Exemption from Building Consent (exemption 2 only)

# APPLICATION FORM – BUILDING CONSENT EXEMPTION

under Building Act 2004 Schedule 1(2)

RECEIVED
Gore District Council
20 JAN 2021
1:28 PM

## OWNER / APPLICANT

*(attach evidence of ownership to this application, and if not the owner, attached details of authorisation to lodge application on owner's behalf).*

| | | | |
|---|---|---|---|
| Name: | Hashem Ramezanzadeh | Phone No: | 03 2090330 |
| Postal address: | 29 Bowler Ave, Gore | Cell phone: | 021 1957018 |
| | | Fax: | |
| | | Email: | HRamezan-zadeh@goredc |
| Signature: | HR | Date: | 20 January 2021 |

## BUILDING LOCATION

GORE DISTRICT COUNCIL
APPROVED Schedule 1 Item 2
Exemption # Schedule 1 (2)
Date: 22 November 2023

Street address: 69 Wentworth Street EAST GORE

(or RAPID number)

Legal description:

Year of construction: Valuation number:

Current, lawfully established use: Water treatment plant and reservoir

## PROJECT

*(Provide sufficient description of building works to enable scope of work to be fully understood)*

**Description of building works** Estimated value of work (incl. GST) $ 650,000

Site leveling and construction of a new building next to the existing water reservoir using precast concrete panels.

Provide details of any proposed new use

## ATTACHMENTS

- [x] Producer Statements
- [x] Copies of plans and specifications
- [x] Other: PS2 received 22/11/2023 Revised drawing set 22/11/2023
- [ ] References to determinations / opinion
- [ ] Photographs

## DECISION

*(to be completed by the Territorial Authority)*

- [x] **Approved** – Building consent is not necessary because either:
  - [x] The completed building work is likely to comply with the building code; or
  - [ ] If the completed building work does not comply with the building code it is unlikely to endanger people or any building, whether on the same land or on other property.
- [ ] **Not Approved** – A building consent is required for the above project.

**Building Control Officer:** [signature] **Date:** 22/11/2023

**PLEASE NOTE**: assessment of the information provided with this application has only been made in consideration of the Building Act 2004. Additional authorisations may be required under other legislation including the Resource Management Act, Health Act, Sale and Supply of Alcohol Act etc. and remain the responsibility of the owner to check.

**FEES**: An assessment fee plus time spent will be invoiced as per the Councils fee schedule.

Assessment fee $ 150.00 plus 2 hours = $ 450.00 Invoiced: Y (N)

* waived fee due to time lapse

Additional processing/RFI notes ~~BC No~~ Sched 1 (2) BCO Russell Paterson

* Gore WWTP upgrade - 69 Wentworth St (East Gore)

Darryl Kensington PSI CPEng 87325 - current structural eng.
PSI states CM1 - overview to provide PS4? ✓

Specification

Section 2 - Concrete
3.10 - Inspections by TA inspector? 3 Waters / Engineer.

Section 3 - Precast concrete
1.3 - PS3 from supplier / installer of panels
- Are they viewed by Daryl & pre-pour? Yes.
2.1 - 40 MPa for precast panels
2.2 - 300E + 500E deformed bars, Reidbar
Mesh to AS/NZS 4671.

Section 4 - Concrete Masonry
1.4 - Inspections at critical stages? Who by? Engineer.

* PS2 received, suitable to now issue the Schedule 1 (2) exemption, on the basis of being under engineer supervision and likely to comply with the Building Code.

22/11/2023

* Note: This documentation was supplied to 3 waters on 15 July 2021 however had not been forwarded to Building Control for completion of the Schedule 1 (2) assessment. (The project lead for this development left Council employment and the continuation of documentation supply did not happen as it should have)

Additional processing/RFI notes BC No_____ BCO _____

## Russell Paterson



**From:** Matt Bayliss
**Sent:** Wednesday, 22 November 2023 11:34 a.m.
**To:** Russell Paterson
**Subject:** FW: GDC WTP Peer Review Closeout
**Attachments:** Beca PS2 - Gore WTP Building.pdf

**Follow Up Flag:** Follow up
**Flag Status:** Flagged

* Received and added into the Schedule 1 (2) application documents.

**From:** Alex Kelly <Alex.Kelly@beca.com>
**Sent:** Thursday, July 15, 2021 12:53 PM
**To:** Darryl Kensington <darryl@kensingtonconsulting.co.nz>; Hashem Ramezan-zadeh <HRamezan-zadeh@goredc.govt.nz>
**Cc:** 'Donovan Harvey (Donovan@marshalls.co.nz)' <Donovan@marshalls.co.nz>; Greg Philips <Greg.Philips@beca.com>; 3333221 - Centralization of Gore WTP <project-35615@workspace.beca.com>; John Heenan <John.Heenan@beca.com>; James Washbrooke <James.Washbrooke@beca.com>; Matt Bayliss <MBayliss@goredc.govt.nz>
**Subject:** GDC WTP Peer Review Closeout

Hi Darryl, Hashem,

Please find attached our PS2 for the Gore WTP New Building, along with associated supporting documentation.

Many thanks,

**Alex Kelly**
Structural Engineer
Beca
Phone +64-3-366-3521
DDI +64-3-367-2465 Mobile +64-27-801-9404
alex.kelly@beca.com
www.beca.com

Sensitivity: General

**From:** Alex Kelly
**Sent:** Tuesday, 13 July 2021 3:41 PM
**To:** Darryl Kensington <darryl@kensingtonconsulting.co.nz>
**Cc:** 'Donovan Harvey (Donovan@marshalls.co.nz)' <Donovan@marshalls.co.nz>; Hashem Ramezan-zadeh <HRamezan-zadeh@goredc.govt.nz>; Greg Philips <Greg.Philips@beca.com>; 3333221 - Centralization of Gore WTP <project-35615@workspace.beca.com>
**Subject:** RE: peer review document response

Hi Darryl,

I have discussed the brace connection further with Abbas on a separate email chain from him to close this out. He should hopefully be getting back to you with the revised details required for the bracing drawings. Once that is complete, can you please send a full set of the revised drawings, full Design Features Report and the PS1, along with a document transmittal from yourself covering all these items and their current revisions and dates (required for attachment to the PS2).

Further to query #29 on the Peer Review register, can you confirm in writing that Steve Knowles is covered by Kensington Consulting's PI insurance as signatory to the PS1.



Cheers,
Alex

Sensitivity: General

**From:** Darryl Kensington <darryl@kensingtonconsulting.co.nz>
**Sent:** Tuesday, 13 July 2021 9:11 AM
**To:** Alex Kelly <Alex.Kelly@beca.com>
**Cc:** Abbas Mirfattah <abbas.mirfattah@enlink.co.nz>; steven.knowles@sjgd.co.nz; 'Donovan Harvey (Donovan@marshalls.co.nz)' <Donovan@marshalls.co.nz>
**Subject:** peer review document response

Morning Alex please find attached response and supporting documents after your discussion with Abbas yesterday. As the detailed cleats are all fabricated to the main portals we have provided an extended fully welded cover plate over the original ( butt welds will be QA tested) and will redrill for new M20 bolts as detailed. Could you please advise me this morning that this detail is accepted so that fabricator can be advised. Many thanks
Cheers Darryl

Darryl Kensington BE Civil, CMEngNZ (Civil,Structural), CPEng , IntPE(NZ)

Kensington Consulting
///// Civil and Structural Engineers

Findex House
173 Spey Street
Invercargill
P: 03 218 7936
M: 027 403 3773

Building Code Clause(s) B1

# PRODUCER STATEMENT – PS2 – DESIGN REVIEW



**ISSUED BY:** Beca Limited
(Design Review Firm)

**TO:** Gore District Council
(Owner/Developer)

**TO BE SUPPLIED TO:** Gore District Council
(Building Consent Authority)

**IN RESPECT OF:** Gore Water Treatment Plant Upgrade - New Building
(Description of Building Work)

**AT:** Wentworth Street, East Gore
(Address)

Town/City: Gore **LOT** ..... **DP** ..... **SO** .....
(Address)

We Beca Limited have been engaged by Gore District Council
(Design Review Firm)

to review the design documents for this project in respect of the requirements of Clause(s) B1 Structure of the Building Code.

The Review is for ☒ All or ☐ Part only of the design work prepared by Kensington Consulting Ltd
(Design Firm)

as described in drawings titled Gore Water Treatment Plant Upgrade - New Building

and numbered S01 - S13 together with the specification, and other documents set out in the schedule attached to this statement according to which the building is proposed to be constructed.

The Review is in respect of Structural Engineering or per attached schedule.
(aspects of design)

The Review confirms that these aspects of the design are in accordance with:

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

☐ Alternative solution as per the attached schedule

**On behalf of the firm undertaking this review**, on the basis of the review undertaken, and subject to:

(i) Site verification of the following design assumptions Confirmation of soil bearing capacity at founding depth
(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 review have the necessary competency to do so.

I, John Heenan am: ☒ CPEng # 111129
(Name of Design Review Professional)

I am a member of: ☒ Engineering New Zealand and hold the following qualifications: NZCE BE CMEngNZ CPEng IntPE(NZ)

The Design Review Firm issuing this statement holds a current policy of Professional Indemnity Insurance no less than $200,000*.

The Design Review Firm is a member of ACE New Zealand: ☒

**SIGNED BY** John Heenan (Signature)
(Name of Design Review Professional)

**ON BEHALF OF** Beca Limited Date 15-07-2021
(Design Review Firm)

*Note: This statement shall only be relied upon by the Building Consent Authority named above. Liability under this statement accrues to the Design Review 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.

## Producer Statement – Peer Review (PS2) Schedule

We have reviewed the following documents as part of the peer review of the Gore Water Treatment Plant Upgrade – New Building project:

- Drawings by Kensington Consulting Ltd as per the attached schedule from SJ Gordon Design Ltd.
- Structural Design Calculations:
  - Initial set received 25 March 2021
  - Revised calculations received 13 May 2021
  - Revised calculations received 15 June 2021
  - Revised calculations received 13 July 2021
- Structural Specification Rev1 by Kensington Consulting Ltd.
- Design Features Report dated 14 July 2021 from SJ Gordon Design Ltd.
- Producer Statement PS1 from SJ Gordon Design Ltd.
  - Confirmation via letter from Kensington Consulting that SJ Gordon Design Ltd is engaged by Kensington Consulting Ltd as a subconsultant to the lead engineer for Marshall Projects to Gore District Council. As such the provisions of Professional Indemnity Insurance as stated on the PS1 are applicable to Kensington Consulting Ltd as Engineer of Record.

**KENSINGTON CONSULTING**
**//// Civil and Structural Engineers**

20080

14/07/21

Gore District Council
PO Box 8
Gore

C/- BECA
Email; Alex.Kelly@Beca.com

Attention: Alex Kelly

Dear Alex

**Gore Waste-Water Plant Peer Review**

As requested, we advise in response to query #29 of the Peer Review register that SJGD Structures as signatory to the PS1, is covered under Kensington Consulting's PI insurance for this project.

We trust this confirmation is acceptable.

Yours Sincerely

D Kensington
Director

FINDEX House, 173 Spey St, PO Box 6168, Invercargill 9841
T:+ 64 3 2187936 M: 0274 033 773 E: Darryl@kensingtonconsulting.co.nz

**Peer review comment register**
**Project:** Gore Water treatment plant
**Designer:** Kensington consulting
**Reviewer:** GP Beca

| N. | Doc reference | Importance | Reviewer comment | | Designer response | | Reviewer comments 2 | | Status | Designer response 2 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Date | Comment | Date | Comment | Date | Comment | | Date | Comment |
| 0 | | | 25/01/21 | Please provide a copy of the calculations | | | 23/04/21 | Received | Closed | | |
| 1 | | | 25/01/21 | Please provide a copy of the DFR | | | 23/04/21 | Received | Closed | | |
| 2 | Drawing S01 | | 25/01/21 | Mesh laps seems too small.<br>23/4 - Not changed. | | Mesh lapping to be inaccordance with the manufacturers standard requirements | 28/05/21 | Add note, "min two transverse wires lapped". | Closed | 15/06/21 | Note added to drawing S01 |
| 3 | Drawing S01 | | 25/01/21 | Why have not all north precast panels got a grout infill between them?<br>23/4 - Not clear which joints are grouted now that the detail has changed | | Joints only grouted to panels affected by chlorine room fire requirements and those forming bunded area to provide a fully sealed joint with solid backing. Panels P12-P19 externally and panels P26-p28 internally | 28/05/21 | Drawings show P11-P12 also grouted. Note on S09 referenceing the required panels to be grouted has been deleted. | Closed | 15/06/21 | List of panel grouted joints added to drawing S09 |
| 4 | Drawing S01 | | 25/01/21 | Drainage outlets how are these detailed through the ground floor slab/beam?<br>23/4 - Detail updated, need to review | | The drains have been regraded on revised drawings to enable the drains to exit out through base of the panel as detailed on sheet S04 section E1 | 28/05/21 | P18 not updated with penetrations. Where does the chlorine room drain drain too?<br>Are grates being provided over the strip drains. | Closed | 15/06/21 | The drain from the chlorine room exits via cored hole and pipe sleeve to external drainage sump beside the foundations. The external drainage works was not part of Kensington Consulting scope of work. Stainless steel grated drainage covers have been noted on the drawings as discussed with GDC. The drains exit out through base of the panel as detailed on drawings |
| 5 | Drawing S01 | | 25/01/21 | Is the doseage rate for the fibres, of 1 kg, for the whole floor slab or should this be a rate, ie xkg/m3?<br>23/4 - no update | | Yes confirming that the doseage rate is 1kg/ m3. Contractor is aware of this | 28/05/21 | Noted. We have not reviewed the dosage rate. | Closed | | |
| 6 | Drawing S01 | | 25/01/21 | The calls up for anchor studs as grade 8.8, should these be 4.6 for a bit more flexability, althought they have a lower capacity?<br>23/4 - no update | | This was originally a general note but is not really required now as all the various fixing requirements are specified where required. Drawing S01 Rev B revised to reflect this | 28/05/21 | Noted | Closed | | |
| 7 | Drawing S01 | | 25/01/21 | Where studs are stainless steel, how is the bimetallic corrosion being dealt with?<br>23/4 - no update | | HDPE washers and epoxy paint coating. Revised section D / D1 sheet S04 Rev B | 28/05/21 | Noted | Closed | | |
| 8 | Drawing S01 | | 25/01/21 | Are there any higher requirement of corrosion resistance to the steelwork in the chlorine dose room?<br>23/4 - No update | | This question was directed to our client who repsonded that no additional coating requirement was required . Copy of email response attached refer query 8 document | 28/05/21 | We would recommend that this is reviewed by a corrosion specialist. | Closed | 15/03/21 | Coating spec changed in steel spec however contractor has offered an PUR3 compliant alternative which is acceptable and we will accept |
| 9 | Drawing S13 | | 25/01/21 | Loads for the design of the precast floor units that form the roof to the chlorine room have not been provided. Please provide. | | This was intended as a ceiling only but have allowed for a nominal 3Kpa UDL in case of some minor storage as access is very restricted but have allowed for a point load of 1kN for a | 23/04/2021<br>28/05/2021 | Drawings updated for live load. Point load not specificed.<br>Need to specifiy point load to NZS 1170. | Closed | 15/06/21 | The as agreed 3.5KN point load in addition to the 3KPa UDL has been added to the drawing S13 and the precast spec undated. |
| 10 | Drawing S01 | | 25/01/21 | Is there a fold in the ground floor slab, we believe there should be, if so what is the detail.<br>23/4 - no update | | There is a 100mm step in the slab at the offices end of the building and sheets S 01 and S04B indicate these details | 28/05/21 | Noted | Closed | | |
| 11 | Drawing S02 | | 25/01/21 | Has the eastern wall been designed to take approximately 10m trib of seismic load for the building?<br>23/4 - calcs to be reviewed. | | Yes,See page RFI-1 | 28/05/21 | Unclear if panel are tied together and detailed as such. | Closed | 15/06/21 | Refer to revised calculations and panel drawings |
| 12 | Drawing S03 | | 25/01/21 | Section C needs updating to show the pillar in panel P22.<br>23/4 - drawings still inconsistent. Strip of panel adjacent to penetration needs to be detailed appropriately | | Current detail of the pillar is fine. Just drawings to be updated. Triming bars are added. See page RFI-2. Revised details for P22 drawing S08 Rev B | 28/05/21 | Noted | Closed | | |
| 13 | Drawings S04 and all Precast wall elevations | | 25/01/21 | Are the HD12-300 shear bars at the base of the precast walls enough for vertical and horizontal loads? How is the eccentricity resolved? | | See page RFI-3 | 28/05/21 | Use of Mu = 1.25 and sp =0.7, is not ok for this connection. Further not considered the combined tensions and shear load. Tension and eccentricity not accounted for together. | Closed | 15/06/21 | Refer to additional calculations |
| 14 | Drawings S04 and all Precast wall elevations | | 25/01/21 | Under seismic actions how is the panel held down. The uplift seems very high.<br>23/4 - calcs to be reviewed. | | The uplift is not too high due to self weight of the walls and light roof. The anchorage capacity of base is checked see RFI-3 | 28/05/21 | 300 kN/m of uplift is high. There is not enough self weigth for this. | Closed | 15/06/21 | Refer to additional calculations |
| 15 | Drawing S04 | | 25/01/21 | Saw cuts in the slab, detail is shown but plans do not show layout and location, how does these interact with the plinths?<br>23/4 - no update | | Attached marked up plan which has incorporated the contractors construction joints | 28/05/21 | Noted | Closed | | |
| 16 | Drawing S05 | | 25/01/21 | There are bracing and strut eccentricies in both vertical and horizontal direction, these should be allowed for?<br>23/4 - calcs to be reviewed. | | They can be resisted by the sections capacity See page RFI-5 | 28/05/2021<br><br>09/07/2021 | Weak axis being of rafter not checked with major axis beinding. Unclear as to how SHS has been checked.<br><br>Brace connection capacity insufficient (S05, section B and plan). Recommend centrelines of SHS strut, UB portal and Reid braces align, with bolt sizes increased to M20's (same as RB20 pins) and in line with RB centreline to take forces without any eccentricity | Closed | 15/06/21 | refer additional calculations |
| 17 | Drawing S05 | | 25/01/21 | The bracing connection plate are connected to the web, has this been checked?<br>23/4 - calcs to be reviewed. | | There are stiffeners and also struts very close to the connection and excentricity is resisted by strut section See page RFI-5 | 28/05/21 | Connection has not been reviewed for eccentricity. | Closed | 15/06/21 | The roof level bracing/ struts shifted up to align with the UB top flange to reduce excentricity. Drawings revised to reflect this |
| 18 | Drawing S05 | | 25/01/21 | 100SHS welds, bolts cleat size to be defined | | | 23/04/21 | Size noted | Closed | | |
| 19 | Drawing S07A | | 25/01/21 | Section AA, this element adjacent to the door should be detailed as a column.<br>23/4 - no update | | Refer revised drawing 07A | 28/05/21 | Noted | Closed | | |
| 20 | Drawing S07A | | 25/01/21 | Trimming around openings in the precast, trimmer bars either side should be added.<br>23/4 - no update | | Refer revised drawing 07A | 28/05/21 | Noted | Closed | | |
| 21 | Drawing S08 | | 25/01/21 | Section AA, this element adjacent to the door should be detailed as a column. Also the stirrups should extend above and below the opening at least 300mm<br>23/4 - no update | | Refer revised drawing 08 | 28/05/21 | Noted | Closed | | |

| N. | Doc reference | Importance | Reviewer comment | | Designer response | | Reviewer comments 2 | | Status | Designer response 2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Date | Comment | Date | Comment | Date | Comment | | Date | Comment | |
| 22 | Drawings S09 | | 25/01/21 | I don't think there is a panel 29?<br>23/4 - detail has been removed without being clouded. Not sure if this is correct? Please review and confirm? | | There is no panel 29 this was a typing error on the original drawings | 28/05/21 | Noted | Closed | | | |
| 23 | Drawing S10 | | 25/01/21 | Panel P10 (and other similar panels) the 2-HD16 bars should be confined similar to the grout ducts?<br>23/4 - no update | | Refer to revised drawings S10,S11 | 28/05/21 | Noted | Closed | | | |
| 24 | Drawing S10 | | 25/01/21 | Panel P10 (and other similar panels) are the 2-HD16 bars developed? | | | 23/04/21 | hooks added | Closed | | | |
| 25 | | | 29/01/21 | Please provide the geotechnical report<br>23/4 - DFR states 300kPa ultimate bearing, however not noted on drawings and geotech report has not been provided for our review. | | There was no Geotech report as such. We went to site and attempted to undertake a series of scala penetrometer tests but the entire area is a siltstone rock. The site is adjacent to the existing reservoir and the area was excavated at the same time for an adjacent reservoir space. The foundation trenches were excavated down into this rock which is rippable with a large excavator which is what they used. The 300KPa geotechnical ultimate bearing used in this project was derived from a geotech report for another project some 700-800m away from the site in an outcrop of the same rock material. Copy of the report and photo of exposed rock in the excavation for that | 28/05/21 | This is not good practice. This structure is more critical and important than a house and a site specific geotech report is probably justified. | Closed | 15/06/21 | Agreed that Kensington Consulting will undertake scala tests and record for perimeter foundations | |
| 26 | | | 29/01/21 | Is there any back fill required under the slab?<br>23/4 - no update | | Minor 100mm depth of compacted hardfill beneath the raised slab under office area. | 28/05/21 | This would be good practice, but would depend on your ground conditions. | Closed | 15/06/21 | minimal Compacted depth of hardfill over the basement rock effectively as a blinding layer to the rock surface to lay DPC and construct slab | |
| 27 | Drawings S05 | | 29/01/21 | What bolt tightening is required for the splice connection, snug, TF?<br>23/4 - no update | | Snug tight . Added to drawing section for clarity however Steelwork general notes on sheet S02 also covered this. | 28/05/21 | The SCNZ standard connections call up TB bolts for this type of splice. | Closed | 15/06/21 | Bolts changed to T/B on drawing S05 | bolted |
| 28 | Drawing S02 | | 29/01/21 | Have the secondary effects of the precast loading the 250PFC edge beam been reviewed?<br>23/4 - calcs to be reviewed. | | The 250 PFC along the eave is mainly under one action that is out of plane of the walls (mainly self weight as vertical load). The lateral deformation of these beams are checked See RFI-4 | 28/05/21 | Eccentricities from the bolt to beam centriod needs to be considered. | Closed | 15/06/21 | refer to previous comments RF4 and the revised calculations | |
| 29 | PS1 | | 28/05/21 | Why is a different company signing the PS1 than the design engineer? | | | 9/07/2021<br>15/07/2021 | Kensington Consulting via Marshall Projects to confirm engineer of record (ie liable to Gore DC via Marshalls for defects, warranty period, PI insurance etc).<br>Letter stating Steve Knowles of SJGD Structures as signatory to the PS1 is covered by Kensington Consulting's PI Insurance. | Closed | 15/06/21 | ps1 revised to reflect work being undertaken on behalf of Kensington Consulting | |
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engineering new zealand

New Zealand Institute of Architects Incorporated

ACENZ

Building Code Clause(s) B1 - Structure

# PRODUCER STATEMENT – PS1 – DESIGN

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

**ISSUED BY:** SJ Gordon Design Ltd on behalf of Kensington Consulting
(Design Firm)

**TO:** Marshall Projects
(Owner/Developer)

**TO BE SUPPLIED TO:** Gore District Council
(Building Consent Authority)

**IN RESPECT OF:** Gore Water Treatment Plant
(Description of Building Work)

**AT:** Wentworth St, East Gore
(Address)

Town/City: Gore (Address) **LOT** ..... **DP** ..... **SO** .....

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

Design services for the primary building structure as identified in the attached Design Features Report

(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 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:

Gore Water Treatment Plant Upgrade - New Building and numbered 20080 Sheets S01 to S13;
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 NZS3604 Good ground
(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, Steven David Knowles (Name of Design Professional) am: ■ CPEng 151244 # ☐ Reg Arch ..... #

I am a member of: ■ Engineering New Zealand ☐ NZIA and hold the following qualifications: BE, CPEng, CMEngNZ
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** Steven David Knowles (Name of Design Professional) (Signature) Steven Knowles Digitally signed by Steven Knowles Date: 2021.03.18 21:20:40 +13'00'

**ON BEHALF OF** SJ Gordon Design Ltd on behalf of Kensington Consulting (Design Firm) Date 14 July 2021

*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.

SJGD structures

S J Gordon Design Ltd

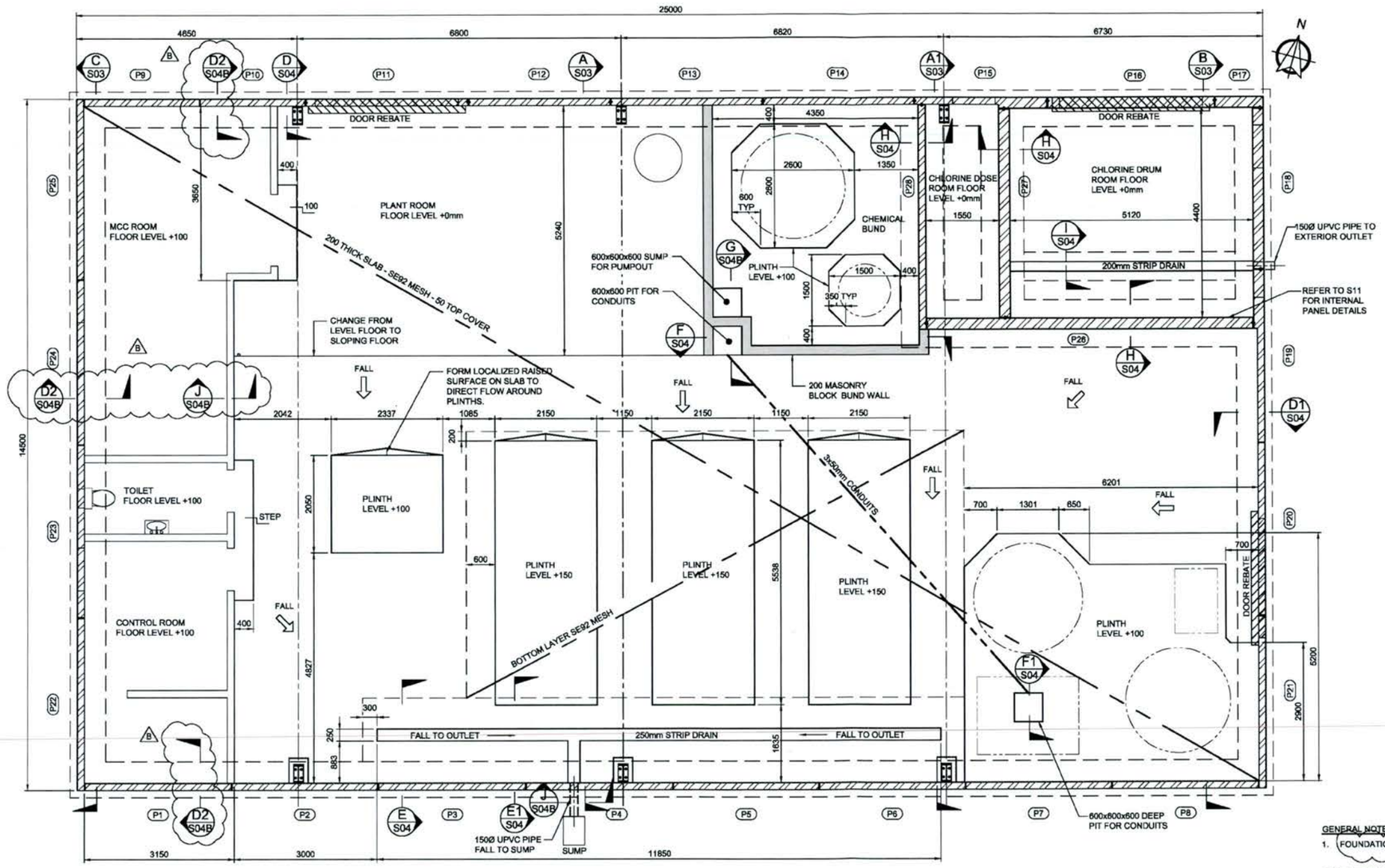
| | | | |
|---|---|---|---|
| To | Gore District Council | Page | 1 of 1 |
| CC | | | |
| From | Steven Knowles | | |
| Ref No | 4248 | Date | 14 July 2021 |

# Attachment to PS1 – 14 July 2021

## - Drawings

Gore Water Treatment Plant Upgrade – New Building

| Project Number | Drawing Number | Revision |
|---|---|---|
| 20080 | S01 | B |
| 20080 | S02 | B |
| 20080 | S03 | B |
| 20080 | S04 | C |
| 20080 | S04B | C |
| 20080 | S05 | E |
| 20080 | S06 | A |
| 20080 | S07A | B |
| 20080 | S07B | B |
| 20080 | S08 | B |
| 20080 | S09 | A |
| 20080 | S10 | B |
| 20080 | S11 | B |
| 20080 | S12 | A |
| 20080 | S13 | C |




## FLOOR PLAN

1:50 at A1
1:100 at A3

**GENERAL NOTES**

1. FOUNDATION BEARING BASED ON 300kPa GEOTECHNICAL ULTIMATE CAPACITY.

**CONCRETE NOTES**

1. CONCRETE STRENGTH SHALL BE 25 MPa AT 28 DAYS FOR FOUNDATIONS / FLOOR CONCRETE AND MASONRY BLOCK GROUT. THE FLOORSLABS SHALL ALSO CONTAIN MIN 1Kg/m³ POLYPROPYLENE FIBRE.
2. CONCRETE STRENGTH SHALL BE 40 MPa AT 28 DAYS FOR PRECAST PANELS.
3. ALL STRUCTURAL CONCRETE SHALL BE CERTIFIED "SPECIAL GRADE" WITH AQURON 300 ADDED AS PER MANUFACTURES SPECIFICATIONS.
4. REINFORCING LAP LENGTHS: HD10 - 700 mm, HD12 - 850 mm, HD16 - 1,050 mm, MESH - 260 mm
5. ALL REINFORCING STEEL SHALL HAVE 75mm MINIMUM COVER IN FOUNDATIONS, UNLESS NOTED OTHERWISE.
6. PRECAST MINIMUM COVER - 35mm 55mm COVER TO INTERIOR FACES OF CHLORINE DRUM ROOM WALLS / ROOF.
7. BAR DESIGNATION: HD = GRADE 500E DEFORMED BARS; D = GRADE 300E DEFORMED BARS; R = GRADE 300E ROUND BARS; RB = GRADE 500 (REID BAR) DEFORMED BARS.
8. BASE PLATE GROUTING - USE SIKA GROUT 212 OR APPROVED EQUIVALENT.
9. STARTER BAR GROUTING - USE RAMSET EPCON C6 OR APPROVED EQUIVALENT.

| Rev No | REVISION DESCRIPTION | DRAWN | APPROVED | DATE |
|---|---|---|---|---|
| B | NOTES MODIFIED | ITB | DK | 12:5:21 |
| A | ISSUED FOR CONSTRUCTION | ITB | DK | 18:3:21 |
| 3 | PLINTHS MODIFIED | ITB | DK | 9:3:21 |
| 2 | UPVC PIPE AND SUMPS ADDED | ITB | DK | 16:12:20 |
| 1 | PLINTH RELOCATED | ITB | DK | 4:12:20 |
| 0 | ISSUED FOR CONSENT / CONSTRUCTION | ITB | DK | 1:12:20 |

| | BY | DATE |
|---|---|---|
| DESIGNED | DK | 10:20 |
| DESIGN CHECK | DK | 11:20 |
| DRAWN | ITB | 10:20 |
| APPROVED | | |

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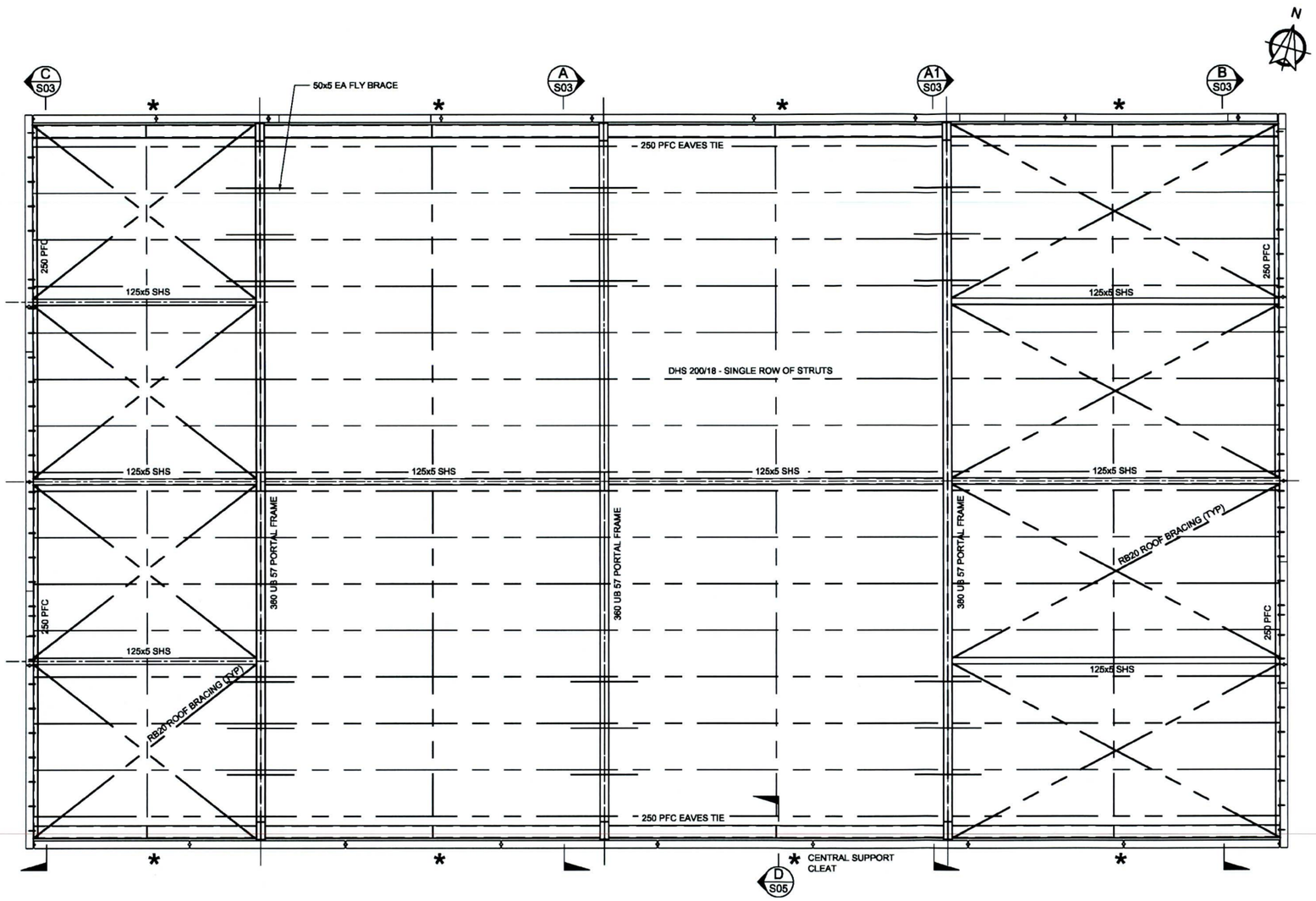
GORE WATER TREATMENT PLANT
UPGRADE - NEW BUILDING
FLOOR PLAN AND PANEL LAYOUT

STATUS: CONSTRUCTION

| SCALE AT A1 | | |
|---|---|---|
| PROJECT NUMBER | DRAWING NUMBER | REV. |
| 20080 | S01 | B |




## STEELWORK PLAN

1:50 at A1
1:100 at A3

ROOF

ROOF STRUCTURE SHALL BE AS FOLLOWS -
ROOFING KARAKA MARSHALL 6 LINE PROFILE.
THERMAKRAFT AUSMESH SAFETY NETTING.
COVERTEK 407 ROOF UNDERLAY.
PINK BATTS R1.8 ROOF BLANKET.
TIMBER PURLINS SCREWED.
COVERTEK 401 ROOF UNDERLAY UNDER ROOFING. REFER TO S03 FOR DETAIL.

