



• SOIL AND WATER MANAGEMENT PLANS ARE CONCEPTUAL ONLY.  
• REFER EJE ARCHITECTURE DRAWING 9861-A200-REV B DATED APRIL 2014 FOR SITE STAGING PLAN.

**LEGEND**

←← DENOTES CLEAN WATER DIVERSION DRAIN.  
(MINIMUM 2.0m WIDE x 0.2m DEEP)

~ ~ ~ DENOTES CUT OFF SWALE.  
(MINIMUM 2.0m WIDE x 0.2m DEEP)

— X — DENOTES SEDIMENT CONTROL FENCE.  
CONSTRUCT IN ACCORDANCE WITH DETAIL SD6-8 ON DRAWING C09DA.

— — — DENOTES ROCK CHECK DAMS.  
CONSTRUCT IN ACCORDANCE WITH DETAIL SD5-4 ON DRAWING C10DA.

▨ DENOTES STABILISED SITE ACCESS.  
CONSTRUCT IN ACCORDANCE WITH DETAIL SD6-14 OF THE 'BLUE BOOK'.

■ DENOTES PROPOSED STORMWATER PIT.

▨ DENOTES PROPOSED STOCKPILE LOCATION.  
CONSTRUCT IN ACCORDANCE WITH DETAIL SD4-1 ON C10DA.

○ DENOTES SEDIMENT BASIN LOCATION

▨ DENOTES EXTENT OF STAGE 1 WORKS.

**PIT PROTECTION DETAIL**  
(ALTERNATIVE DETAIL SD6-11 OR SD6-12 OF THE BLUE BOOK AS APPROPRIATE)

INSTALL PIT PROTECTION TO ALL NEW & EXISTING STORMWATER PITS.

THE CONTRACTOR SHALL ENSURE COUNCIL ASSETS AND THE UTILITIES ARE PROTECTED AT ALL TIMES. ANY AND ALL DAMAGES TO COUNCIL ASSETS AND/OR UTILITIES SHALL BE REPAIRED BY THE CONTRACTOR TO THE SPECIFICATION OF COUNCIL AND THE UTILITIES AUTHORITY AND AT NO COST TO THE PRINCIPAL OR NORTHPROP CONSULTING ENGINEERS

