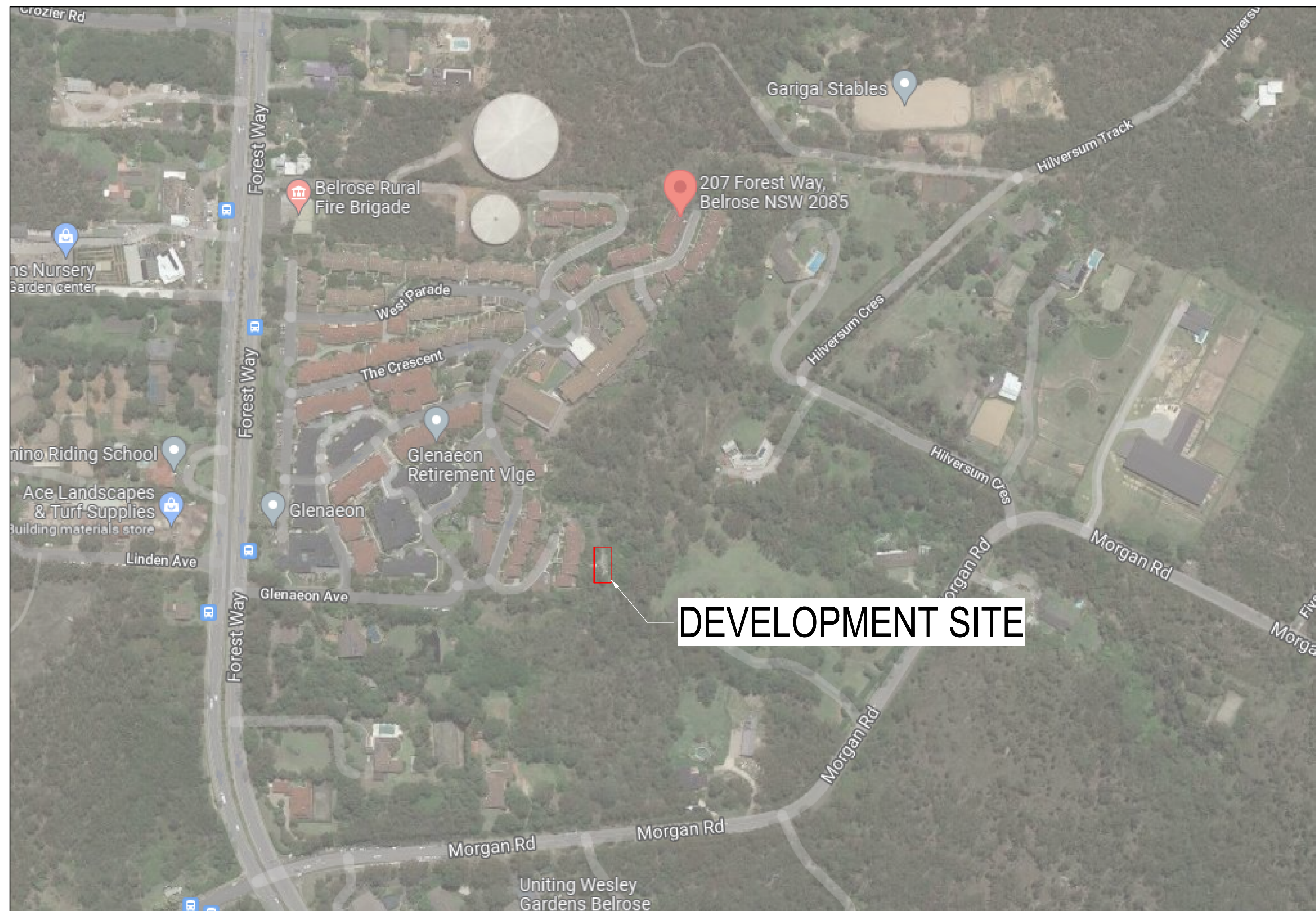


GLENAEON RETIREMENT VILLAGE - SPS UPGRADE

207 FOREST WAY, BELROSE, NSW 2085



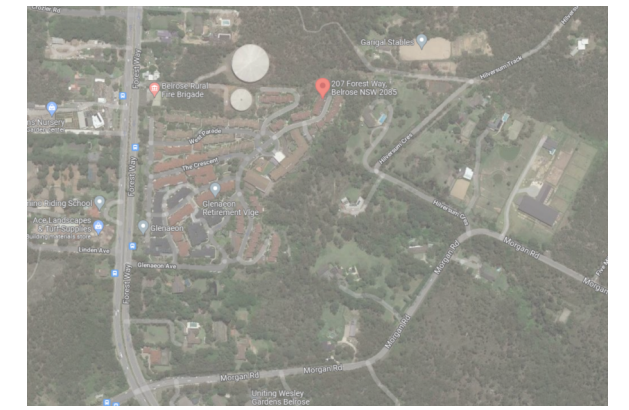
DRAWING INDEX-HYDRAULIC		
DRAWING NUMBER	DISCIPLINE	DRAWING TITLE
GLN-H-D-00000	HYDRAULIC SERVICES	COVER SHEET AND DRAWING INDEX
GLN-H-D-00001	HYDRAULIC SERVICES	HYDRAULIC SERVICES LEGEND AND NOTES
GLN-H-D-00002	HYDRAULIC SERVICES	DESIGN DATA AND PUMP CURVES
GLN-H-D-00003	HYDRAULIC SERVICES	MACERATOR DETAIL
GLN-H-D-00004	HYDRAULIC SERVICES	ACOUSTIC DOOR DETAIL
GLN-H-D-00005	HYDRAULIC SERVICES	SPOON DRAIN DETAIL
GLN-H-D-00006	HYDRAULIC SERVICES	EROSION SOIL CONTROL DETAILS
GLN-H-D-20001	HYDRAULIC SERVICES	SPS DEMOLITION AND STAGING PLAN
GLN-H-D-20002	HYDRAULIC SERVICES	SPS PROPOSED PLAN
GLN-H-D-20003	HYDRAULIC SERVICES	EROSION SOIL CONTROL PLAN
GLN-H-D-50001	HYDRAULIC SERVICES	SECTIONS 01
GLN-H-D-70001	HYDRAULIC SERVICES	DETAILS 01
GLN-H-D-90000	HYDRAULIC SERVICES	PERSPECTIVE VIEW
GLN-H-D-90001	HYDRAULIC SERVICES	HYDRAULIC SCHEMATIC

DRAWING INDEX-ELECTRICAL		
DRAWING NUMBER	DISCIPLINE	DRAWING TITLE
GLN-E-D-20001	ELECTRICAL AND ICT SERVICES	SPS ELECTRICAL DEMOLITION AND STAGING PLAN
GLN-E-D-20002	ELECTRICAL AND ICT SERVICES	SPS ELECTRICAL PROPOSED PLAN
GLN-E-D-90000	ELECTRICAL AND ICT SERVICES	ELECTRICAL SERVICES SCHEMATIC

DRAWING INDEX-STRUCTURE		
DRAWING NUMBER	DISCIPLINE	DRAWING TITLE
GLN-S-D-20001	STRUCTURE	GENERAL NOTES SHEET 1
GLN-S-D-20002	STRUCTURE	GENERAL NOTES SHEET 2
GLN-S-D-20101	STRUCTURE	TANK PLANS
GLN-S-D-20201	STRUCTURE	TANK DETAIL SHEET 1
GLN-S-D-20301	STRUCTURE	PIPE SUPPORT DETAILS SHEET 1

THESE DESIGNS, DRAWINGS AND SPECIFICATIONS ARE COPYRIGHT AND THE PROPERTY OF SCP CONSULTING AND MUST NOT BE USED, REPRODUCED OR COPIED WHOLLY OR IN PART WITHOUT THE WRITTEN PERMISSION OF SCP CONSULTING

ALL SETOUT TO BE OBTAINED FROM THE ARCHITECTURAL DRAWINGS UNLESS OTHERWISE SHOWN ON THESE DRAWINGS. DO NOT USE CAD/ELECTRONIC FILES FOR SETOUT UNDER ANY CIRCUMSTANCES.



D	TENDER ADDENDUM	24/03/2022
C	TENDER ISSUE	16/03/2022
B	ISSUED FOR DRAFT TENDER	09/03/2022
A	DRAFT SCHEMATIC DESIGN	27/01/2022
Rev	Revision Description	Date



Client			
LENDLEASE			
Project			
GLENAEON RETIREMENT LIVING - SPS UPGRADE PROJECT			
Title			
COVER SHEET AND DRAWING INDEX			
Scale 0			
Drawn	Checked	Approved	Revision
KN	VP	HW	
Project Number		Drawing Number	
S210157		GLN-H-D-00000	
			D

STAGING & MIGRATION OF ELECTRICAL WORKS

PHASE 1

COMPLETE ALL ELECTRICAL WORKS INCLUDING EARTHING WITHIN NEW PUMP HOUSE

EXTERNAL WORKS

- SUPPLY AND INSTALL:
- ELECTRICAL PITS/CONDUITS CABLE TRAY AND SUPPORTS BETWEEN PUMP HOUSE MSB AND EXTERNAL CUPBOARD IN TOWNHOUSE
 - LV SUBMAIN + EARTH BETWEEN MSB PH AND EXTERNAL CUPBOARD IN TOWNHOUSE
 - CONTROL CABLE BETWEEN MSB PH AND EXTERNAL CUPBOARD IN TOWNHOUSE

PHASE 2

PRIOR TO DISCONNECTING EXISTING SEWER PUMP INCOMING SUPPLY AT DB

- CHECK AND VERIFY
- FUEL AND TOP UP IN DG DAY TANK
 - AUTO OPERATION OF EXISTING DG SET ON LOSS OF MAINS AND VERIFY PUMPS ARE RUNNING

PHASE 3

INSTALL NEW INCOMING MAINS AT THE EXISTING CUPBOARD

ISOLATE AND DECOMMISSION EXISTING METERS AND DB

INSTALL NEW MSB AND METERING PANEL

- TEST AND RETERMINATE EXISTING:
- TOWN HOUSE SUBMAINS TO RESPECTIVE KWH METERS
 - LIGHTING CIRCUITS WITHIN DB

TEST AND TERMINATE LV SUBMAINS TO NEW MSB PH

TEST EARTHING SYSTEM

LOAD TEST NEW DG SET ON SITE AFTER PLACING IN NEW LOCATION

4HR FULL LOAD TEST AT UNITY PF UTILISING AN ADJUSTABLE TEMPORARY LOAD BANK. 110% FOR THE FINAL HOUR.

CONDUCT A STEP LOAD TEST, IN LOAD STEPS AS FOLLOWS.

- 0 - 50%
- 50 - 75%
- 75 - 100%

INCLUDING SIMULATED MAINS-FAILURE TESTS AND ACTUAL INCOMING LV MAINS FAILURE TEST TO PROVE OPERATION OF GENERATOR THROUGH ATS

USING PUMP LOAD WITH ADDITIONAL DUMMY LOAD WHERE REQUIRED TO BRING LOAD TO NO LESS THAN 75% OF RATING OF GENERATOR SET

CONTRACTOR TO INCLUDE FOR FUEL FOR THE DURATION OF THE TEST

ENERGISE THE NEW INCOMING SUPPLY AT THE METERING PANEL

ENERGISE THE NEW INCOMING SUPPLY TO MSB PH

TEST ALL ELECTRICAL WORKS WITHIN NEW PUMP HOUSE

LOSS OF MAINS TEST AND AUTO OPERATION OF DG SET.

PHASE 4

ISOLATE AND DECOMMISSION EXISTING DG SET AND ATS PANEL

MAKE SAFE EXISTING POWER AND CONTROL CABLES AND INSTALL END CAPS

COORDINATE WITH SITE MANAGER AND RELOCATE EXISTING DG SET

PUMP HOUSE ELECTRICAL SOW

SUPPLY AND INSTALL

- 3 OFF LIGHT FITTINGS (TYPE L1) C/W (1 OFF EMERGENCY VERSION) + 1 OFF EXTERNAL LIGHT FITTINGS (TYPE W1) SUBCIRCUIT WIRING IN SURFACE MOUNTED PVC CONDUITS
- 1 OFF EXIT LIGHTING WITH EMERGENCY TEST FACILITY C/W SUBCIRCUIT WIRING IN SURFACE MOUNTED PVC CONDUITS
- 2 OFF WALL MOUNTED LIGHT SWITCH IN WEATHER PROOF ENCLOSURE + 360D CEILING MOUNTED MOTION SENSOR
- 1 OFF 10A WEATHER PROOF DGPO C/W SUBCIRCUIT WIRING IN SURFACE MOUNTED PVC CONDUIT

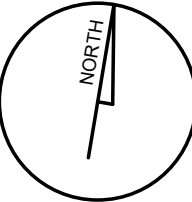
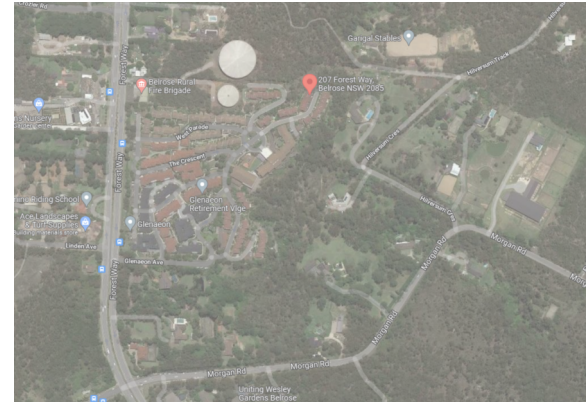
LUMINAIRE SCHEDULE

	IMAGE	DESCRIPTIONS	COLOUR	DIMENSION	CAT NO.	SUPPLIER	LAMP	CONTROL	MOUNTING	NOTES
L1		"ENERGY EFFICIENT LED WEATHERPROOF LUMINAIRE"	4000K	L 1265MM W 130MM H 92MM	BWPECO454E4	PIERLITE	45W LED	NON DIMMABLE	SURFACE MOUNTED	LUMINAIRE MUST HAVE A MINIMUM IP RATING OF IP65 ALL APPROVED LUMINAIRES ARE TO DEMONSTRATE A TOTAL HARMONIC DISTORTION (THD) OF <5% FOR EACH ELECTRICAL COMPONENT
W1		EXTERNAL WALL MOUNTED	4000K	L 362MM W 162MM H 214MM	LED TLSWM/1900NW/XC49	DESIGN PLAN	20W LED	NON DIMMABLE	SURFACE WALL MOUNTED	LUMINAIRE MUST HAVE A MINIMUM IP RATING OF IP65 ALL APPROVED LUMINAIRES ARE TO DEMONSTRATE A TOTAL HARMONIC DISTORTION (THD) OF <5% FOR EACH ELECTRICAL COMPONENT
EXIT		SURFACE/WALL MOUNTED LED BLADE EXIT 24M VIEWING PICTOGRAM DECAL OR APPROVED EQUAL	WHITE	L 355MM W 80MM H 215MM	ECFLED	CLEVERTRONICS	3W LED	NON MONITORED MAINTAINED EMERGENCY CONTROL GEAR	SURFACE MOUNTED/ WALL MOUNTED	ALL EMERGENCY EQUIPMENT IS TO BE ABLE TO DEMONSTRATE A 4 HOUR EMERGENCY BATTERY OPERATION EXIT LUMINAIRE MUST HAVE A MINIMUM CLASSIFICATION OF E2 AND E2/5 AS PER AS2293

NOTES:

- ALL LUMINAIRES SHALL BE SUPPLIED COMPLETE WITH A COMPATIBLE DRIVER/BALLAST
- LEAD TIME AND WARRANTY PERIODS SHALL BE CONFIRMED BY CONTRACTOR
- LUMINAIRES IDENTIFIED AS PER THE SCHEDULE HAVE BEEN USED FOR THE PURPOSE OF LIGHTING CALCULATIONS ASSOCIATED WITH THE LIGHTING DESIGN. IN CASE THE CONTRACTOR WANTS TO PROPOSE AN EQUIVALENT ALTERNATIVE, IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE NEW LUMINAIRE CONFORMS TO THE LIGHTING PERFORMANCE REQUIREMENTS AND CONTRACTOR SHALL THEREFORE PROVIDE ALL RELEVANT CALCULATIONS TO PROVE. WE NOTE THAT THE PROCUREMENT OF ALTERNATIVE LUMINAIRE IS SUBJECT TO APPROVAL

THESE DESIGNS, DRAWINGS AND SPECIFICATIONS ARE COPYRIGHT AND THE PROPERTY OF SCP CONSULTING AND MUST NOT BE USED, REPRODUCED OR COPIED WHOLLY OR IN PART WITHOUT THE WRITTEN PERMISSION OF SCP CONSULTING
ALL SETOUT TO BE OBTAINED FROM THE ARCHITECTURAL DRAWINGS UNLESS OTHERWISE SHOWN ON THESE DRAWINGS. DO NOT USE CADELECTRONIC FILES FOR SETOUT UNDER ANY CIRCUMSTANCES.



EXISTING ENCLOSURE TO BE DEMOLISHED
LV SUBMAIN TO BE INSTALLED WITHIN THE CONDUIT AT THE POINT OF THE INTERFACE BETWEEN CONDUIT AND CABLE TRAY

ELECTRICAL PIT 600X600X1000MM WITH LID

EXISTING PUMP STATION AND ENCLOSURE TO BE DEMOLISHED PER DECOMMISSIONING SPECIFICATION ON DRAWING GLN-H-D-00001

ALL ELECTRICAL CABLES AND EQUIPMENT TO BE SAFELY ISOLATED AND DECOMMISSIONED

LV SUBMAINS TO INTERFACE WITH ABOVE GROUND CABLE TRAY AT THIS POINT

LV SUBMAIN AND CONTROL CABLES FROM DG SET TO MSB PH INSTALLED IN 300MM WIDE GI CABLE TRAYS WITH SUPPORTS AND GI PITCHED ROOF COVER



EXISTING METERING ARRANGEMENT TO BE REPLACED WITH NEW

EXISTING ELECTRICAL CUPBOARD WITH 12 METERS AND DB TO BE UPGRADED

1NO 1000 HDPVC INGROUND CONDUIT

PROPOSED NEW LV SUBMAINS FROM NEW SWITCHBOARD TO NEW MSB PH INSTALLED IN PIT AND CONDUITS.

CABLE INSTALLED IN PIT AND CONDUIT ARRANGEMENT.

ELECTRICAL PIT 600X600X1000MM WITH LID

1NO 1000 HDPVC INGROUND CONDUIT

EXISTING WALL MOUNTED ATS PANEL TO BE SAFELY ISOLATED AND DECOMMISSIONED

ALL POWER AND CONTROL CABLES TO BE FIXED WITH END CAPS

PROPOSED LOCATION FOR NEW DG SET INSTALLED ON CONCRETE FOUNDATION



FOR INFORMATION ONLY

EXISTING STORE HOUSE TO BE DEMOLISHED FLUSH TO EXISTING SLAB

FOUNDATION FOR DG SET

NEW MSB IN EXTERNAL WEATHERPROOF ENCLOSURE INSTALL ON 100MM HEIGHT CONCRETE PLINTH

EXISTING DG SET LOCATION

EXISTING DG SET TO BE DECOMMISSIONED AFTER COMMISSIONING OF NEW SET



LV SUBMAIN AND CONTROL CABLES FROM DG SET TO MSB PH INSTALLED IN 300MM WIDE GI CABLE TRAYS WITH SUPPORTS AND GI PITCHED ROOF COVER

SPS ELECTRICAL DEMOLITION AND STAGING PLAN

1 : 100



1300 SCP ENG (727 364) www.scpconsult.com.au
mail@scpconsult.com.au ABN 80 003 076 024

Client

LENLELEASE

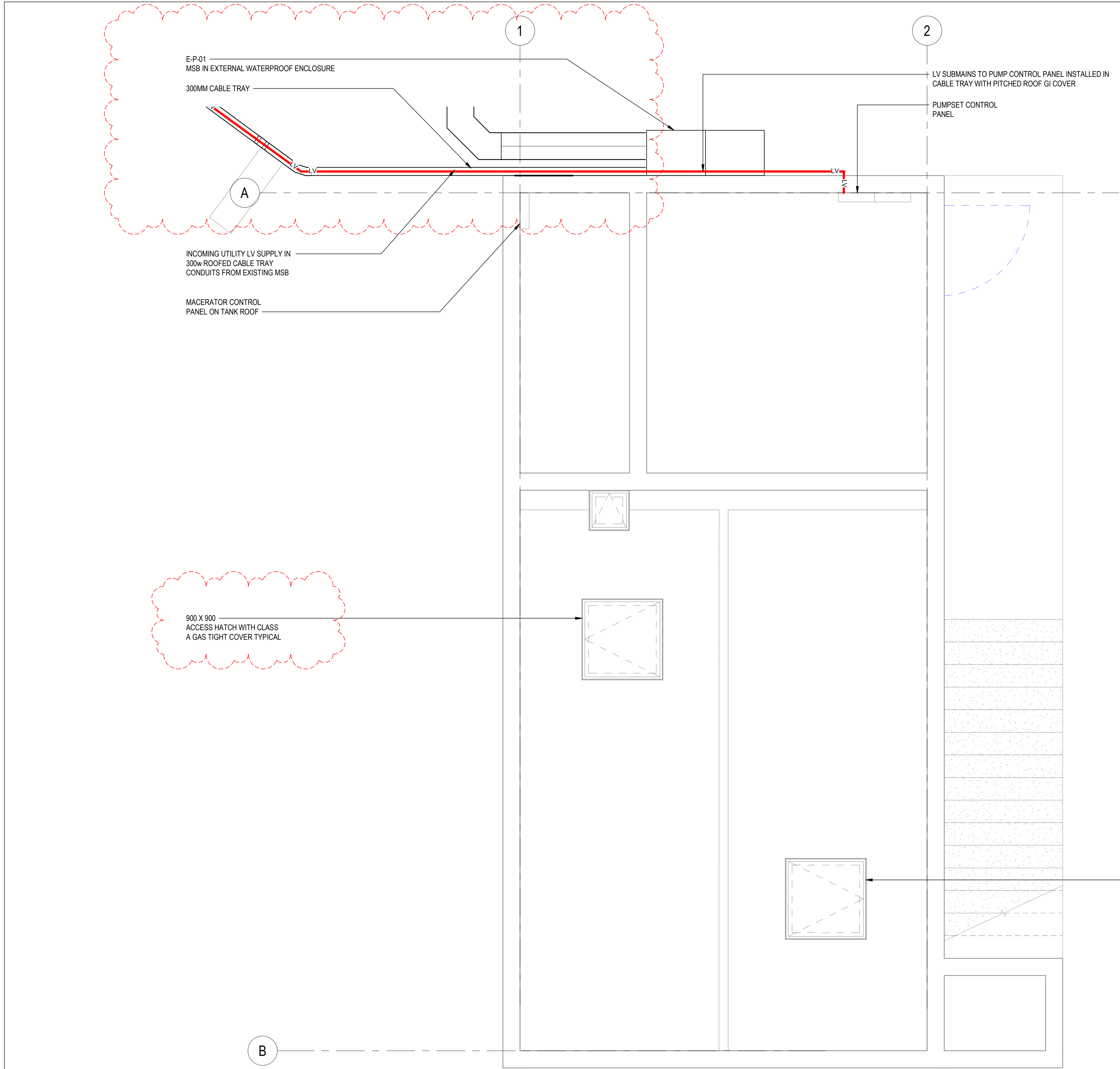
Project
GLENAEON RETIREMENT LIVING - SPS UPGRADE PROJECT

Title
SPS ELECTRICAL DEMOLITION AND STAGING PLAN

Scale
0 5M 1:100 @ A1

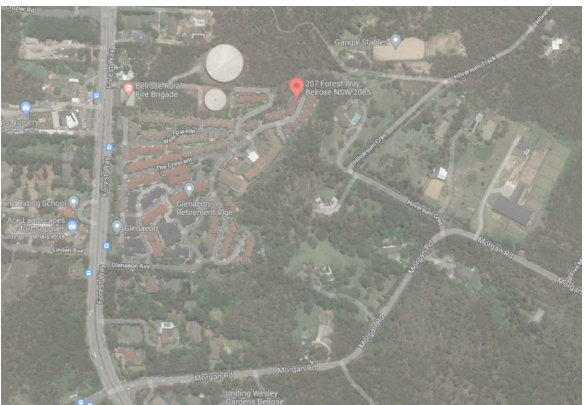
Drawn KN Checked KS Approved HW

Project Number S210157 Drawing Number GLN-E-D-20001 Revision C

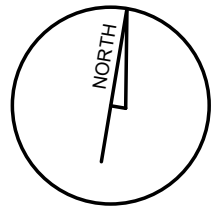


SPS PROPOSED ELECTRICAL PLAN
1 : 25

THESE DESIGNS, DRAWINGS AND SPECIFICATIONS ARE COPYRIGHT AND THE PROPERTY OF SCP CONSULTING AND MUST NOT BE USED, REPRODUCED OR COPIED WHOLLY OR IN PART WITHOUT THE WRITTEN PERMISSION OF SCP CONSULTING. ALL SETOUT TO BE OBTAINED FROM THE ARCHITECTURAL DRAWINGS UNLESS OTHERWISE SHOWN ON THESE DRAWINGS. DO NOT USE CADELECTRONIC FILES FOR SETOUT UNDER ANY CIRCUMSTANCES.



Key Plan



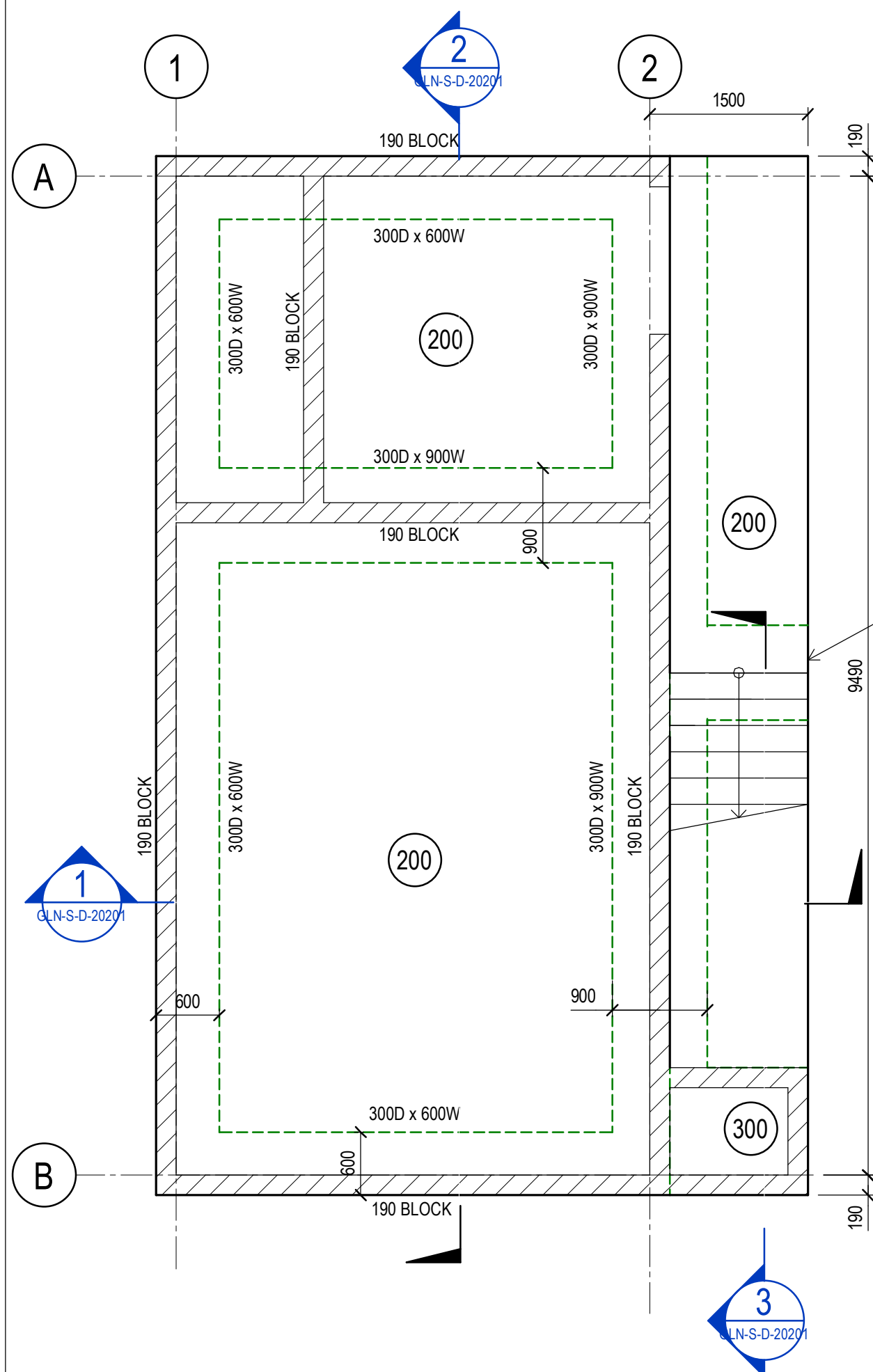
Rev	Revision Description	Date
C	TENDER ADDENDUM	04/04/2022
B	TENDER ISSUE	16/03/2022
A	ISSUED FOR DRAFT TENDER	09/03/2022

**engineers and development consultants**

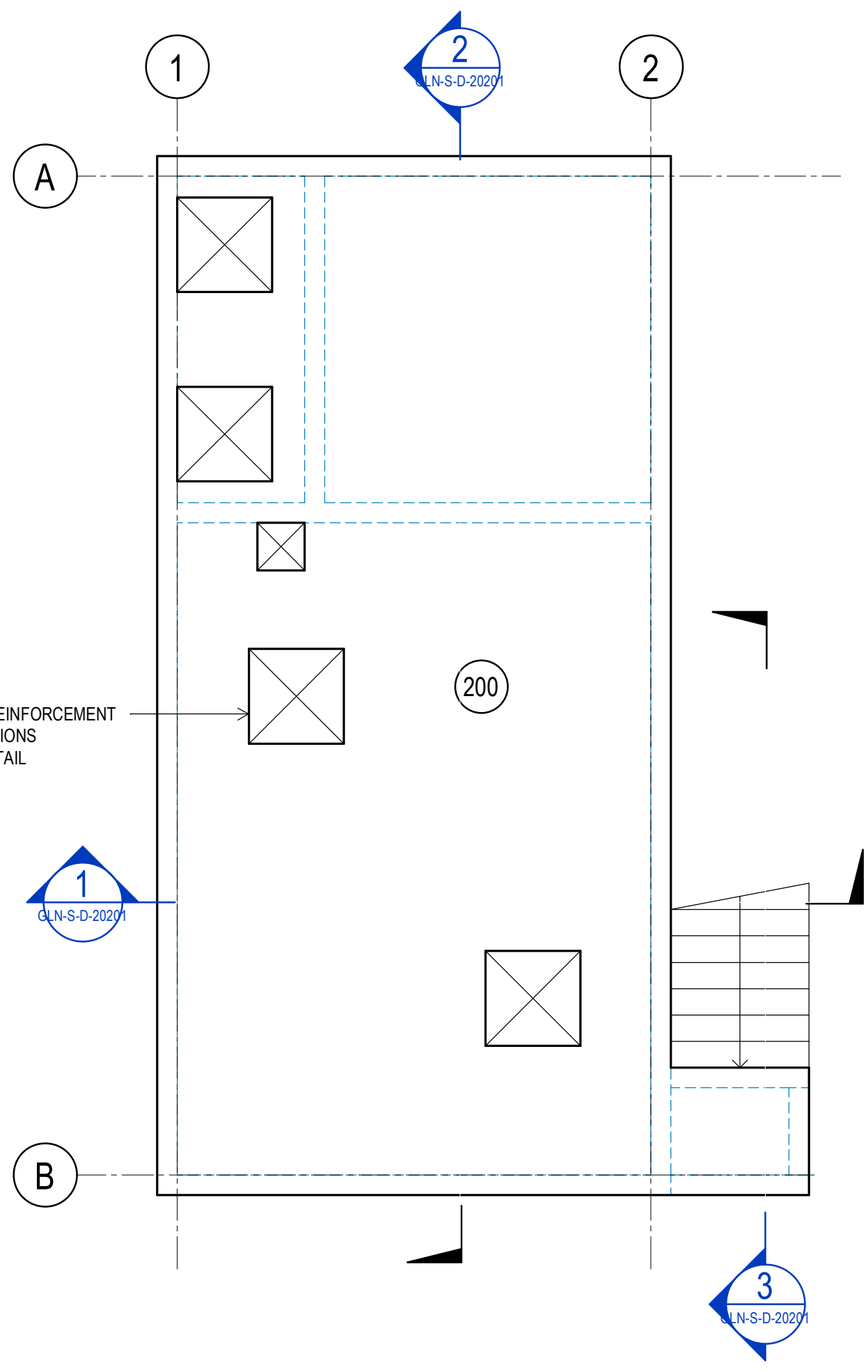
▲ 1300 SCP ENG (727 364)
▲ mail@scpconsult.com.au

▲ www.scpconsult.com.au
▲ ABN 80 003 076 024

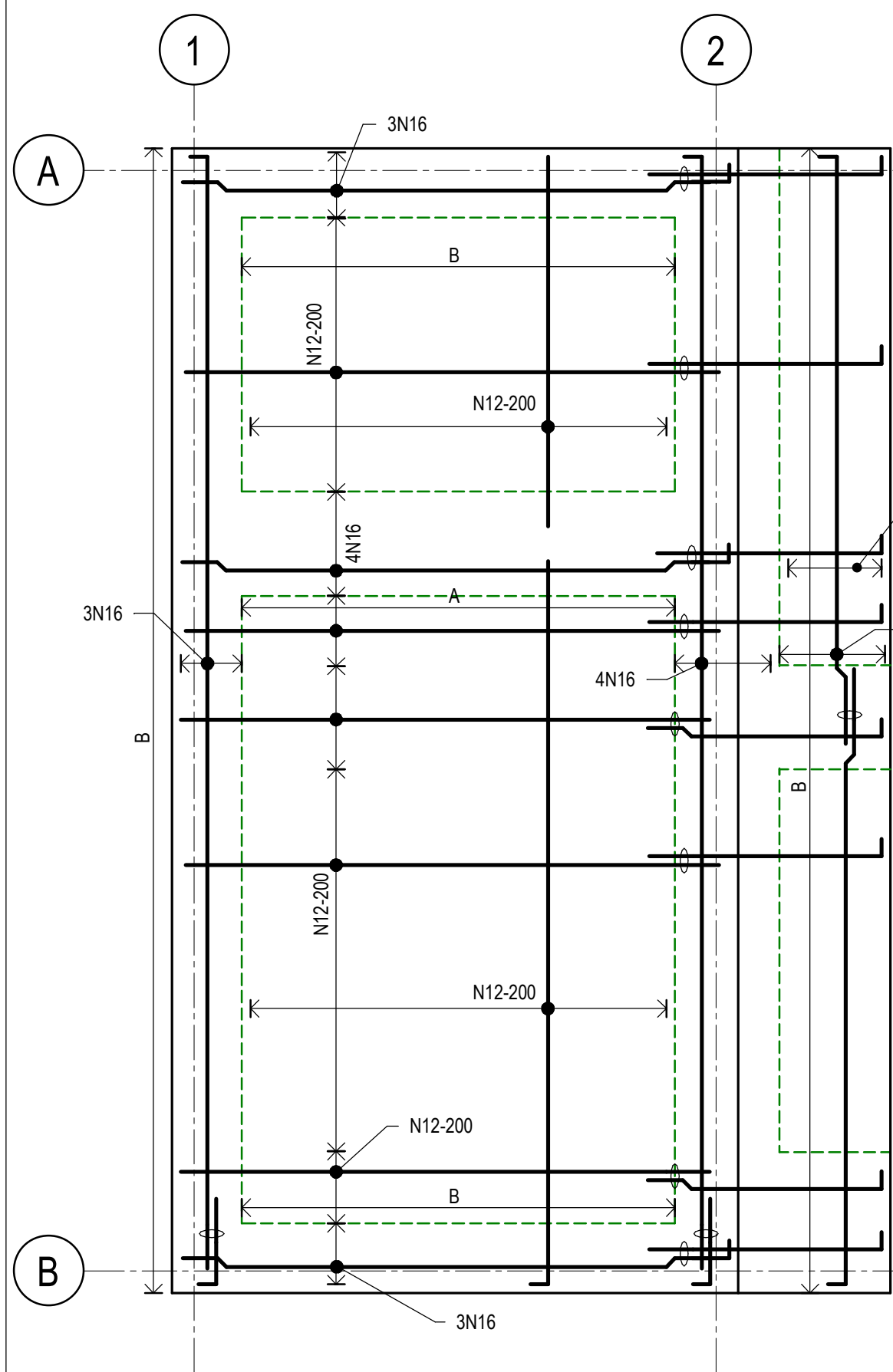
Client LENDELEASE			
Project GLENAEON RETIREMENT LIVING - SPS UPGRADE PROJECT			
Title SPS ELECTRICAL PROPOSED PLAN			
Scale 0 5M 1:25 @ A1 1:100			
Drawn KN	Checked KS	Approved HW	Revision
Project Number S210157	Drawing Number GLN-E-D-20002	Revision C	