STEELWORK NOTES

1. THE CONTRACTOR SHALL CONFIRM ALL DIMENSIONS AND LEVELS ON SITE PRIOR TO COMMENCING CONSTRUCTION.
2. ALL PROPRIETARY FITTINGS SHALL BE INSTALLED STRICTLY TO MANUFACTURERS SPECIFICATIONS.
3. ALL STEELWORK SHALL BE CLEANED TO SA2.5 AND PAINTED IN A SHOP ENVIRONMENT. REFER TO PAINT SPECIFICATION FOR SPECIFIC DETAILS TO ACHIEVE MIN. C4 ATMOSPHERIC CORROSIVE CATEGORY.
4. ALL SURFACES TO BE WELDED SHALL BE CLEANED OF ALL FOREIGN MATTER TO 50mm EACH SIDE OF THE WELD.
5. ALL WELDS CONTINUOUS CATEGORY SP E41XX/W40X UNLESS NOTED OTHERWISE.
6. ALL WELDING SHALL BE 6mm FILLET WELDS ALL ROUND UNLESS NOTED OTHERWISE.
7. ALL STRUCTURAL STEEL OPEN SECTION SHALL BE GRADE 300. ALL CLOSED SECTION SHS AND RHS SHALL BE GRADE 350. ALL BOLTS SHALL BE GALVANISED GRADE 8.8 WITH THREAD NOT PERMITTED WITHIN THE SHEAR PLANE AND TIGHTENED TO A SNUG TIGHT CONDITION (N/S). U.N.O.

| Rev No | REVISION DESCRIPTION | DRAWN | APPROVED | DATE |
|---|---|---|---|---|
| B | NOTE MODIFIED | ITB | DK | 11:6:21 |
| A | ISSUED FOR CONSTRUCTION | ITB | DK | 18:3:21 |
| 1 | STRUCTS WAS 100x6 SHS NOW 125x5 SHS | ITB | DK | 9:3:21 |
| 0 | ISSUED FOR CONSENT / CONSTRUCTION | ITB | DK | 1:12:20 |

| | BY | DATE |
|---|---|---|
| DESIGNED | DK | 10:20 |
| DESIGN CHECK | DK | 11:20 |
| DRAWN | ITB | 10:20 |
| APPROVED | | |

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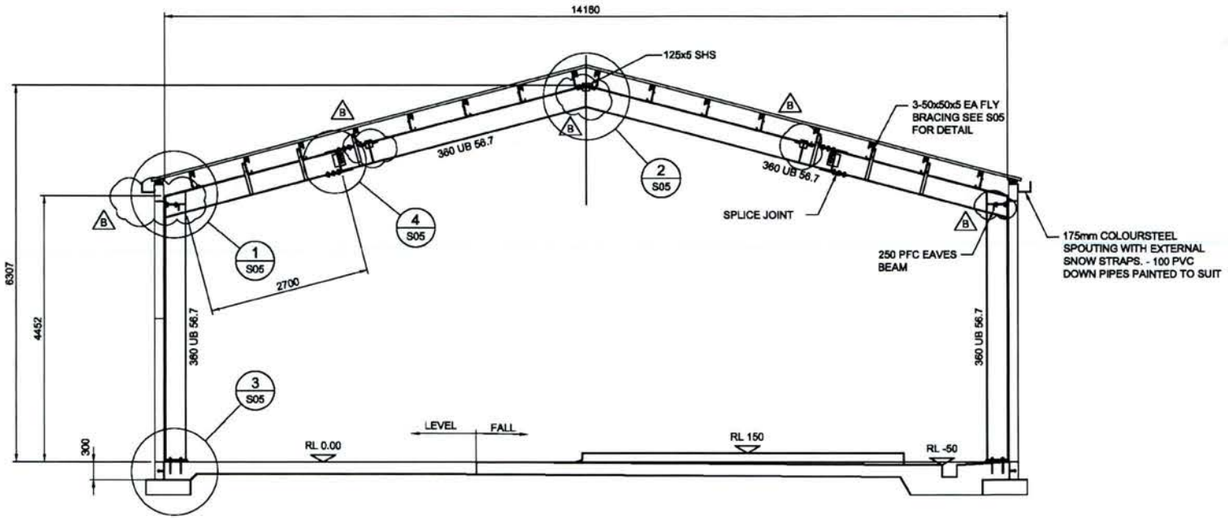
GORE WATER TREATMENT PLANT
UPGRADE - NEW BUILDING
STRUCTURAL STEEL PLAN

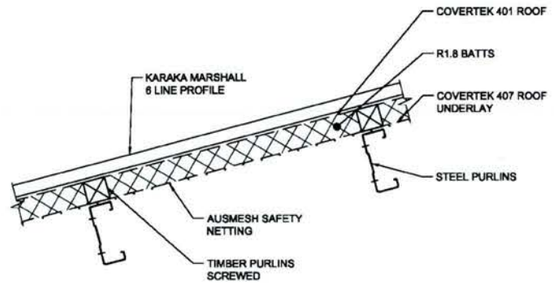
STATUS: CONSTRUCTION

SCALE AT A1

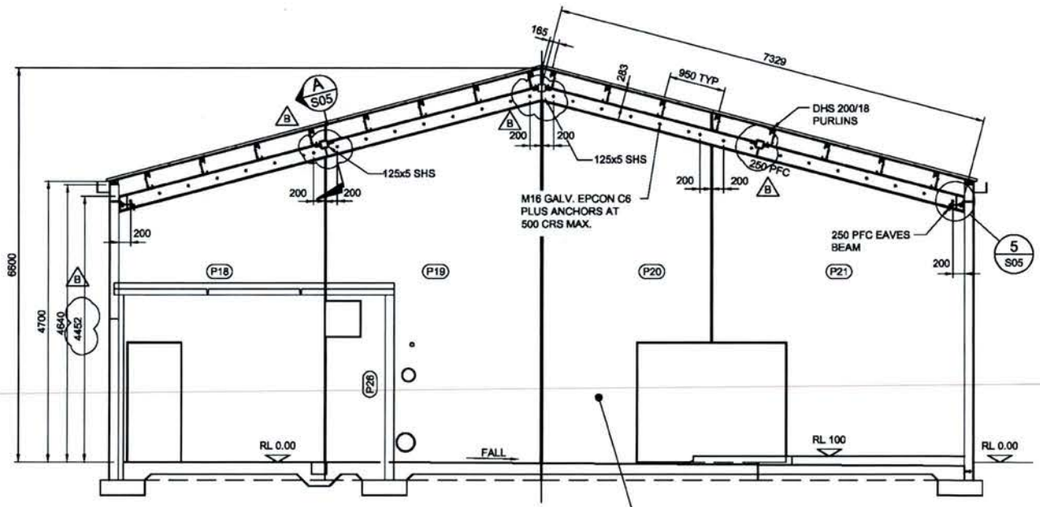
| PROJECT NUMBER | DRAWING NUMBER | REV. |
|---|---|---|
| 20080 | S02 | B |



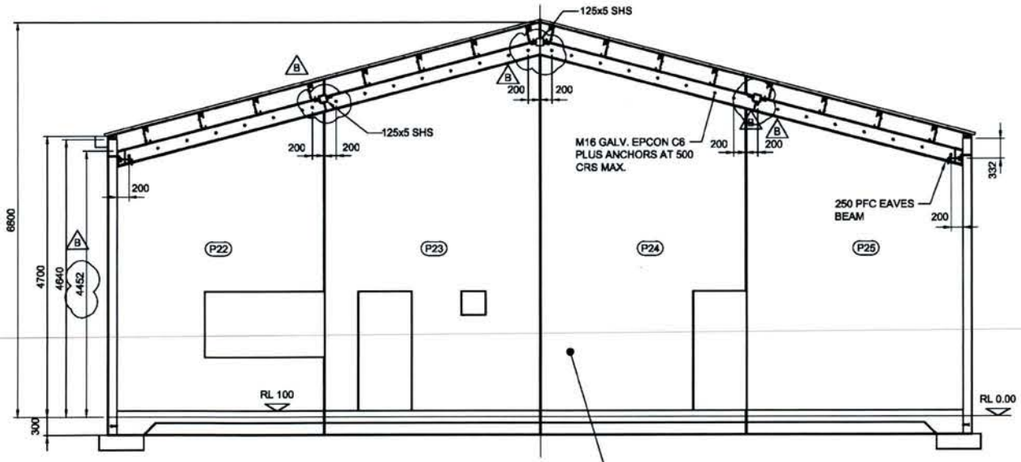

SECTION A S01 & A1 S01
1:50 at A1
1:100 at A3




ROOF DETAIL
1:10 at A1
1:20 at A3




SECTION B S01
1:50 at A1
1:100 at A3




SECTION C S01
1:50 at A1
1:100 at A3

| Rev No | REVISION DESCRIPTION | DRAWN | APPROVED | DATE |
|---|---|---|---|---|
| B | SHS RELOCATED | ITB | DK | 11:6:21 |
| A | ISSUED FOR CONSENT | ITB | DK | 18:3:21 |
| 1 | STEELWORK MODIFIED | ITB | DK | 9:03:21 |
| 0 | ISSUED FORCONSENT / CONSTRUCTION | ITB | DK | 1:12:20 |

| | BY | DATE |
|---|---|---|
| DESIGNED | DK | 10:20 |
| DESIGN CHECK | DK | 11:20 |
| DRAWN | ITB | 10:20 |
| APPROVED | | |

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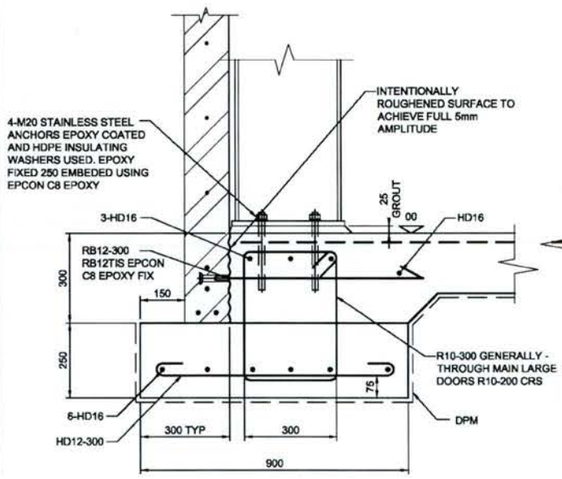
GORE WATER TREATMENT PLANT
UPGRADE - NEW BUILDING
SECTIONS

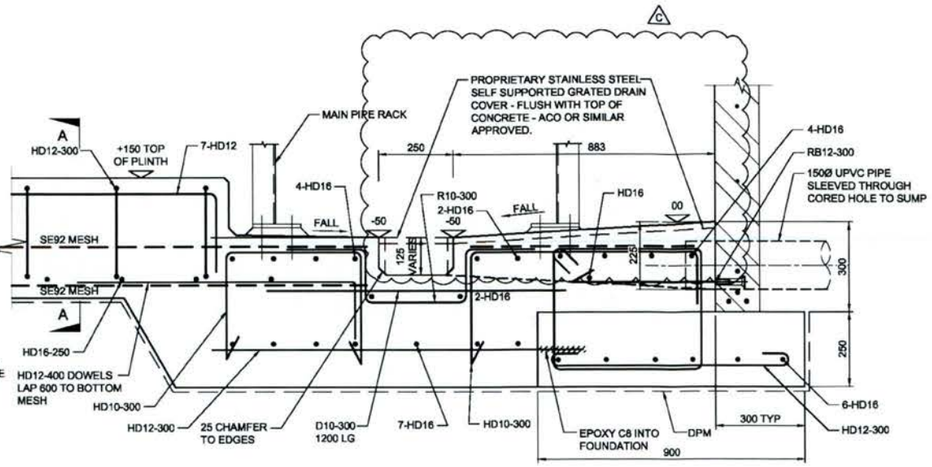
STATUS
CONSTRUCTION

| SCALE AT A1 | | |
|---|---|---|
| PROJECT NUMBER | DRAWING NUMBER | REV. |
| 20080 | S03 | B |

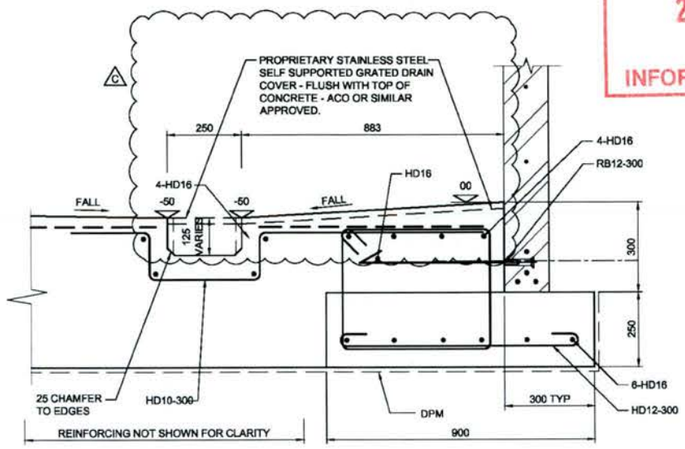
PLOT DATE 11-Jun-21
ORIGINAL SIZE (A1) DO NOT SCALE



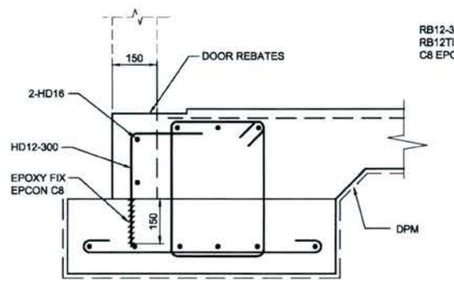

SECTION D S01 & D1 S01 SIMILAR EXCEPT NO PORTAL FRAME
1:10 at A1
1:20 at A3



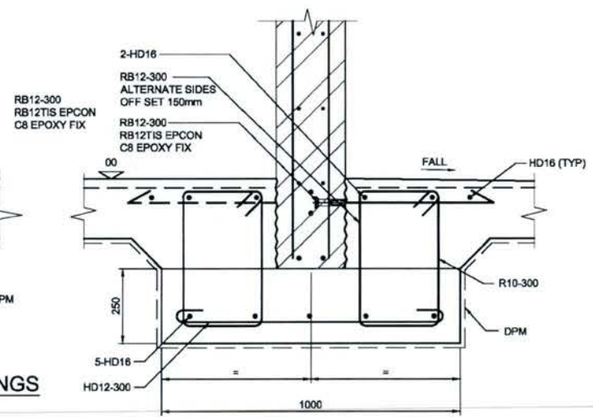

SECTION E1 S01
1:10 at A1
1:20 at A3

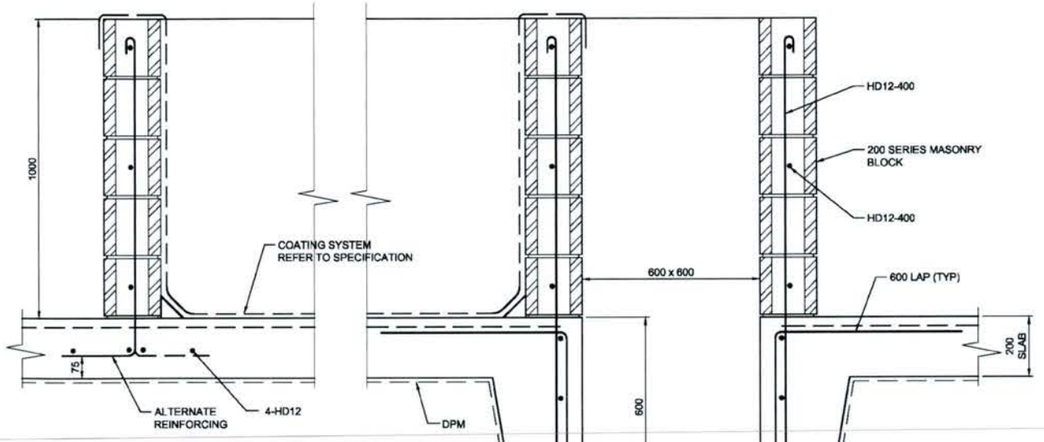



SECTION E S01
1:10 at A1
1:20 at A3



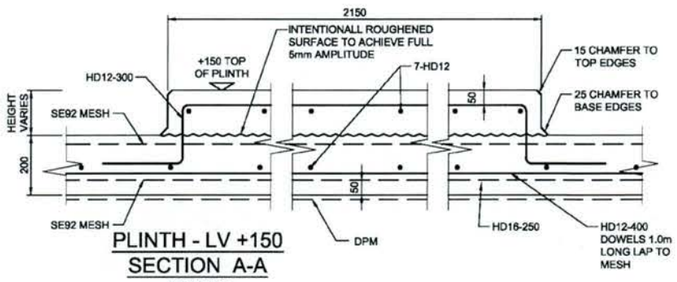

SECTION AT LARGE DOOR OPENINGS
1:10 at A1
1:20 at A3



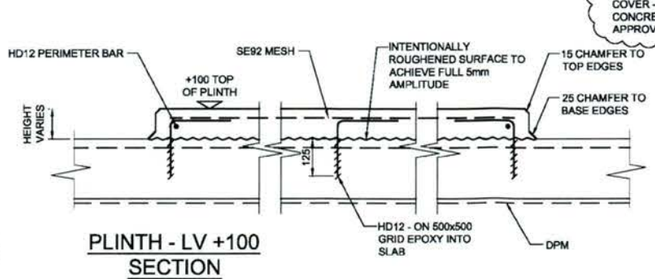




SECTION F S01 & F1 S01 SIMILAR FOR PIT
1:10 at A1
1:20 at A3

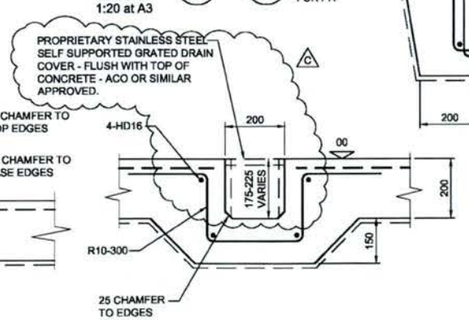
SECTION H S01
1:10 at A1
1:20 at A3



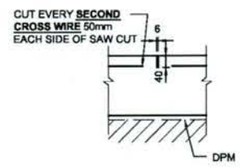

PLINTH - LV +150
SECTION A-A
1:10 at A1
1:20 at A3




PLINTH - LV +100
SECTION
1:10 at A1
1:20 at A3




SECTION I S01 CHLORINE ROOM DRAIN
1:10 at A1
1:20 at A3




SAW CUT JOINT
SCALE 1:10

ORIGINAL SIZE (A1) DO NOT SCALE

| Rev No | REVISION DESCRIPTION | DRAWN | APPROVED | DATE |
|---|---|---|---|---|
| C | FLOOR DRAINAGE GRATING ADDED | ITB | DK | 12:6:21 |
| B | ANCHORS AND DRAIN MODIFIED | ITB | DK | 12:5:21 |
| A | ISSUED FOR CONSTRUCTION | ITB | DK | 18:3:21 |
| 2 | SECTION 'E' AND MODIFIED & EPOXY C8 ADDED | ITB | DK | 9:3:21 |
| 1 | 150 UPVC ADDED | ITB | DK | 16:12:20 |
| 0 | ISSUED FOR CONSENT / CONSTRUCTION | ITB | DK | 1:12:20 |

| | BY | DATE |
|---|---|---|
| DESIGNED | DK | 10:20 |
| DESIGN CHECK | DK | 11:20 |
| DRAWN | ITB | 10:20 |
| APPROVED | | |

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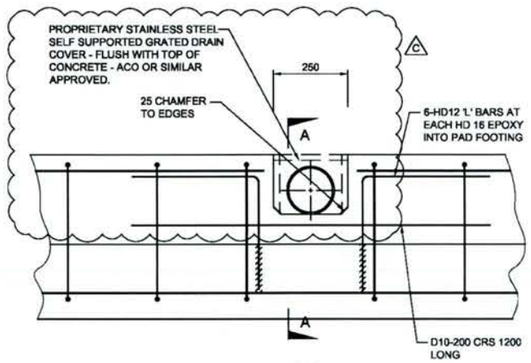
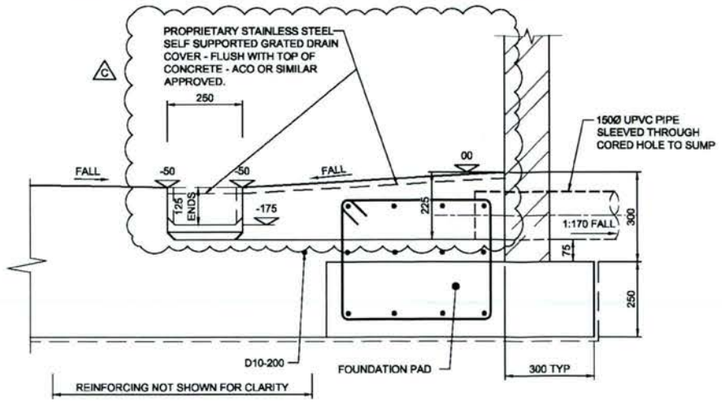
GORE WATER TREATMENT PLANT
UPGRADE - NEW BUILDING
SECTIONS AND DETAILS

STATUS
CONSTRUCTION

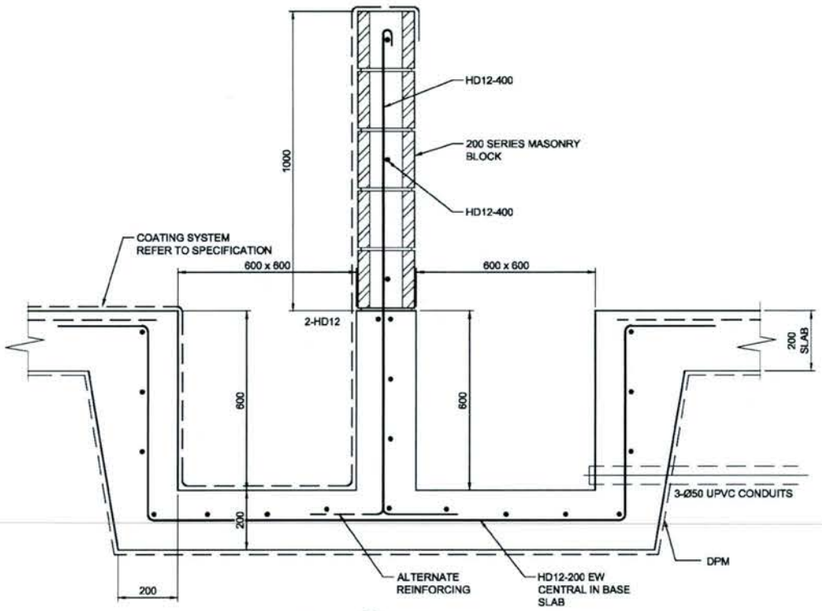
| SCALE AT A1 | | |
|---|---|---|
| PROJECT NUMBER | DRAWING NUMBER | REV. |
| 20080 | S04 | C |



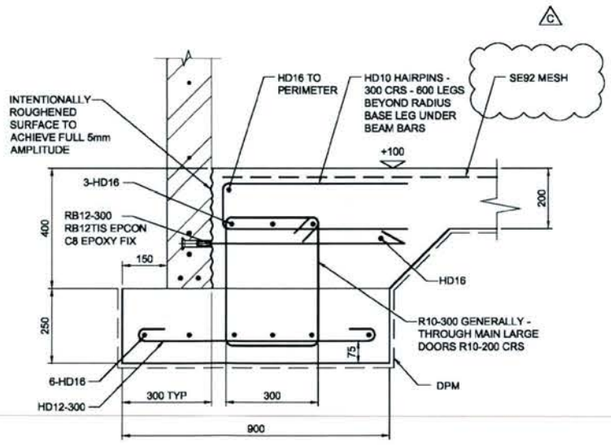

SECTION J S01
1:10 at A1
1:20 at A3




SECTION A-A
SCALE 1:10

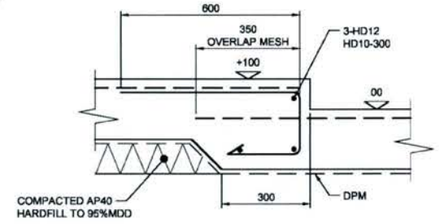



SECTION G S01
1:10 at A1
1:20 at A3




RAISED SLAB LEVEL PERIMTER DETAIL

SECTION D2 S01
1:10 at A1
1:20 at A3




INTERIOR STEP IN FLOOR DETAIL

SECTION J S01
1:10 at A1
1:20 at A3

| Rev No | REVISION DESCRIPTION | DRAWN | APPROVED | DATE |
|---|---|---|---|---|
| B | SECTIONS D2 & J ADDED | ITB | DK | 13:5:21 |
| A | ISSUED FOR CONSTRUCTION | ITB | DK | 18:3:21 |

| | BY | DATE |
|---|---|---|
| DESIGNED | DK | 10:20 |
| DESIGN CHECK | DK | 11:20 |
| DRAWN | ITB | 10:20 |
| APPROVED | | |

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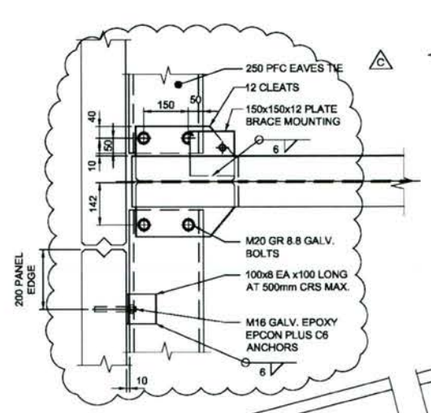
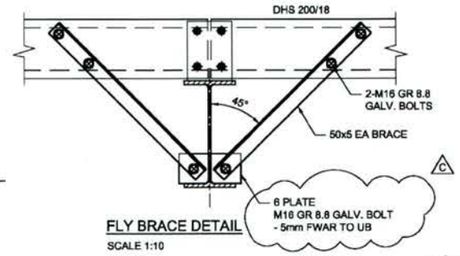
GORE WATER TREATMENT PLANT
UPGRADE - NEW BUILDING
SECTIONS AND DETAILS

STATUS: CONSTRUCTION

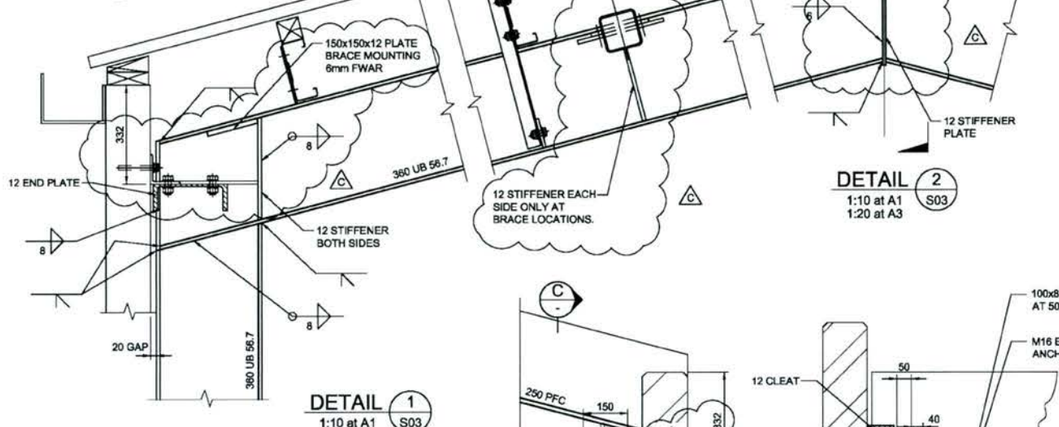
| SCALE AT A1 | | |
|---|---|---|
| PROJECT NUMBER | DRAWING NUMBER | REV. |
| 20080 | S04B | B |

ORIGINAL SIZE (A1) DO NOT SCALE PLOT DATE 14-Jun-21



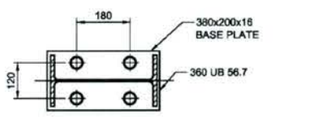




FLY BRACE DETAIL
SCALE 1:10

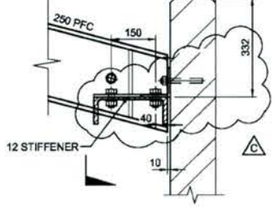



DETAIL 2 S03
1:10 at A1
1:20 at A3

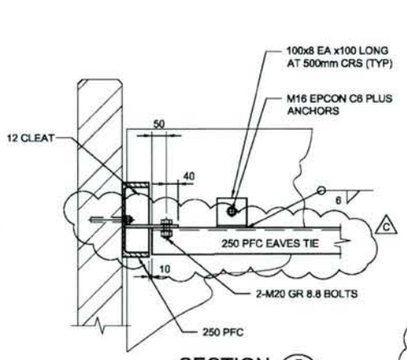
DETAIL 1 S03
1:10 at A1
1:20 at A3



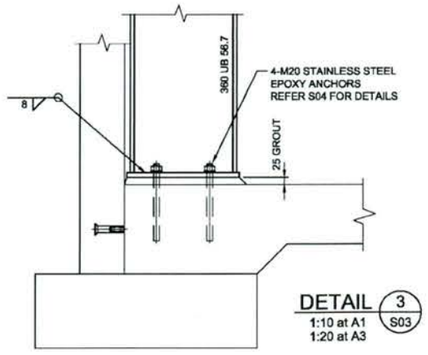

BASE PLATES
SCALE 1:10



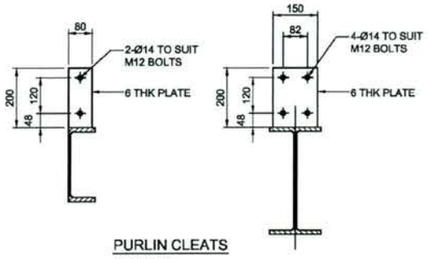

DETAIL 5 S03
1:10 at A1
1:20 at A3



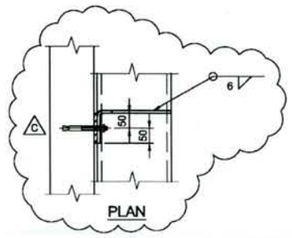

SECTION C
1:10 at A1
1:20 at A3



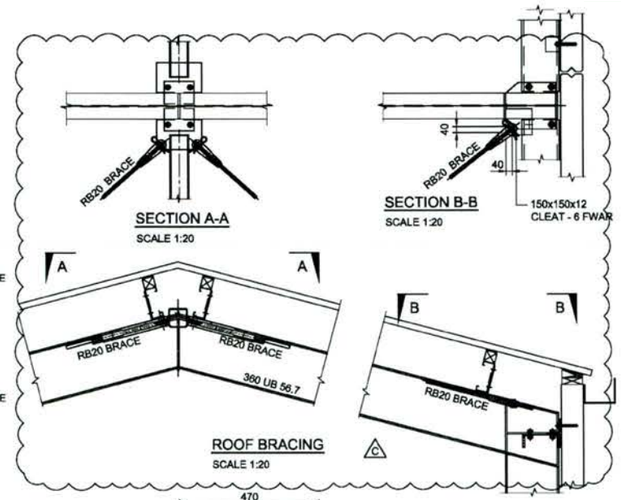

DETAIL 3 S03
1:10 at A1
1:20 at A3

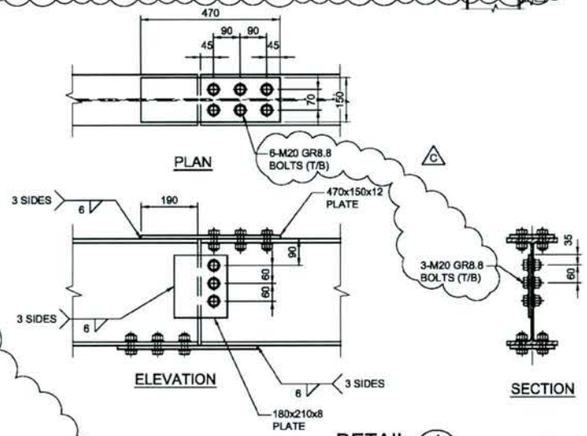



PURLIN CLEATS
SCALE 1:10

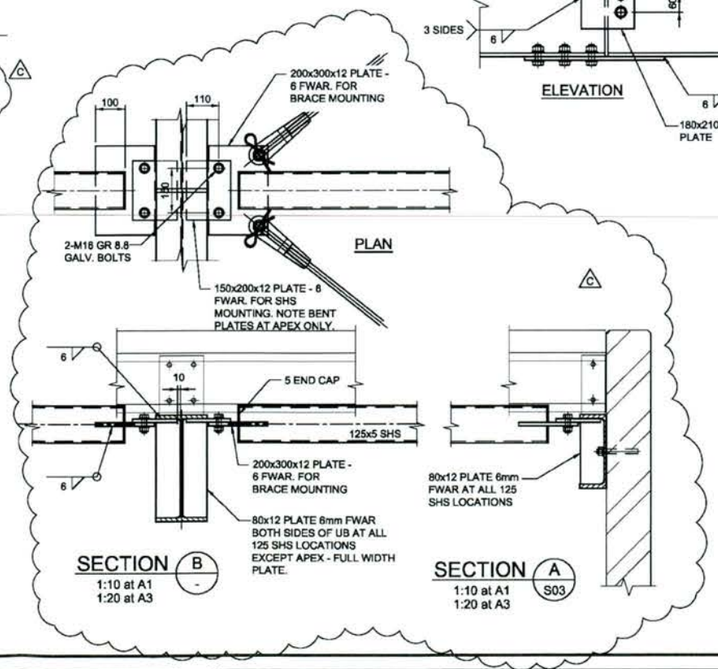



SECTION D S02
1:10 at A1
1:20 at A3




DETAIL 4 S03 SPLICE DETAIL
1:10 at A1
1:20 at A3




SECTION B S03
1:10 at A1
1:20 at A3

SECTION A S03
1:10 at A1
1:20 at A3

| | | | | |
|---|---|---|---|---|
| C | STEELWORK MODIFIED | ITB | DK | 9:8:21 |
| B | BOLTS MODIFIED | ITB | DK | 12:5:21 |
| A | ISSUED FOR CONSTRUCTION | ITB | DK | 18:3:21 |
| 1 | GENERAL ALTERATIONS | ITB | DK | 9:3:21 |
| 0 | ISSUED FOR CONSENT / CONSTRUCTION | ITB | DK | 1:12:20 |
| Rev No | REVISION DESCRIPTION | DRAWN | APPROVED | DATE |

| | BY | DATE |
|---|---|---|
| DESIGNED | DK | 10:20 |
| DESIGN CHECK | DK | 11:20 |
| DRAWN | ITB | 10:20 |
| APPROVED | | |

