monitoring Firm only. As a condition of reliance on this statement, the Building Consent Authority accepts that the total maximum amount of liability of any kind arising from this statement and all other statements provided to the Building Consent Authority in relation to this building work, whether in tort or otherwise, is limited to the sum of $200,000.

This form is to accompany **Forms 6 or 8 of the Building (Forms) Regulations 2004** for the issue of a Code Compliance Certificate.

SCHEDULE to PS4

Please include an itemised list of all referenced documents, drawings, or other supporting materials in relation to this producer statement below:

Site Reports:

23020 - SR01 - Foundations
23020 - SR02 - Steel Structure
23020 - SR03 - Completed stairs

GUIDANCE ON USE OF PRODUCER STATEMENTS

Information on the use of Producer Statements and Construction Monitoring Guidelines can be found on the Engineering New Zealand website
https://www.engineeringnz.org/engineer-tools/engineering-documents/producer-statements/

Producer statements were first introduced with the Building Act 1991. The producer statements were developed by a combined task committee consisting of members of the New Zealand Institute of Architects (NZIA), Institution of Professional Engineers New Zealand (now Engineering New Zealand), Association of Consulting and Engineering New Zealand (ACE NZ) in consultation with the Building Officials Institute of New Zealand (BOINZ). The original suite of producer statements has been revised at the date of this form to ensure standard use within the industry.

The producer statement system is intended to provide Building Consent Authorities (BCAs) with part of the reasonable grounds necessary for the issue of a Building Consent or a Code Compliance Certificate, without necessarily having to duplicate review of design or construction monitoring undertaken by others.

PS1 DESIGN Intended for use by a suitably qualified independent engineering design professional in circumstances where the BCA accepts a producer statement for establishing reasonable grounds to issue a Building Consent;

PS2 DESIGN REVIEW Intended for use by a suitably qualified independent engineering design review professional where the BCA accepts an independent design professional's review as the basis for establishing reasonable grounds to issue a Building Consent;

PS3 CONSTRUCTION Forms commonly used as a certificate of completion of building work are Schedule 6 of NZS 3910:2013 or Schedules E1/E2 of NZIA's SCC 2011[2]

PS4 CONSTRUCTION REVIEW Intended for use by a suitably qualified independent engineering construction monitoring professional who either undertakes or supervises construction monitoring of the building works where the BCA requests a producer statement prior to issuing a Code Compliance Certificate.

This must be accompanied by a statement of completion of building work (Schedule 6).

The following guidelines are provided by ACE New Zealand and Engineering New Zealand to interpret the Producer Statement.

Competence of Engineering Professional
This statement is made by an engineering firm that has undertaken a contract of services for the services named, and is signed by a person authorised by that firm to verify the processes within the firm and competence of its personnel.

The person signing the Producer Statement on behalf of the engineering firm will have a professional qualification and proven current competence through registration on a national competence-based register such as a Chartered Professional Engineer (CPEng).

Membership of a professional body, such as Engineering New Zealand provides additional assurance of the designer's standing within the profession. If the engineering firm is a member of ACE New Zealand, this provides additional assurance about the standing of the firm.

Persons or firms meeting these criteria satisfy the term "suitably qualified independent engineering professional".

Professional Indemnity Insurance
As part of membership requirements, ACE New Zealand requires all member firms to hold Professional Indemnity Insurance to a minimum level.

The PI Insurance minimum stated on the front of this form reflects standard practice for the relationship between the BCA and the engineering firm.

Professional Services during Construction Phase
There are several levels of service that an engineering firm may provide during the construction phase of a project (CM1-CM5 for engineers[3]). The building Consent Authority is encouraged to require that the service to be provided by the engineering firm is appropriate for the project concerned.

Requirement to provide Producer Statement PS4
Building Consent Authorities should ensure that the applicant is aware of any requirement for producer statements for the construction phase of building work at the time the building consent is issued as no design professional should be expected to provide a producer statement unless such a requirement forms part of the Design Firm's engagement.

