SOUTH GIPPSLAND SHIRE COUNCIL WALKERVILLE BASIN **UPGRADE WORKS** 31-36243





LOCALITY PLAN

В	PRELIMINARY ISSUE FOR REVIEW	JR			12/07/18
Α	PRELIMINARY ISSUE FOR REVIEW	JD			21/06/18
No	Revision Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date

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DRAWING LIST

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31-36243-G001
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31-36243-C002
31-36243-S001

DRAWING TITLE COVER SHEET, LOCALITY PLAN & DRAWING LIST GENERAL NOTES - SHEET 1 OF 2 GENERAL NOTES - SHEET 2 OF 2 LAYOUT PLAN AND SPILLWAY DETAIL SECTIONS STRUCTURAL NOTES, PLAN & SECTIONS

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PRELIMINARY

	Client	SOUTH GIP	PSLAND SHIRE COUN	ICIL
	Project	WALKERVI	LLE BASIN	
	Title	UPGRADE	WORKS	
		COVER SHI	EET, LOCALITY PLAN	& DRAWING LIST
be hless	Original Size	Drawing No:	31-36243-G00	1 Rev: B





GENERAL

- ALL WORKS SHALL CONFORM TO THE CURRENT SOUTH GIPPSLAND SHIRE COUNCIL (SGSC) INFRASTRUCTURE DESIGN MANUAL STANDARD DRAWINGS.
- THE CONTRACTOR SHALL ENSURE THAT THEY ARE CONVERSANT WITH ALL CURRENT REVISIONS.
- ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
- LEVELS ARE TO A.H.D. AND TAKEN FROM LEVEL PLANS BY MACKIE SURVEYING DATED 30/10/2017. ALL NEW PSM'S TO BE COORDINATED VERTICALLY AND HORIZONTALLY WITH LAND VICTORIA.
- AT COMPLETION, THE WHOLE SITE SHALL BE CLEANED UP, GRADED OVER AND ALL RUBBISH REMOVED, AND THE SITE LEFT IN A CLEAN AND TIDY CONDITION TO THE SATISFACTION OF THE ENGINEERING PROJECTS OFFICER.
- HOLD POINTS FOR CONSTRUCTION ARE AS FOLLOWS (24 HOURS NOTICE IS REQUIRED FOR INSPECTIONS AT HOLD POINTS): a. INSPECTION PRIOR TO COMMENCEMENT OF WORKS.
- b. INSPECTION OF SUBGRADE & FOUNDATIONS. c. INSPECTION AND TESTING OF EACH EARTHFILL LAYER PRIOR TO PLACING ANY SUBSEQUENT LAYER.
- SGSC'S ENGINEERING PROJECTS OFFICER, HEINZ ZAJAC IS TO BE CONTACTED ON 0458 837 402 WHEN ARRANGING INSPECTIONS.
- ALL LINE MARKING AND SIGNAGE TO BE INSTALLED IN ACCORDANCE WITH AS1742-1 AND AS1742-2, UNLESS SHOWN OTHERWISE. ALL TEMPORARY WARNING SIGNS USED DURING CONSTRUCTION SHALL BE IN ACCORDANCE WITH AS1742-3.
- CARRY OUT WORK IN A SAFE MANNER IN ACCORDANCE WITH APPLICABLE LEGISLATION, STATUTORY REGULATIONS, BY-LAWS OR RULES. THE CONTRACTOR IS RESPONSIBLE FOR OCCUPATIONAL HEALTH AND SAFETY OF SITE PERSONNEL AND GENERAL PUBLIC IN ACCORDANCE WITH WORK HEALTH AND SAFETY ACT 2004, LEGISLATIVE REQUIREMENTS, ASSOCIATED REGULATIONS AND CODES OF PRACTICE, INDUSTRIAL AGREEMENTS AND ACCEPTED INDUSTRY PRACTICE.
- REFER DISCREPANCIES TO THE ENGINEERING PROJECTS OFFICER BEFORE PROCEEDING WITH WORK.
- SUBMIT DETAILS OF CHANGES TO SCOPE, WORK METHODS OR MATERIALS etc FOR APPROVAL BEFORE PROCEEDING. APPROVAL DOES NOT AUTHORISE A VARIATION TO THE CONTRACT.
- CHECK STRUCTURAL DRAWINGS AGAINST OTHER DRAWINGS FOR REQUIREMENTS FOR PENETRATIONS, CONDUITS, PIPES, etc.
- NOMINATION OF PROPRIETARY ITEMS DOES NOT INDICATE EXCLUSIVE PREFERENCE, BUT INDICATES REQUIRED PROPERTIES OF ITEM. SIMILAR ALTERNATIVES HAVING REQUIRED PROPERTIES MAY BE OFFERED FOR APPROVAL. APPROVAL DOES NOT AUTHORISE A VARIATION TO THE CONTRACT. INSTALL PROPRIETARY ITEMS IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS.
- OBTAIN NECESSARY PERMITS AND APPROVALS FROM RELEVANT AUTHORITIES BEFORE COMMENCING WORK ON SITE. NOTIFY RELEVANT SERVICE AUTHORITIES BEFORE COMMENCING WORK ON SITE
- DO NOT OBTAIN DIMENSIONS BY SCALING FROM DRAWINGS.
- HAVE SURVEY AND SETTING OUT UNDERTAKEN BY A REGISTERED SURVEYOR.
- VERIFY ON SITE SETTING OUT DIMENSIONS AND EXISTING MEMBER SIZES SHOWN ON DRAWINGS BEFORE SHOP DRAWINGS, CONSTRUCTION AND FABRICATION IS COMMENCED. EXISTING STRUCTURES SHOWN ON DRAWINGS ARE IN APPROXIMATE LOCATIONS ONLY.
- TAKE CARE OF HAZARDS ASSOCIATED WITH BURIED, CONCEALED OR OVERHEAD SERVICES. UNDERTAKE EXPLORATION TO ESTABLISH LOCATION OF AND PROTECT EXISTING SERVICES AT SITE. MARK LOCATIONS OF SERVICES CLEARLY ON SITE, AND ON AS-BUILT DRAWINGS. HAND EXCAVATE WITHIN ONE METRE OF IN-GROUND SERVICES.
- DISPOSE OF SURPLUS MATERIAL OFF SITE IN ACCORDANCE WITH LOCAL AUTHORITY WASTE REGULATIONS.
- IMPLEMENT SOIL AND WATER MANAGEMENT PROCEDURES TO AVOID EROSION, CONTAMINATION AND SEDIMENTATION OF SITE, SURROUNDING AREAS AND DRAINAGE SYSTEMS AS PART OF THE CONSTRUCTION ENVIRONMENTAL MONITORING PLAN (CEMP).
- WORKMANSHIP AND MATERIALS TO COMPLY WITH REQUIREMENTS OF AUSTRALIAN STANDARDS, BUILDING CODE OF AUSTRALIA (BCA) AND BY-LAWS AND ORDINANCES OF RELEVANT BUILDING AUTHORITIES. ALL STANDARDS REFERRED TO ARE THOSE CURRENT (AS AMENDED) AT COMMENCEMENT OF THE WORKS.
- OBTAIN REQUIREMENTS FOR ADJOINING ELEMENTS TO BE FIXED TO OR SUPPORTED ON WORK AND PROVIDE FOR REQUIRED FIXINGS. PROVIDE FOR TEMPORARY SUPPORT OF ADJOINING ELEMENTS DURING CONSTRUCTION. DRAWINGS DO NOT SHOW DETAILS OF ALL FIXTURES, INSERTS, SLEEVES, RECESSES OR OPENINGS etc REQUIRED.
- MAKE GOOD ANY DAMAGE TO EXISTING ELEMENTS AT COMPLETION OF WORKS.
- WHERE NEW WORK ABUTS EXISTING, PROVIDE SMOOTH TRANSITION FREE OF ABRUPT CHANGES.
- HAVE TESTING PERFORMED BY AN INDEPENDENT NATA (NATIONAL ASSOCIATION OF TESTING AUTHORITIES) ACCREDITED AUTHORITY, AND PROVIDE TEST REPORTS TO THE ENGINEERING PROJECTS OFFICER.
- SEPARATE METALS FROM INCOMPATIBLE MATERIALS (eg STAINLESS STEEL, GALVANIZED STEEL, UNGALVANIZED STEEL AND TREATED TIMBER etc) BY CONCEALED LAYERS OF SUITABLE INERT MATERIALS OF SUITABLE THICKNESSES. USE PLASTIC SLEEVES AND WASHERS FOR BOLTS, etc.
- EXTERNAL ELEMENTS ARE THOSE EXPOSED TO WEATHER, RAIN AND WATER PENETRATION IN FINAL WORKS.
- 28. SUPPLY RELEVANT NOTES, DRAWINGS AND SPECIFICATIONS etc TO SUB-CONTRACTORS.
- 29. KEEP ON SITE A COMPLETE SET OF CONTRACT DOCUMENTS (INCLUDING DRAWINGS AND SPECIFICATIONS) AND SITE INSTRUCTIONS.

LIMITATIONS

- GHD PTY LTD (GHD) HAS PREPARED THIS REPORT ON THE BASIS OF INFORMATION PROVIDED BY SGSC AND OTHERS WHO PROVIDED INFORMATION TO GHD (INCLUDING GOVERNMENT AUTHORITIES), WHICH GHD HAS NOT INDEPENDENTLY VERIFIED OR CHECKED BEYOND THE AGREED SCOPE OF WORK. GHD DOES NOT ACCEPT LIABILITY IN CONNECTION WITH SUCH UNVERIFIED INFORMATION, INCLUDING ERRORS AND OMISSIONS IN THE REPORT WHICH WERE CAUSED BY ERRORS OR OMISSIONS IN THAT INFORMATION.
- GHD HAS SPECIFICALLY RELIED ON THE FOLLOWING INFORMATION PROVIDED BY OTHERS: a. DAM CONSEQUENCE CATEGORY OF 'VERY LOW' AS DETERMINED BY SOUTHERN RURAL WATER.
- b. EXISTING COORDINATES AND LEVELS, AND DESIGN LEVELS, PROVIDED BY SGSC. c. SPILLWAY HAS BEEN DESIGNED FOR 1:100 ARI FOR 5-HOUR STORM. THIS IS THE DURATION PROVIDED BY SGSC FOR THE
- UPSTREAM CATCHMENT TO BE FULLY CONTRIBUTING TO THE BASIN INLET.