SOIL AND WATER MANAGEMENT CONTROL NOTES

- THE ESCP/SWMP AND ITS ASSOCIATED EROSION AND SEDIMENT CONTROL MEASURES MUST BE CONSTANTLY MONITORED, REVIEWED, AND MODIFIED AS REQUIRED TO CORRECT DEFICIENCIES. COUNCIL HAS THE RIGHT TO REQUEST CHANGES IF, IN ITS OPINION, THE MEASURES THAT ARE PROPOSED OR HAVE BEEN INSTALLED ARE INADEQUATE TO PREVENT POLLUTION.
- PRIOR TO ANY ACTIVITIES ONSITE, THE RESPONSIBLE PERSON(S) IS TO BE NOMINATED. THE RESPONSIBLE PERSON(S) WILL BE RESPONSIBLE FOR THE EROSION AND SEDIMENT CONTROL (ESC) MEASURES ONSITE.
- THE APPROVED SWMP MUST BE AVAILABLE ON-SITE FOR INSPECTION BY COUNCIL OFFICERS WHILE WORK ACTIVITIES ARE OCCURRING.
- ALL EROSION AND SEDIMENT CONTROL MEASURES MUST BE APPROPRIATE FOR THE SEDIMENT TYPE(S) OF THE SOILS ONSITE, IN ACCORDANCE WITH THE BLUE BOOK (MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION. LANDCOM, 2004), OR OTHER CURRENT RECOGNISED INDUSTRY STANDARD FOR EROSION AND SEDIMENT CONTROL FOR AUSTRALIAN CONDITIONS. THIS INCLUDES SEDIMENT TRAPS, TREATMENT OF CAPTURED WATER, AND LINING OF CHANNELS.
- NO LAND-DISTURBING ACTIVITIES ON THE SITE SHALL OCCUR UNTIL ALL PERIMETER ESC MEASURES, SEDIMENT BASINS, AND ASSOCIATED TEMPORARY DRAINAGE CONTROLS, HAVE BEEN CONSTRUCTED AND ARE FULLY OPERATIONAL, IN ACCORDANCE WITH CURRENT BEST PRACTICE ESC. THIS IS UNLESS SUCH CLEARING IS REQUIRED FOR THE PURPOSE OF INSTALLING SUCH MEASURES, IN WHICH CASE ONLY THE MINIMUM CLEARING REQUIRED TO INSTALL SUCH MEASURES SHALL OCCUR.
- ADDITIONAL ESC MEASURES MUST BE IMPLEMENTED, AND A REVISED SWMP IS TO BE SUBMITTED FOR APPROVAL TO THE CERTIFIER (WITHIN FIVE (5) BUSINESS DAYS OF ANY SUCH AMENDMENTS) IN THE EVENT THAT:
  - THERE IS A HIGH PROBABILITY THAT SERIOUS OR MATERIAL ENVIRONMENTAL HARM MAY OCCUR AS A RESULT OF SEDIMENT LEAVING THE SITE; OR
  - THE IMPLEMENTED WORKS FAIL TO ACHIEVE COUNCIL'S WATER QUALITY OBJECTIVES SPECIFIED IN THESE CONDITIONS; OR
  - SITE CONDITIONS SIGNIFICANTLY CHANGE; OR
  - SITE INSPECTIONS INDICATE THAT THE IMPLEMENTED WORKS ARE FAILING TO ACHIEVE THE "OBJECTIVE" OF THE SWMP.
- ALL REASONABLE AND PRACTICABLE MEASURES MUST BE TAKEN TO ENSURE STORMWATER RUNOFF FROM ACCESS ROADS AND STABILISED ENTRY/EXIT SYSTEMS, DRAINS TO AN APPROPRIATE SEDIMENT CONTROL DEVICE.
- THE APPLICANT MUST ENSURE AN ADEQUATE SUPPLY OF ESC, AND APPROPRIATE POLLUTION CLEAN-UP MATERIALS ARE AVAILABLE ON-SITE AT ALL TIMES. THIS INCLUDES CHEMICALS/AGENTS TO TREAT TURBID WATER IN BASINS.
- SEDIMENT DEPOSITED OFF SITE AS A RESULT OF ON-SITE ACTIVITIES MUST BE COLLECTED AND THE AREA CLEANED/REHABILITATED AS SOON AS REASONABLE AND PRACTICABLE.
- NEWLY SEALED HARD-STAND AREAS (E.G. ROADS, DRIVEWAYS AND CAR PARKS) MUST BE SWEEP THOROUGHLY AS SOON AS PRACTICABLE AFTER SEALING/SURFACING TO MINIMISE THE RISK OF COMPONENTS OF THE SURFACING COMPOUND ENTERING STORMWATER DRAINS.
- STOCKPILES OF ERODIBLE MATERIAL MUST BE PROVIDED WITH AN APPROPRIATE PROTECTIVE COVER (SYNTHETIC OR ORGANIC) IF THE MATERIALS ARE LIKELY TO BE STOCKPILED FOR MORE THAN 10 DAYS.
- STOCKPILES, TEMPORARY OR PERMANENT, SHALL NOT BE LOCATED IN AREAS IDENTIFIED AS NO-GO ZONES (INCLUDING, BUT NOT LIMITED TO, RESTRICTED ACCESS AREAS, BUFFER ZONES, OR AREAS OF NON-DISTURBANCE) ON THE ESCP/SWMP.