Refer Also:

1 Conditions of Contract for Building & Civil Engineering Construction NZS 3910: 2013
2 NZIA Standard Conditions of Contract SCC 2011
3 Guideline on the Briefing & Engagement for Consulting Engineering Services (ACE New Zealand/Engineering New Zealand 2004)
4 PN01 Guidelines on Producer Statements

www.acenz.org.nz
www.engineeringnz.org

SITE INSPECTION REPORT

Job No.: 23020	Report No.: SRD1
Date: 16/7/2024	Sheet 1 of 1
Project: 200 Maunga Kotukutuku Rd. New Stair	

Seajay
CONSULTING ENGINEERS
CIVIL • STRUCTURAL • FIRE
42 Michael Rd, PO Box 1713, Paraparaumu 5252
Phone: (04) 212 5150 • Cell: 021 121 4591
craig@seajay.co.nz

Area Inspected: Footings & Bolts	BC Number:
Inspected by: Craig McGlue	Contractors Rep:

Observations:

(1) 650W x 1300 long x 300D Footings OK
- 3/HD12 long - T&B OK
- HD10 Stirrups - 300 OK
- HD10 Starters to floor OK

(2) Portal frame bolts replaced with new M24 grade 8-8 bolts OK.

Instructions Given:

(1) ok to pour footings

Next Inspection: Stair Structure

Approved: *(Signed:)*		**Not approved – Hold Point:** *(Signed:)*					
Work may proceed: *(Subject to completing above instructions)*		**Work may not proceed.** *(Further design/instruction and re-inspection required.)*		**Re-inspection required** *(Following completion of above instructions.)*		**Contractor to supply photographs** *(For approval following completion of above instructions. Work not to proceed until approval given.)*	

Note that the above approval does not include statutory inspections and approval which may be required by the Building Consent Authority. Similarly Building Consent Authority approval does not preclude re-inspection or implementation of further instructions directed herewith where the inspection was "Not Approved".

SITE INSPECTION REPORT

Job No.: 23020	Report No.: SR07
Date: 28/8/2024	Sheet 1 of 2
Project: 200 Maungakotukutuku Road New Stairs	

Seajay
CONSULTING ENGINEERS
CIVIL • STRUCTURAL • FIRE
42 Michael Rd, PO Box 1713, Paraparaumu 5252
Phone: (04) 212 5150 • Cell: 021 121 4591
craig@seajay.co.nz

Area Inspected: Stair Structure.	BC Number:
Inspected by: Craig McGhie	Contractors Rep: Peter Saunders

Observations:

(1) Stair structure fabricated in accordance with drawing 23020-S4, S5, S6 & S7.

- 150x100x9 RHS Centre Beam ok
- 6mm steel plates to treads ok
- 75 PFC Landing Frame ok

(2) Stair Balustrade fabricated in accordance with Detail 5 & Section F Drawing S7

- 50x25x2.5 RHS Top rail ok
- 40x6 Flat intermediate & bottom Rail ok
- 12 ø balusters ok

(3) Landing Support column installed as per Section E/S6

- 200UB25 column ok
- 150x100x9 RHS Outrigger Beam ok
- 200PFC transom beam ok
- Connections as per details. ok

(4) Mid Height outrigger beam installed as per Section D/S6

- 100x100x5 SHS out rigger ok
- 6mm Stiffners to existing 200UB25 Column ok
- M16 Bolts to existing column ok

Next Inspection: Stair Treads

Approved: *(Signed:)*		**Not approved – Hold Point:** *(Signed:)*					
Work may proceed: *(Subject to completing above instructions)*	✓	**Work may not proceed.** *(Further design/instruction and re-inspection required.)*		**Re-inspection required** *(Following completion of above instructions.)*		**Contractor to supply photographs** *(For approval following completion of above instructions. Work not to proceed until approval given.)*	✓

Note that the above approval does not include statutory inspections and approval which may be required by the Building Consent Authority. Similarly Building Consent Authority approval does not preclude re-inspection or implementation of further instructions directed herewith where the inspection was "Not Approved".