TEMPORARY WORKS

- THESE DRAWINGS DO NOT DETAIL TEMPORARY WORKS. CONSTRUCTION METHODS AND TEMPORARY WORKS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- PROVIDE SCAFFOLDING, BARRIERS, FALL RESTRAINT, HAND-MID RAILS AND TOE BOARDS FOR WORK AT HEIGHT. ERECT ACCESS STAIRS AT EARLIEST OPPORTUNITY TO REDUCE OPEN SHAFT HAZARDS AND FACILITATE ACCESS. MAINTAIN SAFETY MESH AND BARRIERS TO ALL OPENINGS AND ELEVATED EDGES.

WATER MANAGEMENT

THE CONTRACTOR MAY CONSTRUCT COFFERDAMS TO ENABLE EXCAVATION OF THE OUTLET PIPE, OR ANY OTHER AREA OF THE WORKS WHERE IT MAY BE NECESSARY TO PROVIDE A WORKING BUFFER BETWEEN ANY WATER IN THE BASIN AND THE AREA OF THE WORKS.

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- TEMPORARY DIVERSION AND PROTECTIVE WORKS AS DEEMED NECESSARY.
- 36. THE CONTRACTOR SHALL DO ALL WORK NECESSARY TO DIVERT ANY WATER INTERFERING WITH THE PROGRESS OF THE THE WORKS BY WATER DUE TO FLOODS OR OTHER CAUSES.
- FOUNDATIONS, EXCAVATION AREAS AND OTHER PARTS OF THE WORKS FREE FROM WATER AS REQUIRED FOR PREVENT MIGRATION OF MATERIALS WITHIN THE EMBANKMENT.
- THE SITE. ALL WORKS SHALL BE CONDUCTED IN ACCORDANCE WITH THE CEMP.

SAFETY IN DESIGN

- 39. THE SAFETY RISK MITIGATION ITEMS BELOW ARE BASED ON GHD'S DESIGN OFFICE EXPERIENCE AND DO NOT NECESSARILY UNDERTAKE APPROPRIATE RISK MANAGEMENT ACTIVITIES TO REDUCE RISK AND IS NOT AN ADMISSION BY GHD THAT INCLUSION OF ANY ITEM IS DESIGNER'S RESPONSIBILITY.
- 40. CONSTRUCT BUILDING ELEMENTS THAT CONTRIBUTE TO SAFETY, SUCH AS HANDRAILS AND TOE BOARDS, FALL ARREST SYSTEMS, ACCESS STAIRS, etc AS EARLY AS POSSIBLE.
- 41. PROVIDE SAFETY BARRIERS AT EDGES OF OPENINGS AND ELEVATED AREAS.
- 42. REVIEW ADEQUACY OF WORKING SPACE AVAILABLE FOR CONSTRUCTION ACTIVITIES. ENSURE SEPARATION OF PLANT AND PERSONNEL ON SITE, INCLUDING MOVEMENTS OF BOTH.
- 43. LOCATE LIFTING SLEW AND LAY DOWN AREAS AWAY FROM REGULAR CONSTRUCTION TRAFFIC.
- 44. PROVIDE PROTECTION TO PERSONNEL FROM PLANT AND EQUIPMENT.
- WRITTEN RISK ASSESSMENTS ARE ADVISED FOR ACCESS TO OPEN EXCAVATIONS.
- COLLAPSE OR ENGULFMENT.
- 47. HAVE LOAD CAPACITY OF STRUCTURES VERIFIED BY SUITABLY QUALIFIED STRUCTURAL ENGINEER BEFORE LOADING OR STORING MATERIALS ON EXISTING OR PARTIALLY COMPLETED STRUCTURAL ELEMENTS.
- 48. SEEK ADVICE FROM SUITABLY QUALIFIED STRUCTURAL ENGINEER IF PLANNING CRANE LIFTS OR HOIST INSTALLATION ON PARTIALLY ERECTED OR SUSPENDED STRUCTURES.
- 49. SEEK ADVICE FROM SUITABLY QUALIFIED STRUCTURAL ENGINEER BEFORE CORING, CHASING, CUTTING OR REMOVAL OF EXISTING CONCRETE AND REINFORCEMENT.
- 50. REMOVE MATERIAL FROM STORAGE STRUCTURES BEFORE UNDERTAKING MAINTENANCE WORK.

SURVEY, SET OUT AND ASSET RECORDING

- 51. ALL LEVELS ARE IN METRES TO AHD.
- 52. ALL CO-ORDINATES ARE IN METRES TO THE MAP GRID OF AUSTRALIA (MGA 94, Z55).
- 53. THE CONTRACTOR IS DIRECTLY RESPONSIBLE FOR ENSURING THE PROJECT SET OUT IS CONSISTENT WITH THE DESIGN. ENGINEERING PROJECTS OFFICER FOR CLARIFICATION BEFORE PROCEEDING.
- 54. THE CONTRACTOR IS TO ENGAGE A SUITABLY QUALIFIED AND EXPERIENCED SURVEYOR TO UNDERTAKE ASSET RECORDING OF THE WORK. ALL SURVEYOR WORKS AND DATA RECORDING SHALL BE UNDERTAKEN IN ACCORDANCE WITH SGSC INFRASTRUCTURE DESIGN MANUAL.
- 55. ALL SPECIFIC PIPE MATERIALS SHALL BE INDICATED IN THE AS CONSTRUCTED INFORMATION.

CLEARING AND GRUBBING

- 56. VEGETATION REMOVAL SHALL BE IN ACCORDANCE WITH SGSC PLANNING PERMIT 2018/86.
- 57. CLEARING AND GRUBBING IS THE REMOVAL WITHIN SPECIFIED LIMITS OF VEGETATION SUCH AS TREES, TREE STUMPS, TREE CLEARING AND GRUBBING WORKS SHALL BE IN ACCORDANCE WITH THE CEMP.
- IMPLEMENTED. PRIOR TO COMMENCEMENT OF CLEARING AND GRUBBING OPERATIONS.
- THE AREA BEING CLEARED.
- 60. REMOVAL OF EXISTING TREES SHALL INCLUDE:
- a. REMOVAL OF TREE STUMPS AND TREE ROOTS TO THE EXTENT OF THE TREE DRIP LINE. b. REMOVAL OF TREE ROOTS 20 mm OR LARGER IN DIAMETER OUTSIDE OF THE TREE DRIP LINE. c. MINIMUM DEPTH OF 1 m BELOW THE EXISTING SURFACE. d. TREE ROOTS RUNNING AWAY FROM THE EMBANKMENT CENTRELINE NEED NOT BE FULLY REMOVED, SUBJECT TO APPROVAL BY THE ENGINEERING PROJECTS OFFICER.
- 61. FOLLOWING THE REMOVAL OF THE TREE ROOTS, THE DISTURBED OR LOOSED EMBANKMENT FILL SHALL BE REMOVED BY EXCAVATION TO THE SATISFACTION OF THE ENGINEERING PROJECTS OFFICER.
- 62. HOLES CREATED BY GRUBBING BELOW THE FOUNDATION LEVEL OF STRUCTURES SHALL BE BACKFILLED WITH COMPACTED EARTHFILL MATERIAL IN ACCORDANCE WITH CLAUSE 106 TO 108.

EXCAVATION AND EARTHWORKS TOLERANCES

- REMEDY ANY WORK IN WHICH THE PRESCRIBED TOLERANCE LIMITS ARE EXCEEDED.
- SPECIFIED OR SHOWN ON THE DRAWINGS: a. FOUNDATION EXCAVATION: +/-25 mm AND TO GRADES SHOWN ON THE DRAWINGS INCLUDING AN ALLOWANCE FOR BLINDING CONCRETE WHERE SHOWN.
- DIVISION LINE BETWEEN SUCCESSIVELY PLACED LAYERS SHALL BE 100 mm. c. VERTICAL THICKNESS: WHERE A MATERIAL IS PLACED AS A MORE OR LESS HORIZONTAL BLANKET, THE TOLERANCE ON
- LIFTS SHALL NOT VARY IN THICKNESS BY MORE THAN 10% OF THE LIFT HEIGHT.
- d. BATTER SLOPE AND SHAPE: AT ANY CROSS SECTION THE BATTER SLOPE SHALL BE NOT STEEPER THAN THE SLOPE SPECIFIED. THE BATTER FACE SHALL BE FINISHED TO A UNIFORM SHAPE.