- PRIORITY MUST BE GIVEN TO THE PREVENTION, OR AT LEAST THE MINIMISATION, OF SOIL EROSION, RATHER THAN THE TRAPPING OF DISPLACED SEDIMENT.
- MEASURES USED TO CONTROL WIND EROSION MUST BE APPROPRIATE FOR THE LOCATION AND PREVENT SOIL EROSION AT ALL TIMES, INCLUDING WORKING HOURS, OUT OF HOURS, WEEKENDS, PUBLIC HOLIDAYS, AND DURING ANY OTHER SHUTDOWN PERIODS.
- THE APPLICATION OF LIQUID OR CHEMICAL-BASED DUST SUPPRESSION MEASURES MUST ENSURE THAT SEDIMENT-LADEN RUNOFF RESULTING FROM SUCH MEASURES (E.G. RUNOFF OF EXCESS WATER) DOES NOT CREATE A TRAFFIC OR ENVIRONMENTAL HAZARD.
- PRIOR TO THE CONTROLLED DISCHARGE (E.G. DE-WATERING ACTIVITIES FROM EXCAVATIONS AND SEDIMENT BASINS) OF ANY WATER FROM THE SITE DURING CONSTRUCTION, THE FOLLOWING WATER QUALITY OBJECTIVES MUST BE ACHIEVED:
  - TOTAL SUSPENDED SOLIDS (TSS) TO A MAXIMUM 50mg/L;
  - TURBIDITY (NTUS) TO A MAXIMUM OF 60 NTU MEASURED BY A TURBIDITY METER;
  - WATER PH BETWEEN 6.5 AND 8.5 UNLESS OTHERWISE REQUIRED BY THE COUNCIL; AND
  - EC LEVELS NO GREATER THAN BACKGROUND LEVELS.
- PRIOR TO ANY FORECAST WEATHER EVENT LIKELY TO RESULT IN SEDIMENT LADEN RUNOFF ON THE SITE, ANY EXISTING DETENTION BASINS/TRAPS SHALL BE DEWATERED TO PROVIDE SUFFICIENT CAPACITY TO CAPTURE SEDIMENT LADEN WATER FROM THE SITE PRIOR TO THE WEATHER EVENT.
- ANY SEDIMENT-LADEN WATER CAPTURED ONSITE MUST BE TREATED TO ENSURE IT WILL ACHIEVE COUNCIL'S WATER QUALITY OBJECTIVES SPECIFIED IN THESE CONDITIONS, PRIOR TO ITS RELEASE FROM SITE. A SAMPLE OF THE RELEASED TREATED WATER MUST BE KEPT ONSITE IN A CLEAR CONTAINER WITH THE SAMPLE DATE RECORDED ON IT.
- NO ALUMINIUM BASED PRODUCTS MAY BE USED TREAT TURBID WATER (FLOCCULATING/COAGULANTS) ONSITE WITHOUT THE PRIOR WRITTEN PERMISSION FROM AN APPROPRIATE COUNCIL OFFICER. THE APPLICANT MUST HAVE A DEMONSTRATED ABILITY TO USE SUCH PRODUCTS CORRECTLY AND WITHOUT ENVIRONMENTAL HARM PRIOR TO ANY APPROVAL.
- THE CHEMICAL/AGENT (FLOCCULATING/COAGULANTS) USED IN TYPE D AND TYPE F BASINS TO TREAT TURBID WATER CAPTURED IN THE BASIN MUST BE APPLIED IN CONCENTRATIONS SUFFICIENT TO ACHIEVE COUNCIL'S WATER QUALITY OBJECTIVES, SPECIFIED IN THESE CONDITIONS, WITHIN THE X-DAY RAINFALL DEPTH USED TO CALCULATE THE CAPACITY OF THE BASIN, AFTER A RAINFALL EVENT.
- ALL MANUFACTURERS INSTRUCTIONS MUST BE FOLLOWED FOR THE USE OF ANY CHEMICALS/AGENTS USED ONSITE, EXCEPT WHERE APPROVED BY THE RESPONSIBLE PERSON OR AN APPROPRIATE COUNCIL OFFICER.
- ANY BASIN MUST BE DEWATERED AS SOON AS PRACTICAL, ONCE WATER CAPTURED IN THE BASIN ACHIEVES COUNCIL'S WATER QUALITY OBJECTIVES, SPECIFIED IN THESE CONDITIONS.
- THE APPLICANT MUST ENSURE THAT ON EACH OCCASION A TYPE F OR TYPE D BASIN WAS NOT DE-WATERED PRIOR TO BEING SURCHARGED BY A FOLLOWING RAINFALL EVENT, A REPORT IS PRESENTED TO AN APPROPRIATE COUNCIL OFFICER WITHIN 5 DAYS IDENTIFYING THE CIRCUMSTANCES AND PROPOSED AMENDMENTS, IF ANY, TO THE BASIN'S OPERATING PROCEDURES.
- WHERE MORE THAN ONE STAGE IS TO BE DEVELOPED AT ONE TIME, OR BEFORE THE PRECEDING STAGE IS COMPLETE, THE SEDIMENT BASIN(S) FOR THESE STAGES MUST HAVE SUFFICIENT CAPACITY TO CATER FOR ALL AREA DIRECTED TO THE BASIN(S).
- ALL SEDIMENT BASINS MUST REMAIN FULLY OPERATIONAL AT ALL TIMES UNTIL THE BASIN'S DESIGN CATCHMENT ACHIEVES 70% GROUND COVERAGE, OR SURFACE STABILISATION ACCEPTABLE TO COUNCIL.