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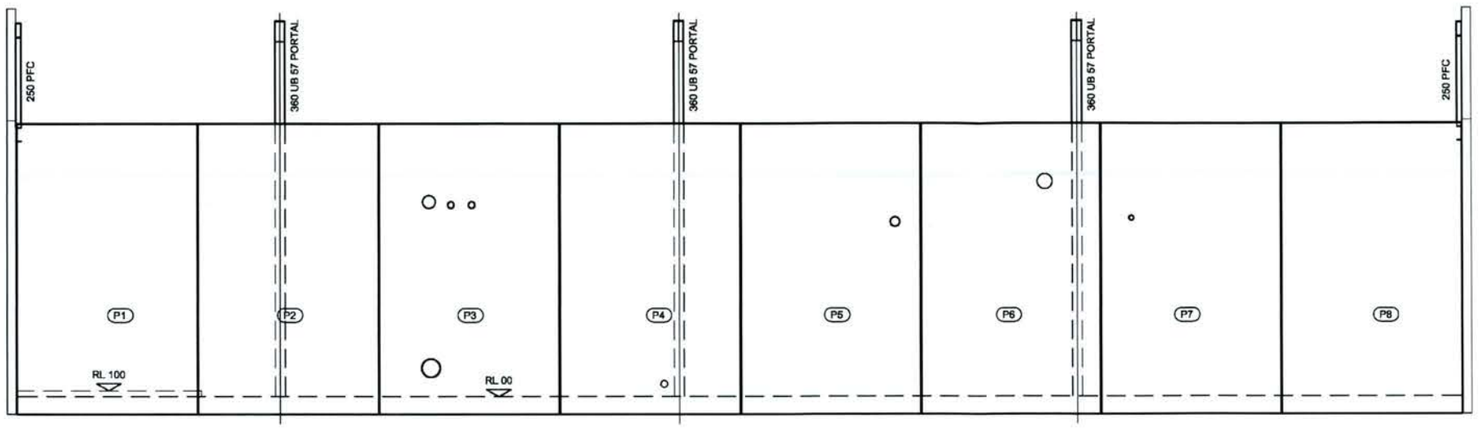
GORE WATER TREATMENT PLANT
UPGRADE - NEW BUILDING
SECTIONS AND DETAILS

STATUS
CONSTRUCTION

| SCALE AT A1 | | |
|---|---|---|
| PROJECT NUMBER | DRAWING NUMBER | REV. |
| 20080 | S05 | C |



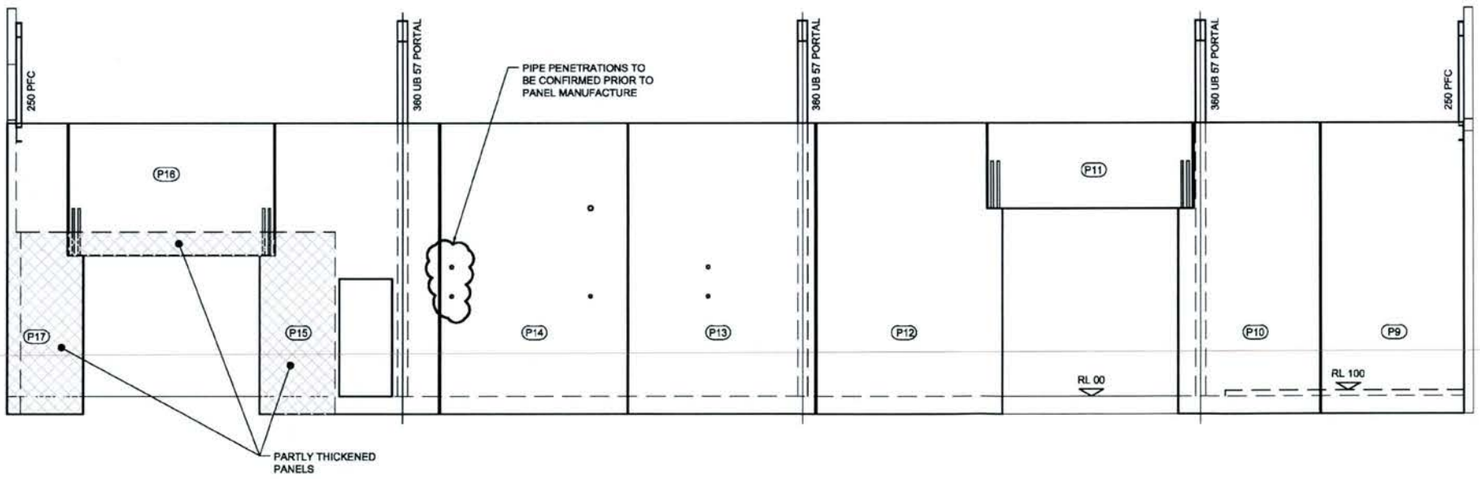
ORIGINAL SIZE (A1) DO NOT SCALE




## SOUTH WALL ELEVATION

REFER TO S10 FOR PANEL DETAILS

1:50 at A1
1:100 at A3




## NORTH WALL ELEVATION

REFER TO S09 FOR PANEL DETAILS

1:50 at A1
1:100 at A3

| Rev No | REVISION DESCRIPTION | DRAWN | APPROVED | DATE |
|---|---|---|---|---|
| A | ISSUED FOR CONSTRUCTION | ITB | DK | 18:3:21 |

| | BY | DATE |
|---|---|---|
| DESIGNED | DK | 10:20 |
| DESIGN CHECK | DK | 11:20 |
| DRAWN | ITB | 10:20 |
| APPROVED | | |

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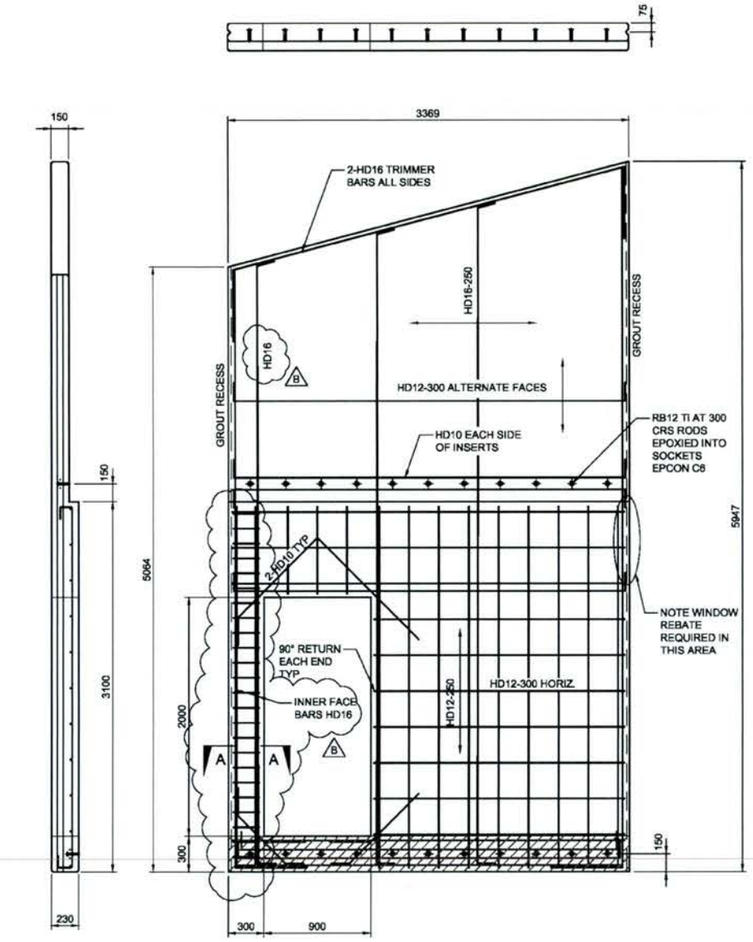
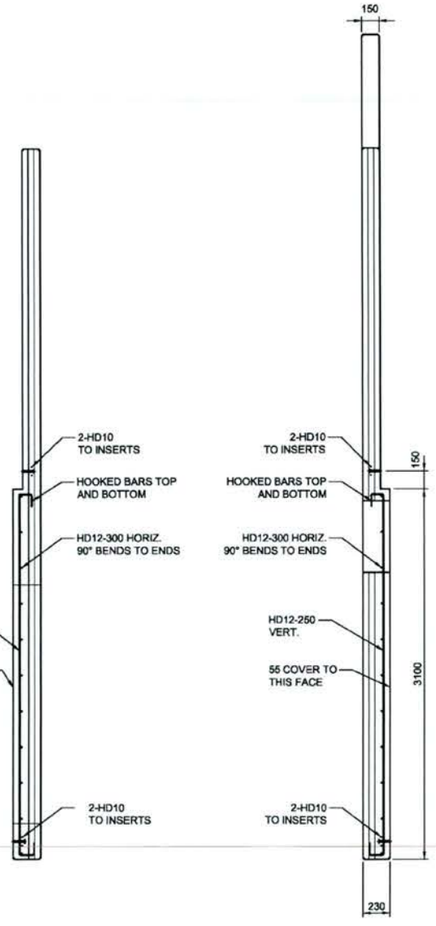
GORE WATER TREATMENT PLANT
UPGRADE - NEW BUILDING
PRECAST PANELS
NORTH & SOUTH WALL ELEVATIONS

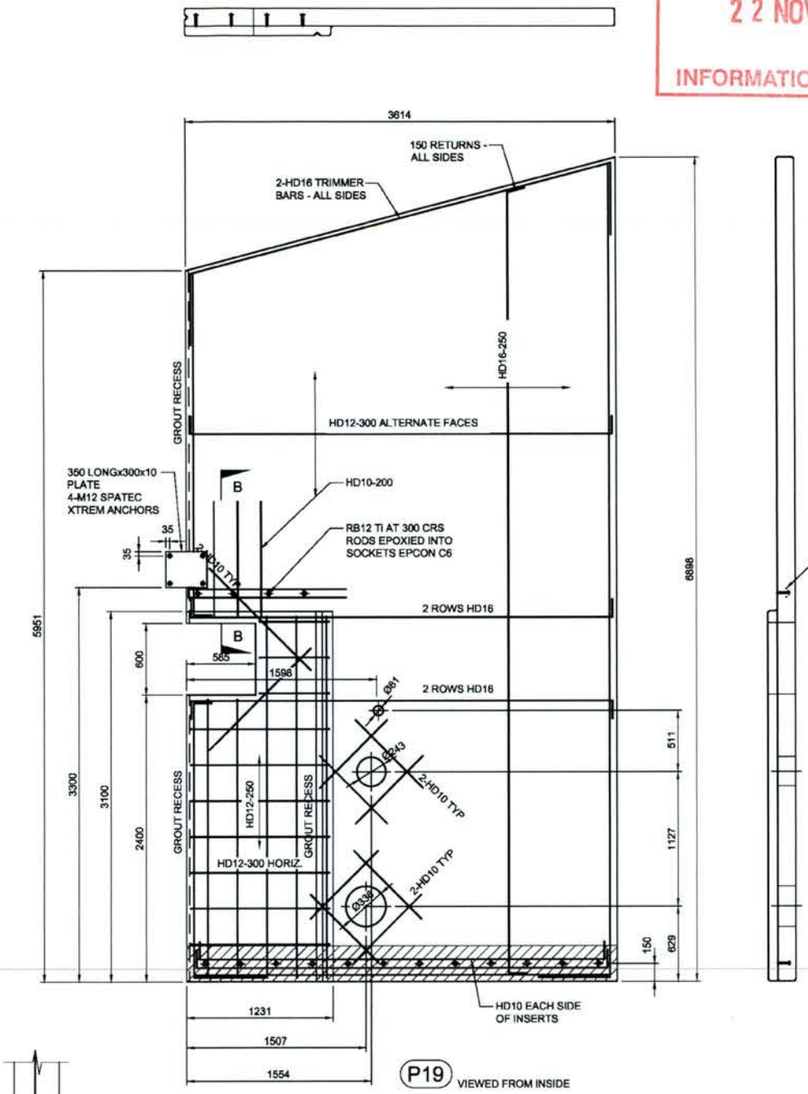
STATUS: CONSTRUCTION

| SCALE AT A1 | PROJECT NUMBER | DRAWING NUMBER | REV. |
|---|---|---|---|
| | 20080 | S06 | A |



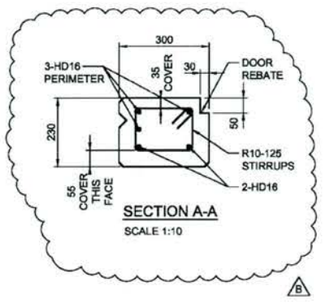

P18 VIEWED FROM INSIDE



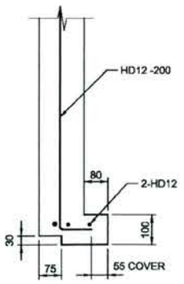




P19 VIEWED FROM INSIDE

NOTE - REBATES TO DOORS AND WINDOWS NOT SHOWN - REFER TO S09 FOR DETAILS




SECTION A-A
SCALE 1:10




SECTION B-B
SCALE 1:10

| | | | | |
|---|---|---|---|---|
| B | SECTION A-A MODIFIED | ITB | DK | 12:5:21 |
| A | ISSUED FOR CONSTRUCTION | ITB | DK | 18:3:21 |
| 1 | GENERAL ALTERATIONS | ITB | DK | 15:3:21 |
| 0 | ISSUED FOR CONSENT / CONSTRUCTION | ITB | DK | 1:12:20 |
| Rev No | REVISION DESCRIPTION | DRAWN | APPROVED | DATE |

| | BY | DATE |
|---|---|---|
| DESIGNED | DK | 10:20 |
| DESIGN CHECK | DK | 11:20 |
| DRAWN | ITB | 10:20 |
| APPROVED | | |

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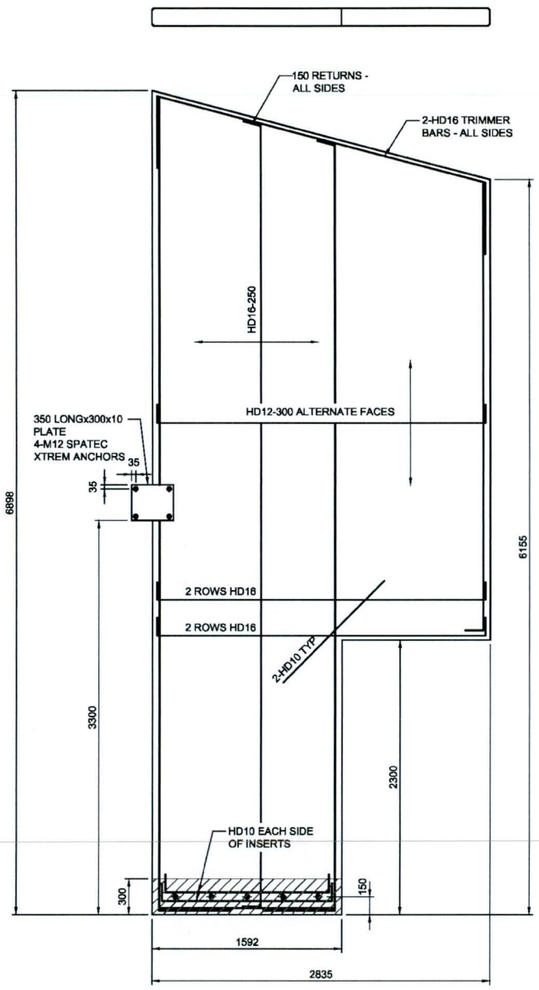
GORE WATER TREATMENT PLANT
UPGRADE - NEW BUILDING
EAST WALL PRECAST PANELS
DETAILS

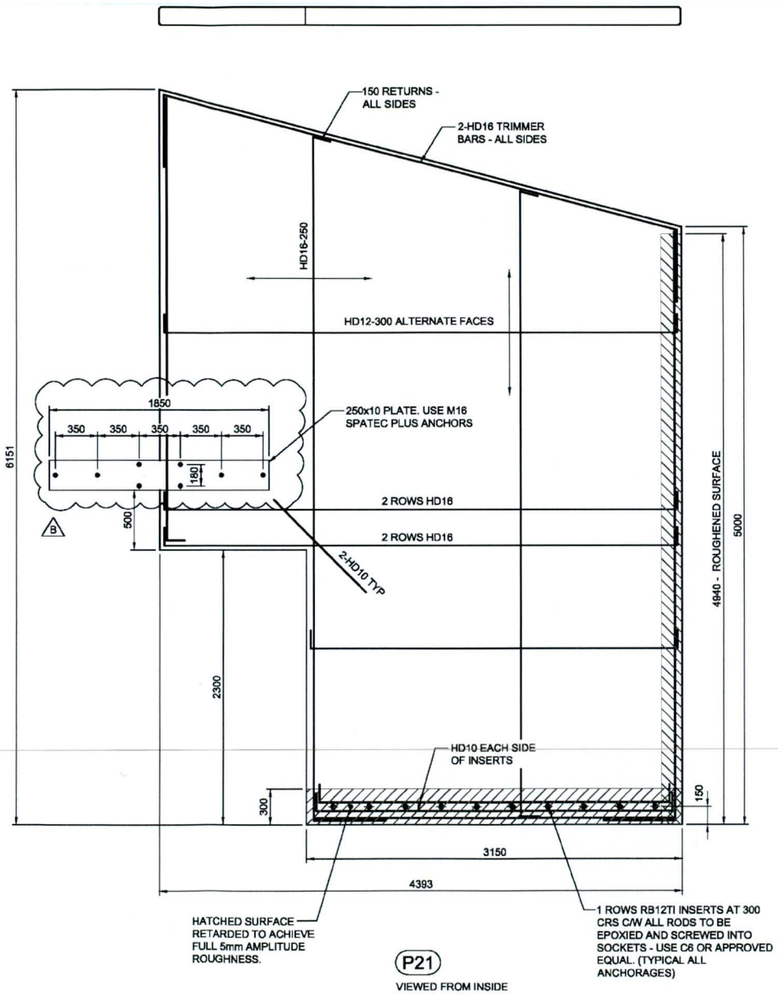
STATUS
CONSTRUCTION

SCALE AT A1

| PROJECT NUMBER | DRAWING NUMBER | REV. |
|---|---|---|
| 20080 | S07A | B |




P20
VIEWED FROM INSIDE




P21
VIEWED FROM INSIDE

## EAST WALL PANELS

1:25 at A1
1:50 at A3

| Rev No | REVISION DESCRIPTION | DRAWN | APPROVED | DATE |
|---|---|---|---|---|
| B | PLATE ADDED | ITB | DK | 9:6:21 |
| A | ISSUED FOR CONSTRUCTION | ITB | DK | 18:3:21 |
| 1 | GENERAL ALTERATIONS | ITB | DK | 15:3:21 |
| 0 | ISSUED FOR CONSENT / CONSTRUCTION | ITB | DK | 1:12:20 |

| | BY | DATE |
|---|---|---|
| DESIGNED | DK | 10:20 |
| DESIGN CHECK | DK | 11:20 |
| DRAWN | ITB | 10:20 |
| APPROVED | | |

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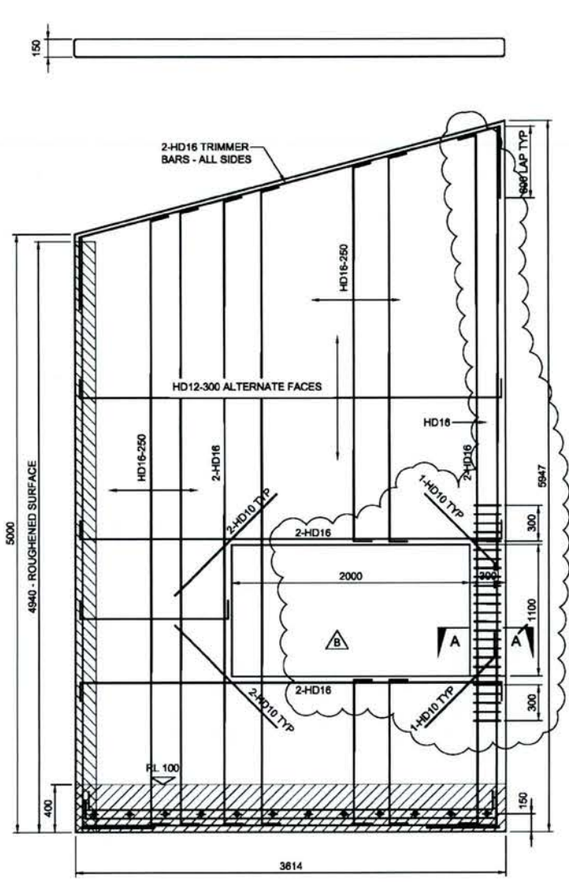
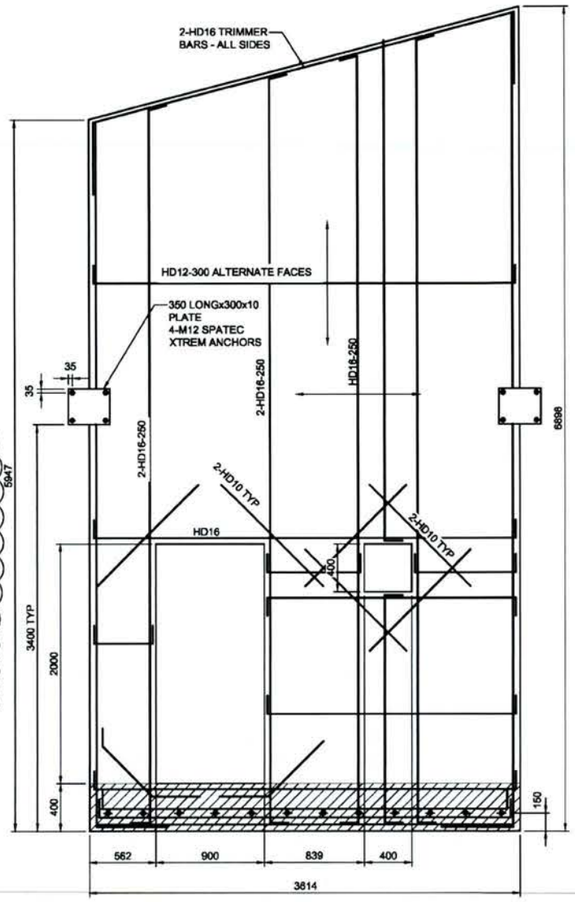
GORE WATER TREATMENT PLANT
UPGRADE - NEW BUILDING
EAST WALL PRECAST PANELS
DETAILS

STATUS: CONSTRUCTION

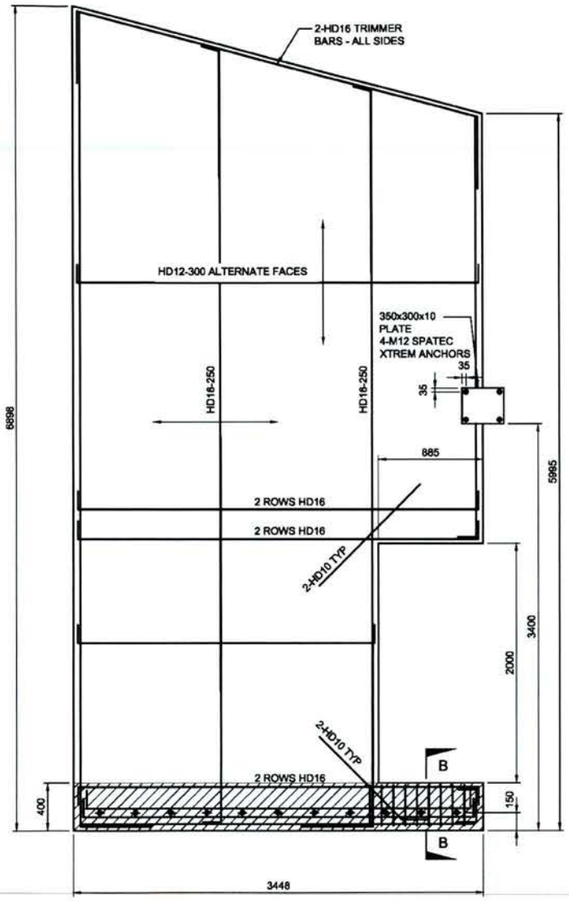
| SCALE AT A1 | PROJECT NUMBER | DRAWING NUMBER | REV. |
|---|---|---|---|
| | 20080 | S07B | B |



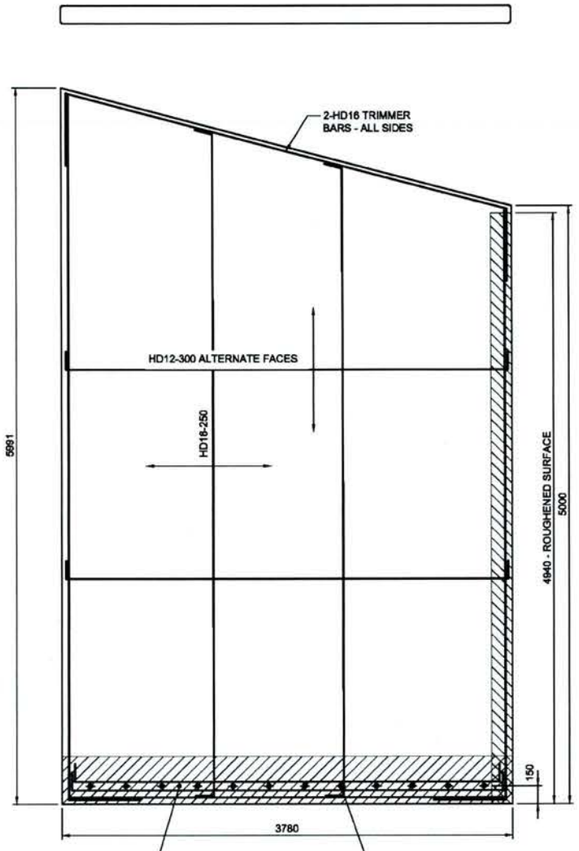

P22
VIEWED FROM INSIDE



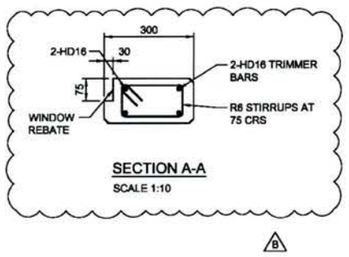

P23
VIEWED FROM INSIDE




P24
VIEWED FROM INSIDE




P25
VIEWED FROM INSIDE

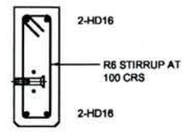



SECTION A-A
SCALE 1:10

B

## WEST WALL PANELS

1:25 at A1
1:50 at A3




SECTION B-B
SCALE 1:10



| Rev No | REVISION DESCRIPTION | DRAWN | APPROVED | DATE |
|---|---|---|---|---|
| B | SECTION A-A MODIFIED | ITB | DK | 12:5:21 |
| A | ISSUED FOR CONSTRUCTION | ITB | DK | 18:3:21 |
| 1 | GENERAL ALTERATIONS | ITB | DK | 15:3:21 |
| 0 | ISSUED FOR CONSENT / CONSTRUCTION | ITB | DK | 1;12:20 |

| | BY | DATE |
|---|---|---|
| DESIGNED | DK | 10:20 |
| DESIGN CHECK | DK | 11:20 |
| DRAWN | ITB | 10:20 |
| APPROVED | | |

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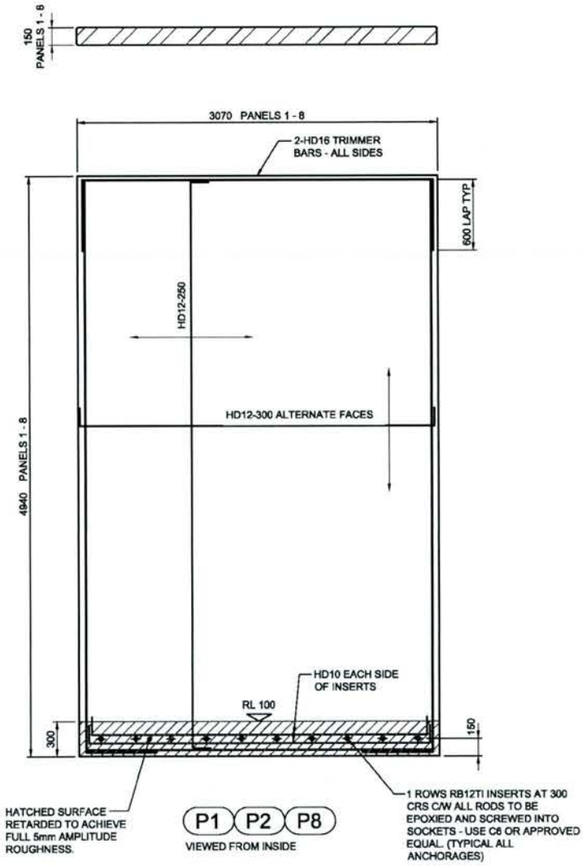
GORE WATER TREATMENT PLANT
UPGRADE - NEW BUILDING
WEST WALL PRECAST PANELS
DETAILS

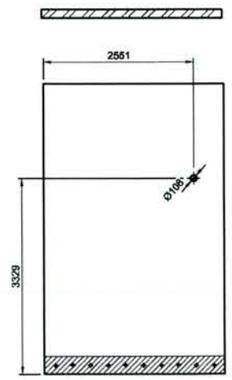
STATUS: CONSTRUCTION

| SCALE AT A1 | | |
|---|---|---|
| PROJECT NUMBER | DRAWING NUMBER | REV. |
| 20080 | S08 | B |

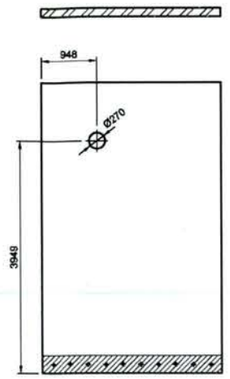



P1 P2 P8
VIEWED FROM INSIDE

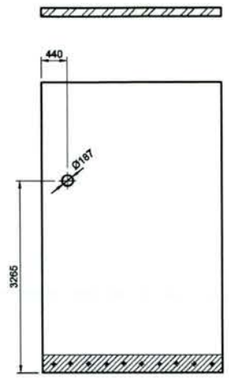
REINFORCING THE SAME
FOR PANELS 1 - 8



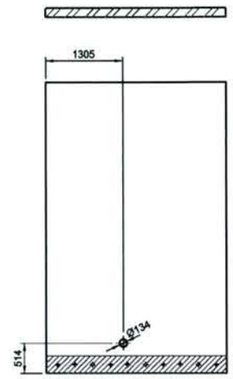

P7
VIEWED FROM INSIDE



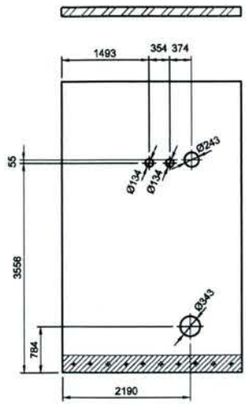

P6
VIEWED FROM INSIDE




P5
VIEWED FROM INSIDE

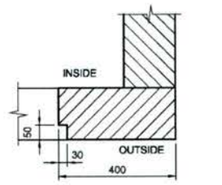



P4
VIEWED FROM INSIDE

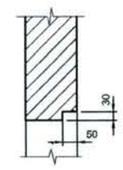



P3
VIEWED FROM INSIDE

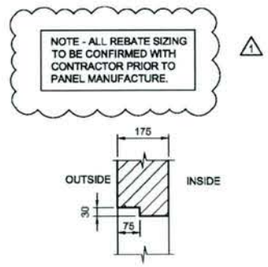
SOUTH WALL PANELS
1:50 at A1
1:100 at A3



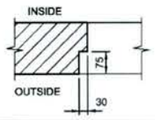

DOOR JAMB DETAIL
1:10 at A1
1:20 at A3



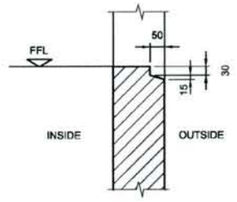

DOOR HEAD DETAIL
1:10 at A1
1:20 at A3



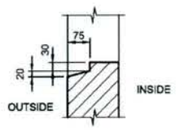

WINDOW HEAD DETAIL
1:10 at A1
1:20 at A3



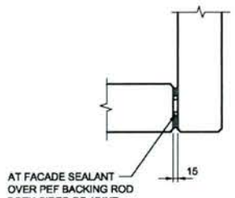

WINDOW JAMB DETAIL
1:10 at A1
1:20 at A3

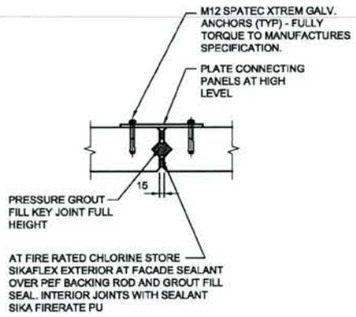



DOOR SILL DETAIL
1:10 at A1
1:20 at A3




WINDOW SILL DETAIL
1:10 at A1
1:20 at A3




PANEL - PANEL CONNECTIONS

| Rev No | REVISION DESCRIPTION | DRAWN | APPROVED | DATE |
|---|---|---|---|---|
| A | ISSUED FOR CONSTRUCTION | ITB | DK | 18:3:21 |
| 1 | GENERAL ALTERATIONS | ITB | DK | 15:3:21 |
| 0 | ISSUED FOR CONSENT / CONSTRUCTION | ITB | DK | 1:12:20 |

| | BY | DATE |
|---|---|---|
| DESIGNED | DK | 10:20 |
| DESIGN CHECK | DK | 11:20 |
| DRAWN | ITB | 10:20 |
| APPROVED | | |