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Ordinary Meeting of Council No. 431 - 27 February 2019

35. THE CONTRACTOR SHALL PROVIDE DEWATERING SYSTEMS AND CONSTRUCTION OF FLOOD PROTECTION WORKS, INCLUDING PROVISION AND MAINTENANCE OF ALL NECESSARY DIVERSION FLUMES, DRAINS, PUMPS, COFFERDAMS, BANKS OR OTHER

WORKS, KEEP THE EXCAVATIONS FREE FROM WATER WHILE THE WORKS ARE IN PROGRESS, AND PREVENT ANY DAMAGE TO

THE CONTRACTOR SHALL PROVIDE FOR THE SAFE DISCHARGE OF SEEPAGE, DRAINAGE AND STORMWATER AT ALL TIMES DURING THE WORKS AND FOR THE EFFECTIVE DEWATERING OF EXCAVATIONS. THIS DEWATERING SHALL MAINTAIN THE CONSTRUCTING EACH PART OF THE WORKS, SHALL ENSURE THE STABILITY OF EXCAVATIONS DURING CONSTRUCTION, AND

38. PLAN AND CARRY OUT THE WORK TO AVOID EROSION, CONTAMINATION AND SEDIMENTATION OF THE SITE AND SURROUNDING AREAS, AND PREVENT THE DISCHARGE OF WATER CONTAINING POLLUTED MATTER OR VISIBLE SUSPENDED MATERIALS OFF

ACCOUNT FOR ALL CONSTRUCTION, OPERATION, MAINTENANCE AND DEMOLITION SAFETY RISKS. BASED ON INFORMATION AVAILABLE WHEN THIS DRAWING WAS MADE, IN ITS CAPACITY AS DESIGNER ONLY, GHD HAS TRIED TO IDENTIFY SAFETY RISKS PERTAINING TO CONSTRUCTION, OPERATION, MAINTENANCE AND DEMOLITION PHASES OF THE ASSET. INCLUSION (OR NOT) OF ANY ITEM DOES NOT REDUCE OR LIMIT OBLIGATIONS OF CONSTRUCTOR, USER, MAINTAINER AND DEMOLISHER TO

46. DO NOT ALLOW ACCESS TO EXCAVATIONS UNLESS APPROPRIATE ACCESS AND EGRESS IS PROVIDED IN CASE OF INUNDATION,

SHOULD ACTUAL SITE CONDITIONS CONFLICT IN ANY WAY WITH THAT DOCUMENTED, THE CONTRACTOR SHALL CONTACT THE

ROOTS/ROOT BALLS, LOGS, BRUSH, NOXIOUS WEEDS AND DECAYED VEGETABLE MATTER, INCLUDING LOPPING OF TREES.

58. EFFECTIVE EROSION AND SEDIMENTATION CONTROL MEASURES IN ACCORDANCE WITH THE CEMP WILL NEED TO BE

59. TREES SHALL BE BROUGHT DOWN IN SUCH MANNER AS TO AVOID DANGER TO PERSONNEL AND PLANT OR DAMAGE TO OTHER TREES, SHRUBS, STRUCTURES OR PROPERTY OUTSIDE THE AREA BEING CLEARED OR DESIGNATED TO BE RETAINED WITHIN

63. SET-OUT AND CONSTRUCT EACH SECTION OF THE WORKS WITHIN THE PRESCRIBED TOLERANCE LIMITS. ALL EARTHWORKS SHALL BE FINISHED TO REASONABLY SMOOTH AND UNIFORM SURFACES CONFORMING TO THE REQUIRED TOLERANCES.

64. EARTHWORKS SHALL BE FINISHED TO WITHIN THE FOLLOWING LIMITS FOR THE LEVELS, LINES, GRADES AND CROSS SECTIONS

b. ABRUPT CHANGES WILL NOT BE PERMITTED IN THE DIVISION LINES BETWEEN ZONES. THE MAXIMUM OFFSET OF THE

THE VERTICAL THICKNESS SHALL NOT BE LESS THAN SHOWN ON THE DRAWINGS AND NOT MORE THAN 100 mm. INDIVIDUAL

	LEVEL.	
65.	DESIGN CREST LEVEL IS TAKEN AS THE LOWEST RL OF THE TOP OF THE EARTH FILL EMBANKMENT. DESIGN CREST LEVEL DOES NOT INCLUDE THE EMBANKMENT CREST CAPPING LAYER.	<u>BAE</u> 92
EXCA	VATION	52.
66.	MATERIALS SUITABLE FOR CONSTRUCTION USE SHALL BE EXCAVATED SEPARATELY FROM MATERIALS ASSESSED AS BEING UNSUITABLE.	93.
67.	UNSUITABLE MATERIALS FROM EXCAVATIONS SHALL BE DISPOSED OF IN ACCORDANCE WITH THE CEMP.	<u>STC</u>
68.	FINAL EXCAVATED SURFACES SHALL NOT BE LOOSE OR FRIABLE (LOOSE BLOCKS) AND SHALL NOT HAVE EXCESSIVE DESICCATION CRACKING AT THE TIME OF PLACEMENT OF THE OVERLYING MATERIAL. AS A GUIDE, EXCESSIVELY DESICCATION CRACKED MATERIAL IS READILY ABLE TO BE REMOVED FROM THE SURFACE IN LOOSE BLOCKS - ACCEPTABLE MATERIALS HAVE NARROW CRACK WIDTHS AND EXCAVATE TO A SMOOTH SURFACE WITH A SMOOTH EDGE EXCAVATOR BUCKET WITH NO PLUCKING OF LOOSE MATERIAL FROM THE EXCAVATED SURFACE. APPROPRIATE MEASURES ARE TAKEN TO ENSURE THIS LEVEL OF DESICCATION CRACKING IS NOT EXCEEDED. SUCH MEASURES MAY INCLUDE (BUT ARE NOT LIMITED TO) STAGING OF THE WORKS OR FINAL TRIMMING IMMEDIATELY PRIOR TO PLACEMENT OF OVERLYING MATERIAL ZONES.	94. 95.
69.	TRAFFICKING WILL RESULT IN DAMAGE TO PREPARED FOUNDATION SURFACES. THE CONTRACTOR SHALL CHOOSE A METHOD THAT AVOIDS MACHINERY TRAFFICKING ACROSS FINAL STRIPPED FOUNDATION SURFACES.	
70.	PRIOR TO COMMENCING EXCAVATION IN ANY AREA AND DURING EXCAVATION WORK THE ENGINEERING PROJECTS OFFICER SHALL INSPECT EACH TYPE OF MATERIAL ENCOUNTERED AND AGREE ON THE CLASSIFICATION OF THE MATERIAL.	96.
71.	MATERIALS, OTHER THAN TOPSOIL, CLASSIFIED AS UNSUITABLE FOR USE AS COMPACTED EARTHFILL SHALL BE TREATED AS WASTE AND STOCKPILED SEPARATELY FOR LATER DISPOSAL.	97.
72.	MATERIALS CLASSIFIED AS SUITABLE FOR USE AS COMPACTED EARTHFILL SHALL BE STOCKPILED FOR PLACEMENT IN THE WORKS.	98.
<u>STRI</u>	PPING OF TOPSOIL	FOL
73.	STRIP TOPSOIL OVER THE GROUND TO BE DISTURBED BY THE WORKS TO THE EXTENT DIRECTED BY THE ENGINEERING PROJECTS OFFICER FROM SITE AREAS TO BE OCCUPIED OR AFFECTED BY THE WORKS.	99.
74.	STRIP THE TOPSOIL TO A DEPTH JUST SUFFICIENT TO INCLUDE THE ROOT ZONE OR DEEPER AS DIRECTED BY THE ENGINEERING PROJECTS OFFICER TO REMOVE ALL ORGANIC MATTER TO THE APPROVAL OF THE ENGINEERING PROJECTS OFFICER.	100
75.	STRIPPED TOPSOIL SHALL BE STOCKPILED FOR REUSE. TOPSOIL STOCKPILES ARE TO BE CLEARLY LABELLED AND SEPARATED FROM BACKFILL MATERIAL.	101
EXCA	VATION DEPTHS	
76.	 THE MINIMUM EXTENTS OF EXCAVATION SHALL BE TO THE LINES, LEVELS AND GRADES SHOWN ON THE DRAWINGS BUT SHALL ALSO INCLUDE THE FOLLOWING: a. STRIPPING OF ALL TOPSOIL, VEGETABLE MATTER OF ALL KINDS, INCLUDING STUMPS, ROOTS, ROOTBALLS AND ALL OTHER OBJECTIONABLE MATERIALS, TOGETHER WITH WEAK, LOOSE, FRIABLE OR PERMEABLE SOILS. TOPSOIL SHALL BE STOCKPILED FOR RE-USE IN ACCORDANCE WITH THE CEMP. b. THE REMOVAL OF MATERIALS THAT MIGHT INTERFERE WITH THE BONDING OF THE FILL OR CONCRETE WITH THE FOUNDATIONS OR WITH COMPACTING OF THE FILL. c. THE REMOVAL OF MATERIALS OF INADEQUATE STRENGTH. 	102
77.	INSPECTION OF THE SURFACE MAY INCLUDE PROOF-ROLLING THE SURFACE AS DESCRIBED IN CLAUSES 130 TO 135. FURTHER PROOF-ROLLING MAY BE REQUIRED FOLLOWING THE REMOVAL OF ANY UNSUITABLE MATERIALS. THE ENGINEERING PROJECTS OFFICER MAY DIRECT ALTERNATIVE METHODS OF FOUNDATION TESTING IF PROOF-ROLLING IS NOT CONSIDERED APPROPRIATE. THIS MAY INCLUDE PLATE LOAD TESTING.	<u>FILI</u>
78.	WHERE, IN THE OPINION OF THE ENGINEERING PROJECTS OFFICER, THE FOUNDATION IS UNABLE TO SUPPORT CONSTRUCTION EQUIPMENT, IS UNSUITABLE SILT OR ORGANIC MATERIAL, OR IT IS NOT POSSIBLE TO COMPACT THE OVERLYING FILL MATERIAL BECAUSE OF HIGH MOISTURE CONTENT, THE ENGINEERING PROJECTS OFFICER MAY DIRECT ONE OF THE FOLLOWING:	104
	 a. SCARIFY THE SUB-GRADE TO A DEPTH OF 150 mm, WORK AS NECESSARY TO ACCELERATE DRYING, AND RE-COMPACT WHEN THE MOISTURE CONTENT IS SATISFACTORY. b. EXCAVATE THE UNSUITABLE MATERIAL AND REMOVE TO SPOIL, AND BACKFILL EXCAVATED AREAS. c. OTHER WORKS AS CONSIDERED NECESSARY. 	105
79.	EXCAVATIONS REMAINING AFTER THE REMOVAL OF UNSUITABLE MATERIALS SHALL BE BACKFILLED WITH COMPACTED EARTHFILL TO DESIGN FOUNDATION LEVEL UNLESS NOTED OTHERWISE ON THE DRAWINGS. SPECIFIED COMPACTION AND MOISTURE CONTENT REQUIREMENTS FOR COMPACTED EARTHFILL SHALL APPLY.	<u>CO</u>
80.	SHOULD FOUNDATIONS BECOME DAMAGED AFTER INSPECTION AND APPROVAL (i.e. DESICCATED OR CRACKED DUE TO EXCESSIVE DRYING, ERODED OR SOFT DUE TO EXCESSIVE FLOWS OR PONDING OF WATER OR DAMAGED DUE TO MACHINERY), REMEDIATION WORK TO THE SATISFACTION OF THE ENGINEERING PROJECTS OFFICER MAY BE REQUIRED. SUCH REMEDIATION MAY INCLUDE FURTHER EXCAVATION TO EXPOSE ACCEPTABLE FOUNDATION MATERIAL AND BACKFILLING TO DESIGN LEVEL.	106. 107
81.	FOLLOWING EXCAVATION AND ADDITIONAL TREATMENT AS DESCRIBED ABOVE, THE DISTURBED FOUNDATION SHALL BE COMPACTED TO THE ORIGINAL BEARING CAPACITY, TO BE VERIFIED BY THE ENGINEERING PROJECTS OFFICER.	108
TREM	ICH EXCAVATION	
82.	FOR TRENCHES WHICH ARE DEEPER THAN 1.5 m SUPPORT (i.e. SHORING) OR BENCHING MAY BE REQUIRED. ALL SHORING FOR TRENCHES SHALL BE DESIGNED BY A COMPETENT AND EXPERIENCED PERSON.	<u>PL</u>
83.	THE QUALITY OF ALL MATERIALS USED FOR THE TEMPORARY SUPPORT OF EXCAVATIONS SHALL CONFORM TO THE APPROPRIATE AUSTRALIAN STANDARDS.	109
84.	LEAVE A CLEAR SPACE AS REQUIRED BY TRENCHING REGULATIONS BETWEEN THE EDGE OF THE EXCAVATION AND THE INNER TOES OF THE SPOIL BANKS.	
85.	DO NOT STACK FINE OR COARSE AGGREGATE, CEMENT OR MATERIALS WITHIN 1.0 m OF THE EDGE OF ANY EXCAVATION.	110
86.	DO NOT STACK EXCAVATED MATERIALS AGAINST THE WALLS OF ANY BUILDING OR FENCE WITHOUT THE WRITTEN PERMISSION OF THE OWNER OF SUCH BUILDING OR FENCE. UPON REMOVAL OF SPOIL BANKS SO PLACED, RESTORE THE WALL OR FENCE TO A CONDITION EQUAL TO THAT EXISTING PRIOR TO THE STACKING OF THE SPOIL AGAINST IT.	111
EXC\	ATION SUPPORT	
87.	ALL SECTIONS OF THE WORK SHALL BE CARRIED OUT IN A CAREFUL, SECURE AND SAFE MANNER WITH DUE PRECAUTIONS AGAINST ACCIDENTS. SUPPORT OF EXCAVATIONS (INCLUDING TIMBERING, SHORING, PROPPING AND THE LIKE), IF APPLICABLE, SHALL BE CARRIED OUT IN CONFORMITY WITH ALL REQUIREMENTS AND REGULATIONS OF CONTROLLING AUTHORITIES, NO PERSONNEL ARE TO ENTER EXCAVATED LINSUPPORTED TRENCHES DEEDED THAN 4.5 ~	112
88.	ATTENTION IS DRAWN TO THE REQUIREMENTS OF THE CONSTRUCTION SAFETY ACT 1979 AND THE OCCUPATIONAL HEALTH	113
00	AND SAFETY REGULATIONS 2007 AND ANY AMENDMENTS THEREOF.	114
89.	CARE SHALL BE TAKEN TO PREVENT VOIDS OUTSIDE THE SHEETING BUT, IF VOIDS ARE FORMED, THEY SHALL IMMEDIATELY BE	

