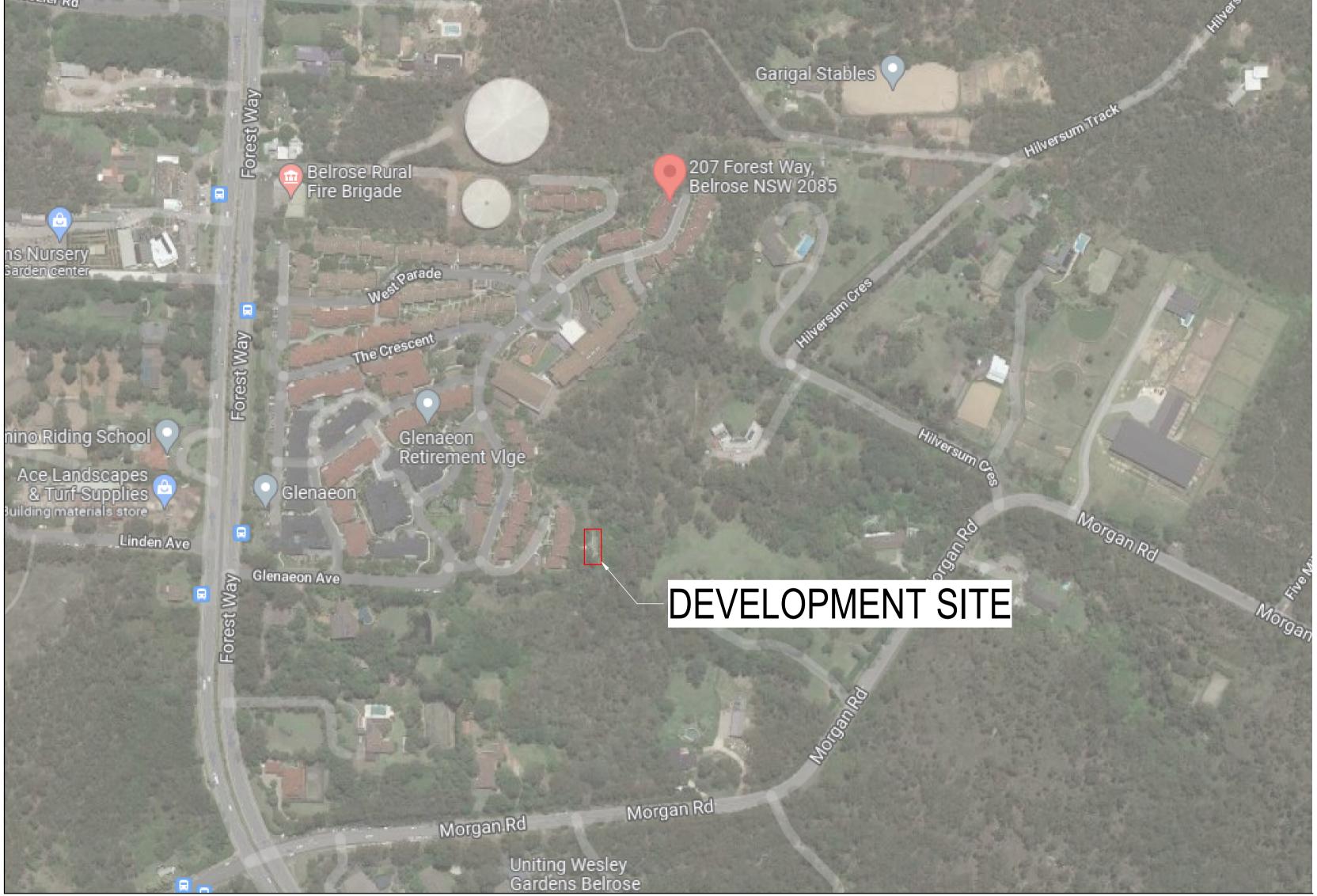
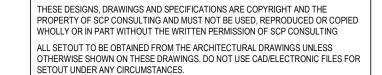
207 FOREST WAY, BELROSE, NSW 2085



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 DÉTAIL
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-RLAN
GLN-H-D-20004	HYDRAULIC SERVICES	OVERALL SITE PLAN
GLN-H-D-20005	HYDRAULIC SERVICES	ELEVATIONS
<u> GLN-}+}-D-5000}~~~~</u>	HYDRAULICSERVICES	SECTIONSOF
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 MSB PH					
GLN-E-D-90001	ELECTRICAL AND ICT SERVICES	ELECTRICAL SERVICES SCHEMATIC MSB AND METERING PANEL					

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			







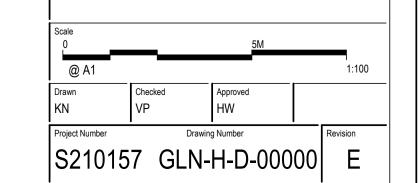


▲ ABN 80 003 076 024

LENDLEASE

GLENAEON RETIREMENT LIVING - SPS UPGRADE PROJECT

COVER SHEET AND DRAWING INDEX



SYMBOLS

AIR ADMITTANCE VALVE

CHECK VALVE

ISOLATION VALVE

KAMLOCK COUPLING

NON-RETURN VALVE

NORMALLY CLOSE ISOLATION VALVE

PRESSURE REDUCING VALVE

MONITORED GATE/ISOLATION VALVE

HOSE TAP

 $\bigcirc$ 

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 $\bowtie$ 

KKK

24/03/2022

16/03/2022

09/03/2022

27/01/2022

Date

# **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).
  - WSA02-2002:1. PLANNING AND DESIGN.
- 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
- 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.
- 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.
- THE CONTRACTOR SHALL COORDINATE THEIR WORK WITH ALL OTHER TRADE CONTRACTORS AND OTHER CONSULTANT'S DRAWINGS AND SPECIFICATION.
- ALL VENT PIPES SHALL TERMINATE ABOVE THE ROOF.
- 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.
- PENETRATIONS THROUGH FIRE RATED STRUCTURES SHALL HAVE FIRE COLLARS INSTALLED AS NECESSARY TO PRESERVE THE INTEGRITY OF THE STRUCTURE
- THE CONTRACTOR SHALL SUPPLY ALL MATERIALS NECESSARY TO COMPLETE AN OPERATIONAL SYSTEM AS THOUGH SHOWN IN THE DOCUMENTS IN FULL.
- WATER PIPE SIZES ON DRAWINGS ARE BASED ON COPPER PIPE DIMENSIONS.
- 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.
- APPROVED AS INSTALLED DRAWINGS SHALL BE SUBMITTED BY THE CONTRACTOR.
- ALLOW TO SUPPLY AND INSTALL SANITARY FIXTURES, TAPWARE AND FITTINGS COMPLETE WITH ALL BRACKETS, SEALANTS, UNIONS, ETC.
- PROPRIETARY BRAND NAMES USED ARE DESCRIPTIVE. EQUAL QUALITY AND PERFORMANCE APPROVED ALTERNATIVE MAKES MAY BE USED.
- ACOUSTIC RATINGS SHALL BE ACHIEVED IN COMPLIANCE WITH THE BCA.
- ISOLATION VALVES ARE TO BE LOCATED IN ACCESSIBLE LOCATION OR BE PROVIDED WITH
  - TANK BASE TO BE EPOXY LINED WITH FLEXIBLE WATERPROOFING MEMBRANE THROUGHOUT WET WELL AND EMERGENCY TANK 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.
- ALL PENETRATIONS TO BE SEALED WITH CHAIN LINK AND HYDROPHILIC SEALANT.
- PAINT EXTERIOR WALL AND DRY WELL WALLS WITH HYDROPHOBIC PAINT AND SEALANT (3

#### DECOMMISSIONING PLAN PROCESS **DECOMMISSIONING PLAN PROCESS DESCRIPTION-TABLE 1 DESCRIPTION-TABLE 2** MECHANICAL ELEMENTS ITEM | ACTION/REQUIREMENT STEP 1 INITIAL CHARGES OF LUBRICANT IN ADDITION TO ANY SPECIAL LUBRICANT | ITEM | ACTION/REQUIREMENT

IEP I	REQUIREMENTS FOR INITIAL FLUSHING OR TREATMENT OF THE SYSTEM OR FOR "RUNNING IN".	I I ⊏IVI	ACTION/REQUIREMENT
	TOX ROWING IN .	1	CHECK ALL SAFETY SIGNAGE IS INSTALLED AND IS APPROPRIATE E.G.
TEP 2	RUN PHYSICAL CHECKS AND TESTS SUCH AS COMPLETENESS OF ASSEMBLY, ROTATIONAL TESTS (INCLUDING CHECKING THAT THE ROTATION		CRANE SWL, 'DANGER' AUTOMATIC EQUIPMENT SIGNS, HEARING PROTECTION REQUIREMENT ETC.
	OF ELECTRICAL MOTORS IS IN THE CORRECT DIRECTION), ALIGNMENT CHECKS, BALANCING AND VIBRATION CHECKS, TEMPERATURE, PRESSURE AND FLOW MEASUREMENTS, CLEARANCES, BELT ALIGNMENT AND TENSION,	2	CHECK BUILDING AND EQUIPMENT IDENTIFICATION E.G. SITE SIGNAGE, SEWAGE PUMPS, PIPEWORK, GAUGES AND ISOLATING VALVES
	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 CERTIFY COMPLIANCE OF EACH ITEM IN TABLE 2 AND SUBMIT A SIGNED

COPY PRIOR TO COMMISSIONING.

ABBREVIATIONS

AIR ADMITTANCE VALVE

- - 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.

CHECK THAT ALL EQUIPMENT IS PROPERLY GUARDED

REQUIREMENTS AND ARE PROPERLY INSTALLED

- CHECK PRESSURE GAUGE COCKS PROVIDED ON THE SEWAGE PUMP SIDE OF EACH REFLUX VALVE AND ONE ON THE PRESSURE MAIN SIDE
- SUITABLY SUPPORTED AND ANCHORED CHECK ALL SEWAGE PIPEWORK VALVES E.G. GATE VALVES COMPLY WITH WSA PS-261 AND REFLUX VALVES COMPLY WITH WSA PS-264. GATE VALVES AND REFLUX VALVES OPERATE AND GATE VALVE DIRECTION FOR CLOSING
- IS CORRECT ORIENTATION 14 CHECK CHART RECORDER SUPPLIED (IF SPECIFIED)
- CHECK DIRECTION OF ROTATION OF ALL ROTATING EQUIPMENT IS CORRECT AND FREE WITH THE RELEVANT GATE VALVE OPEN, START ONE SEWAGE PUMP IN
- SHUT GATE VALVE AND RESTART PUMP AND CHECK FOR ANY LEAKS IN PIPEWORK OR AT THE DISCHARGE CONNECTION
- FLOW. CHECK PUMP PERFORMANCE AGAINST TEST RESULTS 20 CHECK PIPEWORK FOR LEAKAGE
- 22 CHECK ALL INSTRUMENTS AND CONTROLS ARE PERFORMING CORRECTLY CHECK OPERATION OF THE ALTERNATING SET AT NO LOAD AND THEN WITH UTILITY POWER SWITCHED OFF UNDER DESIGN OPERATING CONDITIONS E.G. WITH SEWAGE
- WITHOUT UNDUE NOISE, VIBRATION AND EXHAUST SMOKE CHECK NOISE LEVELS FOR PUMPING STATION AND ALTERNATING SET
  - AGENCY RECORDING ALL TEST RESULTS OBSERVATIONS AND PROVIDING RELEVANT COMMENT AS REQUIRED
  - CHECK THAT ALL O&M MANUALS, AND EQUIPMENT FACTORY TEST REPORTS ARE AVAILABLE

### **DECOMMISSIONING PLAN PROCESS** DESCRIPTION-TABLE 2

#### ITEM | ACTION/REQUIREMENT CHECK "DANGER ELECTRIC" MARKER BRICKS ARE INSTALLED AT GROUND LEVEL AND PAINTED YELLOW CHECK POLE / PILLAR TERMINATION METHOD IS AS PER THE SPECIFICATION AND THE SUPPLY AUTHORITY REQUIREMENTS CHECK CABLE SUPPORTS FOR THE PUMP CABLES, LEVEL PROBE AND ANY LEVEL REGULATORS ARE CORRECTLY LOCATED AND PROPERLY FIXED CHECK MOTOR CABLES ARE SUPPORTED IN THE WET-WELL SO AS TO AVOID DAMAGE WHEN REMOVING OTHER PUMP/PUMPS CHECK LEVEL PROBE SUPPORT BRACKET SUITS THE CABLE CLAMP CHECK LEVEL PROBE IS MINIMUM 300 MM CLEAR OF ALL METAL COMPONENTS CHECK LEVEL PROBE HAS BEEN ADJUSTED SO THAT THE PROBE IS AT THE 34 CORRECT LEVEL (FOR VEGA PROBES THIS IS NORMALLY BOTTOM WATER

CHECK EARTH PIT, MAIN EARTH ELECTRODE AND WATER SERVICE BOND

CHECK ALL CABLES ARE PROPERLY GLANDED AT THE SWITCHBOARD

CHECK APPROPRIATE LUGS FITTED TO ALL FLEXIBLE CABLES, AND CABLES

CHECK PUMP DETAIL PLATE (IN SWITCHBOARD) HAS BEEN ENGRAVED WITH

SET THE OVERLOADS TO THE MOTOR RATING (0.58 TIMES FOR STAR/DELTA),

SET OVERLOADS TO MANUAL AND TRANSITION TIMERS TO 5 SECONDS

CHECK ALL SWITCHBOARD TERMINATIONS HAVE BEEN RETENSIONED,

PARTICULARLY THOSE TERMINATIONS CARRYING MOTOR CURRENT

CHECK ALL TERMINAL NUMBERS ARE AS SHOWN ON THE DRAWINGS

CHECK ALL OTHER MOTOR PROTECTION EQUIPMENT OPERATES AS SPECIFIED

CHECK A WIRE NUMBERS ARE AS SHOWN ON THE DRAWINGS

CHECK ALL FUSES/CIRCUIT BREAKER SETTINGS ARE CORRECT

CHECK MOTOR TERMINATIONS ARE IN ACCORDANCE WITH THE

CONFIRM THAT "NOTIFICATION OF ELECTRICAL WORK" HAS BEEN

OFF, TURN THE MAIN SWITCH ON AND CHECK THAT THE SUPPLY

MONITORING RELAY PICKS UP (INDICATING CORRECT SUPPLY PHASE

SUBMITTED TO SUPPLY AUTHORITY AND WATER AGENCY

CONNECTION DIAGRAM. WITH STAR-DELTA STARTERS, CABLE NO. 1 IS

CHECK THAT ELECTRICITY SUPPLY HAS BEEN CONNECTED AND ENERGISED

CHECK ALL CONTROL SWITCHES AND SEQUENCES OPERATE AS SPECIFIED

CHECK CALIBRATION OF ALL ANALOGUE SIGNALS (INCLUDING FLOW AND

CHECK THAT ALL ALARMS ARE TRANSMITTED BACK TO CENTRAL ALARM

CHECK SIGNAL STRENGTH AND FADE MARGINS ON RADIO TX/RX IF INSTALLED

MEASURE THE VOLTAGES BOTH PHASE TO PHASE AND PHASE TO NEUTRAL.

ISOLATING SWITCHES OFF, MEGGER ALL MOTORS AT 500V. THIS MUST GIVE

COMPARE THE ACTUAL VOLTAGES RELATIVE TO TYPICAL NO-LOAD VOLTAGE OF 435/250V, AND THE VOLTAGE VARIATION BETWEEN PHASES

WITH THE MAIN SWITCH, PUMP CIRCUIT BREAKERS AND CONTROL

CHECK AERIAL SUPPORTS AND MAST IF RADIO COMMUNICATIONS ARE SPECIFIED

WITH THE MOTOR CIRCUIT BREAKERS OPEN AND THE CONTROL ISOLATORS

CARRY OUT POINT TO POINT WIRING CHECKS

PRESSURE TRANSMITTERS)

SHOULD BE LESS THAN 2%

MONITORING POINT

CHECK SETTING OF ALL PRESSURE SWITCHES

CONNECTED TO THE WIRING FROM THE OVERLOAD

(WHERE FITTED). SET "INTEGRAL" BREAKERS INSTANTANEOUS SETTING

IF NO-FLOW PROTECTION IS FITTED SET THE NO-FLOW BYPASS TIMER TO 20

VERIFY LEVEL CONTROLLER CALIBRATION CHECK FLOOD LEVEL REGULATOR HAS BEEN ADJUSTED TO THE REQUIRED

LEVEL AND TERMINATED IN SWITCHBOARD CHECK NO-FLOW PROTECTION EQUIPMENT (IF SPECIFIED) FITTED AND WIRED CHECK SWITCHBOARD HAS BEEN INSTALLED CORRECTLY AND TESTED IN

INSTALLED AND LABELLED AS SPECIFIED

CORRECTLY IDENTIFIED AT TERMINATIONS

CHECK ALL SWITCHBOARD LABELS ARE AS SPECIFIED

CHECK ALL SAFETY LABELS INSTALLED AS SPECIFIED

PUMP MOTOR NAMEPLATE DETAILS

SECONDS

ACCORDANCE TO MANUFACTURERS RECOMMENDATION CHECK EARTH ELECTRODE INSTALLED AS SPECIFIED AND MEASURE AND RECORD EARTH RESISTANCE

10 CHECK ACCESSIBILITY TO EQUIPMENT FOR OPERATION AND MAINTENANCE

CHECK RPZD IS INSTALLED AND HAS BEEN TESTED BY APPROPRIATELY

CHECK THERE IS NO RUBBISH IN THE WET-WELL, INLET MH AND EMERGENCY

CHECK ACCESSIBILITY AND INSTALLATION OF WET-WELL ACCESS COVER.

CHECK STAIRWAYS, HANDRAILS AND LANDING COMPLY WITH DESIGN

CHECK CRANE FUNCTIONALITY AND COVERAGE OVER STRATEGIC

STORAGE WHICH IS LIKELY TO DAMAGE THE SEWAGE PUMPS

LICENSED PLUMBER

VALVES AND APPURTENANCES

**EQUIPMENT** 

CHECK ALL PIPEWORK WITHIN THE PUMPING STATION IS COMPLETE AND

PRIME SEWAGE PUMPS WITH WATER

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

REPEAT FOR BOTH PUMPS RECORDING AMPERAGE, VOLTAGE HEAD AND

CHECK CONTROL AND PROTECTION EQUIPMENT FUNCTIONALITY FOR MANUAL AND AUTOMATIC MODES CHECK INSTRUMENT SET POINTS AND ALARM SETTINGS AND FUNCTIONALITY

PUMPS OPERATING TOGETHER. ALTERNATING SET SHOULD OPERATE

CONDUCT PRE-COMMISSIONING TESTS IN CONJUNCTION WITH THE WATER

DECOMMISSIONING PLAN PROCESS **DESCRIPTION-TABLE 3 ELECTRICAL ELEMENTS** STEP STAGE DESCRIPTION

STEP 1 | COMPLETE THE INSTALLATION INSTALL NEW SEWER PUMP SET AND AND COMMISSIONING OF NEW EMERGENCY STORAGE. PROVIDE ALL SPS AND EMERGENCY NECESSARY MANIFOLD AND EQUIPMENT. STORAGE TANK COMPLETE TANK HYDROSTATIC TESTING. STEP 2 COMMISSIONING ENSURE THAT TESTING AND COMMISSIONING HAS BEEN COMPLETED IN ACCORDANCE WITH CURRENT REGULATIONS 1 STEP 3 | PROVIDE THE NEW CONNECTION WORKS TO BE

STEP 6

SPS FROM THE SITE

CONNECTION AND BYPASS 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 THE CONTENTS OF THE EMERGENCY EMERGENCY STORAGE TANK STORAGE TANK SHALL BE PRESSURE WASHED REMOVED VIA VACUUM AND COLLECTION WELL DECANTING TRUCK IN ACCORDANCE WITH LOCAL COUNCIL REQUIREMENTS. PPE IS RECOMMENDED.