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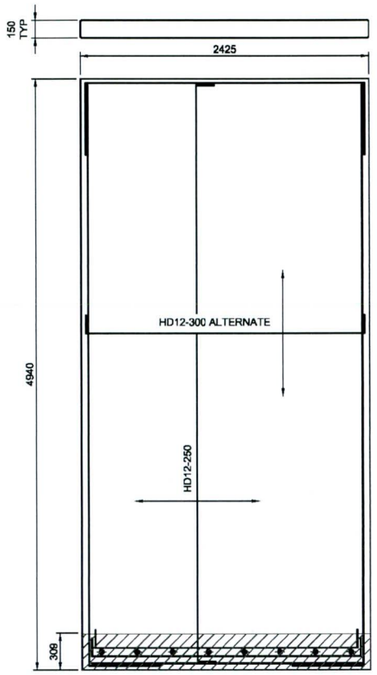
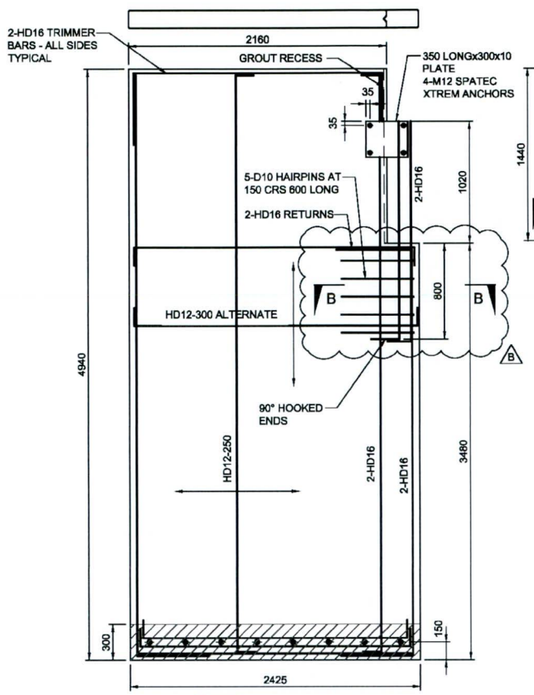
GORE WATER TREATMENT PLANT
UPGRADE - NEW BUILDING
SOUTH WALL PRECAST PANELS
AND PANEL CONNECTION DETAILS

STATUS: CONSTRUCTION

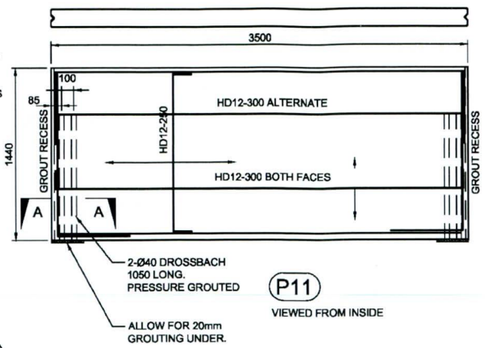
| SCALE AT A1 | | |
|---|---|---|
| PROJECT NUMBER | DRAWING NUMBER | REV. |
| 20080 | S09 | A |



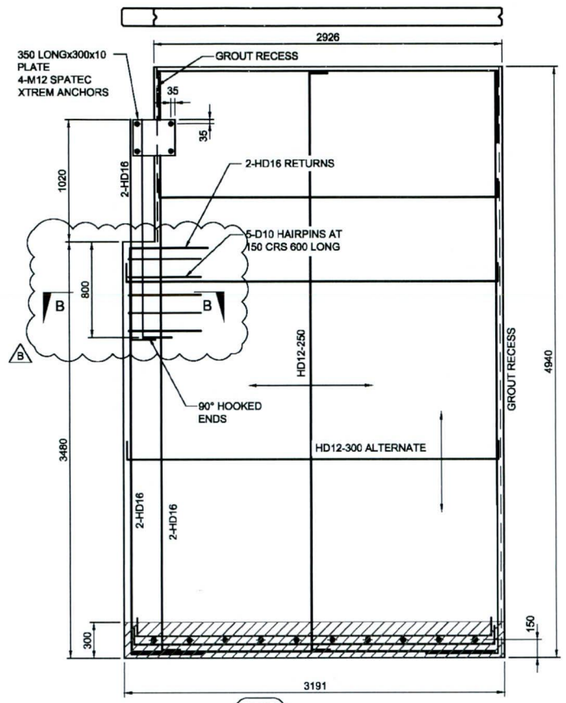

P9 VIEWED FROM INSIDE



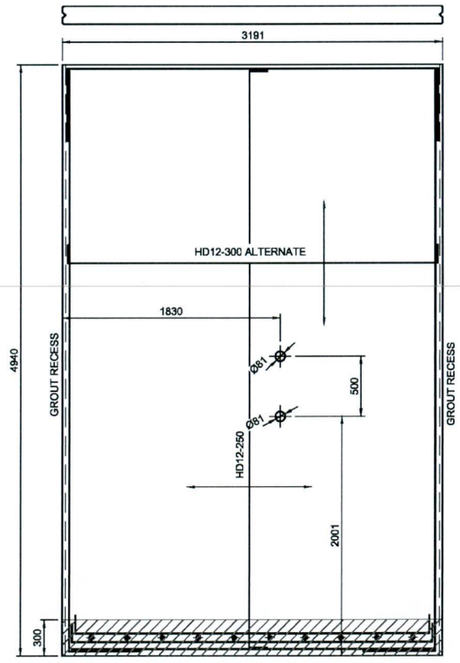

P10 VIEWED FROM INSIDE



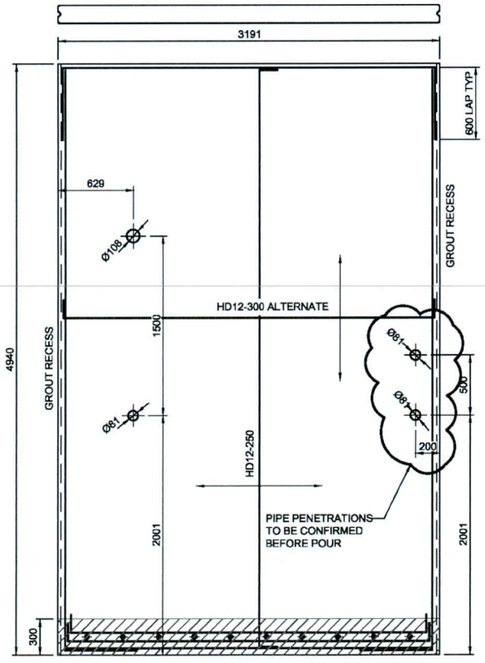

P11 VIEWED FROM INSIDE



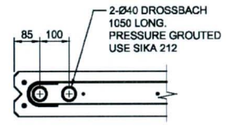

P12 VIEWED FROM INSIDE



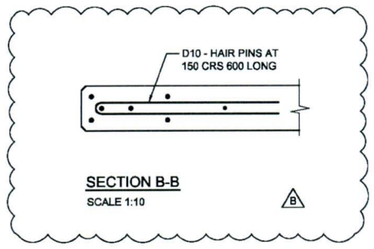

P13 VIEWED FROM INSIDE




P14 VIEWED FROM INSIDE




SECTION A-A
SCALE 1:10




SECTION B-B
SCALE 1:10 B

| Rev No | REVISION DESCRIPTION | DRAWN | APPROVED | DATE |
|---|---|---|---|---|
| B | SECTION B-B ADDED | ITB | DK | 12:5:21 |
| A | ISSUED FOR CONSTRUCTION | ITB | DK | 18:3:21 |
| 1 | GENERAL ALTERATIONS | ITB | DK | 15:3:21 |
| 0 | ISSUED FOR CONSENT / CONSTRUCTION | ITB | DK | 1:12:20 |

| | BY | DATE |
|---|---|---|
| DESIGNED | DK | 10:20 |
| DESIGN CHECK | DK | 11:20 |
| DRAWN | ITB | 10:20 |
| APPROVED | | |

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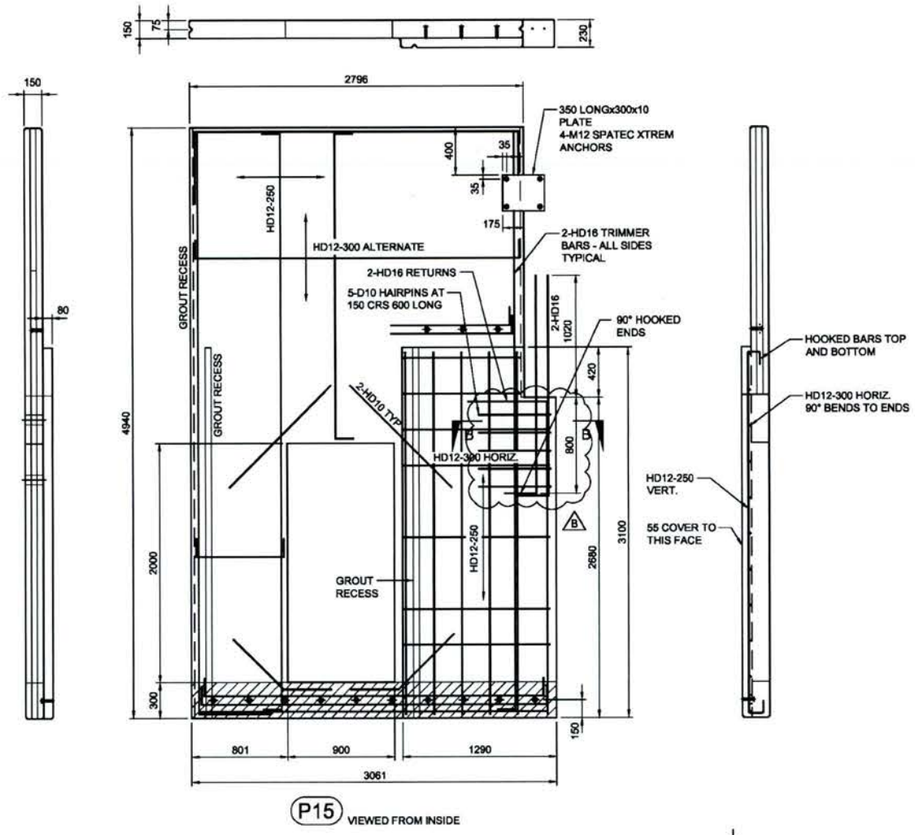
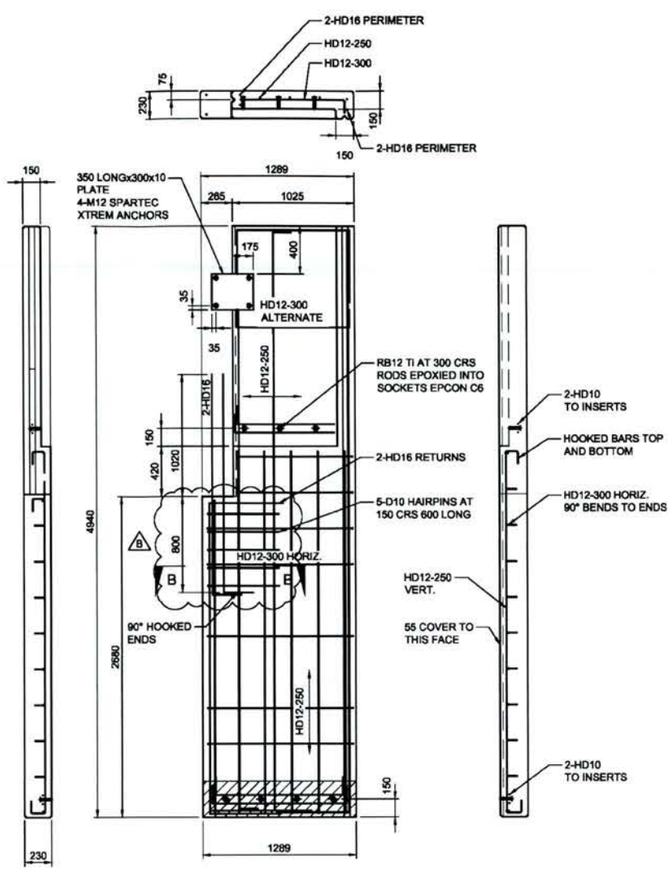
GORE WATER TREATMENT PLANT
UPGRADE - NEW BUILDING
NORTH WALL PRECAST PANELS
DETAILS

STATUS
CONSTRUCTION

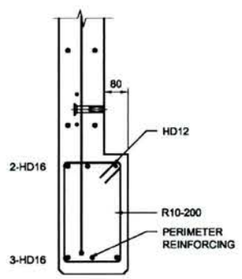
| SCALE AT A1 | | |
|---|---|---|
| PROJECT NUMBER | DRAWING NUMBER | REV. |
| 20080 | S10 | B |



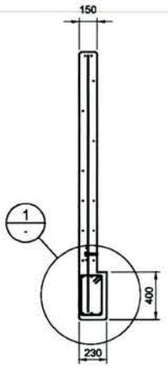

P15 VIEWED FROM INSIDE

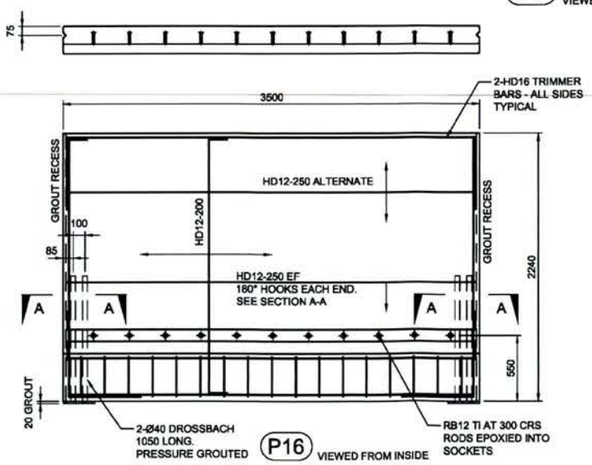



P17 VIEWED FROM INSIDE

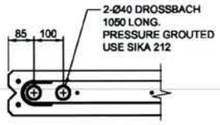


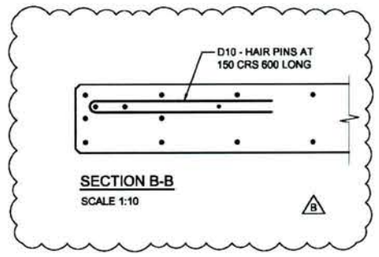

DETAIL 1
1:10 at A1
1:20 at A3




P16 VIEWED FROM INSIDE




SECTION B-B
SCALE 1:10

| | | | | |
|---|---|---|---|---|
| 12:5:21 | | | | |
| B | SECTION | B-B ADDED | ITB | DK |
| A | ISSUED FOR CONSTRUCTION | ITB | DK | 18:3:21 |
| 1 | GENERAL ALTERATIONS | ITB | DK | 15:3:21 |
| 0 | ISSUED FOR CONSENT / CONSTRUCTION | ITB | DK | 1:12:20 |
| Rev No | REVISION DESCRIPTION | DRAWN | APPROVED | DATE |

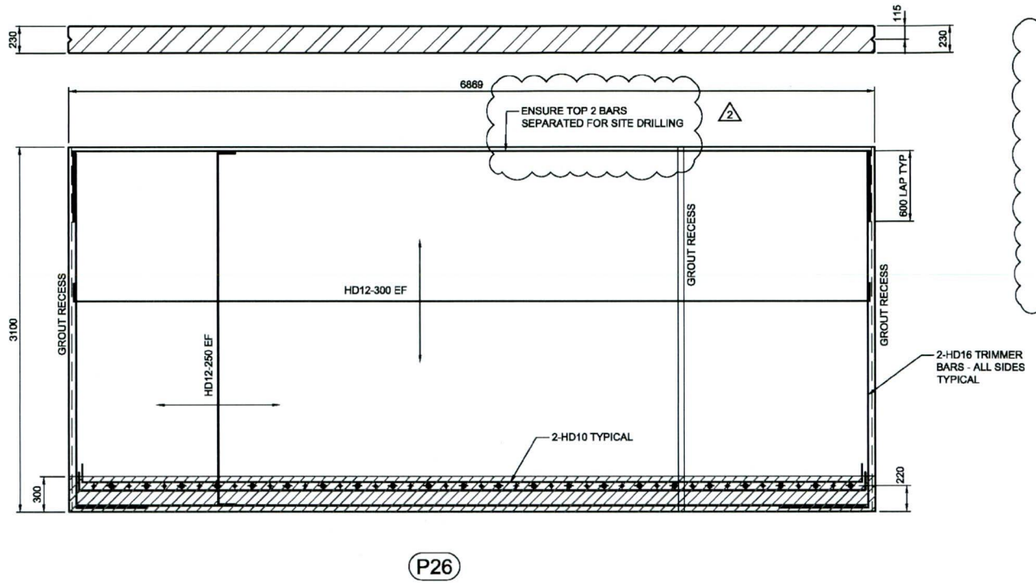
| | BY | DATE |
|---|---|---|
| DESIGNED | DK | 10:20 |
| DESIGN CHECK | DK | 11:20 |
| DRAWN | ITB | 10:20 |
| APPROVED | | |

KENSINGTON CONSULTING
///// Civil and Structural Engineers
03 218 7936 027 403 3773

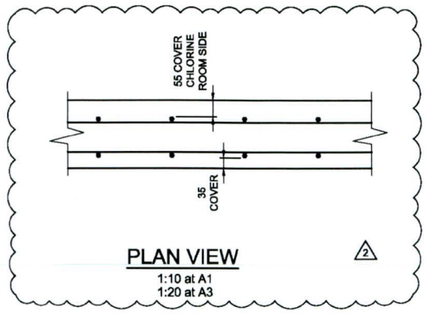
GORE WATER TREATMENT PLANT
UPGRADE - NEW BUILDING
NORTH WALL PRECAST PANELS
DETAILS

STATUS: CONSTRUCTION

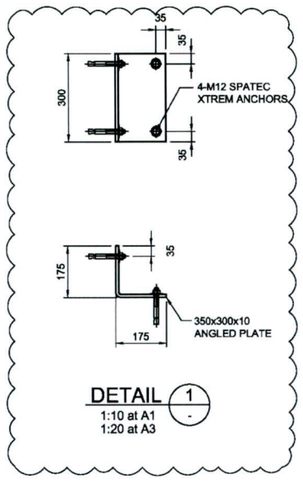
| SCALE AT A1 | | |
|---|---|---|
| PROJECT NUMBER | DRAWING NUMBER | REV. |
| 20080 | S11 | B |



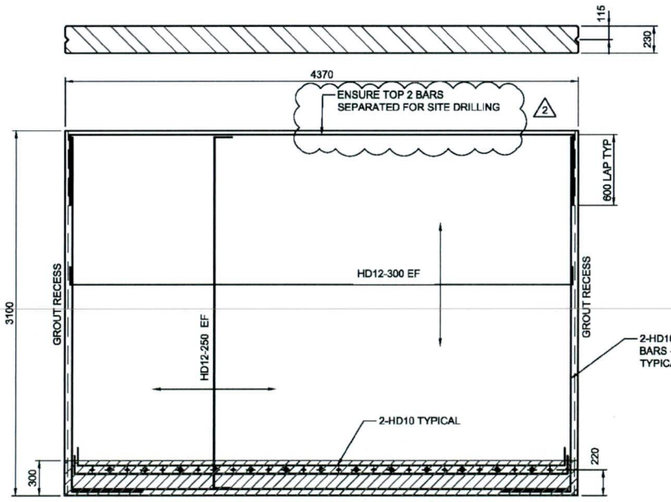

P26



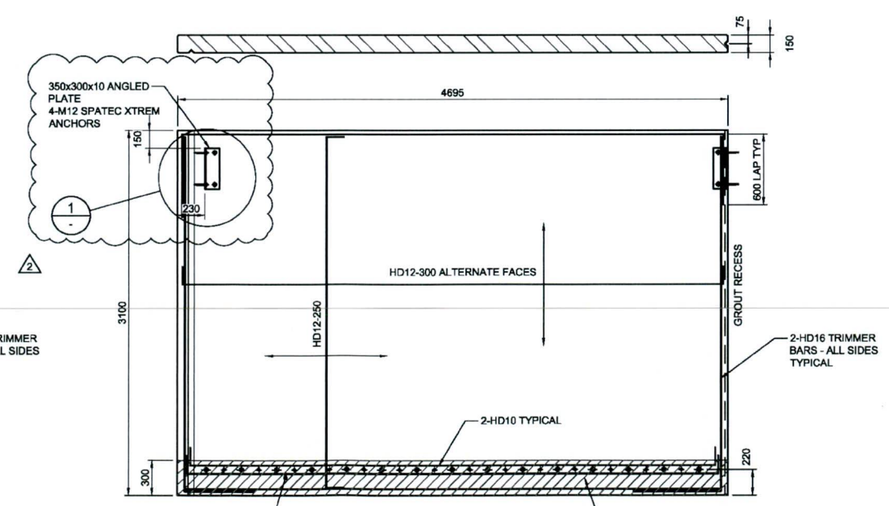

PLAN VIEW
1:10 at A1
1:20 at A3
2




DETAIL 1/-
1:10 at A1
1:20 at A3
2




P27 VIEWED FROM INSIDE




P28 VIEWED FROM INSIDE

HATCHED SURFACE RETARDED TO ACHIEVE FULL 5mm AMPLITUDE ROUGHNESS.

1 ROW RB12TI INSERTS AT 150 CRS - OFFSET EACH SIDE C/W ALL RODS TO BE GROUTED AS WELL AS SCREWED INTO SOCKETS - USE C6 OR APPROVED EQUAL. (TYPICAL ALL ANCHORAGES)

| Rev No | REVISION DESCRIPTION | DRAWN | APPROVED | DATE |
|---|---|---|---|---|
| A | ISSUED FOR CONSTRUCTION | ITB | DK | 18:3:21 |
| 2 | GENERAL ALTERATIONS | ITB | DK | 15:3:21 |
| 1 | PLATES ADDED TO PANEL P28 | ITB | DK | 4:12:20 |
| 0 | ISSUED FOR CONSENT / CONSTRUCTION | ITB | DK | 1:12:20 |

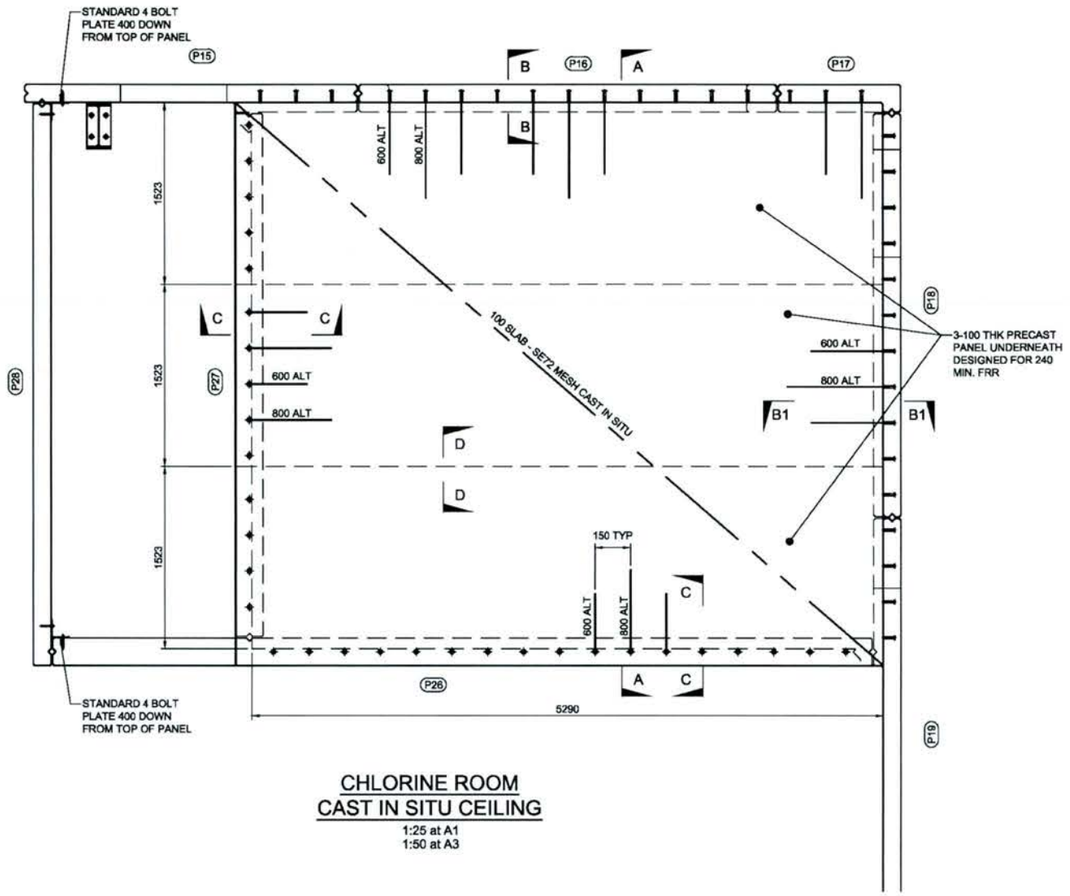
| | BY | DATE |
|---|---|---|
| DESIGNED | DK | 10:20 |
| DESIGN CHECK | DK | 11:20 |
| DRAWN | ITB | 10:20 |
| APPROVED | | |

KENSINGTON CONSULTING
///// Civil and Structural Engineers
03 218 7936 027 403 3773

GORE WATER TREATMENT PLANT
UPGRADE - NEW BUILDING
INTERNAL PRECAST PANELS
DETAILS

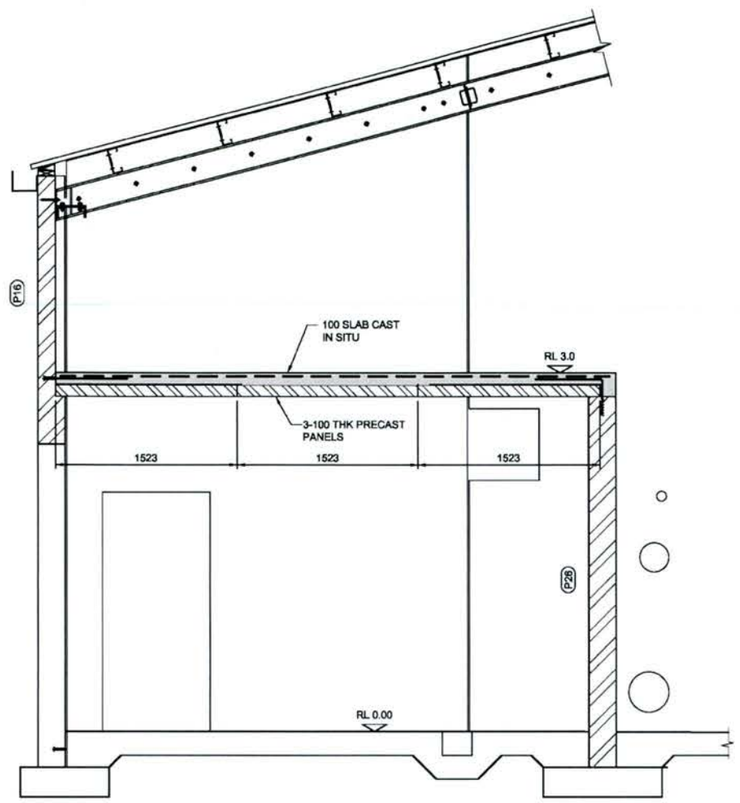
STATUS: CONSTRUCTION

| SCALE AT A1 | PROJECT NUMBER | DRAWING NUMBER | REV. |
|---|---|---|---|
| | 20080 | S12 | A |

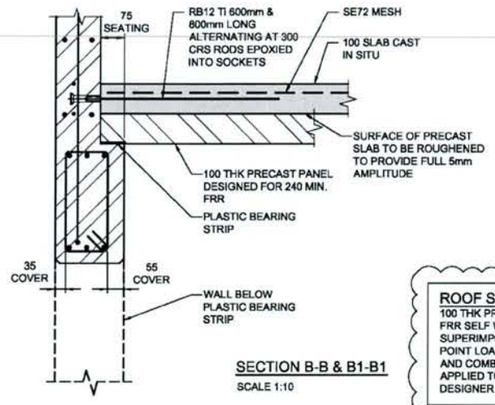



## CHLORINE ROOM CAST IN SITU CEILING

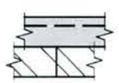
1:25 at A1
1:50 at A3



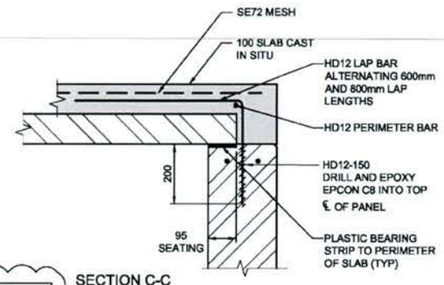

SECTION A-A
SCALE 1:10




SECTION B-B & B1-B1
SCALE 1:10



SECTION D-D
SCALE 1:10




SECTION C-C
SCALE 1:10

**ROOF SLAB DESIGN LOADS**
100 THK PRECAST PANEL DESIGNED FOR 240 MIN. FRR SELF WEIGHT INCLUDING TOPPING.
SUPERIMPOSED LIVE LOAD - 3KPA UDL AND 3.5kN POINT LOAD : APPROPRIATE DESIGN FACTORS AND COMBINATION OF LOADING SHALL BE APPLIED TO THESE LOADS.
DESIGNER TO PROVIDE PS1.

| | | | | |
|---|---|---|---|---|
| C | INCREASED POINT LOADING | ITB | DK | 11:6:21 |
| B | DESIGN LOADS MODIFIED | ITB | DK | 12:5:21 |
| A | ISSUED FOR CONSTRUCTION | ITB | DK | 18:2:21 |
| 1 | GENERAL ALTERATIONS | ITB | DK | 15:3:21 |
| 0 | ISSUED FOR CONSENT / CONSTRUCTION | ITB | DK | 2:12:20 |
| Rev No | REVISION DESCRIPTION | DRAWN | APPROVED | DATE |

| | BY | DATE |
|---|---|---|
| DESIGNED | DK | 10:20 |
| DESIGN CHECK | DK | 11:20 |
| DRAWN | ITB | 10:20 |
| APPROVED | | |

KENSINGTON CONSULTING
///// Civil and Structural Engineers
03 218 7936 027 403 3773

GORE WATER TREATMENT PLANT
UPGRADE - NEW BUILDING
CHLORINE ROON CEILING
PLAN AND SECTIONS

STATUS
CONSTRUCTION

| SCALE AT A1 | | |
|---|---|---|
| PROJECT NUMBER | DRAWING NUMBER | REV. |
| 20080 | S13 | C |

## Caroline Shearing

**From:** Hashem Ramezan-zadeh <HRamezan-zadeh@goredc.govt.nz>
**Sent:** Wednesday, 20 January 2021 1:28 PM
**To:** Caroline Shearing
**Cc:** Russell Paterson
**Subject:** Gore Water Treatment Plant Upgrade - Building Consent Exemption
**Attachments:** Mimecast Large File Send Instructions

I'm using Mimecast to share large files with you. Please see the attached instructions.

---

Hi Caroline,

Please find attached the application for the building consent exemption for Gore water treatment plant (WTP).
I have attached the specifications, PS1 and drawings. I will submit the test plan (ITP) and PS2, shortly.

I appreciate if you would register the application and organise to process it as soon as possible.

Thanks and regards.
Hashem

---

**Hashem Ramezan-zadeh** | Project Manager Infrastructure
**T:** 03 209 0330 | **DDI:** 03 748 0102 | **M:** 021 195 7018
**E:** hramezan-zadeh@goredc.govt.nz | **W:** www.goredc.govt.nz
Gore District Council, 29 Bowler Avenue, PO Box 8, Gore, 9740

GO RE DISTRICT COUNCIL RURAL CITY LIVING

IPENZ ENGINEERS NEW ZEALAND | NEW ZEALAND INSTITUTE OF ARCHITECTS INCORPORATED | ACENZ

Building Code Clause(s).....B1, (20080) ....

# PRODUCER STATEMENT – PS1 – DESIGN

(Guidance notes on the use of this form are printed on page 2)

**ISSUED BY:**.....KENSINGTON CONSULTING LTD.....
(Design Firm)

**TO:**...Gore District Council.....
(Owner/~~Developer~~)

**TO BE SUPPLIED TO:**.....Gore District Council.....
(Building Consent Authority)

**IN RESPECT OF:** foundations comprising strip footings, floor slab, precast walls and suspended roof slab, concrete masonry bund walls, structural steel portal frames and associated bracing for new water treatment plant building..
(Description of Building Work)

**AT:** Wentworth St, East Gore
(Address)

..... **LOT**..... **DP** **SO** ...

We have been engaged by the owner/~~developer~~ referred to above to provide structural design and overview of construction sufficient to provide a PS4 on completion. services in respect of the requirements of
(Extent of Engagement)
Clause(s) ...B1/VM1,VM4, .of the Building Code for
All ☐ or Part only X (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:

X Compliance Documents issued by the Ministry of Business, Innovation & Employment B1/VM1,VM4, NZS 1170,3101, 3404,4230.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 Gore Water Treatment Plant Upgrade

New Building Details and numbered 20080 / S01-S13 .;
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 Foundation bearing based on 50KPa allowable bearing
(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 X CM2 CM3 ☐CM4 ☐CM5 (Engineering Categories) or as per agreement with owner/developer (Architectural)

I, ...Darryl Kensington..... am:
(Name of Design Professional)

x CPEng ..87325.....#

☐Reg Arch ..... .#

I am a Member of : X IPENZ ☐NZIA and hold the following qualifications:BE,CMEngNZ,CPEng(civil,struct'l)IntPE(NZ)
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 .....D Kensington..... ON BEHALF OF ..... KENSINGTON CONSULTING LTD...
(Design Firm)

Date.....4/12/20..... (signature).....

*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*

# GUIDANCE ON USE OF 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, Institution of Professional engineers New Zealand, Association of Consulting Engineers New Zealand in consultation with the Building Officials Institute of New Zealand. The original suit of producer statements has been revised at the date of this form as a result of enactment of the Building Act (2004) by these organisations to ensure standard use within the industry.