e. BATTER LINE: FILL BATTERS SHALL BE CONSTRUCTED SO THAT THE TOE OF THE BATTER IS NOT MORE THAN 300 MM

f. FINISHED SURFACE: TOP SURFACE OF FILLS INCLUDING FINISHED CREST CAPPING GRADE: +50 mm, -0 mm FROM DESIGN

OUTSIDE THE CALCULATED BATTER LINE (I.E. THE LINE JOINING THE BATTER POINTS).

FILLED AND RAMMED TO THE SATISFACTION OF THE ENGINEERING PROJECTS OFFICER. AS THE WORK PROCEEDS. SHORING AND ANY OTHER FORM OF EXCAVATION SUPPORT SHALL BE WITHDRAWN EXCEPT IN 90

CASES WHERE THE ENGINEERING PROJECTS OFFICER HAS DIRECTED THAT IT MAY BE LEFT IN POSITION. TIMBERING SHALL NOT REMAIN PERMANENTLY IN POSITION WITHOUT THE WRITTEN PERMISSION OF THE ENGINEERING PROJECTS OFFICER. THE SHEETING AND BRACING SHALL BE WITHDRAWN IN SUCH A MANNER AS NOT TO ENDANGER ANY ADJACENT STRUCTURE OR

	DO NOT SCALE	Drawn J.DYKES	Designer J.ANDERS	Client	SOUTH GIP	PSLAND SHIRE COUNCIL	
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PIPELINE.

91. ANY MATERIALS USED TO SUPPORT THE EXCAVATION SHALL NOT IMPAIR THE LONG TERM PERFORMANCE OF THE WORKS.

GROUND

- BAD GROUND IS DEFINED AS UNSUITABLE FOR THE PURPOSES OF THE WORKS, INCLUDING UNSTABLE GROUND AND FILL LIABLE TO SUBSIDENCE, GROUND CONTAINING CAVITIES, FAULTS OR FISSURES, GROUND CONTAMINATED BY HARMFUL SUBSTANCES OR GROUND WHICH IS OR BECOMES SOFT, WET OR UNSTABLE.
- IF BAD GROUND IS ENCOUNTERED, NOTIFY TO THE ENGINEERING PROJECTS OFFICER IMMEDIATELY AND OBTAIN INSTRUCTIONS BEFORE CARRYING OUT ANY FURTHER WORK IN THE AFFECTED AREA.

DCKPILING

- CONSTRUCT, MAINTAIN AND OPERATE ALL STOCKPILES IN A NEAT COMPACT MANNER SUCH THAT THEY OCCUPY AS LITTLE AREA AS IS PRACTICABLE AND ARE AT ALL TIMES ADEQUATELY SEALED AND GRADED TO SHED RAINFALL WITHOUT EROSION. ESTABLISH STOCKPILES TO SIZES AND IN LOCATIONS AS DIRECTED BY THE ENGINEERING PROJECTS OFFICER. EROSION CONTROL MEASURES SHALL BE PROVIDED IN ACCORDANCE WITH THE CEMP.
- EXCAVATED MATERIALS SUITABLE FOR USE IN CONSTRUCTION, WHICH CANNOT BE USED IMMEDIATELY, SHALL BE STOCKPILED IN STOCKPILE AREAS APPROVED BY THE ENGINEERING PROJECTS OFFICER. USABLE FILL MATERIAL SHALL BE STOCKPILED IN A MANNER SUITABLE TO MAINTAIN THE REQUIRED MOISTURE CONTENT WITHIN THE FILL FOR RE-COMPACTION. OTHERWISE MATERIAL SHALL BE CONDITIONED TO OPTIMISE COMPACTION IN AN APPROVED MANNER PRIOR TO PLACING.
- ALL AREAS DESIGNATED FOR TEMPORARY STOCKPILING SHALL BE FIRST STRIPPED OF ALL TOPSOIL AND VEGETABLE MATTER, PRIOR TO THE PLACEMENT OF ANY SUCH MATERIAL. ONCE THE TEMPORARY STOCKPILE HAS BEEN REMOVED THE SITE SHALL BE REHABILITATED INCLUDING REPLACEMENT OF TOPSOIL.
- THE TOP SURFACES OF ALL MATERIAL PLACED WITHIN STOCKPILE AREAS SHALL BE GRADED. SURFACE RUN-OFF SHALL BE CONTROLLED TO MINIMISE EROSION OF THE SURFACES OF STOCKPILES.
- TOPSOIL STOCKPILES SHALL BE LIMITED TO A MAXIMUM HEIGHT OF 1.5 m.

NDATION PREPARATION

- THE ENGINEERING PROJECTS OFFICER SHALL INSPECT AND APPROVE ALL FOUNDATIONS. INSPECTION OF TRENCH FOUNDATIONS SHALL ALSO INCLUDE INSPECTION OF TRENCH WALLS TO ENSURE THAT THERE ARE NO VISIBLE CRACKS OR VOIDS WITHIN EITHER THE FOUNDATION OR TRENCH SIDES.
- WHERE GROUNDWATER OR SEEPAGE IS ENCOUNTERED NOTIFY THE ENGINEERING PROJECTS OFFICER AND ANY ACTION TO BE TAKEN SHALL, UNLESS OTHERWISE SPECIFIED, BE SUBMITTED TO THE ENGINEERING PROJECTS OFFICER FOR REVIEW.
- FOR SOIL FOUNDATIONS TO BE COVERED WITH COMPACTED EARTHFILL, CRUSHED ROCK OR ANY STRUCTURES, AFTER STRIPPING OF TOPSOIL, EXCAVATION OF SOIL SHALL BE TAKEN DOWN TO THE TARGET LEVEL. THE APPROVED FOUNDATIONS SHALL THEN BE SCARIFIED TO ENSURE THAT AN ADEQUATE BOND WILL DEVELOP BETWEEN THE FOUNDATION AND FIRST LAYER OF FILLING, AND BROUGHT TO THE MOISTURE CONTENT AS REQUIRED FOR THE MATERIAL TO BE PLACED ON IT.
- WHERE THE SUBGRADE IS UNABLE TO SUPPORT CONSTRUCTION EQUIPMENT, OR IT IS NOT POSSIBLE TO COMPACT THE OVERLYING FILL BECAUSE OF A HIGH MOISTURE CONTENT, THE FOLLOWING APPLIES:
- a. ALLOW THE SUBGRADE TO DRY UNTIL IT WILL SUPPORT EQUIPMENT AND ALLOW COMPACTION. SCARIFY THE SUBGRADE TO A DEPTH OF 150 mm, WORK AS NECESSARY TO ACCELERATE DRYING, AND RE_COMPACT WHEN THE MOISTURE CONTENT IS SATISFACTORY.
- b. EXCAVATE THE WET MATERIAL AND REMOVE TO SPOIL, AND REINSTATE THE EXCAVATED AREAS TO THE REQUIRED COMPACTION STANDARD, USING APPROVED BACKFILL MATERIAL.
- IF THE SUBGRADE DETERIORATES AFTER APPROVAL BECAUSE OF WATER OR OTHER CAUSE, EXCAVATE FURTHER TO A SOUND SURFACE BEFORE PLACING FILL.