STEP 5 CLEAN THE EMERGENCY THE SIDES, LID, BAFFLE OR PARTITION STORAGE TANK (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. REMOVE THE REDUNDANT

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.

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.

THESE DESIGNS, DRAWINGS AND SPECIFICATIONS ARE COPYRIGHT AND THE





Revision Description

LENDLEASE

TENDER ADDENDUM

ISSUED FOR DRAFT TENDER

A DRAFT SCHEMATIC DESIGN

TENDER ISSUE

GLENAEON RETIREMENT LIVING - SPS UPGRADE **PROJECT** 

HYDRAULIC SERVICES LEGEND AND NOTES

Scale 0		<u>5M</u>		
1 : 1 @ A1				1:100
Drawn KN	Checked VP	Approved HW		
Project Number		Drawing Number		Revision
S2101	57 GL	N-H-D-0(	0001	D

	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

	PUMP		F	FL	FINISHED FLOOR LEVE
			F	W	FLOOR WASTE
			G	i	GULLY
			G	L	GROUND LEVEL
			Н	Т	HOSE TAP
			K	GV	KNIFE GATE VALVE
			N	/C	NORMALLY CLOSED
			Р	DWF	PEAK DRY WEATHER F
			Р	WWF	PEAK WET WEATHER
			0	FG	OVER FLOW GULLY
0ED\ ((4	250   11157 (250		] R	PZD	REDUCED PRESSURE
SERVI	CES LINETYPES		S	PS	SEWER PUMP STATIO
		SEWER DRAINAGE-PROPOSED	S	RM	SEWER RISING MAIN
		SEWER DRAINAGE-EXISTING	S	S/EW	SAFETY SHOWER / EYE
====		SEWER RISING MAIN-PROPOSED	S	W	STORM WATER
====		SEWER RISING MAIN-EXISTING	S	V	STOP VALVE
		NON POTABLE WATER SERVICE	Т	ВС	TO BE CONFIRMED
		ELECTRICAL CONDUIT	T	ур	TYPICAL
==	=======	EXISTING SERVICE BE DEMOLISHED	U	/G	UNDER GROUND
		EXISTING ENCLOSURE TO BE DEMOLISHED	V	P	VENT PIPE

ADWF	AVERAGE DRY WEATHER FLOW
AP	ACCESS PANEL
С	CONDUIT
СО	CLEAR OUT
СР	CONTROL PANEL
CU	COPPER
CVP	CHAMBER VENT PIPE
CW	COLD WATER
FFL	FINISHED FLOOR LEVEL
FW	FLOOR WASTE
G	GULLY
GL	GROUND LEVEL
HT	HOSE TAP
KGV	KNIFE GATE VALVE
N/C	NORMALLY CLOSED
PDWF	PEAK DRY WEATHER FLOW
PWWF	PEAK WET WEATHER FLOW
OFG	OVER FLOW GULLY
RPZD	REDUCED PRESSURE ZONE DEVICE
SPS	SEWER PUMP STATION
SRM	SEWER RISING MAIN
SS/EW	SAFETY SHOWER / EYE WASH
SW	STORM WATER
SV	STOP VALVE
TBC	TO BE CONFIRMED
Тур	TYPICAL
U/G	UNDER GROUND
VP	VENT PIPE

GREATER THAN 1 Mohm, AND IDEALLY GREATER THAN 30 Mohm RECORD RESULTS: PUMP 1.....Mohm PUMP 2.....Mohm PUMP 3.....Mohm 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 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 WITH FLYGT PUMPS, ENSURE THAT AN EARTH HAS BEEN PUT ON S2 CHECK OPERATION OF ALL LOCKS ON SWITCHBOARDS CHECK THAT UPDATED ELECTRICAL DRAWINGS ARE STORED ON SITE SIMULATE A MAINS POWER FAILURE, AND CHECK THAT ALTERNATOR STARTS AUTOMATICALLY (IF SPECIFIED) TEST RUN ALTERNATOR ON FULL STATION LOAD, AND MEASURE NOISE LEVEL AT 1 M AND PROPERTY BOUNDARY

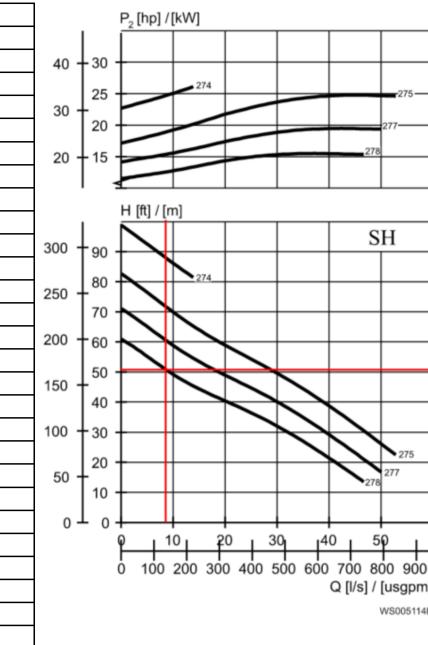
24/03/2022 16/03/2022 09/03/2022

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#### **DESIGN DATA**

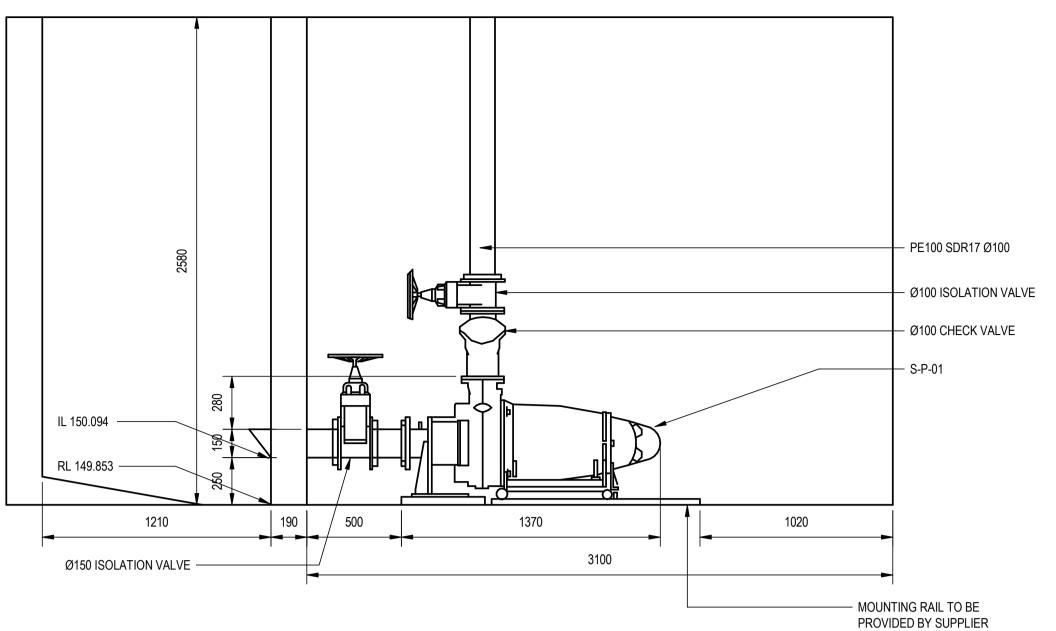
FLOW ESTIMATION	V	
ADWF:	1.76	I/s
PDWF:	4.79	I/s
PWWF:	8.85	l/s
WET WELL		•
PUMP ARRANGEMENT:	DUTY/STANDBY	
PUMP MAKE:	FLYGT FP-3171	
PUMP MODEL:	SH3~ 278	
PUMP IMPELLER:	213	mm
OPERATING POINT - NORMAL OPERATION:	9l/s @51m.hd.	
WET WELL CHAMBER VOLUME:	3140	L
MAX. PUMP STARTS PER HOUR	2.02	
CUT-IT/CUT-OUT 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 STORA	GE	
EQUIVALENT PERSONS	634	EP
WASTE WATER LOAD	150	L/p/d
VOLUME	50720	L
STORAGE CAPACITY	8	hours

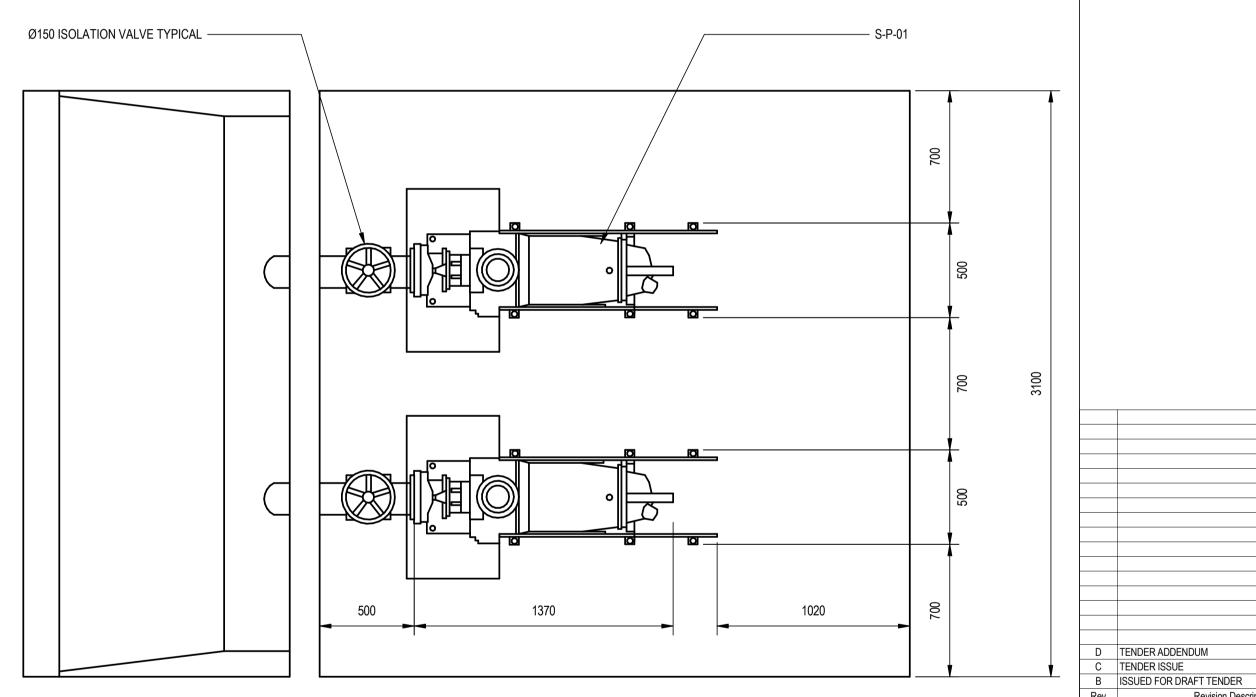
#### N 3171 SH 3 phase 2 poles 60hz; 278mm impeller



### DESIGN DATA AND PUMP CURVES

N.T.S.

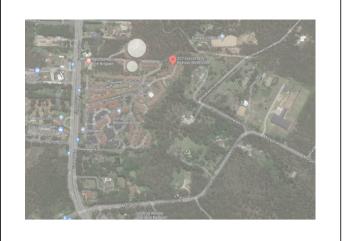




### DETAIL FLYGT PUMP INSTALLATION

1:20

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Rev	Revision Description	Date
	SCD engineers and development consultar	lopment

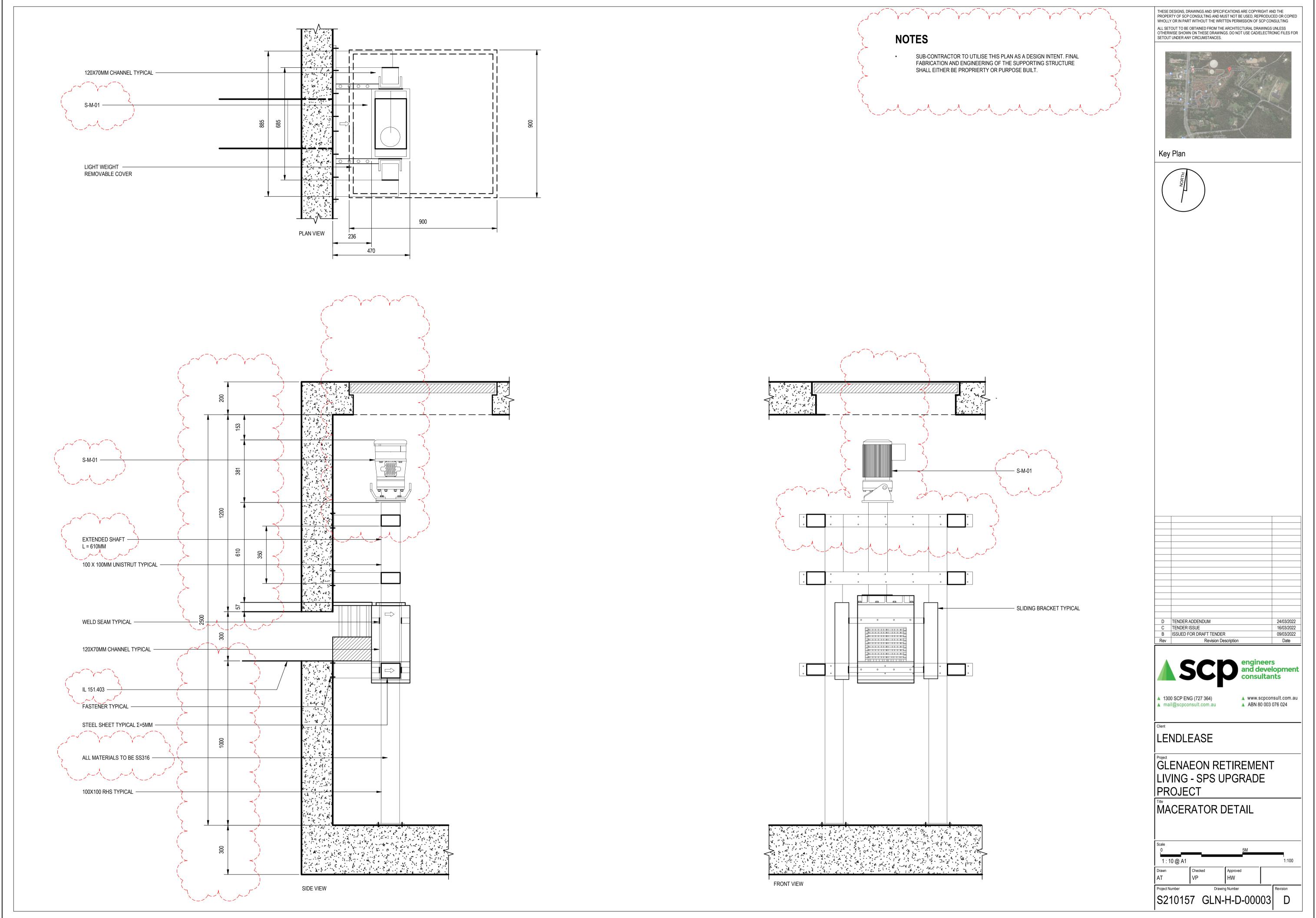
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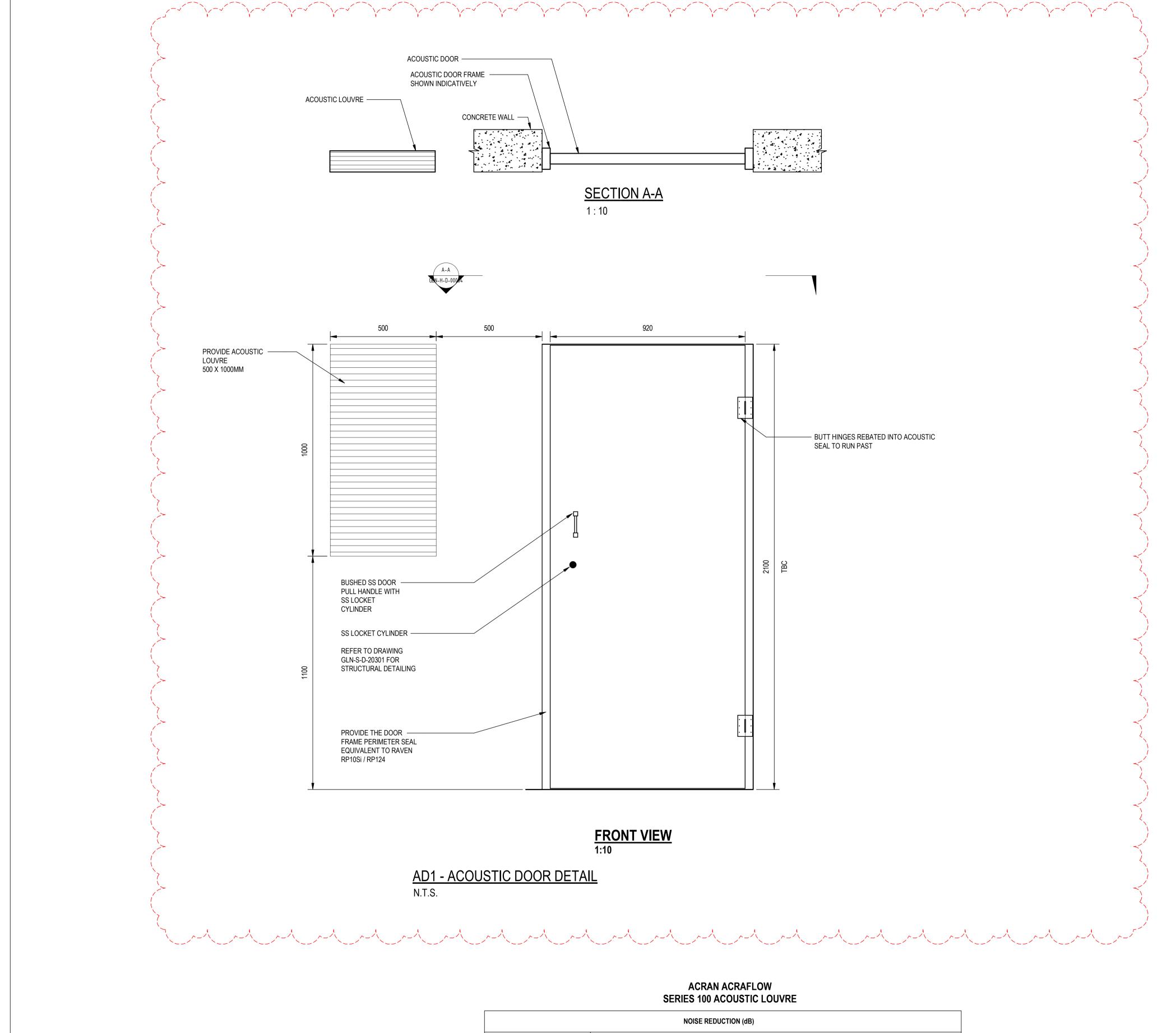
GLENAEON RETIREMENT LIVING - SPS UPGRADE PROJECT

DESIGN DATA AND PUMP CURVES

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As indicated	@ A1			1:100
Drawn KN	Checked VP	Approved HW		
Project Number	С	rawing Number		Revision
S2101	D			







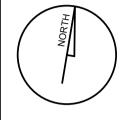
NOISE REDUCTION (dB)							
MODEL		OCTAVE B	AND CENTRE FRE	QUENCIES (Hz)			
	125	250	500	1000	2000	4000	
SERIES 100	14	14	16	21	27	27	dB

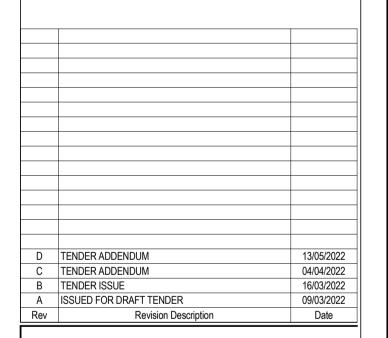
#### NOTES:

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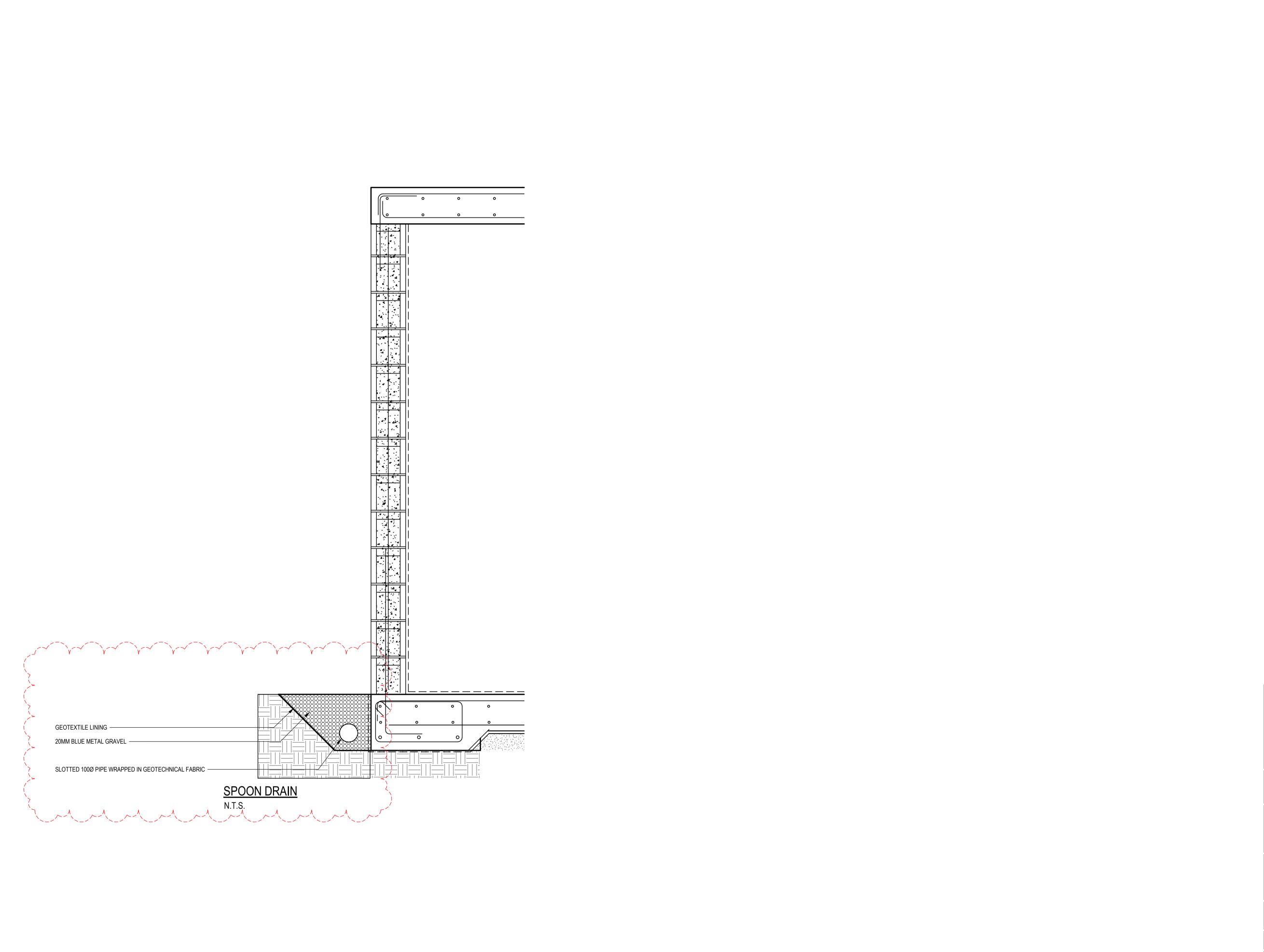
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ACOUSTIC DOOR DETAIL

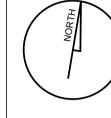
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As indicated	@ A1			1:100
Drawn AT	Checked VP	Approved HW		
Project Number	С	rawing Number		Revision
S2101	57 GLI	N-H-D-00	0004	D

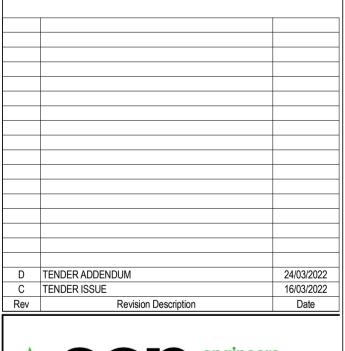


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| Key Pla







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GLENAEON RETIREMENT LIVING - SPS UPGRADE PROJECT

SPOON DRAIN DETAIL

#### 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.

#### LAND DISTURBANCE INSTRUCTIONS

- I. 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 INLET 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 GRADES 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.
- 5ENSURE 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.

#### SITE INSPECTION AND MAINTENANCE INSTRUCTIONS

- 1. THE SITE SUPERINTENDENT WILL INSPECT THE SITE AT LEAST WEEKLY AND AT THE CONCLUSION OF EVERY STORM EVENT TO:
- ENSURE THAT DRAINS OPERATE PROPERLY AND TO EFFECT ANY NECESSARY REPAIRS.
- 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 PLAN WHERE IT PROVES INADEQUATE IN PRACTICE OR IS SUBJECTED TO CHANGES IN
- 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.

#### EROSION AND SEDIMENT CONTROL NOTES

#### SEDIMENT CONTROL INSTRUCTIONS

- . SEDIMENT FENCES WILL BE INSTALLED AS SHOWN ON THE PLAN AND ELSEWHERE AT THE DISCRETION OF THE SITE SUPERINTENDENT TO CONTAIN SOIL 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.
- ACCESS TO SITES SHOULD BE STABILISED TO REDUCE THE LIKELIHOOD OF VEHICLES TRACKING SOIL MATERIALS ONTO PUBLIC ROADS AND ENSURE ALL-WEATHER ENTRY/EXIT.

#### SOIL EROSION CONTROL INSTRUCTIONS

- 1. EARTH BATTERS WILL BE CONSTRUCTED WITH AS LOW A GRADIENT AS PRACTICABLE BUT NO STEEPER, UNLESS OTHERWISE NOTED, THAN:
- 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 GROUNDCOVER 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.
- 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.

#### WASTE CONTROL INSTRUCTIONS

- 1. ACCEPTABLE BINS WILL BE PROVIDED FOR ANY CONCRETE AND MORTAR SLURRIES, 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 BT 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-CONTACTORS ARE TO BE INFORMED OF THEIR OBLIGATION TO USE WASTE CONTROL FACILITIES PROVIDED.
- 4. 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.

TIMBER SLEEPER OR METAL GRID 100mm HIGH AND SPACED AT 200mm CTS. CONTRACTOR SHALL CONDUCT A DIAL BEFORE YOU DIG SEARCH PRIOR TO MIN LENGTH 10m — BERM 0.3m MIN HIGH COMMENCEMENT OF ANY WORK CONSTRUCTION SITE ENSURE THAT ALL COUNCIL AND PUBLIC UTILITY ASSETS ARE MAINTAINED AND PROTECTED AT ALL TIMES IN THE VICINITY OF THE TEMPORARY CONSTRUCTION EXIT N DIAL BEFORE YOU DIG EXISTING ROADWAY 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 DGB20 ROADBASE OR PUNCHED PRODUCT WITH A MINIMUM CBR 30mm AGGREGATE BURST STRENGTH (AS3706.4-90) OF 2500N. RUNOFF FROM PAD DIRECTED TO SEDIMENT TRAP

CONSTRUCTION NOTES

1. STRIP TOPSOIL AND LEVEL SITE.

RUNOFF

THREE LAYERS OF SANDBAGS

WITH ENDS OVERLAPPED

- COMPACT SUBGRADE.
   COVER AREA WITH NEEDLE-PUNCHED GEOTEXTILE.
- 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.

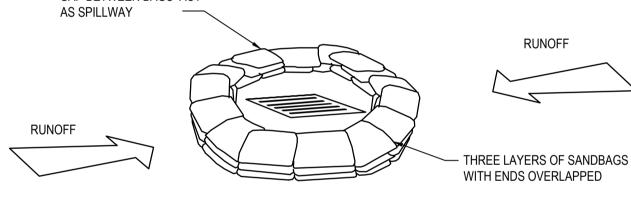
MAINTENANCE NOTES

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.

# TEMPORARY STABILISED CONSTRUCTION EXIT

GAP BETWEEN BAGS ACT



DIRECTION OF FLOW

600

MIN

UNDISTURBED
AREA

VARIES
2600 MIN

**DIVERSION BANK** 

SANDBAG SEDIMENT TRAP - AT OTHER THAN KERB SAG PIT

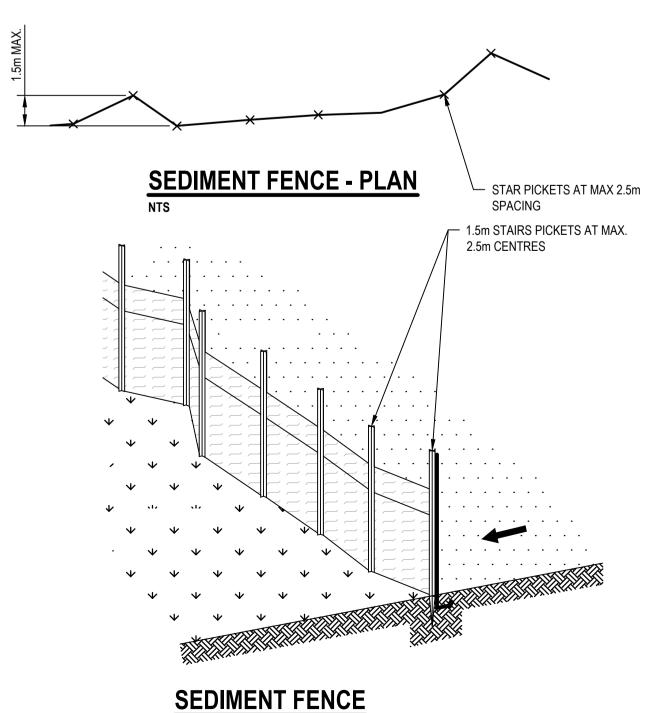
SANDBAG SEDIMENT TRAP - AT KERB SAG PIT

SANDBAGS OVERLAP ONTO

KERB/PAVEMENT BOXING

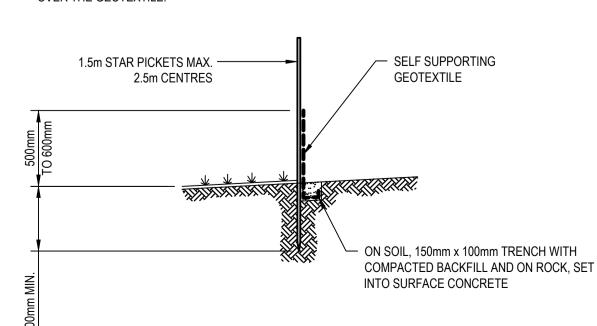
RUNOFF

## SANDBAG SEDIMENT TRAP DETAILS



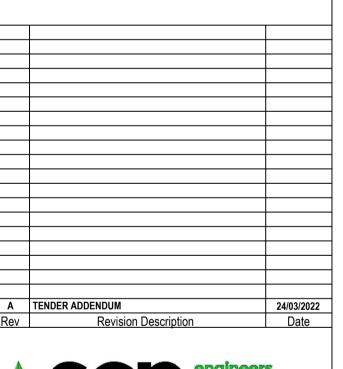
SEDIMENT FENCE

- 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.
- 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.



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Project
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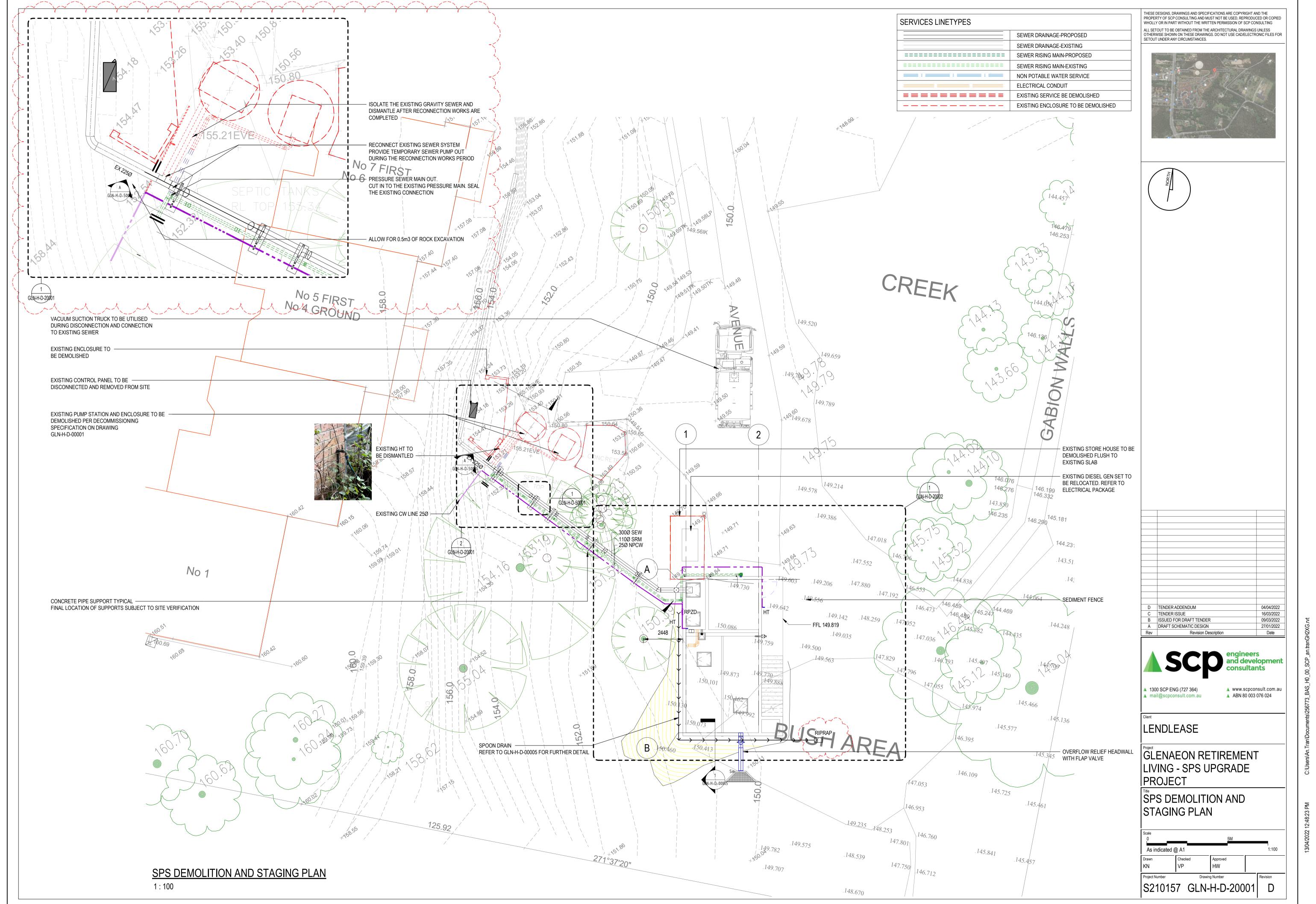
EROSION SOIL CONTROL DETAILS

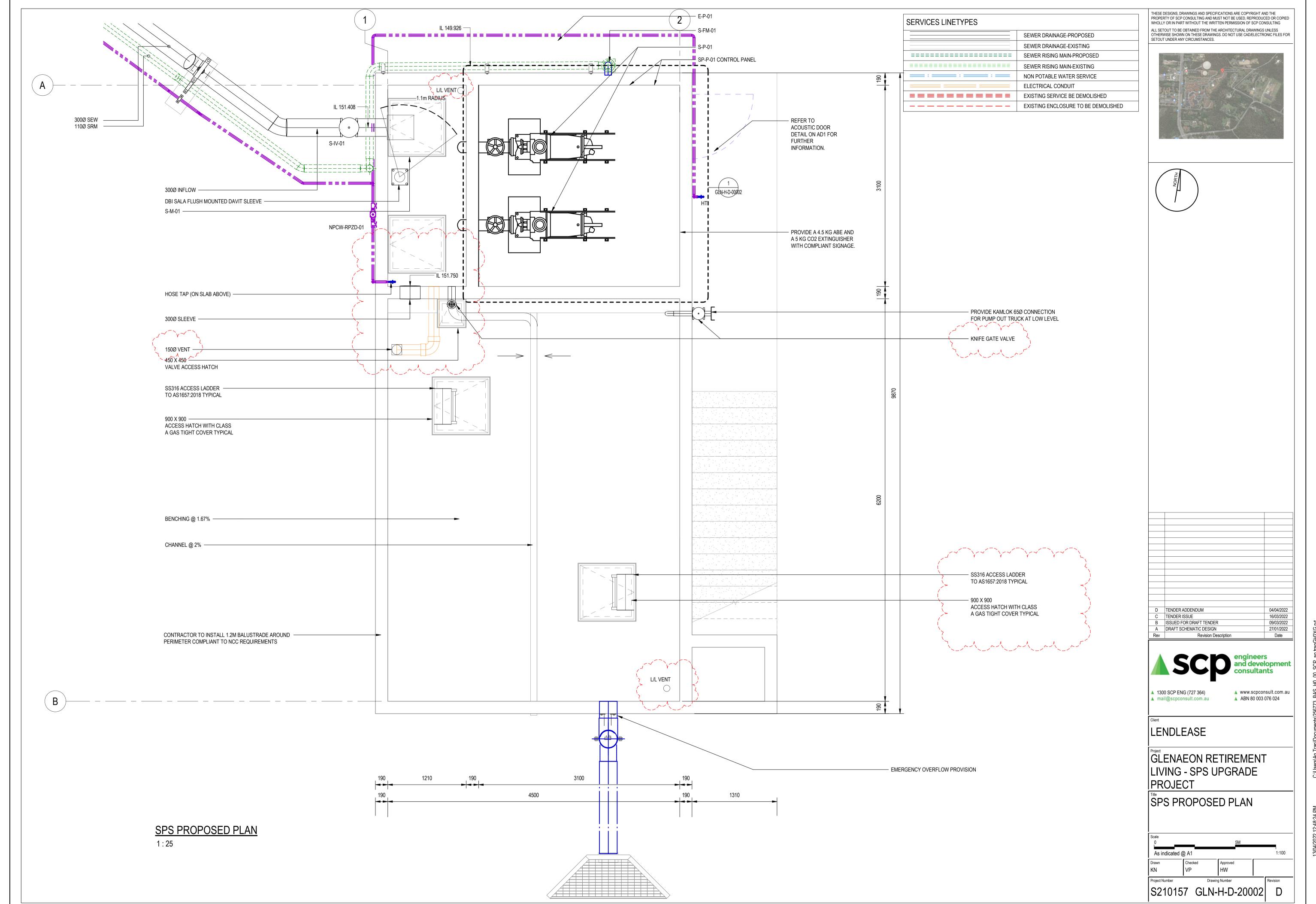
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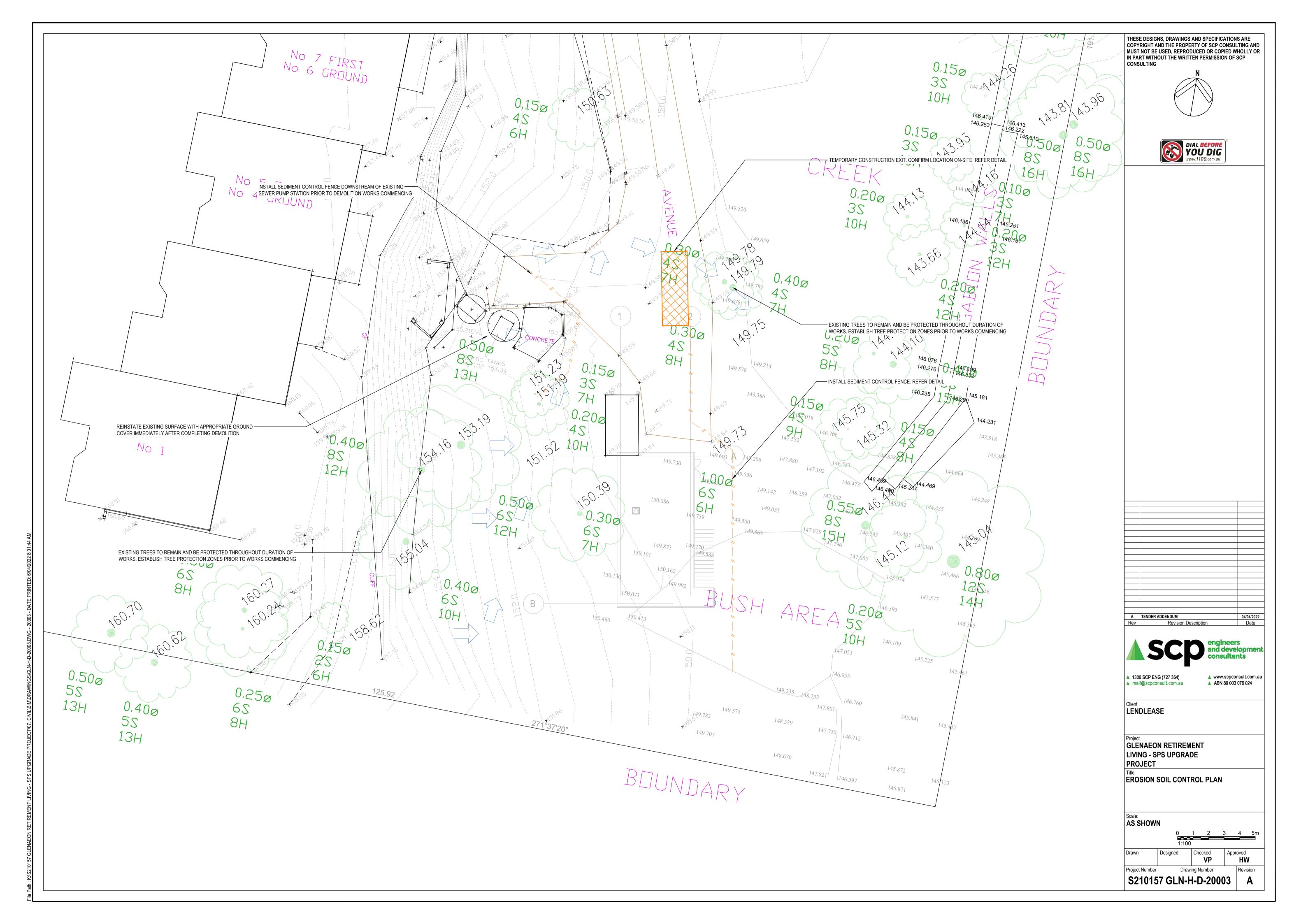
Prawn Designed Checked VP HW