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

**PS1 Design** Intended for use by a suitably qualified independent 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 design 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 design professional who undertakes 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 ACENZ, IPENZ and NZIA to interpret the Producer Statement.

### Competence of Design Professional

This statement is made by a Design 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 designers.

A competent design professional will have a professional qualification and proven current competence through registration on a national competence based register, either as a Chartered Professional Engineer (CPEng) or a Registered Architect.

Membership of a professional body, such as the Institution of Professional Engineers New Zealand (IPENZ) or the New Zealand Institute of Architects (NZIA), provides additional assurance of the designer's standing within the profession. If the design firm is a member of the Association of Consulting Engineers New Zealand (ACENZ), this provides additional assurance about the standing of the firm.

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

### *Professional Indemnity Insurance

As part of membership requirements, ACENZ 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, small projects. If the parties deem this inappropriate for large projects the minimum may be up to $500,000.

### Professional Services during Construction Phase

There are several levels of service which a Design 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 Design 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.

### Attached Particulars

Attached particulars referred to in this producer statement refer to supplementary information appended to the producer statement.

### 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 (ACENZ/IPENZ 2004)

4 PN Guidelines on Producer Statements

**www.acenz.org.nz**
**www.ipenz.org.nz**
**www.nzia.co.nz**

# STRUCTURAL SPECIFICATION

of work to be done and materials to be used in carrying out the works shown on the accompanying drawings

## Gore District Council

## Water Treatment Plant Building

Job number: 20080

Date: November 2020

SPECIFICATION

FOR

# EARTHWORKS

## CONTENTS

## 1. SCOPE

This Specification defines the requirements for quality of materials and workmanship for excavation and backfilling associated with subgrade preparation for concrete structures and underground site services. These earthworks comprise:

(i) Excavation of topsoils.
(ii) Excavation of ground to achieve required subgrade levels.
(iii) Preparation of subgrade after excavation is complete.
(iv) Backfilling, compaction and testing of fill materials.

The scope of work shall be as shown on the drawings 20080/S01-S13 other related drawings and this specification.

## 2. STANDARDS

All earthworks shall be carried out in accordance with all Statutory regulations. Excavating, loading, carting and disposal of spoil from the site shall be carried out in accordance with the relevant territorial authority bylaws and the appropriate Department of Labour acts and guidelines.

The latest amendment of NZS 4402 Methods of Testing Soils for Engineering purposes shall apply to this specification.

## 3. CONSENT

Before any work commences, the Contractor shall obtain all site **Clearance Certificate, Excavation Permit** and any other permits prior to undertaking any excavation or backfilling on site. All existing site services within the construction area shall be fully outlined or discovered before work commences. The Contractor shall submit details of his intended methods for excavation, shoring and dewatering (where required).

## 4. DISPOSAL OF MATERIALS

All excavated materials for disposal shall be stockpiled in areas as instructed by the Project Manager or disposed of offsite, if instructed otherwise.

## 5. EXCAVATION OF TOPSOIL

All rubbish, vegetation, topsoil, humus, and organic matter shall be excavated from the ground surface within the area limits of the earthworks.

Clean topsoil shall be stockpiled in the area designated on the drawings. The stockpiles shall be formed with sloping smooth surfaces.

## 6. EXCAVATION OF GROUND

### 6.1 Services

The Contractor shall take whatever precautions are necessary to avoid damaging or interfering with subsurface services that have been identified from the procedures outlined on the Clearance Certificate and Excavation Permit.

If the Contractor encounters subsurface services that have not been identified previously, he shall stop work and shall inform the Company Representative immediately. No further work shall be undertaken within that area until approved in writing.

### 6.2 Subgrade Profile

The Contractor shall excavate to the levels shown for all foundations, footings, ducts, trenches, pads, etc. cutting to the minimum sizes practicable. Sufficient room shall be allowed for form work and timbering outside the net sizes shown on the Drawings.

The subgrade surface so formed shall generally be graded with minimum falls to avoid ponding during construction. Excavation may be extended as required to permit adequate construction access.

The Contractor shall comply in all respects with the Construction Act, Construction Regulations, and the Work Safe Code of Practice for Excavations current at the time of performing the work. When works are notifiable, a copy of the submitted official notification shall be provided to the Project Manager.

Care shall be taken where excavating against or adjacent to existing structures, not to undermine foundations or damage services which are to remain.

On completion the subgrade surface shall be graded to ensure that the required excavation profile and batters are cut into sound foundation material without track marks from earthmoving equipment or other irregularities.

Care shall be taken to ensure that the excavation is carried out only in suitable weather conditions.

Where seepage is encountered, drainage blankets and subsoil drains shall be installed as directed to collect the seepage and discharge it to an approved point clear of the excavation.

Secure and maintain all excavations and stockpiles free from slippage, erosion and other foreign materials. Shoring, strutting, sheeting, pumps and other materials and plant necessary for carrying out and maintaining the excavations shall be provided and maintained by the Contractor until no longer required.

Prior to any backfilling, all excavations shall be proof rolled by the Contractor and inspected by the Engineer. The Contractor shall remove uneven or soft pockets of foundation material all as required by the Engineer. The Contractor shall advise the Engineer if any loose or soft ground is encountered during excavation and shall carry out remedial work as directed.

## 7. SURFACE DRAINAGE CONTROL

The Contractor shall ensure that the Site is kept well drained and free from surface water. Any remedial work required as a consequence of the Contractor's failure to keep the site drained shall be repaired at the Contractor's expense. The Contractor shall comply with the Regional Council's requirements for the control of stormwater runoff.

## 8. SUBGRADE PREPARATION

On completion of excavation, the exposed subgrade surfaces shall be proof compacted using a minimum of three passes of a heavy 10 T wheeled drum compactor. Any soft spots shall be removed and the areas backfilled in accordance with Clause 9 of this specification.

## 9. BACKFILLING AND GEOTEXTILES

### 9.1 Materials

All materials shall be supplied by the Contractor and shall conform to the requirements of this Specification and be approved by the Engineer prior to use in the work. The Contractor shall provide a complete written statement regarding the origin, composition, and manufacture of the material to be supplied by him.

The Contractor shall not change the source of supply of materials without written authorisation of the Engineer.

Backfill

The types of hardfill shall generally be defined on the contract drawings. The backfill types shall be:

Crushed Basecourse Dunite NZTA Specification M4, AP40 & AP65

This material shall be compacted to achieve at least 95% of the maximum dry density of the material as determined by Test 4.3.1 of NZS 4402 - Determination of the dry density/water content relationship, NZ vibrating hammer compaction test.

Geotextiles

Geotextile filter fabric and Geogrid mesh shall be as detailed on the drawings and as noted below in 9.1.2 Geotextiles. These geotextiles shall not be placed until the exposed subgrade has been proof rolled and approved to place by the Engineer.

9.1.1 Hardfill

Hardfill shall be well graded and conform to the following requirements:

| Maximum Particle Size | 40mm/65mm |
|---|---|
| Test Sieve Aperture | Percentage Passing by Weight |
| 19mm | 60-75 |
| 9.5mm | 37-58 |
| 2.36mm | 14-34 |
| 600 ∓m | 5-20 |
| 75 ∓m | 9 max |

9.1.2 Geotextiles

WShere specified the filter fabric shall comprise Bidim A29 grade non-woven, neddle punched polyester fabric with minimum 450mm side lap and 1m end of roll lap.

The Geogrid mesh shall comprise of Tensar TX 160 multidirectional grid mesh. Side laps shall be a minimum of 300mm and 1m end of roll.

## 9.2 Placing and Compaction

The Contractor shall spread the backfill material in layers appropriate to the type of compaction plant he intends to use. Fill layers shall not exceed 150 mm loose depth prior to compaction. These fill materials shall be compacted to the minimum dry densities specified. Results of all compaction tests shall be forwarded to the Engineer within 24 hours of the completion of the test.

The Contractor shall be responsible for ensuring that the compaction control is monitored to ensure that the required level of compaction is achieved evenly in all fill materials. Heavy compaction plant shall not be used within 0.5 m of the edge of existing buildings or structures. Light compaction plant shall be used within this zone to achieve the required level of compaction. Where light compaction plant is used, the maximum loose depth of the backfill shall be limited to 150 mm in each layer. No backfilling shall be undertaken until the relevant area has been inspected and approved. The Engineer shall reserve the right to conduct independent tests on compaction control during the course of the Contract.
Where the construction of any foundations requires the excavation of previously compacted backfill material, the backfill material shall subsequently be replaced and compacted in layers in accordance with the requirements above.

Backfilling shall not be carried out if rain or surface water make conditions unsuitable.

Prior to setting up boxing or concreting, all completed earthworks shall be inspected and approved.

Foundation backfilling shall not be commenced until stripped foundations have been inspected and approved.

## 10. INSPECTION AND TESTING

The Contractor shall arrange for and undertake all material and compaction testing. All results conforming and non-conforming are to be forwarded to the Engineer.

The minimum conforming testing frequency and required tests are:

| | |
|---|---|
| **Hardfill** | |
| Grading, crushing resistance, weathering resistance, and soil optimum dry density (Test 4.1.3, NZS 4402) | - Two tests prior to commencement then<br>1 per < 400m$^3$<br>2 per 400 - 1500m$^3$<br>3 per 1500 - 3000m$^3$ |
| Nuclear densometer test | - One test per 50m$^2$ per layer of compacted material |
| | |

Tests shall comply with:

| | | |
|---|---|---|
| Grading | - | NZS 4402, Test 2.8 |
| Crushing Resistance | - | NZS 3111 |
| Weathering Resistance | - | NZS 3111 |

| | | |
|---|---|---|
| Optimum Dry Density | - | NZS 4402, Test 4.1.3 |
| Insitu Density | - | NZS 4402, Test 5.1 |
| Nuclear Densometer Test | - | Backscatter mode |

All testing shall be conducted at a Telarc registered or ISO 9000 accredited laboratory. The nuclear densometer shall be calibrated at a Telarc registered laboratory and operated by, or under the supervision of, an operator licensed by the NZ Nuclear Radiation Laboratory.

The Contractor shall facilitate inspection by the Engineer at all times during construction. The Company Representative may from time to time carry out check tests of soil properties, and relative compaction being achieved in the fill, but the Contractor shall remain responsible for achieving the required standard of work.

At any stage of the work, the Engineer may require material which has not been compacted to the specified standard or which contains unsuitable material, to be uncovered, excavated and replaced or recompacted to the specification without additional payment to the Contractor.

# Section 2 CONCRETE

## 1. GENERAL

1.1 DOCUMENTS
Documents referred to in this section are:

| | |
|---|---|
| NZS 3104 | Specification for concrete production |
| NZS 3109 | Concrete construction |
| NZS 3114 | Specification for concrete surface finishes |
| NZS 3124 | Concrete construction for minor works |
| NZS 3604 | Timber framed buildings |
| AS/NZS 4671 | Steel reinforcing materials |

The documents also include the drawings titled Gore Water Treatment Plant upgrade- New Building and numbered 20080/ S01 – S13 other related drawings and this specification.

## 2. PRODUCTS

2.1 READY-MIX CONCRETE
Ordinary grade 25 MPa, maximum aggregate size 19 mm to NZS 3104 ground floor and foundations. Reinforced areas of the floor slab concrete shall have a minimum of 1 kg/m3 of polypropylene fibre added also. Delivery dockets listing mix and despatch details to be supplied.

2.2 SITE CONCRETE
To NZS 3124. Shall be a minimum 10 MPa, all materials and batching to NZS 3104.

2.3 REINFORCEMENT
Bars to AS/NZS 4671. Grade 300 and Grade 500 deformed, other than for ties, stirrups and spirals, unless shown otherwise on the drawings. Welded reinforcing mesh to be ductile type complying with AS/NZS 4671.

2.4 TYING WIRE
Mild drawn galvanised steel or stainless steel wire not less than 1.2 mm diameter.

2.5 SPACERS AND CHAIRS
Precast concrete or purpose made moulded PVC to approval. Use concrete spacer blocks only where the concrete surface is not exposed in the finished work.

2.6 DAMPPROOF MEMBRANE
0.25 mm minimum polyethylene to NZS 3604, section 7.5.4.

## 3. EXECUTION

3.1 HANDLE AND STORE
Handle and store reinforcing steel and accessories without damage or contamination. Store on timber fillets on hard ground in a secure area clear of any building operation. Lay steel fabric flat.

Ensure reinforcement is clean and remains clean so that at the time of placing concrete it is free of all loose mill scale, loose rust and any other contamination that may reduce bonding capacity.

3.2 FALSEWORK AND FORMWORK
Use falsework and formwork of sufficient strength to retain and support the wet concrete to the required profiles and tolerances. Select formwork finish to produce the specified

finished quality. Ensure timber or plywood used for formwork is non-staining to the set concrete.

Securely fix and brace formwork sufficiently to support loads and with joints and linings tight enough to prevent water loss. Do not use tie wires or rods unless approved in writing by the owner. Unless detailed otherwise, provide a 19 mm chamfer or fillet strip at all interior and exterior angles of beam and column forms. Mitre at intersections.

Water blast to clean formwork. Keep formwork wet before concrete is placed.

Unless detailed otherwise, set up soffit boxing for beams and slabs to provide a camber when forms are stripped, of 3 mm rise for every 3 metres of total clear span.

3.3 INSTALL DAMPPROOF MEMBRANE
Apply polythene membrane to prepared basecourse with 150 mm laps between sheets. Tape seal laps and penetrations with 50 mm wide pressure sensitive plastic tape. Refer to drawings for perimeter details.

3.4 CUT AND BEND REINFORCEMENT
Cut and bend bars using proper bending tools to avoid notching and to the requirements of NZS 3109. Do not rebend bars without written approval.

3.5 SECURE REINFORCEMENT
Secure reinforcement adequately with tying wire and place, support and secure against displacement when concreting. Bend tying wire back well clear of the formwork. Spacing as dimensioned, or if not shown, to the clear distance minimums laid down in NZS 3109, clause 3.6.

3.6 LAPPED SPLICES
Set length of laps, where not dimensioned on the drawings, in accordance with NZS 3109, clause 3.7. Increase laps of plain round steel by 100%.

3.7 REINFORCEMENT COVER
Minimum cover to all reinforcing bars, stirrups, ties and spirals, as shown on the drawings and to NZS 3109, clause 3.8. Fix chairs for top reinforcement in slabs at 1.0 metre centres or to ensure adequate support. Cover tolerances to NZS 3109, clause 3.9.

3.8 CASTING IN
Build in all bolts and fixings for wall plates and bracing elements, holding down bolts, pipes, sleeves and fixings as required by all trades and as shown on the drawings, prior to pouring the concrete.

Location and form of conduits to be approved in writing by the owner. Minimum cover 40 mm. Do not encase aluminium items in concrete. Do not paint steel embedded items more than 25 mm into the concrete encasement. Cut back form ties to specified cover and fill the cavities with mortar.

Form all pockets, chases and flashing grooves as required by all trades and as shown on the drawings.

Wrap all pipes embedded in concrete with tape to break the bond and to allow for expansion. Do not embed pipes for conveying liquids exceeding a temperature of 50°C in concrete.

3.9 CONSTRUCTION JOINTS
Locate and construct as shown on the drawings.

3.10 PRE-PLACEMENT INSPECTION
Do not place concrete until all excavations, boxing and reinforcing have been inspected and passed by the territorial authority inspector.

3.11 SURFACE FINISHES
To NZS 3114, section 105, as scheduled or as denoted on the drawings.

3.12 EXPOSED CONCRETE
Formwork linings and surface finishes as nominated for both fair face and concealed or exposed surfaces. Unless detailed, obtain written confirmation of the type and pattern of all joints.

3.13 CONCRETE SURFACE TOLERANCES
To NZS 3114, sections 104 and 105, with the suggested tolerances becoming the required tolerances.

3.14 PUMPING CONCRETE
Set up and supervise pump operation, placing and compaction of the mix toNZS 3109. Advise the ready-mix supplier of the type of pump and the slump required, in addition to the concrete grade, strength and quantity.

3.15 COMPACTION
Use power operated vibrators on foundations, vertical constructions and beams.

3.16 FLOOR SLAB
Construct in accordance with NZS 3604, section 7.5. Lay to true and straight surfaces, screeded, floated and steel (manual or power) trowelled finish. Tolerance on flatness: maximum 3 mm gradual deviation over a 3 metre straight-edge, to the requirements of NZS 3109.

3.17 SAW CUTS
Cut slabs where indicated on the drawings and as required to control shrinkage cracking. Carry out cutting as soon as possible, without causing tear-out of aggregate and before shrinkage cracking has occurred, generally within 24 hours of pouring. Where saw cuts are made, cut out 100 mm of every second wire of the mesh for a length of 50 mm each side of the saw cut position. Saw cuts: 1/3rd slab depth or 30 mm minimum.

3.18 SURFACE DEFECTS
Make good surface defects immediately after forms are stripped. Make good hollows or bony areas with 1:2 mortar or plaster, finished to the same tolerances as the parent concrete. Fill any tie rod holes with 1:2 mortar.

3.19 CURING OF CONCRETE
Keep damp for not less than seven days. Ensure curing of slabs commences as soon as possible after final finishing, by the use of continuous water sprays, or ponding. Alternately, apply a curing membrane. Ensure any membrane used will not affect subsequent applied finishes.

3.20 STRIKE FORMWORK
Strike formwork without damaging or overloading structure. Do not remove formwork before the following minimum periods:

| | |
|---|---|
| Sides of beams, walls and columns: | 12 hours |
| Slabs in beam and slab construction: | 4 days |
| (leave props under slab spans over 2 metres) | |
| Props from under slab spans over 2 metres: | 10 days |
| Beams, soffits and slab spans over 5 metres: | 18 days |

3.21 CLEAN OUT
Clean out saw cuts. Fill with cement grout where the floor will be covered with carpet or vinyl.

3.22 REMOVE
Remove all unused materials and all concrete and reinforcing debris from the site.

# Section 3 PRECAST CONCRETE

## 1. GENERAL

This specification section shall be read in conjunction with the General and Specific Conditions.

### 1.1 SCOPE OF WORK

This section covers the manufacture, supply and installation of all precast reinforced concrete wall panel and flat slab roof elements.

### 1.2 DOCUMENTS REFERRED TO

Documents referred to in this section are:

| | |
|---|---|
| NZS 3101 | Concrete structures standard<br>Part 1 The design of concrete structures |
| NZS 3104 | Specification for concrete production |
| NZS 3109 | Concrete construction |
| NZS 3114 | Specification for concrete surface finishes |
| AS/NZS 4671 | Steel reinforcing materials |

Structural series drawings titled Gore Water Treatment Plant Upgrade- New Building and numbered 20080/S01-S13, other related drawings and this specification.

### 1.3 PRODUCER STATEMENT PS3- CONSTRUCTION

Provide a producer statement from a suitably qualified person covering the supply and installation of precast items.

### 1.4 QUALIFICATION, OFF-SITE WORK

Use only precast concrete workers skilled and experienced in form making, casting, transportation and erection of precast items.

### 1.5 SITE LOADINGS, PERMANENT STRUCTURE

Prevent damage to supporting structure from stacking of precast items.

### 1.6 ROOF SLAB DESIGN LOADINGS

The 100mm prestressed flat slab roof units shall be designed for the following:
Own self weight and 100mm topping concrete
Superimposed live load of 3 KPa
Appropriate design factors and combination of loading shall be applied to these loads.

### 1.7 SHOP DRAWINGS

Provide a set of shop drawings for review and approval prior to manufacture. Drawings to clearly indicate all lifting eye locations, type used and ratings. **Note: All lifting eyes to have at least twice the load rating over that actually required and shall be a proprietary type industry standard.**

## 2. PRODUCTS

### 2.1 CERTIFIED READY MIXED CONCRETE

Ordinary grade 40 MPa for precast elements, maximum aggregate size 19 mm to NZS 3104. Provide delivery dockets listing mix, additives, slump and dispatch details.
All concrete for panels to have Aquron 3000 waterproofing additive dosed as per manufacturers specifications.

### 2.2 REINFORCEMENT

Bars to AS/NZS 4671. Grade 300E and Grade 500E deformed, proprietary REIDBAR other than for ties, stirrups and spirals, unless shown otherwise on the drawings. Welded reinforcing mesh to AS/NZS 4671.

2.3 TYING WIRE
Mild drawn **galvanised** steel or stainless steel wire not less than 1.2 mm diameter.

2.4 SPACERS AND CHAIRS
Use purpose made moulded PVC chairs to approval.

2.5 CAST IN STEEL ITEMS
Hot dip galvanise after manufacture to a coating weight of 600 grams/$m^2$ all cast in weld plates.

2.6 SEATINGS
Rigid plastic shims/levelling pads shall be used full length beneath all end seating of precast slab units.

2.7 GROUTING OF PANEL TO PANEL SHEAR KEYS
The vertical edge joint keys shall be pressure grouted using a standard cement based general purpose grout of maximum strength 25MPA at 28 days

2.8 GROUTING OF DROSBACH DUCT SLEEVES
All Drosbach ducts shall be pressure grouted from the base level duct with proprietary Sika 212 cementitious grout by specialist Contractors until the grout flows from the top duct uniform in texture and free of air bubbles. Gouting ducts shall be arranged on the interior panel face.

## 3. EXECUTION

### Conditions

3.1 HANDLE, TRANSPORT AND STACK
Handle, transport and stack panels to ensure support that avoids distortion and stress and at the same time protects the finished surfaces from chipping, scoring, cracking or other disfigurement.

3.2 TOLERANCES, OFF SITE PRECAST
Manufacture cladding panels to the following tolerances:

| | | |
|---|---|---|
| Length and height: | < 9.0 metres | ± 2 mm |
| Thickness overall: | | ± 3mm |
| Deviation from square: (difference in length between two diagonals) | Length | ± 3mm |
| Twist: (any one corner out of plane passing through other three corners) | | ± 1 mm |
| Position of panel openings and cast in items: | | ± 2mm |

3.3 SECURE REINFORCEMENT
Secure adequately with tying wire and place accurately where detailed, supported and secured against displacement.

3.4 CONCRETE PLACING
Carefully place concrete in layers so that all parts of the mould are completely filled and full contact is made with the face to give a totally uniform finish. Use approved compaction techniques with power driven vibrators to give a uniform, void-free concrete panel.

3.5 CASTING IN ITEMS
Accurately cast in all embedded items and fixings as detailed with full compactness all round. Inserts shall be rigidly held in location prior to casting. No" puddling-in" of inserts will be permitted.

3.6 CURING
Confirm in writing the system to be used for curing concrete. Cure panels for a minimum of 7 days. Keep the time between casting and the start of curing to an absolute minimum.

Apply a fine spray of water continuously over the curing period through a system of nozzles placed to cover the whole of the panels being cured.

3.7 TOLERANCES, ON SITE EXECUTION

Locate precast items to the following tolerances:

| | |
|---|---|
| Plan: | ±3 mm |
| Vertical: | ±1 mm per metre |

3.8 SEALANTS

Ensure at time of erection, that the limits of acceptable joint variation (from the manufacturer's requirements) for each product are maintained. Prepare joints, protect adjoining surfaces, prime joint edges, seal joint surfaces, fit limiting rods and insert sealant to the manufacturer's requirements and temperature limits.

Standard joint sealant AT Façade or equal approved installed as per manufacturers specifications to the exterior face of wall joints and interior face where not specified to be a fire rated sealant.

Interior face wall joints to the Chlorine storage room shall be sealed with Sika Firerate PU installed as per the manufacturers specifications.

3.9 REID ANCHOR - EPOXY FILLING

All Reid bars anchored into the base fixing inserts of the panels shall be epoxied in place by using Ramset C6 epoxy applied into the socket immediately prior to installing and tightening the bar. Sufficient epoxy shall be installed to express around the socket circumference when bar is fully tightened. The sockets shall be free of all dirt and grease prior to placing the epoxy.

3.9 CLEAN AND DRESS

Clean and dress panels externally and internally to leave them to the standard of finish specified and without blemish, ensuring following work can be completed to the required standard.

3.10 CLEAN UP

Clean up surrounding areas of trade waste and remove temporary works required for the installation of the precast concrete items.

3.11 REMOVE

Remove debris, unused materials and elements from the site.

## 4. SCHEDULES

4.1 SURFACE FINISHES

| | |
|---|---|
| Formed surfaces: | F4 finish to NZS 3114 |
| Unformed surfaces: | U3 finish to NZS 3114 |

# Section 4 CONCRETE MASONRY

## 1. GENERAL

1.1 DOCUMENTS
Documents referred to in this section are:

| | |
|---|---|
| NZBC B1/AS1 | Structure general, 2.0 Masonry |
| NZS 3103 | Sands for mortars and plasters |
| NZS 3109 | Concrete construction |
| NZS 3604 | Timber framed buildings |
| NZS 4210 | Masonry construction: materials and workmanship |
| NZS 4229 | Concrete masonry buildings not requiring specific engineering design |
| AS/NZS 4455 | Masonry units and segmented pavers |
| AS/NZS 4671 | Steel reinforcing materials |

The documents also include the drawings titled Gore Water Treatment Plant Upgrade-New Building and numbered 20080/ S01 – S13 other related drawings and this specification.

1.2 MANUFACTURER'S DOCUMENTS
Manufacturer's and supplier's documents relating to work in this section are:
~ Firth open ended reinforcing concrete masonry blocks

1.3 QUALIFICATIONS
Carry out all masonry work with people competent and experienced in this type of work, under the supervision of a registered mason. The registered mason to certify in writing to the owner that the observation has been carried out in accordance with the relevant New Zealand Standards.

1.4 INSPECTION
Call for inspection of the work at critical stages including set out, reinforcing, and the time prior to and during grouting. All to recognised trade practice as set out in NZS 4210, clause 1.4.

1.5 TESTS
Carry out all required tests in accordance with NZS 4210, appendix 2A.

1.6 QUALITY RECORDS
Keep accurate records relating to strength and quality of materials used in the construction, and make the information available to the territorial authority inspector on request.

## 2. PRODUCTS

2.1 MASONRY UNITS
To AS/NZS 4455.

2.2 REINFORCEMENT
To AS/NZS 4671 and as detailed.

2.3 MORTAR
Sand to NZS 3103. Chloride levels to not exceed 0.04% by dry weight of sand. Mortar to NZS 4210, section 2.2. Compressive strength of not less than 12.5 MPa.

2.4 GROUT
To NZS 4210, section 2.3. Spread value 450 – 530 mm.

2.5 WATER
Clean, fresh and free from excess alkali, salt, silt and organic materials. Water from a local authority water supply is acceptable.

## 3. EXECUTION

3.1 MASONRY CONSTRUCTION GENERALLY
To NZS 4210 and NZS 4229.

3.2 STORAGE
Store masonry units clear of the ground, under cover and well ventilated until placed in the work.

3.3 MOISTURE CONTENT
Ensure masonry units are air dry prior to laying.

3.4 CHECK BASE CONCRETE
Ensure the base concrete is true to line and level, requiring a base mortar bed of 10 mm (minimum) to 20 mm (maximum). Ensure that all laitance, loose aggregate, or anything preventing bond is removed prior to laying masonry units.

3.5 STARTER POSITIONS
Before commencing laying masonry units, check the location of starter reinforcement by measure or by a dry trial lay up of the first course. Do not correct misplacement by cranking bars. Where misplacement exceeds the location tolerance, obtain written direction before proceeding.

3.6 REINFORCEMENT AND GROUTING
Reinforcement detailed, bent and placed in accordance with NZS 4210. Refer to drawings for details of reinforcement and extent of grout filling.

3.7 COVER
Minimum cover as required for reinforced concrete, with grout and masonry treated as a homogeneous material. Maintain reinforcing bars for retaining walls a minimum of 15 mm and for other masonry a minimum of 6 mm from the masonry work face, with the space filled with grout.

3.8 TOLERANCES
Construct within the tolerances set out in NZS 4210, clauses 2.6.5 and 2.7.1. Lay masonry units with bedding of consistent thickness throughout.

3.9 PROTECTION
Protect fair-faced masonry walls, keeping them clear of mortar droppings, grout splashes, or stains of any kind.

3.10 LAY MASONRY UNITS
Ensure consistent, fully filled and tooled joints. Where walls are reinforced, prevent mortar droppings from entering the cells to be grouted. Provide clean out holes at base of wall, unless "low lift" (NZS 4210) grouting is used. Ensure reinforcement is accurately placed and tied. Lay in regular running bond with all necessary special units and sill units. Cut masonry, if necessary, true and square without chipping.

3.11 MASONRY UNITS JOINTS
Not exceeding 10 mm thick, or less than 8 mm when the units are bedded in. Joints tooled concave, unless detailed otherwise.

3.12 CONTROL JOINTS
Locate at major changes of wall height or thickness, at openings, and at not more than 8 metre centres, or, as shown on the drawings. Where reinforcement passes through a control joint, provide for breaking bond using methods detailed on NZS 4210, figure 2.10.1, unless specifically detailed otherwise.

3.13 BRACING
Provide sufficient temporary lateral bracing to ensure stability until the final supporting construction is in place.

3.14 PRE-GROUTING INSPECTION
Inspect walls prior to grouting. Ensure cells are clean and reinforcement is correctly placed. Where "high lift" (to NZS 4210) grouting is used, seal the clean out holes and brace to prevent blow outs.

3.15 GROUTING OF CELLS
Grout all masonry cells below finished grades, all cells in retaining walls and all cells containing reinforcing.

3.16 GROUT CELLS
Grout all masonry unit cells.

3.17 GROUTING PROCEDURE
Use procedures set out in NZS 4210. Methods acceptable on this project are:
- high lift grouting with expansive admixture
- high lift grouting with reduced compaction
- low lift grouting.

3.18 CONSTRUCTION JOINTS
Form and treat construction joints between grout pours and between masonry walls and hardened concrete work to ensure bonding occurs. Comply with NZS 4210, section 2.16.

3.19 MORTAR IN COMPONENTS
Mortar in components such as sills, copings, lintels, and steps, as work proceeds.

3.20 BUILD IN
Build in plugs, bolts, ties, metal flashings, dowels, fastenings and fixings as required by all trades and as shown on the drawings.

3.21 PROGRESSIVE CLEANING
Clean off mortar splashes and grout spills as they occur, making good any damage at the same time.

3.22 FINAL CLEANING
Clean down masonry work and remove waste material from adjoining surfaces and floors at completion.

3.23 REMOVE
Remove from the site materials not used.

## 4. SCHEDULES

4.1 MASONRY UNITS

| | |
|---|---|
| Brand: | ~Firth or approved equal |
| Width: | ~200mm |
| Bond: | ~stretcher |

4.2 GROUT

| | |
|---|---|
| Design strength: | ~25 MPa at 28 days with expansive additive. |
| Maximum aggregate size: | ~12 mm |

# Section 5 STRUCTURAL STEELWORK

## 1. GENERAL

1.1 DOCUMENTS
Documents referred to in this section are:

| | |
|---|---|
| NZBC | F5/AS1 Construction and demolition hazards |
| AS/NZS 1111 | ISO metric hexagon commercial bolts and screws |
| AS/NZS 1252 | High-strength steel bolts with associated nuts and washers for structural engineering |
| AS/NZS 1554 | Structural steel welding, 1554.1 Welding of steel structures |
| AS/NZS 2312 | Guide to the protection of iron and steel against atmospheric corrosion |
| NZS 3404 | Steel structures Standard, Part 1: Steel structures Standard |
| AS 3828 | Guidelines for the erection of building steelwork |
| AS/NZS 4680 | Hot-dip galvanised (zinc) coatings on fabricated ferrous articles |
| AS/NZS 4792 | Hot-dip galvanised (zinc) coatings on ferrous hollow sections |
| HERA | Report R4-99 "HERA specification for the fabrication, erection and surface treatment of structural steelwork". |

The documents also include the drawings titled Gore Water Treatment Plant Upgrade-New Building and numbered 20080/ S01 –S13 other related drawings and this specification.

1.2 QUALIFICATIONS
Welders to be qualified and certificated in all the various welds required for the project. Documentary evidence from an approved reviewing authority that the particular personnel engaged on the work shall be provided. This shall state the individual and the types of weld they are qualified to undertake.

1.3 SHOP DRAWINGS
Supply 1 set of shop and erection drawings to the Engineer for review prior to fabrication.

1.4 SHOP DRAWINGS REVIEW
Shop drawings review indicates the design concept has been reviewed without the need for further modification. This does not relieve the contractor of any responsibility for the correctness of the shop drawings, site dimensions, or for ensuring the work is performed in compliance with the drawings and specifications.

1.5 VERIFY DETAILS AND DIMENSIONS
Refer to drawings to ensure all required details and fixings are provided for in the structural steelwork. Verify dimensions against site measurements prior to fabrication.

1.6 TEST WELDING
Non-destructive test welding with method, extent and standards of acceptance to AS/NZS 1554.1, appendix F, with the suggested extent becoming the required extent.

## 2. PRODUCTS

2.1 STRUCTURAL STEEL
All steel Grade 300, except RHS sections Grade 350, unless noted otherwise on the drawings. Test and stress relieve for brittle fracture when required by NZS 3404, part 1, section 17.

2.2 WELDING
Electrodes to comply with and be selected for the grade of steel being welded as required by AS/NZS 1554.1. Welding wire as required by the wire manufacturer for the materials to be joined and the welding position. Welding flux: dry and used from sealed containers. Material for arc stud welding to comply with AS/NZS 1554.1.

2.3 BOLTS, NUTS AND WASHERS
To AS/NZS 1111 and AS/NZS 1252. Hot dip galvanise all bolts, nuts and washers forming a permanent part of any structure subject to a protective coating, to AS/NZS 4680.

## 3. EXECUTION

3.1 SURFACE FINISH
Grind off all burrs and sharp arrises.

3.2 TOLERANCES
Discard material showing visual defects affecting its structural integrity. Structural elements to comply with NZS 3404, part 1, section 14.4 (straightness, full contact splices, length and struts not prepared for full contact). Comply with the required tolerances laid down for holding down bolts, columns, beams and other members in HERA Report R4-99, sections 2.5, 4.5 and 5.6.

3.3 CUTTING
To NZS 3404, part 1, clause 14.3.3 and HERA Report R4-99, sections 1.5 and 4.6. Hand cut only where machine cutting is not possible.

3.4 CONSTRUCT
Construct the steel structure as detailed and to NZS 3404, part 1, section 14 (fabrication) and part 1, section 15 (erection).

3.5 WELDING
To NZS 3404, part 1, clause 14.3.4 and AS/NZS 1554.1. Comply with AS/NZS 1554.1 for guidance on welding inspection and quality control.

3.6 HOLING
To NZS 3404, part 1, clause 14.3.5 for sizes, alignment, finishing and punching of holes.

3.7 BOLTING
Bolting to comply with NZS 3404, clause 14.3.6.

3.8 THREADS EXCLUDED FROM SHEAR PLANE
Select length of bolts such that the threaded portion does not occur within the shear plane between joined parts.