SITE INSPECTION REPORT

Job No.: 23020	Report No.: SR02
Date:	Sheet 2 of 2
Project: 200 Maunga Kotukutuku Rd. New Stairs	

Seajay
CONSULTING ENGINEERS
CIVIL • STRUCTURAL • FIRE
42 Michael Rd, PO Box 1713, Paraparaumu 5252
Phone: (04) 212 5150 • Cell: 021 121 4591
craig@seajay.co.nz

Area Inspected: Stair Structure.	BC Number:
Inspected by: Craig McGhie	Contractors Rep: Peter Saunders

Observations:

(5) The landing balustrade has been installed as per the details on drawing S8

- 75 x 25 x 2.5 RHS Top Rail. ok
- 40 x 6 Flat intermediate & botton Rail ok
- 12 ø balusters ok
- Fixings as per drawings ok

Instructions Given:

(1) Complete installation of stair treads.

(2) Plywood stair treads (8mm thick) ok.

Next Inspection: Stair treads

Approved: (Signed:)	Not approved – Hold Point: (Signed:) Peter to supply photos of installed treads						
Work may proceed: (Subject to completing above instructions)		**Work may not proceed.** (Further design/instruction and re-inspection required.)		**Re-inspection required** (Following completion of above instructions.)		**Contractor to supply photographs** (For approval following completion of above instructions. Work not to proceed until approval given.)	✓

Note that the above approval does not include statutory inspections and approval which may be required by the Building Consent Authority. Similarly Building Consent Authority approval does not preclude re-inspection or implementation of further instructions directed herewith where the inspection was "Not Approved".

SITE INSPECTION REPORT

Job No.: 23020	**Report No.:** SR03
Date: 10/1/2025	**Sheet** 1 **of** 2
Project: 200 Maungakotukutuku Road Paraparaumu	

Seajay
CONSULTING ENGINEERS
CIVIL • STRUCTURAL • FIRE
42 Michael Rd, PO Box 1713 Paraparaumu 5252
Phone: (04) 212 5150 • Cell: 021 121 4591
craig@seajay.co.nz

Area Inspected: Stair Final	**BC Number:**
Inspected by: (Photos by Client)	**Contractors Rep:** Peter Saunders

Observations:

The client has installed 80mm thick plywood treads and landings as per the design drawings.