Project Number Drawing Number Revision

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

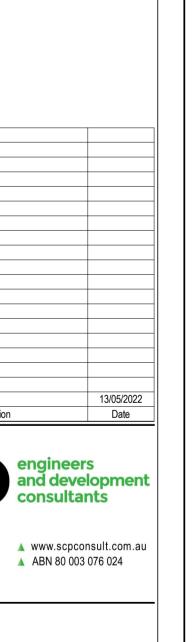


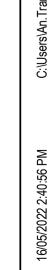


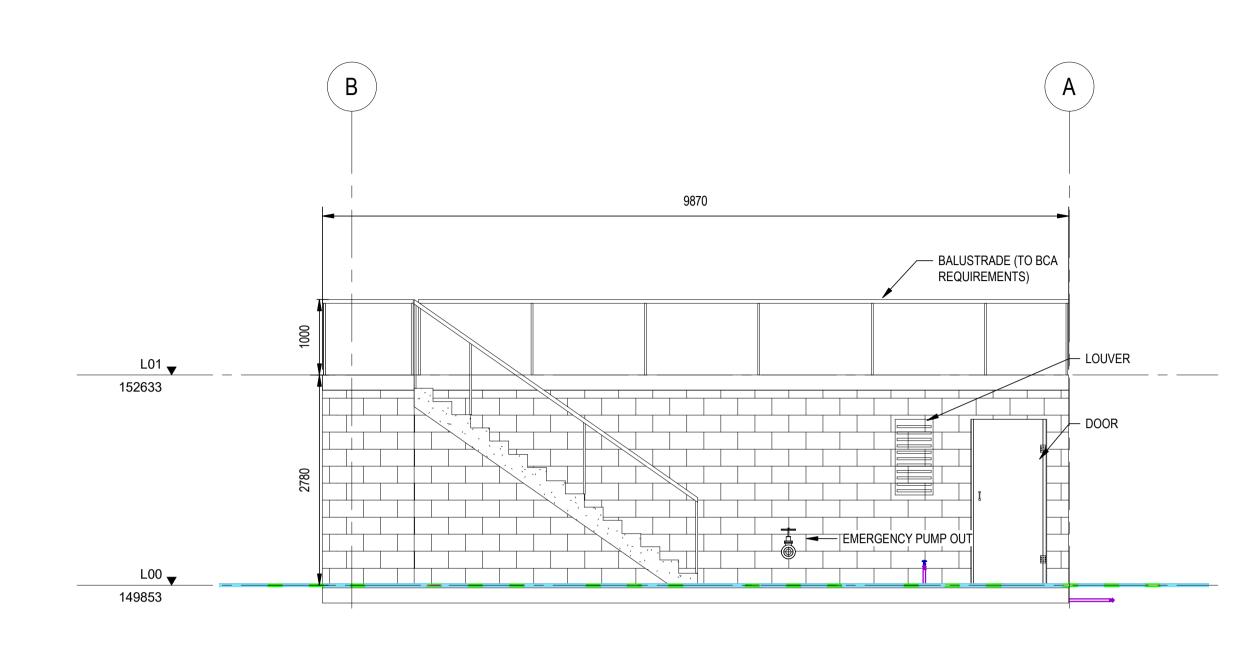






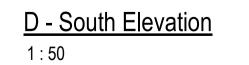


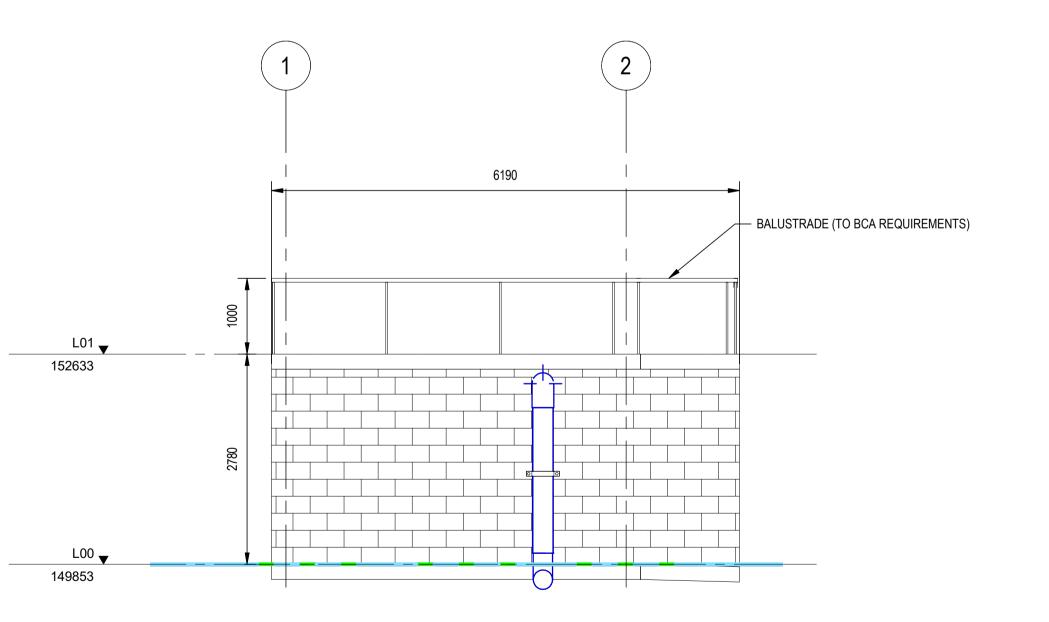












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GLENAEON RETIREMENT
LIVING - SPS UPGRADE
PROJECT

A TENDER ADDENDUM

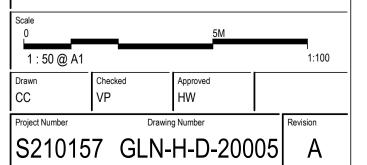
Rev Revision Description

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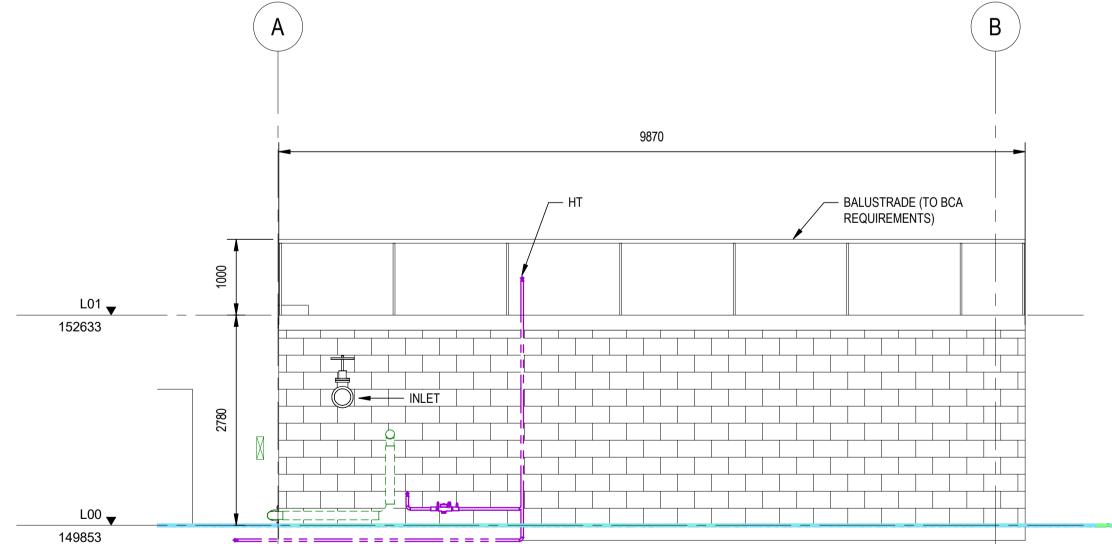
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Key Plan