MATERIALS

- THE FOLLOWING GENERAL REQUIREMENTS APPLY TO ALL FILL MATERIALS.
- a. ALL MATERIALS SHALL BE WELL-GRADED WITHIN THE GRADATION LIMITS; GAP-GRADED SOILS ARE NOT ACCEPTABLE.
- b. MATERIALS SHALL CONTAIN NO ORGANIC MATERIAL (WITH THE EXCEPTION OF TOPSOIL). c. THE MAXIMUM DIMENSION OF ANY PARTICLE SHALL NOT BE GREATER THAN TWO-THIRDS THE REQUIRED THICKNESS OF THE LAYER IN WHICH IT IS TO BE PLACED.

MATERIALS UNSUITABLE FOR USE IN THE WORKS OR IN THE EXPOSED FOUNDATIONS, INCLUDE THOSE MATERIALS SPECIFIED AS SUCH TO BE REMOVED DURING CLEARING AND GRUBBING (I.E. VEGETATION, REFUSE AND OBSTRUCTIONS), OR CONTAINING PARTICLES LARGER THAN ALLOWED OR NOT ALLOWED AS SPECIFIED, OR MATERIALS WHICH ARE SOFT, EXCESSIVELY WET AND UNSTABLE OR OTHERWISE NOT SUITABLE FOR THE SPECIFIED USE.

/PACTED EARTHFILL

MATERIAL FOR THE COMPACTED EARTHFILL SHALL CONSIST OF A SELECTED WELL-GRADED IMPERVIOUS MIXTURE OF SOIL, FREE OF PERISHABLE MATTER AND ORGANIC MATERIAL, AND COMPLYING WITH THIS CLAUSE.

ROCK FRAGMENTS HAVING A MAXIMUM DIMENSION OF MORE THAN 60 mm WILL NOT BE PERMITTED. STONES, COBBLES, ROCK FRAGMENTS OR HARD CLAY LUMPS THAT WOULD INTERFERE WITH COMPACTION SHALL BE BROKEN DOWN OR REMOVED BEFORE BEING TRANSPORTED TO THE EMBANKMENT.

- THE PROPERTIES OF THE MATERIAL WHEN COMPACTED IN PLACE SHALL BE AS FOLLOWS:
- a. PLASTICITY INDEX: SHALL BE NOT LESS THAN 15% WHEN DETERMINED IN ACCORDANCE WITH AS 1289.3.3.1.
- b. LIQUID LIMIT: SHALL NOT EXCEED 70% WHEN DETERMINED IN ACCORDANCE WITH AS 1289.3.1.2. c. PERCENT FINES (75 MICRON): SHALL NOT BE LESS THAN 25% WHEN DETERMINED IN ACCORDANCE WITH AS 1289.3.6.1. d. NON-DISPERSIVE: THE MATERIAL SHALL HAVE AN EMERSON CLASS EQUAL TO OR GREATER THAN 3.

CEMENT AND COMPACTION

PLACEMENT METHODS SHALL BE SUCH THAT PLACEMENT DOES NOT DISTURB OR DAMAGE OTHER WORK, AND DOES NOT RESULT IN EXCESSIVE SEGREGATION. FILL SHALL BE PLACED AND SPREAD IN SUCH A MANNER THAT NO GAPS ARE LEFT BETWEEN ADJACENT PLACED LOADS OF MATERIALS. ENSURE THERE ARE NO UNCOMPACTED OR SEGREGATED CONSTRUCTION JOINTS. PLACEMENT AND COMPACTION OF FILL MATERIAL SHALL BE IN EQUAL CONTINUOUS LAYERS NOT EXCEEDING THE MAXIMUM LAYER THICKNESSES IN ACCORDANCE WITH THIS SPECIFICATION.

FILL SHALL NOT BE PLACED IN LAYERS ON SLOPES GREATER THAN ONE VERTICAL TO FOUR HORIZONTAL. WHERE FILL IS REQUIRED TO BE PLACED ON STEEPER SLOPES THE FOUNDATION SHALL BE BENCHED TO PROVIDE NEAR HORIZONTAL BENCHES WITH STEEP, STABLE SLOPES BEHIND TO ENABLE COMPACTION IN HORIZONTAL LIFTS.

THE MOISTURE CONTENT OF FILL MATERIALS SHALL BE MAINTAINED TO ATTAIN REQUIRED COMPACTION DENSITY, AND ENSURE UNIFORM DISTRIBUTION OF MOISTURE THROUGHOUT THE SOIL. AFTER COMPLETION OF COMPACTION OF A LAYER, THE MOISTURE CONTENT OF THE MATERIAL IN THE LAYER SHALL BE MAINTAINED WITHIN THE RANGE SPECIFIED UNTIL THE NEXT LAYER HAS BEEN PLACED.

FOR ALL AREAS AND MATERIALS, EACH LAYER MUST BE UNIFORMLY COMPACTED OVER THE FULL AREA AND DEPTH OF THE LAYER TO ACHIEVE THE SPECIFIED LEVEL OF COMPACTION BEFORE THE NEXT LAYER IS COMMENCED.

SLOPES SHALL GRADE AWAY FROM STRUCTURES BY A MINIMUM 50 mm IN 3 m, UNLESS NOTED OTHERWISE. COMPLETED SURFACES SHOULD BE SELF-DRAINING AND FREE OF DEPRESSIONS CAPABLE OF HOLDING WATER.

THE FINISHED SURFACE SHALL BE EVENLY GRADED BETWEEN DESIGN SURFACE LEVELS AND MATCHED TO THE SURROUNDING NATURAL SURFACE AT THE EXTENT OF THE WORKS.

115. FILLS DISTURBED BY CONSTRUCTION OR VEHICULAR TRAFFIC OR DAMAGED BY WATER RUNOFF OR OTHER MEANS SHALL BE RE-LEVELLED AND RE-COMPACTED TO THE DIMENSIONS SHOWN ON THE DRAWINGS.

PRELIMINARY

Attachment 4.1.1

- 116. DURING THE FILLING OPERATION THE SURFACE OF EACH LAYER SHALL BE KEPT GENERALLY HORIZONTAL. PRIOR TO THE CESSATION OF WORK EACH DAY, THE TOP OF THE FILL SHALL BE SHAPED AND COMPACTED TO MINIMISE THE POTENTIAL FOR DAMAGE RESULTING FROM WET WEATHER.
- 117. THE SURFACE OF ANY LAYER OF FILL MATERIAL SHALL BE WORKED WITH EXCAVATOR TYNES, A PADFOOT ROLLER OR SIMILAR TO A SUFFICIENT DEPTH TO PROVIDE A SATISFACTORY BONDING SURFACE FREE OF LAMINAR SURFACES AND MOISTENED, IF NECESSARY, BEFORE THE NEXT SUCCEEDING LAYER OF FILL MATERIAL IS PLACED. PLANT, PARTICULARLY RUBBER TYRED PLANT, SHALL NOT BE PERMITTED TO TRAVEL ON THE PREPARED AND SCARIFIED SURFACE OF THE FILL LAYER BEFORE PLACEMENT OF THE OVERLYING LAYER HAS BEEN COMPLETED.
- 118. A LOT MUST CONTAIN ONLY AREAS OF WORK THAT ARE ESSENTIALLY HOMOGENEOUS. THIS OCCURS WHEN MATERIAL ORIGIN AND PROPERTIES, GENERAL APPEARANCE, MOISTURE CONDITION DURING COMPACTION, COMPACTION TECHNIQUE, RESPONSE TO COMPACTORS, AND STATE OF UNDERLYING MATERIALS ARE SUBSTANTIALLY ALIKE. AREAS THAT FAIL TO MEET THESE CONDITIONS MUST BE EXCLUDED FROM THE LOT AND MUST BE REWORKED AND TESTED SEPARATELY AS ONE OR MORE ADDITIONAL LOTS.
- 119. COMPACTED EARTHFILL SHALL BE PLACED IN THE LOCATIONS SHOWN ON THE DRAWINGS.
- 120. LAYER THICKNESS FOR COMPACTED EARTHFILL SHALL BE NO MORE THAN 200 mm AFTER COMPACTION.
- 121. THE MATERIAL IN EACH LAYER OF COMPACTED EARTHFILL SHALL HAVE UNIFORM MOISTURE CONTENT THROUGHOUT THE LAYER, DURING AND AFTER COMPACTION, WITHIN THE RANGE OF OPTIMUM MOISTURE CONTENT TO PLUS 3% (WET OF STANDARD OPTIMUM).
- 122. COMPACTED EARTHFILL SHALL BE COMPACTED WITH APPROVED TAMPING FOOT VIBRATING ROLLERS UNTIL THE FIELD DENSITY MEETS THE CRITERION THAT THE HILF DENSITY RATIO IS IN EXCESS OF 98% WHEN TESTED IN ACCORDANCE WITH AS 1289.5.7.1 USING STANDARD COMPACTIVE EFFORT IN ACCORDANCE WITH AS 1289.5.1.1 (i.e. > 98% OF STANDARD COMPACTION).
- 123. THE CONTRACTOR MAY NEED TO ESTABLISH PROCEDURES FOR CONDITIONING THE CLAY MATERIAL AT ITS SOURCE OR IN STOCKPILE TO BRING IT WITHIN THE RANGE OF MOISTURE CONTENTS SPECIFIED IN THIS SUB-CLAUSE PRIOR TO ITS HAULAGE TO THE EMBANKMENT.
- 124. CONDITIONING OF COMPACTED EARTHFILL ON THE EMBANKMENT BY THE ADDITION OF WATER, OTHER THAN TO REPLACE THAT MOISTURE LOSS WHICH HAS OCCURRED AS A RESULT OF DRYING ON THE EMBANKMENT, SHALL NOT BE PERMITTED.
- 125. COMPACTED EARTHFILL MATERIAL SHALL BE OVER-PLACED AND TRIMMED TO ENSURE THE SPECIFIED COMPACTION IS ACHIEVED RIGHT TO THE EDGE OF THE BATTER WITHIN THE APPROVED FINAL LINES OF THE ZONE. TRIMMED MATERIAL MAY BE RECONDITIONED AND USED ELSEWHERE.