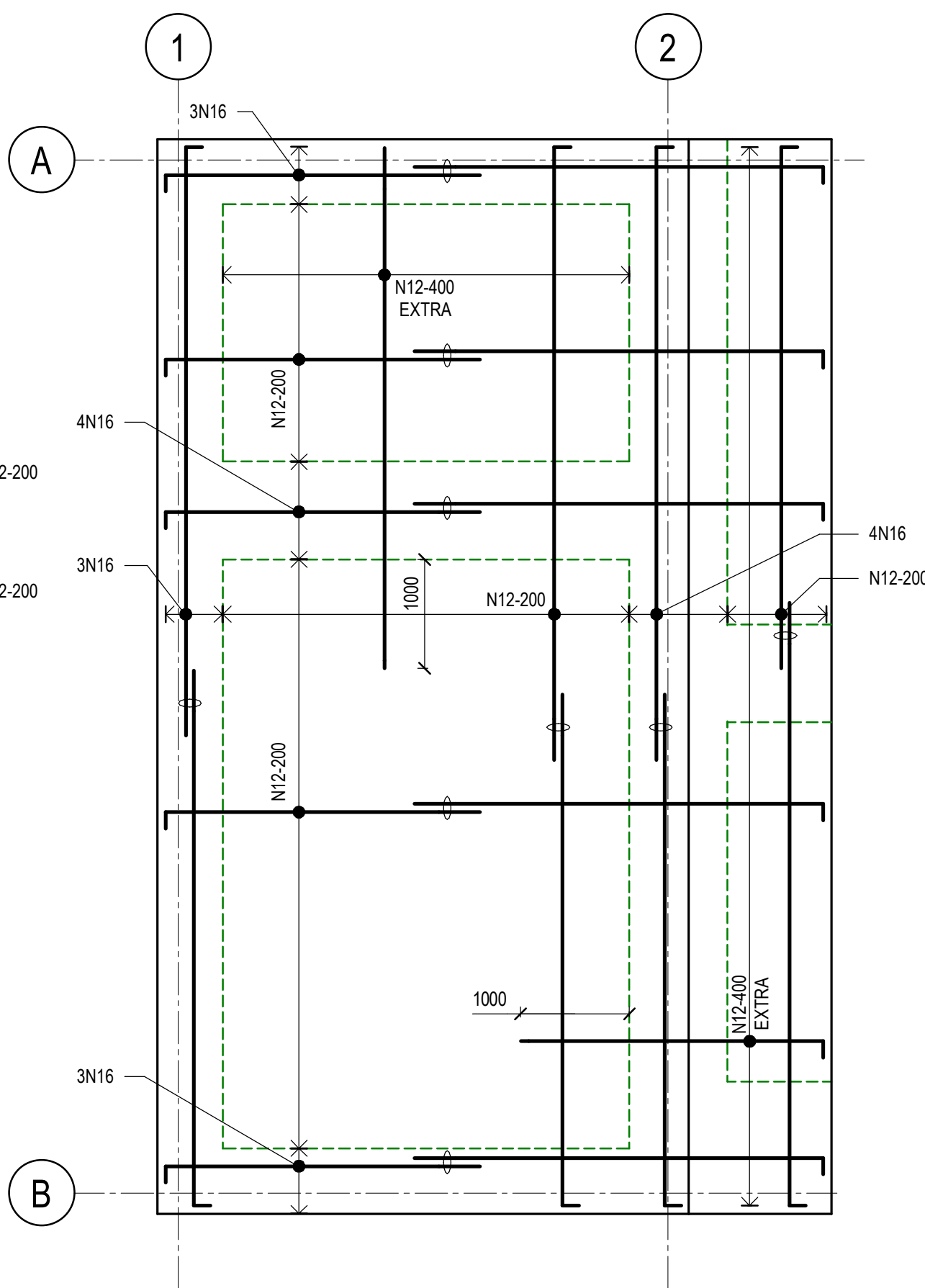
TANK SLAB GENERAL ARRANGEMENT
SCALE 1 : 50



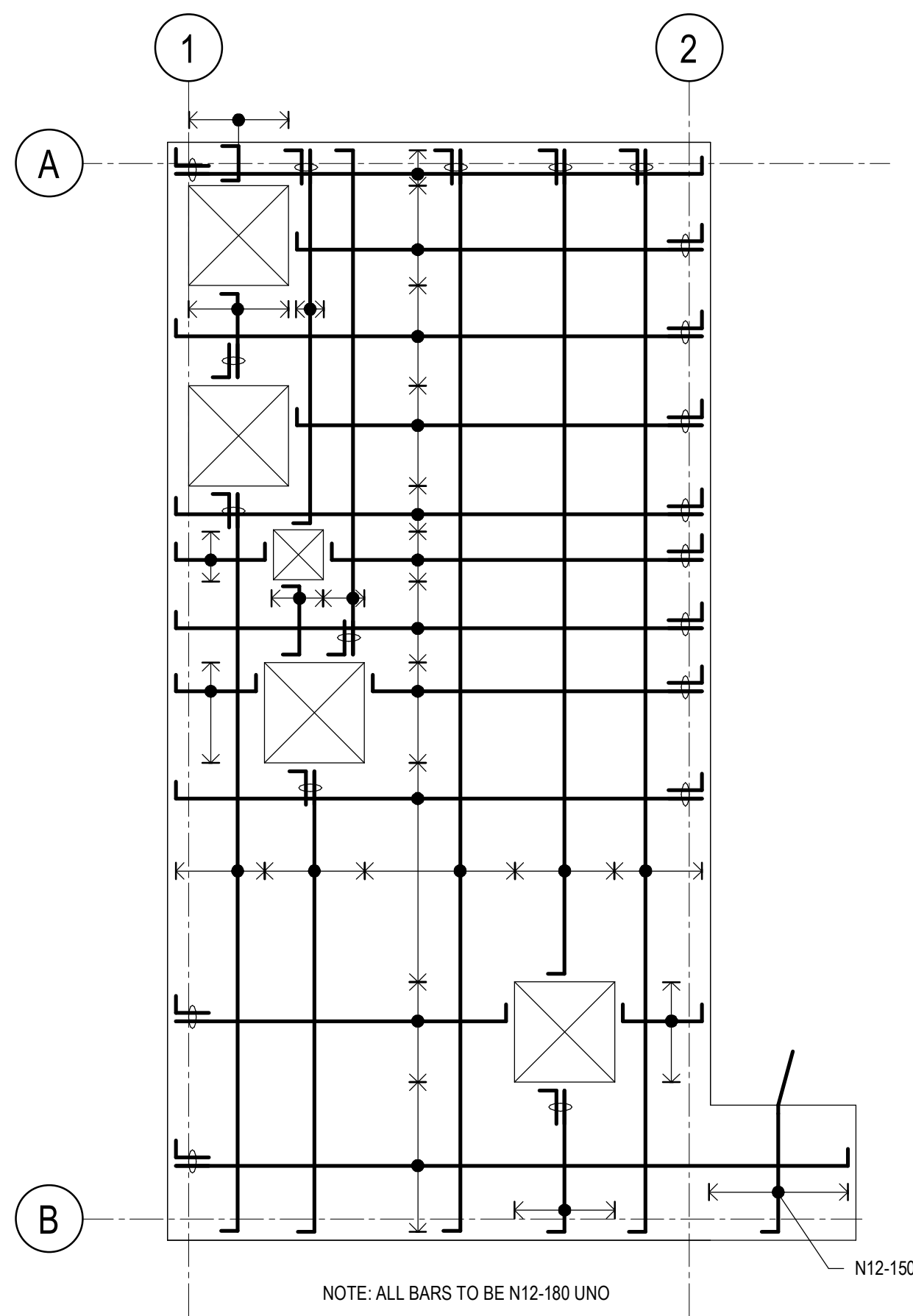
TANK LID GENERAL ARRANGEMENT PLAN
SCALE 1 : 50



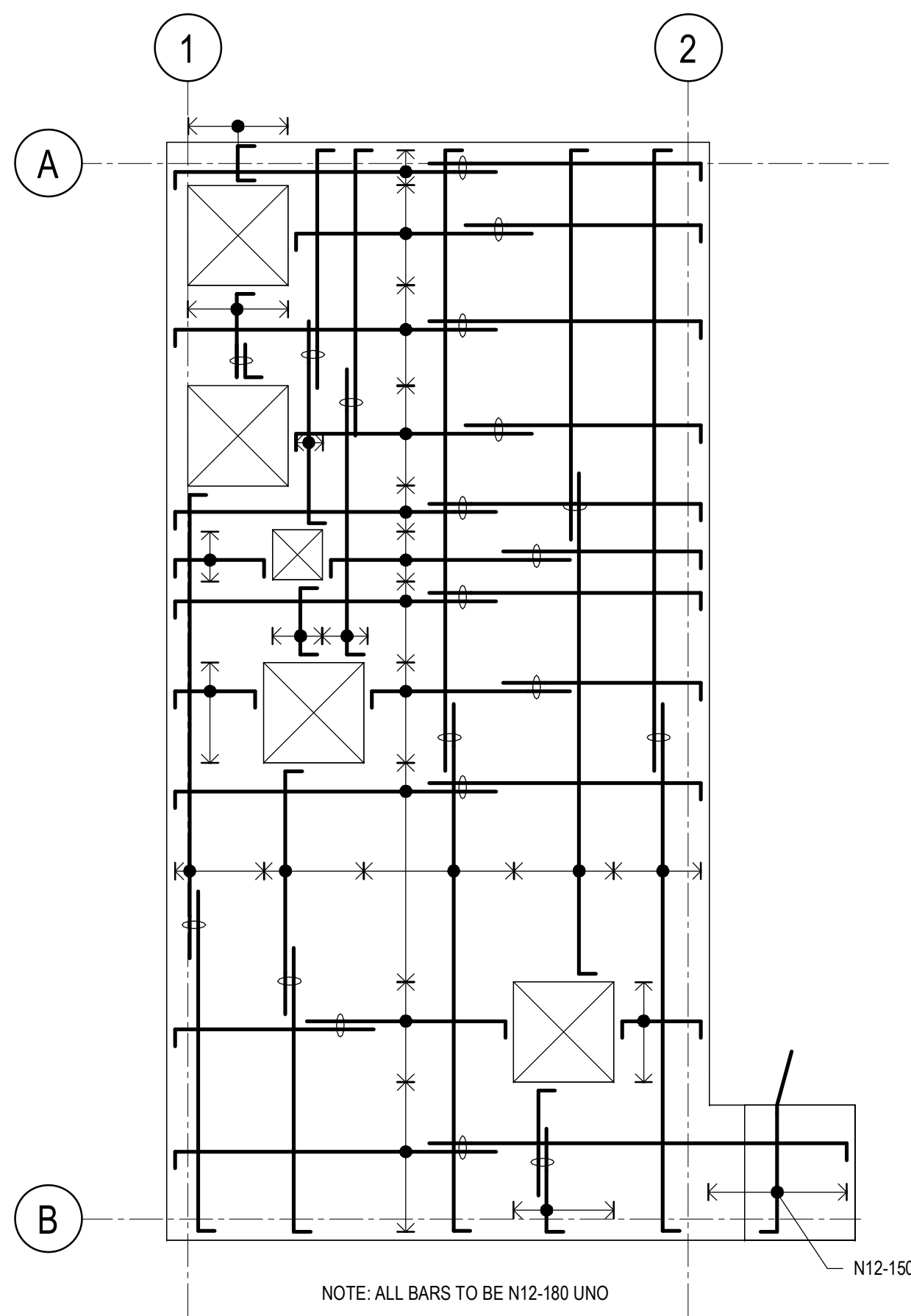
TANK SLAB REINFORCEMENT BOTTOM PLAN
SCALE 1 : 50



TANK SLAB REINFORCEMENT TOP PLAN
SCALE 1 : 50



TANK ROOF SLAB REINFORCEMENT BOTTOM PLAN
SCALE 1 : 50



TANK ROOF SLAB REINFORCEMENT TOP PLAN
SCALE 1 : 50

LAP SCHEDULE - SLABS (LESS THAN 300 THICK)

BAR DIAMETER	CONCRETE STRENGTH $f_c =$				
	32 MPa	40 MPa	50 MPa	65 MPa	80 MPa
N12	500	450	400	350	350
N16	700	650	600	500	500
N20	950	850	800	700	700
N24	1250	1100	1000	900	900
N28	1550	1350	1250	1100	1100
N32	1850	1650	1500	1300	1300
N36	2200	1950	1750	1550	1550

NOTE: FOR SLABS GREATER THAN 300 THICK, USE BEAM LAP SCHEDULE

LAP SCHEDULE - BEAMS

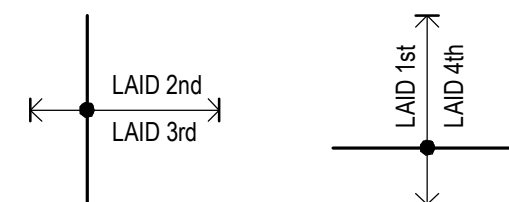
BAR DIAMETER	CONCRETE STRENGTH $f_c =$				
	32 MPa	40 MPa	50 MPa	65 MPa	80 MPa
N12	500	450	450	450	450
N16	800	750	650	600	600
N20	1150	1000	900	800	800
N24	1500	1350	1200	1050	1050
N28	1850	1650	1500	1300	1300
N32	2250	2000	1800	1600	1600
N36	2700	2400	2150	1900	1900

TIE SCHEDULE

TIE TYPE	REINFORCEMENT	TIE ARRANGEMENT
'A'	N12-400	
'B'	N12-400	

LAYERING SEQUENCE

UNLESS NOTED OTHERWISE ON PLAN



REINFORCEMENT NOTES

DISTRIBUTION BARS TO BE N12-500 U.N.O. ON PLAN EX. DENOTES EXTRA BARS

PROVIDE SL72 MESH OVER TOP FOR BEAMS 450 DEEP OR DEEPER. NOT SHOWN ON PLAN TYP.

PROVIDE SL72 MESH OVER TOP FOR ALL EXTERNAL SLABS & BEAMS. NOT SHOWN ON PLAN TYP.

FOR ADDITIONAL REINFORCEMENT NOT SHOWN ON PLAN REFER SLAB SECTION DETAILS, TYPICAL STRESSING ANCHORAGE DETAILS & SLAB DOWEL DETAILS

BAR LAPS FOR ALL OUTSIDE BARS IN BEAMS BANDS SHALL BE JOGGLED

CUT CROSS RODS AND LAP TO ALLOW MAXIMUM TENDON DRAPE

ALL REINFORCEMENT SUPPLIED SHALL BE ACRS CERTIFIED. AN ACRS CERTIFICATE SHALL BE SUBMITTED TO SCP CONSULTING FOR VERIFICATION

TOP REINFORCEMENT IN BEAMS AT BEAM INTERSECTIONS SHALL HAVE TOP BARS CRANKED OR LIGATURE HEIGHT LOWERED TO AVOID REINFORCEMENT CLASH.

MINIMUM CLEAR COVER TO REINFORCEMENT;

: 40mm BOTTOM (INTERNAL)

: 40mm BOTTOM (EXTERNAL)

: 40mm SIDES (INTERNAL)

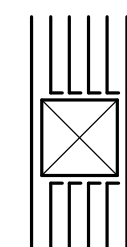
: 40mm SIDES (EXTERNAL)

: 40mm TOP (INTERNAL)

: 40mm TOP (EXTERNAL)

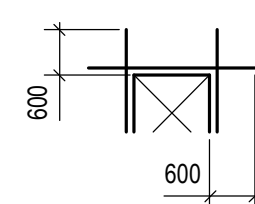
REFER TO SECTIONS FOR ANY ADDITIONAL REINFORCEMENT THAT MAY NOT BE SHOWN ON PLANS

BARS AT PENETRATIONS



REINFORCEMENT THAT RUNS INTO A PENETRATION IS TO BE TERMINATED EACH SIDE OF PENETRATION & COGGED

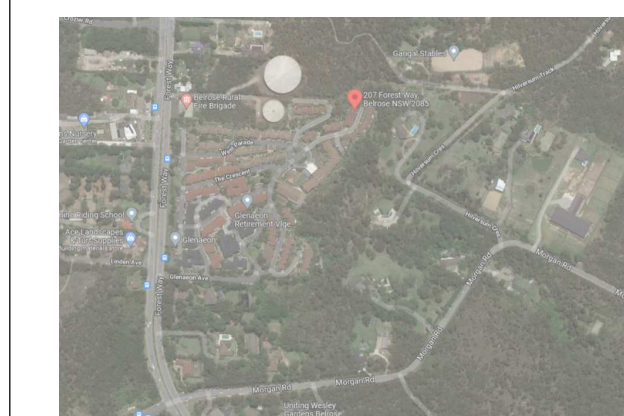
TRIMMER DETAIL



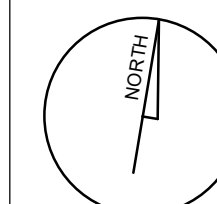
PROVIDE 2N16 TOP & BTM TRIMMER BARS EXTENDING 600mm PAST EACH EDGE OF OPENINGS / PENETRATIONS, UNLESS NOTED OTHERWISE ON PLAN.

LAYERING TO SUIT ADJACENT REINFORCEMENT.

THESE DESIGNS, DRAWINGS AND SPECIFICATIONS ARE COPYRIGHT AND THE PROPERTY OF SCP CONSULTING AND MUST NOT BE USED, REPRODUCED OR COPIED WHOLLY OR IN PART WITHOUT THE WRITTEN PERMISSION OF SCP CONSULTING. ALL SETOUT TO BE OBTAINED FROM THE ARCHITECTURAL DRAWINGS UNLESS OTHERWISE SHOWN ON THESE DRAWINGS. DO NOT USE CADELECTRONIC FILES FOR SETOUT UNDER ANY CIRCUMSTANCES.



Key Plan



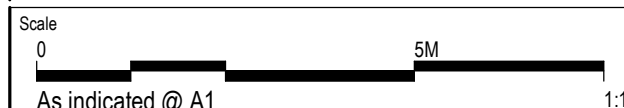
Rev	Revision Description	Date
A	TENDER ISSUE	14.03.22



LENDLEASE

Project
GLENAEON RETIREMENT LIVING - SPS UPGRADE PROJECT

Title
TANK PLANS



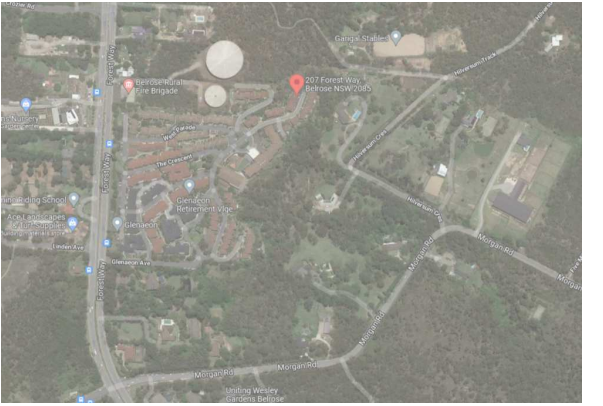
Drawn LC	Checked KD	Approved HW	Revision
-------------	---------------	----------------	----------

Project Number
S210157

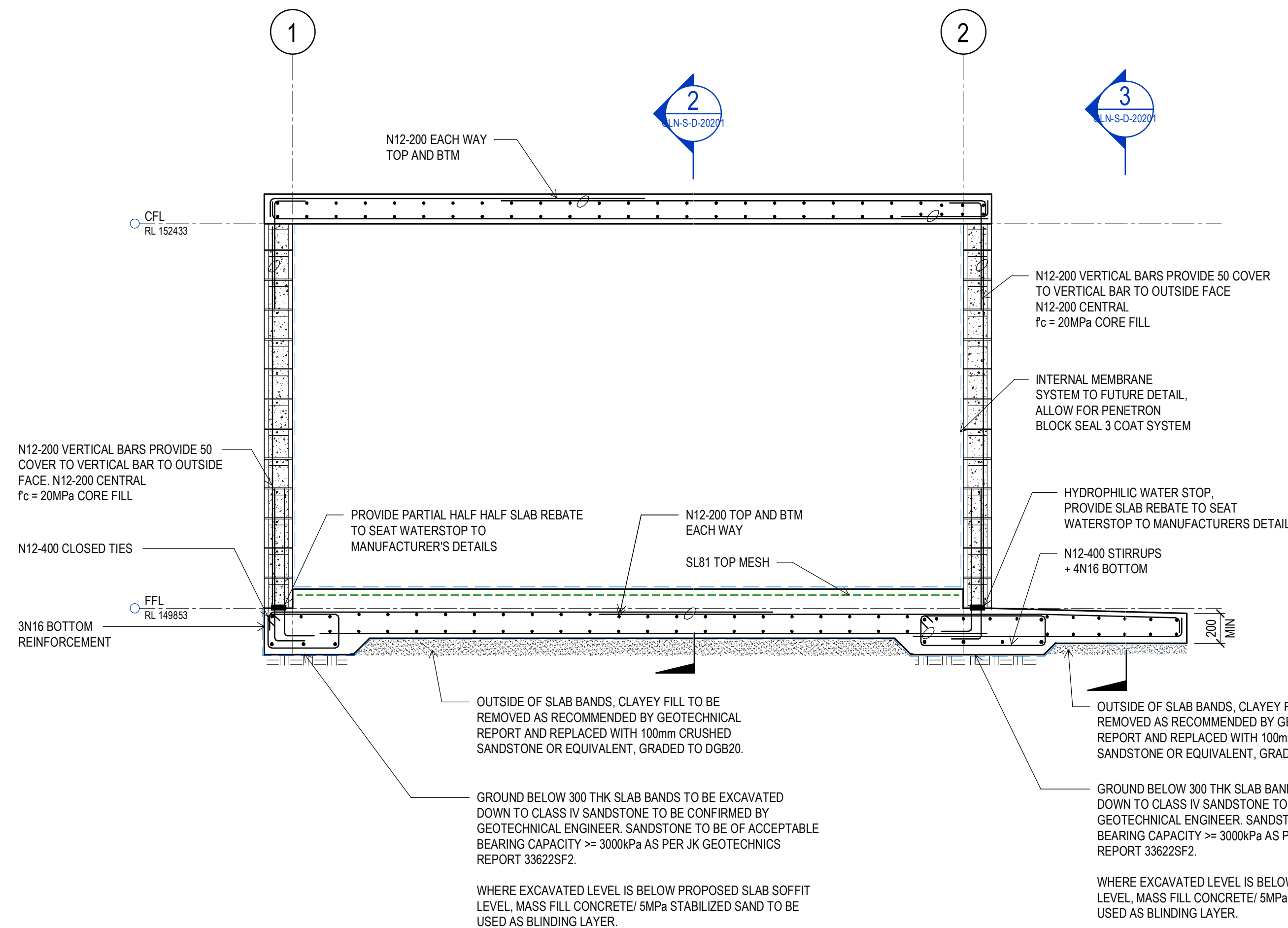
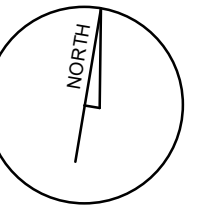
Drawing Number
GLN-S-D-20101

Revision
A

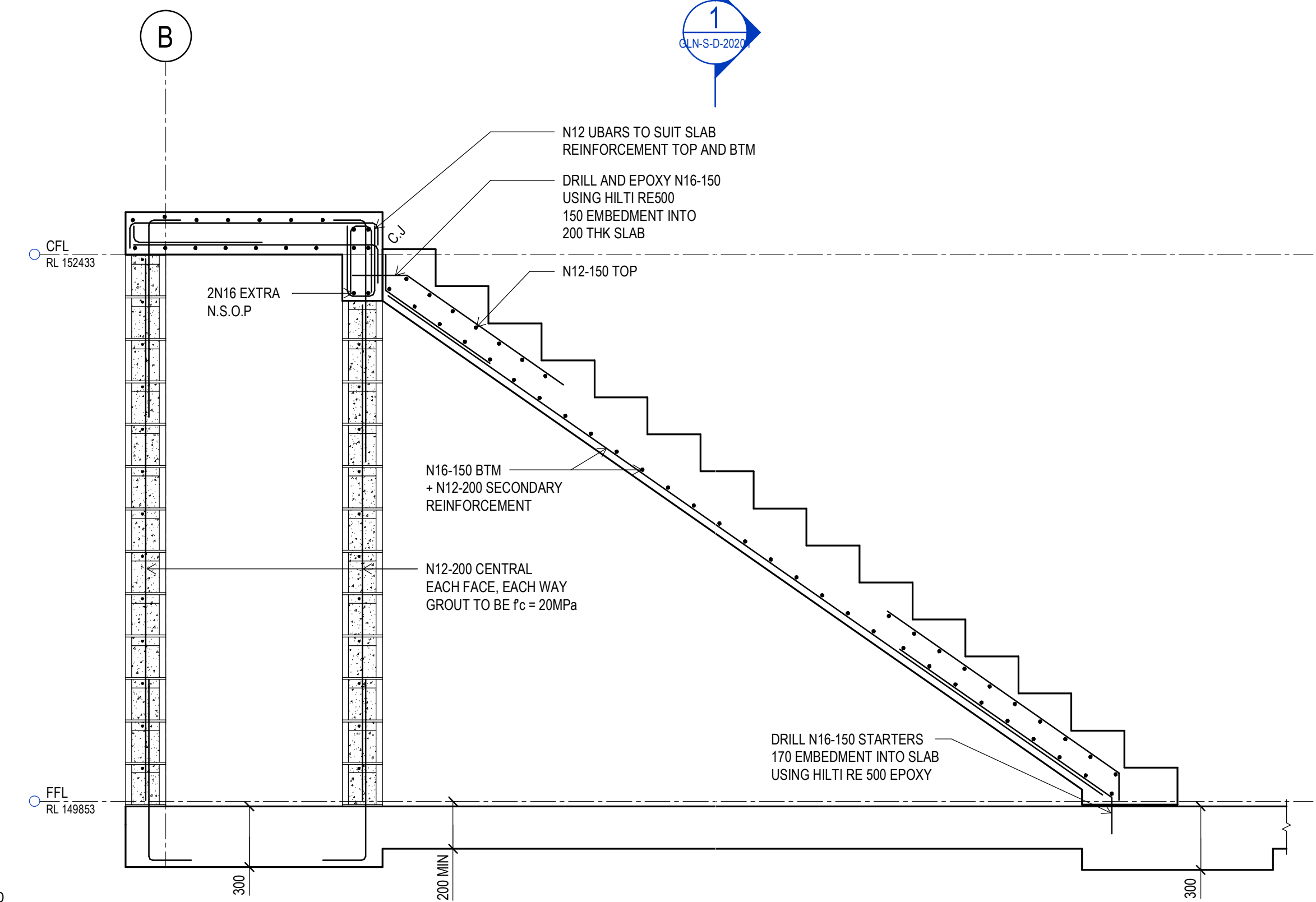
THESE DESIGNS, DRAWINGS AND SPECIFICATIONS ARE COPYRIGHT AND THE PROPERTY OF SCP CONSULTING AND MUST NOT BE USED, REPRODUCED OR COPIED WHOLLY OR IN PART WITHOUT THE WRITTEN PERMISSION OF SCP CONSULTING. ALL SETOUT TO BE OBTAINED FROM THE ARCHITECTURAL DRAWINGS UNLESS OTHERWISE SHOWN ON THESE DRAWINGS. DO NOT USE CADELECTRONIC FILES FOR SETOUT UNDER ANY CIRCUMSTANCES.



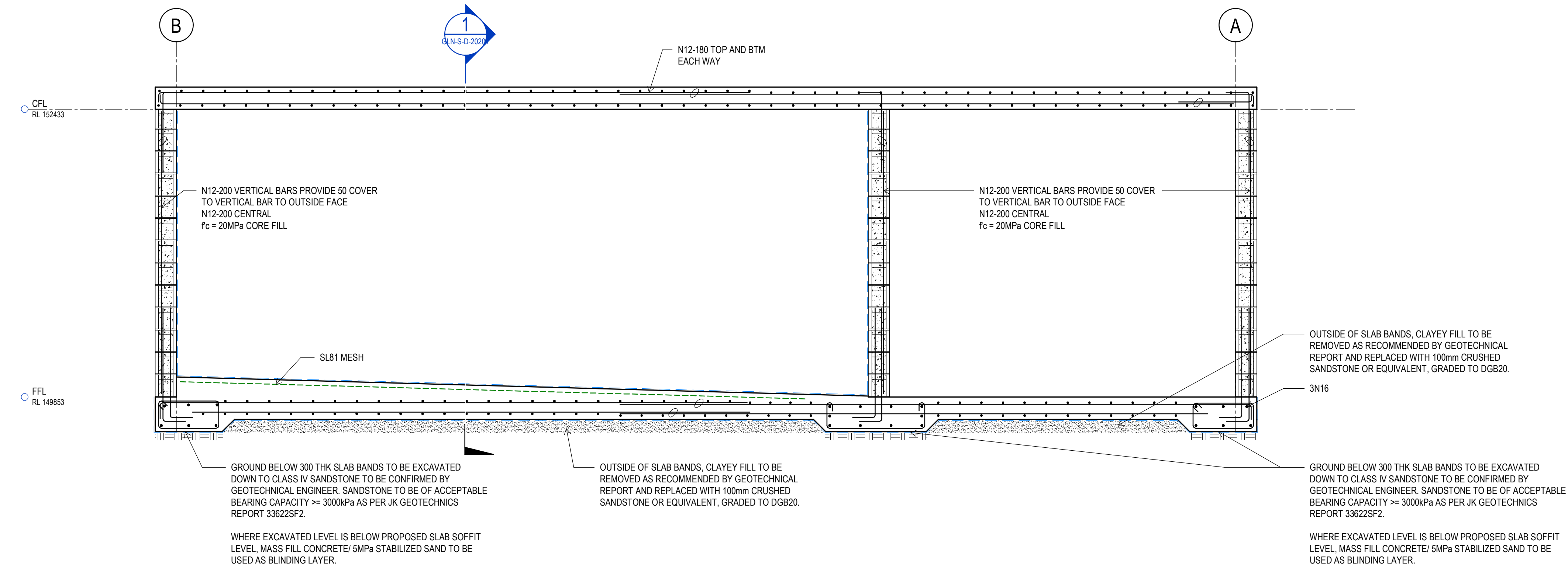
Key Plan



1 SECTION
SCALE 1:25



3 SECTION
SCALE 1:20



2 SECTION
SCALE 1:25

Rev	Revision Description	Date
A	TENDER ISSUE	14.03.22

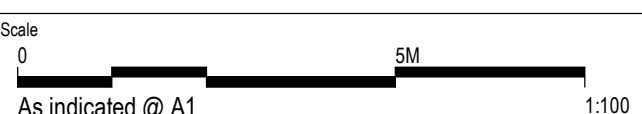
scp engineers and development consultants

▲ 1300 SCP ENG (727 364) ▲ www.scpconsult.com.au
▲ mail@scpconsult.com.au ▲ ABN 80 003 076 024