3.9 START ERECTION
Start erection only when the holding down bolts and anchorages have achieved sufficient strength. Carry out the erection of the structural steel to the requirements of AS 3828. Comply with NZBC acceptable solution F5 and NZS 3404, part 1, section 15. Provide temporary bracing as required to achieve stability during erection.

3.10 BASE PLATES
Enlargement or site cutting of holes not permitted. Bending or displacement of holding down bolts not permitted.

3.11 COLUMNS
Plumb columns using sawn steel packs and wedges not larger than necessary for the purpose. The column base must not be raised by more than 25 mm. Fill space beneath the base plate with cement-sand grout, containing a non-shrink additive, the grout having a minimum compressive strength of 30MPa at 28 days. Alternately use a dry pack of 1:2 cement with the sand mortar hammered in tight to ensure complete filling of space.

3.12 INSPECTION
Inspect all stages of fabrication and construction of the structure to NZS 3404, part 1, sections 14 (fabrication) and 15 (erection).

3.13 ENCASED STEELWORK

Where required clean the steelwork to be encased in concrete to remove all loose mill scale, rust, dirt and other matter affecting bond with concrete. Achieve this by wire brushing and the use of suitable solvents.

3.14 BRUSH CLEANING

Remove oil and grease by the use of solvents. Scrape and power wire brush to bright metal. Avoid producing a polished surface. Ensure no burrs or sharp arrises remain which may prevent full coating thickness being attained. Prime immediately and paint as soon as practicable.

3.15 BLAST CLEANING

Remove oil and grease by the use of solvents. Abrasive blast clean to bright metal to SA 2.5. Select grit type and equipment such that the cleaned surface profile between peaks and valleys does not exceed one third of the dry film thickness. Ensure no burrs or sharp arrises remain which may prevent full coating thickness being attained. Prime immediately and paint as soon as practicable.

3.16 PRIMING

After cleaning and grit blasting to bright metal in the workshop, unless noted otherwise coat all steelwork, with minimum 75um epoxy zinc coating. Patch prime on site after erection, using a compatible priming system.

3.17 GALVANISING

Clean sections thoroughly and apply zinc coating to the requirements of AS/NZS 4680 and AS/NZS 4792 (hollow sections) to give a coating weight of not less than 600 grams per square metre.

3.18 ZINC SPRAYING

To AS/NZS 2312 with clear seal finish

- Abrasive blast clean to AS 1627.4, class $2^1/_2$, minimum profile 10 microns
- Apply spray coating before discoloration and within 4 hours
- Steel temperature 3°C minimum above dew point and less than 150°C

3.19 UNPAINTED SURFACES

Do not paint:

- faying face of high strength friction grip bolted joints
- areas for site welding, keeping 75 mm clear all round
- surfaces being embedded in concrete.

Where steel is only partly encased then extend priming 25 mm maximum into the concrete encasement area.

3.20 PATCH PRIMING

Clean areas of damaged priming and areas left clear for site jointing to a standard comparable with that specified for shop cleaning. Wash off chemical deposits from welding fumes. Apply priming coats to the same standard as shop primers, ensuring thorough coating of bolts, nuts and connection areas. Reprime if more than 4 weeks elapse before the final coating system is applied.

3.21 COATING SYSTEMS

Apply all coatings in accordance with the coating manufacturer's requirements. Apply coatings to steel within 4 hours of cleaning and before condensation or light rusting can occur. Ensure steel is dry and atmospheric conditions warm and dry, with an air temperature of greater than 12°C and relative humidity less than 85%.

Touch-up/repair any damage to the coating system before linings are placed.

Fully protect coating systems from damage during construction. Repair any damage strictly as per the manufacturer's specifications.

3.22 WELDING
Shop weld together touching or near-touching steelwork all round with 5 mm (one pass) continuous fillet welds unless denoted otherwise on the drawings.

## 4. SCHEDULES

4.1 COATING SYSTEM
All steel work shall be prime coated in accordance with section 3.16 after blast cleaning in accordance with section 3.15.

4.1 WELD TESTING
The following are the minimum requirements for testing of welds by an independent testing authority. Test locations and results for all members shall be documented including type of inspection, result and any remedial work undertaken and included as part of PS3 documentation.

- 100% visual
- All Column base plates and all rafter/ apex connection plates to 360UB– mag particle

4.2 PRIMER
Resene Armourzinc 120- 75u DFT or equal approved by Engineer.

4.3 PROTECTIVE COATINGS (to all exposed interior steel)
1st coat Resene Armourcote 515/510 125u DFT or equal approved by Engineer.
2nd coat Imperite I.F. 503 50u DFT or equal approved by Engineer.

# Section 6 SPECIAL COATINGS – BUND AREA

## 1.1 GENERAL

### .1 SCOPE OF WORK

This section deals with the manufacture, supply and installation of floor and wall coatings including covings, upstands, plinths and dressing to sumps in bunded areas shown in the drawings titled Gore Water Treatment Plant Upgrade- New Building and numbered 20080/S01-S13.

### .2 Documents

MANUFACTURER'S DOCUMENTS

Manufacturer's and supplier's documents relating to work in this section are available from:

Armatec Environmental Ltd
Web: www.armatec.co.nz
Email: info@armatec.co.nz
Telephone: 06 755 0410
Facsimile: 06 755 2346

Approved equivalent suitably experienced applicators will also be considered.

### .3. Requirements

SHOP DRAWINGS AND INSTALLATION DETAILS

Provide drawn profiles and preliminary installation details for evaluation

Shop drawings to show, but not be limited to:

- Complete details of construction, connections (minimum scale 1:10)
- Sealant types
- Provision for thermal movement and bridging of joints
- Sequence of installation
- Co-ordination requirements with other work and full schedule of materials

SHOP DRAWINGS REVIEW

Shop drawing review indicates only that the supplied interpretation of the design concept has been reviewed without the need for further modification, other than the corrections indicated by the reviewer. It does not relieve the contractor of the responsibility for ensuring the correctness of shop drawings, site dimensions, the overall design, or for ensuring the work complies with the contract documents. Nor can it be construed as authorising departures from the contract documents.

REVISED SHOP DRAWINGS

Provide a copy of shop drawings revised to include required modifications, before proceeding with any fabrication or erection.

.4 Guarantees

GUARANTEE
Guarantee this work under specific environmental and use conditions against failure of materials, watertightness and execution:

Have a minimum expected life of 25 years before recoating including normal wear and tear including walking, placing ladders and similar activities expected in such an area.

.5 Performance

PERFORMANCE OF FLOOR & WALL COATING

Tenderers to confirm performance and compliance in accordance with the following requirements

Exposure, immersion and contact to chemicals as listed:
Hydrofluosilicic acid (17% w/w)
ACH (aluminium chloral hydrate 50% w/w)
PACl (polyaluminium chloride 34% w/w)
Caustic soda (25-50% w/w)

- Outdoor use.
- Pedestrian and other traffic will occur regularly
- A wet anti-slip surface is required with a minimum coefficient of 0.55
- Food hygiene performance
- Floors will fall to sumps at 1:50 maximum
- Include a bond beaker and reinforcement over wall/floor junctions and construction joints to enable movement to be accommodated.
- Miscellaneous plinths will require coating under equipment
- Quick curing rate
- High impact resistance
- Consistent colour match between batches
- Provide a water tight finish, noting blockwork is utilised for internal bund walls. Bunds will be water tested on completion and no detectable seepage through walls or significant water loss will be allowed

1.2 PRODUCTS

.1 Materials

Ceilcote Flakeline or approved equivalent, subject to compatibility with the application especially in regard to flexible sealants in joints.

SUPERCEDED

SUPERCEDED

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## DRAWING/DOCUMENT TRANSMITTAL FORM



04 December 2020

| | | | |
|---|---|---|---|
| ***Client:*** | Gore District Council | ***Project:*** | Gore WTP Upgrade |
| ***Attention:*** | Hashem Ramezan-Zadeh | ***Contract Number:*** | GDC 2019/01 |
| ***From:*** | Donovan Harvey | ***Transmittal Number:*** | GOR 014 |
| **Document Sent For:** Approval | | | |

| *Drawing Number* | *Drawing Name* | *Revision* | *Drawn/Written By* |
|---|---|---|---|
| N/A | SPEC and Producer Statement – PS1 | N/A | Kensington Consulting |
| 20080-S01 | Floor Plan and Panel Lauout | 0 | D. Kensington |
| 20080-S02 | Structural Steel Plan | 0 | D. Kensington |
| 20080-S03 | Building Sections | 0 | D. Kensington |
| 20080-S04 | Building Sections and Details | 0 | D. Kensington |
| 20080-S05 | Building Sections and Details | 0 | D. Kensington |
| 20080-S06 | Precast Panels North & South Elevations | 0 | D. Kensington |
| 20080-S07A | East Wall Precast Panels Details | 0 | D. Kensington |
| 20080-S07B | East Wall Precast Panels Details | 0 | D. Kensington |
| 20080-S08 | West Wall Precast Panels Details | 0 | D. Kensington |
| 20080-S09 | South Wall Precast Panels | 0 | D. Kensington |
| 20080-S10 | North Wall Precast Panels | 0 | D. Kensington |
| 20080-S11 | North Wall Precast Panels | 0 | D. Kensington |
| 20080-S12 | Internal Precast Panel Details | 0 | D. Kensington |
| 20080-S13 | Chlorine Room Ceiling | 0 | D. Kensington |

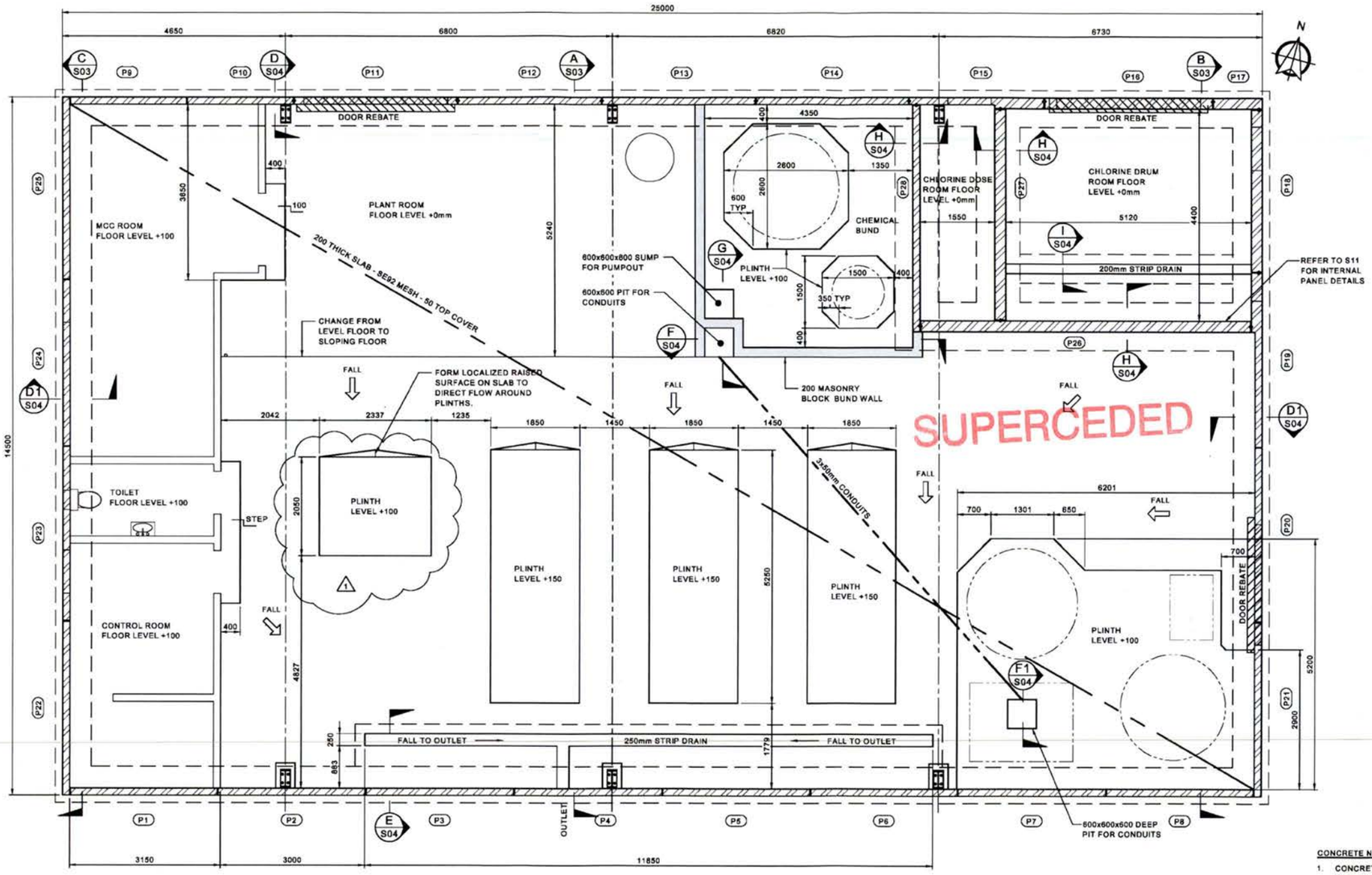


Regards,

Donovan Harvey
Project Manager

PALL Water

MARSHALL PROJECTS
Engineering Water Partnerships




## FLOOR PLAN

1:50 at A1
1:100 at A3

**CONCRETE NOTES**

1. CONCRETE STRENGTH SHALL BE 25 MPa AT 28 DAYS FOR FOUNDATIONS / FLOOR CONCRETE AND MASONRY BLOCK GROUT. THE FLOORSLAB SHALL ALSO CONTAIN MIN 1Kg POLYPROPYLENE FIBRE.
2. CONCRETE STRENGTH SHALL BE 40 MPa AT 28 DAYS FOR PRECAST PANELS.
3. ALL STRUCTURAL CONCRETE SHALL BE CERTIFIED "SPECIAL GRADE"
4. REINFORCING LAP LENGTHS: HD10 - 700 mm, HD12 - 850 mm, HD16 - 1,050 mm, MESH - 260 mm
5. ALL REINFORCING STEEL SHALL HAVE 75mm MINIMUM COVER IN FOUNDATIONS, UNLESS NOTED OTHERWISE.
6. BAR DESIGNATION: HD = GRADE 500E DEFORMED BARS; D = GRADE 300E DEFORMED BARS; R = GRADE 300E ROUND BARS; RB = GRADE 500 (REID BAR) DEFORMED BARS.
7. BASE PLATE GROUTING - USE SIKA GROUT 212 OR APPROVED EQUIVALENT.
8. STARTER BAR GROUTING - USE RAMSET EPCON C6 OR APPROVED EQUIVALENT.
9. ALL ANCHOR STUDS SHALL BE GALVANISED GRADE 8.8, MIN EMBEDMENT OF 150mm. UNLESS STAINLESS STEEL SPECIFIED OTHERWISE.

SUPERCEDED

| Rev No | REVISION DESCRIPTION | DRAWN | APPROVED | DATE |
|---|---|---|---|---|
| | | | | |
| | | | | |
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| | | | | |
| 1 | PLINTH RELOCATED | ITB | DK | 4:12:20 |
| 0 | ISSUED FOR CONSENT / CONSTRUCTION | ITB | DK | 1:12:20 |

| | BY | DATE |
|---|---|---|
| DESIGNED | DK | 10:20 |
| DESIGN CHECK | DK | 11:20 |
| DRAWN | ITB | 10:20 |
| APPROVED | | |

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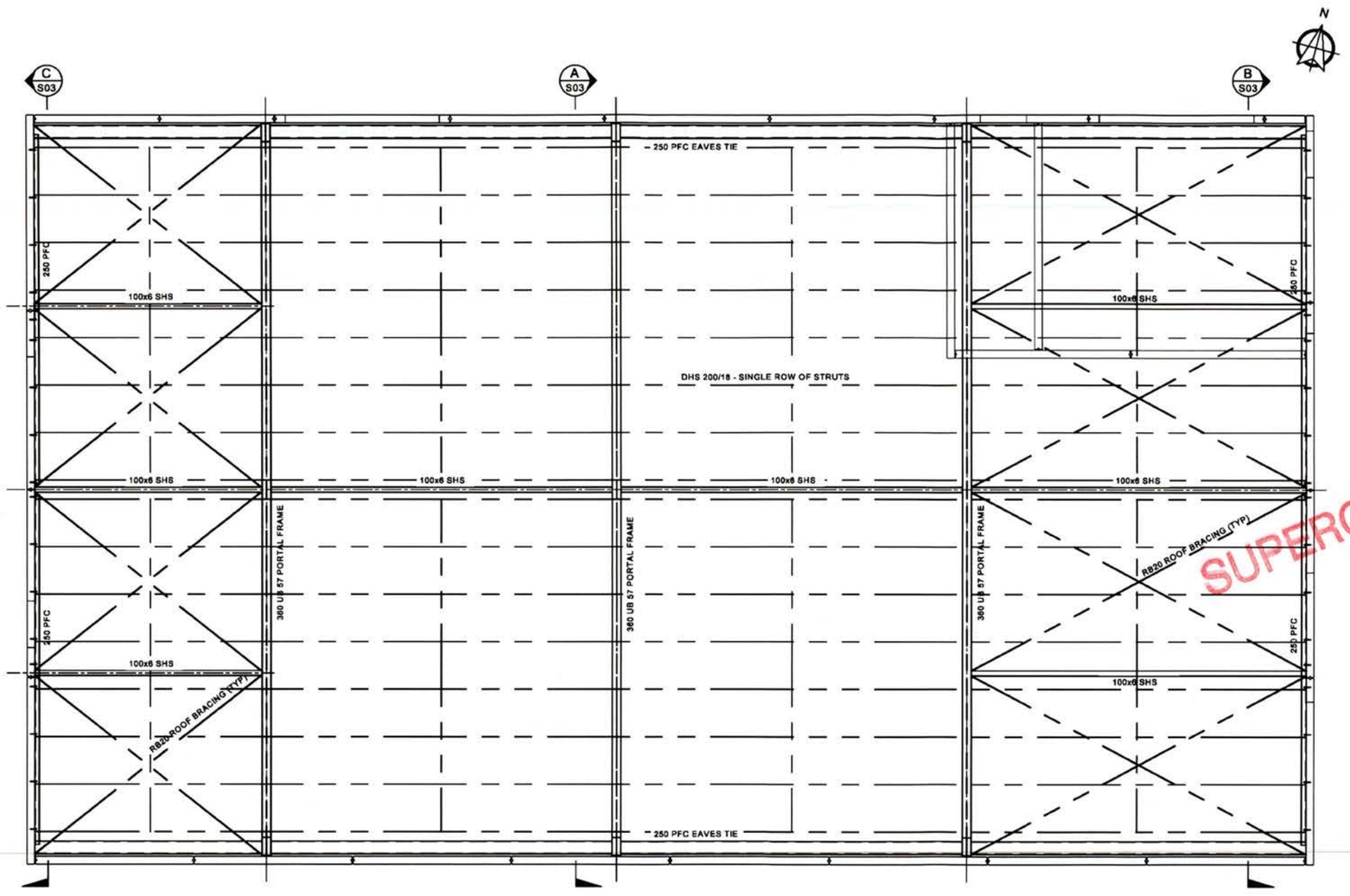
GORE WATER TREATMENT PLANT
UPGRADE - NEW BUILDING
FLOOR PLAN AND PANEL LAYOUT

STATUS
CONSENT / CONSTRUCTION

| SCALE AT A1 | DRAWING NUMBER | REV. |
|---|---|---|
| PROJECT NUMBER | | |
| 20080 | S01 | 1 |



ORIGINAL SIZE (A1) DO NOT SCALE PLOT DATE 4-Dec-20




## STEELWORK PLAN

1:50 at A1
1:100 at A3

ROOF

ROOF STRUCTURE SHALL BE AS FOLLOWS -
ROOFING KARAKA MARSHALL 6 LINE PROFILE.
THERMAKRAFT AUSMESH SAFETY NETTING.
COVERTEK 407 ROOF UNDERLAY.
PINK BATTS R1.8 ROOF BLANKET.
TIMBER PURLINS SCREWED.
COVERTEK 401 ROOF UNDERLAY UNDER ROOFING.

STEELWORK NOTES

1. THE CONTRACTOR SHALL CONFIRM ALL DIMENSIONS AND LEVELS ON SITE PRIOR TO COMMENCING CONSTRUCTION.
2. ALL PROPRIETARY FITTINGS SHALL BE INSTALLED STRICTLY TO MANUFACTURERS SPECIFICATIONS.
3. ALL STEELWORK SHALL BE CLEANED TO SA25 AND PAINTED IN A SHOP ENVIRONMENT. REFER TO PAINT SPECIFICATION FOR SPECIFIC DETAILS.
4. ALL SURFACES TO BE WELDED SHALL BE CLEANED OF ALL FOREIGN MATTER TO 50mm EACH SIDE OF THE WELD.
5. ALL WELDS CONTINUOUS CATEGORY SP E41XX/W40X UNLESS NOTED OTHERWISE.
6. ALL WELDING SHALL BE 6mm FILLET WELDS ALL ROUND UNLESS NOTED OTHERWISE.
7. ALL STRUCTURAL STEEL OPEN SECTION SHALL BE GRADE 300. ALL CLOSED SECTION SHS AND RHS SHALL BE GRADE 350. ALL BOLTS SHALL BE GALVANISED GRADE 8.8 WITH THREAD NOT PERMITTED WITHIN THE SHEAR PLANE AND TIGHTENED TO A SNUG TIGHT CONDITION (N/S).



| Rev No | REVISION DESCRIPTION | DRAWN | APPROVED | DATE |
|---|---|---|---|---|
| 0 | ISSUED FOR CONSENT / CONSTRUCTION | ITB | DK | 1:12:20 |

| | BY | DATE |
|---|---|---|
| DESIGNED | DK | 10:20 |
| DESIGN CHECK | DK | 11:20 |
| DRAWN | ITB | 10:20 |
| APPROVED | | |

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GORE WATER TREATMENT PLANT
UPGRADE - NEW BUILDING
STRUCTURAL STEEL PLAN

STATUS
CONSENT / CONSTRUCTION

SCALE AT A1

| PROJECT NUMBER | DRAWING NUMBER | REV. |
|---|---|---|
| 20080 | S02 | 0 |



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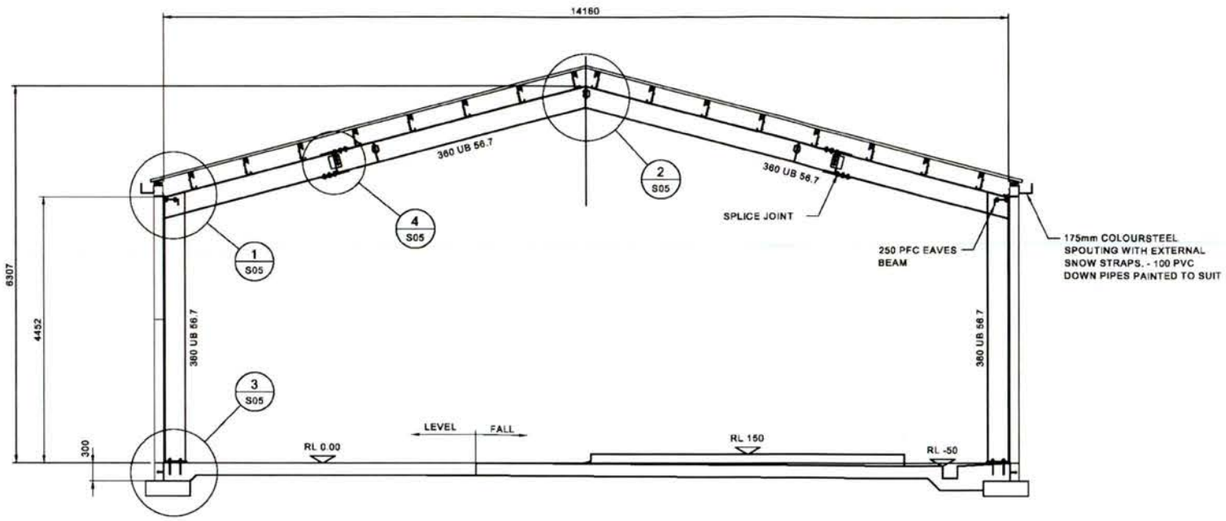
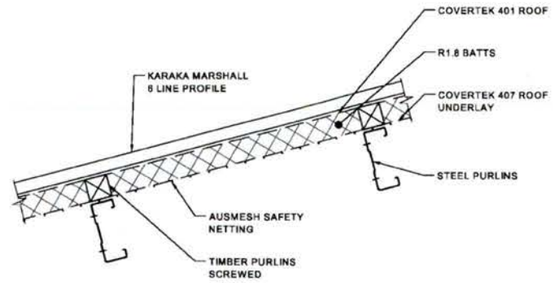
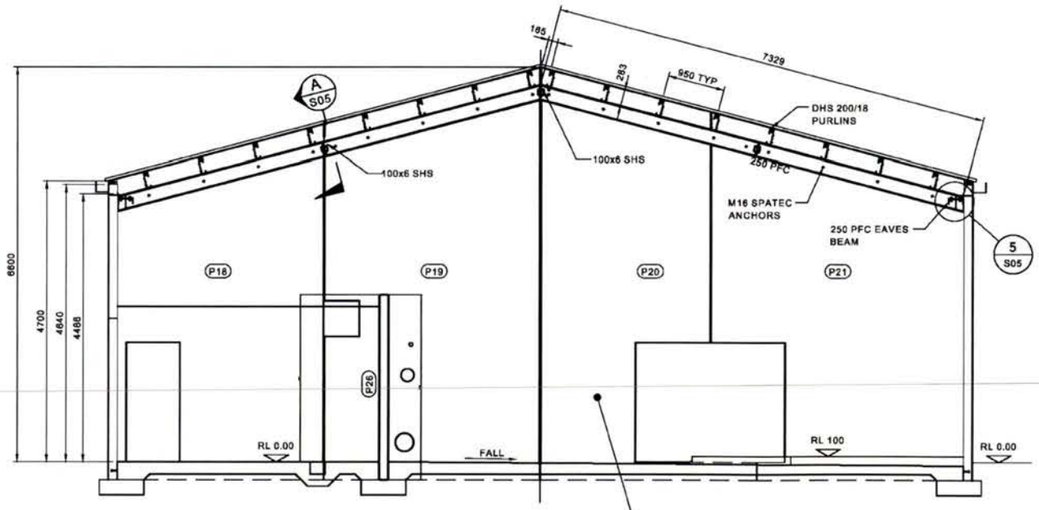



SECTION A S01
1:50 at A1
1:100 at A3




ROOF DETAIL
1:10 at A1
1:20 at A3






SECTION B S01
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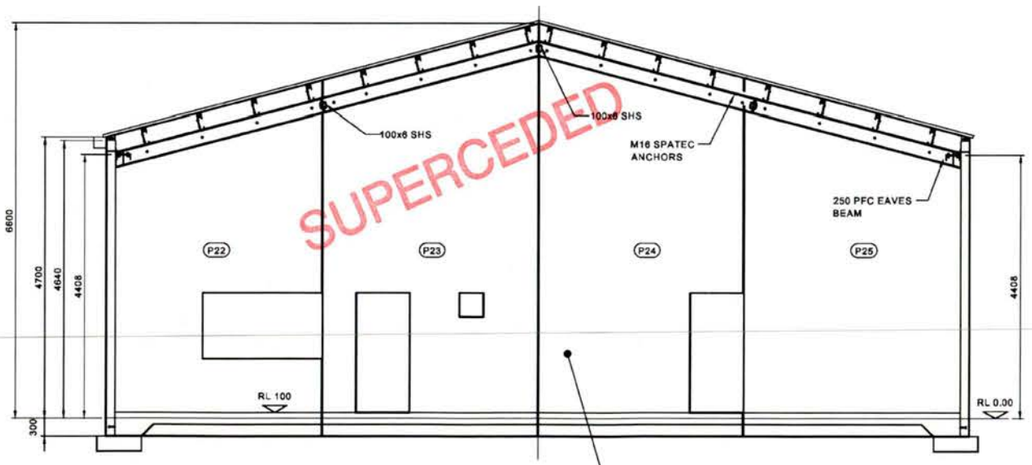




SECTION C S01
1:50 at A1
1:100 at A3



| Rev No | REVISION DESCRIPTION | DRAWN | APPROVED | DATE |
|---|---|---|---|---|
| 0 | ISSUED FORCONSENT / CONSTRUCTION | ITB | DK | 1:12:20 |

| | BY | DATE |
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| DESIGNED | DK | 10:20 |
| DESIGN CHECK | DK | 11:20 |
| DRAWN | ITB | 10:20 |
| APPROVED | | |

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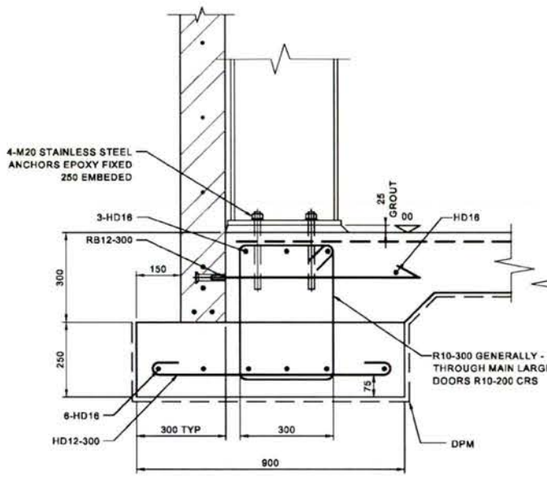
GORE WATER TREATMENT PLANT
UPGRADE - NEW BUILDING
SECTIONS

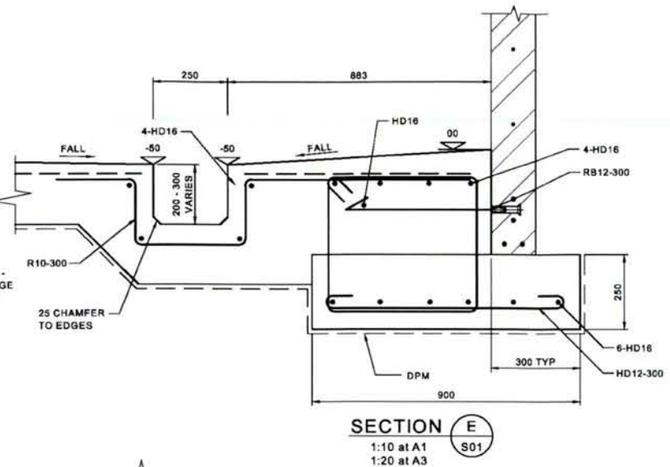
STATUS
CONSENT / CONSTRUCTION

| SCALE AT A1 | | |
|---|---|---|
| PROJECT NUMBER | DRAWING NUMBER | REV. |
| 20080 | S03 | 0 |

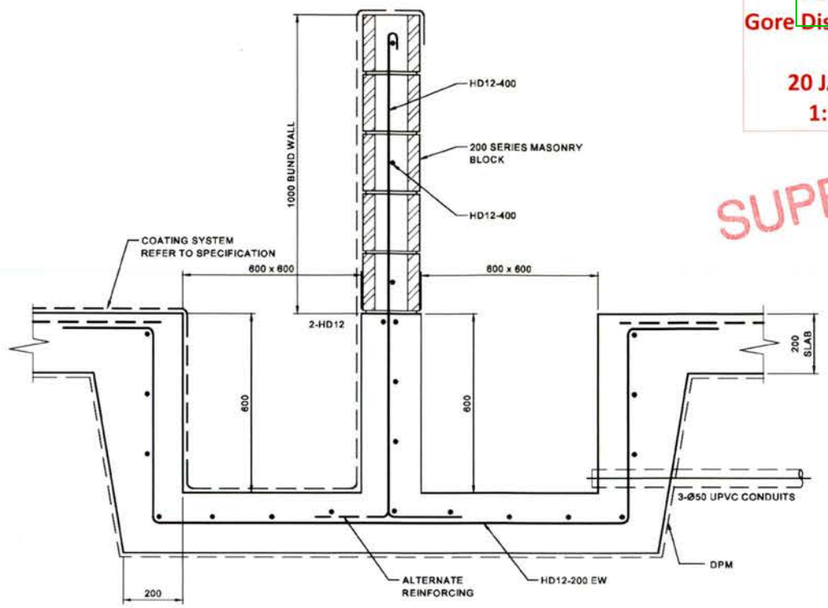
ORIGINAL SIZE (A1) DO NOT SCALE PLOT DATE 3-Dec-20



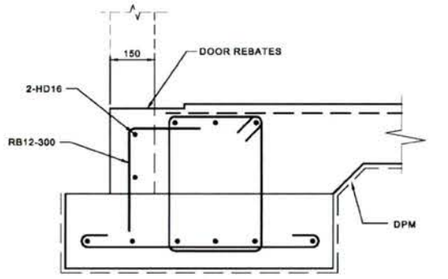

SECTION D S01 & D1 S01 SIMILAR EXCEPT NO PORTAL FRAME
1:10 at A1
1:20 at A3




SECTION E S01
1:10 at A1
1:20 at A3




SECTION G S01
1:10 at A1
1:20 at A3




SECTION AT LARGE DOOR OPENINGS
1:10 at A1
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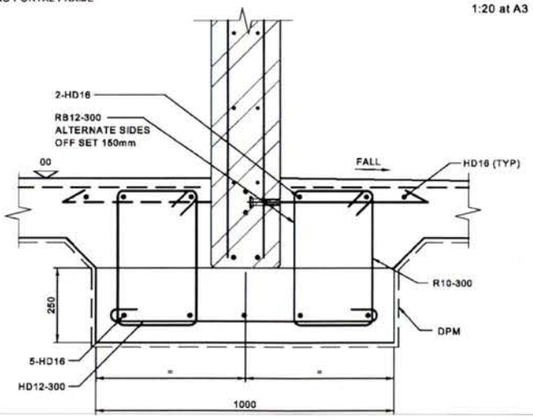
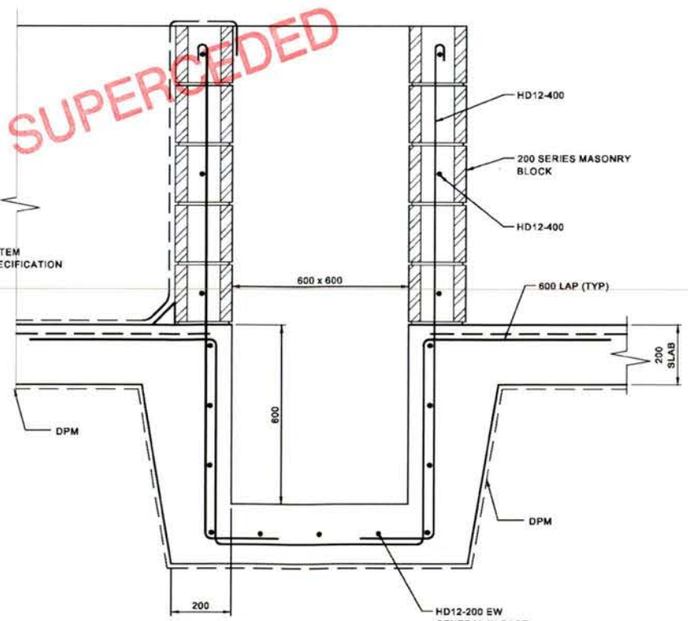
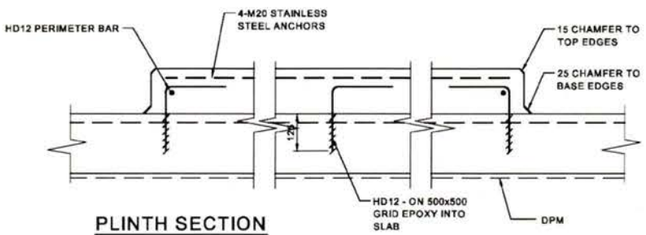