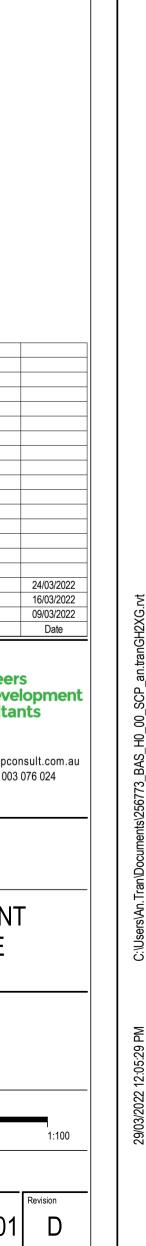
ELEVATIONS

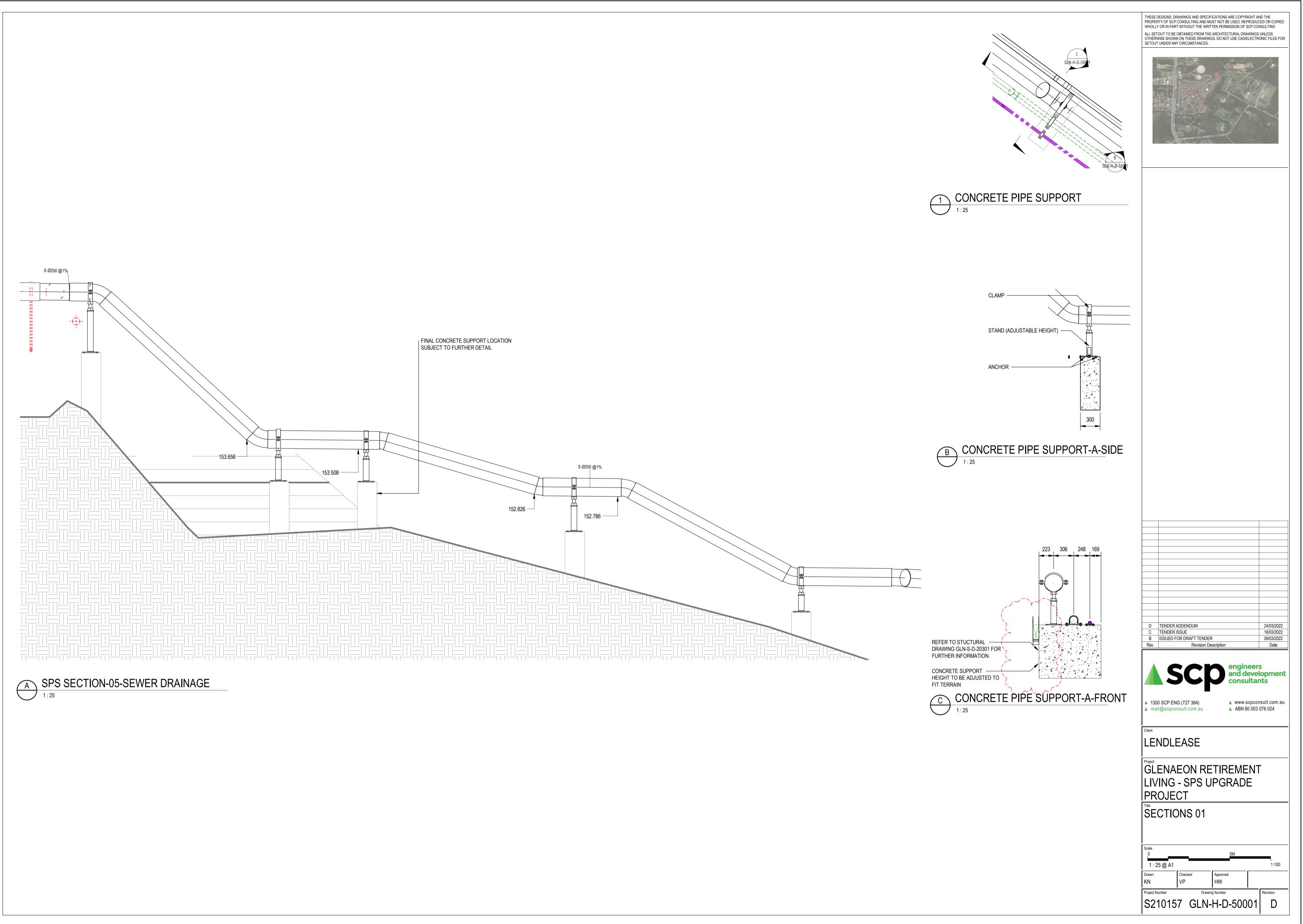


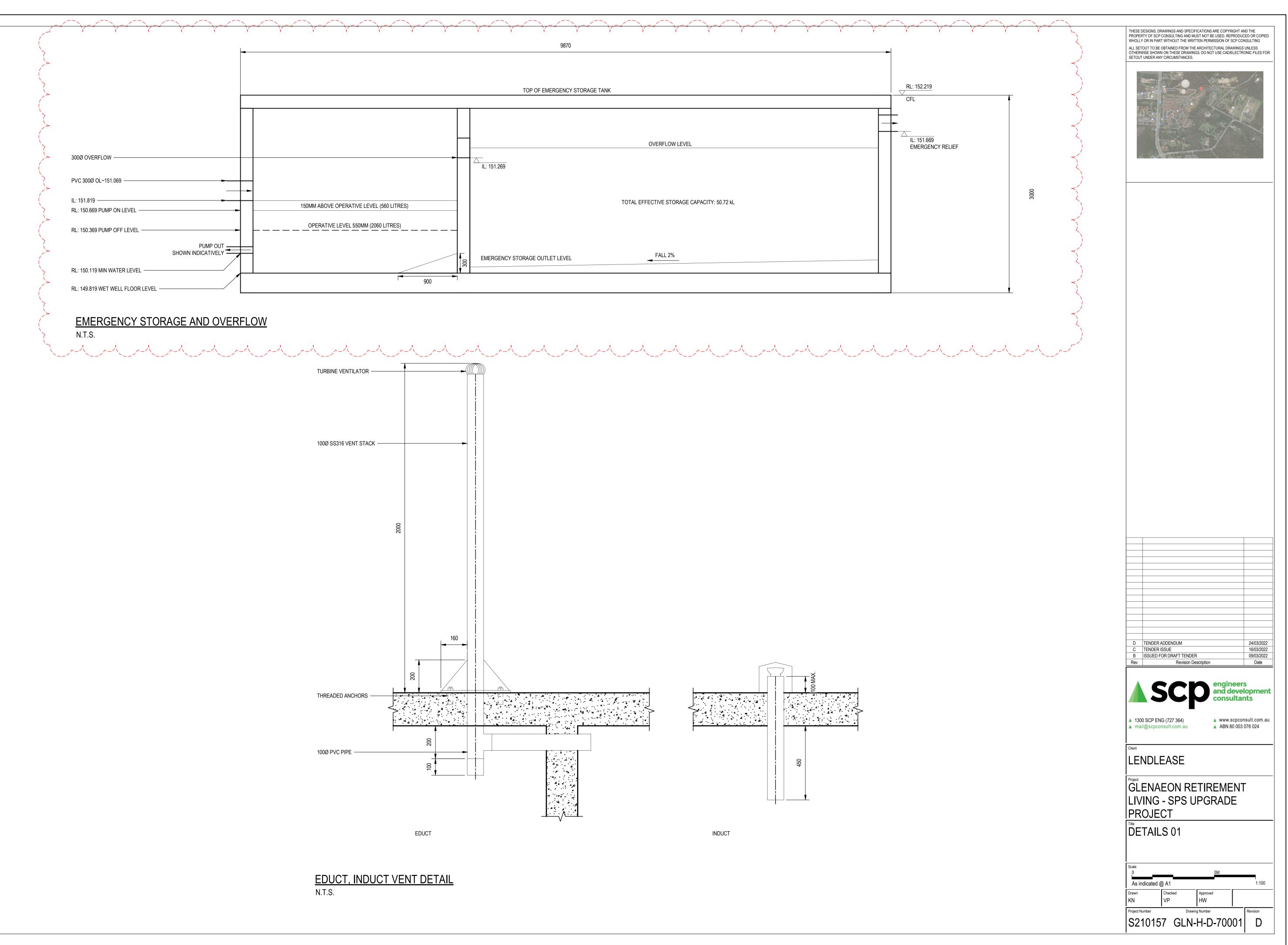
A - North Elevation
1:50



<u>C - West Elevation</u> 1:50

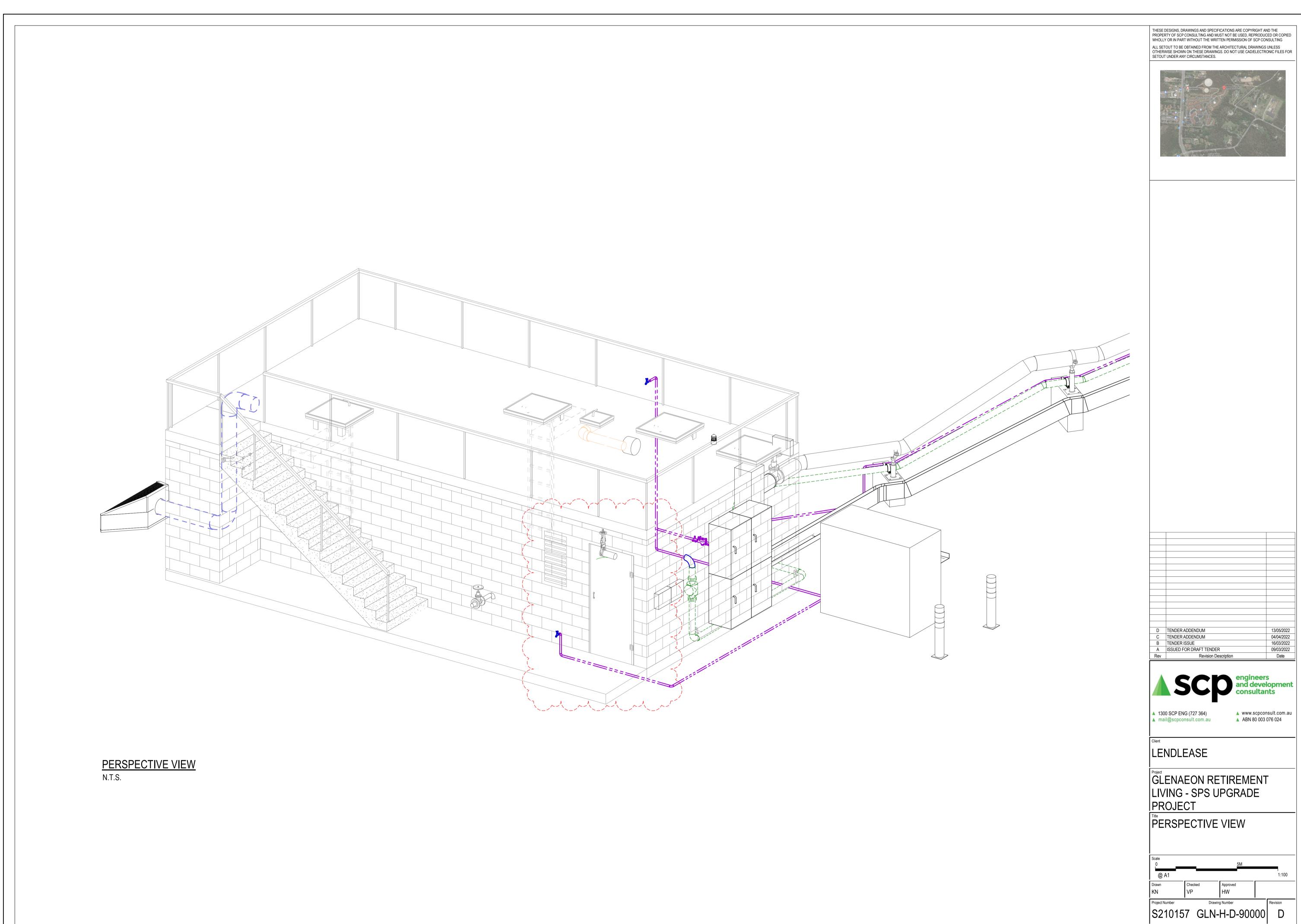


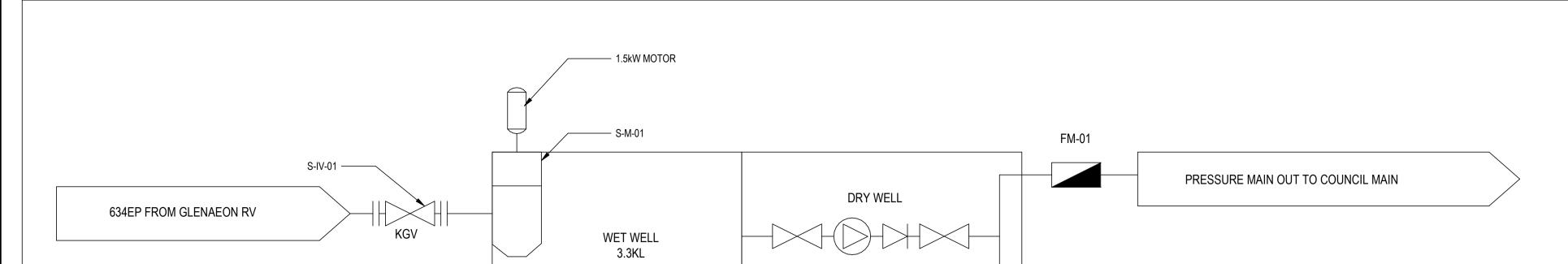




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65Ø KAMLOK COUPLING

EMERGENCY RELIEF

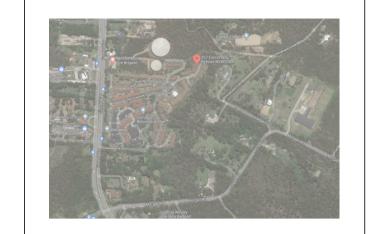
S-IV-02 —\_\_\_

**EMERGENCY STORAGE** 50.72KL

300Ø

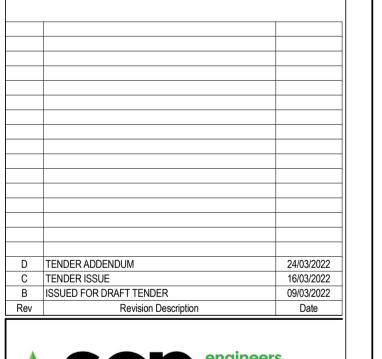
OVERFLOW TO EMERGENCY STORAGE

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	SCHEDULE OF EQUIPMENT AND CONTROLS				
EQUIPMENT SYSTEM TYPE EQUIP ID NO. BMSC MONITOR DESCRIPTION				DESCRIPTION	
PUMPS	S-	P-	01	YES	DUAL CENTRIFUGAL SEWER ELECTRIC VSD PUMP SET ARRANGED AS DUTY/STANDBY COMPLETE WITH Ø100MM CHECK VALVES AND ISOLATION VALVES FLYGT FP 3171 HT3~ 278 DUTY: 9L/S @ 51M.HD
MACERATOR	S-	M-	01	YES	OPEN CHANNEL SEWER MACERATOR MUFFIN MONSTER 10000-B150-DI DUTY: 62 m3/hour
FLOW METER	S-	FM-	01	YES	DN 100 FLOW METER> FLOW: 10L/SEC
BACK FLOW PREVENTION	NPCW-	RPZD-	01	NO	DN20 RPZD C/W STRAINER AND DISMANTLING JOINTS> FLOW 0.3 L/SEC.
ELECTRICAL PANEL	E-	P-	01	YES	
ISOLATION VALVE	S-	IV-	01	NO	Ø300MM FLANGED KNIFE GATE VALVE. WET WELL SEWER INLET FROM GLENAEON RV
ISOLATION VALVE	S-	IV-	02	NO	Ø100MM FLANGED KNIFE GATE VALVE. WET WELL SEWER INLET FROM EMERGENCY STORAGE

HYDRAULIC SCHEMATIC N.T.S.





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▲ ABN 80 003 076 024

LENDLEASE

GLENAEON RETIREMENT LIVING - SPS UPGRADE PROJECT

HYDRAULIC SCHEMATIC

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Drawn <b>KN</b>	Checked VP	Approved HW		
Project Number	Dra	wing Number		Revision
S2101	157 GLN	I-H-D-900	01	D

16/03/2022

09/03/2022

Date

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▲ ABN 80 003 076 024

1:100 @ A1

S210157 GLN-E-D-2000<sup>2</sup>

#### THESE DESIGNS, DRAWINGS AND SPECIFICATIONS ARE COPYRIGHT AND THE PROPERTY OF SCP CONSULTING AND MUST NOT BE USED, REPRODUCED OR COPIED **STAGING & MIGRATION OF ELECTRICAL WORKS** 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 **LUMINAIRE SCHEDULE** PHASE 1 PHASE 4 PHASE 3 SETOUT UNDER ANY CIRCUMSTANCES. INSTALL NEW INCOMING MAINS AT THE EXISTING CUPBOARD COMPLETE ALL ELECTRICAL WORKS INCLUDING EARTHING WITHIN NEW ISOLATE AND DECOMMISSION EXISTING DG SET AND ATS PANEL IMAGE DESCRIPTIONS COLOUR DIMENSION SUPPLIER LAMP CONTROL MOUNTING NOTES PUMP HOUSE ISOLATE AND DECOMMISSION EXISTING METERS AND DB MAKE SAFE EXISTING POWER AND CONTROL CABLES AND INSTALL END CAPS EXTERNAL WORKS COORDINATE WITH SITE MANAGER AND RELOCATE EXISTING DG SET INSTALL NEW MSB AND METERING PANEL LUMINAIRE MUST HAVE A MINIMUM IP RATING OF IP65 SUPPLY AND INSTALL: "ENERGY L 1265MM ELECTRICAL PITS/CONDUITS CABLE TRAY AND SUPPORTS TEST AND RETERMINATE EXISTING: EFFICIENT LED SURFACE NON W 130MM BWPECO454E4 | PIERLITE | 45W LED | 4000K ALL APPROVED LUMINAIRES ARE TO DEMONSTRATE A BETWEEN PUMP HOUSE MSB AND EXTERNAL CUPBOARD IN TOWN HOUSE SUBMAINS TO RESPECTIVE KWH METERS WEATHERPROOF DIMMABLE MOUNTED H 92MM TOTAL HARMONIC DISTORTION (THD) OF <5% FOR LIGHTING CIRCUITS WITHIN DB TOWNHOUSE LUMINAIRE" PUMP HOUSE ELECTRICAL SOW EACH ELECTRICAL COMPONENT LV SUBMAIN + EARTH BETWEEN MSB PH AND EXTERNAL CUPBOARD IN TOWN HOUSE LUMINAIRE MUST HAVE A MINIMUM IP RATING OF IP65 TEST AND TERMINATE LV SUBMAINS TO NEW MSB PH 3 OFF LIGHT FITTINGS (TYPE L1) C/W (1 OFF EMERGENCY VERSION) + 1 CONTROL CABLE BETWEEN MSB PH AND EXTERNAL CUPBOARD IN SURFACE TOWN HOUSE OFF EXTERNAL LIGHT FITTINGS (TYPE W1) SUBCIRCUIT WIRING IN EXTERNAL WALL NON DESIGN W 162MM TLSWM/1900NW/ 4000K 20W LED WALL ALL APPROVED LUMINAIRES ARE TO DEMONSTRATE A TEST EARTHING SYSTEM SURFACE MOUNTED PVC CONDUITS DIMMABLE MOUNTED PLAN H 214MM XC49 MOUNTED TOTAL HARMONIC DISTORTION (THD) OF <5% FOR EACH ELECTRICAL COMPONENT LOAD TEST NEW DG SET ON SITE AFTER PLACING IN NEW LOCATION 1 OFF EXIT LIGHTING WITH EMERGENCY TEST FACILITY C/W SUBCIRCUIT WIRING IN SURFACE MOUNTED PVC CONDUITS PHASE 2 4HR FULL LOAD TEST AT UNITY PF UTILISING AN ADJUSTABLE TEMPORARY PRIOR TO DISCONNECTING EXISTING SEWER PUMP INCOMING SUPPLY AT DB 2 OFF WALL MOUNTED LIGHT SWITCH IN WEATHER PROOF ENCLOSURE + LOAD BANK. 110% FOR THE FINAL HOUR. 360D CEILING MOUNTED MOTION SENSOR SURFACE/WALL CHECK AND VERIFY CONDUCT A STEP LOAD TEST, IN LOAD STEPS AS FOLLOWS. MOUNTED LED ALL EMERGENCY EQUIPMENT IS TO BE ABLE TO NON L 355MM FUEL AND TOP UP IN DG DAY TANK 1 OFF 10A WEATHER PROOF DGPO C/W SUBCIRCUIT WIRING IN SURFACE • 0 - 50% **BLADE EXIT 24M** DEMONSTRATE A 4 HOUR EMERGENCY BATTERY MONITORED SURFACE W 80MM AUTO OPERATION OF EXISTING DG SET ON LOSS OF MAINS AND MOUNTED PVC CONDUIT 50 - 75% VIEWING CLEVERT MOUNTED/ MAINTAINED **ECFLED** 3W LED H 215MM VERIFY PUMPS ARE RUNNING • 75 - 100% **PICTOGRAM** RONICS WALL **EMERGENCY** DECAL OR MOUNTED EXIT LUMINAIRE MUST HAVE A MINIMUM CONTROL INCLUDING SIMULATED MAINS-FAILURE TESTS AND ACTUAL INCOMING LV APPROVED CLASSIFICATION OF E2 AND E2/5 AS PER AS2293 **GEAR** MAINS FAILURE TEST TO PROVE OPERATION OF GENERATOR THROUGH ATS **EQUAL** USING PUMP LOAD WITH ADDITIONAL DUMMY LOAD WHERE REQUIRED TO BRING LOAD TO NO LESS THAN 75% OF RATING OF GENERATOR SET ALL LUMINAIRES SHALL BE SUPPLIED COMPLETE WITH A COMPATIBLE DRIVER/BALLAST CONTRACTOR TO INCLUDE FOR FUEL FOR THE DURATION OF THE TEST LEAD TIME AND WARRANTY PERIODS SHALL BE CONFIRMED BY CONTRACTOR ENERGISE THE NEW INCOMING SUPPLY AT THE METERING PANEL 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 ENERGISE THE NEW INCOMING SUPPLY TO MSB PH 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 TEST ALL ELECTRICAL WORKS WITHIN NEW PUMP HOUSE LOSS OF MAINS TEST AND AUTO OPERATION OF DG SET, - EXISTING WALL MOUNTED ATS PANEL TO BE SAFELY ISOLATED AND DECOMMISSIONED EXISTING ENCLOSURE TO BE DEMOLISHED ALL POWER AND CONTROL CABLES LV SUBMAIN TO BE INSTALLED WITHIN THE CONDUIT AT THE POINT OF THE INTERFACE BETWEEN CONDUIT AND CABLE TRAY TO BE FIXED WITH END CAPS PROPOSED LOCATION FOR NEW DG SET INSTALLED ON CONCRETE FOUNDATION ELECTRICAL PIT 600X600X1000MM WITH LID EXISTING PUMP STATION AND ENCLOSURE TO BE FOR INFORMATION ONLY DEMOLISHED PER DECOMMISSIONING SPECIFICATION ON DRAWING + EXISTING STORE HOUSE TO BE GLN-H-D-00001 DEMOLISHED FLUSH TO EXISTING SLAB ALL ELECTRICAL CABLES AND EQUIPMENT TO BE SAFELY ISOLATED AND DECOMMISSIONED FOUNDATION FOR DG SET LV SUBMAINS TO INTERFACE WITH ABOVE GROUND CABLE TRAY AT THIS POINT .143.51 NEW MSB IN EXTERNAL WEATHERPROOF ENCLOSU LV SUBMAIN AND CONTROL CABLES FROM DG SET TO INSTALL ON 100MM HEIGHT CONCRETE PLINTH MSB PH INSTALLED IN 300MM WIDE GI CABLE TRAYS EXISTING DG SET LOCATION WITH SUPPORTS AND GI PITCHED ROOF COVER EXISTING DG SET TO BE DECOMMISSIONED AFTER COMMISSIONING OF NEW SET .149.035 .149.500 **EXISTING METERING** ARRANGEMENT TO BE TENDER ADDENDUM REPLACED WITH NEW TENDER ISSUE 149.873 A ISSUED FOR DRAFT TENDER **EXISTING ELECTRICAL** Revision Description **CUPBOARD WITH 12 METERS** AND DB TO BE UPGRADED 1NO 100Ø HDPVC INGROUND CONDUIT LV SUBMAIN AND CONTROL CABLES PROPOSED NEW LV 3 B SUBMAINS FROM NEW FROM DG SET TO MSB PH INSTALLED SWITCHBOARD TO NEW MSB IN 300MM WIDE GI CABLE TRAYS WITH 1300 SCP ENG (727 364) PH INSTALLED IN PIT AND SUPPORTS AND GI PITCHED ROOF 150.413 ▲ mail@scpconsult.com.au 150.460 CONDUITS. CABLE INSTALLED IN PIT AND CONDUIT ARRANGEMENT. LENDLEASE ELECTRICAL PIT 600X600X1000MM WITH LID **GLENAEON RETIREMENT** 1NO 100Ø HDPVC INGROUND CONDUIT LIVING - SPS UPGRADE PROJECT SPS ELECTRICAL DEMOLITION .145.841 .148.539 AND STAGING PLAN

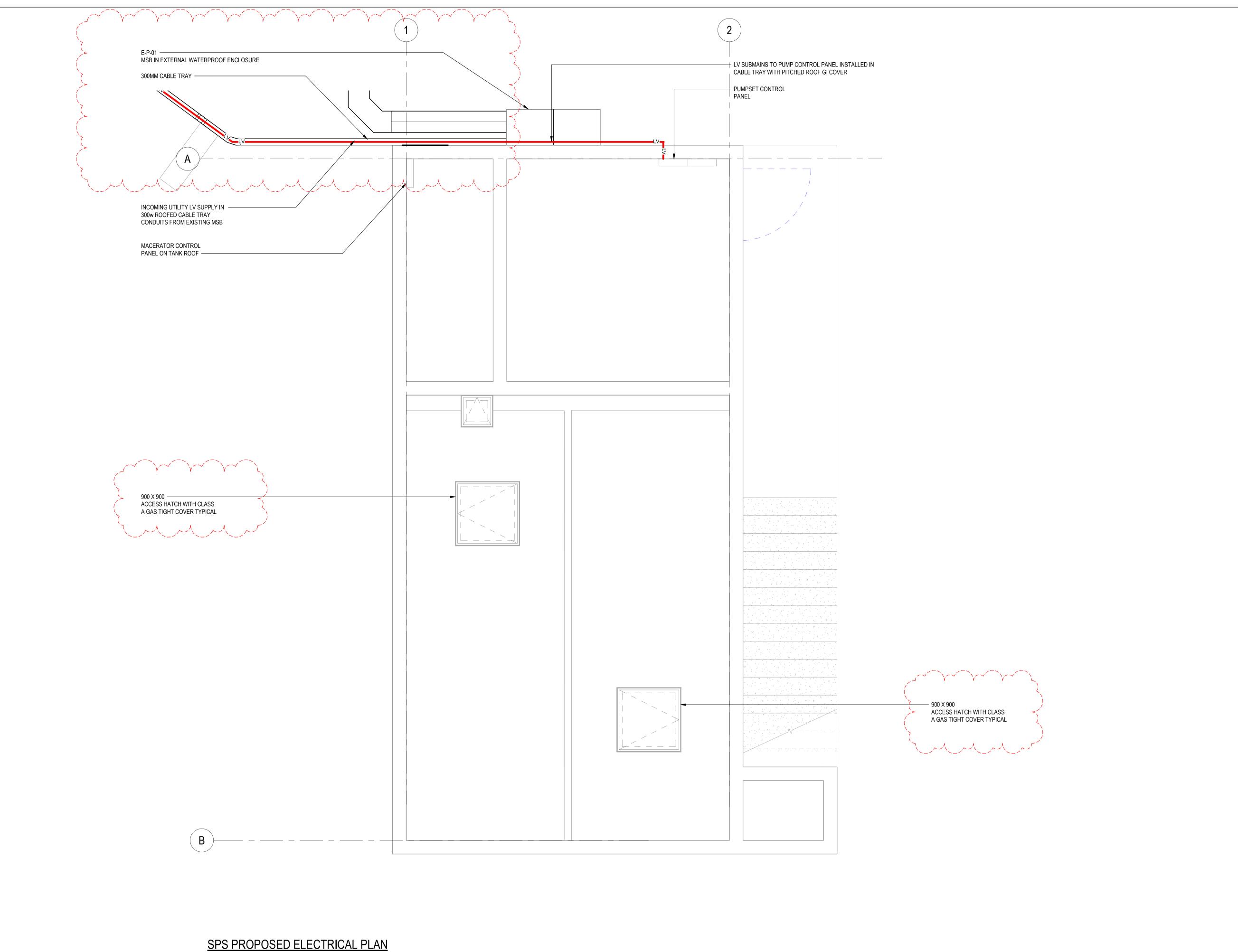
SPS ELECTRICAL DEMOLITION AND STAGING PLAN