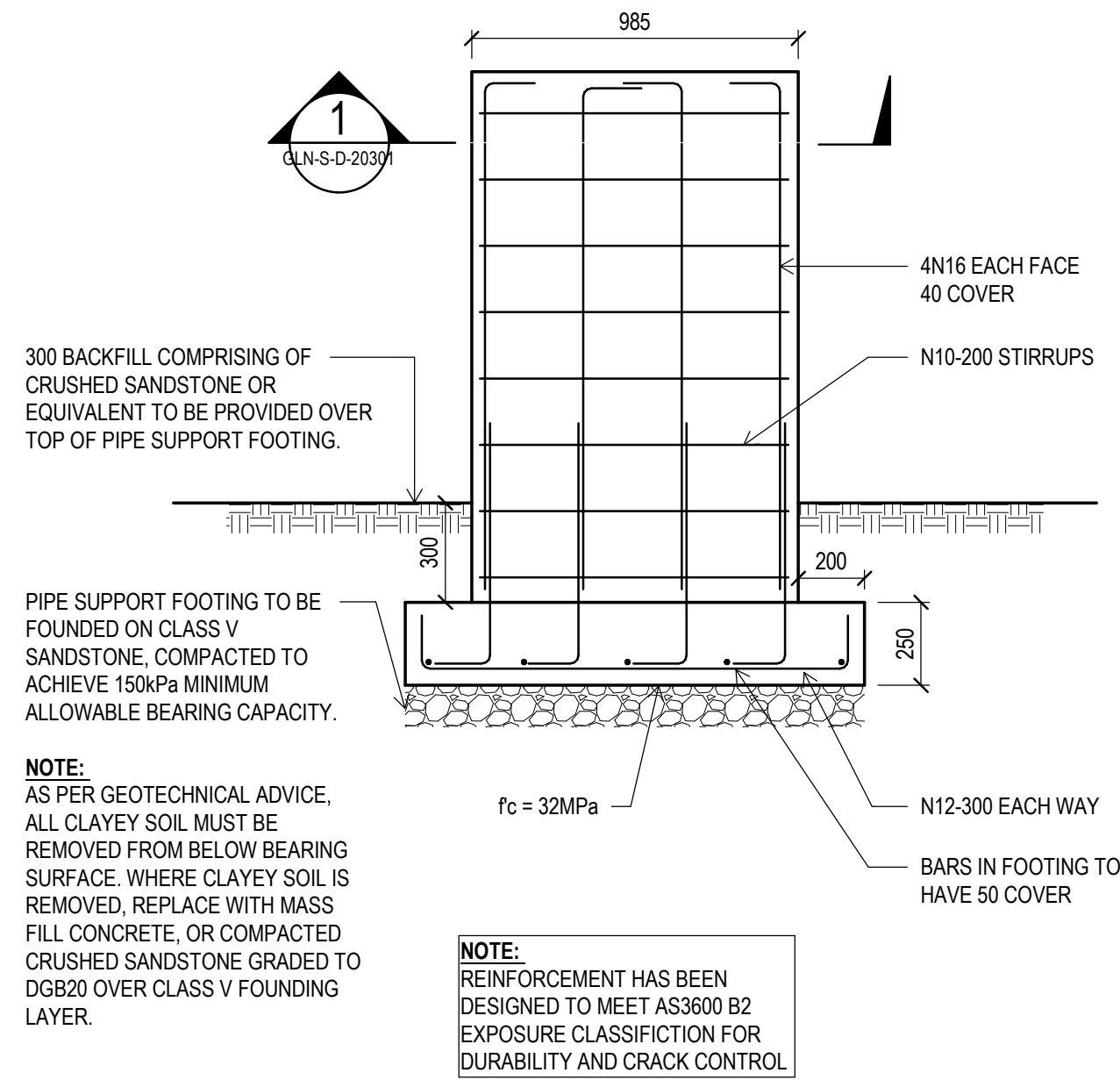
Client
LENLELEASE

Project
GLENAON RETIREMENT LIVING - SPS UPGRADE PROJECT

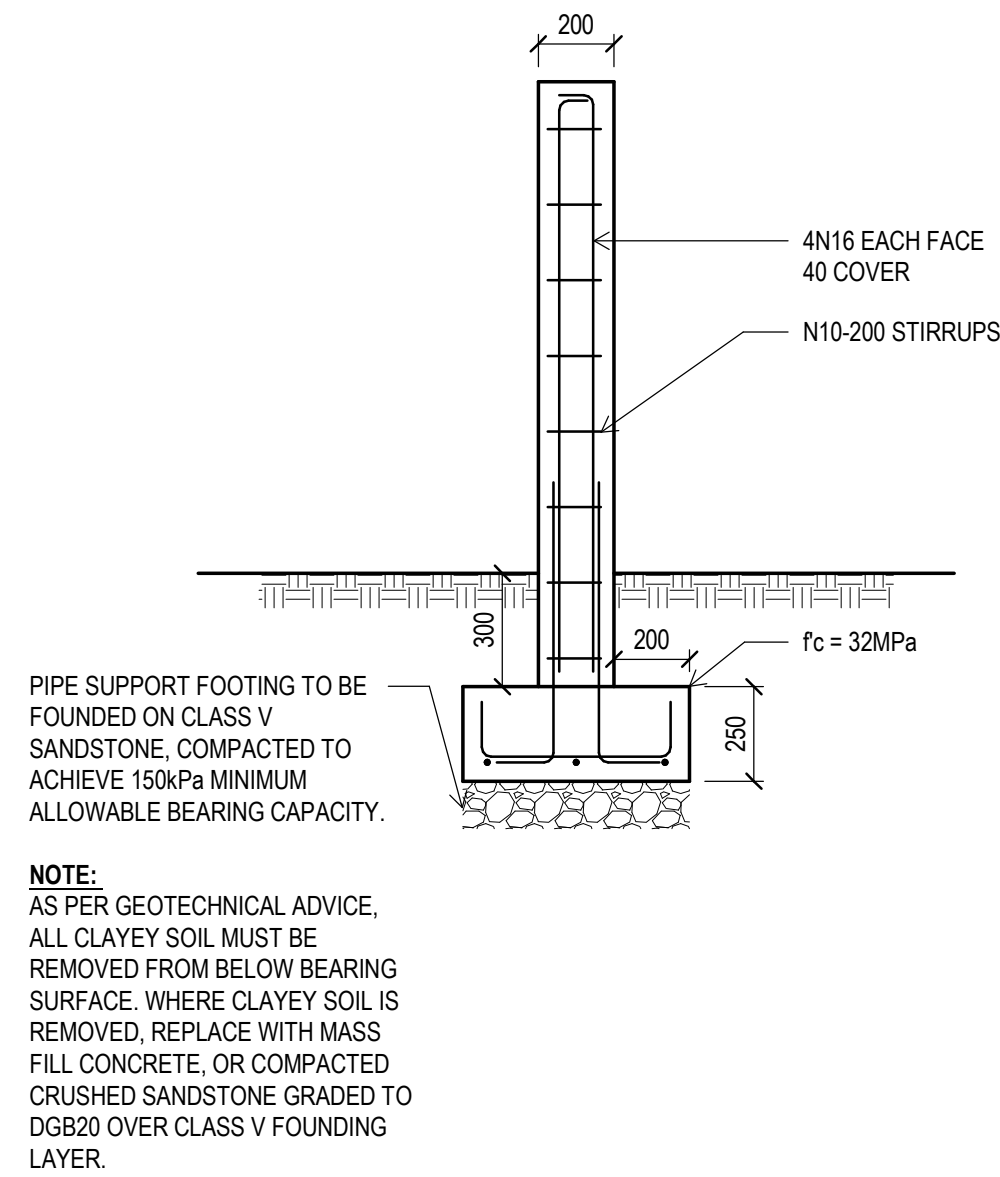
Title
TANK DETAILS SHEET 1



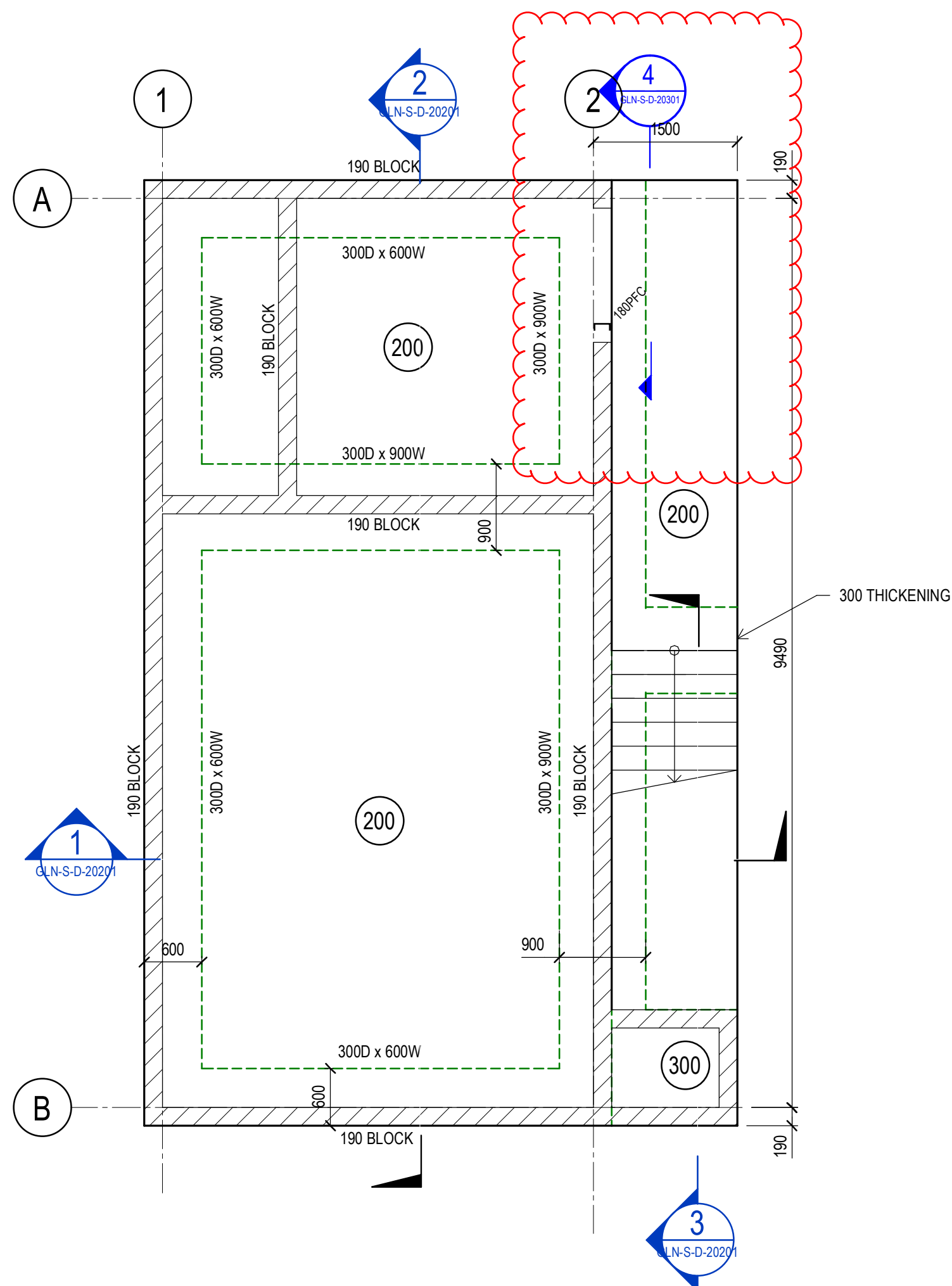
Drawn	Checked	Approved	Revision
LC	KD	HW	A
Project Number	Drawing Number	Revision	
S210157	GLN-S-D-20201	A	



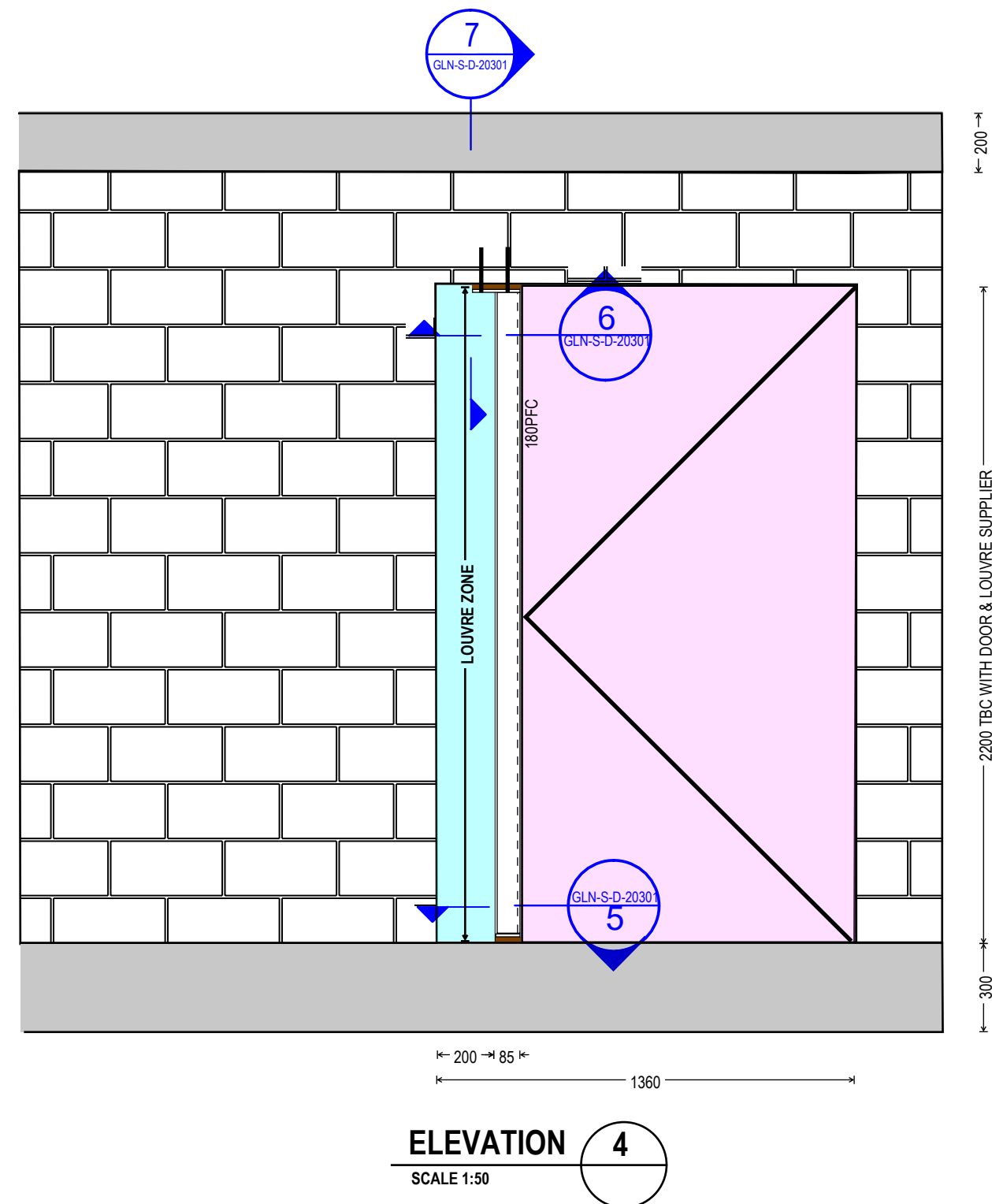
**PIPE SUPPORT COLUMN TYPICAL
ELEVATION LONG SIDE**
SCALE 1:20



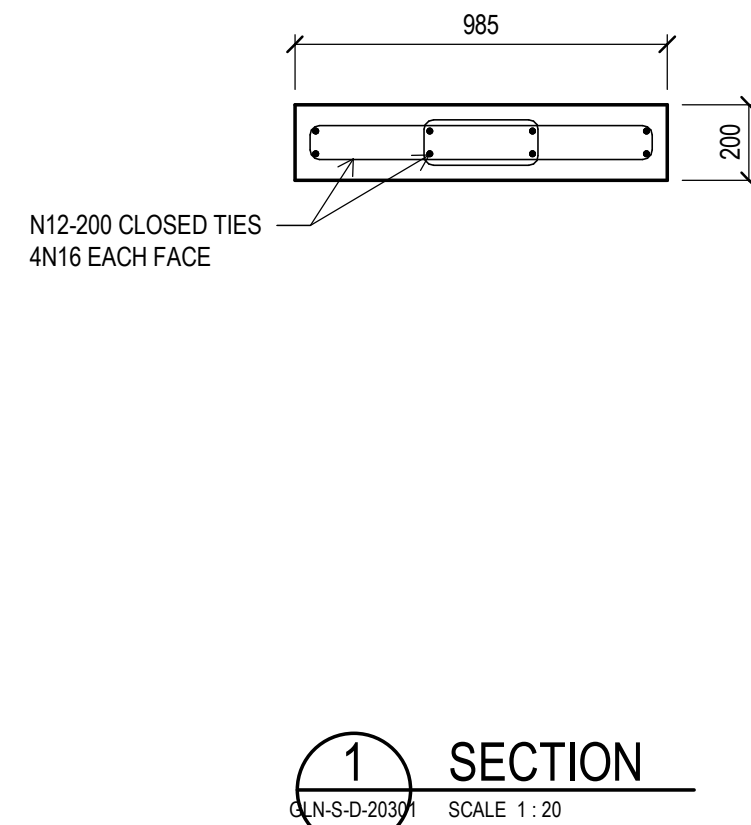
**PIPE SUPPORT COLUMN TYPICAL
ELEVATION SHORT SIDE**
SCALE 1:20



TANK SLAB GENERAL ARRANGEMENT
SCALE 1:50

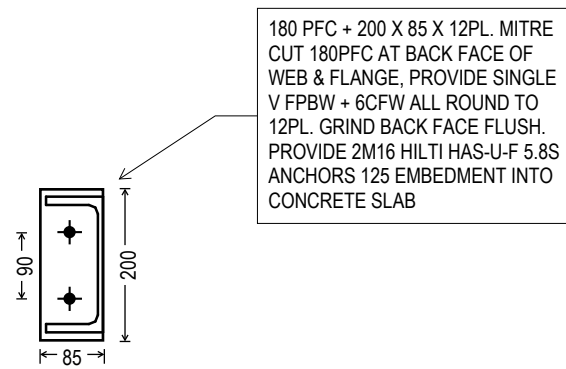


ELEVATION 4
SCALE 1:50

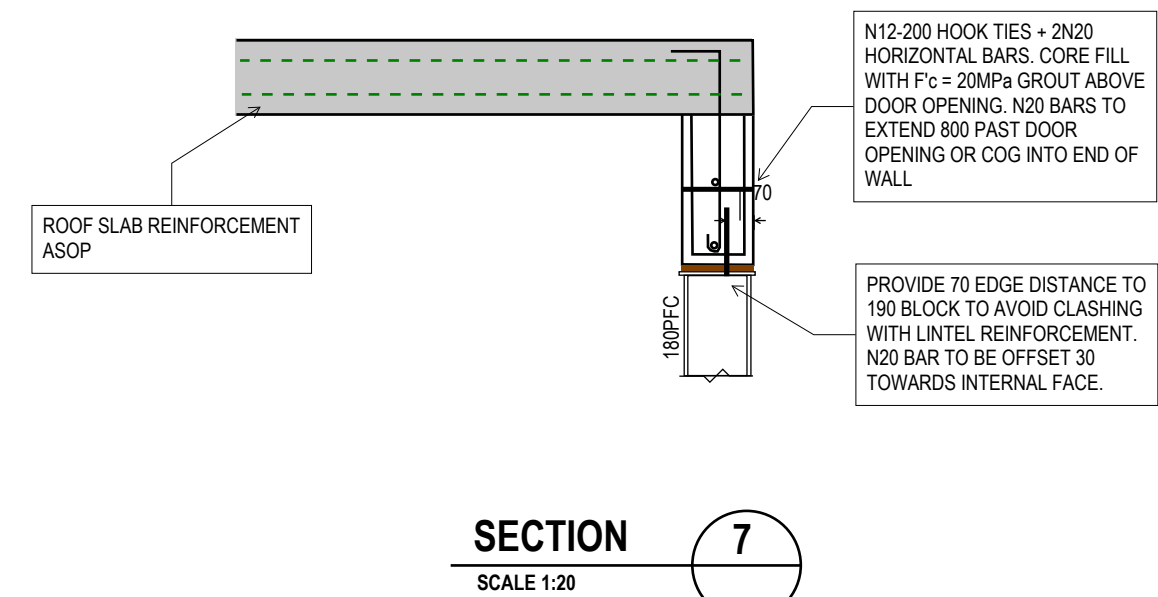
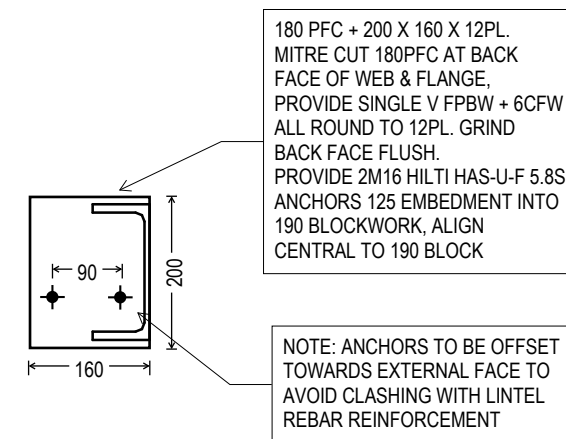


SECTION 1
SCALE 1:20

SECTION 5
SCALE 1:10
**TYPICAL 180PFC DOOR POST
BASEPLATE DETAIL**

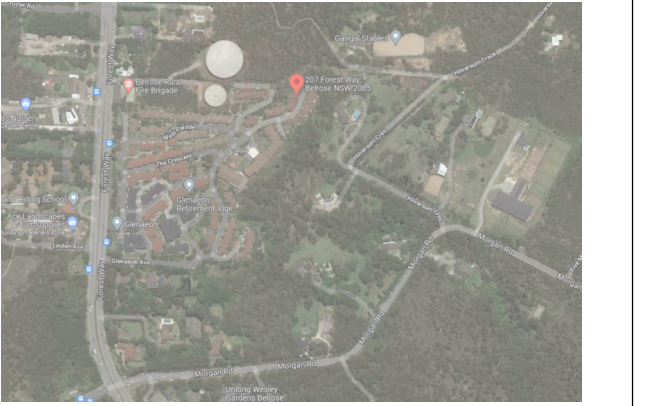


SECTION 6
SCALE 1:10
**TYPICAL 180PFC DOOR POST
TOP PLATE DETAIL**

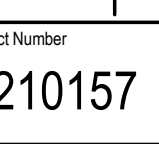
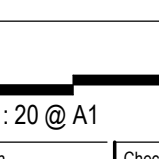
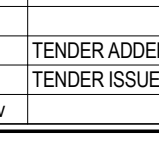
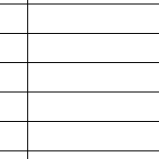
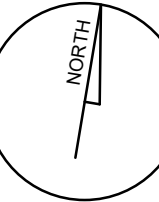


SECTION 7
SCALE 1:20

THESE DESIGNS, DRAWINGS AND SPECIFICATIONS ARE COPYRIGHT AND THE PROPERTY OF SCP CONSULTING AND MUST NOT BE USED, REPRODUCED OR COPIED WHOLLY OR IN PART WITHOUT THE WRITTEN PERMISSION OF SCP CONSULTING. ALL SETOUT TO BE OBTAINED FROM THE ARCHITECTURAL DRAWINGS UNLESS OTHERWISE SHOWN ON THESE DRAWINGS. DO NOT USE CADELECTRONIC FILES FOR SETOUT UNDER ANY CIRCUMSTANCES.



Key Plan



B	TENDER ADDENDUM	13/04/22
A	TENDER ISSUE	14/03/22
Rev	Revision Description	Date

scp engineers and development consultants

1300 SCP ENG (727 364) | www.scpconsult.com.au
mail@scpconsult.com.au | ABN 80 003 076 024

Client: **LENLELEASE**

Project: **GLENAEON RETIREMENT LIVING - SPS UPGRADE PROJECT**

Title: **DETAILS SHEET 1**

Scale: 1:20 @ A1

Drawn: LC | Checked: KD | Approved: HW

Project Number: S210157 | Drawing Number: GLN-S-D-20301 | Revision: B

1. THE NEW SWITCHBOARD IS TO BE FLOOR MOUNTED ON THE WALL AT LOCATION SHOWN ON THE FLOOR PLANS.
2. ALL DIMENSIONS SHOWN ARE THE MAXIMUM ALLOWED - THE DEPTH OF THE BOARD IS NOT TO EXCEED 250mm.
3. THE BOARD IS TO BE TOP AND BOTTOM ENTRY WITH FRONT ACCESS ONLY.
4. THE BOARD IS TO BE DEAD FRONT ESCUTCHEON TYPE - ALL ESCUTCHEONS SHALL HAVE LOCATING PINS.
5. THE SWITCHBOARD IS TO BE COMPLETE WITH ITS OWN DOORS, LOCK KEYED TO LOCKWOOD KEY NO 42886 (THE FRONT ELEVATION IS SHOWN WITH THE DOORS REMOVED).
6. FABRICATE THE ENCLOSURE FROM MINIMUM 2.5mm THICK MILD STEEL GRADE ALUMINIUM REINFORCEMENT AS NECESSARY TO INCREASE RIGIDITY AND TO SUPPORT HEAVY EQUIPMENT.
7. THE EXTERIOR AND INTERIOR OF THE SWITCHBOARD IS TO HAVE AN EPOXY POWDERCOAT FINISH - THE EXTERIOR FINISH COLOUR IS TO BE "WHITE" (TO THE DULUX POWDERCOAT CARD) AND THE INTERIOR FINISH COLOUR IS TO BE "GLOSS WHITE".
8. THE MCB CHASSIS ARE TO BE THREE PHASE BUSBAR CHASSIS ASSEMBLIES CAPABLE OF ACCEPTING COMBINED MCB/RCD UNITS WHICH OCCUPY ONLY ONE POLE (NIPH TERASAKI DIN. T250A CHASSIS) FITTED WITH THE NUMBER OF MCB'S OR MCB/RCD CHASSIS AS SHOWN AND BLANK OFF SPARE POLES WITH PVC BLANKS.
9. DO NOT FIT FUSE CARTRIDGES TO THE SPARE FUSE BASES
10. RATED SHORT TIME WITHSTAND CURRENT = 10kA FOR 1 SECOND.
11. DEGREE OF PROTECTION = IP42 - AS 1939
12. SEGREGATION = FORM 1 - AS 3439
13. REFER TO THE SPECIFICATION FOR FURTHER CONSTRUCTION DETAILS

- THE SWITCHBOARD IS TO BE GROUND MOUNTED ON A CONCRETE BASE AT LOCATION SHOWN ON THE DRAWINGS
- THE SWITCHBOARD IS TO BE FOR BOTTOM ENTRY ONLY
- THE SWITCHBOARD IS TO HAVE FRONT ACCESS ONLY
- THE SWITCHBOARD IS TO BE FITTED WITH HINGED AND LOCKABLE FRONT DOORS. THE DOORS ARE TO BE FITTED WITH – TWO LOCKABLE "L" HANDLES KEYS TO THE SUPPLY AUTHORITY REQUIREMENTS/APPROVAL (THE FRONT ELEVATION IS SHOWN WITH THE DOOR REMOVED)
- PROVIDE LOCATING PINS FOR THE ESCUTCHEON PANELS
- FABRICATED THE ENCLOSURE FROM MINIMUM 2.5mm THICK MARINE GRADE ALUMINIUM EQUAL TO COMALCO 5552H34, WELDED, MACHINE BENT AND FOLDED TO FORM A WEATHERPROOF CABINET NO LESS THAN IP56
- THE EXTERIORS AND INTERIORS OF THE SWITCHBOARD ARE TO HAVE AN EPOXY POWDERCOAT FINISH (THE EXTERIORS FINISH IS TO MATCH THE COLOUR OF THE NEW TRANSFORMER AND THE INTERIORS FINISH COLOUR IS TO BE GLOSS WHITE)

- ALL BOLTS ARE TO BE GALVANISED STEEL – WHERE TWO DISSIMILAR METALS MEET THEY SHALL BE ISOLATED WITH 1.5mm RED FIBRE WASHERS
- PROVIDE MAGNETIC SCREENING (TO SUPPLY AUTHORITY REQUIREMENTS) FOR THE SUPPLY AUTHORITY METER PANEL
- PROVIDE A LABEL TO THE MEN CONNECTION INSIDE THE SWITCHBOARD ENGRAVED "MEN LINK"
- RATED SHORT TIME WITHSTAND CURRENT = 25KA FOR 1 SECOND
- DEGREE OF PROTECTION = IP56 – AS 1939
- SEGREGATION = FORM 2B – AS 3439
- RATED CURRENT = 1600 A
- REFER TO THE SPECIFICATION FOR FURTHER CONSTRUCTION DETAILS

THE CONTRACTOR TO VERIFY THE FOLLOWING WITH RESPECT TO THE EXISTING INCOMING SUPPLY AT THE TOWN HOUSE CUPBOARD.

- CABLE SIZE
- SOURCE OF INCOMING SUPPLY
- CIRCUIT BREAKER RATING AT THE SWITCHBOARD SOURCE
- APPROXIMATE CABLE LENGTH BETWEEN THE SOURCE SWITCHBOARD AND THE BOARD NEAR THE TOWN HOUSE CUPBOARD
- THE METHOD OF CABLE INSTALLATION

ALLOW FOR UPGRADING

- EXISTING LV SUBMANS IF FOUND NON COMPLIANT TO AS
- REPLACE THE EXISTING CIRCUIT BREAKER WITH NEW
- MODIFICATIONS TO THE EXISTING SOURCE SWITCHBOARD INTERNAL BUSBAR TO FIT NEW CIRCUIT BREAKER

CONTRACTOR TO SUBMIT LOW VOLTAGE CABLE CALCULATIONS TAKING INTO CONSIDERATION THE LOAD/ACCUMULATIVE VOLTAGE DROP/SOURCE AND DESTINATION THREE-PHASE FAULT CURRENT/EARTH FAULT LOW IMPEDENCE.

FINAL ELECTRICAL LOADS TO BE CONFIRMED BY ELECTRICAL CONTRACTORS.
FAULT RATING OF SUBSTATION AND MAIN SWITCH BOARD TO BE CONFIRMED

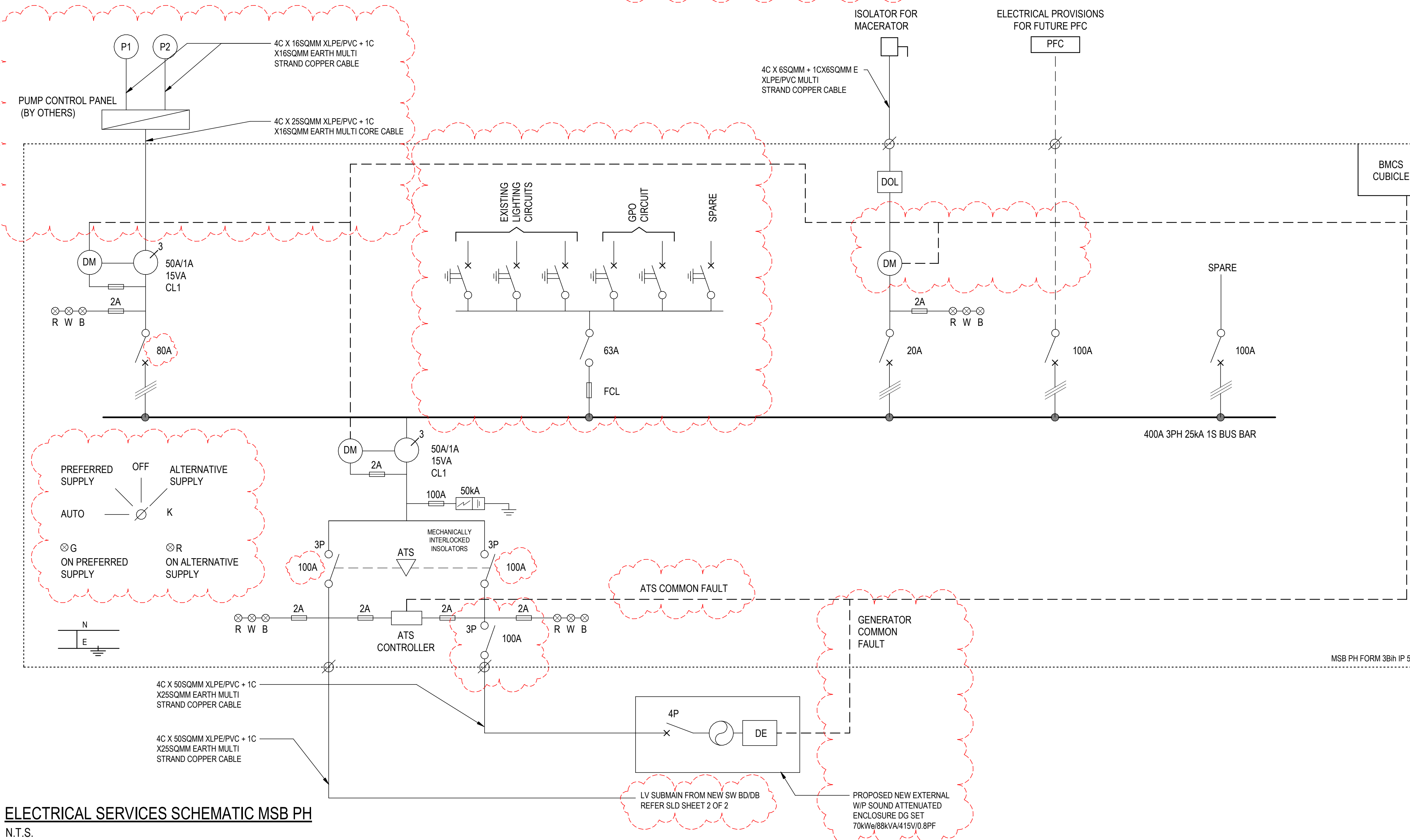
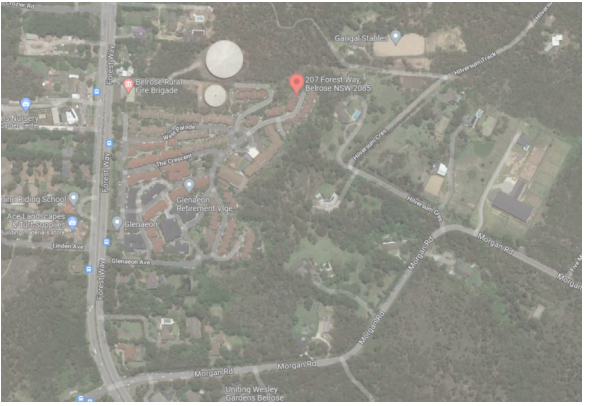
ALL DISTRIBUTION BOARDS AND MS 3 HAVE BEEN PROVIDED WITH FAULT CURRENT LIMITER (FCL). THE ELECTRICAL CONTRACTOR TO CONFIRM REQUIREMENT OF FCL AFTER CALCULATING THE ACTUAL THREE PHASE FAULT CURRENT AT THE DESTINATION BOARDS TAKING INTO CONSIDERATION THE THREE PHASE FAULT CURRENT AT THE SOURCE AND IMPEDENCE OF SUBMAINS.

ALL CABLE SIZES SHALL BE VERIFIED FOR SHORT CIRCUIT CAPACITY, CUMULATIVE VOLTAGE DROP, SELECTIVITY, EARTH LOOP IMPEDANCE AND OTHER PARAMETERS AS PER AS 3000 THE CIRCUIT BREAKERS SHALL BE MECHANICALLY INTERLOCKED WITH CASTLE KEY FOR MANUAL CHANGEOVER FOR GENERATION OPERATION UNDER MAINS FAILURE.

	DISTRIBUTION BOARD
	PUMP MOTOR
	DIRECT ON LINE STARTER
	CURRENT TRANSFORMER
	DIGITAL POWER METER
	FUSE
	MCCB
	THREE PHASE
ATS	AUTOMATIC TRANSFER SWITCH
BMCS	BUILDING MANAGEMENT & CONTROL SYSTEM
	EXISTING DG SET
PFC	POWER FACTOR CORRECTION UNIT
	SURGE ARRESTER
	PHASE INDICATION LAMPS
	CT WITH LINKS

THESE DESIGNS, DRAWINGS AND SPECIFICATIONS ARE COPYRIGHT AND THE PROPERTY OF SCP CONSULTING AND MUST NOT BE USED, REPRODUCED OR COPIED WHOLLY OR IN PART WITHOUT THE WRITTEN PERMISSION OF SCP CONSULTING

ALL SETOUT TO BE OBTAINED FROM THE ARCHITECTURAL DRAWINGS UNLESS OTHERWISE SHOWN ON THESE DRAWINGS. DO NOT USE CAD/ELECTRONIC FILES FOR SETOUT UNDER ANY CIRCUMSTANCES.



N.T.S.