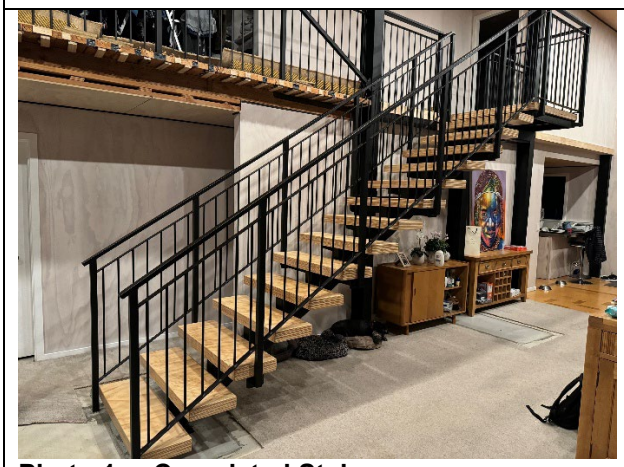


Photo 1 – Completed Stairs

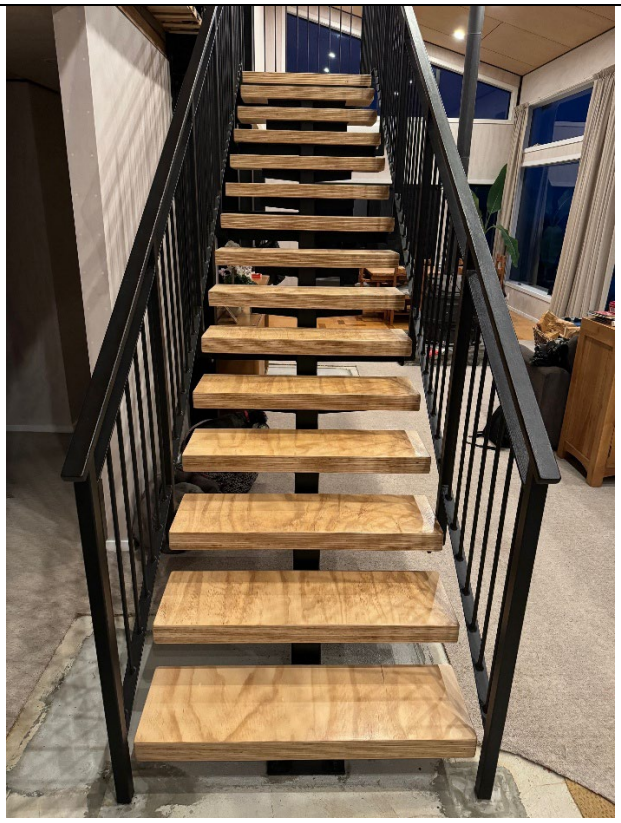


Photo 2 – Completed stairs and treads

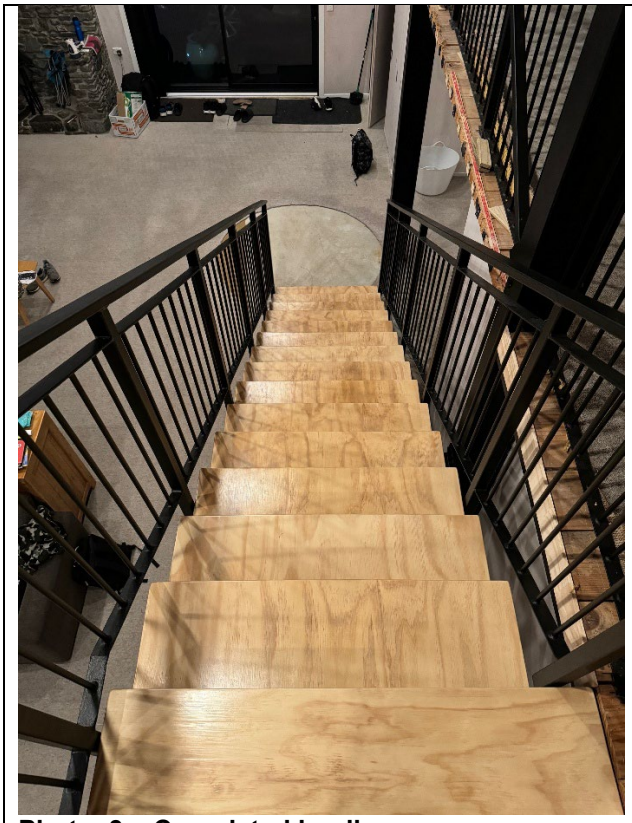


Photo 3 – Completed landing

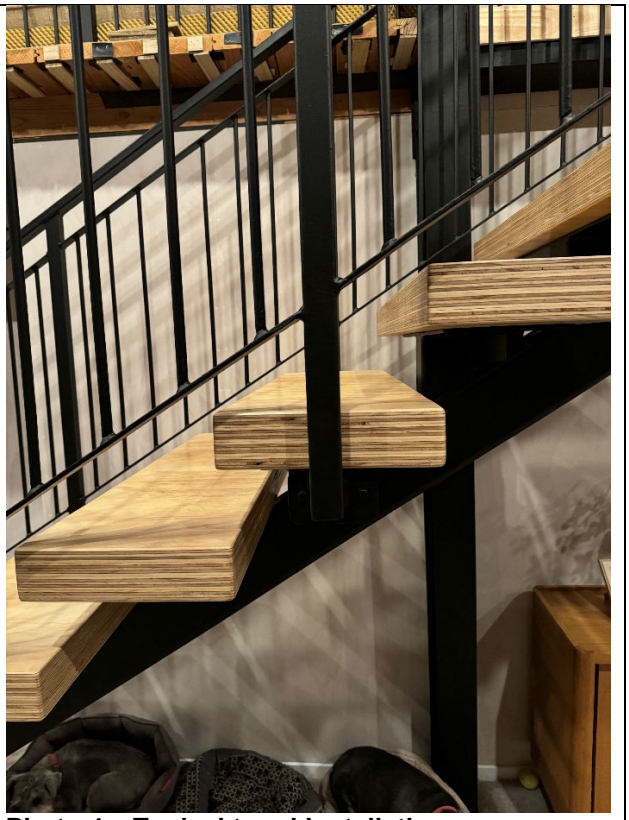


Photo 4 – Typical tread installation

Instructions Given:

Nil

Next Inspection:

Approved: *(Signed:)*		**Not approved – Hold Point:** *(Signed:)*					
Work may proceed: *(Subject to completing above instructions)*	✓	**Work may not proceed**. *(Further design/instruction and re-inspection required.)*		**Re-inspection required** *(Following completion of above instructions.)*		**Contractor to supply photographs** *(For approval following completion of above instructions. Work not to proceed until approval given.)*	

Note that the above approval does not include statutory inspections and approval which may be required by the Building Consent Authority. Similarly Building Consent Authority approval does not preclude re-inspection or implementation of further instructions directed herewith where the inspection was "Not Approved".

BC240320
Received by
Kapiti Coast District Council
10/01/25
via email

BC240320
Received
by
Kapiti
Coast
District
Council
05/12/2024
via
Email

Statement of Compliance with the NZ Building Code

Consent No: 240320

ISSUED BY: **Kapiti Coast District Council**

PROJECT

Site Address:	198-200 Maungakotukutuku Road, Paraparau
Legal Description:	LOT 20 DP 33688
Work Description:	The project comprises construction of a new set of internal stairs in the existing two storey house.
Building Category:	R1

OWNER

Name(s):	Peter Saunders and Usani Saunders
Address:	200 Maungakotukutuku Road,Paraparaumu

[P] Application for CCC received and accepted
[P] Consent description accurate and reflects amendments (if relevant).
[P] Confirm owner named on Building Consent application is current owner
[P] Confirm all required inspections completed and documented in GoGet
[P] If inspection(s) have been missed, have they been compensated for?
Engineer covering preline
[P] Work in accordance with approved consent and approved amendments
[P] Supporting documentation required in building consent addenda received
[P] Code Compliance Certificate Sign Off
[P] Approve to issue Code Compliance Certificate if all fees paid

NOTES:
Inspections Prepaid:
Inspections Done:

On review of the documentation and inspection notes it can be considered on reasonable grounds that all work has been completed in compliance with the building consent.

Signed: Date: 10 March 2025
Name: Stew Nelson
Position: Building Officer

GoGet Inspection Audit Report

Consent No: **240320**

Applicant: **Seajay Consulting Engineers**

Site Address: **198-200 Maungakotukutuku Road, Paraparau**

Work Type: **The project comprises construction of a new set of internal stairs in the existing two storey house.**

Inspection Type: **Final Inspection**

Inspection Outcome: **Fail**

Inspected By: **Stew Nelson**

Inspection Date: **28 November 2024 9:26 a.m.**

Duration: **30 minutes**

Inspection Element	Status
Exterior	N/A
Interior	Fail
All previous inspections/notes passed	Fail
First inspection. Preline was noted on consent, SORG not required after reviewing documents but will require engineer PS4	
Drawings	Pass
On site and reviewed	
Additional information/plan	N/A
Service areas-floors/walls	N/A
Stair design	Pass
Assessed under Section 112 **1. Not uniform from top riser to landing as rest of stairs. Homeowner confirms old staircase was not uniform** **2. Slip resistance of LVL may or may not met building code requirements but SORG the performance is better than old treads. Observed old treads on site today** **Other riser and treads are fine**	
Handrails	Pass
Inbuilt into barrier, 900mm	
Barriers from falling	Pass
>1m along stair, landing and second level	
Lighting	N/A
Laundering	N/A
Cooking facilities	N/A
Smoke detectors	Fail
Installed in dead space, both levels	
Food storage/preparation	N/A
Ventilation	N/A
HWC flues	N/A
HWC restraint	N/A
Tempering valve	N/A
Glazing - human impact	N/A
Window restrictors	N/A
Hot water temp	N/A
Solid fuel heater	N/A
Water supply tank	N/A
Trap seals and AAVS	N/A
Cistern flushing	N/A