SPECIAL COMPACTION

- 126. SPECIAL COMPACTION OF EARTHFILL MATERIAL MAY BE REQUIRED IN CONFINED AREAS, SUCH AS NEAR OR AGAINST STRUCTURES OR NEAR TREES WHERE THE USE OF STANDARD COMPACTION EQUIPMENT IS IMPRACTICAL OR POSES A RISK TO THE NEARBY TREES OR STRUCTURES.
- 127. SURFACES OF FILL WHICH ARE RUPTURED OR UNEVEN AFTER COMPACTION SHALL BE REPAIRED AND REVEALED BEFORE PLACING THE NEXT LAYER OF MATERIAL
- 128. COMPACTION PRESSURES AGAINST THE BACK OF WALLS SHALL BE LIMITED TO 12 kPa.
- 129. COMPACTION SHALL BE BY HAND HELD EQUIPMENT AS APPROVED BY THE ENGINEERING PROJECTS OFFICER. THE MAXIMUM LOOSE LAYER THICKNESS SHALL BE 100 mm.

TESTING AND ACCEPTANCE OF EARTHWORKS

- 130. TESTING OF EARTHWORKS FOR COMPLIANCE SHALL BE CONDUCTED IN ACCORDANCE WITH THE RELEVANT TEST METHODS GIVEN IN AS 1289.
- 131. AREAS UPON WHICH FILLS, PAVEMENTS AND CONCRETE STRUCTURES ARE TO BE CONSTRUCTED SHALL BE TEST ROLLED. EQUIPMENT NOMINATED FOR USE IN TEST ROLLING PROCEDURES SHALL COMPLY WITH THE FOLLOWING REQUIREMENTS: a. STATIC SMOOTH STEEL-WHEELED ROLLERS SHALL HAVE A MASS OF NOT LESS THAN 2.3 TONNES.
 - b. PNEUMATIC TYRED PLANT SHALL HAVE A GROUND CONTACT PRESSURE UNDER EITHER THE FRONT OR REAR WHEELS OF NOT LESS THAN 450 kPa PER TYRE. THE AREA OVER WHICH THIS GROUND CONTACT PRESSURE SHALL BE APPLIED SHALL NOT BE LESS THAN 0.035 m2 PER TYRE. THIS MAY CONSTITUTE A LOADER WITH A FULL BUCKET OR A LOADED DUMP TRUCK.
- 132. COMPLIANCE WITH THE TEST ROLLING REQUIREMENTS SHALL BE WHEN AN AREA WITHSTANDS TEST ROLLING WITHOUT EXCESSIVE VISIBLE DEFORMATION (GREATER THAN 25 mm) OR SPRINGING AS DETERMINED BY THE ENGINEERING PROJECTS OFFICER.

CONTROL SAMPLING

- 133. FOR MOISTURE AND COMPACTION CONTROL ON THE FILL MATERIALS, THE SERVICE PROVIDER SHALL TAKE REPRESENTATIVE SAMPLES FROM THE TEST LOT TO DETERMINE DENSITY AND MOISTURE CONTENT RELATIVE TO OPTIMUM. A LOT SHALL COMPRISE THE SMALLEST VOLUME OF MATERIAL BASED ON COMPLYING WITH THE FOLLOWING CRITERIA: a. ONE LAYER OF THE SPECIFIED MATERIAL TYPE.
 - b. A MAXIMUM SURFACE AREA OF 500 m2
 - c. ONE DAY'S CONTINUOUS PLACEMENT AT A SPECIFIC LOCATION. d. MATERIAL FROM A SINGLE MATERIAL TYPE ONLY.
- 134. FOR GENERAL FILL, A LOT WILL COMPRISE ONE THIRD OF THE TESTING FREQUENCY LISTED ABOVE (i.e. THREE PLACED LAYERS OR THREE DAYS PRODUCTION FORM ONE (1) LOT.)
- 135. TEST SITES SHALL BE RANDOMLY SELECTED USING THE METHODOLOGY OF AS1289.1.4.1 FOR COMPACTED EARTHFILL AND GENERAL FILL UNLESS OTHERWISE APPROVED BY THE ENGINEERING PROJECTS OFFICER.
- 136. THE THREE DIMENSIONAL LOCATION (I.E. LEVEL/OFFSET/CHAINAGE) OF ALL TEST SITES SHALL BE RECORDED ON A PAPER PLOT AND SUBMITTED ALONG WITH THE TEST RESULTS.
- 137. NO LOT IS TO BE COVERED UNTIL FULL CONFORMANCE HAS BEEN ACHIEVED/VERIFIED IN ACCORDANCE WITH THE SPECIFICATION.

COMPACTION

138. COMPACTION AND FIELD MOISTURE CONTENT OF COMPACTED EARTHFILL AND CREST CAPPING MATERIALS SHALL BE MEASURED BY THE HILF RAPID COMPACTION CONTROL TEST, AS 1289.5.7.1. THE LABORATORY 'WET DENSITY' IS DEFINED AS THE DENSITY OF THE COMBINED SAMPLE WHEN IT IS COMPACTED AT FIELD MOISTURE CONTENT BY THE HILF RAPID COMPACTION CONTROL TEST METHOD.

139. IN SITU DENSITY SHALL BE MEASURED BY ONE OF:

a. THE SAND REPLACEMENT METHOD, AS 1289.5.3.1.

b. NUCLEAR DENSITY GAUGES DETERMINED IN ACCORDANCE WITH THE TEST PROCEDURES GIVEN BY TEST METHOD AS 1289.5.8.1, NUCLEAR GAUGE METHOD AND CALIBRATED FOR REPRESENTATIVE MATERIALS.

140. THE DENSITY RATIO FOR COMPACTED EARTHFILL, AND GENERAL FILL MATERIAL SHALL BE BASED ON STANDARD COMPACTIVE EFFORT.

MATERIAL	PROCESS	TEST PROCEDURE FOR QUALITY COMPLIANCE	RECOMMENDED TESTING FREQUENCY		
	PARTICLE SIZE	A \$ 1290.2 C 1	1 TEST PER 500 m3 OF MATERIAL PLACED O MINIMUM 2 TESTS		
	DISTRIBUTION	AS 1209.3.0.1	MINIMUM 3 TESTS PER SOURCE FOR APPRC IMPORTED MATERIAL.		
		A \$ 1290 2 2 1	1 TEST PER 500 m3 OF MATERIAL PLACED O MINIMUM 2 TESTS		
	PLASTICITY INDEX	AS1209.3.3.1	MINIMUM 3 TESTS PER SOURCE FOR APPROV IMPORTED MATERIAL.		
COMPACTED EARTHFILL	LIQUID LIMIT AND	A \$ 1290.2.1.1	1 TEST PER 500 m3 OF MATERIAL PLACED O MINIMUM 2 TESTS		
	LINEAR SHRINKAGE	AS1209.3.1.1	MINIMUM 3 TESTS PER SOURCE FOR APPRC IMPORTED MATERIAL.		
	EMERSON CLASS CLASSIFICATION	AS 1289.3.8.1	MINIMUM 3 TESTS PER SOURCE FOR APPRO IMPORTED MATERIAL.		
	FIELD WET DENSITY	AS 1289.5.3.1, OR 1289.5.8.1	AT LEAST ONE SET OF THREE TESTS PER LO		
	MOISTURE VARIATION	AS1289.5.7.1 USING STANDARD COMPACTIVE EFFORT IN ACCORDANCE WITH AS1289.5.1.1	AT LEAST ONE SET OF THREE TESTS PER LO		
	HILF DENSITY RATIO	AS1289.5.7.1 USING STANDARD COMPACTIVE EFFORT IN ACCORDANCE WITH AS1289.5.1.1	AT LEAST ONE SET OF THREE TESTS PER LO		
	COMPACTION	AS1289.5.6.1	ONE TEST FOR EACH 50 m3 PLACED (MINIMU TESTS AND MAXIMUM OF 10 TESTS)		
	SOUNDNESS	AS1141.24	ONE TEST PER SOURCE FOR APPROVAL OF MATERIAL		
		AS2758.1	ONE TEST PER SOURCE FOR APPROVAL OF MATERIAL		
		AS1141.34			
	WEAK PARTICLE LIMIT	AS1141.32	ONE TEST PER SOURCE FOR APPROVAL OF		