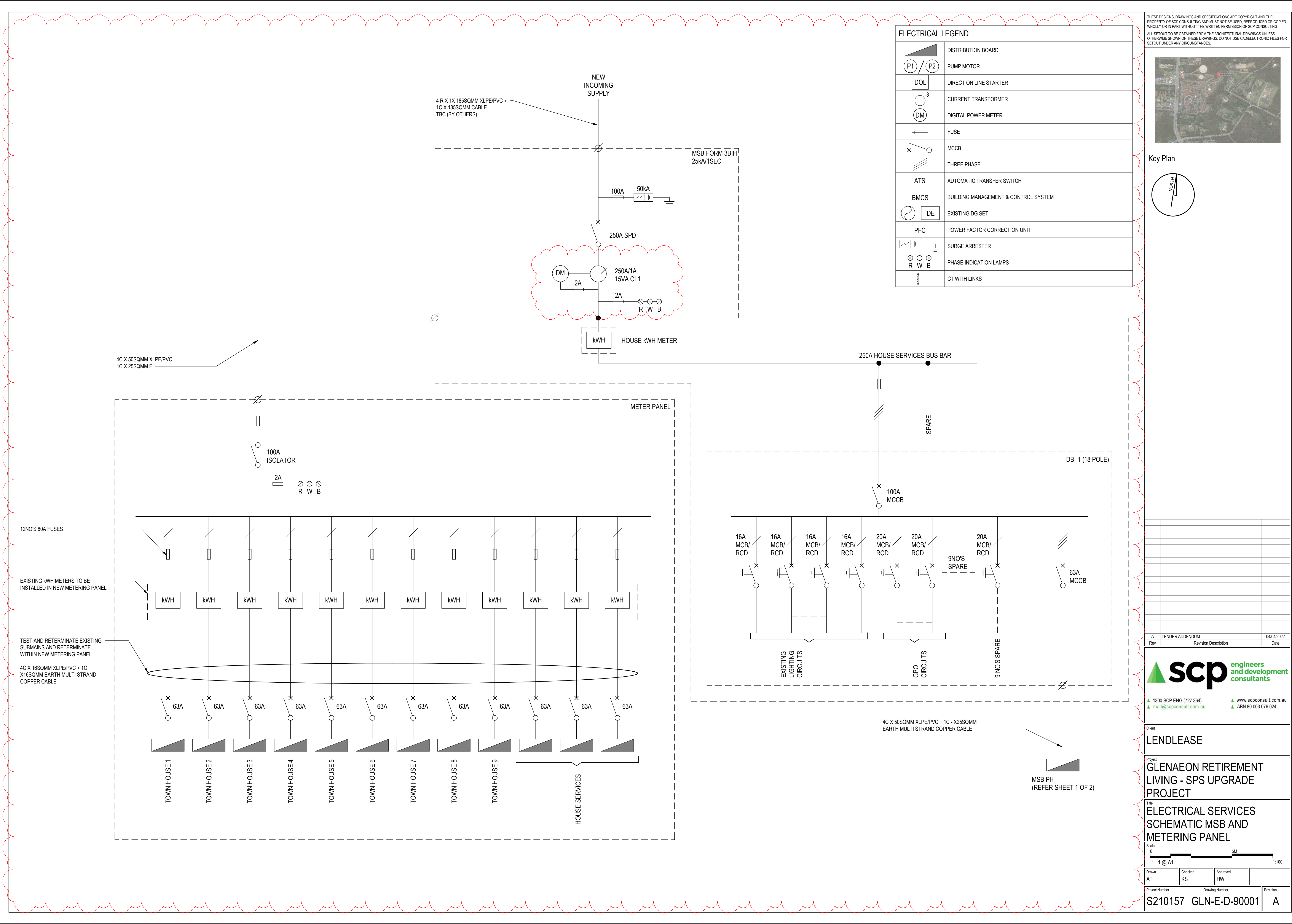
C	TENDER ADDENDUM	04/04/2022
B	TENDER ISSUE	16/03/2022
A	ISSUED FOR DRAFT TENDER	09/03/2022
Rev	Revision Description	Date



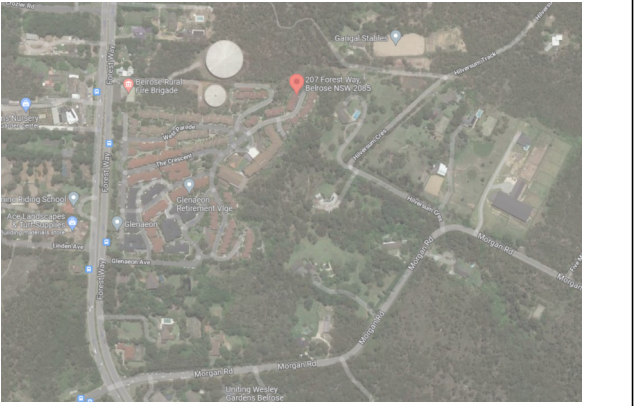
Title
ELECTRICAL SERVICES
SCHEMATIC MSB PH

Scale
0 5M 1:1 @ A1 1:100

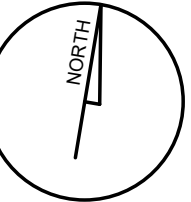
Drawn AT	Checked KS	Approved HW	
Project Number S210157 GLN-E-D-90000			Revision C



THESE DESIGNS, DRAWINGS AND SPECIFICATIONS ARE COPYRIGHT AND THE PROPERTY OF SCP CONSULTING AND MUST NOT BE USED, REPRODUCED OR COPIED WHOLLY OR IN PART WITHOUT THE WRITTEN PERMISSION OF SCP CONSULTING. ALL SETOUT TO BE OBTAINED FROM THE ARCHITECTURAL DRAWINGS UNLESS OTHERWISE SHOWN ON THESE DRAWINGS. DO NOT USE CADELECTRONIC FILES FOR SETOUT UNDER ANY CIRCUMSTANCES.



Key Plan



A	TENDER ADDENDUM	04/04/2022
Rev	Revision Description	Date



scp engineers and development consultants

▲ 1300 SCP ENG (727 364) ▲ www.scpconsult.com.au
▲ mail@scpconsult.com.au ▲ ABN 80 003 078 024

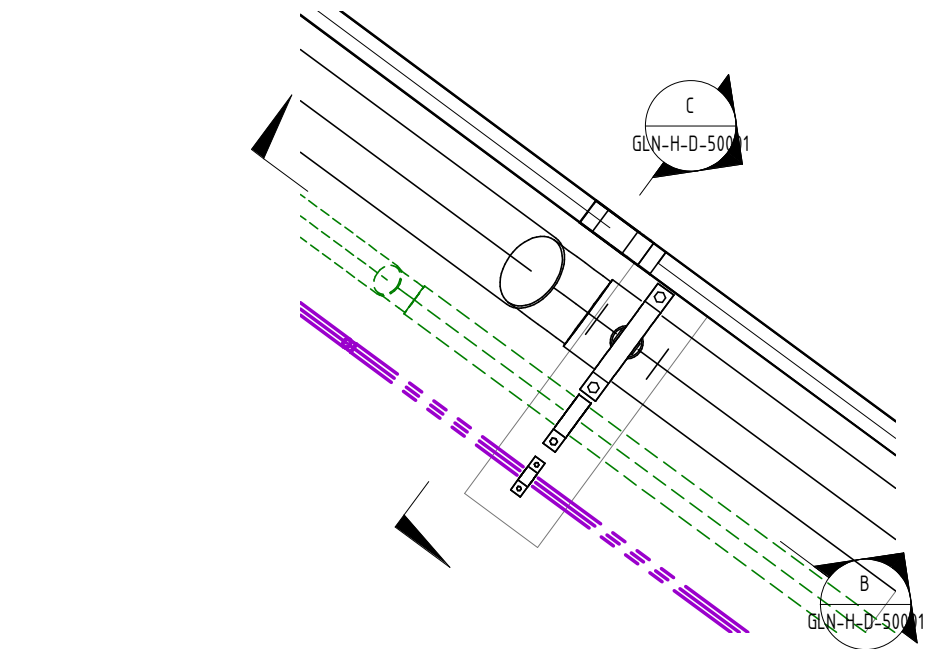
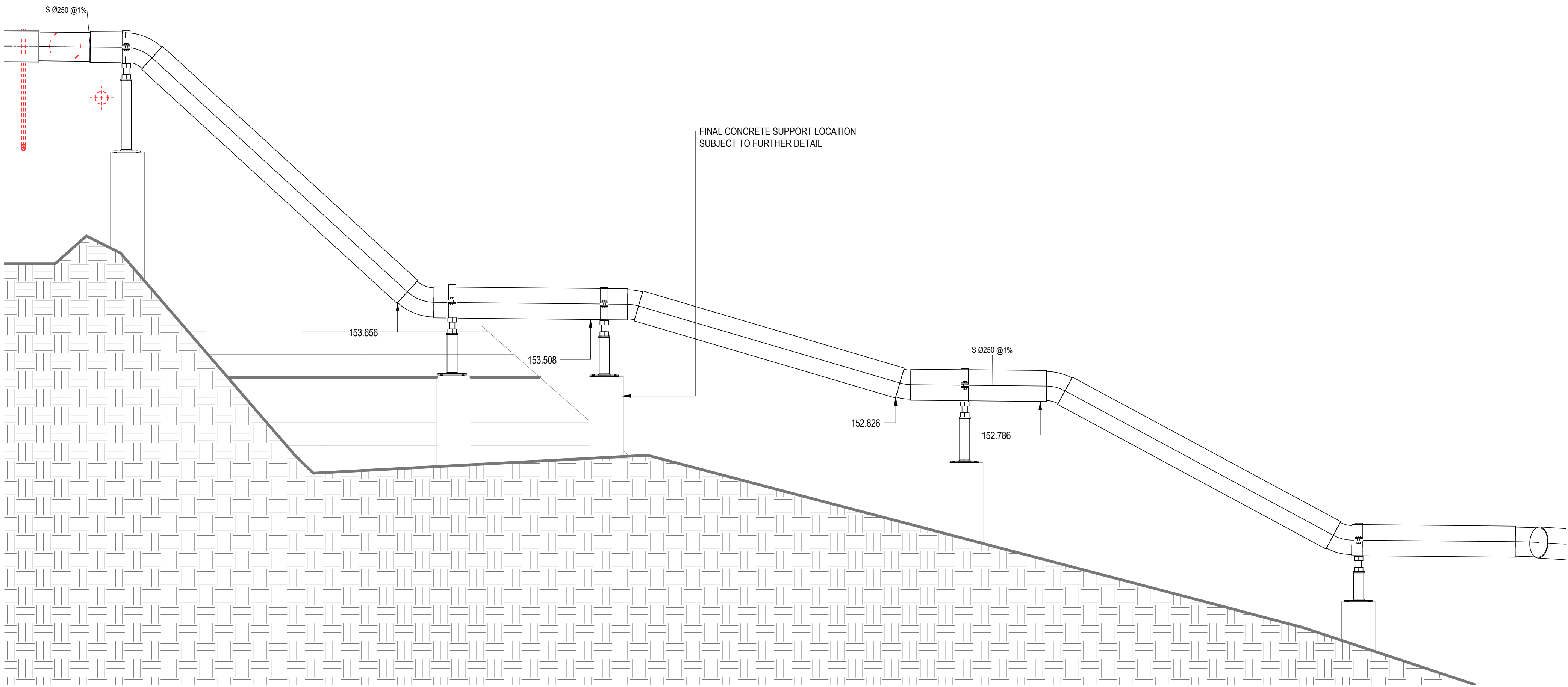
Client
LENDELEASE

Project
GLENAEON RETIREMENT LIVING - SPS UPGRADE PROJECT

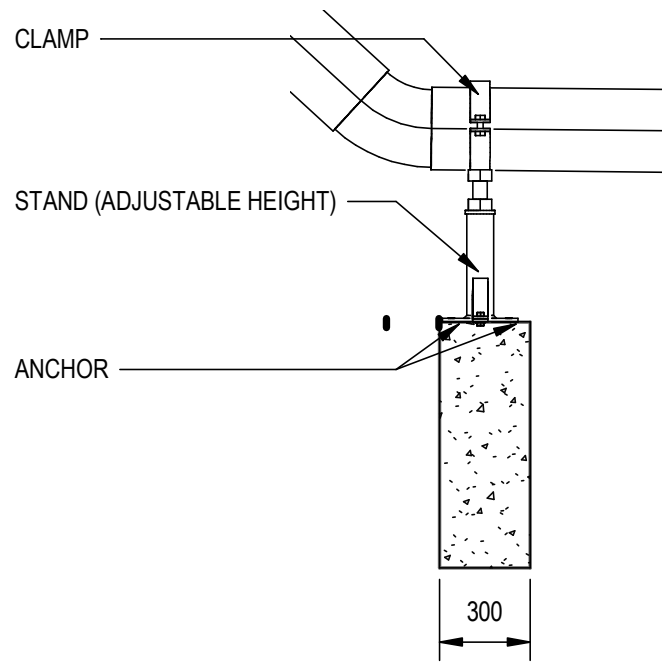
Title
ELECTRICAL SERVICES SCHEMATIC MSB AND METERING PANEL

Scale
0 5M 1:1 @ A1 1:100

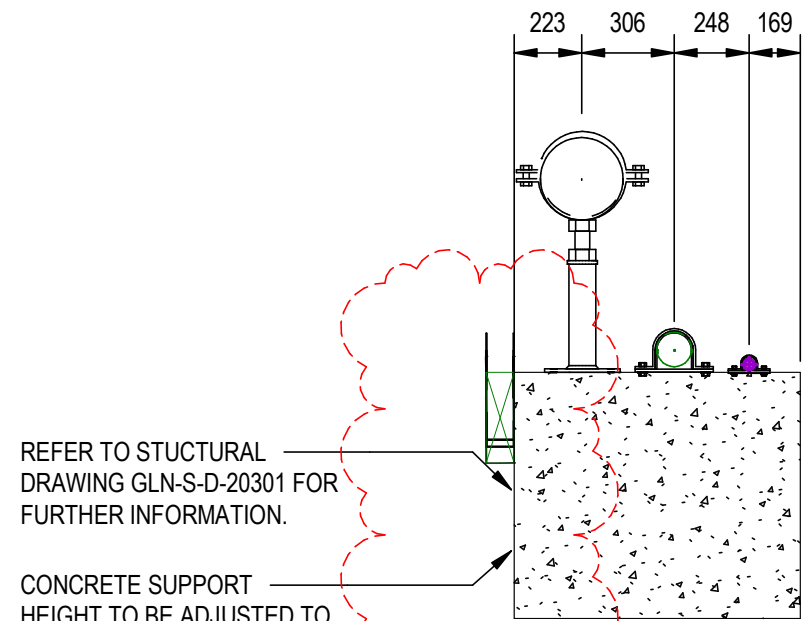
Drawn AT	Checked KS	Approved HW	Revision S210157 GLN-E-D-90001 A
-------------	---------------	----------------	-------------------------------------



1 CONCRETE PIPE SUPPORT
1:25



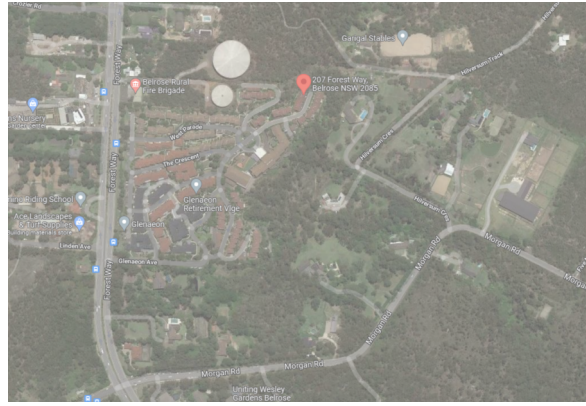
B CONCRETE PIPE SUPPORT-A-SIDE
1:25



C CONCRETE PIPE SUPPORT-A-FRONT
1:25

THESE DESIGNS, DRAWINGS AND SPECIFICATIONS ARE COPYRIGHT AND THE PROPERTY OF SCP CONSULTING AND MUST NOT BE USED, REPRODUCED OR COPIED WHOLLY OR IN PART WITHOUT THE WRITTEN PERMISSION OF SCP CONSULTING

ALL SETOUT TO BE OBTAINED FROM THE ARCHITECTURAL DRAWINGS UNLESS OTHERWISE SHOWN ON THESE DRAWINGS. DO NOT USE CADELECTRONIC FILES FOR SETOUT UNDER ANY CIRCUMSTANCES.



Rev	Revision Description	Date
D	TENDER ADDENDUM	24/03/2022
C	TENDER ISSUE	16/03/2022
B	ISSUED FOR DRAFT TENDER	09/03/2022



1300 SCP ENG (727 364) www.scpconsult.com.au
mail@scpconsult.com.au ABN 80 003 076 024

Client
LENLELEASE

Project
GLENAEON RETIREMENT LIVING - SPS UPGRADE PROJECT

Title
SECTIONS 01

Scale
0 5M 1:25 @ A1 1:100

Drawn KN	Checked VP	Approved HW
-------------	---------------	----------------

Project Number S210157	Drawing Number GLN-H-D-50001	Revision D
---------------------------	---------------------------------	---------------

GENERAL NOTES:

- THE WHOLE OF THE PLUMBING AND DRAINAGE WORKS SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING:
 - NSW HEALTH ADVISORY NOTE 3: DESTRUCTION, REMOVAL OR REUSE OF SEPTIC TANKS, COLLECTION WELLS, AERATED WASTEWATER TREATMENT SYSTEMS (AWTS) AND OTHER SEWAGE MANAGEMENT FACILITIES (SMF).
 - WSA002-2002-1: PLANNING AND DESIGN.
2. THE DRAWINGS ARE A GUIDE ONLY FOR THE POSITIONS, LAYOUT AND SIZING OF THE SERVICE PIPES. FINAL LOCATIONS OF ALL FIXTURES AND EQUIPMENT SHALL BE IN ACCORDANCE WITH THE ARCHITECTS DRAWINGS. ANY DISCREPANCIES SHALL BE REPORTED TO THE PROJECT MANAGER.
3. THE CONTRACTOR IS TO VERIFY THE POSITIONS OF ALL DRAINAGE PIPES AND SERVICE LINES AND THAT THE INVERT AND SURFACE LEVELS ARE CORRECT BEFORE COMMENCING WORK.
4. ALL MATERIALS WILL BE IN ACCORDANCE WITH THE BCA AND THE REQUIREMENTS OF THE BUILDING CERTIFIER AND THE PLUMBING INSPECTOR. ENSURE MATERIALS MEET THE FIRE RATING REQUIREMENTS OF THE BCA.
5. THE CONTRACTOR SHALL COORDINATE THEIR WORK WITH ALL OTHER TRADE CONTRACTORS AND OTHER CONSULTANT'S DRAWINGS AND SPECIFICATION.
6. ALL VENT PIPES SHALL TERMINATE ABOVE THE ROOF.
7. THE WATER SUPPLY INSTALLATION AND PIPEWORK SHALL COMPLY WITH AS/NZS 3500 PART 1, CONCERNING BACKFLOW PREVENTION. ALL BACKFLOW PREVENTION VALVES SHALL COMPLY WITH AS 2845 AND BE PROVIDED WITH DRAINS WHERE REQUIRED. ALL HOSE TAPS SHALL HAVE A VACUUM BREAKER INSTALLED TO AS/NZS 3500.1, SECTION 4.
8. PENETRATIONS THROUGH FIRE RATED STRUCTURES SHALL HAVE FIRE COLLARS INSTALLED AS NECESSARY TO PRESERVE THE INTEGRITY OF THE STRUCTURE.
9. THE CONTRACTOR SHALL SUPPLY ALL MATERIALS NECESSARY TO COMPLETE AN OPERATIONAL SYSTEM AS THOUGH SHOWN IN THE DOCUMENTS IN FULL.
10. WATER PIPE SIZES ON DRAWINGS ARE BASED ON COPPER PIPE DIMENSIONS.
11. ABOVE GROUND PIPEWORK SHALL BE MARKED SHOWING SERVICE AND FLOW DIRECTION. LABELS SHALL BE AT A MAXIMUM 6 METERS APART. NON-POTABLE WATER SHALL BE DEFINED AND MARKED AS PER CODE REQUIREMENTS.
12. APPROVED AS INSTALLED DRAWINGS SHALL BE SUBMITTED BY THE CONTRACTOR.
13. ALLOW TO SUPPLY AND INSTALL SANITARY FIXTURES, TAPWARE AND FITTINGS COMPLETE WITH ALL BRACKETS, SEALANTS, UNIONS, ETC.
14. PROPRIETARY BRAND NAMES USED ARE DESCRIPTIVE. EQUAL QUALITY AND PERFORMANCE APPROVED ALTERNATIVE MAKES MAY BE USED.
15. ACOUSTIC RATINGS SHALL BE ACHIEVED IN COMPLIANCE WITH THE BCA.
16. ISOLATION VALVES ARE TO BE LOCATED IN ACCESSIBLE LOCATION OR BE PROVIDED WITH ACCESS PANEL.
17. TANK BASE TO BE EPOXY LINED WITH FLEXIBLE WATERPROOFING MEMBRANE THROUGHOUT WET WELL AND EMERGENCY LINK INTERIOR. CONTRACTOR TO ALLOW FOR RE-COATING OF WATERPROOFING MEMBRANE. CONTRACTOR TO UTILISE SPECIALIST CONTRACTOR FOR TREATMENTS TO BE INCORPORATED AS A COMPLETE WATERPROOF SYSTEM.
18. ALL PENETRATIONS TO BE SEALED WITH CHAIN LINK AND HYDROPHILIC SEALANT.
19. PAINT EXTERIOR WALL AND DRY WELL WALLS WITH HYDROPHOBIC PAINT AND SEALANT (3 LAYERS)

SYMBOLS	
	AIR ADMITTANCE VALVE
	CHECK VALVE
	HOSE TAP
	ISOLATION VALVE
	KAMLOCK COUPLING
	MONITORED GATE/ISOLATION VALVE
	NON-RETURN VALVE
	NORMALLY CLOSE ISOLATION VALVE
	PRESSURE REDUCING VALVE
	PUMP

SERVICES LINETYPES	
	SEWER DRAINAGE-PROPOSED
	SEWER DRAINAGE-EXISTING
	SEWER RISING MAIN-PROPOSED
	SEWER RISING MAIN-EXISTING
	NON POTABLE WATER SERVICE
	ELECTRICAL CONDUIT
	EXISTING SERVICE BE DEMOLISHED
	EXISTING ENCLOSURE TO BE DEMOLISHED

DECOMMISSIONING PLAN PROCESS DESCRIPTION-TABLE 1	
ITEM	ACTION/REQUIREMENT
STEP 1	INITIAL CHARGES OF LUBRICANT IN ADDITION TO ANY SPECIAL LUBRICANT REQUIREMENTS FOR INITIAL FLUSHING OR TREATMENT OF THE SYSTEM OR FOR "RUNNING IN".
STEP 2	RUN PHYSICAL CHECKS AND TESTS SUCH AS COMPLETENESS OF ASSEMBLY, ROTATIONAL TESTS (INCLUDING CHECKING THAT THE ROTATION OF ELECTRICAL MOTORS IS IN THE CORRECT DIRECTION), ALIGNMENT CHECKS, BALANCING AND VIBRATION CHECKS, TEMPERATURE, PRESSURE AND FLOW MEASUREMENTS, CLEARANCES, BELT ALIGNMENT AND TENSION, ETC., DEPENDING ON THE TYPE OF EQUIPMENT.
STEP 3	RUN ELECTRICAL AND INSTRUMENT INSTALLATION TESTS, INCLUDING MOTOR INSULATION TESTS AND CALIBRATING INSTRUMENTS AGAINST CERTIFIED INSTRUMENTS AND CORRECTING AS NECESSARY.
STEP 4	RUN TESTS OF THE CORRECT FUNCTIONING OF AUTOMATIC AND MANUAL CONTROL AND PROTECTION EQUIPMENT, INCLUDING SIMULATING DANGER CONDITIONS, MAL-OPERATIONS OR FAILURES, TO CHECK THAT ALL INSTRUMENTS AND CONTROLS FUNCTION CORRECTLY.
STEP 5	ADJUST THE INSTRUMENT SET POINTS AND ALARM SETTINGS AND PROVE CORRECT OPERATION OF ALARMS.
STEP 6	EQUIPMENT AND SYSTEM OPERATING TESTS AND SCHEDULED ITEMS IN TABLE 2
STEP 7	CERTIFY COMPLIANCE OF EACH ITEM IN TABLE 2 AND SUBMIT A SIGNED COPY PRIOR TO COMMISSIONING.

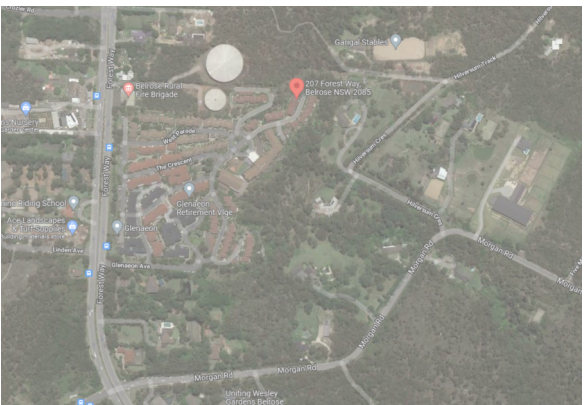
DECOMMISSIONING PLAN PROCESS DESCRIPTION-TABLE 2	
MECHANICAL ELEMENTS	
ITEM	ACTION/REQUIREMENT
1	CHECK ALL SAFETY SIGNAGE IS INSTALLED AND IS APPROPRIATE E.G. CRANE SWL, 'DANGER' AUTOMATIC EQUIPMENT SIGNS, HEARING PROTECTION REQUIREMENT ETC.
2	CHECK BUILDING AND EQUIPMENT IDENTIFICATION E.G. SITE SIGNAGE, SEWAGE PUMPS, PIPEWORK, GAUGES AND ISOLATING VALVES
3	CHECK RP2D IS INSTALLED AND HAS BEEN TESTED BY APPROPRIATELY LICENSED PLUMBER
4	CHECK CRANE FUNCTIONALITY AND COVERAGE OVER STRATEGIC EQUIPMENT
5	CHECK THERE IS NO RUBBISH IN THE WET-WELL, INLET MH AND EMERGENCY STORAGE WHICH IS LIKELY TO DAMAGE THE SEWAGE PUMPS
6	CHECK ACCESSIBILITY AND INSTALLATION OF WET-WELL ACCESS COVER, VALVES AND APPURTENANCES
7	CHECK THAT ALL EQUIPMENT IS PROPERLY GUARDED
8	CHECK STAIRWAYS, HANDRAILS AND LANDING COMPLY WITH DESIGN REQUIREMENTS AND ARE PROPERLY INSTALLED
9	CHECK THAT MANUFACTURERS' REQUIREMENTS IN TERMS OF INSTALLATION, LUBRICANTS AND QUANTITIES, AND ALIGNMENT HAVE BEEN COMPLIED WITH FOR RELEVANT EQUIPMENT E.G. SEWAGE PUMPS, ALTERNATING SET ETC.
10	CHECK ACCESSIBILITY TO EQUIPMENT FOR OPERATION AND MAINTENANCE
11	CHECK PRESSURE GAUGE COCKS PROVIDED ON THE SEWAGE PUMP SIDE OF EACH REFLUX VALVE AND ONE ON THE PRESSURE MAIN SIDE
12	CHECK ALL PIPEWORK WITHIN THE PUMPING STATION IS COMPLETE AND SUITABLY SUPPORTED AND ANCHORED
13	CHECK ALL SEWAGE PIPEWORK VALVES E.G. GATE VALVES COMPLY WITH WSA PS-281 AND REFLUX VALVES COMPLY WITH WSA PS-284. GATE VALVES AND REFLUX VALVES OPERATE AND GATE VALVE DIRECTION FOR CLOSING IS CORRECT ORIENTATION
14	CHECK CHART RECORDER SUPPLIED (IF SPECIFIED)
15	PRIME SEWAGE PUMPS WITH WATER
16	CHECK DIRECTION OF ROTATION OF ALL ROTATING EQUIPMENT IS CORRECT AND FREE
17	WITH THE RELEVANT GATE VALVE OPEN, START ONE SEWAGE PUMP IN MANUAL MODE AND CHECK THAT THE WATER LEVEL DROPS AND THE PUMP OPERATES WITHOUT UNDUE NOISE AND VIBRATION. SHUT DOWN PUMP AT APPROXIMATELY DESIGN CUT-OUT LEVEL
18	SHUT GATE VALVE AND RESTART PUMP AND CHECK FOR ANY LEAKS IN PIPEWORK OR AT THE DISCHARGE CONNECTION
19	REPEAT FOR BOTH PUMPS RECORDING AMPERAGE, VOLTAGE HEAD AND FLOW. CHECK PUMP PERFORMANCE AGAINST TEST RESULTS
20	CHECK PIPEWORK FOR LEAKAGE
21	CHECK CONTROL AND PROTECTION EQUIPMENT FUNCTIONALITY FOR MANUAL AND AUTOMATIC MODES
22	CHECK ALL INSTRUMENTS AND CONTROLS ARE PERFORMING CORRECTLY
23	CHECK INSTRUMENT SET POINTS AND ALARM SETTINGS AND FUNCTIONALITY
24	CHECK OPERATION OF THE ALTERNATING SET AT NO LOAD AND THEN WITH UTILITY POWER SWITCHED OFF UNDER DESIGN OPERATING CONDITIONS E.G. WITH SEWAGE PUMPS OPERATING TOGETHER. ALTERNATING SET SHOULD OPERATE WITHOUT UNDUE NOISE, VIBRATION AND EXHAUST SMOKE
25	CHECK NOISE LEVELS FOR PUMPING STATION AND ALTERNATING SET
26	CONDUCT PRE-COMMISSIONING TESTS IN CONJUNCTION WITH THE WATER AGENCY RECORDING ALL TEST RESULTS OBSERVATIONS AND PROVIDING RELEVANT COMMENT AS REQUIRED
27	CHECK THAT ALL O&M MANUALS, AND EQUIPMENT FACTORY TEST REPORTS ARE AVAILABLE

DECOMMISSIONING PLAN PROCESS	
DESCRIPTION-TABLE 2	
ELECTRICAL ELEMENTS	
ITEM	ACTION/REQUIREMENT
28	CHECK "DANGER ELECTRIC" MARKER BRICKS ARE INSTALLED AT GROUND LEVEL AND PAINTED YELLOW
29	CHECK POLE / PILLAR TERMINATION METHOD IS AS PER THE SPECIFICATION AND THE SUPPLY AUTHORITY REQUIREMENTS
30	CHECK CABLE SUPPORTS FOR THE PUMP CABLES, LEVEL PROBE AND ANY LEVEL REGULATORS ARE CORRECTLY LOCATED AND PROPERLY FIXED
31	CHECK MOTOR CABLES ARE SUPPORTED IN THE WET-WELL SO AS TO AVOID DAMAGE WHEN REMOVING OTHER PUMP/PUMPS
32	CHECK LEVEL PROBE SUPPORT BRACKET SUITS THE CABLE CLAMP
33	CHECK LEVEL PROBE IS MINIMUM 300 MM CLEAR OF ALL METAL COMPONENTS
34	CHECK LEVEL PROBE HAS BEEN ADJUSTED SO THAT THE PROBE IS AT THE CORRECT LEVEL (FOR VEGA PROBES THIS IS NORMALLY BOTTOM WATER LEVEL)
35	VERIFY LEVEL CONTROLLER CALIBRATION
36	CHECK FLOOD LEVEL REGULATOR HAS BEEN ADJUSTED TO THE REQUIRED LEVEL AND TERMINATED IN SWITCHBOARD
37	CHECK NO-FLOW PROTECTION EQUIPMENT (IF SPECIFIED) FITTED AND WIRED CORRECTLY
38	CHECK SWITCHBOARD HAS BEEN INSTALLED CORRECTLY AND TESTED IN ACCORDANCE TO MANUFACTURERS RECOMMENDATION
39	CHECK EARTH ELECTRODE INSTALLED AS SPECIFIED AND MEASURE AND RECORD EARTH RESISTANCE
40	CHECK EARTH PIT, MAIN EARTH ELECTRODE AND WATER SERVICE BOND INSTALLED AND LABELLED AS SPECIFIED
41	CHECK ALL CABLES ARE PROPERLY GLANDED AT THE SWITCHBOARD
42	CHECK APPROPRIATE LUGS FITTED TO ALL FLEXIBLE CABLES, AND CABLES CORRECTLY IDENTIFIED AT TERMINATIONS
43	CHECK PUMP DETAIL PLATE (IN SWITCHBOARD) HAS BEEN ENGRAVED WITH PUMP MOTOR NAMEPLATE DETAILS
44	CHECK ALL SWITCHBOARD LABELS ARE AS SPECIFIED
45	CHECK ALL SAFETY LABELS INSTALLED AS SPECIFIED
46	SET THE OVERLOADS TO THE MOTOR RATING (0.58 TIMES FOR STAR/DELTA), SET OVERLOADS TO MANUAL AND TRANSITION TIMERS TO 5 SECONDS (WHERE FITTED), SET "INTEGRAL" BREAKERS INSTANTANEOUS SETTING
47	IF NO-FLOW PROTECTION IS FITTED SET THE NO-FLOW BYPASS TIMER TO 20 SECONDS
48	CHECK ALL SWITCHBOARD TERMINATIONS HAVE BEEN RETENSIONED, PARTICULARLY THOSE TERMINATIONS CARRYING MOTOR CURRENT
49	CHECK A WIRE NUMBERS ARE AS SHOWN ON THE DRAWINGS
50	CHECK ALL TERMINAL NUMBERS ARE AS SHOWN ON THE DRAWINGS
51	CHECK ALL FUSES/CIRCUIT BREAKER SETTINGS ARE CORRECT
52	CHECK ALL OTHER MOTOR PROTECTION EQUIPMENT OPERATES AS SPECIFIED
53	CARRY OUT POINT TO POINT WIRING CHECKS
54	CHECK MOTOR TERMINATIONS ARE IN ACCORDANCE WITH THE CONNECTION DIAGRAM, WITH STAR-DELTA STARTERS, CABLE NO. 1 IS CONNECTED TO THE WIRING FROM THE OVERLOAD
55	CONFIRM THAT "NOTIFICATION OF ELECTRICAL WORK" HAS BEEN SUBMITTED TO SUPPLY AUTHORITY AND WATER AGENCY
56	CHECK THAT ELECTRICITY SUPPLY HAS BEEN CONNECTED AND ENERGISED
57	WITH THE MOTOR CIRCUIT BREAKERS OPEN AND THE CONTROL ISOLATORS OFF, TURN THE MAIN SWITCH ON AND CHECK THAT THE SUPPLY MONITORING RELAY PICKS UP (INDICATING CORRECT SUPPLY PHASE SEQUENCE)
58	CHECK ALL CONTROL SWITCHES AND SEQUENCES OPERATE AS SPECIFIED
59	CHECK CALIBRATION OF ALL ANALOGUE SIGNALS (INCLUDING FLOW AND PRESSURE TRANSMITTERS)
60	CHECK SETTING OF ALL PRESSURE SWITCHES
61	CHECK THAT ALL ALARMS ARE TRANSMITTED BACK TO CENTRAL ALARM MONITORING POINT
62	CHECK SIGNAL STRENGTH AND FADE MARGINS ON RADIO TX/RX IF INSTALLED
63	CHECK AERIAL SUPPORTS AND MAST IF RADIO COMMUNICATIONS ARE SPECIFIED
64	MEASURE THE VOLTAGES BOTH PHASE TO PHASE AND PHASE TO NEUTRAL, COMPARE THE ACTUAL VOLTAGES RELATIVE TO TYPICAL NO-LOAD VOLTAGE OF 435/250V, AND THE VOLTAGE VARIATION BETWEEN PHASES SHOULD BE LESS THAN 2%
65	WITH THE MAIN SWITCH, PUMP CIRCUIT BREAKERS AND CONTROL ISOLATING SWITCHES OFF, MEGGER ALL MOTORS AT 500V. THIS MUST GIVE GREATER THAN 1 Mohm, AND IDEALLY GREATER THAN 30 Mohm RECORD RESULTS: PUMP 1.....Mohm PUMP 2.....Mohm PUMP 3.....Mohm
66	IF THERMISTORS ARE FITTED, USE A LOW VOLTAGE OHMMETER TO CHECK THAT THE RESISTANCE T1 TO T2 IS BETWEEN 150 AND 600 ohms RECORD RESULTS: PUMP 1.....ohm PUMP 2.....ohm PUMP 3.....ohm
67	WITH S1 DISCONNECTED, CHECK FOR A RESISTANCE OF ABOVE 40 Kohm BETWEEN CONTROL CORES S1 AND S2 (OR S1 AND EARTH WITH FLYGT PUMPS) AGAIN USING A LOW VOLTAGE OHMMETER RECORD RESULTS: PUMP 1.....Kohm PUMP 2.....Kohm PUMP 3.....Kohm
68	WITH FLYGT PUMPS, ENSURE THAT AN EARTH HAS BEEN PUT ON S2
69	CHECK OPERATION OF ALL LOCKS ON SWITCHBOARDS
70	CHECK THAT UPDATED ELECTRICAL DRAWINGS ARE STORED ON SITE
71	SIMULATE A MAINS POWER FAILURE, AND CHECK THAT ALTERNATOR STARTS AUTOMATICALLY (IF SPECIFIED)
72	TEST RUN ALTERNATOR ON FULL STATIONARY LOAD, AND MEASURE NOISE LEVEL AT 1 M AND PROPERTY BOUNDARY

DECOMMISSIONING PLAN PROCESS DESCRIPTION-TABLE 3		
STEP	STAGE	DESCRIPTION
STEP 1	COMPLETE THE INSTALLATION AND COMMISSIONING OF NEW SPS AND EMERGENCY STORAGE TANK	INSTALL NEW SEWER PUMP SET AND EMERGENCY STORAGE. PROVIDE ALL NECESSARY MANIFOLD AND EQUIPMENT. COMPLETE TANK HYDROSTATIC TESTING.
STEP 2	COMMISSIONING	ENSURE THAT TESTING AND COMMISSIONING HAS BEEN COMPLETED IN ACCORDANCE WITH CURRENT REGULATIONS.
STEP 3	PROVIDE THE NEW CONNECTION AND BYPASS	CONNECTION WORKS TO BE CONDUCTED DURING OFF PEAK HOURS. WATER SUPPLY TO THE SITE SHALL BE TURNED OFF TEMPORARILY DURING DISCONNECTION AND RECONNECTION WITH AT LEAST 1 WEEK NOTICE TO RESIDENCE. EFFLUENT THAT WILL BE RECEIVED DURING THE RECONNECTION EVENT IS TO BE PUMPED OUT VIA MOBILE PUMP TRUCK, WITH SUFFICIENT DECANTING. SPILLAGE TO THE ENVIRONMENT TO BE MINIMISED IN ACCORDANCE WITH LOCAL COUNCIL REQUIREMENTS & INSPECTIONS.
STEP 4	EMPTY THE EXISTING EMERGENCY STORAGE TANK AND COLLECTION WELL	THE CONTENTS OF THE EMERGENCY STORAGE TANK SHALL BE PRESSURE WASHED REMOVED VIA VACUUM DECANTING TRUCK IN ACCORDANCE WITH LOCAL COUNCIL REQUIREMENTS. PPE IS RECOMMENDED.
STEP 5	CLEAN THE EMERGENCY STORAGE TANK	THE SIDES, LID, BAFFLE OR PARTITION (IF FITTED) AND SQUARE JUNCTIONS OF THE TANK SHOULD BE HOSED DOWN AS THE WASTE IS BEING REMOVED. THE TANK IS TO BE TREATED BY HYDRATED LIME. IT IS RECOMMENDED TO USE PPE. SEVERAL HOLES SHOULD BE DRILLED IN THE BASE OF THE TANK. THE LID AND THOSE PARTS OF THE WALLS BAFFLE AND SQUARE JUNCTIONS ABOVE THE GROUND SHOULD BE COLLAPSED INTO THE TANK IN ACCORDANCE WITH LOCAL COUNCIL REQUIREMENTS.
STEP 6	REMOVE THE REDUNDANT SPS FROM THE SITE	THE CONTENTS OF THE TANK AND COLLECTION WELL ARE TO BE REMOVED TO A SITE ACCEPTABLE TO THE LOCAL AUTHORITY. THE CONTENTS OF A TANK OR COLLECTION WELL MUST NOT BE BROADCAST OR DISCHARGED ABOVE GROUND. THE SIDES, LID, BAFFLE OR PARTITION (IF FITTED) AND SQUARE JUNCTIONS OF THE TANK SHOULD BE HOSED DOWN AS THE WASTE IS BEING REMOVED. THE INLETS AND OUTLETS SHOULD BE PLUGGED AND THE TANK SHOULD THEN BE FILLED WITH CLEAN WATER AND DISINFECTED TO A MINIMUM LEVEL OF 5 mg/L OF FREE RESIDUAL CHLORINE, WITH A MINIMUM ONE HALF HOUR CONTACT TIME. THE LID SHOULD BE EXPOSED TO THE CHLORINE SOLUTION. THE CHLORINE SHOULD BE ALLOWED TO DISSIPATE NATURALLY AT LEAST OVERNIGHT AND NOT BE NEUTRALISED. THE CONTENTS OF THE TANK AND WELL MAY BE THEN EMPTIED AS STATED ABOVE IN (1D.2) AND THE TRENCH SHOULD BE SEALED. THE SEPTIC TANK AND/OR COLLECTION TO BE REMOVED. APPROVAL OF THE LOCAL COUNCIL UNDER SECTION 68 OF THE LOCAL GOVERNMENT ACT IS TO BE OBTAINED BEFORE THE VESSEL IS REINSTALLED INCLUDING REQUIRED COUNCIL INSPECTIONS DURING DECOMMISSIONING AND PUMP OUT.

