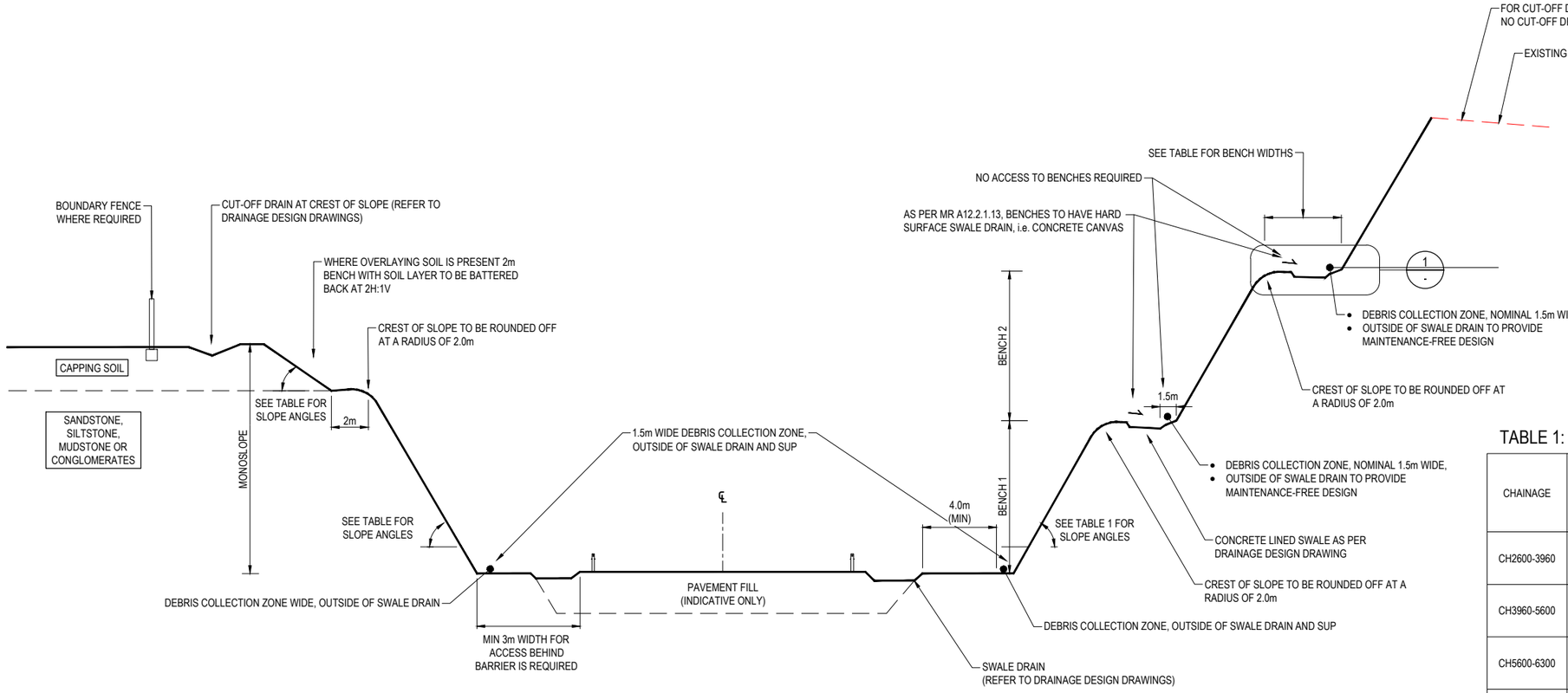


TYPICAL DETAILS - CUT SLOPES
N.T.S.