1:100





S210157 GLN-E-D-20002

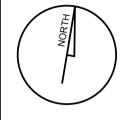


1:25

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Key Plan





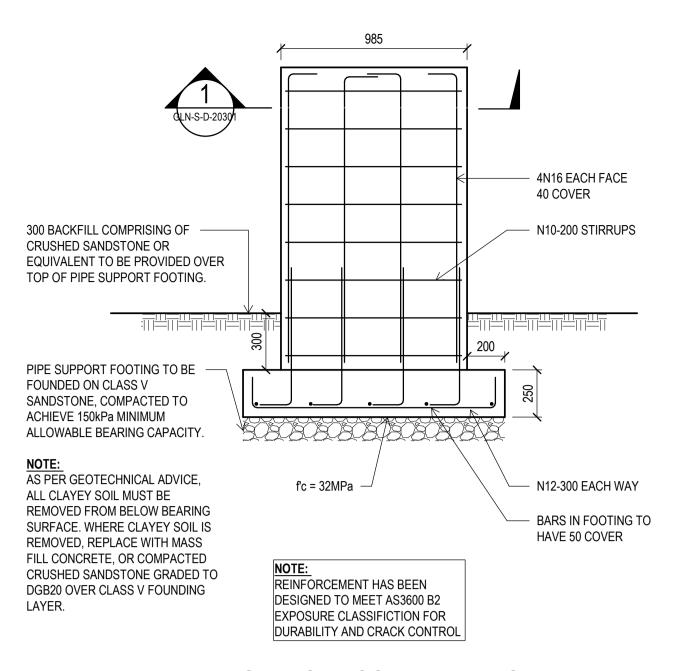


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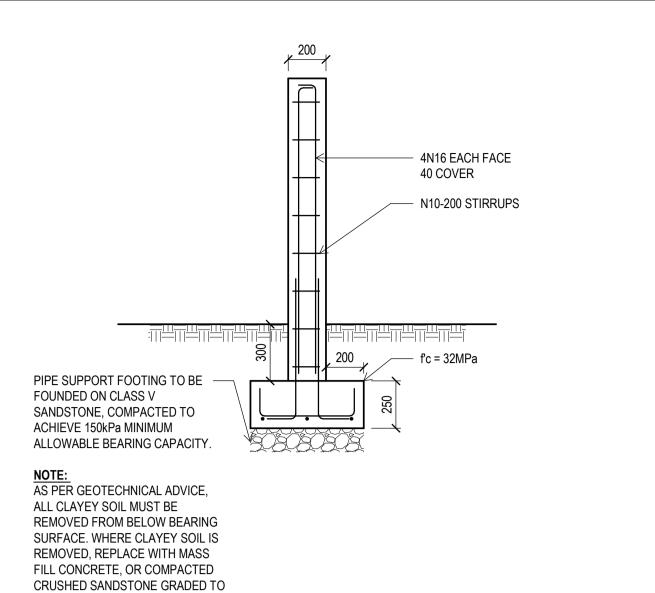
#### LENDLEASE

GLENAEON RETIREMENT LIVING - SPS UPGRADE PROJECT

SPS ELECTRICAL PROPOSED







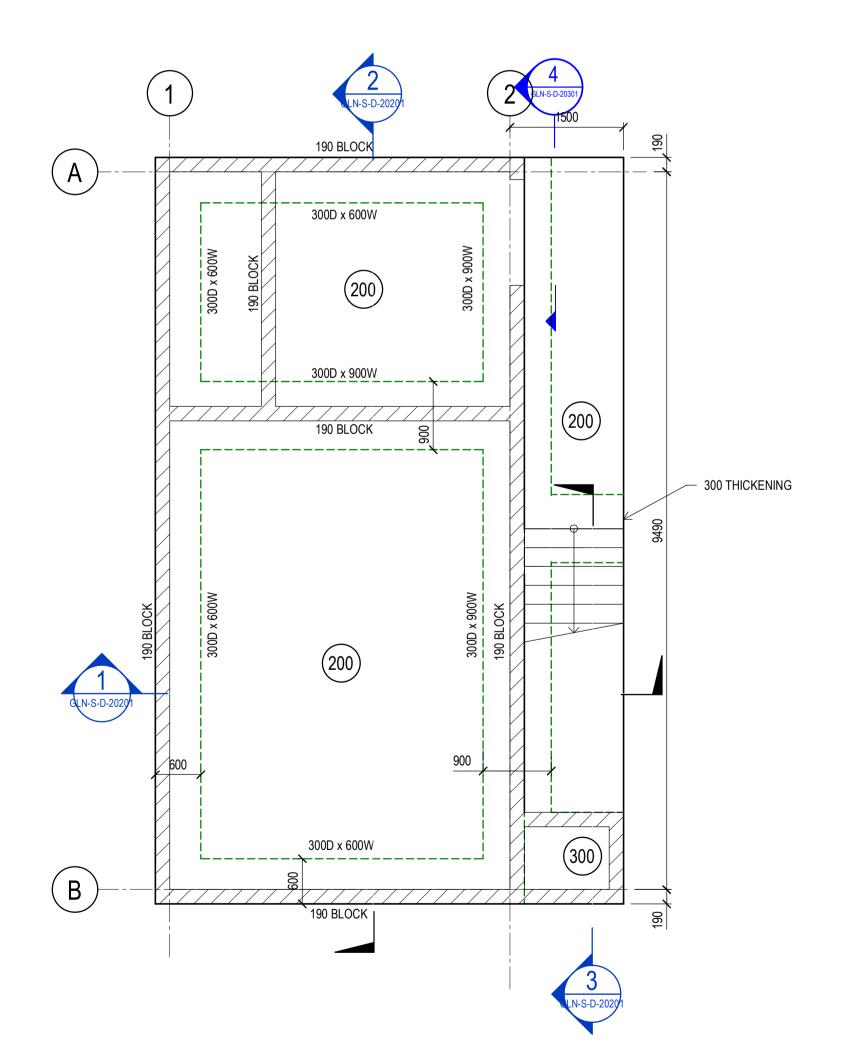
PIPE SUPPORT COLUMN TYPICAL ELEVATION SHORT SIDE

DGB20 OVER CLASS V FOUNDING

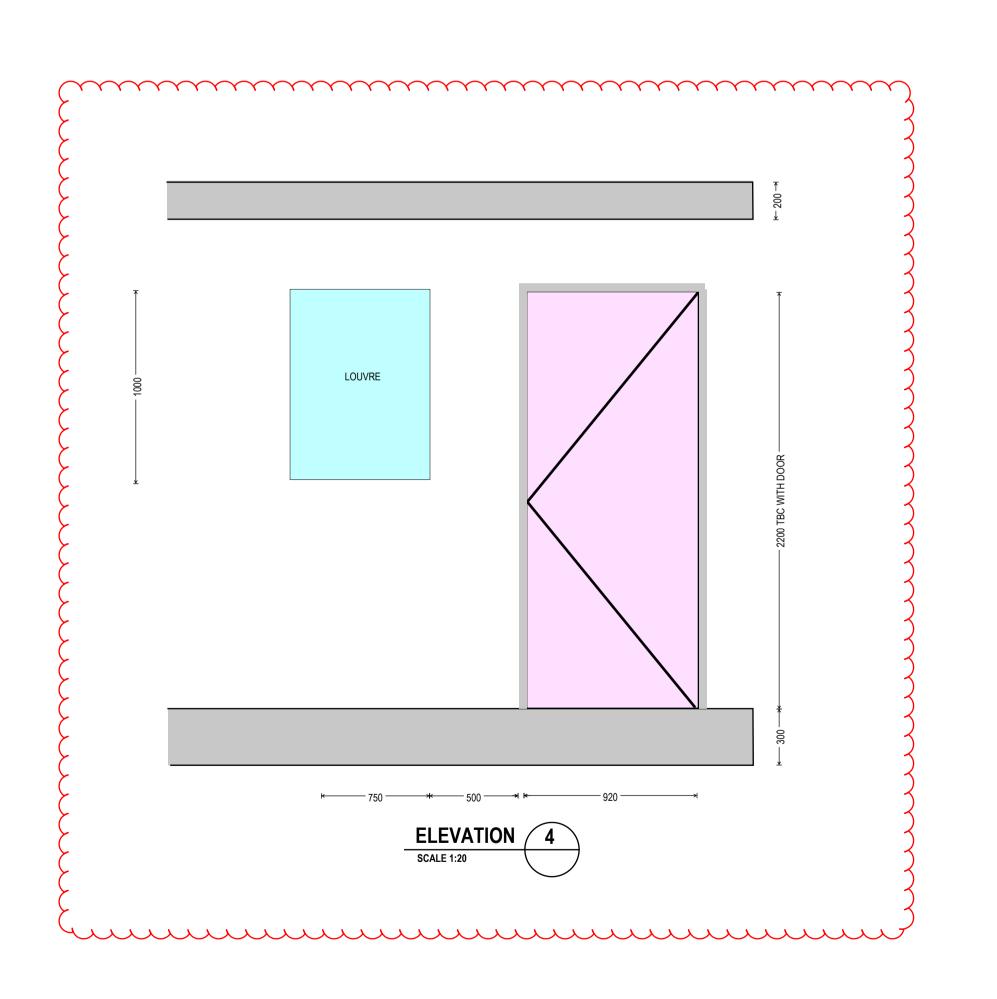
LAYER.



N12-200 CLOSED TIES -4N16 EACH FACE



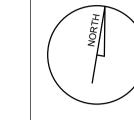
TANK SLAB GENERAL ARRANGEMENT
SCALE 1:50



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Key Plan



	TENDER ADDENDUM	12.05.22
В	TENDER ADDENDUM	13.04.22
Α	TENDER ISSUE	14.03.22
Rev	Revision Description	Date

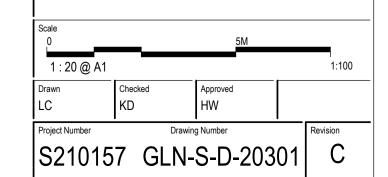
<b>▲</b> SCP	engineers and development consultants
4 4200 CCD ENG (727 264)	A www.sopoonsult.com.ou

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

#### LENDLEASE

GLENAEON RETIREMENT LIVING - SPS UPGRADE PROJECT

DETAILS SHEET 1



C:\User

# NOTES (DISTRIBUTION BOARD) THE NEW SWITCHBOARD IS TO BE FLOOR MOUNTED ON THE WALL AT LOCATION SHOWN ON THE FLOOR PLANS. DEPTH OF THE BOARD IS NOT TO EXCEED 250mm.

- ALL DIMENSIONS SHOWN ARE THE MAXIMUM ALLOWED THE
- THE BOARD IS TO BE TOP AND BOTTOM ENTRY WITH FRONT ACCESS ONLY.
- ESCUTCHEONS SHALL HAVE LOCATING PINS. THE SWITCHBOARD IS TO BE COMPLETE WITH ITS OWN

THE BOARD IS TO BE DEAD FRONT ESCUTCHEON TYPE - ALL

FRONT ELEVATION IS SHOWN WITH THE DOORS REMOVED). FABRICATE THE ENCLOSURE FROM MINIMUM 2.5mm THICK

DOORS, LOCK KEYED TO LOCKWOOD KEY No 42886 (THE

- MARINE GRADE ALUMINIUM REINFORCED AS NECESSARY TO INCREASE RIGIDITY AND TO SUPPORT HEAVY EQUIPMENT. 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".
- THE MCB CHASSIS ARE TO BE THREE PHASE BUSBAR CHASSIS ASSEMBLIES CAPABLE OF ACCEPTING COMBINED MCB/RCD UNITS WHICH OCCUPY ONLY ONE POLE (NHP TERASAKI DIN-T/250A CHASSIS) FITTED WITH THE NUMBER OF MCB'S OR MCB/RCD UNITS AS SHOWN AND BLANK OFF SPARE POLES WITH PVC BLANKS.
- DO NOT FIT FUSE CARTRIDGES TO THE SPARE FUSE BASES
- RATED SHORT TIME WITHSTAND CURRENT = 10kA FOR 1 SECOND.
- DEGREE OF PROTECTION = IP42 AS.1939
- SEGREGATION = FORM 1 AS.3439
- REFER TO THE SPECIFICATION FOR FURTHER CONSTRUCTION **DETAILS**

#### NOTES (MSB PH)

- 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 KEYED 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 5552/H34, WELDED, MACHINE BENT AND FOLDED TO FORM A WEATHERPROOF CABINET NO LESS

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

- PROVIDE MAGNETIC SCREENING (TO SUPPLY AUTHORITY REQUIREMENTS) FOR THE SUPPLY AUTHORITY METER PANEL
- PROVIDE A LABEL TO THE MEN CONNECTION INSIDE THE
- RATED SHORT TIME WITHSTAND CURRENT = 25KA FOR 1 SECOND

SWITCHBOARD ENGRAVED "MEN LINK"

- DEGREE OF PROTECTION = IP56 AS 1939
- SEGREGATION = FORM 2B AS 3439
- RATED CURRENT = 1600 A
- REFER TO THE SPECIFICATION FOR FURTHER CONSTRUCTION

#### NOTES (EXISTING INCOMING SUPPLY)

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 SUBMAINS 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

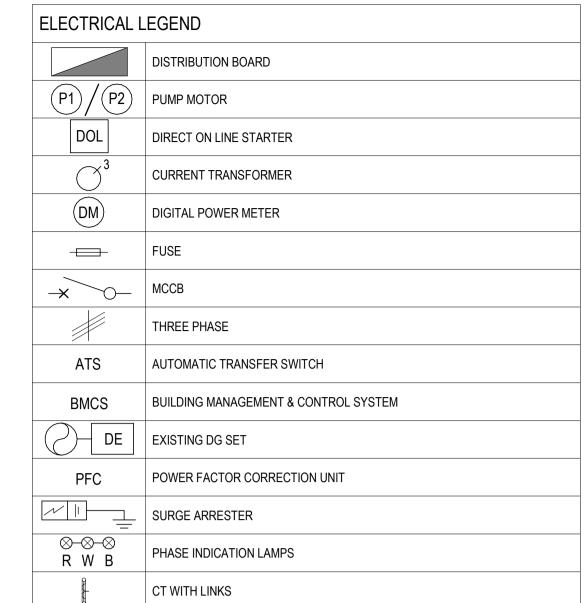
CONTRACTOR TO SUBMIT LOW VOLTAGE CABLE CALCULATIONS TAKING INTO CONSIDERATION THE LOAD/ACCUMULATIVE VOLTAGE DROP/SOURCE AND DESTINATION THREE-PHASE FAULT CURRENT/EARTH FAULT LOW IMPEDENCE.

SCHEMATIC DIAGRAM INDICATED CONCEPTUAL DESIGN INTENT ONLY. ELECTRICAL CONTRACTOR TO COMPLETE FINAL

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 IMPENDENCE OF SUBMAINS.

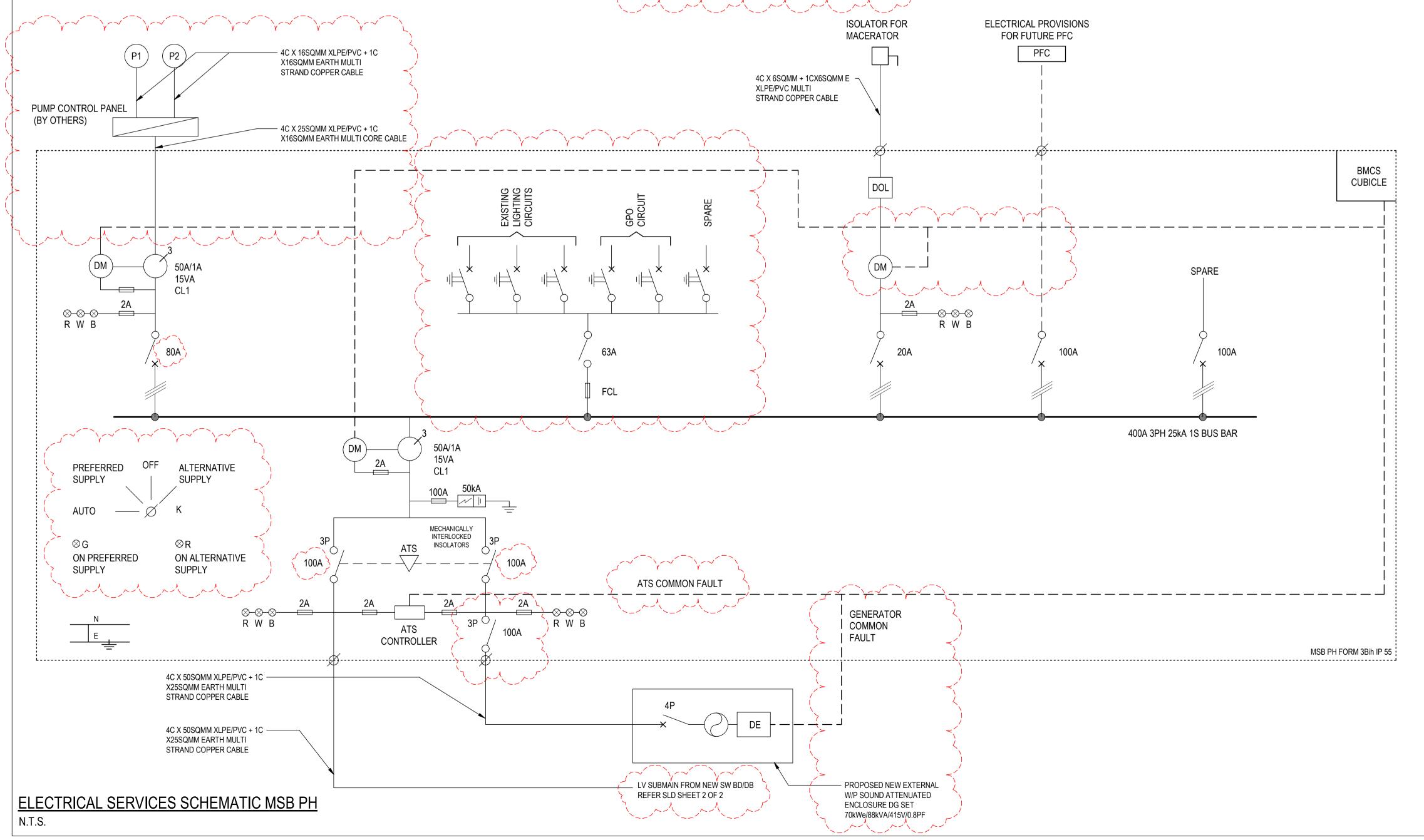
ALL CABLE SIZES SHALL BE VERIFIED FOR SHORT CIRCUIT CAPACITY, CUMLATIVE VOLTAGE DROP, SELECTIVITY, EARTH LOOP IMPEDANCE AND OTHER PARAMETERS AS PER AS 3000 THE CIRCUIT BREAKERS SHALL BE MECHANICALLY INTERLOCKED WITH CASTLE KEY FOR MANUAL CHANGEOVER FOR GENERATION OPERATION UNDER MAINS FAILURE.