THESE DESIGNS, DRAWINGS AND SPECIFICATIONS ARE COPYRIGHT AND THE PROPERTY OF SCP CONSULTING AND MUST NOT BE USED, REPRODUCED OR COPIED WHOLLY OR IN PART WITHOUT THE WRITTEN PERMISSION OF SCP CONSULTING

ALL SETOUT TO BE OBTAINED FROM THE ARCHITECTURAL DRAWINGS UNLESS OTHERWISE SHOWN ON THESE DRAWINGS. DO NOT USE CAD/ELECTRONIC FILES FOR SETOUT UNDER ANY CIRCUMSTANCES.



D	TENDER ADDENDUM	24/03/2022
C	TENDER ISSUE	16/03/2022
B	ISSUED FOR DRAFT TENDER	09/03/2022
A	DRAFT SCHEMATIC DESIGN	27/01/2022
Rev	Revision Description	Date



scp

**engineers
and development
consultants**

▲ 1300 SCP ENG (727 364)

▲ mail@scpconsult.com.au

▲ www.scpconsult.com.au

▲ ABN 80 003 076 024

Client

LENDLEASE

Project

GLENAEON RETIREMENT
LIVING - SPS UPGRADE
PROJECT

Title

HYDRAULIC SERVICES
LEGEND AND NOTES

Scale

0

5M

1 : 1 @ A1
1:100

Drawn
KN

Checked
VP

Approved
HW

Project Number

Drawing Number

Revision

S210157

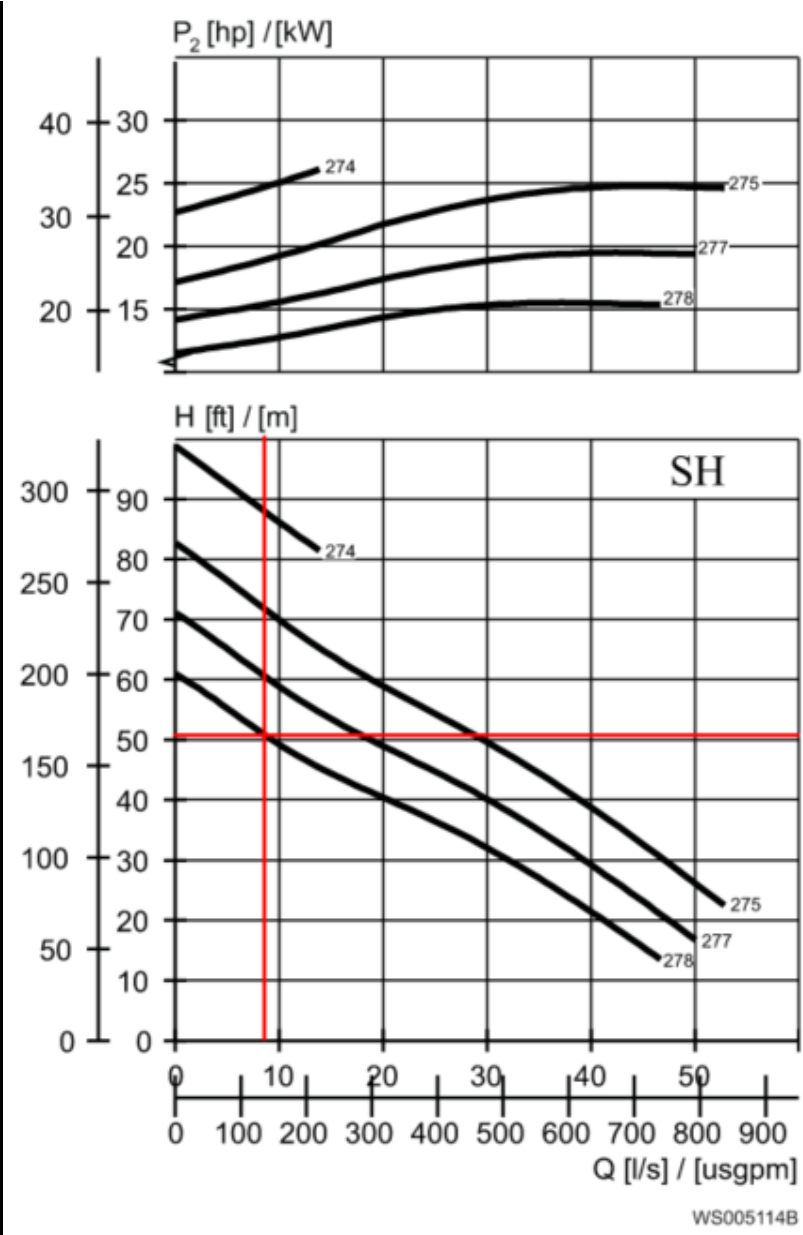
GLN-H-D-00001

D

DESIGN DATA

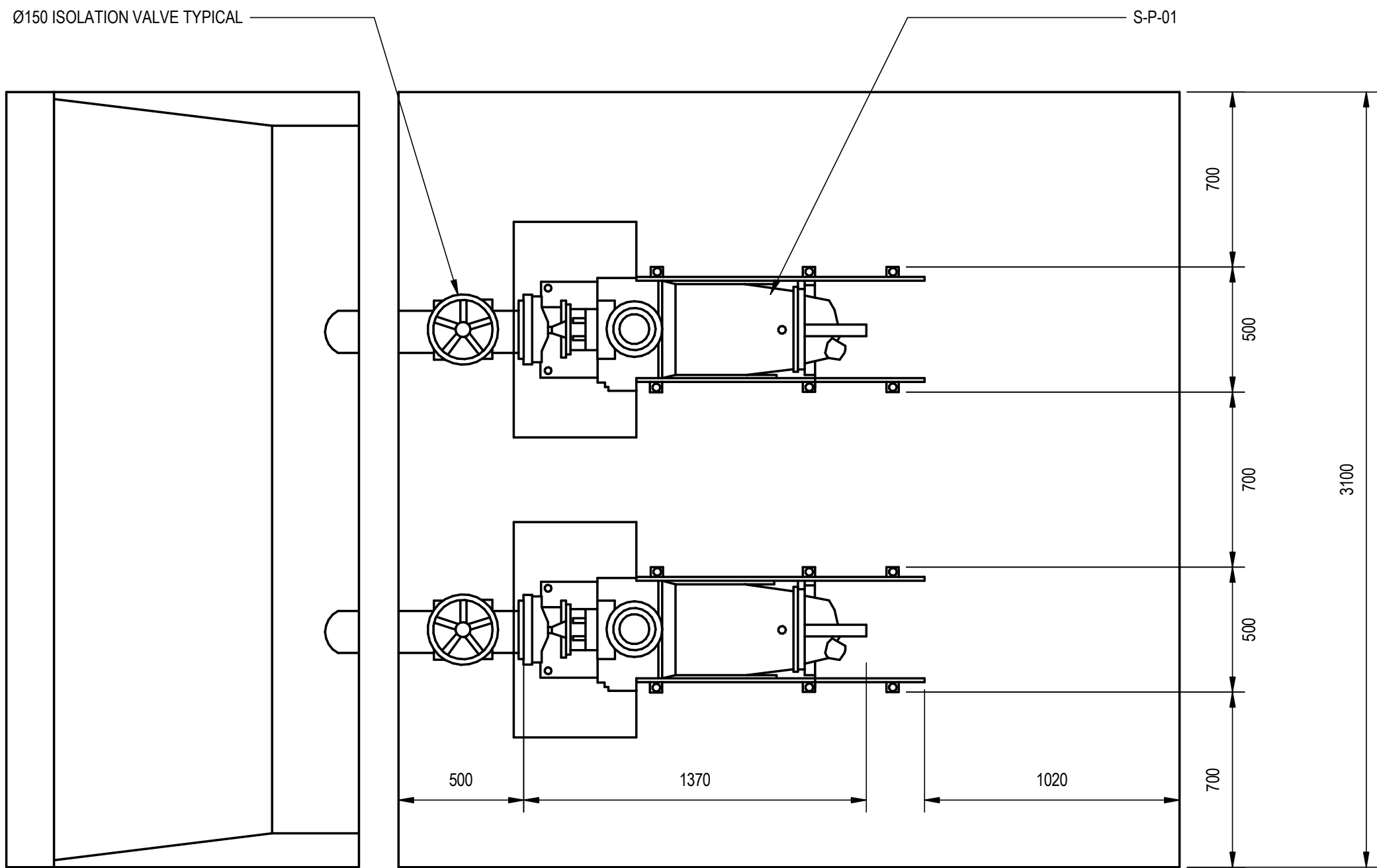
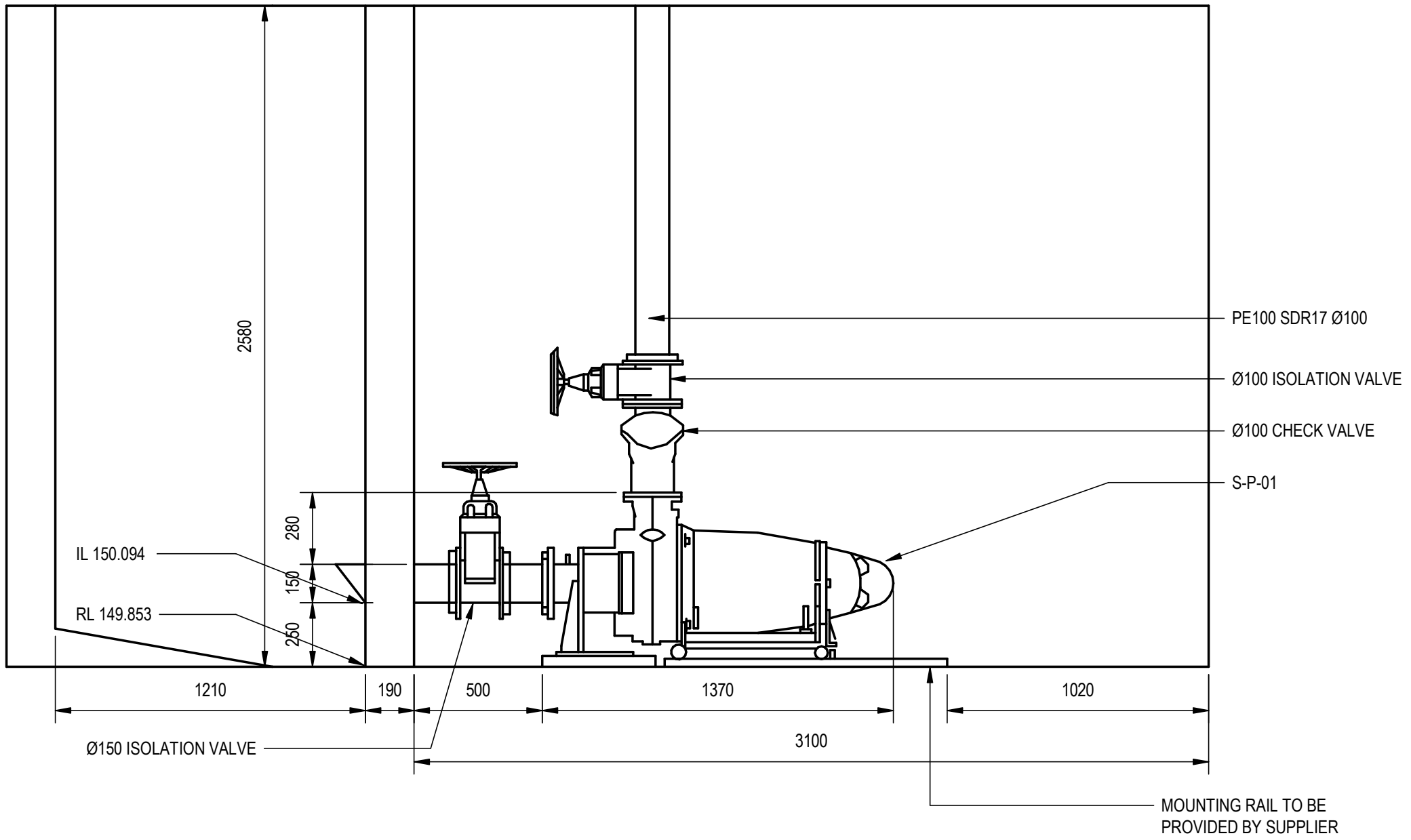
FLOW ESTIMATION		
ADWF:	1.76	l/s
PDWF:	4.79	l/s
PWWF:	8.85	l/s
WET WELL		
PUMP ARRANGEMENT:	DUTY/STANDBY	
PUMP MAKE:	FLYGT FP-3171	
PUMP MODEL:	SH3~ 278	
PUMP IMPELLER:	213	mm
OPERATING POINT - NORMAL OPERATION:	9l/s @51m.hd.	
WET WELL CHAMBER VOLUME:	3140	L
MAX. PUMP STARTS PER HOUR	2.02	
CUT-IT/CUT-OUT TIME AT ADWF:	21.10	min
CUT-IT/CUT-OUT TIME AT PDWF:	7.76	min
CUT-IT/CUT-OUT TIME AT PWWF:	4.20	min
VALVE CHAMBER		
PIPING:	PVC	
PIPE INTERNAL DIAMETER:	225	mm
DESIGN SPECIFIC ROUGHNESS:	0.0015	mm
VELOCITY	0.45	m/s
PRESSURE MAIN		
PIPE:	DICL	
PIPE INTERNAL DIAMETER:	100	mm
LENGTH TO DISCHARGE MAINTENANCE HOLE:	~400	m
DESIGN SPECIFIC ROUGHNESS:	0.0015	mm
VELOCITY	1.15m/s @9l/s	
EMERGENCY STORAGE		
EQUIVALENT PERSONS	634	EP
WASTE WATER LOAD	150	l/p/d
VOLUME	50720	L
STORAGE CAPACITY	8	hours

N 3171 SH 3 phase 2 poles 60hz; 278mm impeller



DESIGN DATA AND PUMP CURVES

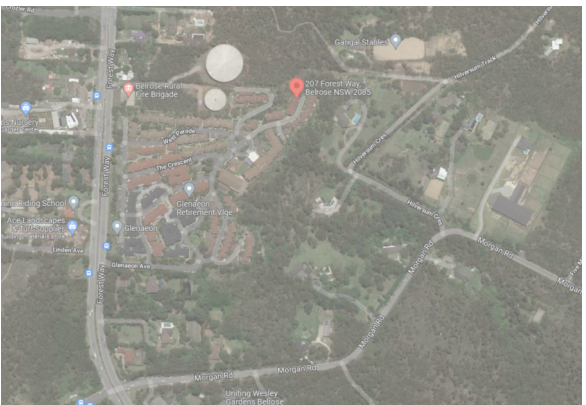
N.T.S.



DETAIL FLYGT PUMP INSTALLATION

1 : 20

THESE DESIGNS, DRAWINGS AND SPECIFICATIONS ARE COPYRIGHT AND THE PROPERTY OF SCP CONSULTING AND MUST NOT BE USED, REPRODUCED OR COPIED WHOLLY OR IN PART WITHOUT THE WRITTEN PERMISSION OF SCP CONSULTING. ALL SETOUT TO BE OBTAINED FROM THE ARCHITECTURAL DRAWINGS UNLESS OTHERWISE SHOWN ON THESE DRAWINGS. DO NOT USE CADELECTRONIC FILES FOR SETOUT UNDER ANY CIRCUMSTANCES.



Rev	Revision Description	Date
D	TENDER ADDENDUM	24/03/2022
C	TENDER ISSUE	16/03/2022
B	ISSUED FOR DRAFT TENDER	09/03/2022

scp engineers and development consultants

▲ 1300 SCP ENG (727 364) ▲ www.scpconsult.com.au
▲ mail@scpconsult.com.au ▲ ABN 80 003 078 024

Client
LENDELEASE

Project
GLENAEON RETIREMENT LIVING - SPS UPGRADE PROJECT

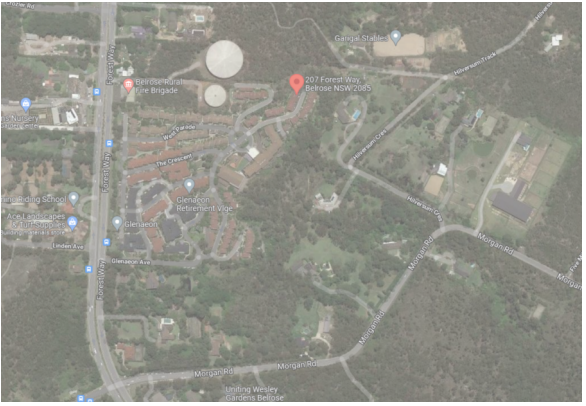
Title
DESIGN DATA AND PUMP CURVES

Scale
0 5M 1:100
As indicated @ A1

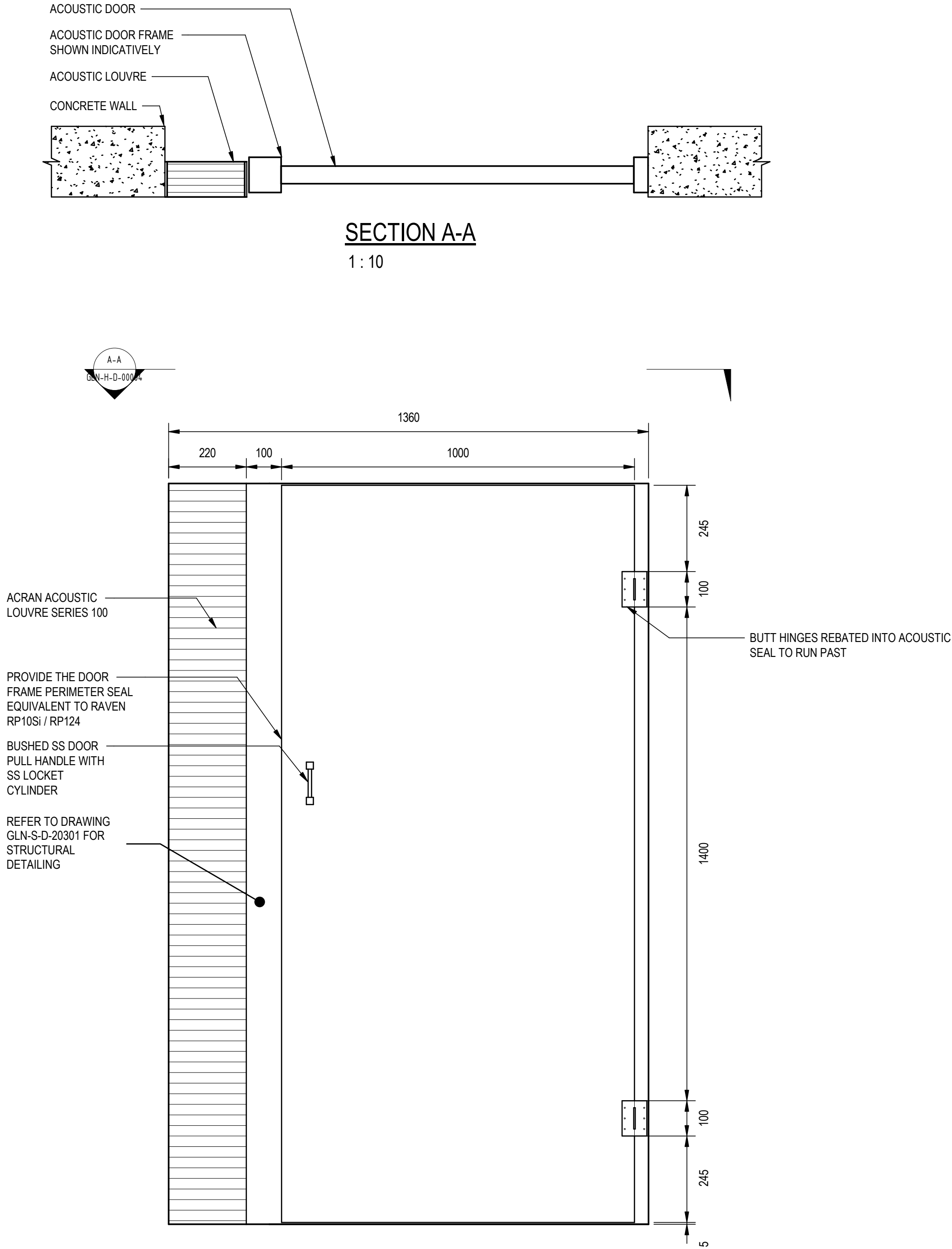
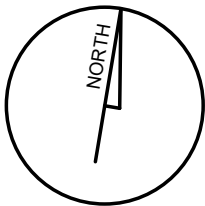
Drawn KN	Checked VP	Approved HW
-------------	---------------	----------------

Project Number S210157	Drawing Number GLN-H-D-00002	Revision D
----------------------------------	--	----------------------

THESE DESIGNS, DRAWINGS AND SPECIFICATIONS ARE COPYRIGHT AND THE PROPERTY OF SCP CONSULTING AND MUST NOT BE USED, REPRODUCED OR COPIED WHOLLY OR IN PART WITHOUT THE WRITTEN PERMISSION OF SCP CONSULTING. ALL SETOUT TO BE OBTAINED FROM THE ARCHITECTURAL DRAWINGS UNLESS OTHERWISE SHOWN ON THESE DRAWINGS. DO NOT USE CADELECTRONIC FILES FOR SETOUT UNDER ANY CIRCUMSTANCES.



Key Plan



FRONT VIEW
1:10

AD1 - ACOUSTIC DOOR DETAIL
N.T.S.

ACRAN ACRAFLOW SERIES 100 ACOUSTIC LOUVRE							
MODEL	NOISE REDUCTION (dB)						
	OCTAVE BAND CENTRE FREQUENCIES (Hz)						
	125	250	500	1000	2000	4000	
SERIES 100	14	14	16	21	27	27	dB

Rev	Revision Description	Date
C	TENDER ADDENDUM	04/04/2022
B	TENDER ISSUE	16/03/2022
A	ISSUED FOR DRAFT TENDER	09/03/2022



engineers
and development
consultants

▲ 1300 SCP ENG (727 364)
▲ mail@scpconsult.com.au

▲ www.scpconsult.com.au
▲ ABN 80 003 076 024

Client
LENLELEASE

Project
**GLENAEON RETIREMENT
LIVING - SPS UPGRADE
PROJECT**

Title
ACOUSTIC DOOR DETAIL

Scale
0 5M 1:100
As indicated @ A1

Drawn
AT

Checked
VP

Approved
HW

Revision
C

Project Number
S210157

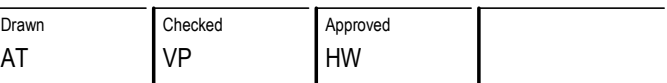
Drawing Number
GLN-H-D-00004

D	TENDER ADDENDUM	24/03/2022
C	TENDER ISSUE	16/03/2022
Rev	Revision Description	Date

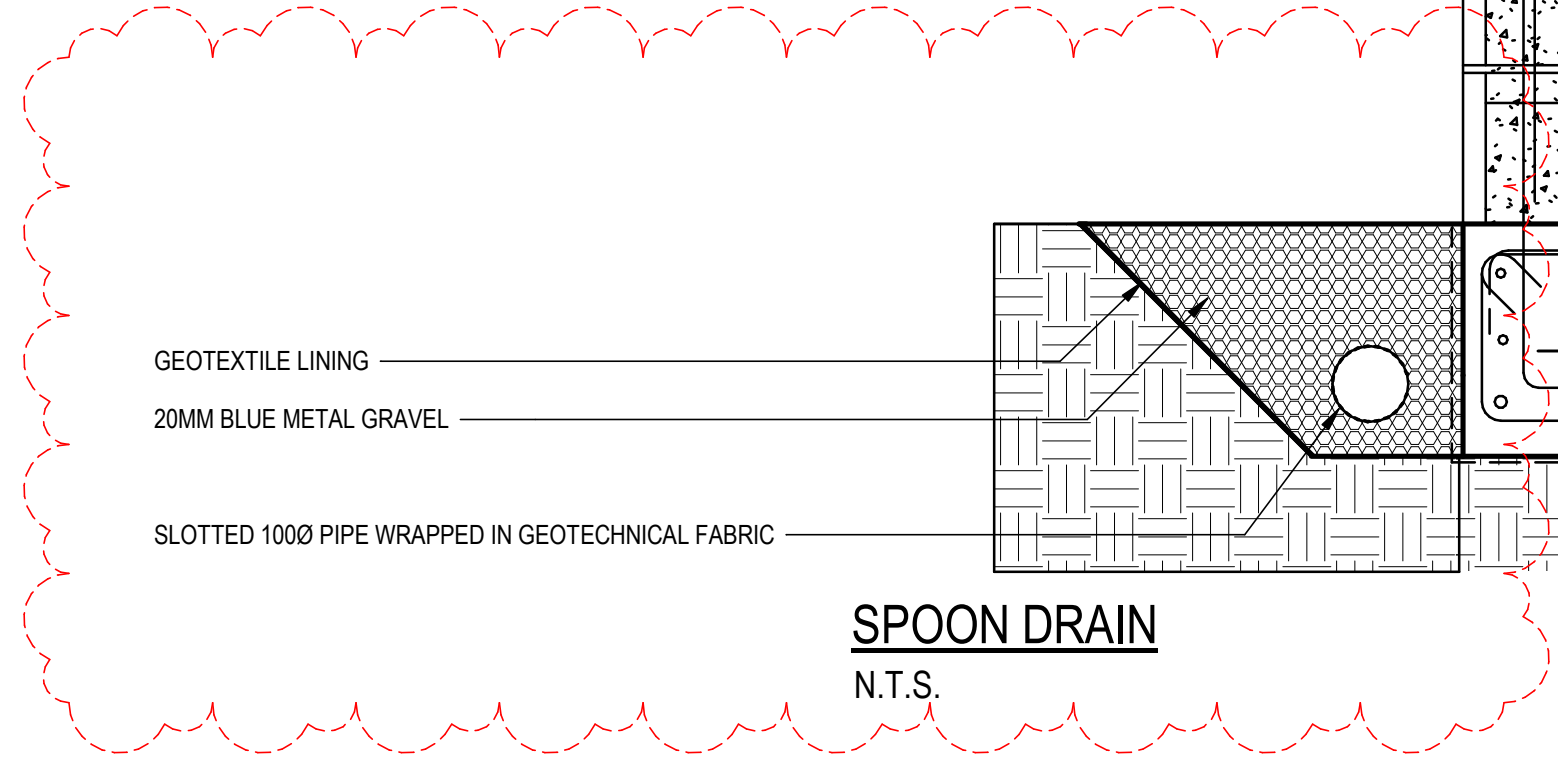


Tide

SPOON DRAIN DETAIL



Project Number	Drawing Number	Revision
S210157	GLN-H-D-00005	D



GENERAL INSTRUCTIONS

1. THIS SOIL AND WATER MANAGEMENT PLAN IS TO BE READ IN CONJUNCTION WITH OTHER ENGINEERING PLANS RELATING TO THIS DEVELOPMENT.
2. CONTRACTORS WILL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE UNDERTAKEN AS INSTRUCTED IN THIS SPECIFICATION AND CONSTRUCTED FOLLOWING THE GUIDELINES OF "MANAGING URBAN STORMWATER SOILS AND CONSTRUCTION", DEPT OF HOUSING, 1998 (BLUE BOOK).
3. ALL SUBCONTRACTORS WILL BE INFORMED OF THEIR RESPONSIBILITIES IN REDUCING THE POTENTIAL FOR SOIL EROSION AND POLLUTION TO DOWNSLOPE AREAS.

1. DISTURBANCE TO BE NO FURTHER THAN 5 (PREFERABLY 2) METRES FROM THE EDGE OF ANY ESSENTIAL ENGINEERING ACTIVITY AS SHOWN ON APPROVED PLANS. ALL SITE WORKERS WILL CLEARLY RECOGNISE THESE ZONES THAT, WHERE APPROPRIATE, ARE IDENTIFIED WITH BARRIER FENCING (UPSLOPE) AND SEDIMENT FENCING (DOWNSLOPE) OR SIMILAR MATERIALS.
2. ACCESS AREAS ARE TO BE LIMITED TO A MAXIMUM WIDTH OF 10 METRES. THE SITE MANAGER WILL DETERMINE AND MARK THE LOCATION OF THESE ZONES ON-SITE. ALL SITE WORKERS WILL CLEARLY RECOGNISE THESE BOUNDARIES THAT, WHERE APPROPRIATE, ARE IDENTIFIED WITH BARRIER FENCING (UPSLOPE) AND SEDIMENT FENCING (DOWNSLOPE) OR SIMILAR MATERIALS.
3. ENTRY TO LANDS NOT REQUIRED FOR CONSTRUCTION OR ACCESS IS PROHIBITED EXCEPT FOR ESSENTIAL THINNING OF PLANT GROWTH.
4. WORKS ARE TO PROCEED IN THE FOLLOWING SEQUENCE:
 - a. INSTALL ALL BARRIER AND SEDIMENT FENCING WHERE SHOWN ON THE PLAN.
 - b. CONSTRUCT THE STABILISED SITE ACCESS.
 - c. CONSTRUCT DIVERSION DRAINS AS REQUIRED.
 - d. INSTALL MESH AND GRAVEL INLETS FOR ANY ADJACENT KERB INLETS.
 - e. INSTALL GEOTEXTILE FILTER FILTERS AROUND ANY ON-SITE DROP INLET PITS.
 - f. CLEAR SITE AND STRIP AND STOCKPILE TOPSOIL IN LOCATIONS SHOWN ON THE PLAN.
 - g. UNDERTAKE ALL ESSENTIAL CONSTRUCTION WORKS ENSURING THAT ROOF AND/OR PAVED AREA STORMWATER SYSTEMS ARE CONNECTED TO PERMANENT DRAINAGE AS SOON AS PRACTICABLE.
 - h. GRADE LOT AREAS TO FINAL GRADINGS AND APPLY PERMANENT STABILISATION (LANDSCAPING) WITHIN 20 DAYS OF COMPLETION OF CONSTRUCTION WORKS.
 - i. REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER THE PERMANENT LANDSCAPING HAS BEEN COMPLETED.
5. SENSURE THAT SLOPE LENGTHS DO NOT EXCEED 80 METRES WHERE PRACTICABLE. SLOPE LENGTHS ARE DETERMINED BY SILTATION FENCING AND CATCH DRAIN SPACING. 6. ON COMPLETION OF MAJOR WORKS LEAVE DISTURBED LANDS WITH A SCARIFIED SURFACE TO ENCOURAGE WATER INFILTRATION AND ASSIST WITH KEYING TOPSOIL LATER.