RECON	IMENDED EARTHWORKS	TESTING REQUIREMENTS				
AL	PROCESS	TEST PROCEDURE FOR QUALITY COMPLIANCE	RECOMMENDED TESTING FREQUENCY			
	PARTICLE SIZE	404000.2.0.4	1 TEST PER 500 m3 OF MATERIAL PLACED OR MINIMUM 2 TESTS			
	DISTRIBUTION	AS1269.3.6.1	MINIMUM 3 TESTS PER SOURCE FOR APPROVAL OF IMPORTED MATERIAL.			
		A \$ 1200 2 2 1	1 TEST PER 500 m3 OF MATERIAL PLACED OR MINIMUM 2 TESTS			
		AS 1209.3.3.1	MINIMUM 3 TESTS PER SOURCE FOR APPROVAL O IMPORTED MATERIAL.			
	LIQUID LIMIT AND	A \$1280 3.1.1	1 TEST PER 500 m3 OF MATERIAL PLACED OR MINIMUM 2 TESTS			
	LINEAR SHRINKAGE	AS 1209.3.1.1	MINIMUM 3 TESTS PER SOURCE FOR APPROVAL O IMPORTED MATERIAL.			
	EMERSON CLASS CLASSIFICATION AS 1289.3.8.1		MINIMUM 3 TESTS PER SOURCE FOR APPROVAL C IMPORTED MATERIAL.			
	FIELD WET DENSITY	AS 1289.5.3.1, OR 1289.5.8.1	AT LEAST ONE SET OF THREE TESTS PER LOT			
CTED FILL	MOISTURE VARIATION AS1289.5.7.1 USING STANDARD COMPACTIVE EFFORT IN ACCORDANCE WITH AS1289.5.1.1		AT LEAST ONE SET OF THREE TESTS PER LOT			
	HILF DENSITY RATIO	AS1289.5.7.1 USING STANDARD COMPACTIVE EFFORT IN ACCORDANCE WITH AS1289.5.1.1	AT LEAST ONE SET OF THREE TESTS PER LOT			
	COMPACTION AS1289.5.6.1		ONE TEST FOR EACH 50 m3 PLACED (MINIMUM OF 4 TESTS AND MAXIMUM OF 10 TESTS)			
	SOUNDNESS	AS1141.24	ONE TEST PER SOURCE FOR APPROVAL OF MATERIAL			
		AS2758.1	ONE TEST PER SOURCE FOR APPROVAL OF			
	ORGANIC CONTENT	AS1141.34	MATERIAL			
	WEAK PARTICLE LIMIT	AS1141.32	ONE TEST PER SOURCE FOR APPROVAL OF MATERIAL			
	DEGRADATION FACTOR	AS1141.25.3	ONE TEST PER SOURCE FOR APPROVAL OF MATERIAL			

142. TABLE 2: REMEDIAL ACTIONS FOR COMPACTED FILL

RECOMMENDED EARTHWORKS TESTING REQUIREMENTS

CATEGORY	HILF DENSITY RATIO RESULT	MOISTURE RESULT	REMEDIAL ACTION
А	ONE TEST OF THREE FAILS BY LESS THAN 1%	PASS	ACCEPT LOT
В	TWO OR MORE TESTS PER LOT FAIL BY LESS THAN 1%	PASS	RE-COMPACT AND RETEST
С	ANY TESTS FAIL BY 1% OR MORE	ALL TESTS PASS, BUT NOT MORE THAN 1.0% WET OF OMC	RIP, RE-WATER IF REQUIRED, RE-COMPACT AND RE-TEST
D	ANY TESTS FAIL BY 1% OR MORE	ALL TESTS PASS, BUT 1.0% OR MORE WET OF OMC	RIP, ALLOW TO DRY, RE-COMPACT AND RE-TEST
E	PASS	ONE TEST OF THREE FAILS, BUT NO MORE THAN 1.0% DRY OR 3% WET OF OMC	ACCEPT LOT
F	PASS	TWO OR MORE TESTS FAIL, BUT NO MORE THAN 2.0% DRY OF OMC	RIP, RE-WATER, RE-COMPACT AND RE-TEST
G	FAIL BEYOND LIMITS OF OTHER CATEGORIES	FAIL BEYOND LIMITS OF OTHER CATEGORIES	REMOVE FILL, REPLACE, COMPACT AND RE-TEST

TOPSOIL

- LARGER THAN 50 mm DIAMETER.
- AREAS, TO HEIGHTS NOT EXCEEDING 1.5 m.
- 146. PROVIDE ADEQUATE DRAINAGE AND EROSION PROTECTION.
- 147. COMPACTION OF THE TOPSOIL DURING STOCKPILING SHALL BE AVOIDED.

- 150. TOPSOIL SHALL NOT BE PLACED WHEN WET.
- ACROSS THE SITE USING ALL AVAILABLE TOPSOIL.
- 152. IMPORTED TOPSOIL SHALL BE APPROVED BY THE ENGINEERING PROJECTS OFFICER.

GRASSING

- 153. PLACE TOPSOIL AND ADDITIONAL IMPORTED SOIL TO REMEDIATED AREAS AS REQUIRED.
- WITH THE SEED SUPPLIER'S RECOMMENDATIONS.
- 155. PROTECT NEWLY SOWN AREAS AGAINST TRESPASS AND TRAFFIC UNTIL GRASS IS WELL ESTABLISHED.
- NOT LESS THAN 75 mm HEIGHT.
- COVER WITHIN THREE MONTHS.

В	PRELIMINARY ISSUE FOR REVIEW	JR			12/07/18
A	PRELIMINARY ISSUE FOR REVIEW	JD			21/06/18
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143. TOPSOIL SHALL BE FERTILE, FRIABLE SOIL CONTAINING ORGANIC MATTER THAT IS REASONABLY FREE FROM SUBSOIL, REFUSE, TREE ROOTS LARGER THAN 20 mm IN DIAMETER AND 300 mm IN LENGTH, NOXIOUS WEEDS, CLAY LUMPS AND STONES

144. EXISTING TOPSOIL SHALL BE STRIPPED AND STOCKPILED FOR LATER USE FROM ALL GREENFIELD AREAS DISTURBED BY THE WORKS, INCLUDING TEMPORARY WORKS TO A NOMINAL DEPTH OF 100 mm.

145. ESTABLISH STOCKPILES TO SIZES AND IN LOCATIONS TO SUIT THE AVAILABLE DESIGNATED WORK ZONES AND LAYDOWN

148. STOCKPILES SHALL BE TURNED OVER EVERY TWO MONTHS TO MINIMISE COMPACTION AND VEGETATION GROWTH. PROTECT THE TOPSOIL STOCKPILES FROM CONTAMINATION BY OTHER EXCAVATED MATERIAL, WEEDS AND BUILDING DEBRIS.

149. ALL DISTURBED SURFACES AND COMPLETED FILL SURFACES (EXCLUDING THOSE COVERED WITH PAVEMENT OR CONCRETE) SHALL HAVE A LAYER OF TOPSOIL SPREAD AND TRIMMED AS SOON AS POSSIBLE AFTER COMPLETION OF THAT SECTION OF THE WORKS. THE TOPSOIL SHALL BE PLACED AT A MOISTURE CONTENT WHICH WILL ALLOW UNIFORM SPREADING.

151. THE DEPTH OF TOPSOIL PLACED SHALL BE AS SHOWN ON THE DRAWINGS AND SUFFICIENT TO PROVIDE A UNIFORM DEPTH

154. SOW THE PREPARED TOPSOIL WITH GRASS TO THE SATISFACTION OF THE ENGINEERING PROJECTS OFFICER IN ACCORDANCE

156. THE FIRST CUT AND SUBSEQUENT MOWING SHALL BE CARRIED OUT AT INTERVALS TO MAINTAIN THE STANDARD OF GRASS

157. A MINIMUM EVEN 80% GRASS COVER SHALL BE ACHIEVED WITHIN TWO MONTHS AND MINIMUM DENSE EVEN 95% GRASS

SPILLWAY WORKS

ROCK MATTRESSES

- 158. THE SPILLWAY CHUTE WILL BE LINED WITH ROCK MATTRESS (i.e. RENOTM MATTRESSES, OR APPROVED EQUIVALENT) TO PROVIDE EROSION PROTECTION TO THE EMBANKMENT MATERIALS DURING SPILLWAY FLOW.
- 159. THE ROCKFILL USED WITHIN THE ROCK MATTRESSES SHALL BE A MAXIMUM SIZE OF 200 mm AND WITH A MAXIMUM OF 5% PASSING THE 75 mm SIEVE (i.e. D5 OF 75 mm). THE GRADING OF THE ROCKFILL IS DESIGNED TO FIT WITHIN THE DEPTH OF THE SPECIFIED ROCK MATTRESS (0.3m) WHILST NOT BEING SMALLER THAN THE NOMINAL MESH SIZE.
- 160. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.
- 161. ROCK SPALLS SHALL BE PLACED IN THE DOWNSTREAM TOE AREA OF THE OUTLET AND SPILLWAY FOR EROSION PROTECTION AS SHOWN ON THE DRAWINGS.
- 162. ROCK SPALLS SHALL COMPRISE HARD, DURABLE ROCK OF UNIFORM QUALITY WITH A MINIMUM DIAMETER OF 150 mm.

GEOTEXTILE

- 163. GEOTEXTILE SHALL BE INSTALLED BENEATH THE ROCK MATTRESS TO PROVIDE EROSION PROTECTION BY PREVENTING MIGRATION OF FINES FROM THE EMBANKMENT DURING FLOW.
- 164. BIDIM® A44 (OR APPROVED EQUIVALENT) HAS BEEN SPECIFIED FOR USE BENEATH THE ROCK MATTRESSES.
- 165. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

CONCRETE CUT-OFF WALL

- 166. A CONCRETE CUT-OFF WALL FOR THE SPILLWAY HAS BEEN DESIGNED TO ACT AS THE CONTROL STRUCTURE FOR THE SPILLWAY TO PREVENT CREST EROSION AND LIMIT SEEPAGE FLOW THROUGH THE EMBANKMENT
- 167. THE CONCRETE SHALL BE CAST IN-SITU GRADE S20.