WC pan connection	N/A
Non potable water signs	N/A
Septic system	N/A
Window labels	N/A
Non compliance discussed onsite	Pass
Photos to be provided, left email with homeowner. Please also provide photos of old staircase and written confirmation that old stairs were not uniform	
Final check complete	N/A
Other	N/A
Intertenancy/commercial	N/A
Other	N/A

Engineer covering
Taken at 9:12 AM on Thursday 28/11/2024

Taken at 9:12 AM on Thursday 28/11/2024

Taken at 9:13 AM on Thursday 28/11/2024

Handrail and barrier

Taken at 9:14 AM on Thursday 28/11/2024

Taken at 9:14 AM on Thursday 28/11/2024

Taken at 9:17 AM on Thursday 28/11/2024

Not uniform with rest of stairs
Taken at 9:17 AM on Thursday 28/11/2024

SD in deadspace
Taken at 9:17 AM on Thursday 28/11/2024

Old and new
Taken at 9:33 AM on Thursday 28/11/2024

Kapiti Coast District Council
175 Rimu Road
Private Bag 60601
Paraparaumu 5254
Phone (04) 296 4700

SITE NOTICE

Consent No:	**240320**
Applicant:	**Peter Saunders and Usani Saunders**
Site Address:	**198-200 Maungakotukutuku Road, Paraparau**
Work Type:	**The project comprises construction of a new set of internal stairs in the existing two storey house.**
Building Category:	**R1**

Inspection Type:	**Final Inspection**
Inspection Outcome:	**Fail**
Inspected By:	**Stew Nelson**
Inspection Date:	**28 November 2024**

Failed Items

Interior

All previous inspections/notes passed	**First inspection. Preline was noted on consent, SORG not required after reviewing documents but will require engineer PS4**
Smoke detectors	**Installed in dead space, both levels**

Passed Items

Interior

Drawings	**On site and reviewed**
Stair design	**Assessed under Section 112** **1. Not uniform from top riser to landing as rest of stairs. Homeowner confirms old staircase was not uniform** **2. Slip resistance of LVL may or may not met building code requirements but SORG the performance is better than old treads. Observed old treads on site today** **Other riser and treads are fine**
Handrails	**Inbuilt into barrier, 900mm**
Barriers from falling	**>1m along stair, landing and second level**
Non compliance discussed onsite	**Photos to be provided, left email with homeowner. Please also provide photos of old staircase and written confirmation that old stairs were not uniform**

GoGet Inspection Audit Report

Consent No: **240320**

Applicant: **Seajay Consulting Engineers**

Site Address: **198-200 Maungakotukutuku Road, Paraparau**

Work Type: **The project comprises construction of a new set of internal stairs in the existing two storey house.**

Inspection Type: **Final Inspection**

Inspection Outcome: **Pass**

Inspected By: **Stew Nelson**

Inspection Date: **27 January 2025 3:23 p.m.**

Duration: **15 minutes**

Inspection Element	Status
Interior	Pass
All previous inspections/notes passed	Pass
PS4 received, SORG preline not required now	
Smoke detectors	Pass
Photos provided, SD's in compliant location	

Kapiti Coast District Council
175 Rimu Road
Private Bag 60601
Paraparaumu 5254
Phone (04) 296 4700

SITE NOTICE

Consent No:	**240320**
Applicant:	**Peter Saunders and Usani Saunders**
Site Address:	**198-200 Maungakotukutuku Road, Paraparau**
Work Type:	**The project comprises construction of a new set of internal stairs in the existing two storey house.**
Building Category:	**R1**

Inspection Type:	**Final Inspection**
Inspection Outcome:	**Pass**
Inspected By:	**Stew Nelson**
Inspection Date:	**27 January 2025**

Passed Items

Interior

All previous inspections/notes passed	**PS4 received, SORG preline not required now**
Smoke detectors	**Photos provided, SD's in compliant location**

KAPITI COAST DISTRICT COUNCIL

Consent No: 240320 Building Category: R1

Site Address: 198-200 Maungakotukutuku Road, Paraparau

Owner/Agent: Seajay Consulting Engineers

Inspections

The following inspections are required:

1 Preline Building

1 Final Inspection

2 Total Inspections

Residential Documentation

1 Application for CCC

1 Construction review PS4 statement for structural engineering