GENERAL NOTES

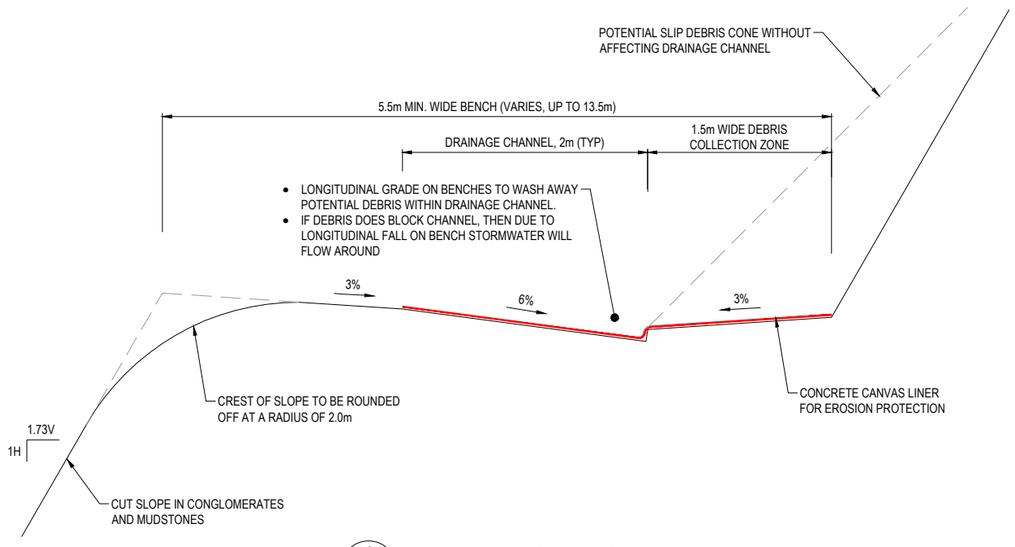
1. ALLOWANCE SHALL BE MADE FOR 250 NUMBERS OF ADDITIONAL HORIZONTAL BORED DRAINS, 10-15° UPWARDS INCLINED, 20m LONG, Ø50mm PVC PIPE INSERTED IN DRILL HOLE, CONCRETE OUTLET, SPACED AT 5m ALONG CUT SLOPE. THE BORED DRAINS MAY BE REQUIRED IN DEEP CUTS WHERE ONGOING SEEPAGE IS ENCOUNTERED DURING CONSTRUCTION.
2. ALLOWANCE SHALL BE MADE FOR 2000m² ADDITIONAL SLOPE FACE PROTECTION IF ADVERSE GROUND CONDITIONS ARE ENCOUNTERED, i.e. LENSES OF LOOSE MATERIAL AT STEEP CUT SLOPE. THE PROPOSED MITIGATION MAY COMPRISE A MacMat R MESH WITH 1m LONG BOLTS AT 2m BY 2m.

SAFETY IN DESIGN INFORMATION

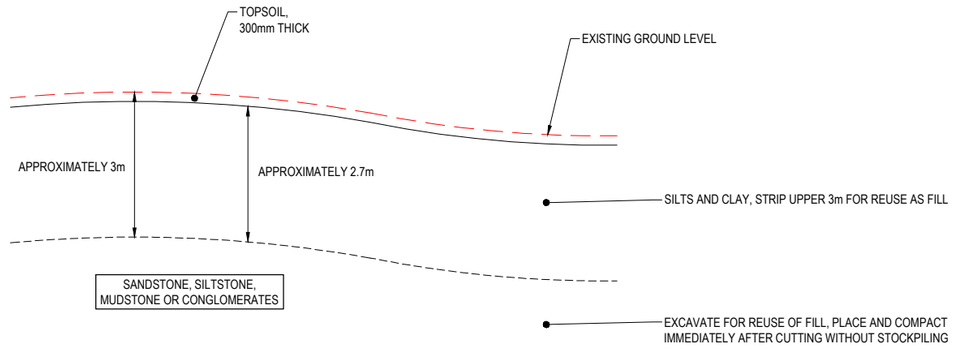
IN ADDITION TO THE HAZARDS/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING SET, NOTE THE FOLLOWING SIGNIFICANT RESIDUAL RISKS. (REFERENCE SHALL ALSO BE MADE TO THE SAFETY IN DESIGN REGISTER)

TABLE 1: SUMMARY OF CUT SLOPE BATTERS

CHAINAGE	UNIT	BATTER ANGLE	MAX. MONOSLOPE HEIGHT	BENCH HEIGHT	BENCH WIDTHS				
					1ST	2ND	3RD	4TH	5TH+
CH2600-3960	RIVER TERRACE / E4 CONGLOMERATE	18.4° (3H:1V)	18m	NA	-	-	-	-	-
CH3960-5600	W1/W2 SILTSTONE/TEPHRA/PUMICE SANDS	18.4° (3H:1V)	35m	NA	-	-	-	-	-
CH5600-6300	E4 CONGLOMERATE	60° (1H:1.7V)	9m	9m	5.5m	7.5m	7.5m	7.5m	7.5m
CH6300-6800	E4 OVER E3 SANDSTONE/SILTSTONE	60° (1H:1.7V)	15m	9m	5.5m	7.5m	7.5m	7.5m	7.5m
CH6800-12700	E3 SANDSTONE/SILTSTONE	60° (1H:1.7V)	10m	10m	5.5m	9.5m	12.5m	12.5m	13.5m



1 — **DETAIL 1 - BENCH AND SWALE DRAIN DETAIL**
N.T.S.