SECTION H S01
1:10 at A1
1:20 at A3

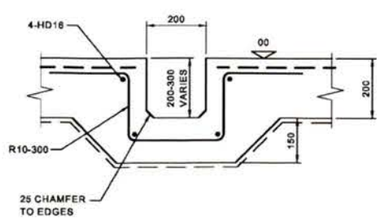




SECTION F S01 & F1 S01 SIMILAR FOR PIT
1:10 at A1
1:20 at A3

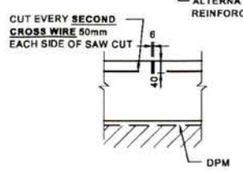
SUPERCEDED




PLINTH SECTION
1:10 at A1
1:20 at A3




SECTION I S01 CHLORINE ROOM DRAIN
1:10 at A1
1:20 at A3




SAW CUT JOINT
SCALE 1:10

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|---|---|---|---|---|
| 0 | ISSUED FOR CONSENT / CONSTRUCTION | ITB | DK | 1:12:20 |

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| DESIGN CHECK | DK | 11:20 |
| DRAWN | ITB | 10:20 |
| APPROVED | | |

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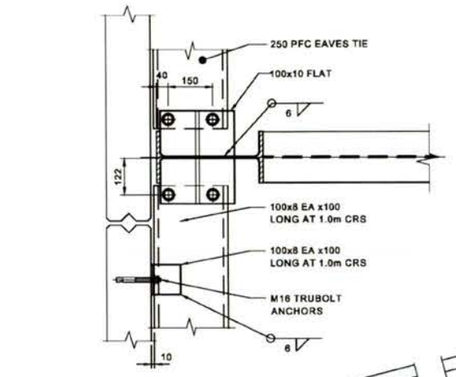
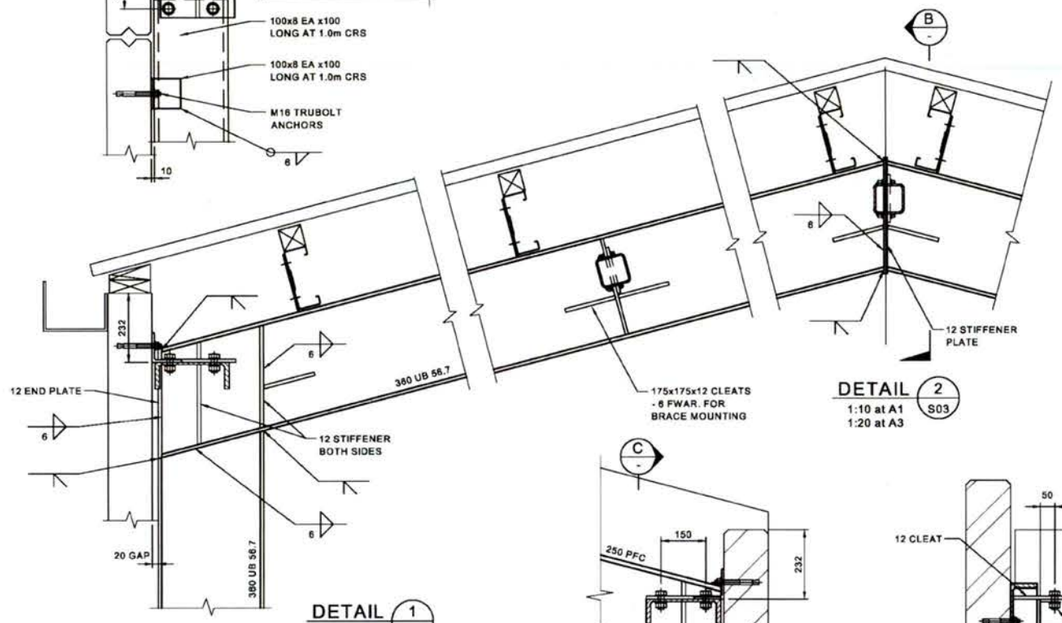
GORE WATER TREATMENT PLANT
UPGRADE - NEW BUILDING
SECTIONS AND DETAILS

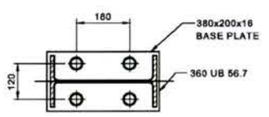
STATUS
CONSENT / CONSTRUCTION

| SCALE AT A1 | | |
|---|---|---|
| PROJECT NUMBER | DRAWING NUMBER | REV. |
| 20080 | S04 | 0 |

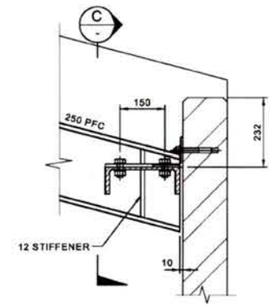


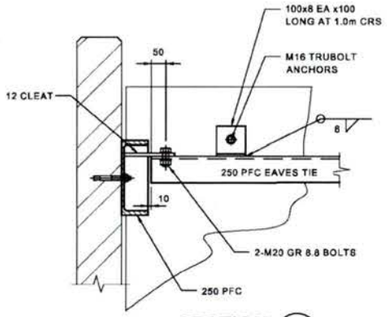

DETAIL 1 (S03)
1:10 at A1
1:20 at A3



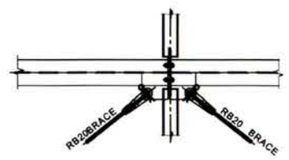

BASE PLATES
SCALE 1:10

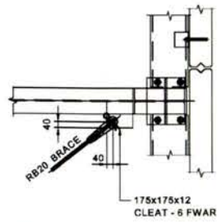



DETAIL 5 (S03)
1:10 at A1
1:20 at A3

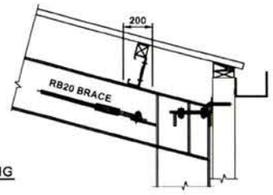



SECTION C
1:10 at A1
1:20 at A3

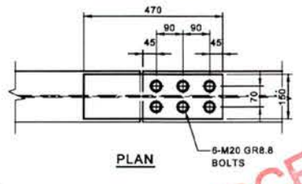


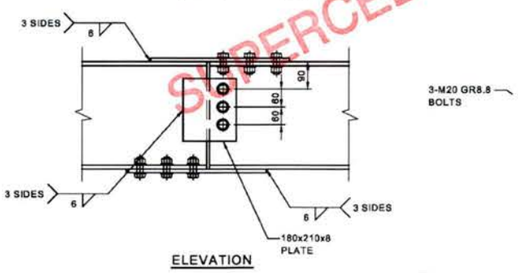





ROOF BRACING
SCALE 1:20

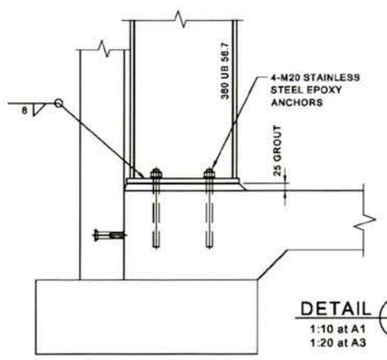



PLAN




ELEVATION

DETAIL 4 (S03) SPLICE DE
1:10 at A1
1:20 at A3




DETAIL 3 (S03)
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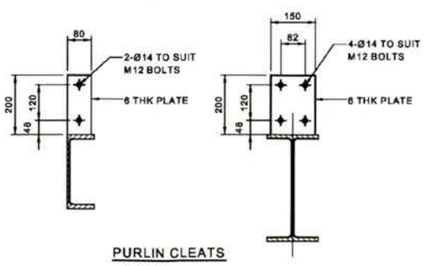
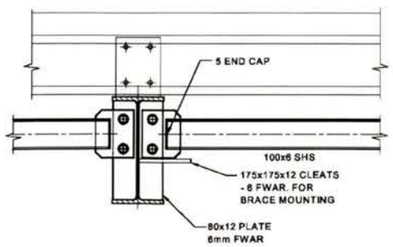
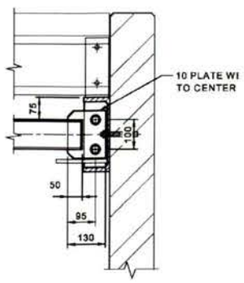
1:20 at A3




PURLIN CLEATS
SCALE 1:10




SECTION B
1:10 at A1
1:20 at A3




SECTION A (S03)
1:10 at A1
1:20 at A3



| Rev No | REVISION DESCRIPTION | DRAWN | APPROVED | DATE |
|---|---|---|---|---|
| 0 | ISSUED FOR CONSENT / CONSTRUCTION | ITB | DK | 1:12:20 |

| | BY | DATE |
|---|---|---|
| DESIGNED | DK | 10:20 |
| DESIGN CHECK | DK | 11:20 |
| DRAWN | ITB | 10:20 |
| APPROVED | | |

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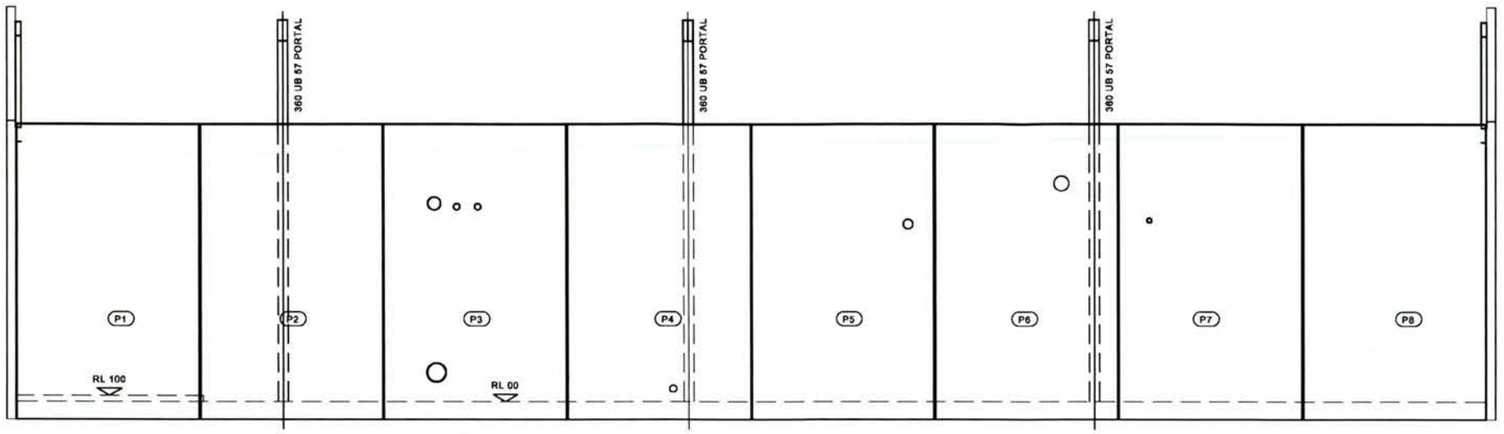
GORE WATER TREATMENT PLANT
UPGRADE - NEW BUILDING
SECTIONS AND DETAILS

STATUS
CONSENT / CONSTRUCTION

SCALE AT A1

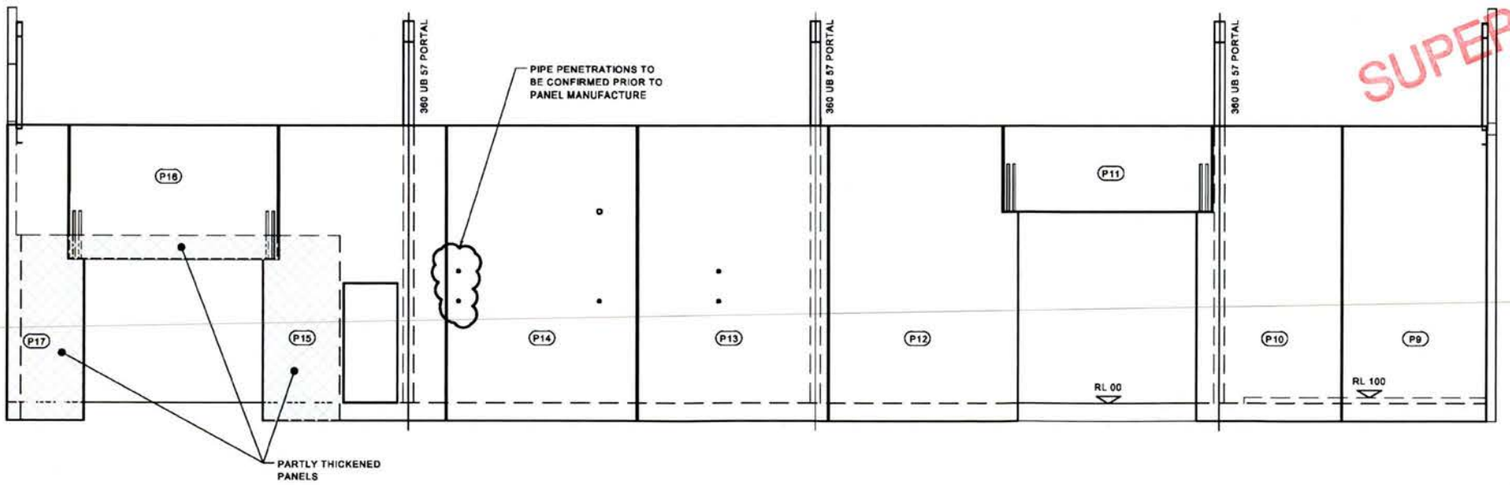
| PROJECT NUMBER | DRAWING NUMBER | REV. |
|---|---|---|
| 20080 | S05 | 0 |




## SOUTH WALL ELEVATION

REFER TO S10 FOR PANEL DETAILS

1:50 at A1
1:100 at A3




## NORTH WALL ELEVATION

REFER TO S09 FOR PANEL DETAILS

1:50 at A1
1:100 at A3





| Rev No | REVISION DESCRIPTION | DRAWN | APPROVED | DATE |
|---|---|---|---|---|
| 0 | ISSUED FOR CONSENT / CONSTRUCTION | ITB | DK | 1:12:20 |

| | BY | DATE |
|---|---|---|
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| DESIGN CHECK | DK | 11:20 |
| DRAWN | ITB | 10:20 |
| APPROVED | | |

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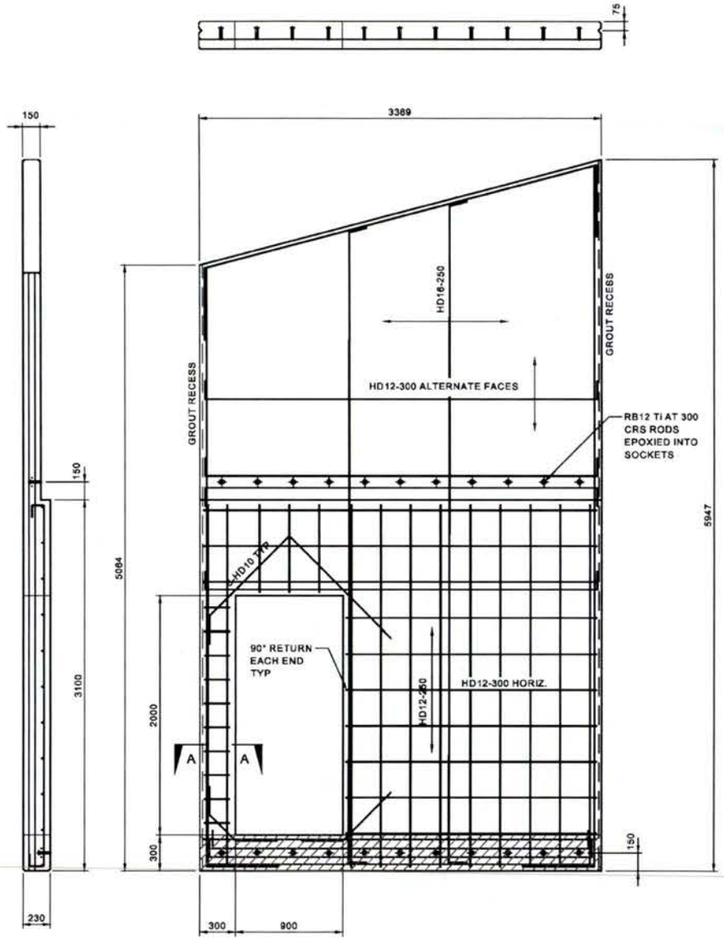
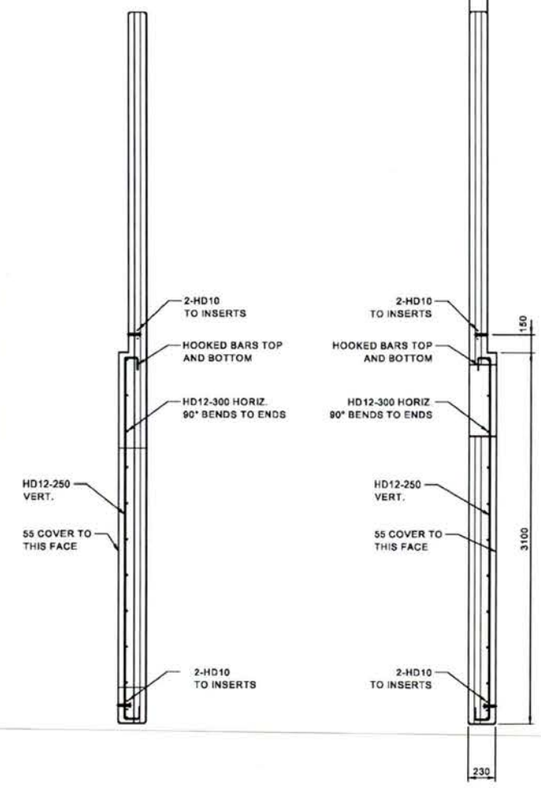
GORE WATER TREATMENT PLANT
UPGRADE - NEW BUILDING
PRECAST PANELS
NORTH & SOUTH WALL ELEVATIONS

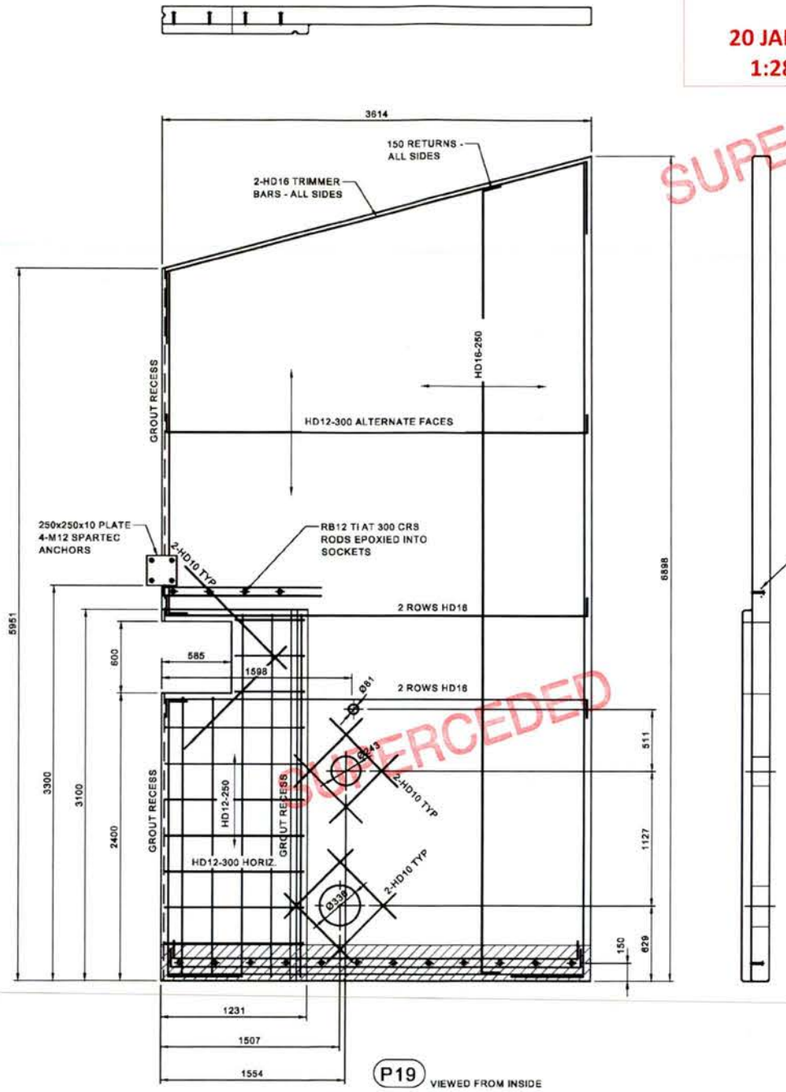
STATUS
CONSENT / CONSTRUCTION

| SCALE AT A1 | | |
|---|---|---|
| PROJECT NUMBER | DRAWING NUMBER | REV. |
| 20080 | S06 | 0 |

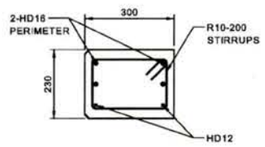



P18 VIEWED FROM INSIDE




P19 VIEWED FROM INSIDE




SECTION A-A
SCALE 1:10



| Rev No | REVISION DESCRIPTION | DRAWN | APPROVED | DATE |
|---|---|---|---|---|
| 0 | ISSUED FOR CONSENT / CONSTRUCTION | ITB | DK | 1:12:20 |

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| DRAWN | ITB | 10:20 |
| APPROVED | | |

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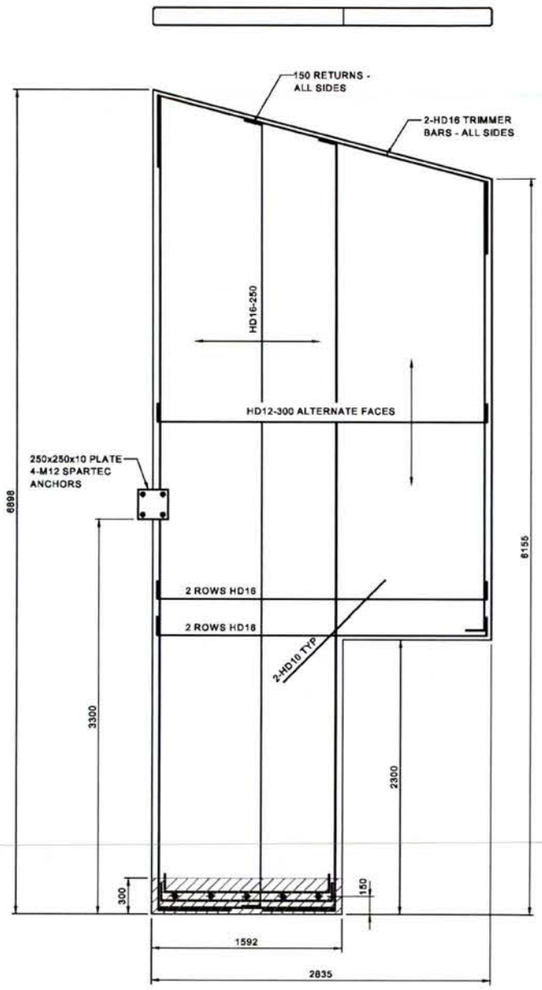
GORE WATER TREATMENT PLANT
UPGRADE - NEW BUILDING
EAST WALL PRECAST PANELS
DETAILS

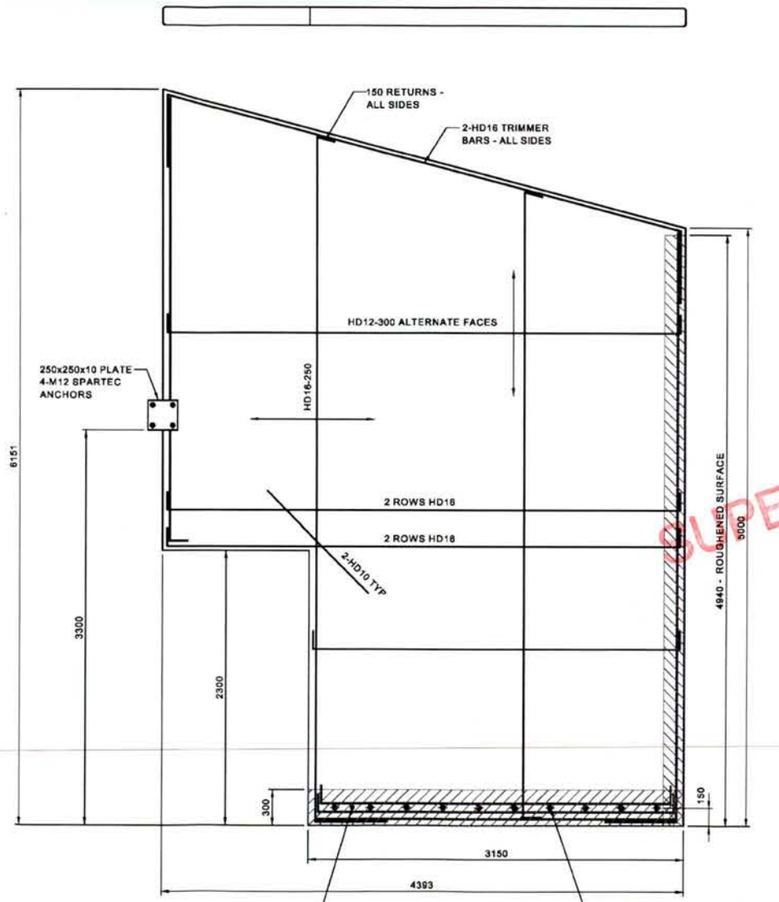
STATUS
CONSENT / CONSTRUCTION

| SCALE AT A1 | | |
|---|---|---|
| PROJECT NUMBER | DRAWING NUMBER | REV. |
| 20080 | S07A | 0 |

ORIGINAL SIZE (A1) DO NOT SCALE PLOT DATE 3-Dec-20




P20
VIEWED FROM INSIDE




P21
VIEWED FROM INSIDE





## EAST WALL PANELS

1:25 at A1
1:50 at A3

ORIGINAL SIZE (A1) DO NOT SCALE

| Rev No | REVISION DESCRIPTION | DRAWN | APPROVED | DATE |
|---|---|---|---|---|
| 0 | ISSUED FOR CONSENT / CONSTRUCTION | ITB | DK | 1:12:20 |

| | BY | DATE |
|---|---|---|
| DESIGNED | DK | 10:20 |
| DESIGN CHECK | DK | 11:20 |
| DRAWN | ITB | 10:20 |
| APPROVED | | |

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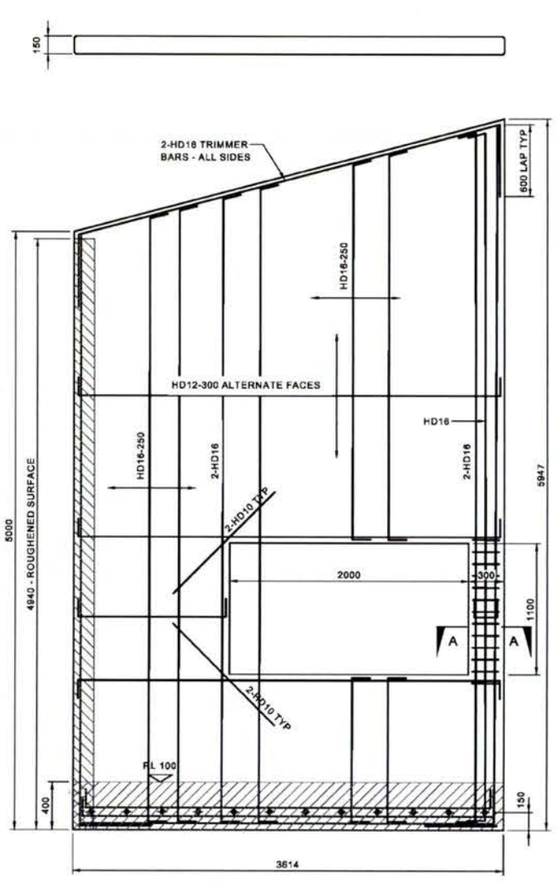
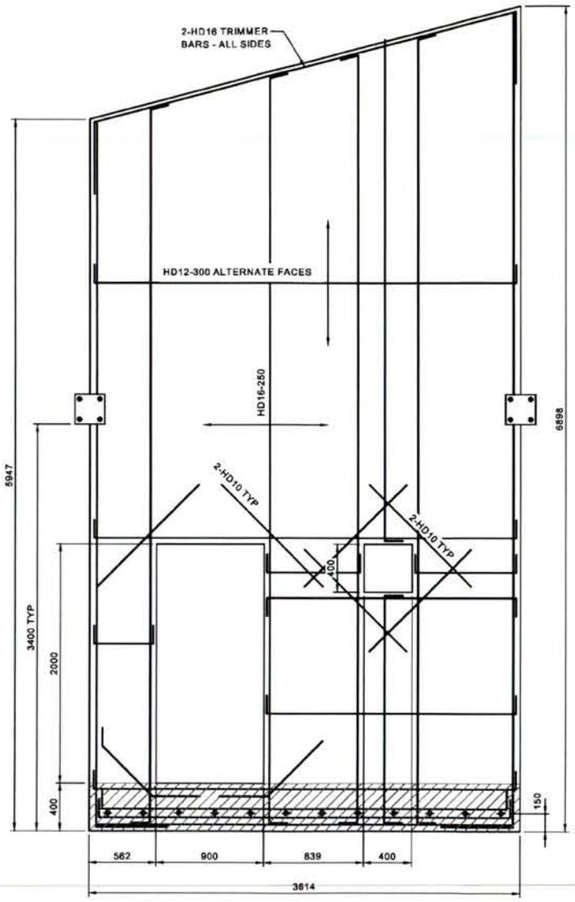
GORE WATER TREATMENT PLANT
UPGRADE - NEW BUILDING
EAST WALL PRECAST PANELS
DETAILS

STATUS
CONSENT / CONSTRUCTION

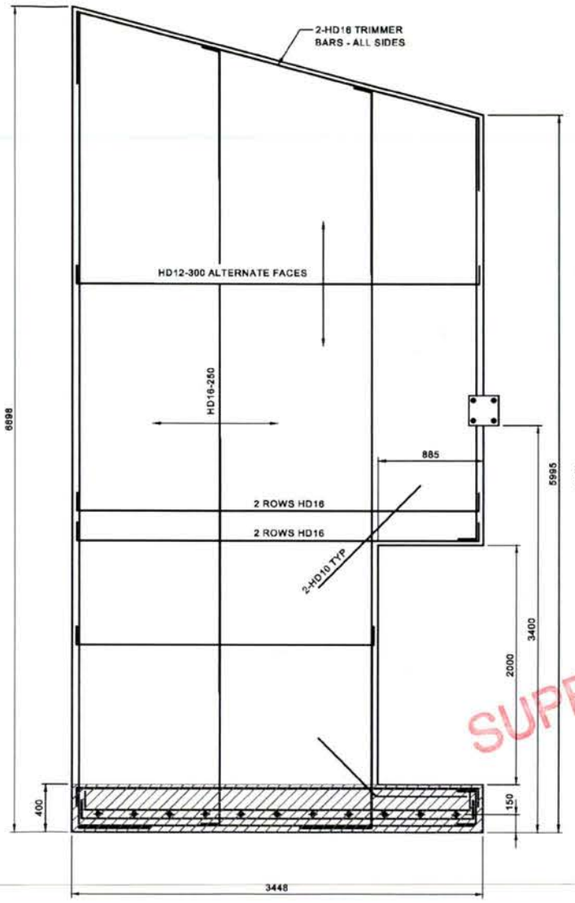
| SCALE AT A1 | | |
|---|---|---|
| PROJECT NUMBER | DRAWING NUMBER | REV. |
| 20080 | S07B | 0 |



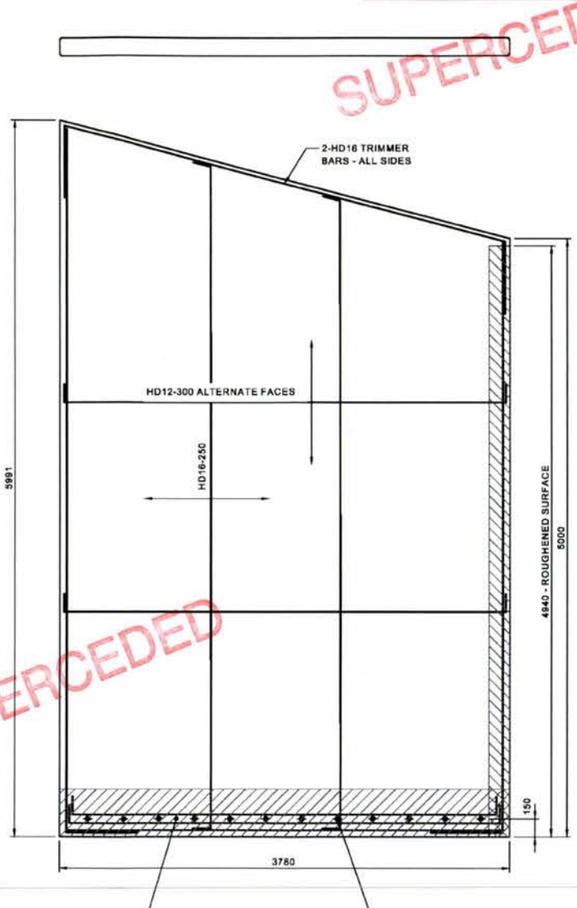

P22
VIEWED FROM INSIDE




P23
VIEWED FROM INSIDE



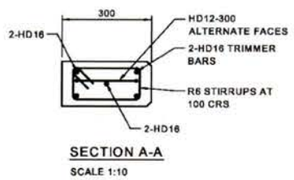

P24
VIEWED FROM INSIDE




HATCHED SURFACE RETARDED TO ACHIEVE FULL 5mm AMPLITUDE ROUGHNESS.