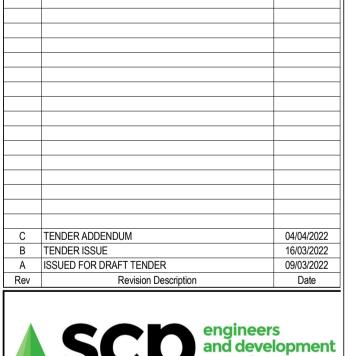




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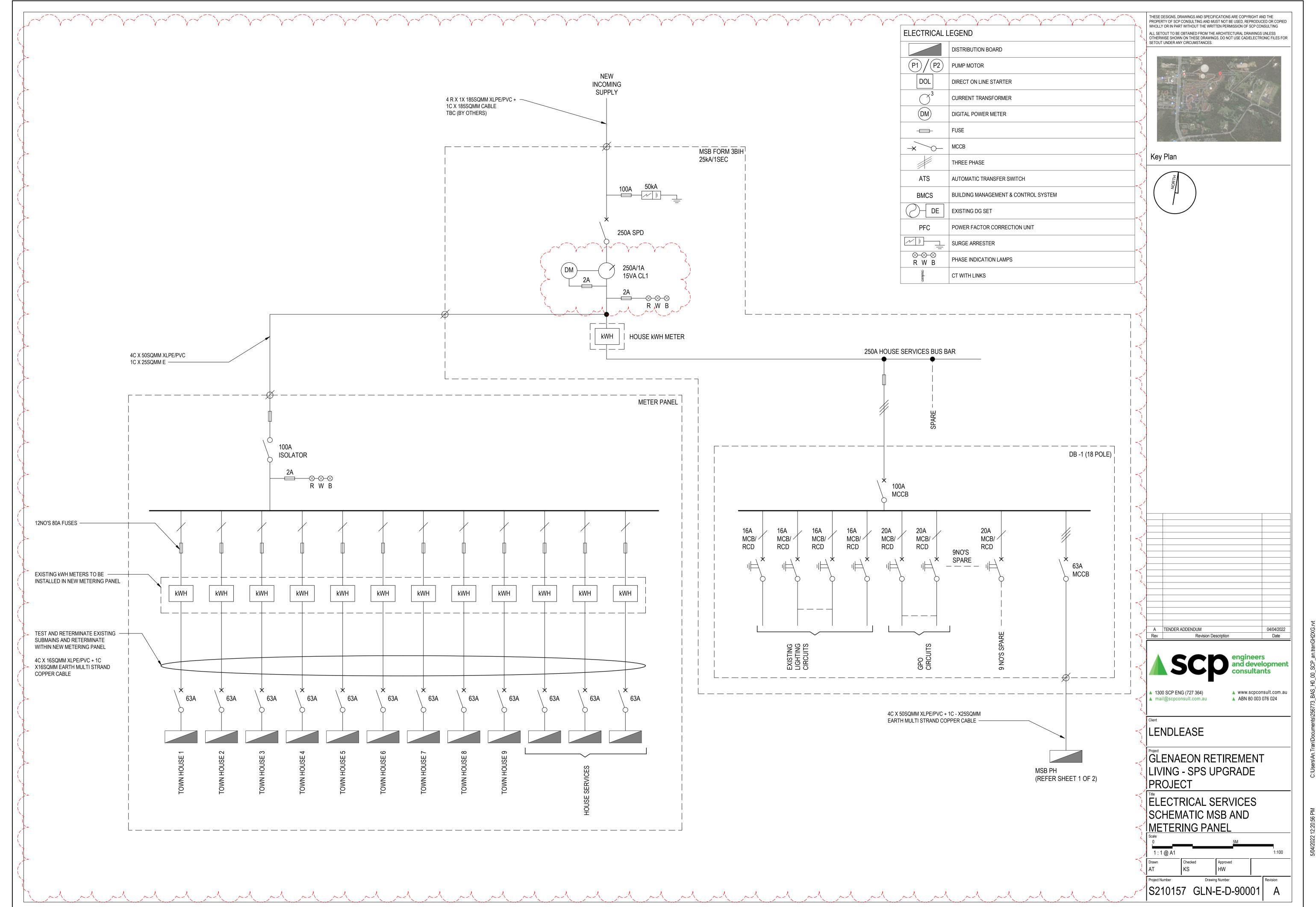
LENDLEASE

PROJECT

**GLENAEON RETIREMENT** LIVING - SPS UPGRADE

ELECTRICAL SERVICES SCHEMATIC MSB PH

Scale 0		5M		
1 : 1 @ A1				1:100
Drawn	Checked	Approved		
AT	KS	HW		
Project Number	Dı	rawing Number	<u></u> [	Revision
92101	57 CIN	N-E-D-90	nnnl	$\mathbf{C}$



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#### 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 Arrange	ment 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

SCP CONSULTING DURING CONSTRUCTION.

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

CONSTRUCTION CERTIFICATE IS ISSUED BY THE PRINCIPAL CERTIFYING AUTHORITY AND ONLY IF

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 E09. SUB-BASE TO CONCRETE SLABS SHALL BE MATERIAL COMPLYING WITH DGS40 TO RMS 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 E10. COMPACTION TEST RESULTS SHALL BE SUBMITTED TO SCP CONSULTING FOR REVIEW. 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

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 5.3.1, 5.3.5 OR 5.8.1. CALIBRATE THE SURFACE MOISTURE - DENSITY GAUGE PRIOR TO USE ON SITE. DENSITY 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 1726 AND TEST TO AS 1141 OR AS 1289, AS APPROPRIATE, FOR COMPLIANCE WITH THE CRITERIA STATED ON THE STRUCTURAL DRAWINGS.

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

CALIFORNIA BEARING RATIO: SAMPLE AND TEST TO AS 1289 CLAUSES 6.6.1-6.1.3 AS APPROPRIATE.

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:

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.

EXCAVATE FOR FOOTINGS, PITS, WELLS, SHAFTS AND THE LIKE, TO THE REQUIRED SIZES AND

PROOF ROLL EXCAVATED SURFACES TO DETERMINE EXTENT OF ANY UNSUITABLE GROUND. 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

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 SELF DRAINING.

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 E8 IN LOOSE TO THE REQUIRED DENSITY OR IN ACCORDANCE WITH GEOTECHNICAL ENGINEERS REQUIREMENTS.

COMPACTION OR 98% MODIFIED COMPACTION.

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

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

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

SPECIFICATIONS. SUB-BASE SHALL BE COMPACTED TO 100% STANDARD COMPACTION, UNLESS NOTED OTHERWISE ON THE DRAWINGS.

#### **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 \*\*\*

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 JE LARGER ROLLERS ARE USED, PROPRETAINING 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 BACKELL RETAINING WALLS LINTIL FLOOR CONSTRUCTION AND CONNECTIONS TO RETAINING WALL AT TOP AND BOTTOM IS IN PLACE, UNLESS THE RETAINING WALL IS

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

#### **FORMWORK**

CLASS 4

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

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

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 FROM CORRECT POSITION SHALL BE 10mm FOR CLASS 1, 15mm FOR CLASS 2, 20mm FOR CLASS 3, 25mm FOR

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.

REQUIRED SOFFIT FINISH IN EXPOSED AREAS

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 METALDECK FORMWORK SHALL BE APPROVED BY THE DESIGN CONSULTANT WITH REGARD TO

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 LOST FORMWORK SHALL BE CHLORIDE FREE AND NOT IMPAIR STRUCTURAL PERFORMANCE.

#### STRUCTURAL STEELWORK

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 AS/NZS 5131 THE CONSTRUCTION CATEGORIES FOR THIS PROJECT ARE DEFINED IN THE TABLE BELOW SERVICE FABRICATION CONSTRUCTION IMPORTANCE ELEMENT LEVEL CATEGORY | CATEGORY CATEGORY SC1 FC1 CC3 IL3

FILLET WELD GP/SP S03. TREATMENT GRADES

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

**S04. COATING QUALITY LEVEL** 

1	E COATING QUALITY LEVEL ASSESSED ACCORDING TO AS/NZS 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 AS/NZS 4680. ALL BOLTS TO BE HOT DIPPED GALVANISED TO AS/NZS 1214 AT 330 g/m<sup>2</sup> REPAIR OF ALL GALVANISED TO AS/NZS 4680.

#### S05. WORKMANSHIP AND QUALITY

ALL STRUCTURAL STEELWORK SHALL BE FABRICATED IN ACCORDANCE WITH AS/NZS 5131. ALL WORK ON THIS PROJECT SHALL BE UNDERTAKEN BY COMPETENT PERSONNEL. REQUIREMENTS AND EXAMPLES OF QUALIFICATIONS FOR COMPETENT PERSONNEL ARE CONTAINED IN AS/NZS 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 AS/NZS 5131. THE TOLERANCE CLASS FOR FUNCTIONAL TOLERANCES SHALL BE CLASS 1 UNO.

S07. STEEL MATERIAL GRADES

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

WITHOUT APPROVAL IN WRITING FROM SCP CONSULTING. DOCUMENTATION SUPPLIED WITH MATERIALS AND COMPONENTS SHALL CONFORM TO THE REQUIREMENTS OF AS/NZS 5131.

#### S08. LAMELLAR TEARING

JOINT DETAILS WHICH ARE SUSCEPTIBLE TO LAMELLAR TEARING (LT) ARE INDICATED ON THE PROJECT DRAWINGS. AS 'LT SUSPECTIBLE'. WITH THE SPECIFIC PLATE WITH HIGH THROUGH-THICKNESS STRESS NOTED. THE SPECIFIC PLATE IN JOINTS THAT ARE INDICATED AS 'LT SUSPECTIBLE' SHALL BE SUPPLIED ULTRASONICALLY TESTED TO AS 1710 CLASS 1, ALL BUTT JOINTS AT T AND X JOINTS SHALL BE CONSIDERED 'LT SUSCEPTIBLE' UNO.

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 AS/NZS 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.

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 FABRICATION SCP RESERVES RIGHT TO REJECT NON ACRS CERTIFIED STEEL

**S12. SPLICING 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, HOLING AND SHAPING ALL CUTTING, HOLING AND SHAPING OF STRUCTURAL STEEL SHALL CONFORM TO THE REQUIREMENTS OF AS/NZS 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 AS/NZS 5131
8.8/S	HIGH STRENGTH STRUCTURAL BOLTS OF GRADE 8.8 TO AS/NZS 1252.1, TIGHTENED TO A SNUG TIGHT CONDITION TO AS/NZS 5131
8.8/TB	HIGH STRENGTH STRUCTURAL BOLTS OF GRADE 8.8 TO AS/NZS 1252.1, FULLY TENSIONED TO AS/NZS 5131 AS A BEARING JOINT.
8.8/TF	HIGH STRENGTH STRUCTURAL BOLTS OF GRADE 8.8 TO AS/NZS 1252.1, FULLY TENSIONED TO AS/NZS 5131 AS A FRICTION JOINT.

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 ARCS CERTIFIED BOLT ASSEMBLIES UNLESS NOTED OTHERWISE ALL TF/TB BOLTS TO BE HOBSON BRANDED.

**S16. METHOD OF TENSIONING** 

/TB AND /TF BOLT CATEGORIES SHALL BE INSTALLED USING EITHER THE PART TURN METHOD OR THE DIRECT TENSION INDICATOR METHOD TO AS/NZS 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 \$30. CONNECTION TO FOOTINGS THE DESIGN. THE CONTACT SURFACES SHALL BE PREPARED ACCORDING TO AS/NZS 5131 AND BE FREE FROM PAINT. LACQUER OR OTHER APPLIED FINISHES UNLESS THE APPLIED FINISH HAS BEEN TESTED IN ACCORDANCE WITH

WELDING CONSUMABLES SHALL CONFORM TO THE REQUIREMENTS OF AS/NZS 1554, BASED ON THE YIELD

#### S18. BOLT FINISH

ALL BOLTS SHALL BE HOT-DIP GALVANISED TO AS/NZS 1214. S19. WELDING CONSUMABLES

AS/NZS 5131 APPENDIX G AND A FRICTION COEFFICIENT OF 0.35 OR HIGHER IS DETERMINED.

RENGTH 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	AS/NZS 1554.1			
>500 MPa; ≤690 MPa	AS/NZS 1554.4			
<u> </u>	· ·			

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

WELDS SUBJECT TO FATIGUE LOADING TO BE FP WELD CATEGORY

SITE WELD

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

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

OF AS/NZS 5131

ACCORDANCE WITH THE FOLLOWING MINIMUM REQUIREMENTS: a) ALL WELDS SHALL BE 6mm CONTINUOUS FILLET WELD (CFW) E48XX SP ALL ROUND

b) ALL STEEL TO STEEL BOLTED CONNECTIONS SHALL BE MINIMUM TWO M20 GRADE 8.8/S AT 70 PITCH UNO c) A MINIMUM OF TWO THREADS SHALL EXTEND PAST THE NUT.

d) ALL PLATES SHALL BE 10mm MINIMUM THICK GR250, 6CFW E48SP e) ALL PURLIN AND GIRT CLEATS SHALL BE 8mm MINIMUM THICK GR250, 4CFW. f) ALL SHEAR STUDS WELDED TO AS2327.1 AND AS1554.2

AND THE ASI STANDARDISED STRUCTURAL CONNECTION DETAILS CONTAINED THEREIN.

THE ENDS OF HOLLOW SECTION MEMBERS SHALL BE SEALED WITH NOMINAL THICKNESS PLATES AND CONTINUOUS SEAL WELDED UNLESS NOTED OTHERWISE. IF HOLLOW SECTIONS ARE TO BE HOT-DIP GALVINISED, VENT AND DRAINAGE HOLES SHALL CONFORM TO THE REQUIREMENTS OF AS/NZS 5131 IN NON-VIEWABLE LOCATIONS.

ALL DETAILING WHERE NOT SPECIFICALLY SHOWN SHALL BE IN ACCORDANCE WITH THE AUSTRALIAN

STEEL INSTITUTE (ASI) CURRENT EDITIONS OF THE 'DESIGN CAPACITY TABLES FOR STRUCTURAL STEEL'

S22. SURFACE TREATMENT AND CORROSION PROTECTION UNLESS NOTED OTHERWISE IN THE CONTRACTUAL DOCUMENTATION, THE MINIMUM SURFACE TREATMENT OF BOTH INTERNAL AND EXTERNAL STEELWORK SHALL CONFORM TO THE REQUIREMENTS

STRUCTURAL STEELWORK TO BE GALVANISED SHALL CONFORM TO THE REQUIREMENTS OF AS/NZS 5131. UNLESS NOTED OTHERWISE IN THE CONTRACTUAL DOCUMENTATION. THE CORROSION PROTECTION WHEN SELECTING A PAINT SYSTEM SHALL BE AS SPECIFIED IN THE TABLE BELOW

delegative At Alivi of of Elimony, let be Acoustic below.			
DESIGN- ATION	LOCATION	MINIMUM PROTECTIVE COATING SYSTEM	AS/NZS 2312.1 REF.
INT1	INTERNAL STEELWORK - HIDDEN	ALKYD PRIMER SYSTEM	ALK1
INT2	INTERNAL STEELWORK - REQUIRING COLOR FINISH	ALKYD PRIMER WITH ACRYLIC LATEX TOP COAT SYSTEM	ACL1
EXT1	INTERNAL STEELWORK - COLOUR NOT REQUIRED	HOT DIPPED GALVANISED OR SINGLE COAT SOLVENT BORNE INORGANIC ZINC SILICATE SYSTEM	IZS1
EXT2	EXTERNAL STEELWORK IN INDUSTRIAL ENVIRONMENT - MIO FINISH ACCEPTABLE	HOT DIPPED GALVANISED OR MICACEOUS IRON OXIDE (MIO) SYSTEM	EHB6
EXT3	EXTERNAL STEELWORK - COLOUR AND GLOSS FINISH REQUIRED	HOT DIPPED GALVANISED OR HIGH BUILD POLYURETHANE SYSTEM	PUR4

ALL DESIGN CONSULTANTUALLY EXPOSED STEEL SHALL BE AS SPECIFIED BY THE DESIGN CONSULTANT AND CONFORM

\$41. STRUCTURAL STEEL TO BE CONCRETE ENCASED SHALL BE UNPAINTED AND WRAPPED WITH TO AS5131 AND THE ARCH SPECIFICATION.

MEMBERS EMBEDDED IN CAVITY WALLS SHALL BE HD GALVANISED TO AS 4791 AND AS 4792, 500g/m²

ALL HD GALV COATING REPAIR TO AS4680 APPENDIX E, TO SCP APPROVAL FIRE PROTECTION COATINGS PREPARATION AND SURFACE FINISHED SHALL BE COMPATIBLE WITH THE FIRE PROTECTION SYSTEM. APPROVED AND LICENSED APPLICATORS ONLY TO BE ENGAGED BY THE FABRICATOR. THE REQUIRED COATING THICKNESS SHALL BE ADVISED BY THE SUPPLIER BASED ON A 450°C AT 120 MIN FRL. CLEARANCE ZONES SHALL BE ADVISED TO THE DESIGN CONSULTANT.

ALL MEMBERS HAVING A NATURAL CAMBER WITHIN THE STRAIGHTNESS TOLERANCE SHALL BE ERECTED

ERECTION TOLERANCES SHALL CONFORM TO THE REQUIREMENTS OF AS/NZS 5131.

S25. MECHANICAL AND CHEMICAL ANCHORS

S26. STRUCTURAL STEELWORK ERECTION

WITH THE NATURAL CAMBER UP.

S23. DESIGN CONSULTANTURALLY EXPOSED STRUCTURAL STEELWORK

AS/NZS 5131

STRUCTURES".

OF AS/NZS 5131.

DESIGN CONSULTANTURALLY EXPOSED STRUCTURAL STEEL (AESS) SHALL CONFORM TO THE

AESS COMPONENTS SHALL BE AESS 2 UNO. CONFIRM WITH DESIGN CONSULTANT.

STRUCTURAL DECKING, SHALL CONFORM TO THE REQUIREMENTS OF AS/NZS5131.

AREAS TO BE TREATED AS AESS, THE AESS CATEGORY 2 FOR HIGH LEVEL AND AESS CATEGORY 3 FOR

DESIGN CONSULTANTURALLY SENSITIVE CONNECTION DETAILS ARE INDICATED ON THE PROJECT DRAWINGS.

LIGHT GAUGE STEEL MEMBERS. COMPRISING PURLINS. GIRTS INCLUDING ASSOCIATED FASTENERS AND

STRUCTURAL STEELWORK ERECTION SHALL CONFORM TO THE REQUIREMENTS OF AS/NZS 5131, AND THE

AUSTRALIAN STEEL INSTITUTE GUIDE "PRACTICAL GUIDE & PLANNING AND SAFE ERECTION OF STEEL

MECHANICAL AND CHEMICAL ANCHORS SHALL CONFORM TO THE REQUIREMENTS OF AS/NZS 5131.

LOW LEVEL UNLESS SPECIFIED BY THE PROJECT DESIGN CONSULTANTS ARE DESIGNATED FOR THE

THE TOLERANCE CLASS FOR FUNCTIONAL TOLERANCES SHALL BE CLASS 1 UNO. S29. POST-INSTALLED ANCHORS THE INSTALLATION OF MECHANICAL AND CHEMICAL ANCHORS SHALL CONFORM TO THE REQUIREMENTS

DESIGN OF ANCHORS TO AS5216.2018 SITE TESTING SHALL BE PERFORMED ON MECHANICAL AND CHEMICAL ANCHORS TO VALIDATE CORRECT INSTALLATION (PROOF TESTING), A MINIMUM TEST SAMPLE POPULATION SHALL BE THREE SPECIMENS OR 2.5% OF THE TOTAL RELEVANT ANCHOR POPULATION. WHICHEVER IS GREATER, IF A SINGLE FAILURE IS RECORDED, THE MINIMUM TEST SAMPLE POPULATION SHALL BE INCREASED TO SIX TEST SPECIMENS OF 5% OF THE TOTAL RELEVANT ANCHOR POPULATION, WHICHEVER IS GREATER. IF TWO OR MORE TEST SAMPLES FAIL, ALL ANCHORS IN THE RELEVANT ANCHOR POPULATION SHALL BE TESTED.

THE 'TEST SAMPLE POPULATION' IS DEFINED AS A GROUP OF ANCHORS REPRESENTATIVE OF THE RELEVANT ANCHOR POPULATION, HAVING THE SAME TYPE OF ANCHOR, THE SAME BASE MATERIAL )THAT HAS NOT EXPERIENCED DIFFERENT ENVIRONMENTAL EXPOSURE). SAME INSTALL ATION METHOD AND SAME INSTALLATION PERSONNEL. WHERE ANY OF THESE VARIABLES CHANGE, THIS GROUP OF ANCHORS SHALL BE CONSIDERED A SEPARATE ANCHOR POPULATION.

ALL SITE TESTING OF POST-INSTALLED ANCHORS SHALL BE UNDERTAKEN ACCORDING TO THE REQUIREMENTS OF BAREFACED TECHNICAL NOTE - SITE TESTING GUIDELINES VOLUMES 1 TO 4.