1. THE SITE SUPERINTENDENT WILL INSPECT THE SITE AT LEAST WEEKLY AND AT THE CONCLUSION OF EVERY STORM EVENT TO:
 - a. ENSURE THAT DRAINS OPERATE PROPERLY AND TO EFFECT ANY NECESSARY REPAIRS.
 - b. REMOVE SPILLED SAND OR OTHER MATERIALS FROM HAZARD AREAS, INCLUDING LANDS CLOSER THAN 5 METRES FROM AREAS OF LIKELY CONCENTRATED OR HIGH VELOCITY FLOWS ESPECIALLY WATERWAYS AND PAVED AREAS.
 - c. REMOVE TRAPPED SEDIMENT WHENEVER THE DESIGN CAPACITY OF THAT STRUCTURE HAS BEEN EXCEEDED.
 - d. ENSURE REHABILITATED LANDS HAVE EFFECTIVELY REDUCED THE EROSION HAZARD AND TO INITIATE UPGRADING OR REPAIR AS NECESSARY.
 - e. CONSTRUCT ADDITIONAL EROSION AND/OR SEDIMENT CONTROL WORKS AS MIGHT BECOME NECESSARY TO ENSURE THE DESIRED PROTECTION IS GIVEN TO DOWNSLOPE LANDS AND WATERWAYS. MAKE ONGOING CHANGES TO THE SUBJECT WHERE IT PROVES INADEQUATE IN PRACTICE OR IS SUBJECTED TO CHANGES IN CONDITIONS ON THE WORK-SITE OR ELSEWHERE IN THE CATCHMENT.
 - f. MAINTAIN EROSION AND SEDIMENT CONTROL STRUCTURES IN A FULLY FUNCTIONING CONDITION UNTIL ALL EARTHWORK ACTIVITIES ARE COMPLETED AND THE SITE IS REHABILITATED.
2. THE SITE SUPERINTENDENT WILL KEEP A LOGBOOK MAKING ENTRIES AT LEAST WEEKLY, IMMEDIATELY BEFORE FORECAST RAIN AND AFTER RAINFALL. ENTRIES WILL INCLUDE:
 - a. THE VOLUME AND INTENSITY OF ANY RAINFALL EVENTS.
 - b. THE CONDITION OF ANY SOIL AND WATER MANAGEMENT WORKS.
 - c. THE CONDITION OF VEGETATION AND ANY NEED TO IRRIGATE.
 - d. THE NEED FOR DUST PREVENTION STRATEGIES.
 - e. ANY REMEDIAL WORKS TO BE UNDERTAKEN. THE LOGBOOK WILL BE KEPT ON SITE AND MADE AVAILABLE TO ANY AUTHORISED PERSON UPON REQUEST. IT WILL BE GIVEN TO THE PROJECT MANAGER AT THE CONCLUSION OF THE WORKS.

SEDIMENT CONTROL INSTRUCTIONS

1. SEDIMENT FENCES WILL BE INSTALLED AS SHOWN ON THE PLAN AND ELSEWHERE AT THE DISCRETION OF THE SITE SUPERINTENDENT TO CONTAIN SOLID AS NEAR AS POSSIBLE TO THEIR SOURCE.
2. SEDIMENT FENCES WILL NOT HAVE CATCHMENT AREAS EXCEEDING 900 SQUARE METRES AND HAVE A STORAGE DEPTH OF AT LEAST 0.6 METRES.
3. SEDIMENT REMOVED FROM ANY TRAPPING DEVICES WILL BE RELOCATED WHERE FURTHER POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS CANNOT OCCUR.
4. STOCKPILES ARE NOT TO BE LOCATED WITHIN 5 METRES OF HAZARD AREAS INCLUDING AREAS OF HIGH VELOCITY FLOWS SUCH AS WATERWAYS, PAVED AREAS AND DRIVEWAYS.
5. WATER WILL BE PREVENTED FROM DIRECTLY ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS THE CATCHMENT AREA HAS BEEN PERMANENTLY LANDSCAPED AND/OR WATER HAS BEEN TREATED BY AN APPROVED DEVICE. 6. TEMPORARY SEDIMENT TRAPS WILL REMAIN IN PLACE UNTIL AFTER THE LANDS THEY ARE PROTECTING ARE COMPLETELY REHABILITATED.
6. ACCESS TO SITES SHOULD BE STABILISED TO REDUCE THE LIKELIHOOD OF VEHICLES TRACKING SOIL MATERIALS ONTO PUBLIC ROADS AND ENSURE ALL-WEATHER ENTRY/EXIT.

- a. 2(H):1(V) WHERE SLOPE LENGTH LESS THAN 12 METRES
- b. 2.5(H):1(V) WHERE SLOPE LENGTH BETWEEN 12 AND 16 METRES.
- c. 3(H):1(V) WHERE SLOPE LENGTH BETWEEN 16 AND 20 METRES.
- d. 4(H):1(V) WHERE SLOPE LENGTH GREATER THAN 20 METRES.
2. ALL WATERWAYS, DRAINS, SPILLWAYS AND THEIR OUTLETS WILL BE CONSTRUCTED TO BE STABLE IN AT LEAST THE 1:20 YEAR ARI, TIME OF CONCENTRATION STORM EVENT.
3. WATERWAYS AND OTHER AREAS SUBJECT TO CONCENTRATED FLOWS AFTER CONSTRUCTION ARE TO HAVE A MAXIMUM GROUND COVER C-FACTOR OF 0.05 (70% GROUND COVER) WITHIN 10 WORKING DAYS FROM COMPLETION OF FORMATION. FLOW VELOCITIES ARE TO BE LIMITED TO THOSE SHOWN IN TABLE 5-1 OF "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION", DEPT OF HOUSING 1998 (BLUE BOOK). FOOT AND VEHICULAR TRAFFIC WILL BE PROHIBITED IN THESE AREAS.
4. STOCKPILES AFTER CONSTRUCTION ARE TO HAVE A MAXIMUM GROUND COVER C-FACTOR OF 0.1 (60% GROUND COVER) WITHIN 10 WORKING DAYS FROM COMPLETION OF FORMATION.
5. ALL LANDS, INCLUDING WATERWAYS AND STOCKPILES, DURING CONSTRUCTION ARE TO HAVE A MAXIMUM GROUND COVER C-FACTOR OF 0.15 (50% GROUND COVER) WITHIN 20 WORKING DAYS FROM INACTIVITY EVEN THOUGH WORKS MAY CONTINUE LATER.
6. FOR AREAS OF SHEET FLOW USE THE FOLLOWING GROUND COVER PLANT SPECIES FOR TEMPORARY COVER: JAPANESE MILLET 20 KG/HA AND OATS 20 KG/HA.
7. PERMANENT REHABILITATION OF LANDS AFTER CONSTRUCTION WILL ACHIEVE A GROUND COVER C-FACTOR OF LESS THAN 0.1 AND LESS THAN 0.05 WITHIN 60 DAYS. NEWLY PLANTED LANDS WILL BE WATERED REGULARLY UNTIL AN EFFECTIVE COVER IS ESTABLISHED AND PLANTS ARE GROWING VIGOROUSLY. FOLLOW-UP SEED AND FERTILISER WILL BE APPLIED AS NECESSARY.
8. RE-VEGETATION SHOULD BE AIMED AT RE-ESTABLISHING NATURAL SPECIES. NATURAL SURFACE SOILS SHOULD BE REPLACED AND NON-PERSISTANT ANNUAL COVER CROPS SHOULD BE USED.

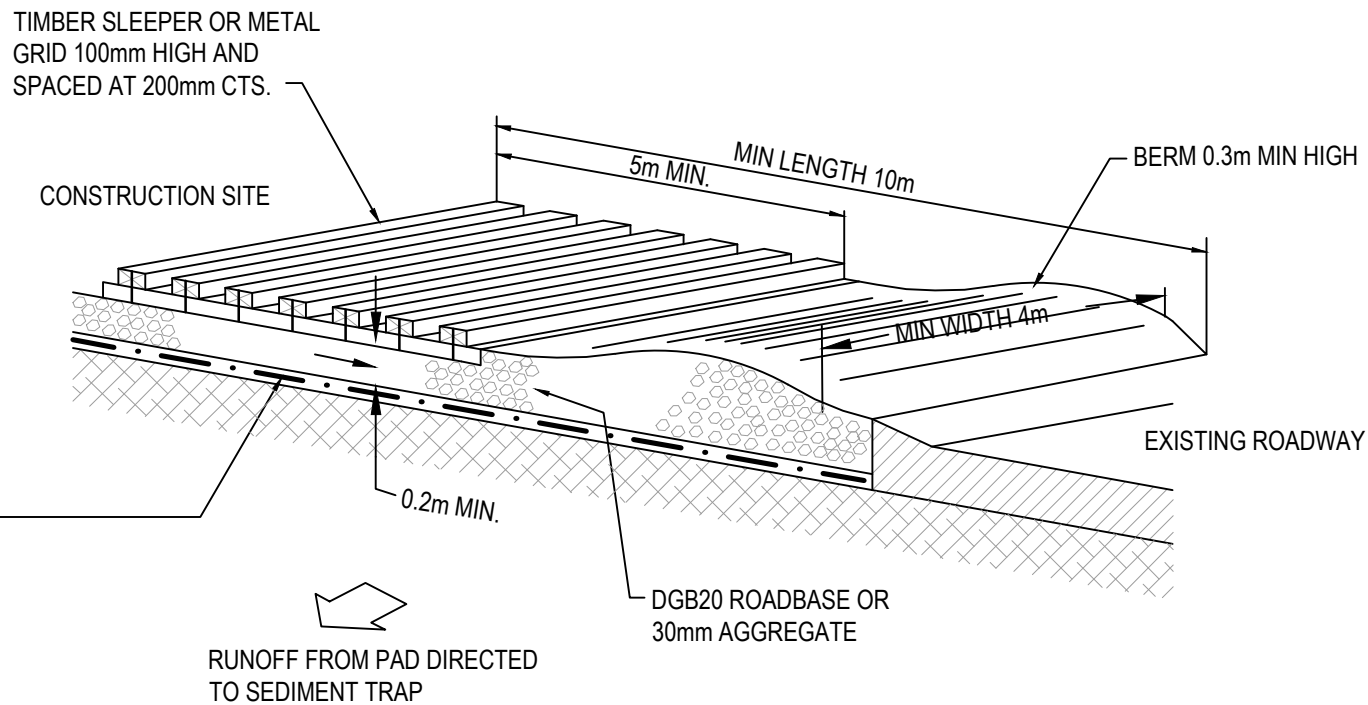
1. ACCEPTABLE BINS WILL BE PROVIDED FOR ANY CONCRETE AND MORTAR SURFACES, PAINTS, ACID WASHING, LIGHTWEIGHT WASTE MATERIALS AND LITTER. CLEARANCE SERVICES WILL BE PROVIDED AT LEAST WEEKLY. DISPOSAL OF WASTE WILL BE IN A MANNER APPROVED BY THE SITE SUPERINTENDENT.
2. ALL POSSIBLE POLLUTANT MATERIALS ARE TO BE STORED WELL CLEAR OF ANY POORLY DRAINED AREAS, FLOOD PRONE AREAS, STREAMBANKS, CHANNELS AND STORMWATER DRAINAGE AREAS. STORE SUCH MATERIALS IN A DESIGNATED AREA UNDER COVER WHERE POSSIBLE AND WITHIN CONTAINMENT BUNDS.
3. ALL SITE STAFF AND SUB-CONTRACTORS ARE TO BE INFORMED OF THEIR OBLIGATION TO USE WASTE CONTROL FACILITIES PROVIDED.
4. ANY de-WATERING ACTIVITIES ARE TO BE CLOSELY MONITORED TO ENSURE THAT WATER IS NOT POLLUTED BY SEDIMENT, TOXIC MATERIALS OR PETROLEUM PRODUCTS.
5. PROVIDE DESIGNATED VEHICULAR WASHDOWN AND MAINTENANCE AREAS WHICH ARE TO HAVE CONTAINMENT BUNDS.

NOTE:

1. CONTRACTOR SHALL CONDUCT A DIAL BEFORE YOU DIG SEARCH PRIOR TO COMMENCEMENT OF ANY WORK
2. ENSURE THAT ALL COUNCIL AND PUBLIC UTILITY ASSETS ARE MAINTAINED AND PROTECTED AT ALL TIMES IN THE VICINITY OF THE TEMPORARY CONSTRUCTION EXIT



GEOTEXTILE FABRIC DESIGNED TO PREVENT
INTERMIXING OF SUBGRADE AND BASE
MATERIALS AND TO MAINTAIN GOOD
PROPERTIES OF THE SUB-BASE LAYERS.
GEOTEXTILE MAY BE WOVEN OR NEEDLE
PUNCHED PRODUCT WITH A MINIMUM CBR
BURST STRENGTH (AS3706.4-90) OF 2500N.

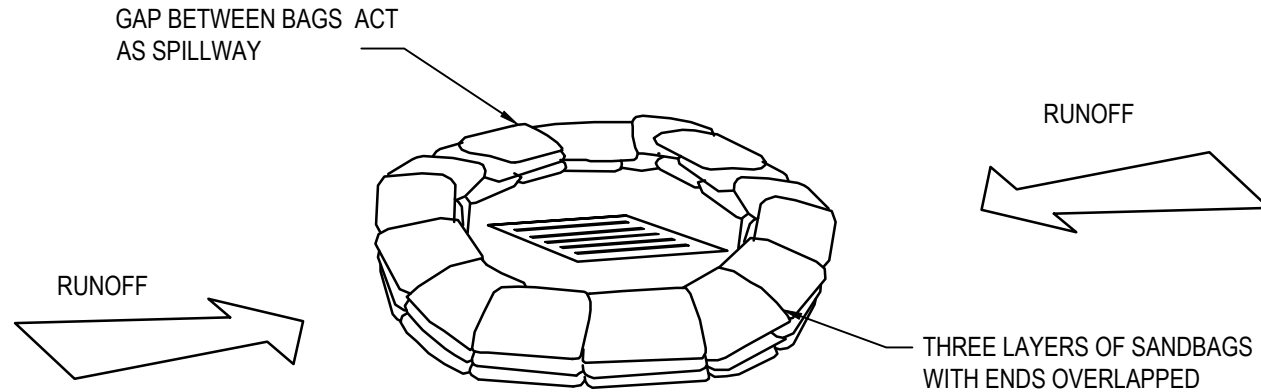


1. STRIP TOPSOIL AND LEVEL SITE.
2. COMPACT SUBGRADE.
3. COVER AREA WITH NEEDLE-PUNCHED GEOTEXTILE.
4. CONSTRUCT 200MM THICK PAD OVER GEOTEXTILE USING ROADBASE OR 30MM AGGREGATE.
5. CONSTRUCT HUMP IMMEDIATELY WITHIN BOUNDARY TO DIVERT WATER TO A SEDIMENT FENCE OR OTHER SEDIMENT TRAP WHERE THE SEDIMENT IS COLLECTED AND REMOVED.

THE EXIT SHALL BE MAINTAINED IN A CONDITION WHICH PREVENTS TRACKING OR FLOWING OF SEDIMENT OFF THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL GRAVEL AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED OFF THE CONSTRUCTION SITE MUST BE REMOVED IMMEDIATELY.

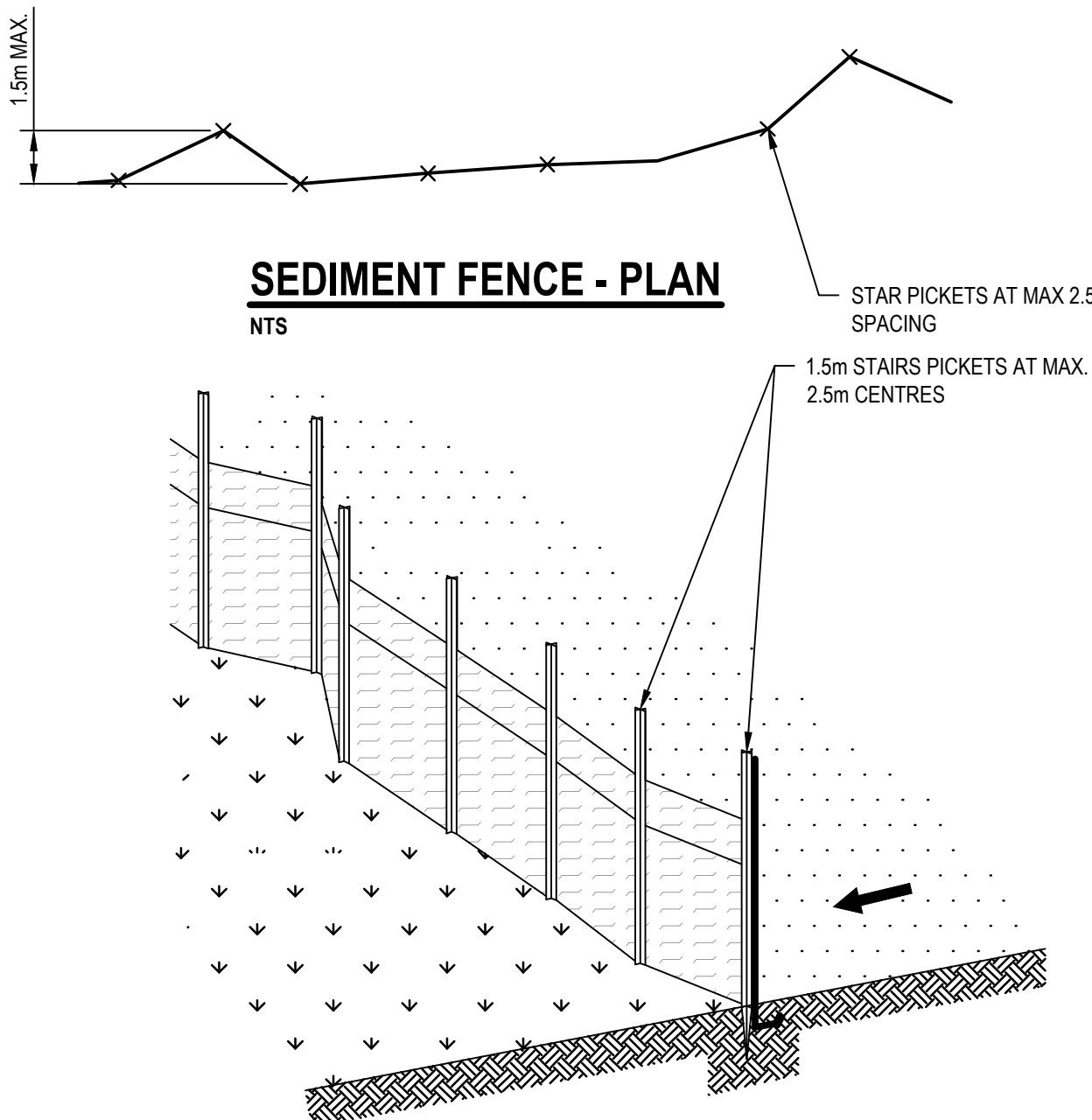
A diagram showing a cross-section of a road with a curb and pavement. A sandbagged curb is shown, with sandbags overlapping onto the curb/pavement boxing. The sediment is contained within the curb. The runoff is shown flowing over the curb. Labels include: "SANDBAGS OVERLAP ONTO KERB/PAVEMENT BOXING", "THE SEDIMENT IS CO...", "RUNOFF", and "THREE LAYERS OF SANDBAGS WITH ENDS OVERLAPPED".

SANDBAG SEDIMENT TRAP - AT KERB SAG PIT



SANDBAG SEDIMENT TRAP - AT OTHER THAN KERB SAG PIT

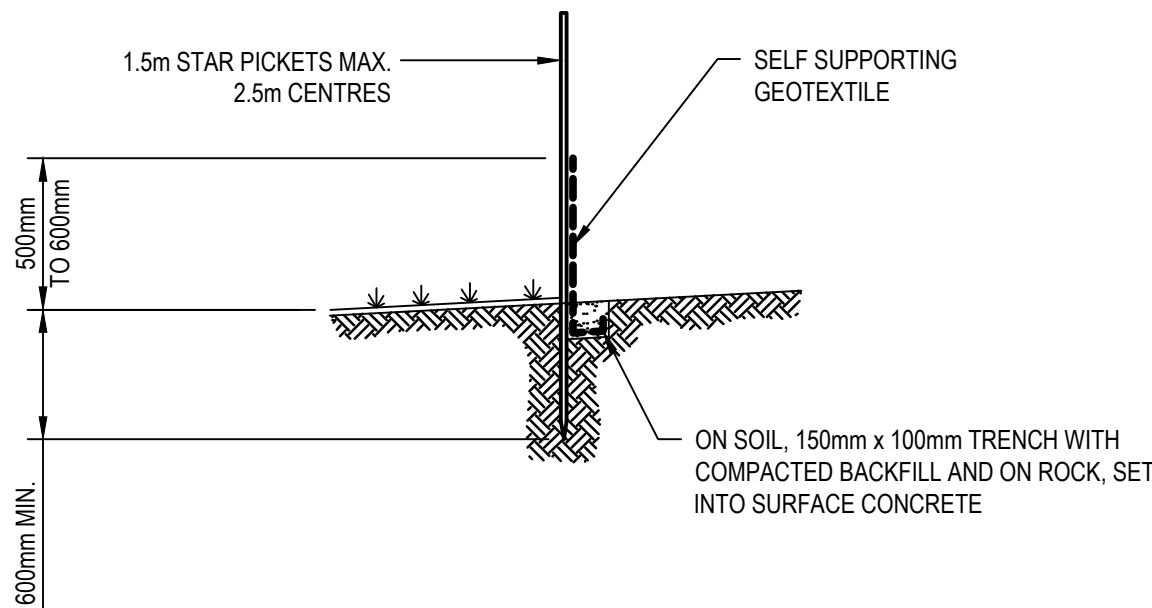
NTS



NTS

NTS

1. CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BE PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN THE DRAWING, TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW IF CONCENTRATED AT ONE POINT TO 50 litres/sec IN THE DESIGN STORM EVENT, USUALLY THE 10 YEAR EVENT.
2. CUT A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
3. DRIVE 1.5 METER LONG STAR PICKETS INTO GROUND AT 2.5 METER INTERVALS (MAX.) AT THE DOWNSLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.
4. FIX SELF-SUPPORTING GEOTEXTILE TO THE UPSLOPE SIDE OF THE POSTS, ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH WIRE TIES, OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHADE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY.
5. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.
6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.



THESE DESIGNS, DRAWINGS AND SPECIFICATIONS ARE
COPYRIGHT AND THE PROPERTY OF SCP CONSULTING AND
MUST NOT BE USED, REPRODUCED OR COPIED WHOLLY OR
IN PART WITHOUT THE WRITTEN PERMISSION OF SCP
CONSULTING

[illegible]

A	TENDER ADDENDUM	24/03/2022
Rev	Revision Description	Date



▲ 1300 SCP ENG (727 364) ▲ www.scpconsult.com.au
▲ mail@scpconsult.com.au ▲ ABN 80 003 076 024

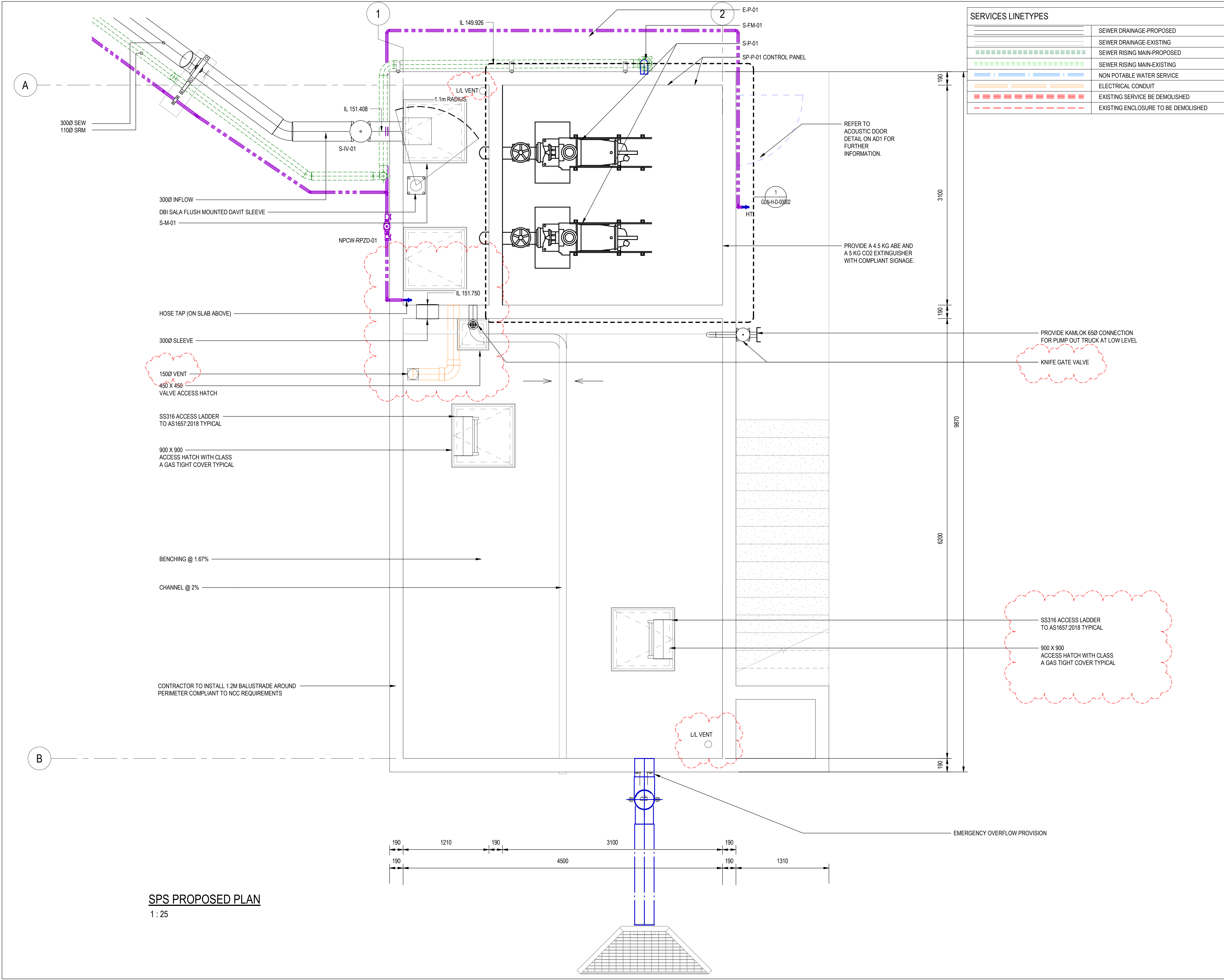
Client
LENDLEASE

Project	GLENAEON RETIREMENT LIVING - SPS UPGRADE PROJECT
Title	EROSION SOIL CONTROL DETAILS

Scale:
AS SHOWN

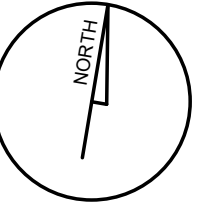
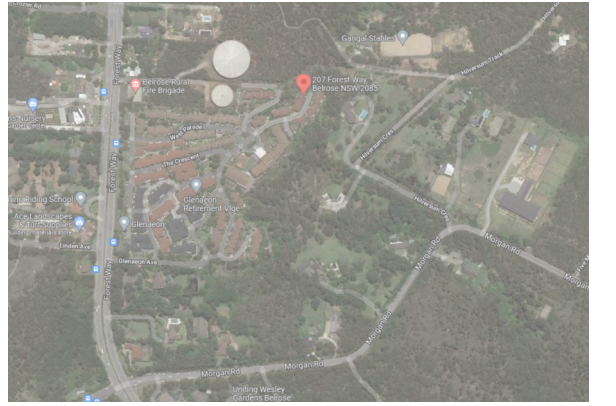
Drawn AT	Designed	Checked VP	Approved HW
--------------------	----------	----------------------	-----------------------

Project Number	Drawing Number	Revision
S210157 GLN-H-D-00006		A



SERVICES LINETYPES	
	SEWER DRAINAGE-PROPOSED
	SEWER DRAINAGE-EXISTING
	SEWER RISING MAIN-PROPOSED
	SEWER RISING MAIN-EXISTING
	NON POTABLE WATER SERVICE
	ELECTRICAL CONDUIT
	EXISTING SERVICE BE DEMOLISHED
	EXISTING ENCLOSURE TO BE DEMOLISHED

THESE DESIGNS, DRAWINGS AND SPECIFICATIONS ARE COPYRIGHT AND THE PROPERTY OF SCP CONSULTING AND MUST NOT BE USED, REPRODUCED OR COPIED WHOLLY OR IN PART WITHOUT THE WRITTEN PERMISSION OF SCP CONSULTING. ALL SETOUT TO BE OBTAINED FROM THE ARCHITECTURAL DRAWINGS UNLESS OTHERWISE SHOWN ON THESE DRAWINGS. DO NOT USE CADELECTRONIC FILES FOR SETOUT UNDER ANY CIRCUMSTANCES.



Rev	Revision Description	Date
D	TENDER ADDENDUM	04/04/2022
C	TENDER ISSUE	16/03/2022
B	ISSUED FOR DRAFT TENDER	09/03/2022
A	DRAFT SCHEMATIC DESIGN	27/01/2022

**scpon**engineers and development consultants

 1300 SCP ENG (727 364) mail@scpcconsult.com.au

 www.scpcconsult.com.au ABN 80 003 076 024

Client
LENLELEASE

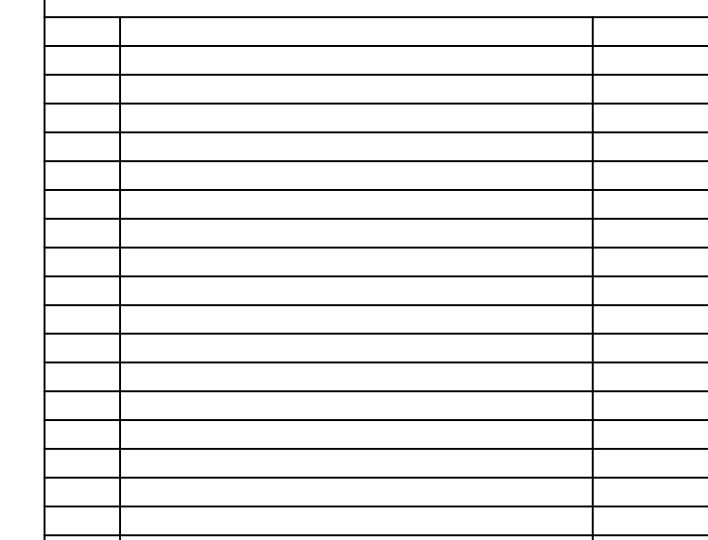
Project
GLENAEON RETIREMENT LIVING - SPS UPGRADE PROJECT

Title
SPS PROPOSED PLAN

Scale
0 5M 1:100
As indicated @ A1

Drawn KN	Checked VP	Approved HW
-------------	---------------	----------------

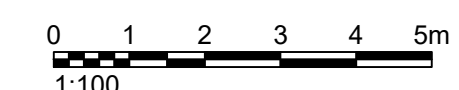
Project Number S210157	Drawing Number GLN-H-D-20002	Revision D
----------------------------------	--	----------------------

 **scp** engineers and development consultants

Client
LENDLEASE

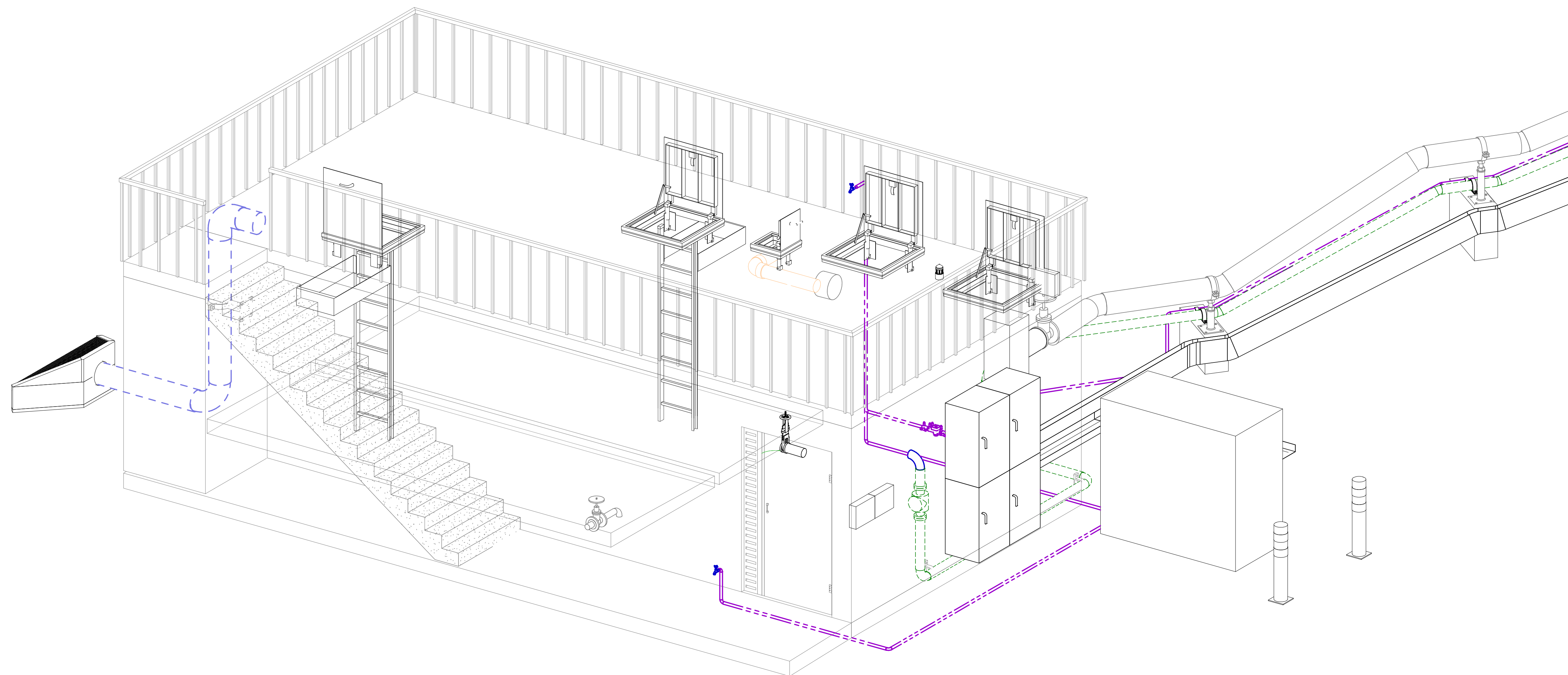
Project
**GLENAEON RETIREMENT
LIVING - SPS UPGRADE
PROJECT**

Title
EROSION SOIL CONTROL PLAN

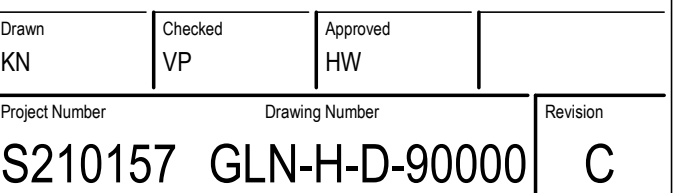
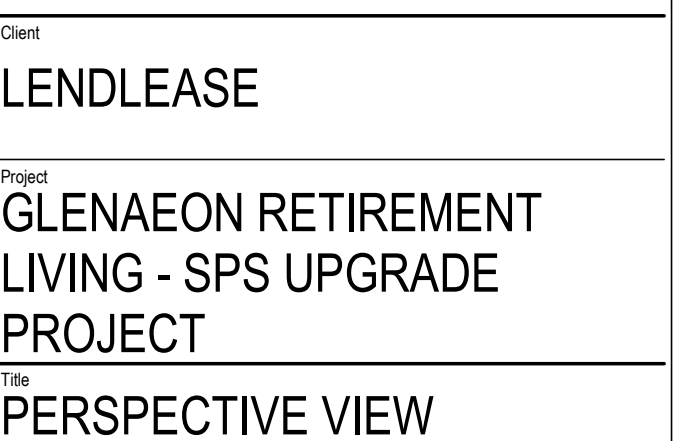
Scale:
AS SHOWN