- SETTLED SEDIMENT MUST BE REMOVED AS SOON AS REASONABLE AND PRACTICABLE FROM ANY SEDIMENT BASIN IN ACCORDANCE WITH THE BLUE BOOK.
- ALL SEDIMENT CONTROL DEVICES (OTHER THAN SEDIMENT BASINS) MUST BE DE-SILTED AND MADE FULLY OPERATIONAL AS SOON AS REASONABLE AND PRACTICABLE AFTER RUNOFF-PRODUCING RAINFALL, OR IF THE SEDIMENT RETENTION CAPACITY OF THE DEVICE FALLS BELOW 75% OF THE DESIGN RETENTION CAPACITY.
- PROCEDURES FOR INITIATING A SITE SHUTDOWN, WHETHER PROGRAMMED OR UN-PROGRAMMED, MUST INCORPORATE REVEGETATION OF ALL SOIL DISTURBANCES UNLESS OTHERWISE APPROVED BY COUNCIL. THE STABILISATION WORKS MUST NOT RELY UPON THE LONGEVITY OF NON-VEGETATED EROSION CONTROL BLANKETS, OR TEMPORARY SOIL BINDERS.
- ALL ESC MEASURES MUST BE INSPECTED:
  - AT LEAST DAILY (WHEN WORK IS OCCURRING ON-SITE); AND
  - AT LEAST WEEKLY (WHEN WORK IS NOT OCCURRING ON-SITE); AND
  - WITHIN 24HRS OF EXPECTED RAINFALL; AND
  - WITHIN 18HRS OF A RAINFALL EVENT THAT CAUSES RUNOFF ON THE SITE).
- WRITTEN RECORDS MUST BE KEPT ONSITE OF ESC MONITORING AND MAINTENANCE ACTIVITIES CONDUCTED DURING THE CONSTRUCTION AND MAINTENANCE PERIODS, AND BE AVAILABLE TO COUNCIL OFFICERS ON REQUEST.
- ALL SITE MONITORING DATA INCLUDING RAINFALL RECORDS, DATES OF WATER QUALITY TESTING, TESTING RESULTS AND RECORDS OF CONTROLLED WATER RELEASES FROM THE SITE, MUST BE KEPT IN AN ON-SITE REGISTER. THE REGISTER IS TO BE MAINTAINED UP TO DATE FOR THE DURATION OF THE APPROVED WORKS AND BE AVAILABLE ON-SITE FOR INSPECTION BY COUNCIL OFFICERS ON REQUEST.
- WATER QUALITY SAMPLES FROM SEDIMENT BASIN(S) MUST BE TAKEN AT A DEPTH NO LESS THAN 200MM BELOW THE WATER SURFACE WITHIN THE BASIN.
- ALL ENVIRONMENTAL INCIDENTS MUST BE RECORDED IN A FIELD LOG THAT MUST REMAIN ACCESSIBLE TO ALL RELEVANT REGULATORY AUTHORITIES ON REQUEST.
- ALL MATERIALS REMOVED FROM ESC DEVICES DURING MAINTENANCE, OR DECOMMISSIONING, WHETHER SOLID OR LIQUID, MUST BE DISPOSED OF IN A MANNER THAT DOES NOT CAUSE ANY ONGOING EROSION OR POLLUTION HAZARD.
- INSTALL SEDIMENT PROTECTION FILTERS ON ALL NEW AND EXISTING STORMWATER INLET PITS IN ACCORDANCE WITH EITHER THE MESH AND GRAVEL INLET FILTER DETAIL SD6-11 OR THE GEOTEXTILE INLET FILTER DETAIL SD6-12 OF THE 'BLUE BOOK'.
- ESTABLISH ALL REQUIRED SEDIMENT FENCES IN ACCORDANCE WITH DETAIL SD6-8 OF THE 'BLUE BOOK'.
- ALL TRENCHES INCLUDING ALL SERVICE TRENCHES AND SWALE EXCAVATION SHALL BE SIDE-CAST TO THE HIGH SIDE AND CLOSED AT THE END OF EACH DAY'S WORK.
- ALL VEGETATION TO BE REMOVED SHALL BE MULCHED ONSITE AND SPREAD/STOCKPILED AS DIRECTED BY THE SUPERINTENDENT.
- ANY SURPLUS MATERIAL SHALL BE REMOVED FROM SITE AND DISPOSED OF IN ACCORDANCE WITH EPA GUIDELINES.
- CONSTRUCT AND MAINTAIN ALL MATERIAL STOCKPILES IN ACCORDANCE WITH DETAIL SD4-1 OF THE 'BLUE BOOK' (INCLUDING CUT-OFF SWALES TO THE HIGH SIDE AND SEDIMENT FENCES TO THE LOW SIDE).
- ENSURE STOCKPILES DO NOT EXCEED 2.0m HIGH. PROVIDE WIND AND RAIN EROSION PROTECTION AS REQUIRED IN ACCORDANCE WITH THE 'BLUE BOOK'.
- PROVIDE WATER TRUCKS OR SPRINKLER DEVICES DURING CONSTRUCTION AS REQUIRED TO SUPPRESS DUST.
- ONCE CUT/FILL OPERATIONS HAVE BEEN FINALIZED ALL DISTURBED AREAS THAT ARE NOT BEING WORKED ON SHALL BE RE-VEGETATED AS SOON AS IS PRACTICAL, ALTERNATIVELY SPECIFIED EROSION & SEDIMENT CONTROL MEASURES ARE TO BE RETAINED.