EMBANKMENT CREST CAPPING

- 168. THE SURFACE OF THE EMBANKMENT CREST SHALL BE PREPARED AND COVERED WITH CLASS 3 CREST CAPPING MATERIAL IN ACCORDANCE WITH THIS SPECIFICATION. THE COMPACTED THICKNESS OF CAPPING MATERIAL SHALL BE AS SHOWN ON THE DRAWINGS.
- USE CRUSHED ROCK OR NATURAL GRAVEL CONSISTING OF HARD, DENSE, DURABLE PARTICLES OF UNIFORM QUALITY, FREE 169. FROM DELETERIOUS MATERIALS OR COATINGS INCLUDING CLAY AND ORGANIC MATTER, AND CONTAINING NOT MORE THAN 1% OF DISINTEGRATED, WEATHERED, DISCOLOURED, SOFT, FRACTURED, FRIABLE OR POORLY INDURATED FRAGMENTS. IF THE MATERIAL IS PRODUCED BY CRUSHING ROUNDED RIVER STONES, 75% OF THE PARTICLES LARGER THAN 9.5 mm MUST HAVE NOT LESS THAN TWO FRACTURED FACES.
- 170. USE CRUSHED ROCK OR SUITABLE NATURAL GRAVELS COMPLYING WITH THE DISTRIBUTION TYPES SPECIFIED FROM THE FOLLOWING TABLES. DETERMINE PARTICLE SIZE DISTRIBUTION AFTER COMPACTION IN THE PAVEMENT.

171. TABLE 3: PARTICLE SIZE DISTRIBUTION FOR CLASS 3 CREST CAPPING MATERIAL

SIEVE	PERCENTAGE PASSING (BY MASS)
(mm)	FOR PARTICLE SIZE DISTRIBUTION
53	
37.5	
26.5	100
19	95-100
13.2	75 - 95
9.5	60 - 90
4.75	42 - 76
2.36	28 - 60
0.425	14 - 28
0.075	6 - 13

172. TABLE 4: CREST CAPPING MATERIAL PROPERTIES

PROPERTY	ACCEPTANCE CRITERIA	TEST METHOD
LIQUID LIMIT	35% MAX	AS 1289.3.1.1
PLASTICITY INDEX	10% MAX	AS 1289.3.3.1
LINEAR SHRINKAGE	3% MAX	AS 1289.3.4.1
WET STRENGTH	100 kN MIN	AS 1141.22
WET/DRY STRENGTH VARIATION	35% MAX	AS 1141.22
UNCONFINED COHESION	1.7 MPa MIN	AS 1141.52

- 173. SPREAD THE MATERIAL IN UNIFORM LAYERS WITHOUT SEGREGATION AS NEAR AS PRACTICABLE TO THE REQUIRED THICKNESS.
- 174. LAYER THICKNESS: NOT LESS THAN 100 mm AND NOT MORE THAN 150 mm THICK (AFTER COMPACTION). USE EQUAL LAYERS IN MULTI-LAYER COURSES.
- 175. JOINTS: PLAN SPREADING AND DELIVERY TO MINIMISE THE NUMBER OF JOINTS. OFFSET JOINTS IN SUCCESSIVE LAYERS BY AT LEAST 300 mm. MAKE TRANSVERSE JOINTS IN CEMENT TREATED MATERIAL: a. AT THE END OF EACH DAY'S WORK.
- b. WHERE SPREADING HAS BEEN HALTED FOR MORE THAN TWO HOURS.
- 176. MOISTEN PREPARED SUBGRADES AND PRECEDING LAYERS OF SUBBASE IMMEDIATELY BEFORE SPREADING SUBBASE OR BASE MATERIAL. KEEP THE LEADING EDGES OF SUBBASE OR BASE MATERIAL MOIST UNTIL NEW MATERIAL IS ADDED ADJACENT TO IT.
- 177. COMPACT EACH LAYER TO ACHIEVE 100% DRY DENSITY RATIOS TO AS 1289.5.4.1 (% OF STANDARD MAXIMUM DRY DENSITY).
- 178. DURING SPREADING AND COMPACTION, MAINTAIN THE MATERIALS AT THE OPTIMUM MOISTURE CONTENT (STANDARD COMPACTION) APPROPRIATE TO EACH MATERIAL, WITHIN +1%, -2%.



179.	. TABLE 5: CREST CAPPING TESTING REQUIREMENTS						
	MATERIAL	PROPERTY	TEST PROCEDURE FOR QUALITY COMPLIANCE	RECOMMENDED TESTING FREQUENCY			
		DRY DENSITY RATIO	AS1289.5.2.1	AT LEAST 3 TESTS PER LOT			
		GRADING	AS 1289.3.6.1	AT LEAST 3 TESTS IN TOTAL			
		PLASTIC LIMIT	AS1289.3.2.1	AT LEAST 3 TESTS IN TOTAL			
		LIQUID LIMIT	AS1289.3.1.1	AT LEAST 3 TESTS IN TOTAL			
	WEARING	LOS ANGELES ABRASION	AS1141.23	2 TESTS PRIOR TO APPROVAL OF SOURCE			
		CALIFORNIA BEARING RATIO (CBR)	AS1289.F1.1	2 TESTS PRIOR TO APPROVAL OF SOURCE			
		MOISTURE CONTENT	AS1289.2.1.1 OR AS APPROVED BY THE ENGINEERING PROJECTS OFFICER	ONE TEST FOR EACH PRODUCTION DAY OR EACH 1000 TONNE, WHICHEVER IS THE GREATER.			

180. TABLE 6: CREST CAPPING REMEDIAL ACTIONS

CATEGORY	RESULT	REMEDIAL ACTION
A	ONE TEST OF THREE FAILS BY LESS THAN 1%	ACCEPT LOT
В	TWO OR MORE TESTS PER LOT FAIL BY LESS THAN 1%	RE-COMPACT AND RETEST
С	ANY TESTS FAIL BY 1% OR MORE	RIP, RE-WATER IF REQUIRED, RE-COMPACT AND RE-TEST

PRELIMINARY

	Client	SOUTH GIP	PSLAND SHIRE COUNCIL	
	Project	WALKERVI	LLE BASIN	
	Title	UPGRADE	WORKS	
		GENERAL	NOTES - SHEET 2 OF 2	
be unless	Original Size	Drawing No:	31-36243-G003	Rev: B

Attachment 4.1.1



Ordinary Meeting of Council No. 431 - 27 February 2019

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NOTE

1. TBMS, EXISTING LEVELS AND DESIGN

					0 0.5 1.0 1.5 2.0 2.5m		DO NOT SCALE	Drawn J.DYKES	Designer J.ANDERS
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GENERAL NOTES

- G1. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL OTHER CONSULTANTS' DRAWINGS AND SPECIFICATIONS. ANY DISCREPANCIES SHALL BE REFERRED TO THE ENGINEER FOR DECISION BEFORE PROCEEDING
- WITH THE WORK. G2. ALL DIMENSIONS ARE IN MILLIMETRES.
- G3. DIMENSIONS SHALL NOT BE OBTAINED BY SCALING THE STRUCTURAL DRAWINGS.
- G4. SETTING OUT DIMENSIONS SHOWN ON THE DRAWINGS SHALL BE VERIFIED BY THE BUILDER.
- G5. DURING CONSTRUCTION THE STRUCTURE SHALL REMAIN IN A STABLE CONDITION AND NO PART SHALL BE OVER-STRESSED.
- G6. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE SAA CODES AND THE BY-LAWS AND ORDINANCES OF THE RELEVANT BUILDING AUTHORITIES.

CONCRETE

- C1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 3600.
- C2. CONCRETE QUALITY:

	CONCRETE
SLUMP	80 +/- 20
MAX. AGGREGATE SIZE	20
ADMIXTURES	NIL
GRADE	N32
WATER CEMENT RATIO (MAX)	0.5

- C3. CLEAR CONCRETE COVER TO REINFORCEMENT SHALL BE AS FOLLOWS UNLESS OTHERWISE SHOWN: WALLS: 40 mm
- C4. CONSTRUCTION JOINTS WHERE NOT SHOWN SHALL BE LOCATED TO THE APPROVAL OF THE ENGINEER.
- C5. NO HOLES OR CHASES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.
- C6. REINFORCEMENT IS REPRESENTED DIAGRAMATICALLY. IT IS NOT NECESSARILY SHOWN IN TRUE PROJECTION.
- C7. SPLICES IN REINFORCEMENT SHALL BE MADE ONLY IN THE POSITIONS SHOWN. THE WRITTEN APPROVAL OF THE ENGINEER SHALL BE OBTAINED FOR ANY OTHER SPLICES. WHERE THE LAP LENGTH IS NOT SHOWN IT SHALL BE SUFFICIENT TO DEVELOP THE FULL STRENGTH OF THE REINFORCEMENT.
- C8. WELDING OF REINFORCEMENT WILL NOT BE PERMITTED UNLESS SHOWN ON THE STRUCTURAL DRAWINGS.
- C9. REINFORCEMENT SYMBOLS:
 - R: DENOTES STRUCTURAL GRADE 250 PLAIN ROUND BAR TO AS4671.
 - N: DENOTES HOT ROLLED GRADE 500 DEFORMED (RIBBED) BAR DUCTILITY CLASS N TO AS4671.
 - DENOTES HOT ROLLED GRADE 500 DEFORMED BAR DUCTILITY CLASS L TO AS4671. SL: DENOTES HARD DRAWN WIRE GRADE 500 SQUARE REINFORCING MESH DUCTILITY CLASS L TO AS4671
 - RL: DENOTES HARD DRAWN WIRE GRADE 500 RECTANGULAR REINFORCING MESH DUCTILITY CLASS L TO AS4671 W: DENOTES GRADE 500 STEEL REINFORCING WIRE TO AS4671
- C10. ALL REINFORCEMENT SHALL COMPLY WITH AS4671.





REUSE OR REPLACE EXISTING GRATED LID AS REQUIRED



Plot Date: 12 July 2018 - 12:06 PM Plotted by: John Roberts Ordinary Meeting of Council No. 431 - 27 February 2019







DETAIL PIT



Ì	YP.) (TYP.) N10-150 HAIRPIN SCABBLE EXISTING CONCRETE SURFACE CHEMSET RE502 (TYP.) TO EXPOSE COARSE AGGREGATE
F	
	- SCALE 1 : 10
— SC/	
•	
•	DEMOLISH EXISTING PIPELINE AND ENCASEMENT. REPLACE AND RESEAL WITH NEW RCP
	- SCALE 1 : 10
	Project WALKERVILLE BASIN
	STRUCTURAL NOTES, PLAN & SECTIONS
be /	Driginal Size Drawing No: 31-36243-S001 Rev: B