Drawn	Designed	Checked VP	Approved HW
-------	----------	----------------------	-----------------------

		VP	THW
Project Number	Drawing Number		Revision



C	TENDER ADDENDUM	04/04/2022
B	TENDER ISSUE	16/03/2022
A	ISSUED FOR DRAFT TENDER	09/03/2022
Rev	Revision Description	Date



STRUCTURAL DRAWING LIST		
DRAWING No.		DRAWING TITLE
Series 00 - General		
GLN-S-D-20001	GENERAL NOTES SHEET 1	
GLN-S-D-20002	GENERAL NOTES SHEET 2	
Series 09 - General Arrangement Plans		
GLN-S-D-20101	TANK PLANS	
GLN-S-D-20201	TANK DETAILS SHEET 1	
GLN-S-D-20301	PIPE SUPPORT DETAILS SHEET 1	

GENERAL

- G01.** THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH:-
- DESIGN CONSULTANTURAL AND OTHER CONSULTANTS' DRAWINGS
 - ALL RELEVANT REFERENCE DRAWINGS AND SPECIFICATIONS
 - OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF CONSTRUCTION.
- ALL DISCREPANCIES IN THESE DRAWINGS SHALL BE REFERRED TO SCP CONSULTING FOR DECISION BEFORE PROCEEDING.
- G02.** DIMENSIONS SHALL NOT BE OBTAINED BY SCALING THE STRUCTURAL DRAWINGS OR ELECTRONIC FILES. FIGURED DIMENSIONS ONLY SHALL BE USED, UNLESS NOTED OTHERWISE. ALL REDUCED LEVELS ARE IN METRES AND ALL DIMENSIONS ARE IN MILLIMETRES
- G03.** SETTING OUT DIMENSIONS SHOWN ON THE DRAWINGS SHALL BE VERIFIED BY THE BUILDER FROM SETOUT DRAWINGS.
- THE LOCATION OF ALL STRUCTURAL ELEMENTS, INCLUDING FOUNDATIONS, ANCHOR BOLTS, CORE HOLES ETC. SHALL BE SET-OUT BY A LICENSED SURVEYOR WHO SHALL PROVIDE WRITTEN CERTIFICATION OF SETTING-OUT AFTER INSTALLATION AND CONSTRUCTION.
- G04.** DURING CONSTRUCTION STRUCTURES SHALL BE MAINTAINED IN A STABLE CONDITION AND NO PART SHALL BE OVERLOADED. TEMPORARY SUPPORT SHALL BE PROVIDED BY THE BUILDER IN ORDER TO KEEP THE BUILDING WORKS AND ANY EXCAVATIONS STABLE AT ALL TIMES.
- G05.** ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF CURRENT AUSTRALIAN STANDARDS AND CURRENT BUILDING CODE OF AUSTRALIA.
- G06.** THE STRUCTURAL COMPONENTS DETAILED ON THE STRUCTURAL DRAWINGS HAVE BEEN DESIGNED FOR THE FOLLOWING LOADS:
- LIVE LOADS IN ACCORDANCE WITH AS 1170 - PART 1 AS SPECIFIED ON THE STRUCTURAL PLANS.
 - WIND LOADS IN ACCORDANCE WITH AS 1170 - PART 2, (UNO)
 - IMPORTANCE LEVEL: 2
 - TERRAIN CATEGORY: 2.5 MIN.
 - RETURN PERIOD: 1 / 1000
 - LOCATION: SYDNEY
 - REGION: A
 - BASIC WIND VELOCITY: 46m / SEC.
- G07.** THE RELEVANT PROVISIONS OF AS 1170.4 - 2007 HAVE BEEN APPLIED FOR THE FOLLOWING PARAMETERS:
- RETURN PERIOD: 1 / 1000
 - HAZARD FACTOR: 0.08
 - SUBSOIL CLASS: BE
 - IMPORTANCE LEVEL: 2
 - EARTHQUAKE DESIGN CATEGORY: 2
- G08.** CONSTRUCTION USING ANY STRUCTURAL DRAWINGS SHALL NOT COMMENCE UNTIL A CONSTRUCTION CERTIFICATE IS ISSUED BY THE PRINCIPAL CERTIFYING AUTHORITY AND ONLY IF THAT STRUCTURAL DRAWING IS DESIGNATED 'ISSUED FOR CONSTRUCTION'.
- G09.** THE CONTRACTOR SHALL GIVE AT LEAST FORTY-EIGHT HOURS NOTICE OF ANY INSPECTIONS OF STRUCTURAL WORK THAT ARE REQUIRED TO BE MADE BY SCP CONSULTING. SCP CONSULTING ACCEPTS NO RESPONSIBILITY FOR CONSTRUCTION WORK NOT INSPECTED AND APPROVED BY SCP CONSULTING DURING CONSTRUCTION.
- G10.** THE METHOD OF CONSTRUCTION AND THE MAINTENANCE OF SAFETY DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE BUILDER. IF ANY STRUCTURAL ELEMENT DOCUMENTED ON THE STRUCTURAL DRAWING PRESENTS DIFFICULTY IN TERMS OF CONSTRUCTABILITY OR SAFETY, THE MATTER SHALL BE REFERRED TO SCP CONSULTING FOR RESOLUTION BEFORE PROCEEDING. THE DETERMINATION OF A SAFE WORK METHOD IS THE RESPONSIBILITY OF THE BUILDER.
- G11.** NO CHANGES IN ANY STRUCTURAL ELEMENT DOCUMENTED IN THE STRUCTURAL DRAWINGS SHALL BE MADE WITHOUT REFERENCE TO SCP CONSULTING.
- G12.** PROPRIETARY ITEMS SPECIFIED ON THE STRUCTURAL DRAWINGS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS WRITTEN RECOMMENDATIONS.
- G13.** THE BUILDER SHALL ARRANGE SEPARATE CERTIFICATION OF ANY DESIGN AND CONSTRUCT ITEMS BY AN NPER REGISTERED STRUCTURAL ENGINEER.
- G14.** ALL DESIGN CONSULTANTURAL FITMENTS (GLAZING, PARTITIONS, CEILINGS) SHOULD ALLOW FOR SHORT TERM AND LONG TERM MOVEMENT OF STRUCTURAL ELEMENTS. THE BUILDER SHOULD CONSULT SCP CONSULTING FOR THE ALLOWANCE TO BE MADE.
- G15.** ALL STRUCTURAL ELEMENTS HAVE BEEN DESIGNED FOR EARTHQUAKE FORCES IN ACCORDANCE WITH AS1170.4. THE DESIGN REQUIREMENTS OF AS1170.4 ARE BASED ON A PROBABILISTIC EARTHQUAKE EVENT. THE STRUCTURE HAS BEEN DESIGNED AND DETAILED TO RESIST THE PROBABILISTIC EARTHQUAKE EVENT AND NOT COLLAPSE, HOWEVER SOME DAMAGE TO THE STRUCTURE WILL GENERALLY OCCUR. REPAIR OR DEMOLITION OF THE STRUCTURE MAY BE REQUIRED.
- G16.** THE BUILDER AND ASSOCIATED SUB CONTRACTORS SHALL BE RESPONSIBLE FOR ALL DEMOLITION AND TEMPORARY WORKS (INCLUDING COST, DESIGN IMPLEMENTATION AND CERTIFICATION BY A NPER REGISTERED TEMPORARY WORKS ENGINEER).
- G17.** THE DESIGN LIFE OF THE WORKS SHALL BE 50 YEARS.
- G18.** PRIOR TO COMMENCEMENT OF SITE WORKS, THE BUILDER SHALL LOCATE AND CONFIRM ALL EXISTING SERVICES AND SEEK DIRECTION FROM SCP CONSULTING SHOULD ANY EXISTING SERVICES OR ASSETS AFFECT THE DOCUMENTED STRUCTURAL ELEMENTS.

GROUNDWORKS/SITE PREPARATION

E01. A GEOTECHNICAL INVESTIGATION OF THE SITE HAS BEEN MADE AND A COPY OF THE REPORT HAS BEEN MADE AVAILABLE FOR INFORMATION ONLY. THE GEOTECHNICAL INFORMATION GIVEN IN THIS REPORT, OR SHOWN ON THE STRUCTURAL DRAWINGS, OR BOTH, IS INFORMATION ON THE NATURE OF THE GROUND AT EACH TESTED PART. IT IS NOT A COMPLETE DESCRIPTION OF CONDITIONS EXISTING AT OR BELOW GROUND LEVEL.

E02. TOLERANCES

SURFACES: FINISH GROUNDWORKS TO REASONABLY SMOOTH AND UNIFORM SURFACES. SUBGRADES: THE FOLLOWING TOLERANCES APPLY TO FINISHED SUBGRADE LEVELS UNLESS OVERRIDDEN BY SPECIFIC REQUIREMENTS ELSEWHERE ON THE DRAWINGS.

ITEM	LEVEL TOLERANCE ABSOLUTE	(MAXIMUM) RELATIVE
FILL SUBGRADE	+ 0 - 10	20mm
CUT SUBGRADE	+ 0 - 20	20mm

ABSOLUTE LEVEL TOLERANCE: MAXIMUM DEVIATION FROM DESIGN LEVEL. RELATIVE LEVEL TOLERANCE: MAXIMUM DEVIATION FROM 3m STRAIGHT EDGE LAID ANYWHERE ON EACH PLANE SURFACE.

E03. TESTING FOR COMPLIANCE SHALL BE CARRIED OUT IN ACCORDANCE WITH AS1289 AS SET OUT BELOW. LEVEL 2 CERTIFICATION IN ACCORDANCE WITH AS 3798, SHALL APPLY. FIELD DRY DENSITY: TO ONE OF THE METHODS OF AS 1289 CLAUSES 5.1.1, 5.3.5 OR 5.8.1. CALIBRATE THE SURFACE MOISTURE - DENSITY GAUGE PRIOR TO USE ON SITE.

STANDARD INDEX: TO AS 1289 CLAUSE 5.6.1
STANDARD MAXIMUM DRY DENSITY: TO AS 1289 CLAUSE 5.1.1
MODIFIED MAXIMUM DRY DENSITY: TO AS 1289 CLAUSE 5.2.1
FILLING SAMPLE TO AS 1141.2 AND AS 1178 AND TEST TO AS 1141 OR AS 1289, AS APPROPRIATE, FOR COMPLIANCE WITH THE CRITERIA STATED ON THE STRUCTURAL DRAWINGS. CALIFORNIA BEARING RATIO: SAMPLE AND TEST TO AS 1289 CLAUSES 6.6.1-6.1.3 AS APPROPRIATE.

E04. KEEP GROUNDWORKS FREE OF SURFACE WATER. PLACE WALL FILLING, PAVING, STRUCTURES, SERVICES, AND THE LIKE ON GROUND FROM WHICH SURFACE WATER HAS BEEN REMOVED. PROTECT FRESH WORK FROM WATER DAMAGE.

E05. REMOVE THE FOLLOWING FROM THE SITE: EXCAVATED MATERIAL NOT RE-USABLE AS TOPSOIL, FILLING, MULCH, OR THE LIKE AND DEBRIS RESULTING FROM SITE CLEARING.

E06. EXCAVATE AS REQUIRED OR AS SHOWN ON THE STRUCTURAL DRAWINGS, INCLUDING BUT NOT NECESSARY LIMITED TO THE FOLLOWING:

SITE SURFACE:

EXCAVATE OVER THE SITE TO GIVE CORRECT LEVELS AND PROFILES AS THE BASIS FOR CONSTRUCTION, PAVING, FILLING, LANDSCAPING AND THE LIKE. MAKE ALLOWANCE FOR COMPACTION OR SETTLEMENT.

FOOTINGS:

EXCAVATE FOR FOOTINGS, PITTS, WELLS, SHAFTS AND THE LIKE, TO THE REQUIRED SIZES AND DEPTHS.

PROOF ROLLING:

PROOF ROLLING TO BE IN ACCORDANCE WITH INSTRUCTIONS FROM THE GEOTECHNICAL ENGINEER ENGAGED SPECIFICALLY FOR THIS PURPOSE. REPLACE UNSUITABLE MATERIAL WITH APPROVED FILLING COMPACTED IN ACCORDANCE WITH INSTRUCTIONS FROM THE GEOTECHNICAL ENGINEER.

E07. PLACING FILLING

EXTENT:

PLACE AND COMPACT FILLING APPROVED BY THE GEOTECHNICAL ENGINEER TO THE DIMENSIONS, LEVELS, GRADES, AND CROSS SECTIONS AS SHOWN ON THE STRUCTURAL DRAWINGS, SO THAT THE SURFACE IS ALWAYS STAY DRAINING.

LAYERS:

PLACE FILLING APPROVED BY THE GEOTECHNICAL ENGINEER IN LOOSE LAYERS NOT EXCEEDING 200mm OR THE SPECIFIED MAXIMUM LAYER THICKNESS, AND COMPACT EACH LAYER AS SPECIFIED IN CLAUSE E9 IN LOOSE TO THE REQUIRED DENSITY OR IN ACCORDANCE WITH GEOTECHNICAL ENGINEERS REQUIREMENTS.

PLACING AGAINST CONCRETE:

DO NOT PLACE FILLING AGAINST CONCRETE UNTIL THE CONCRETE HAS BEEN IN PLACE FOR MINIMUM OF FOURTEEN DAYS.

PLACING AT STRUCTURES:

PLACE AND COMPACT FILLING IN LAYERS SIMULTANEOUSLY ON BOTH SIDES OF STRUCTURES, CULVERTS AND PIPELINES TO AVOID DIFFERENTIAL LOADING.

MATERIAL:

INORGANIC NON-PERISHABLE MATERIAL, OF THE TYPE SPECIFIED ON THE STRUCTURAL DRAWINGS. SUBMIT DETAILS OF PROPOSED FILLING IF NO MATERIAL SPECIFIED TO SCP CONSULTING.

E08. COMPACTION LEVELS UNLESS SPECIFIED ELSEWHERE ON THE DRAWINGS, OR BY THE GEOTECHNICAL ENGINEER, SHALL BE EITHER 100% STANDARD COMPACTION OR 98% MODIFIED COMPACTION.

E09. SUB-BASE TO CONCRETE SLABS SHALL BE MATERIAL COMPLYING WITH DGS40 TO RMS SPECIFICATIONS. SUB-BASE SHALL BE COMPACTED TO 100% STANDARD COMPACTION, UNLESS NOTED OTHERWISE ON THE DRAWINGS.

E10. COMPACTION TEST RESULTS SHALL BE SUBMITTED TO SCP CONSULTING FOR REVIEW.

FOOTINGS

F01. A GEOTECHNICAL INVESTIGATION OF THE SITE HAS BEEN MADE AND A COPY OF THE REPORT HAS BEEN MADE AVAILABLE FOR INFORMATION ONLY. THE GEOTECHNICAL INFORMATION GIVEN IN THIS REPORT, OR SHOWN ON THE DRAWINGS, OR BOTH, IS INFORMATION ON THE NATURE OF THE GROUND AT EACH TESTED PART. IT IS NOT A COMPLETE DESCRIPTION OF CONDITIONS EXISTING AT OR BELOW GROUND LEVEL.

F02. ALL EXCAVATIONS AND FOUNDING MATERIAL SHALL BE APPROVED BY A GEOTECHNICAL ENGINEER AS HAVING THIS BEARING CAPACITY BEFORE PLACING MEMBRANES OR REINFORCEMENT OR CONCRETE. A COPY OF THE REPORT ON THE FOUNDING MATERIAL SHALL BE SUPPLIED TO SCP CONSULTING. SPOON TEST AS REQUIRED.

F03. FOOTINGS SHALL BE LOCATED CENTRALLY UNDER WALLS AND COLUMNS UNLESS NOTED OTHERWISE ON STRUCTURAL DRAWINGS.

F04. FOOTINGS SHALL BE CONSTRUCTED AND BACKFILLED AS SOON AS POSSIBLE FOLLOWING EXCAVATION. FOUNDATION MATERIAL SHALL NOT BE PERMITTED TO SOFTEN OR DRY OUT. IF CONCRETE IS NOT PLACED IMMEDIATELY AFTER EXCAVATION OF FOOTING, PROVIDE A 50mm BLINDING LAYER OF WEAK (15MPa) CONCRETE TO THE BASE OF EXCAVATION.

F05. EXCAVATE FOR FOUNDATIONS TO THE REQUIRED SIZES AND DEPTH. FOOTING FOUNDING LEVELS ARE PROVISIONAL SUBJECT TO ACTUAL SITE CONDITIONS.

F06. ANY RESIDENTIAL SLABS AND FOOTINGS HAVE BEEN DESIGNED FOR REACTIVITY CLASS *** TO AS 2870.

F07. THE BUILDER SHALL ENSURE THE STABILITY OF ADJACENT BUILDINGS AND SERVICES DURING EXCAVATION FOR FOOTINGS. IF IN DOUBT AS TO REQUIREMENTS CONSULT GEOTECHNICAL ENGINEER AND SCP CONSULTING.

F08. FOOTINGS NEAR BOUNDARIES SHALL HAVE THE BASE OF THE FOOTING LEVEL HIGHER THAN THE EXISTING ADJACENT FOOTING.

RETAINING WALLS

RW1. BACKFILLING BEHIND RETAINING WALLS SHALL BE WELL-GRADED NON-COHESIVE GRANULAR MATERIAL APPROVED BY SCP CONSULTING. COMPACT IN 150MM LAYERS WITH A 2 TONNE STATIC ROLLER. IF LARGER ROLLERS ARE USED, PROP RETAINING WALL.

RW2. UNLESS NOTED OTHERWISE ON DRAWINGS, ALL RETAINING WALLS SHALL BE PROVIDED WITH A FREE DRAINING NON-COHESIVE COARSE GRANULAR DRAINAGE LAYER MINIMUM 300MM WIDE AT THE BACK OF THE WALL WITH AN AGRICULTURAL DRAINAGE PIPE AT THE BASE 50mm DIA. WEEP HOLES SHALL BE PROVIDED AT 1.0 METRE CENTRES MAXIMUM.

RW3. WHERE RETAINING WALLS ARE SUPPORTED BY FLOORS BUILT AGAINST THEM OR INTO THEM, DO NOT BACKFILL RETAINING WALLS UNTIL FLOOR CONSTRUCTION AND CONNECTIONS TO RETAINING WALL AT TOP AND BOTTOM IS IN PLACE, UNLESS THE RETAINING WALL IS TEMPORARILY PROPPED.

RW4. ALL WALLS TO HAVE EXPANSION JOINTS AT 6m MAX CTS OR AS PER SCP CONSULTING DETAILS.

FORMWORK

FW1. THE DESIGN CERTIFICATION & ERECTION INSPECTION OF AND PERFORMANCE OF THE FORMWORK AND FALSEWORK IS THE RESPONSIBILITY OF THE FORMWORK SUB-CONTRACTOR. NOT OF SCP CONSULTING. FORMWORK SHALL BE CERTIFIED BY A NPER REGISTERED STRUCTURAL ENGINEER EXPERIENCED IN FORMWORK DESIGN IN ACCORDANCE WITH STATE REGULATIONS AND STATE SAFETY CODE OF PRACTICE.

FW2. THE FORMWORK SHALL NOT BE DESIGNED TO RELY ON RESTRAINT OR SUPPORT FROM THE PERMANENT STRUCTURE WITHOUT PRIOR APPROVAL FROM SCP CONSULTING. POST TENSIONING REACTIONS TO BE CONSIDERED AS REQUIRED.

FW3. STRIPPING TIMES SHALL COMPLY WITH AS 3610 AND AS 3600 (WHERE MORE STRINGENT) UNLESS OTHERWISE APPROVED BY SCP CONSULTING.

FW4. DURING CONSTRUCTION, SUPPORT PROPPING WILL BE REQUIRED WHERE LOADS FROM STACKED MATERIALS, FORMWORK AND OTHER SUPPORTED SLABS INDUCE LOADS IN A SLAB OR BEAM WHICH EXCEED THE DESIGN LOAD FOR STRENGTH OR SERVICEABILITY AT THAT AGE. ONCE THE NOMINATED 28 DAY STRENGTH HAS BEEN ATTAINED, THESE LOADS SHALL NOT EXCEED THE DESIGN SUPERIMPOSED LOADS SET OUT ON THE STRUCTURAL DRAWINGS.

FW5. CONSTRUCTION SUPPORT PROPPING IS TO BE LEFT IN PLACE WHERE NEEDED TO AVOID OVERSTRESSING THE STRUCTURE DUE TO CONSTRUCTION LOADING. NO BRICKWORK OR PARTITION WALLS ARE TO BE CONSTRUCTED ON SUSPENDED LEVELS UNTIL ALL PROPPING IS REMOVED AND THE SLAB HAS ABSORBED ITS DEAD LOAD. DEFLECTION, PROP REMOVAL, SHALL BE PROGRAMMED TO AVOID DISTRESS TO PREVIOUSLY CAST FLOORS. RE-SHORING OR BACK-PROPPING SHALL BE SUBMITTED BY THE FORMWORK CONTRACTOR FOR APPROVAL OF SCP CONSULTING.

FW6. DIMENSIONAL TOLERANCES SHALL COMPLY WITH AS 3610 CLAUSE 3.4 OR AS 3600 CLAUSE 17.5. FOR THE APPROPRIATE FINISH CLASS. FINISH CLASS TO DESIGN CONSULTANT'S SPECIFICATIONS. IN ANY CASE MAXIMUM DEVIATION FROM CORRECT POSITION SHALL BE 10mm FOR CLASS 1, 15mm FOR CLASS 2, 20mm FOR CLASS 3, 25mm FOR CLASS 4.

FW7. CONCRETE FORMED SURFACES SHALL HAVE FOLLOWING FORMWORK CLASS IN ACCORDANCE WITH AS 3610, UNLESS SPECIFIED DIFFERENTLY ON THE DESIGN CONSULTANTURAL DRAWINGS.

CONCRETE ELEMENT OR SURFACE	FORMWORK CLASS TO AS 3610
NORMAL DESIGN CONSULTANTURAL & CIVIL WORKS AND SURFACES NOT OTHERWISE SPECIFIED	2 TO 3 (T.B.C. BY DESIGN CONSULTANT)
SURFACES TO BE RENDERED OR HIDDEN BY OTHER FINISHES	4
SURFACES PERMANENTLY CONCEALED	4

FW8. BEFORE PLACING REINFORCEMENT, APPLY A RELEASE AGENT COMPATIBLE WITH THE REQUIRED SURFACE FINISH TO FACE OF FORMWORK.

FW9. CHAMFER AT RE-ENTRANT ANGLES AND FILLET AT CORNERS FACE OF BEVEL 25mm UNO ON DESIGN CONSULTANTURAL DRAWINGS.

FW10. BEFORE PLACING CONCRETE, REMOVE WATER, DUST, DEBRIS FROM THE FORMWORK.

FW11. FILL ALL THE HOLES LEFT BY FORM TIE BOLTS WITH MORTAR MATCHING THE SURFACE COLOUR OF THE FINISHED SURFACE. WALL PART OF WATER RETAINING STRUCTURES SHALL HAVE TIE BOLT HOLES FILLED WITH A WATERPROOF GROUT.

FW12. PROVIDE CHAMFERS AND DRIP GROOVES AS CLAUSE C18.

FW13. IF METAL DECK FORMWORK IS USED, ALL PROPPING AND BEARING DETAILS SHALL BE DETERMINED BY THE FORMWORK SUB-CONTRACTORS ENGINEERS AND SHALL BE ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. THERE SHALL BE NO PERMANENT MARKS ON THE METAL DECK SOFFIT, DUE TO PROPPING SYSTEM. THE EXTENT OF METAL DECK FORMWORK SHALL BE APPROVED BY THE DESIGN CONSULTANT WITH REGARD TO REQUIRED SOFFIT FINISH IN EXPOSED AREAS.

FW14. IN MULTI STOREY CONSTRUCTION, PROPPING TO EXTEND AT LEAST 3 LEVELS (OR STOREYS) BELOW THE FLOOR BEING CAST. PROP REMOVAL IS TO BE PROGRAMMED TO AVOID DISTRESS TO PREVIOUSLY CAST FLOORS. REFER TO SCP CONSULTING FOR SPECIFIC PROPPING REQUIREMENTS.

FW15. VOID FORMERS TO BE CERTIFIED TO SUPPORT WET CONCRETE LOAD AND PLACEMENT / COMPACTION LOAD AND DEFLECT < SPAN / 1000 FOR BEAMS AND SLABS. COLLAPSE AND LOSS OF SUPPORT TO HARDENED CONCRETE TO OCCUR WITHIN 48 HOURS AT COMPLETION OF CONCRETE BEING POURED OVER.

FW16. PERMANENT LOSS FORMWORK SHALL BE CHLORIDE FREE AND NOT IMPAIR STRUCTURAL PERFORMANCE.

STRUCTURAL STEELWORK

S01. GENERAL

REFER AS5131 FOR ALL DEFINITIONS, RESPONSIBILITIES AND PROCUREMENT REQUIREMENTS. ALL STEEL PURCHASED TO ACRS AND ISO14001 COMPLIANCE.

S02. CONSTRUCTION CATEGORY

IN ACCORDANCE WITH THE REQUIREMENTS OF ASINZS 5131 THE CONSTRUCTION CATEGORIES FOR THIS PROJECT ARE DEFINED IN THE TABLE BELOW:

ELEMENT	IMPORTANCE LEVEL	SERVICE CATEGORY	FABRICATION CATEGORY	CONSTRUCTION CATEGORY
FILLET WELD GP/SP	IL3	SC1	FC1	CC3

S03. TREATMENT GRADES

UNLESS NOTED OTHERWISE IN THE PROJECT DRAWINGS, FOR THE ELEMENTS ON THIS PROJECT, THE TREATMENT GRADES ACCORDING TO ASINZS 5131 SHALL BE P2 FOR ALL PAINTED STRUCTURAL STEELWORK UNO. ALL EXPOSED STEELWORK TO BE P3.

S04. COATING QUALITY LEVEL

THE COATING QUALITY LEVEL ASSESSED ACCORDING TO ASINZS 5131 SHALL BE AS GIVEN IN THE TABLE BELOW:

ITEM	COATING QUALITY LEVEL
INTERNAL STEELWORK	PC1
EXTERNAL STEELWORK (NON COASTAL)	PC2
EXTERNAL STEELWORK (COASTAL)	PC2

EXTERNAL STEEL MAY BE HOT DIPPED GALVANISED AT 600 g/m² (MAX) TO ASINZS 4680. ALL BOLTS TO BE HOT DIPPED GALVANISED TO ASINZS 1214 AT 330 g/m² REPAIR OF ALL GALVANISED TO ASINZS 4680.

S05. WORKMANSHIP AND QUALITY

ALL STRUCTURAL STEELWORK SHALL BE FABRICATED IN ACCORDANCE WITH ASINZS 5131. ALL WORK ON THIS PROJECT SHALL BE UNDERTAKEN BY COMPETENT PERSONNEL. REQUIREMENTS AND EXAMPLES OF QUALIFICATIONS FOR COMPETENT PERSONNEL ARE CONTAINED IN ASINZS 5131. STEELWORK SHALL BE FABRICATED BY FABRICATORS CERTIFIED UNDER THE ASI NATIONAL STRUCTURAL STEELWORK COMPLIANCE SCHEME (NSSCS).

S06. TOLERANCES

FABRICATION TOLERANCES SHALL CONFORM TO THE REQUIREMENTS OF ASINZS 5131. THE TOLERANCE CLASS FOR FUNCTIONAL TOLERANCES SHALL BE CLASS 1 UNO.

S07. STEEL MATERIAL GRADES

ALL STRUCTURAL STEEL MATERIAL SHALL CONFORM TO THE FOLLOWING TABLE UNO:

COMPONENT	TO CONFORM WITH AUSTRALIAN STANDARDS	GRADE
HOT ROLLED STEEL SECTIONS	ASINZS 3679.1; TS 102	300/350
PLATE	ASINZS 3678; TS 102	250/300/350/400/450
FLATS	ASINZS 1594; TS 102	250/300/350/400/450
HOLLOW SECTIONS: CIRCULAR (CHS) SQUARE (SHS) RECTANGULAR (RHS)	ASINZS 1163; TS 102	C350L0 & C250L0 C350L0 & C450L0 C350L0 & C450L0
WELDED BEAMS & COLUMNS	ASINZS 3679.2; TS 102	300/400/450
SHEAR STUDS (COMPOSITE SLAB TO STEEL)	ASINZS 1554.2 AS 1443	380
QUENCH & TEMPERED PLATE	AS 3597	690
PURLINS & GIRTS	AS 3597	450
RODS / SQUARES	AS 3679.1; TS102	250/300

MEMBER SIZES SHALL BE AS SHOWN ON THE STRUCTURAL DRAWINGS. NO SUBSTITUTION IS PERMITTED WITHOUT APPROVAL IN WRITING FROM SCP CONSULTING. DOCUMENTATION SUPPLIED WITH MATERIALS AND COMPONENTS SHALL CONFORM TO THE REQUIREMENTS OF ASINZS 5131.

S08. LAMELLAR TEARING

JOINT DETAILS WHICH ARE SUSCEPTIBLE TO LAMELLAR TEARING (LT) ARE INDICATED ON THE PROJECT DRAWINGS AS LT SUSCEPTIBLE. WITH THE SPECIFIC PLATE WITH HIGH THROUGH-THICKNESS STRESS NOTED. THE SPECIFIC PLATE IN JOINTS THAT ARE INDICATED AS LT SUSCEPTIBLE SHALL BE SUPPLIED ULTRASONICALLY TESTED TO AS 1710 CLASS 1. ALL BUTT JOINTS AT T AND X JOINTS SHALL BE CONSIDERED LT SUSCEPTIBLE UNO.

S09. Z-PLATE REQUIREMENT

JOINTS THAT ARE DESIGNATED LT SUSCEPTIBLE AND FURTHER REQUIRE PLATE TO A NOMINATED Z-VALUE ARE INDICATED ON THE PROJECT DRAWINGS WITH A DESIGNATED Z-VALUE. THE PLATE USED FOR THESE JOINTS SHALL BE ORDERED TO THE DESIGNATED Z-VALUE. ALL PLATES GREATER THAN 16mm TO BE Z35 TO AS3678. ALL PLATES TO BE ULTRA SONICALLY TESTED TO AS1710 CLASS 1 AT THE POINT OF SUPPLY.

S10. SUPPLEMENTARY TESTING

SUPPLEMENTARY ULTRASONIC TESTING TO AS 2207 AND ASINZS 1554.1 IS REQUIRED FOR ALL PLATES 25mm THICKNESS AND OVER. ULTRASONIC TESTING TO AS 1710 CLASS 1.

HIGHLY STRESSED JOINTS SUBJECTED TO HIGH UNIFORM STRESS AS NOMINATED ON THE DRAWINGS OR FOR ALL JOINTS WITH PLATE THICKNESS > 40mm, SHALL BE ULTRASONICALLY TESTED TO AS2207 AND AS1554.1.

S11. STEEL QUALITY

ALL STRUCTURAL STEEL SHALL BE SOURCED FROM MILLS WITH A RELEVANT JAS ANZ ACCREDITED THIRD-PARTY CERTIFICATION SCHEME SUCH AS THE ACRS SCHEME. NO ALTERNATIVE SOURCING OF STEELWORK WITHOUT AN JAS ANZ ACCREDITED THIRD-PARTY SCHEME IS PERMITTED. CURRENT ACRS CERTIFICATE TO BE SUPPLIED TO SCP FOR REVIEW PRIOR TO ERECTION. SCP RESERVES THE RIGHT TO REJECT NON ACRS CERTIFIED STEEL.

S12. SPACING OF STRUCTURAL MEMBERS

ALL STRUCTURAL STEELWORK MEMBERS SHALL BE SUPPLIED IN A SINGLE LENGTH, EXCEPT WHERE OTHERWISE INDICATED WITH SPLICE LOCATIONS SHOWN ON THE STRUCTURAL DRAWINGS. SPLICES AT OTHER LOCATIONS SHALL BE APPROVED BY THE ENGINEER PRIOR TO FABRICATION COMMENCING.

S13. CUTTING, HOLDING AND SHAPING

ALL CUTTING, HOLDING AND SHAPING OF STRUCTURAL STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASINZS 5131. PENETRATIONS OR CUT-OUTS OTHER THAN THOSE SHOWN ON THE DRAWINGS SHALL NOT BE MADE WITHOUT PRIOR APPROVAL.

S14. BOLT DESIGNATION

ALL BOLTS TO BE 8.8/S TYPE UNLESS NOTED OTHERWISE.

4.6/S	COMMERCIAL GRADE 4.6 BOLTS TO AS 1111, TIGHTENED TO A SNUG TIGHT CONDITION TO ASINZS 5131
8.8/S	HIGH STRENGTH STRUCTURAL BOLTS OF GRADE 8.8 TO ASINZS 1252.1, TIGHTENED TO A SNUG TIGHT CONDITION TO ASINZS 5131
8.8/TB	HIGH STRENGTH STRUCTURAL BOLTS OF GRADE 8.8 TO ASINZS 1252.1, FULLY TENSIONED TO ASINZS 5131 AS A BEARING JOINT.
8.8/TF	HIGH STRENGTH STRUCTURAL BOLTS OF GRADE 8.8 TO ASINZS 1252.1, FULLY TENSIONED TO ASINZS 5131 AS A FRICTION JOINT.

S15. STEEL QUALITY

ALL BOLTS TO BE SOURCED FROM SUPPLIERS WITH A RELEVANT JAS ANZ ACCREDITED THIRD-PARTY CERTIFICATION SCHEME, SUCH AS THE ACRS SCHEME. NO ALTERNATIVE SOURCING OF BOLTS WITHOUT A JAS ANZ ACCREDITED THIRD-PARTY SCHEME IS PERMITTED. CURRENT ACRS CERTIFICATE TO BE SUPPLIED TO SCP FOR REVIEW PRIOR TO ERECTION. SCP RESERVES THE RIGHT TO REJECT NON ACRS CERTIFIED BOLT ASSEMBLIES UNLESS NOTED OTHERWISE ALL T/F/TB BOLTS TO BE HOBSON BRAND.

S16. METHOD OF TENSIONING

T/B AND T/F BOLT CATEGORIES SHALL BE INSTALLED USING EITHER THE PART TURN METHOD OR THE DIRECT TENSION INDICATOR METHOD TO ASINZS 5131.

S17. CONTACT SURFACES IN TENSIONED CONNECTIONS

FOR CONNECTIONS WHERE 8.8/TF BOLTS ARE SPECIFIED, A FRICTION COEFFICIENT OF 0.35 HAS BEEN ASSUMED FOR THE DESIGN. THE CONTACT SURFACES SHALL BE PREPARED ACCORDING TO ASINZS 5131 AND BE FREE FROM PAINT, LACQUER OR OTHER APPLIED FINISHES UNLESS THE APPLIED FINISH HAS BEEN TESTED IN ACCORDANCE WITH ASINZS 5131 APPENDIX G AND A FRICTION COEFFICIENT OF 0.35 OR HIGHER IS DETERMINED.

S18. BOLT FINISH

ALL BOLTS SHALL BE HOT-DIP GALVANISED TO ASINZS 1214.