SEDIMENT BASIN CALCULATION

THE SITE IS LOCATED WITHIN THE WARNERS BAY SOIL LANDSCAPE, WHICH HAS THE FOLLOWING PROPERTIES (IN ACCORDANCE WITH TABLE C13 OF THE 'BLUE BOOK'):

- SEDIMENT TYPE D
- SOIL HYDROLOGY GROUP B
- K-FACTOR OF 0.059 (WORST CASE)

THE SIZING OF THE SEDIMENT STORAGE VOLUME OF THE SITES PROPOSED SEDIMENTATION BASINS WERE CALCULATED BY APPLYING THE REVISED UNIVERSAL SOIL LOSS EQUATION (RUSLE) METHOD:

SOIL LOSS = R K L S P C

WHERE;

R = RAINFALL EROSION FACTOR = 2590

2 YEAR, 6 HOUR STORM INTENSITY = 10.9 mm/hr

LS = SLOPE LENGTH/GRADIENT FACTOR = 0.78

K = SOIL ERODIBILITY FACTOR = 0.059

P = EROSION CONTROL PRACTICE (P-FACTOR) = 13 (TYPICAL)

C = GROUND COVER (C-FACTOR) = 10 (TYPICAL FOR STRIPPED SITE)

THE REMAINING VARIABLES ARE PRESENTED WITHIN THE TEMPORARY SEDIMENT BASIN CAPACITY TABLE.

THE SETTLING ZONE VOLUME OF THE BASIN WAS CALCULATED FOR A 2 MONTHS SOIL LOSS AS CALCULATED BY THE RUSLE METHOD:

SETTLING ZONE VOLUME = 10 CV RX-DAY, Y-%ILE x CATCHMENT AREA

WHERE RX-DAY, Y-%ILE = 24.4 mm/hr

[5 DAY, 75th PERCENTILE RAINFALL EVENT, NEWCASTLE]

TOTAL BASIN VOLUME						
SITE	C <sub>v</sub>	R <sub>x</sub> -DAY, y-%ile	TOTAL CATCHMENT AREA (ha)	SETTLING ZONE VOLUME (m³)	SEDIMENT STORAGE VOLUME (m³)	TOTAL BASIN VOLUME (m³)
CATCHMENT 1	0.56	24.4	0.79	108	16	124
CATCHMENT 2	0.56	24.4	0.4	55	8	63
CATCHMENT 3	0.56	24.4	0.63	99	13	112
CATCHMENT 4	0.56	24.4	0.77	121	16	137
CATCHMENT 5	0.56	24.4	0.81	127	16	143
CATCHMENT 6	0.56	24.4	0.69	108	14	122

NOT FOR CONSTRUCTION

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT	ARCHITECT	PROJECT	DRAWING TITLE	JOB NUMBER	
A	ISSUED FOR D.A.	K.H.	B.C.	E.A.	11.04.14	ELEEBANA SHORES RETIREMENT LIVING PTY LTD	EJE architecture	ELEEBA NA SHORES PROPOSED SENIORS LIVING RETIREMENT VILLAGE DEVELOPMENT 40 & 48 BURTON RD, MOUNT HUTTON	CONCEPT SOIL AND WATER MANAGEMENT PLAN - SHEET 1	NL130193	
B	RE-ISSUED FOR D.A.	J.B.	B.C.	E.A.	05.06.14						
DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED						THE COPYRIGHT OF THIS DRAWING REMAINS WITH NORTHPROP CONSULTING ENGINEERS PTY LTD.		DRAWING NUMBER C01DA			REVISION B
										DRAWING SHEET SIZE = A1	

PLANS 1:750

0 7.5 14 21.5 29 36.5m

ALL SETOUT TO ARCHITECT'S DRAWINGS. DIMENSIONS TO BE VERIFIED WITH THE ARCHITECT AND ON SITE BEFORE MAKING SHOP DRAWINGS OR COMMENCING WORK. NORTHPROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY.

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