FOOTING BOLTS SHALL MEET THE REQUIREMENTS OF AS/NZS 5131. PROVIDE 6mm PLATE WASHER OR HARDENED WASHERS, MATERIALS USED FOR GROUTING UNDER STEEL BASE PLATES AND BEARING PLATES SHALL MEET THE REQUIREMENTS DEFINED IN AS/NZS 5131. GROUT UNDER ALL BASE PLATES. BEFORE GROUTING, SUPPORT BASE PLATES ON STEEL PACKERS OR WEDGES. GROUT UNDER BASE PLATES AND INTO CORED HOLES WITH MASTERFLOW 870 NON-SHRINK GROUT OR EQUIVALENT, MINIMUM COMPRESSIVE STRENGTH 80MPa AT 28 DAYS, MIN. THICKNESS 15mm, MAX. THICKNESS 40mm.

ALL BOLTS, NUTS AND WASHERS, INCLUDING HOLD DOWN BOLTS, CAST-IN FERRULES AND MASONRY ANCHORS ARE TO BE HOT-DIP GALVANIZED UNLESS NOTED OTHERWISE. ALL GALVANIZED COMPONENTS TO

S32. ERECTION SEQUENCE METHODOLOGY

BE CAST INTO CONCRETE MUST BE PASSIVATED.

WHERE ASSESSED AS REQUIRED FROM THE RISK PLANNING WORKSHOPS, SUBMIT THE ERECTION SEQUENCE METHODOLOGY (ESM) FOR APPROVAL IN ACCORDANCE WITH THE ASI 'PRACTICAL GUIDE TO PLANNING THE SAFE ERECTION OF STEEL STRUCTURES'. THE 'ERECTION SEQUENCE METHODOLOGY' (ESM) IS RECOMMENDED FOR PROJECTS WHERE AT A RISK ASSESSMENT HAS BEEN UNDERTAKEN AND INDICATES THE NEED. THE SCOPE AND EXTENT OF THE ESM IS AN OUTCOME OF THE RISK PLANNING WORKSHOPS. THE CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY

S33. PROPRIETARY ITEMS

ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. S34. STRUCTURAL STEELWORK INSPECTION, TESTING AND CORRECTION INSPECTION, TESTING AND CORRECTION SHALL CONFORM TO THE REQUIREMENTS OF AS/NZS 5131.

PROPRIETARY ITEMS (e.g. PURLINS, ROOF/WALL SHEETING, FERRULES) SHALL BE INSTALLED IN

INSPECTION AND TEST PLANS (ITP) SHALL BE P	
ITEM	ITP
MATERIALS & COMPONENTS	REQUIRED
PREPARATION & ASSEMBLY	REQUIRED
WELDING	REQUIRED
MECHANICAL FASTENING	REQUIRED
SURFACE TREATMENT	REQUIRED
PAINT COATINGS	REQUIRED
GALVANISED COATINGS	REQUIRED
ERECTION	PEOLIBED

\$35. THE CONTRACTOR SHALL PREPARE WORKSHOP (SHOP DETAIL) DRAWINGS AND SHALL SUBMIT EITHER AN ELECTRONIC PDF FILE OR TWO HARD COPIES OF EACH DRAWING FOR EXAMINATION OF CONNECTION DETAILS. FABRICATION SHALL NOT COMMENCE UNTIL THE WORKSHOP DRAWINGS HAVE BEEN REVIEWED, A REVIEW WILL BE PROVIDED FOR MEMBER SIZES AND CONNECTION DETAILS BUT WILL NOT EXTEND TO DIMENSIONS, ALL DIMENSIONS AND SETOUTS SHALL BE OBTAINED FROM DESIGN CONSULTANTURAL DRAWINGS. SHOULD VARIATIONS BE NECESSARY TO THE STRUCTURAL DETAILS PROVIDED, THESE SHALL BE REFERRED TO SCP CONSULTING FOR APPROVAL BEFORE BEING INCLUDED ON SHOP DETAIL DRAWINGS. SHOP DETAILS SHALL PROVIDE FOR FIXING OR SUPPORT OF ANY BUILDING

S36. SHOP DETAIL DRAWINGS SHALL CLEARLY INDICATE: : DIMENSIONS OF ITEMS, IDENTIFICATION, STEEL GRADE : PROCEDURES NECESSARY FOR SHOP AND SITE ASSEMBLY : LOCATION. TYPE AND SIZE OF WELDS AND BOLTS **ORIENTATION OF MEMBERS** : CAMBER OR PRESENT (IF ANY : LOCATION OF TEMPORARY CONNECTIONS AND BRACING SURFACE PREPARATION METHOD AND COATING SYSTEM : WELDING AND BOLTING CATEGORIES

: SURFACE PREPARATION AT TF BOLTED CONNECTIONS

ELEMENTS SHOWN ON DESIGN CONSULTANTURAL DRAWINGS.

\$37. UNLESS NOTED OTHERWISE, HOLES SHALL BE 2mm LARGER THAN THE NOMINAL BOLT DIAMETER. WHERE SLOTTED OR OVERSIZE HOLES ARE PERMITTED ON THE STRUCTURAL DRAWINGS. THEY SHALL COMPLY WITH AS 4100.HAND FLAME CUTTING OF BOLT HOLES IS NOT PERMITTED. ALL BOLT HOLES SHALL BE DRILLED BOLTS TO BE INSTALLED WITH A HARDENED WASHER UNDER THE TURNED PART OVER THE HOLE. PROVIDE 6mm PLATE WASHER OR HARDENED WASHER TO SLOTTED OR OVERSIZED HOLES.

\$38. THE SUBCONTRACTOR SHALL GIVE NOTICE OF AT LEAST 48 HOURS SO THAT INSPECTION MAY BE MADE BY EITHER SCP CONSULTING (IF REQUIRED) OR THE SUBCONTRACTORS NOMINATED INSPECTION ORGANISATION AT THE FOLLOWING STAGES:

: COMMENCEMENT OF WELDING PROCEDURE AND WELDER QUALIFICATIONS TESTS : COMMENCEMENT OF WELDING : PRIOR TO THE PLACEMENT OF THE ROOT RUNS OF COMPLETE PENETRATION BUTT WELDS : COMPLETION OF FABRICATION PRIOR TO SURFACE PREPARATION : COMMENCEMENT OF SURFACE PREPARATION PRIOR TO PROTECTIVE COATING : COMPLETION OF PROTECTIVE COATING PRIOR TO DELIVERY TO SITE : STEELWORK ON SITE PRIOR TO ERECTION

\$39. PROVIDE SURVEY CERTIFICATES RELATING TO ERECTED STEELWORK THAT CONFIRM THAT TOLERANCES COMPLY WITH S28.

**\$40.** REMOVE ALL TEMPORARY CLEATS ON COMPLETION AND RESTORE THE SURFACE IN AN

: COMPLETION OF ERECTION PRIOR TO ENCASING OR FIXING CLADDING

THE MINIMUM COVER TO THE FABRIC SHALL BE 50mm.

APPROVED MANNER. SL41 FABRIC. THE GAP BETWEEN THE STRUCTURAL STEEL AND THE FABRIC SHALL BE 25mm. Revision Description



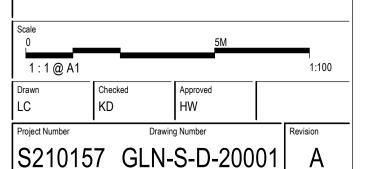
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LENDLEASE

mail@scpconsult.com.au

**GLENAEON RETIREMENT** LIVING - SPS UPGRADE PROJECT

GENERAL NOTES SHEET



CO2. 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 FOR REQUIRED STRENGTH & OTHER SPECIFIC REQUIREMENTS WHERE NO STRENGTH IS SPECIFIED ON THE STRUCTURAL DRAWINGS, ADOPT

THE HIGHEST TA	ABULATED STREN	GTH GIVEN E	BELOW FOR T	HE ELEME	ENT.		
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 40 50	GP GP GP	285 330 400	20 20 20		80 80 80	
COLUMNS & WALLS	65 80	GP GP	500 600	20 20	0.45	120 120	
INSITU RETAINING WALLS	32	GP	285	20	0.45	80	700
SLAB ON GROUND	25 32 40	SL SL SL	265 285 300	20 20 20	0.45	40* 40* 40*	650 650 650
POST-TENSIONED SUSPENDED SLABS (22MPa AT 5 DAYS)	32 40 50 **	SL SL SL	300 330 400	20 20 20	0.45	80 80 80	600 600 600
CONVENTIONAL SUSPENDED SLABS	32	SL	285	20	0.45	80	600
WORKING SLAB	20	GP	250	20	0.45	80	-
PRECAST CONCRETE	40 50	SL SL	285 330	20 20	0.45	80 80	700 700
WATER RETAINING STRUCTURES	32+PENETRON 40+PENETRON 50+PENETRON	SL SL SL	300/330 330 400	20/14 20/14 20/14	0.45	80 80 80	600 600 600
DINCEL WALLS	A0, 50	GP	260	10	0.50	200	-
SELF COMPACTING COLUMNS	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 x 10-12

\* 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 LOO ROOF.

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

NOTE: HOUSE SLABS TO AS2870 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%, SULPHURIC ANHYDRIDE <1.8%,

SOUNDRESS < 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).

CO3. 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 2758.1. 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.

CO4. 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. ALKALL REACTIVITY - 6 MONTHS AND CHANGE OF SOURCE

STRENGTH TEST EVENLY THROUGHOUT

POUR. PT SLABS TO HAVE 3 TEST CYLINDERS FOR EVERY 50m3 (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

OTHERWISE ON THE STRU	OTOTAL DIAWINGS.			
	CLEAR COVER (mm)			
ELEMENT	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

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

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

COT. 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.

CO8. 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 D500N 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

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.

CO9. 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

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. 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 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 SUBCONTRACTOR 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 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 35°C AND 27°C FOR > 40MPa AND 600 DEEP. USE ALIPHATIC ALCOHOL SPRAYED AFTER SCREEDING 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 LOADING. ( SEE FW5 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% SCABBLED SURFACE TO BE FORMED. HIGH PRESSURE BLAST AS REQUIRED. ALL VERTICAL C.J 100% MECHANICALLY SCABBLED, 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

#### **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

MO2. 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%

MO4. MORTAR PROPORTIONS SHALL COMPLY WITH AS 3700 AND SHALL MEET THE REQUIREMENTS OF AS 3700 FOR DURABILITY UNO THE PROPORTIONS FOR NORMAL MASONRY SHALL BE MORTAR TYPE M3.

: 1 PART GP CEMENT : 1 PART LIME · 6 PARTS SAND

BY WEIGHT OF CEMENT.

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 fc = 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.

MO9. 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 CONTENT: 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 TIE 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. CONFORMING 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) 5M FOR 190mm 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 CAULKING AND TIED WITH TELESCOPIC TYPE FRAME TIES ACROSS

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

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 LOADBEARING BRICKWORK 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.

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 FOLLOWING SHALL APPLY FOR REINFORCED

RM1. REINFORCEMENT SHALL COMPLY WITH AS 4671, GRADE D500N (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

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.

: PROVIDE 55MM COVER FROM THE OUTSIDE OF THE BLOCKWORK TO ALLOW ADEQUATE GROUT

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.

RM5. BOND BEAMS SHALL CONFORM TO AS 4455. BOND BEAMS SHALL BE REINFORCED WITH 2N12 BARS AND FILLED WITH GROUT TO AS 3700 UNO ON THE STRUCTURAL DRAWINGS.

RM6. GROUT SHALL BE PLACED BY AN APPROVED METHOD AND SHALL BE VIBRATED WITH A NEEDLE VIBRATOR OR RODDED. WALLS TO BE PROGRESSIVELY FILLED WITH MAXIMUM POUR HEIGHT OF 1600mm IN ANY ONE GROUT POUR.

RM7. REINFORCED BLOCK RETAINING WALLS SHALL HAVE A WATERPROOF MEMBRANE APPLIED TO DESIGN CONSULTANTS DETAILS BEHIND WALL.

RM8. BACK FILLING BEHIND REINFORCED BLOCK RETAINING WALLS SHALL COMPLY WITH RW1.

#### **VIBRATION MONITORING & CONTROL PLAN**

VM1. THE ADJOINING BUILDINGS MAY BE PARTICULARLY SENSITIVE TO VIBRATION.

VM2. THE BUILDER IS TO PROVIDE A CONSTRUCTION AND EXCAVATION METHODOLOGY TO LIMIT THE VIBRATION VELOCITIES AT VARIOUS FREQUENCIES AND DISTANCES FROM THE POINT OF SENSITIVITY IN ACCORDANCE WITH AS 2670.2 "EVALUATION OF HUMAN EXPOSURE TO WHOLE BODY VIBRATION PART II - CONTINUOUS AND SHOCK INDUCED VIBRATION IN BUILDINGS"

VM3. THE INTERNAL NOISE LEVEL IN NEIGHBOURING COMMERCIAL AND PUBLIC BUILDINGS IS NOT TO EXCEED THOSE RECOMMENDED IN AS 2107 OR AS OUTLINED IN THE COUNCIL D.A. CONDITION OF APPROVAL. IN NEIGHBOURING BUILDINGS THE INTERNAL NOISE LEVEL IS NOT TO EXCEED THE BACKGROUND NOISE LEVEL L90 BY MORE THAN 5dBa.

VM4. MAXIMUM VIBRATION VELOCITY TO BE 5mm/SECOND AT CRITICAL LOCATIONS AROUND THE PERIMETER OF THE SITE.

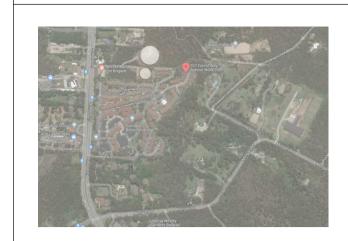
VM5. THE USE OF HEAVY MACHINERY SUCH AS ROCK HAMMERS MAY BE UNACCEPTABLE. THE CONTRACTOR IS TO INVESTIGATE THE USE OF ROTARY CUTTERS OR SIMILAR.

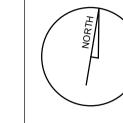
VM6. THE BUILDER SHALL ENGAGE A VIBRATION AND ACOUSTIC CONSULTANT TO FORM PART OF HIS PROJECT TEAM AND TO DETERMINE, IN CONJUNCTION WITH THE CLIENT AND PROPRIETOR, A VIBRATION MONITORING AND CONTROL PLAN (VCP) FOR THE WORKS

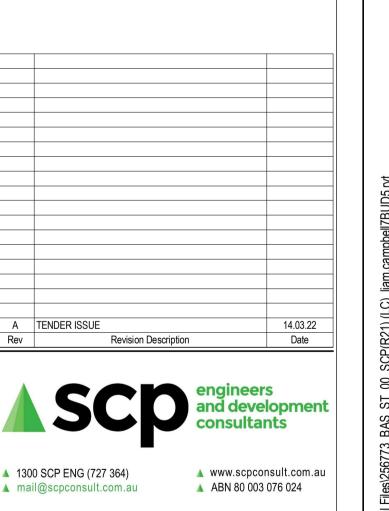
VM7. THE VCP SHOULD ADDRESS THE FOLLOWING POINTS: (A) DETERMINE A VIBRATION MONITORING AND CONTROL PLAN (VCP) IN CONJUNCTION WITH THE RESPECTIVE CONSULTANTS

(B) COMPLETE PROVING TRIALS OF THE VCP BEFORE ON-SITE INVESTIGATION. (C) INSTALL VISUAL AND AUDIBLE ALARMS TO INSTANTLY INDICATE EXCEEDANCE. (D) TRAIN ALL MACHINE OPERATORS IN VIBRATION CONTROLLED TECHNIQUES BEFORE ON-SITE ENGAGEMENT.

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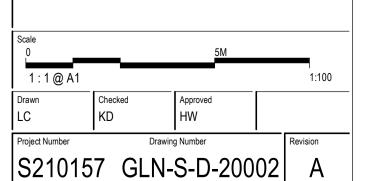


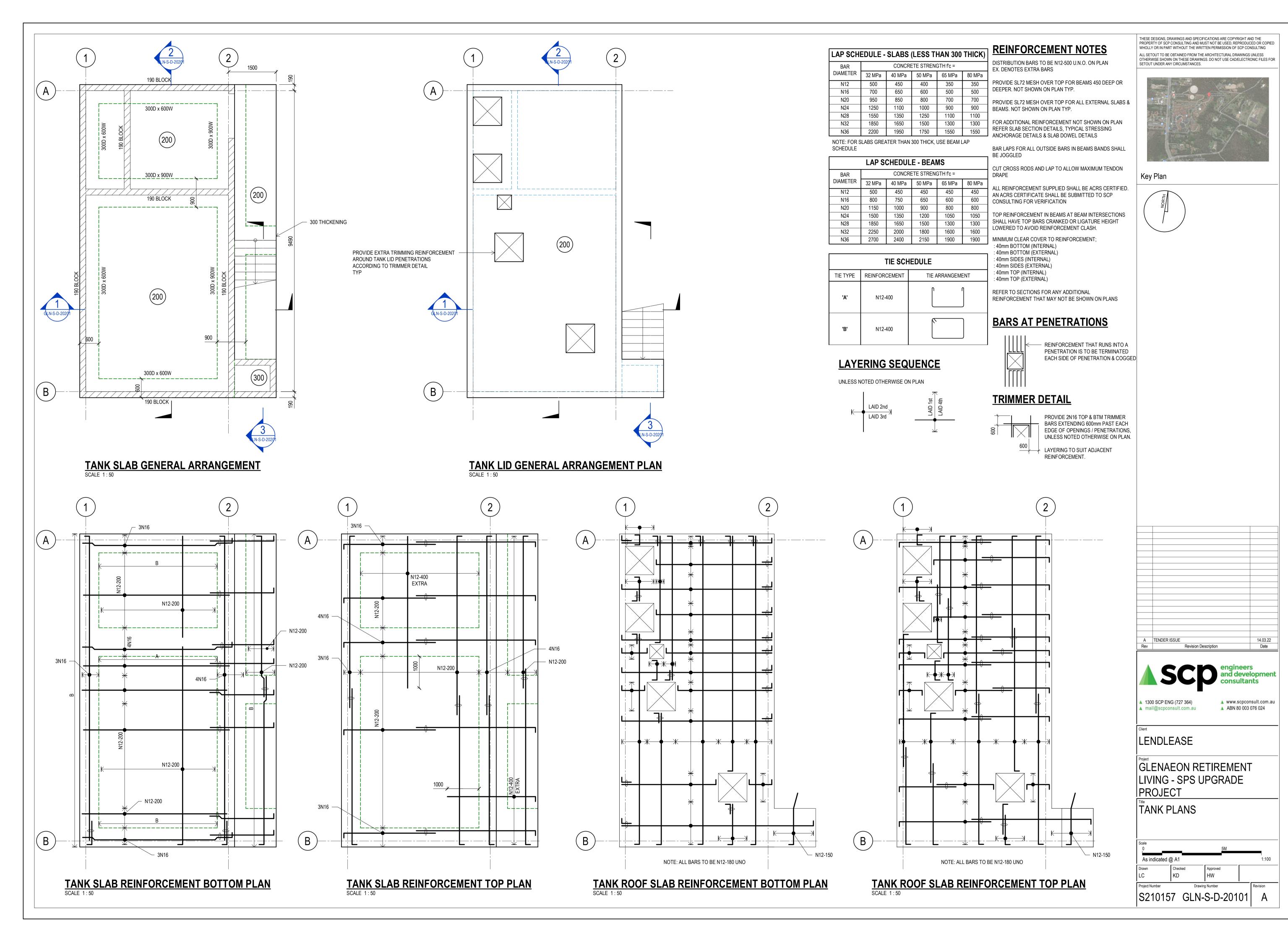


LENDLEASE

GLENAEON RETIREMENT LIVING - SPS UPGRADE PROJECT

GENERAL NOTES SHEET 2





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