P25
VIEWED FROM INSIDE

1 ROWS RB12TI INSERTS AT 300 CRS C/W ALL RODS TO BE EPOXIED AND SCREWED INTO SOCKETS - USE C6 OR APPROVED EQUAL. (TYPICAL ALL ANCHORAGES)




SECTION A-A
SCALE 1:10

## WEST WALL PANELS

1:25 at A1
1:50 at A3



| Rev No | REVISION DESCRIPTION | DRAWN | APPROVED | DATE |
|---|---|---|---|---|
| 0 | ISSUED FOR CONSENT / CONSTRUCTION | ITB | DK | 1;12:20 |

| | BY | DATE |
|---|---|---|
| DESIGNED | DK | 10:20 |
| DESIGN CHECK | DK | 11:20 |
| DRAWN | ITB | 10:20 |
| APPROVED | | |

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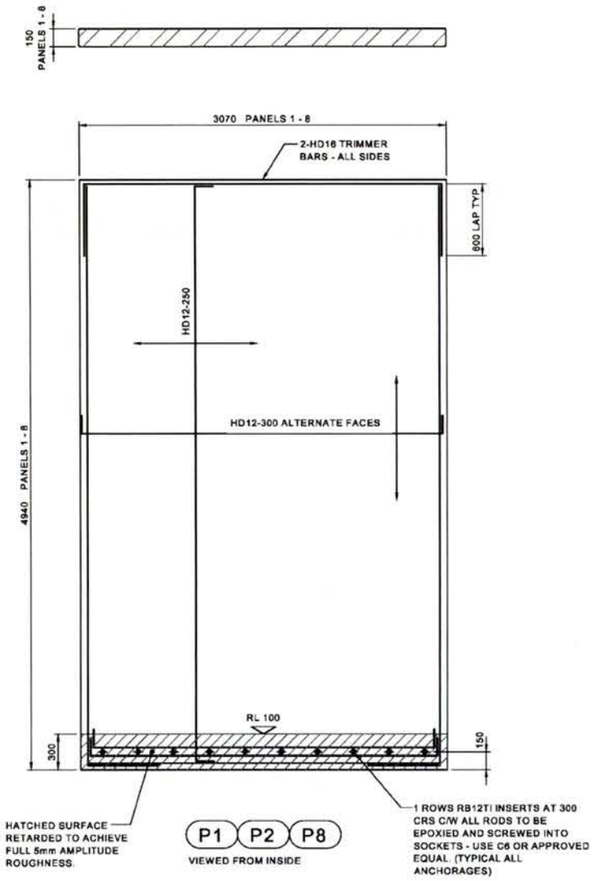
GORE WATER TREATMENT PLANT
UPGRADE - NEW BUILDING
WEST WALL PRECAST PANELS
DETAILS

STATUS
CONSENT / CONSTRUCTION

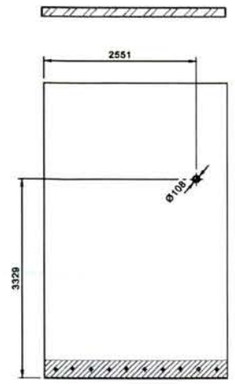
| SCALE AT A1 | | |
|---|---|---|
| PROJECT NUMBER | DRAWING NUMBER | REV. |
| 20080 | S08 | 0 |

ORIGINAL SIZE (A1) DO NOT SCALE PLOT DATE 3-Dec-20

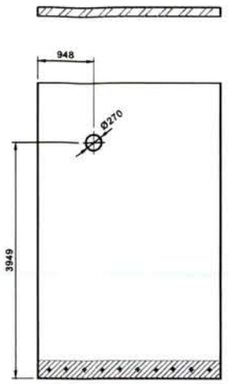



P1 P2 P8
VIEWED FROM INSIDE

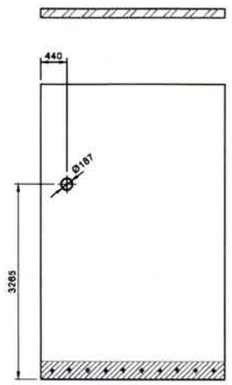
REINFORCING THE SAME
FOR PANELS 1 - 8



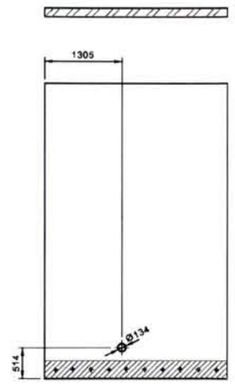

P7
VIEWED FROM INSIDE



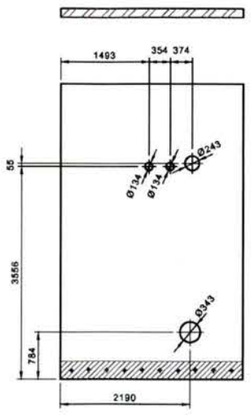

P6
VIEWED FROM INSIDE



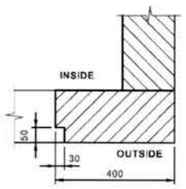

P5
VIEWED FROM INSIDE



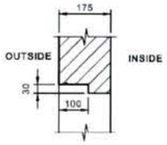

P4
VIEWED FROM INSIDE

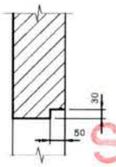



P3
VIEWED FROM INSIDE




DOOR JAMB DETAILL
1:10 at A1
1:20 at A3

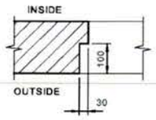


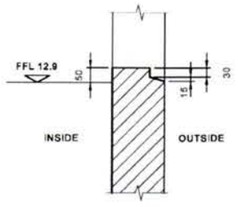

DOOR HEAD DETAILL
1:10 at A1
1:20 at A3

WINDOW HEAD DETAILL
1:10 at A1
1:20 at A3

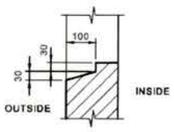





WINDOW JAMB DETAILL
1:10 at A1
1:20 at A3



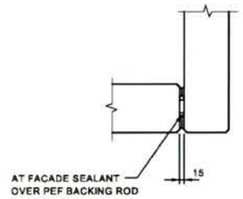

DOOR SILL DETAILL
1:10 at A1
1:20 at A3

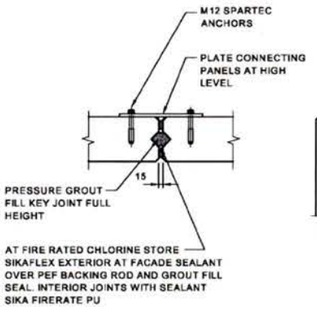


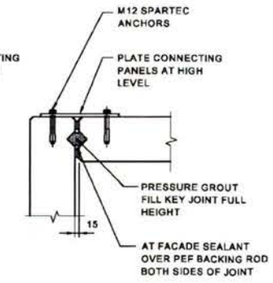

WINDOW SILL DETAILL
1:10 at A1
1:20 at A3



ORIGINAL SIZE (A1) DO NOT SCALE




PANELS 13, 14, 15, 17, 18, 19, 26, 27 & 29

PANEL - PANEL CONNECTIONS

SOUTH WALL PANELS
1:50 at A1
1:100 at A3

| Rev No | REVISION DESCRIPTION | DRAWN | APPROVED | DATE |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| 0 | ISSUED FOR CONSENT / CONSTRUCTION | ITB | DK | 1:12:20 |

| | BY | DATE |
|---|---|---|
| DESIGNED | DK | 10:20 |
| DESIGN CHECK | DK | 11:20 |
| DRAWN | ITB | 10:20 |
| APPROVED | | |

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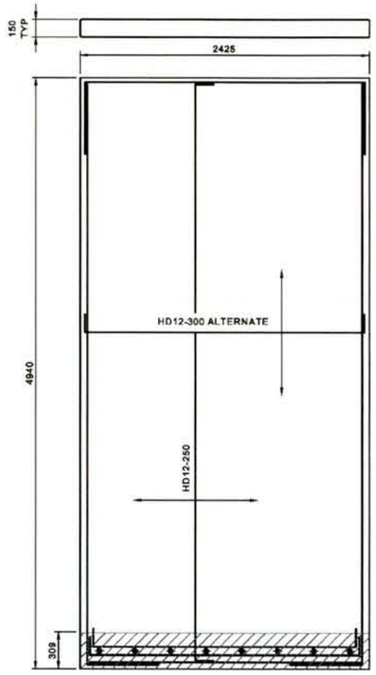
GORE WATER TREATMENT PLANT
UPGRADE - NEW BUILDING
SOUTH WALL PRECAST PANELS
AND PANEL CONNECTION DETAILS

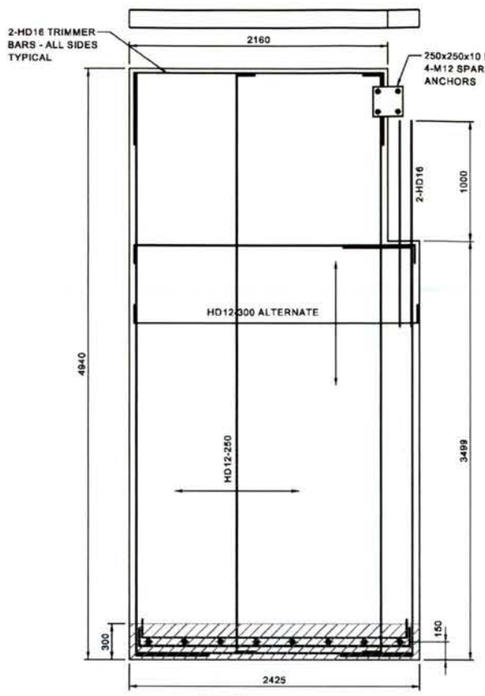
STATUS
CONSENT / CONSTRUCTION

SCALE AT A1

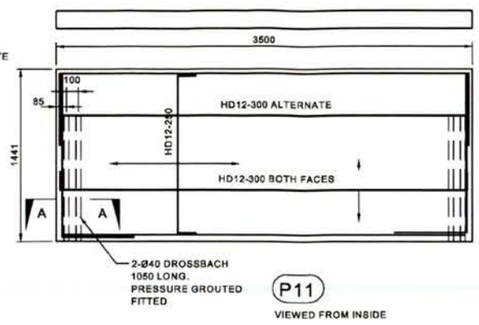
| PROJECT NUMBER | DRAWING NUMBER | REV. |
|---|---|---|
| 20080 | S09 | 0 |



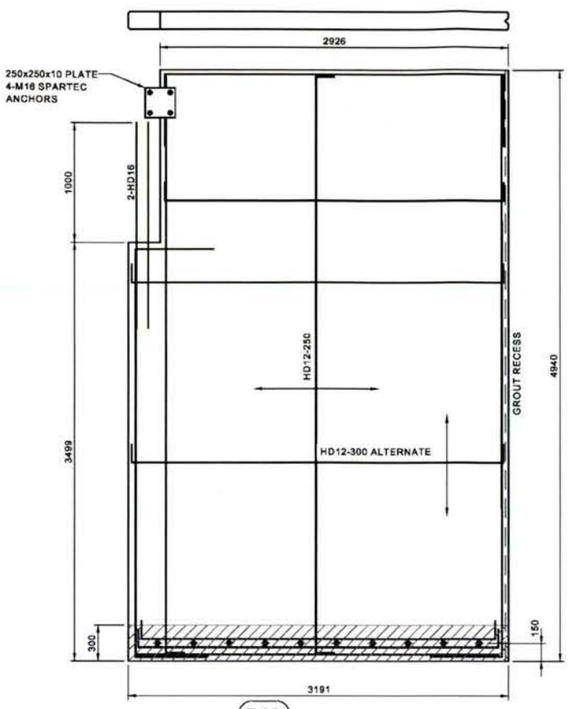

P9 VIEWED FROM INSIDE



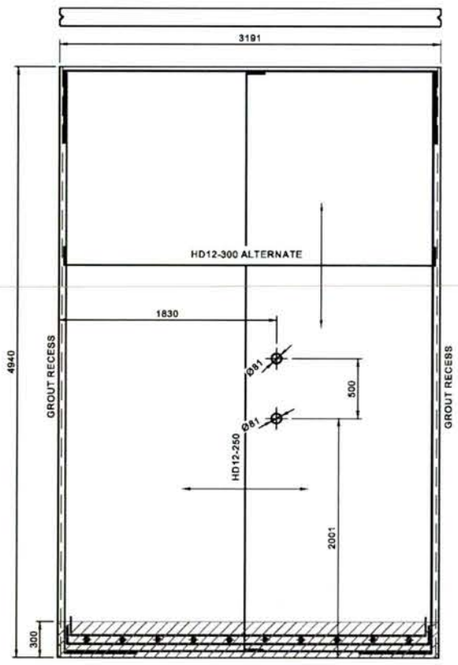

P10 VIEWED FROM INSIDE



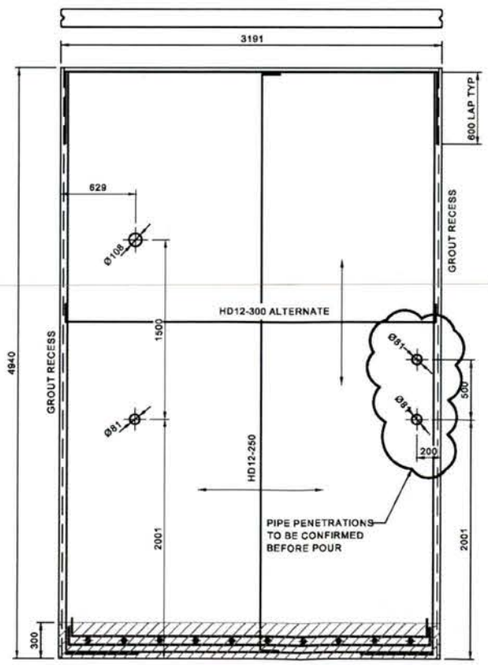

P11 VIEWED FROM INSIDE




P12 VIEWED FROM INSIDE

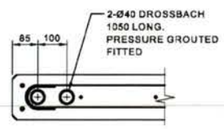



P13 VIEWED FROM INSIDE




P14 VIEWED FROM INSIDE






SECTION A-A
SCALE 1:10



| Rev No | REVISION DESCRIPTION | DRAWN | APPROVED | DATE |
|---|---|---|---|---|
| 0 | ISSUED FOR CONSENT / CONSTRUCTION | ITB | DK | 1:12:20 |

| | BY | DATE |
|---|---|---|
| DESIGNED | DK | 10:20 |
| DESIGN CHECK | DK | 11:20 |
| DRAWN | ITB | 10:20 |
| APPROVED | | |

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///// Civil and Structural Engineers
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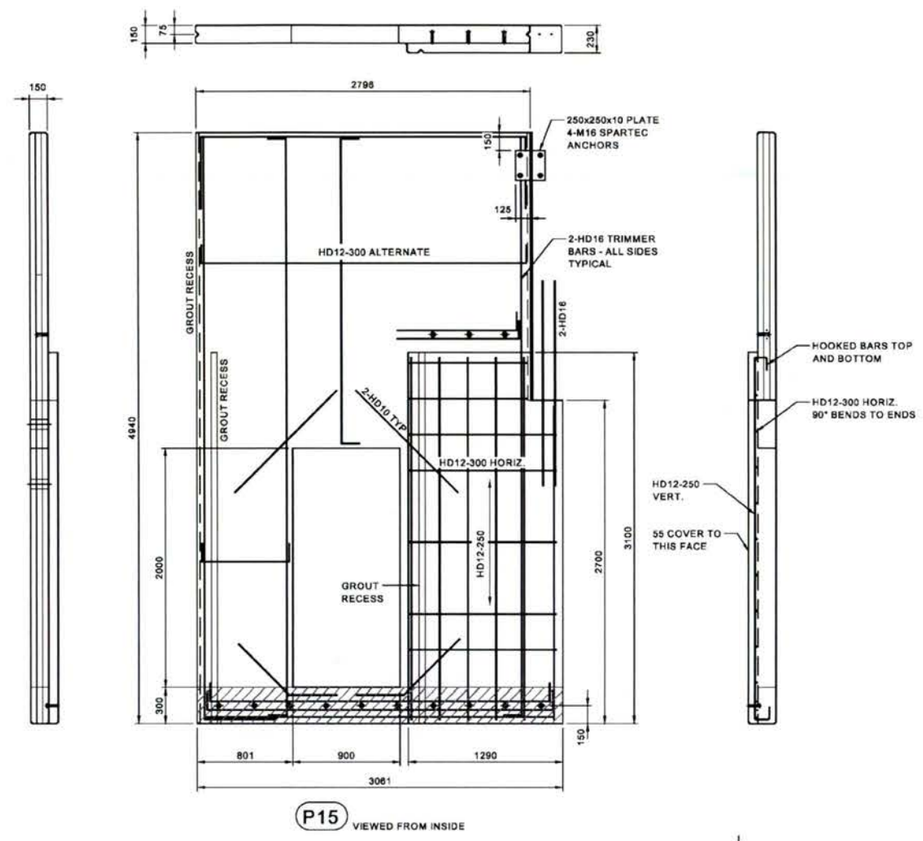
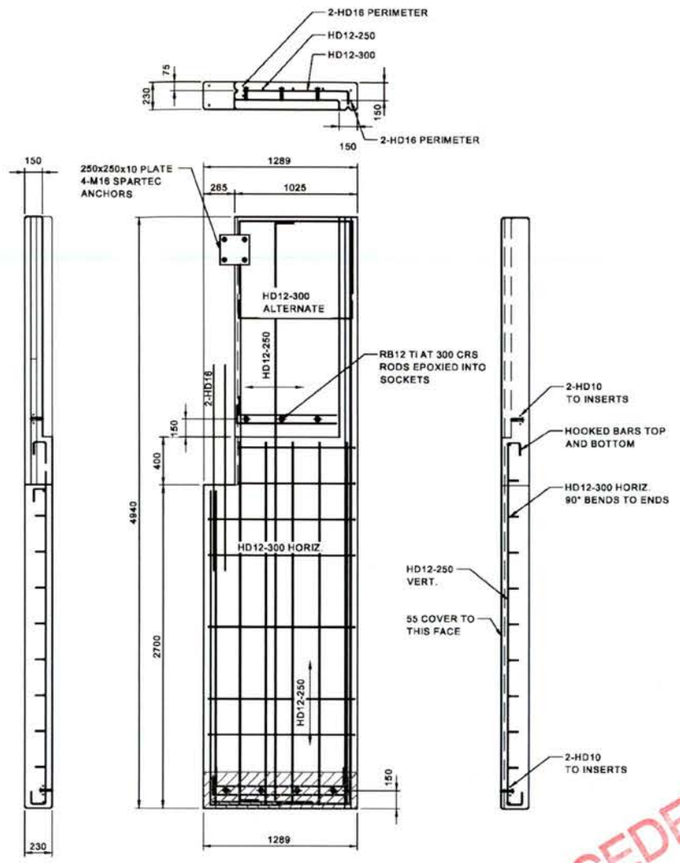
GORE WATER TREATMENT PLANT
UPGRADE - NEW BUILDING
NORTH WALL PRECAST PANELS
DETAILS

STATUS
CONSENT / CONSTRUCTION

| SCALE AT A1 | | |
|---|---|---|
| PROJECT NUMBER | DRAWING NUMBER | REV. |
| 20080 | S10 | 0 |

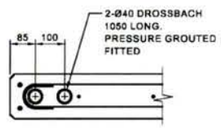



P15 VIEWED FROM INSIDE

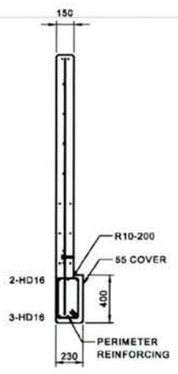


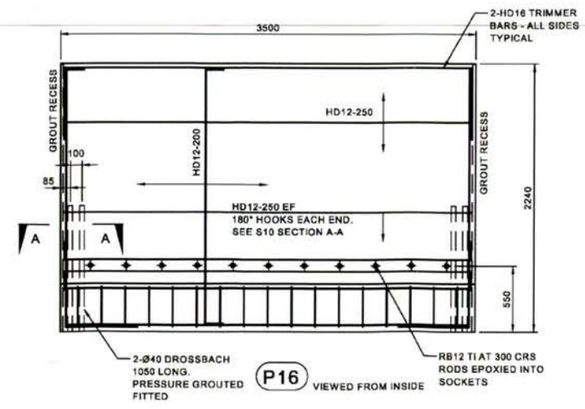

P17 VIEWED FROM INSIDE






SECTION A-A
SCALE 1:10




P16 VIEWED FROM INSIDE



| Rev No | REVISION DESCRIPTION | DRAWN | APPROVED | DATE |
|---|---|---|---|---|
| 0 | ISSUED FOR CONSENT / CONSTRUCTION | ITB | DK | 1:12:20 |

| | BY | DATE |
|---|---|---|
| DESIGNED | DK | 10:20 |
| DESIGN CHECK | DK | 11:20 |
| DRAWN | ITB | 10:20 |
| APPROVED | | |

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///// Civil and Structural Engineers
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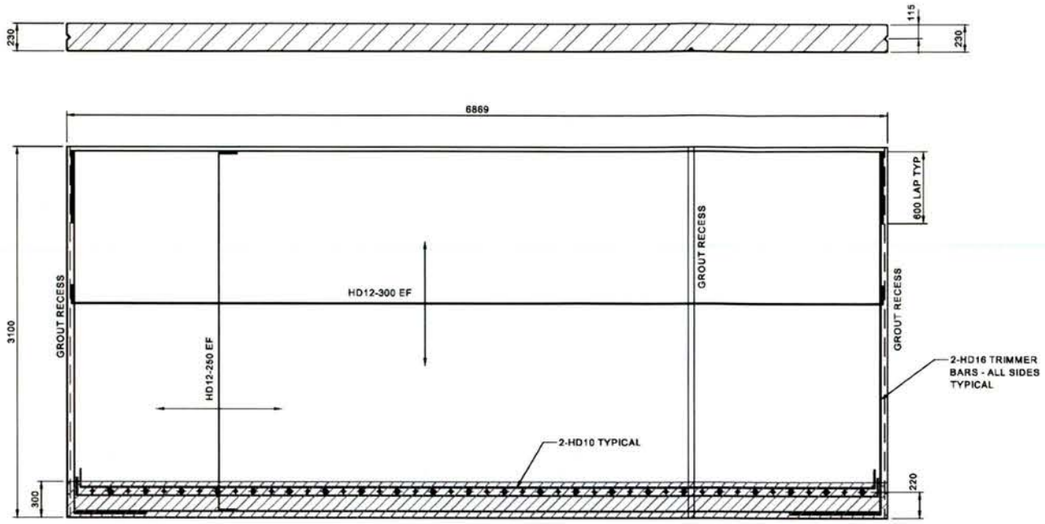
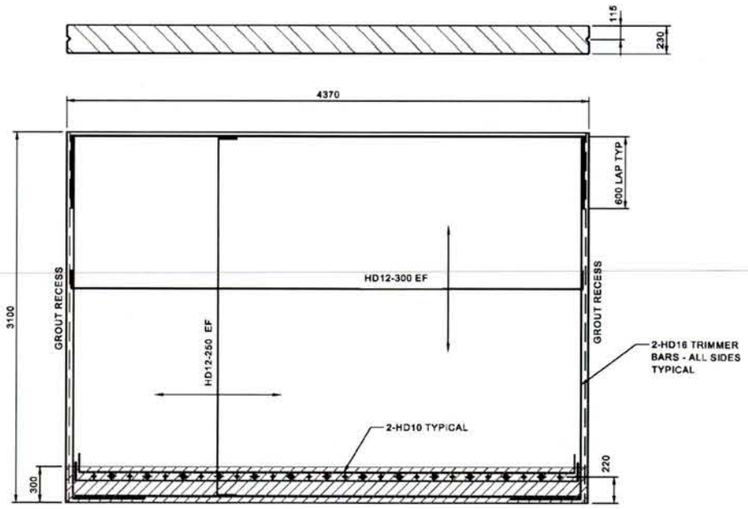
GORE WATER TREATMENT PLANT
UPGRADE - NEW BUILDING
NORTH WALL PRECAST PANELS
DETAILS

STATUS
CONSENT / CONSTRUCTION

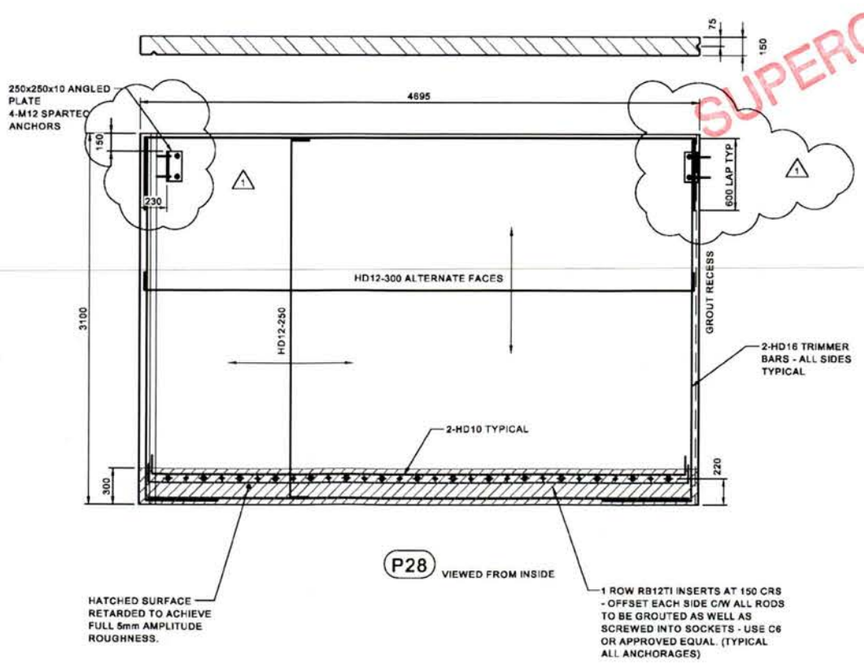
| SCALE AT A1 | | |
|---|---|---|
| PROJECT NUMBER | DRAWING NUMBER | REV. |
| 20080 | S11 | 0 |




P26




P27 VIEWED FROM INSIDE




P28 VIEWED FROM INSIDE





| Rev No. | REVISION DESCRIPTION | DRAWN | APPROVED | DATE |
|---|---|---|---|---|
| 1 | PLATES ADDED TO PANEL P28 | ITB | DK | 4:12:20 |
| 0 | ISSUED FOR CONSENT / CONSTRUCTION | ITB | DK | 1:12:20 |

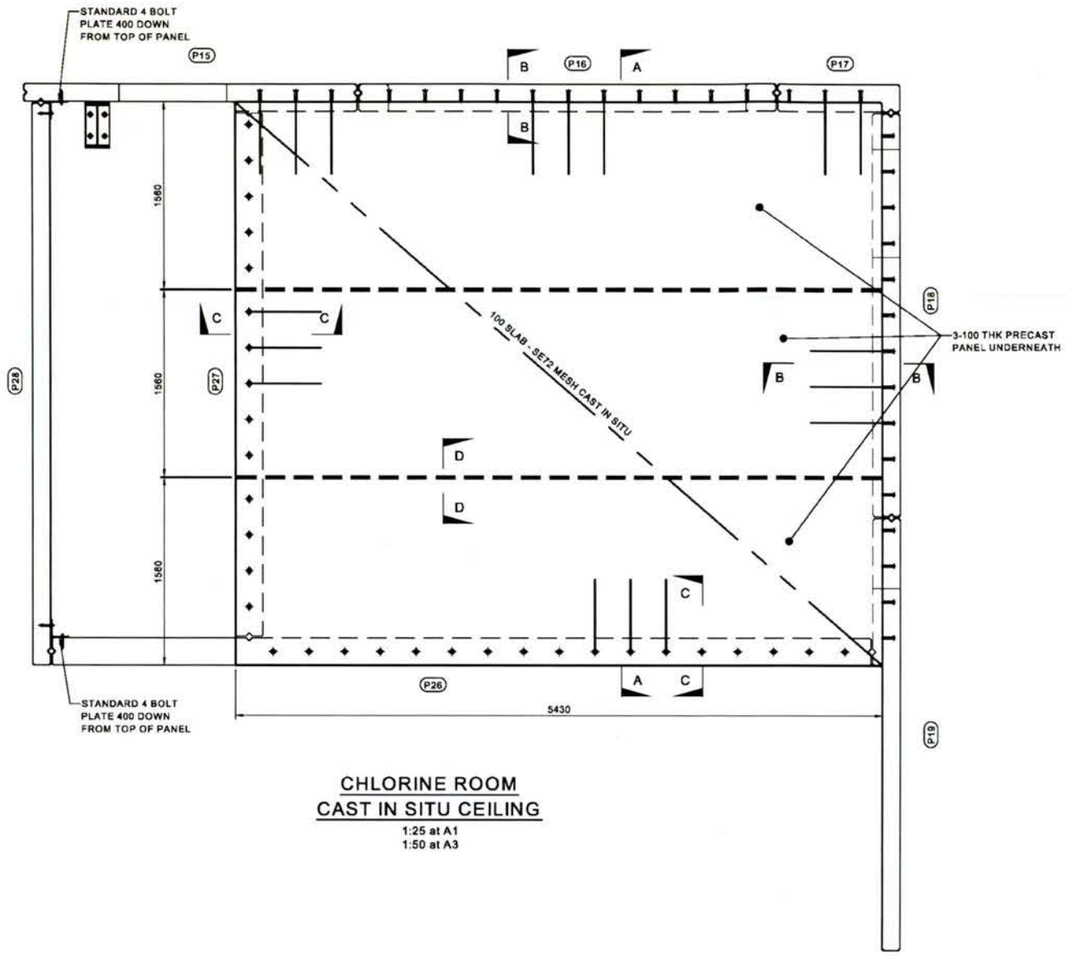
| | BY | DATE |
|---|---|---|
| DESIGNED | DK | 10:20 |
| DESIGN CHECK | DK | 11:20 |
| DRAWN | ITB | 10:20 |
| APPROVED | | |

KENSINGTON CONSULTING
///// Civil and Structural Engineers
03 218 7936 027 403 3773

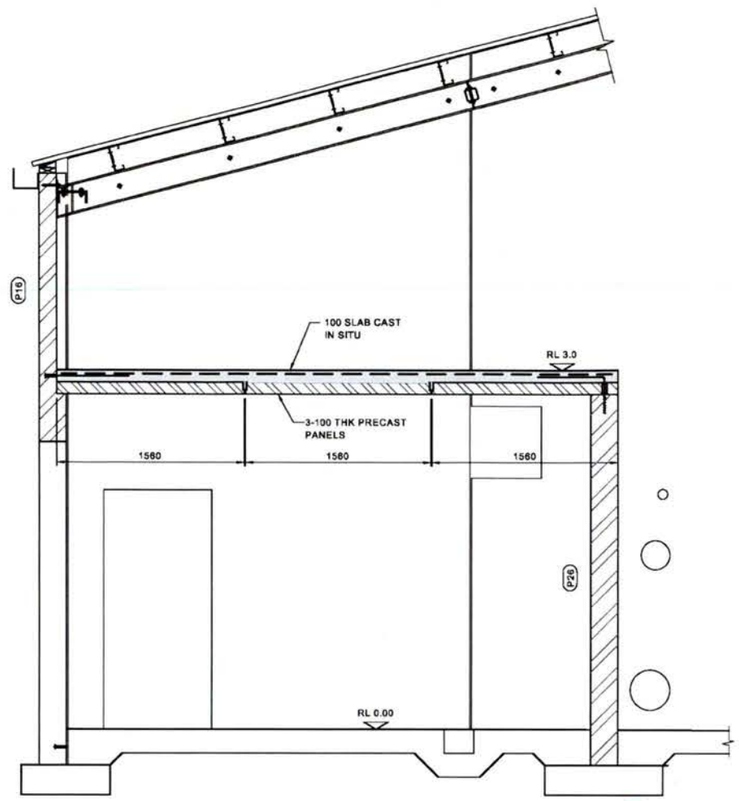
GORE WATER TREATMENT PLANT
UPGRADE - NEW BUILDING
INTERNAL PRECAST PANELS
DETAILS

STATUS
CONSENT / CONSTRUCTION

| SCALE AT A1 | | |
|---|---|---|
| PROJECT NUMBER | DRAWING NUMBER | REV. |
| 20080 | S12 | 1 |

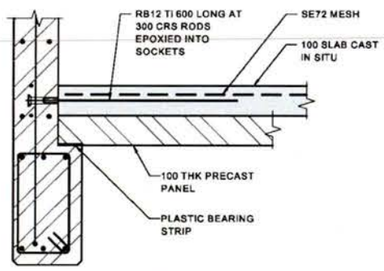



CHLORINE ROOM
CAST IN SITU CEILING
1:25 at A1
1:50 at A3



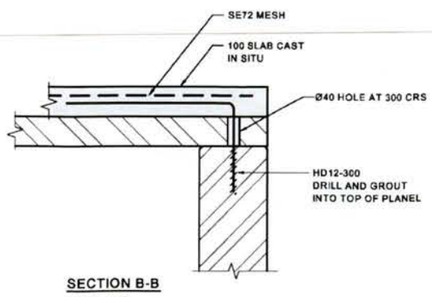

SECTION A-A
SCALE 1:10






SECTION B-B
SCALE 1:10


SECTION C-C
SCALE 1:10




SECTION B-B
SCALE 1:10



| Rev No | REVISION DESCRIPTION | DRAWN | APPROVED | DATE |
|---|---|---|---|---|
| 0 | ISSUED FOR CONSENT / CONSTRUCTION | ITB | DK | 2:12:20 |

| | BY | DATE |
|---|---|---|
| DESIGNED | DK | 10:20 |
| DESIGN CHECK | DK | 11:20 |
| DRAWN | ITB | 10:20 |
| APPROVED | | |

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///// Civil and Structural Engineers
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GORE WATER TREATMENT PLANT
UPGRADE - NEW BUILDING
CHLORINE ROON CEILING
PLAN AND SECTIONS

STATUS
CONSENT / CONSTRUCTION

| SCALE AT A1 | | |
|---|---|---|
| PROJECT NUMBER | DRAWING NUMBER | REV. |
| 20080 | S13 | 0 |


74
75
72
79
68
66
64
65
65A
9
7
5
3
1
Street
6
4
2
60
58
56
54
52
Wentworth Street
Wentworth Street
Talbot Street
Talbot Street
36
31
29
Street