S19. WELDING CONSUMABLES

WELDING CONSUMABLES SHALL CONFORM TO THE REQUIREMENTS OF ASINZS 1554, BASED ON THE YIELD STRENGTH OF THE STEEL TO BE WELDED, AS DEFINED IN THE TABLE BELOW:

NOMINAL YIELD STRENGTH OF STEEL TO BE WELDED	TO CONFORM WITH AUSTRALIAN STANDARDS
<500 MPa	ASINZS 1554.1
>500 MPa, <690 MPa	ASINZS 1554.4

NOMINAL YIELD STRENGTH OF STEEL TO BE WELDED	NOMINAL TENSILE STRENGTH OF WELD METAL, (MPa)
ALL STEEL WITH GRADE<300 MPa	430
ALL STEEL WITH 300 < GRADE <450 MPa	490
QUENCH & TEMPERED STEEL TO GRADE 690 MPa	760

ELEMENT	WELD CATEGORY
SHOP WELD	SP
SITE WELD	SP

WELDS SUBJECT TO FATIGUE LOADING TO BE FP WELD CATEGORY

NON-DESTRUCTIVE EXAMINATION

ALL WELDS 100% VISUALLY SCANNED / EXAMINED TO AS1554.1 THE EXTENT OF NON-DESTRUCTIVE SC1 & SC2 EXAMINATION (NDE) SHALL BE AS DEFINED IN TABLE 13.6.2.2(A) OF ASINZS 5131.

SHOP OR SITE FILLET WELD TO BE 10% MAGNETIC PARTICLE OR LIQUID PENETRANT. SHOP OR SITE BUTT WELDS TO BE 100% ULTRASONICALLY OR RADIOGRAPHY TESTED.

ALL WELD TEST CERTIFICATION TO BE NATA CERTIFIED AND SUBMITTED TO SCP CONSULTING.

S20. MINIMUM CONNECTION DETAILING GUIDELINES

UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS, CONNECTION DETAILS SHALL BE IN ACCORDANCE WITH THE FOLLOWING MINIMUM REQUIREMENTS:

- S21.**
- a) ALL WELDS SHALL BE 6mm CONTINUOUS FILLET WELD (CFW) 4E8XX SP ALL ROUND
 - b) ALL STE

CONCRETE

C01. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF AS 3600 INCLUDING AMENDMENTS EXCEPT WHERE VARIED BY THE STRUCTURAL DRAWINGS. ANY MATTER IN DOUBT SHALL BE REFERRED TO SCP CONSULTING.

C02. PLACING OF CONCRETE SHALL GENERALLY BE IN ACCORDANCE WITH AS 3600 CLAUSE 17.1.

CONCRETE QUALITY (UNO ON OTHER STRUCTURAL DRAWINGS). REFER TO STRUCTURAL DRAWINGS OR REQUIRED STRENGTH & OTHER SPECIFIC REQUIREMENTS WHERE NO STRENGTH IS SPECIFIED ON THE STRUCTURAL DRAWINGS. ADOPT THE HIGHEST TABULATED STRENGTH GIVEN BELOW FOR THE ELEMENT.

ELEMENT	STRENGTH GRADE (MPa) REFER DRAWINGS	CEMENT TYPE	MIN. CEMENT CONTENT (kg/m³)	MAX. AGG. SIZE (mm)	W/C RATIO MAX.	MAX. TARGET SLUMP	MAX 56 DAY DRYING SHRINKAGE (MICROSTRAIN)
FOOTINGS (BORED PILES, PAD, BASES & STRIP FOOTINGS)	32	GP	285	20		80	-
	40	GP	330	20		80	-
	50	GP	400	20		80	-
COLUMNS & WALLS	65	GP	500	20	0.45	120	-
	80	GP	600	20		120	-
INSITU RETAINING WALLS	32	GP	285	20	0.45	80	700
SLAB ON GROUND	25	SL	265	20		40*	650
	32	SL	285	20	0.45	40*	650
	40	SL	300	20		40*	650
POST-TENSIONED SUSPENDED SLABS (22MPa AT 5 DAYS)	32	SL	300	20		80	600
	40	SL	330	20	0.45	80	600
	50**	SL	400	20		80	600
CONVENTIONAL SUSPENDED SLABS	32	SL	285	20	0.45	80	600
WORKING SLAB	20	GP	250	20	0.45	80	-
PRECAST CONCRETE	40	SL	285	20	0.45	80	700
	50	SL	330	20		80	700
WATER RETAINING STRUCTURES	32+PENETRON	SL	300/330	20/14		80	600
	40+PENETRON	SL	330	20/14	0.45	80	600
	50+PENETRON	SL	400	20/14		80	600
DINCEL WALLS	A0, 50	GP	260	10	0.50	200	-
	32, 40, 50, 65, 80	GP	N/A	10		600mm SPREAD	-

NOTE: AGGRESSIVE ENVIRONMENT (CORROSIVE CLASSIFICATION C). CONCRETE BINDER TO INCLUDE FLYASH OR SLAG. CONCRETE TO HAVE 420kg/m3 TOTAL BLENDED CEMENTITIOUS CONTENT. MAX DIFFUSION 3×10^{-12} m²/s.

* DENOTES ADD SUPERPLASTICISER TO RAISE SLUMP TO 80MM

NOTE: ALL SHRINKAGE VALUES TO HAVE +/- 50 MICROSTRAIN ALLOWANCE. ALLOW FOR SHRINKAGE TEST TO EACH HALF OF THE 100 ROOF

** DENOTES RETARDER ADDED TO ASSIST IN FINISHING AS REQUIRED.

NOTE: HOUSE SLABS TO AS270

NOTE: DINCEL WALLS MAX W/C = 0.50. MAX FLYASH CONTENT 30% OF TOTAL CEMENTITIOUS CONTENT

NOTE: PILES TO HAVE TREMIE MIX DESIGN AS REQUIRED TO AVOID SEGREGATION.

NOTE: AIR ENTRAINMENT 2% +/-1.5%

NOTE: CONCRETE QUALITY / REJECTION IS THE RESPONSIBILITY OF THE CONTRACTOR. NOTIFY WITHIN 7 DAYS IF NON-CONFORMANCE EXIST.

NOTE: GP OR GB CEMENT TO AS1379. TRI CALCIUM ALUMINATE <7%, SULPHUR ANHYDRIDE <1.8%.

SOUNDNESS < 5mm

NOTE: DO NOT ADD WATER ON SITE.

NOTE: ADMIXTURE TO AS1478.1 NO CHLORIDES. AEM VINYL RESIN BASED

NOTE: CHLORIDE AND SULPHATE TO AS1379.

NOTE: E28 + 33GPa (S40), 35MPa (S50), 37GPa (S65), 40GPa (S80).

C03. MIX DESIGNS SHALL BE SUBMITTED FOR APPROVAL. THE USE OF BLENDED CEMENTS, FLYASH AND/OR CHEMICAL ADMIXTURES WILL NOT BE PERMITTED EXCEPT WITH PRIOR APPROVAL OF SCP CONSULTING IN WRITING. CONCRETE AGGREGATE SHALL CONSIST OF CRUSHED RIVER GRAVEL OR BASALT IN ACCORDANCE WITH AS 2768.1. SLAG AGGREGATES WILL NOT BE PERMITTED UNLESS APPROVED BY SCP CONSULTING. NO ADMIXTURES SHALL BE USED UNLESS APPROVED BY SCP CONSULTING. IF EARLY AGE STRENGTH IS SPECIFIED ON THE DRAWINGS, MIX DESIGN SHALL BE SUCH AS TO GUARANTEE THAT SPECIFIED EARLY AGE STRENGTH IS ACHIEVED. GREEN STAR MIXES ARE TO SUIT PROJECT ESD REQUIREMENTS.

C04. PROJECT ASSESSMENT SHALL BE IN ACCORDANCE WITH AS 1379. ALL ORGANISATIONS RESPONSIBLE FOR TESTING AND ASSESSMENT OF CONCRETE AND CONCRETE MATERIALS SHALL BE NATA REGISTERED. SAMPLING AND TESTING SHALL BE TO AS 1012. ACCEPTANCE CRITERIA - AVERAGE MUST EXCEED REQUIRED VALUE. NO SAMPLE TO BE LESS THAN 85% OF REQUIRED VALUE. SUBMIT TEST RESULTS OF PROJECT ASSESSMENT TO SCP CONSULTING.

MATERIAL TEST:
PBC, FLYASH, GROUND SLAG - MONTHLY.
COURSE AGGREGATE TEST TO AS1411 MONTHLY TO 3 MONTHLY.
ALKALI REACTIVITY - 6 MONTHS AND CHANGE OF SOURCE.
STRENGTH TEST EVENLY THROUGHOUT.
POUR, PT SLABS TO HAVE 3 TEST CYLINDERS FOR EVERY 50m² (4/5 D, 28 D, SPARE) FOR CONCRETE IN COLUMNS AND WALLS. TAKE ONE SAMPLE PER BATCH.
SLUMP TEST ONE SAMPLE PER BATCH.

C05. SUPPLY OF READY MIXED CONCRETE SHALL COMPLY WITH AS 1379.

C06. CLEAR REINFORCEMENT COVER SHALL BE IN ACCORDANCE WITH TABLE BELOW UNLESS NOTED OTHERWISE ON THE STRUCTURAL DRAWINGS.

ELEMENT	CLEAR COVER (mm)		
	POURED AGAINST THE GROUND	POURED AGAINST FORM OR PLASTIC SHEETING	TOP SURFACE
PAD & STRIP FOOTINGS	50	40	50
SLAB ON GROUND *	50	40	40
RETAINING WALLS	50	50	-
SUSPENDED FLOORS	-	30	30
ROAD PAVEMENTS *	50	40	40
PITS	50	40	40
BORED PIERS, PILES	50	N/A	N/A
COLUMNS	N/A	30	N/A
POOL ENVIRONMENT, SUSPENDED SLABS	N/A	50	30

NOTE: REINFORCEMENT COVERS ABOVE SHALL BE INCREASED AS NECESSARY TO SATISFY FIRE RESISTANCE RATING REQUIREMENTS - REFER AS 3600 SECTION 5 - AND DESIGN CONSULTANTURAL DRAWINGS.

* SLABS ON THE GROUND TO BE POURED ON UNDERLAY MEMBRANE - SEE CLAUSE C23

* PT COVERS TO BE INCREASED TO AS3600 REQUIREMENTS FOR FIRE REQUIREMENTS.

C07. SLABS AND BEAMS SHALL BE CONSTRUCTED TO BEAR ONLY ON THE BEAMS. WALLS OR COLUMNS SHOWN ON THE STRUCTURAL DRAWINGS. ALL OTHER ELEMENTS SHALL BE KEPT A MINIMUM OF 15mm CLEAR OF THE SOFFITS OF BEAMS/SLABS. COLUMNS SHALL BE POURED A MINIMUM OF 24 HOURS BEFORE SLABS AND BEAMS WHICH BEAR ON THEM.

C08. REINFORCEMENT SHALL COMPLY WITH AS 4671 AND AS 3600 CLAUSE 17.2. REINFORCEMENT IS SHOWN DIAGRAMMATICALLY AND NOT NECESSARILY IN TRUE PROJECTION ON STRUCTURAL DRAWINGS. ALL REINFORCING BARS SHALL BE GRADE D500 TO AS4671. ALL WELDED MESH SHALL BE GRADE 500L TO AS4671 AND SHALL BE SUPPLIED IN FLAT SHEETS.

REINFORCEMENT SYMBOLS.

-N - GRADE 500N DEFORMED BAR TO AS 4671

-R - GRADE 250R ROUND BAR TO AS 4671

-RL - RECTANGULAR MESH GRADE 500L TO AS 4671

-SL - SQUARE MESH GRADE 500L TO AS 4671

-TM - TRENCH MESH GRADE 500L TO AS 4671

ALL DOWELS TO BE HD GALV. OR AGGRESSIVE ENVIRONMENTS GRADE 316L STAINLESS STEEL. ALL DOWELS TO BE GRADE 250 (UNO) HD GALV. WITH SQUARE CUT ENDS. APPLY 2 COATS OF BITUMEN EMULSION HALF THE LENGTH OF THE DOWEL OF ONE END. EMBED THE UNPAINTED HALF OF THE DOWELS IN FIRST CONCRETE POUR. ALL GALVANISING TO BE 700g/m². PREPARATION TO AS1627.5.

THE NUMBER IMMEDIATELY FOLLOWING THE N SYMBOL IS THE BAR DIAMETER IN MILLIMETRES. (E.G. N20 IS A 20 DIA. BAR GRADE 500N) A CERTIFICATE CONFIRMING CONFORMANCE TO THE ABOVE STANDARDS OR THE ACRS CERTIFICATION SCHEME SHALL BE SUPPLIED TO SCP CONSULTING.

C09. ALL REINFORCEMENT SHALL BE FIRMLY SUPPORTED ON PLASTIC TIPPED STEEL. PLASTIC OR CONCRETE CHAIRS GENERALLY AT NOT GREATER THEN 900 CENTRES BOTH WAYS. BARS ARE TO BE TIED AT ALTERNATE INTERSECTIONS WITH WIRE TIES IN EXPOSED SLAB SOFFITS. USE PLASTIC CHAIRS ONLY

C10. MAKE CONSTRUCTION JOINTS WHERE SHOWN ON THE STRUCTURAL DRAWINGS. DO NOT RELOCATE OR ELIMINATE A CONSTRUCTION JOINT. DO NOT MAKE A CONSTRUCTION JOINT NOT SHOWN ON THE STRUCTURAL DRAWINGS. WITHOUT PRIOR APPROVAL OF SCP CONSULTING. BEFORE FRESH CONCRETE IS PLACED AT A CONSTRUCTION JOINT, ROUGHEN AND CLEAN THE HARDENED CONCRETE SURFACE OF THE JOINT, SO THAT ALL SOFT MATERIAL, FOREIGN MATTER AND LAITANCE IS REMOVED. DAMPEN THE HARDENED CONCRETE SURFACE, WITHOUT LEAVING FREE WATER JUST BEFORE PLACING CONCRETE.

C11. CONDUITS AND PIPES SHALL BE LOCATED IN THE MIDDLE 1/3 OF THE SLAB OR BEAM DEPTH AND PIPES SHALL BE SPACED HORIZONTALLY AT A MINIMUM OF 3 TIMES THE CONDUIT DIAMETER. CONDUITS AND PIPES SHALL NOT EXTEND SUCH THAT THEY ARE WITHIN THE COVER TO THE REINFORCEMENT.

C12. SITE BENDING OF REINFORCING BARS SHALL BE CARRIED OUT USING MECHANICAL BENDING TOOLS WITHOUT HEATING.

C13. LAPS AND SPLICES SHALL BE MADE ONLY IN THE POSITIONS AND TO THE DIMENSIONS SHOWN ON THE STRUCTURAL DRAWINGS. FABRIC SHALL BE LAPPED TWO TRANSVERSE WIRES PLUS 50mm JOGGLES TO BARS SHALL BE 1 BAR DIAMETER OVER A LENGTH OF 12 BAR DIAMETERS. BUNDLED BARS SHALL BE TIED TOGETHER AT CENTRES OF 30 BAR DIAMETERS WITH THREE (3) WRAPS OF THE WIRE.

C14. DO NOT WELD OR THREAD REINFORCEMENT EXCEPT AS SHOWN ON THE STRUCTURAL DRAWINGS, OR AS APPROVED BY SCP CONSULTING. IF APPROVED, ANY WELDING SHALL COMPLY WITH AS1554.3.

C15. BEAM DEPTHS ARE WRITTEN FIRST AND INCLUDE SLAB THICKNESS. CONCRETE SIZES DO NOT INCLUDE THICKNESS OF APPLIED FINISHES. SET DOWNS OR FALLS ARE NOT PERMITTED UNLESS SHOWN ON THE STRUCTURAL DRAWINGS.

C16. NO PENETRATIONS, HOLES OR CHASES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE ELEMENTS WITHOUT THE APPROVAL OF SCP CONSULTING. PROVIDE 2N12 BARS x 1000 LONG AT CORNERS OF ALL RECTANGULAR PENETRATIONS, TOP AND BOTTOM.

C17. THE SUB-CONTRACTOR SHALL GIVE AT LEAST 24 HOURS NOTICE SO THAT INSPECTION MAY BE MADE OF THE FOLLOWING:

- MEMBRANE INSTALLED ON THE SUB-BASE, (WHERE APPLICABLE)

- REINFORCEMENT AND TENDONS FIXED IN PLACE

- CORES AND EMBEDMENTS FIXED IN PLACE

- NO CONCRETE SHALL BE PLACED UNTIL INSPECTIONS AND ANY REQUIRED RECTIFICATION IS COMPLETED.

C18. FOR CHAMFERS, DRIP GROOVES, REGLETs, REFER TO DESIGN CONSULTANTURAL DETAILS (SEE CLAUSE FW9) MAINTAIN COVER TO REINFORCEMENT AT ALL SUCH DETAILS.

C19. PLACE CONCRETE IN LAYERS SUCH THAT EACH SUCCEEDING LAYER IS BLENDED INTO THE PRECEDING ONE BY THE COMPACTION PROCESS. SLABS AND BEAMS SHALL BE POURED TOGETHER. THE FINISHED CONCRETE SHALL BE A DENSE HOMOGENEOUS MASS COMPLETELY FILLING THE FORMWORK AND THOROUGHLY EMBEDDING THE REINFORCEMENT. FINISH TYPE SHALL BE AS SPECIFIED IN THE DESIGN CONSULTANTURAL DRAWINGS.

C20. VIBRATION AND COMPACTION:

USE IMMERSION AND SCREED VIBRATORS ACCOMPANIED BY HAND METHODS AS APPROPRIATE TO REMOVE AIR BUBBLES AND COMPACT THE MIX. USE FORM VIBRATORS WHERE USE OF IMMERSION VIBRATORS IS IMPRACTICABLE. ENSURE CONCRETE IS FULLY COMPACTED AND ENTRAPPED AIR REMOVED, BUT AVOID OVER VIBRATION THAT MAY CAUSE SEGREGATION. DO NOT USE VIBRATORS TO MOVE CONCRETE ALONG THE FORMS.

C21. CURE AS SOON AS THE SURFACE (USING NON WAX OR NON C.R.) OF THE CONCRETE HAS HARDENED SUFFICIENTLY TO PREVENT DAMAGE BUT IN NO CASE LATER THAN 2 HOURS AFTER FINISHING IS COMPLETED. CONTINUE FINAL CURING FOR 7 DAYS. CURE BY ONE OF THE FOLLOWING MEANS:
1. PONDING OR CONTINUOUS SPRINKLING WITH WATER. OR
2. THE USE OF WET COVERINGS SUCH AS HESSIAN OR SAND. OR
3. THE USE OF AN APPROVED IMPERMEABLE PLASTIC SHEETING. PROTECT SHEETING FROM WIND AND TRAFFIC. THE COVERING MATERIAL SHALL BE HELD FIRMLY AGAINST THE CONCRETE FOR THE FULL LENGTH OF ALL EDGES AND LAPS AND AT FREQUENT INTERVALS BETWEEN SO THAT THERE SHALL BE NO AIR CIRCULATION AT THE CONCRETE SURFACES. OR
4. LIQUID MEMBRANE CURING COMPOUNDS COMPLYING WITH AS3799 ACRYLIC BASED UV STABLE. EMULSION COMPOUNDS MAY BE APPLIED TO THE CONCRETE SURFACE IN LIEU OF THE ABOVE METHODS PROVIDED THEY DO NOT IMPAIR THE ADHESION OR SUBSEQUENT SURFACE TREATMENTS, TOPPINGs OR FINISHES. SUBMIT PROPOSED CURING METHOD FOR APPROVAL OF SCP CONSULTING.

C22. NO CONCRETE SHALL BE POURED IF THE AIR TEMPERATURE AT THE POUR LOCATION EXCEEDS 30°C AND 27°C FOR - 40MPa AND 600 DEEP. USE ALIPHATIC ALCOHOL SPRAYED AFTER SPOREDDING TO PREVENT PLASTIC SHRINKAGE WHEN TEMPERATURE IS ABOVE 30°C BUT NOT EXCEEDING 35°C OR WHEN WIND SPEED EXCEEDS 40 KPH AND AIR TEMPERATURE EXCEEDS 25 DEGS. DO NOT POUR DURING RAIN EVENTS.

C23. CONCRETE SLABS ON GROUND SHALL BE POURED ONTO UNDERLAY MEMBRANE WHICH SHALL BE HIGH-IMPACT RESISTANCE POLYETHYLENE FILM TO AS 1326 GRADE IR3. MINIMUM THICKNESS SHALL BE 0.2mm LAP JOINTS SHALL HAVE AT LEAST 200mm OVERLAP. SEALED WITH PRESSURE-SENSITIVE ADHESIVE TAPE. PLACE METAL OR PLASTIC PLATES UNDER REINFORCING CHAIRS TO AVOID PUNCTURING MEMBRANE.

C24. SUPPORT PROPPING SHALL BE LEFT IN PLACE AS REQUIRED IN ORDER TO AVOID OVERSTRESSING A COMPLETED FLOOR DUE TO CONSTRUCTION LOADINGS. (SEE FWS AND PT14)

C25. BRICKWORK OR UNREINFORCED CONCRETE MASONRY BLOCKWORK SHALL NOT BE BUILT ON SUSPENDED CONCRETE SLABS OR BEAMS UNTIL SUPPORTING FORMWORK HAS BEEN REMOVED AND DEAD LOAD REFLECTION COMPLETED. (SEE FW5).

C26. ALL HORIZONTAL C.J. TO HAVE CHEMICAL RETARDANT APPLIED ALLOW FOR 100% SCABBED SURFACE TO BE FORMED. HIGH PRESSURE BLAST AS REQUIRED. ALL VERTICAL C.J. 100% MECHANICALLY SCABBED. FOR LARGE POURS, CONTRACTOR TO SUBMIT PLACEMENT METHODOLOGY TO LIMIT INTERNAL TEMPERATURE RISE AND EARLY AGE CRACKING. THIS INCLUDES ELEMENTS > 1000mm DEEP. CONCRETE PLACEMENT TEMP. BELOW 30°C AND MAX INTERNAL TEMPERATURE WITHIN THE POUR OF 65°C AND A MAX TEMPERATURE DIFFERENTIAL WITHIN THE CONCRETE POUR TO BE LESS THAN 25°C.

C27. ALL WATERPROOFING DETAILS AND COMPONENT SELECTION TO WATERPROOF ENGINEER / CONTRACTORS REQUIREMENTS.

C28. ALL CONCRETE REPAIR TO CONCRETE TECHNOLOGIST REQUIREMENTS. ALL REPAIRS TO BE INSPECTED AND CERTIFIED BY CT.

C29. REFER TO ELECTRICAL CONSULTANT FOR ALL ELECTRICAL CONTINUITY DETAILS, AND LIGHTNING PROTECTION.

MASONRY

M01. MATERIALS, INCLUDING MORTAR, CONCRETE, GROUT, WALL TIES AND REINFORCEMENT, SHALL COMPLY WITH AS 3700 SECTION 10. MASONRY UNITS SHALL COMPLY WITH AS 4455. MORTAR CLASS XXX. DURABILITY CLASS XXX. IF NOT NOTED MORTAR CLASS SHALL BE M4 & DURABILITY CLASS R4.

M02. MASONRY SHALL BE CONSTRUCTED IN ACCORDANCE WITH AS 3700 SECTION 11.

M03. MORTAR MATERIALS SHALL COMPRISE:

- CEMENT - TYPE GP CEMENT TO AS 3972.

- LIME - TO AS 1672.1

- SAND - FINE WITH LOW CLAY CONTENT

- FREE FROM EFFLORESCENT SALTS.

- SELECT FOR COLOUR AND GRADING

NO ADMIXTURES SHALL BE USED WITHOUT PRIOR APPROVAL OF SCP CONSULTING. COLOURING PIGMENTS SHALL BE COMPATIBLE WITH CEMENT AND TO BS 1014 BUT SHALL NOT EXCEED 10% BY WEIGHT OF CEMENT.

M04. MORTAR PROPORTIONS SHALL COMPLY WITH AS 3700 AND SHALL MEET THE REQUIREMENTS OF AS 3700 FOR DURABILITY UNO AND THE PROPORTIONS FOR NORMAL MASONRY SHALL BE MORTAR TYPE M3.

- 1 PART GP CEMENT

- 1 PART LIME

- 6 PARTS SAND

UNLESS SHOWN OTHERWISE ON STRUCTURAL DRAWINGS OR APPROVED BY SCP CONSULTING, GROUTED AND REINFORCED MASONRY SHALL BE MORTAR TYPE M4 (1 PART GP CEMENT TO 4 PARTS SAND). MORTAR ADMIXTURE SHALL NOT BE USED WITHOUT THE APPROVAL OF SCP CONSULTING.

M05. ALL CONCRETE BLOCKWORK UNITS SHALL BE GRADE 15 UNO ON STRUCTURAL DRAWINGS (COMPRESSIVE STRENGTH $f_c = 15$ MPa) CONFORMING TO AS4455 ALL CLAY BRICK UNITS SHALL BE GRADE 20. SUBMIT CERTIFICATES CONFIRMING CONFORMANCE FOR APPROVAL BEFORE CONSTRUCTION COMMENCES.

M06. BED JOINT REINFORCEMENT SHALL BE GALVANISED WOVEN WIRE MESH OR WELDED WIRE TO AS 2975, LAPPED 450 AT SPLICES.

M07. DAMP PROOF COURSES, FLASHINGS AND WEATHERINGS SHALL COMPLY WITH AS 2904. DAMP PROOF COURSES SHALL BE LAID IN LONG LENGTHS TO FULL WIDTH OF WALLS AND PIERS. LAP FULL WIDTH AT ANGLES AND AT INTERSECTIONS AND 150mm AT JOINTS. ALL CAVITIES BELOW GROUND LEVEL SHALL BE MORTAR OR GROUT FILLED.

M08. WALL TIES SHALL CONFORM TO AS 2699. MASONRY SHALL BE STABILISED AT ALL MEMBERS BY PROVISION OF GALVANISED MEDIUM DUTY FRAME TIES AT 400 CTS HORIZONTALLY AND 400mm CTS VERTICALLY. FOR CAVITY CONSTRUCTION, HORIZONTAL SPACING OF TIES SHALL BE 600mm. VERTICAL SPACING SHALL BE 600mm. MINIMUM EMBEDMENT SHALL BE 75mm. MASONRY SHALL BE TIED TO STEEL OR CONCRETE COLUMNS AT 400mm MAXIMUM VERTICAL CENTRES. TIE TO ALL TO SLAB SOFFITS WITH MEDIUM DUTY EXPANSION TIES AT 400mm CENTRES HORIZONTALLY. REFER CLAUSE 3.4 AND 4.1 OF AS3700.

M09. ALL WALL TIES TO BE STAINLESS STEEL. IF CONSTRUCTION IS WITHIN 1KM OF A SURF COAST, 100m OF NON-SURF COAST, OR WITHIN 1km OF MAJOR INDUSTRIAL COMPLEX PRODUCING ACIDIC POLLUTION, OR OTHER CLASS R4 AREAS AS DEFINED IN TABLE 5.1 OF AS3700

M10. WORKMANSHIP GENERALLY SHALL COMPLY WITH SECTION 11 OF AS 3700 AND

- DAMAGED BLOCKWORK UNITS SHALL NOT BE USED

- MOISTURE CONTROL - BLOCKS NOT TO BE WETTED.

- TOLERANCES IN CONFORMITY WITH TABLE 11.1 OF AS 3700

- CUTTING BY MASONRY SAW ONLY

- CHASES - DO NOT CHASE BLOCKWORK OR BRICKWORK WITHOUT APPROVAL OF SCP CONSULTING. HOLLOW BLOCKS OR BRICKS SHALL NOT BE CHASED UNDER ANY CIRCUMSTANCES MAXIMUM CHASE DEPTH IN CORE FILLED BLOCKWORK TO BE 20mm.

- JOINT FINISH TO AS 3700 CLAUSES 4.9.2 AND 11.4.15

- BONDING - STRETCHER BOND

- BONDING AT INTERSECTIONS OR ACROSS VERTICAL JOINTS BY EITHER MASONRY BONDING TO AS 3700 CLAUSE 4.11.2 OR TO THE BONDING TO AS 3700 CLAUSE 4.11.3

- CLEAN MASONRY PROGRESSIVELY TO REMOVE MORTAR SMEARS, STAINS, DISCOLOURATION.

- KEEP PERPENDS IN ALTERNATE COURSES VERTICALLY ALIGNED

M11. HORIZONTAL BED JOINT REINFORCEMENT SHALL BE PERMISSIBLE AS A MEANS OF CRACK CONTROL. THE LONGITUDINAL WIRES OF SUCH REINFORCEMENT SHALL BE A MIN. OF 2 WIRES EACH 3mm DIA. CONCRETES TO AS 2875 AND BE CORROSION RESISTANT. JOINT REINFORCEMENT SHOULD BE LOCATED IN THIRD BED JOINT ABOVE BOTTOM OF WALL. IN SECOND BED JOINT BELOW TOP OF WALL. IN FIRST TWO BED JOINTS IMMEDIATELY ABOVE AND BELOW ALL OPENINGS AT FLOOR LEVELS. AT VERTICAL SPACINGS NOT EXCEEDING 500mm. AT OPENINGS, REINFORCEMENT TO EXTEND BEYOND EDGE BY 600mm. REINFORCEMENT NOT TO EXTEND THROUGH CONTROL JOINTS. LAP 450mm AS REQUIRED

M12. MAX. SPACING OF VERTICAL CONTROL JOINTS SHALL BE:

(A) 3M FOR 150mm BLOCKS

(B) 3.5M FOR 140mm BLOCKS

(C) 3M FOR 90mm BLOCKS

M13. LOCATION OF VERTICAL CONTROL JOINTS SHALL BE:

(A) AT CHANGES IN WALL THICKNESS EXCEPT FOR PIERS AND BUTTRESSES.

(B) AT CHASES AND RECESSES FOR PIPING COLUMN FIXTURES, ETC.

(C) AT SIDES OF WALL OPENINGS AND NEAR WALL INTERSECTIONS.

(D) TO MATCH ANY EXPANSION JOINTS IN CONCRETE ABOVE OR BELOW

(E) AT JOINTS IN FOOTINGS OR AT CHANGES OF SUPPORTING STRUCTURE

(i.e. FOOTINGS, SUSPENDED SLABS etc.)

VERTICAL CONTROL JOINTS SHALL COMPLY WITH TECHNICAL NOTE 61 PUBLISHED BY CEMENT AND CONCRETE ASSOCIATION. CONTROL JOINTS SHALL BE WEATHER PROTECTED WHERE NECESSARY BY FLEXIBLE CALKINGS AND TIED WITH TELESCOPIC TYPE FRAME TIES ACROSS THE JOINT.

M14. THE SUB-CONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF ALL MASONRY WALLS DURING CONSTRUCTION.

M15. WHERE WALLS ARE NON-LOADBEARING THEY SHALL BE SEPARATED FROM ANY SUSPENDED CONCRETE SLABS OVER BY A 20MM THICK COMPRESSIBLE LAYER.

M16. WHERE LOAD-BEARING BLOCKWORK SUPPORTS CONCRETE SLABS, ALL BED JOINTS SHALL BE FULL AND THE TOP COURSE SHALL HAVE BOND BEAMS WITH CORES FILLED WITH MORTAR AND LEVELED SMOOTH PRIOR TO CONSTRUCTION OF SLABS WITH TWO LAYERS OF EMBOSSED POLYETHYLENE BETWEEN CONCRETE SLAB & BOND BEAM. WHERE LOAD-BEARING BROCKWORK SUPPORTS R.C. SLABS, SMOOTH TOP COURSE WITH MORTAR AND PROVIDE TWO LAYERS OF EMBOSSED POLYETHYLENE BETWEEN CONCRETE SLAB AND MORTAR.

M17. ALL DETAILS OF CONNECTIONS TO SUPPORTING ELEMENTS, TIES, ETC. SHALL BE AS SHOWN ON THE STRUCTURAL DRAWINGS OR CONFORM TO THE REQUIREMENTS OF AS 3700 IF NOT SHOWN ON THE STRUCTURAL DRAWINGS.

M18. LINTELS SHALL BE GALVANISED (STAINLESS STEEL FOR DURABILITY CLASS R4) AND SIZED AS PER THE DESIGN CONSULTANTURAL SPECIFICATION UNLESS SHOWN ON STRUCTURAL DRAWINGS. MINIMUM BEARING AT EACH END 100mm (OPENING LESS THAN 1 METRE) 150mm (OPENINGS GREATER THAN 1 METRE)

M19. APPLY WATERPROOF MEMBRANE TO REAR OF ALL RETAINING WALLS.

M20. DO NOT CONSTRUCT MASONRY WALLS AND SUSPENDED CONCRETE SLABS UNTIL THEY HAVE BEEN STRIPPED AND PROPPING HAS BEEN REMOVED.

M21. INSPECTION.

THE SUB-CONTRACTOR SHALL GIVE 24 HOURS NOTICE TO ALLOW INSPECTION OF:

- ITEMS TO BE BUILT-IN LOCATED IN THEIR CORRECT POSITION, INCLUDING DAMP-PROOF COURSE, FLASHINGS, BOLTS, STRUCTURAL STEELWORK AND THE LIKE.

- LINTELS IN POSITION

- REINFORCEMENT IN PLACE IN CORE HOLES BEFORE PLACING CONCRETE.

- BOTTOMS OF CAVITIES AFTER CLEANING OUT

- BOTTOMS OF CORE HOLES BEFORE GROUTING

- CONTROL JOINTS READY FOR INSERTION OF JOINT FILLER

M22. MAXIMUM SPACING OF WALL STIFFENERS SHALL BE 20 x WALL THICKNESS UNO ON THE DESIGN CONSULTANTURAL PLAN. WALL STIFFENERS TO BE RHS TYPE EMBEDDED IN THE BLOCK CORE WITH GROUT AND NOMINATED COVER. REFER TYPICAL DETAIL. WALL STIFFENERS IN EXTERNAL WALLS TO BE HOT DIPPED GALVANISED.

REINFORCED MASONRY

(TO BE READ IN CONJUNCTION WITH MASONRY NOTES)

IN ADDITION TO THE REQUIREMENTS FOR MASONRY THE FOLLOWINGS SHALL APPLY FOR REINFORCED MASONRY:

RM1. REINFORCEMENT SHALL COMPLY WITH AS 4671. GRADE D500 (SEE CLAUSE C7) STAINLESS STEEL REINFORCEMENT SHALL COMPLY WITH AS2387.

RM2. BLOCKWORK SHALL BE REINFORCED IN ACCORDANCE WITH THE DETAILS PROVIDED ON THE STRUCTURAL DRAWINGS. REINFORCED CONCRETE BLOCKWORK SHALL COMPLY WITH THE FOLLOWING UNO ELSEWHERE ON THE STRUCTURAL DRAWINGS:
- BLOCKS SHALL BE STRENGTH GRADE 15 CONFORMING TO AS1500
- MORTAR SHALL BE CLASSIFICATION M4
- PROVIDE 55MM COVER FROM THE OUTSIDE OF THE BLOCKWORK TO ALLOW ADEQUATE GROUT COVER

RM3. CORES IN BLOCKWORK TO BE FILLED WITH GROUT SHALL HAVE A HOLE MACHINE CUT IN THE BASE OF EACH CORE TO BE FILLED OR PROVIDE STANDARD "KNOCK OUT" BLOCK ON THE SIDE DECIDED BY THE DESIGN CONSULTANT. ROD CORE HOLES CLEAN TO REMOVE PROTRUDING MORTAR PINS. AFTER INSPECTION COVER HOLE WITH FORMWORK AND GROUT CORE.

RM4. BLOCKWORK CORES WHERE REQUIRED SHALL BE FILLED WITH GROUT OF CHARACTERISTIC COMPRESSIVE STRENGTH OF 20 MPa, SLUMP 230 +/- 30MM. FOR READY MIXED GROUT SUPPLIED AND CERTIFIED BY CONCRETE SUPPLIER. GROUT SHALL HAVE A CEMENT CONTENT NOT LESS THAN 300 Kg/cu.m. MORTAR SHALL BE LEFT FOR 3 DAYS MINIMUM BEFORE POURING GROUT.