DETAIL 2 - GENERAL CUT SOIL PROFILE
N.T.S.

NOTES FOR REUSEABILITY OF SOILS

1. REQUIRES DRYING.
2. IF SOIL IS TOO WET, THEN CUT TO WASTE.
3. SOILS MAY REQUIRE CONDITIONING.

Plot Date: 2020-02-11 11:45:50 Office: NZAKL Filename: K:\MANAWATU-TARARUA HIGHWAY\PHASE\08_TECHNICAL - DESIGN WORKING AREA\DRAFTING\DELIVER\DESIGN\DRAWING\03_CONCEPT AND CONSENTING\TAT-3DG-G-1251-1257.DWG

CLIENT

WAKA KOTAHI NZ TRANSPORT AGENCY

Te Ahu a Turanga Manawatū Tararua Highway

REV	DATE	REVISION DETAILS	APPROVED
C	24/02/2020	ISSUED FOR REGIONAL CONSENT	D. McGAHAN
B	19/11/2019	ISSUED FOR CONCEPT DESIGN	D. MACKINTOSH
A	18/10/2019	CONCEPT DESIGN - DRAFT REVIEW	D. MACKINTOSH

SCALE	NOT TO SCALE
SIZE	A1
DRAWN	J. SAINI
DESIGNED	R. KONRAD
REVIEWED	K. CHEUNG

CONSENT
NOT FOR CONSTRUCTION

APPROVED
DATE 24/02/2020
T. WATTERSON
T. WATTERSON

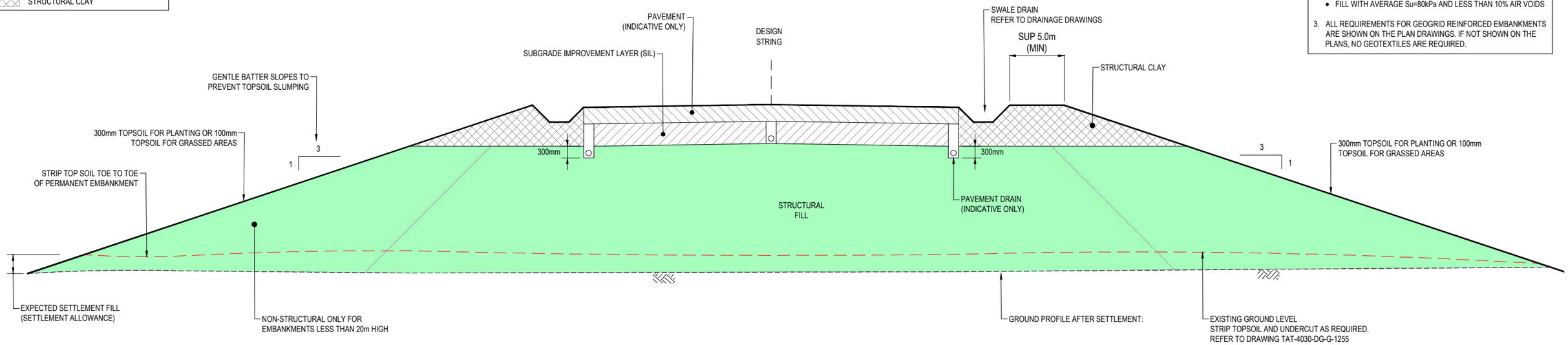
PROJECT	TE AHU A TURANGA: MANAWATŪ TARARUA HIGHWAY
TITLE	EARTHWORKS TYPICAL DETAILS SHEET 1
DRAWING No.	PROJECT No. TAT – PHASE 3 – TYPE DG – DISC G – NUMBER 1251 – REV C

LEGEND

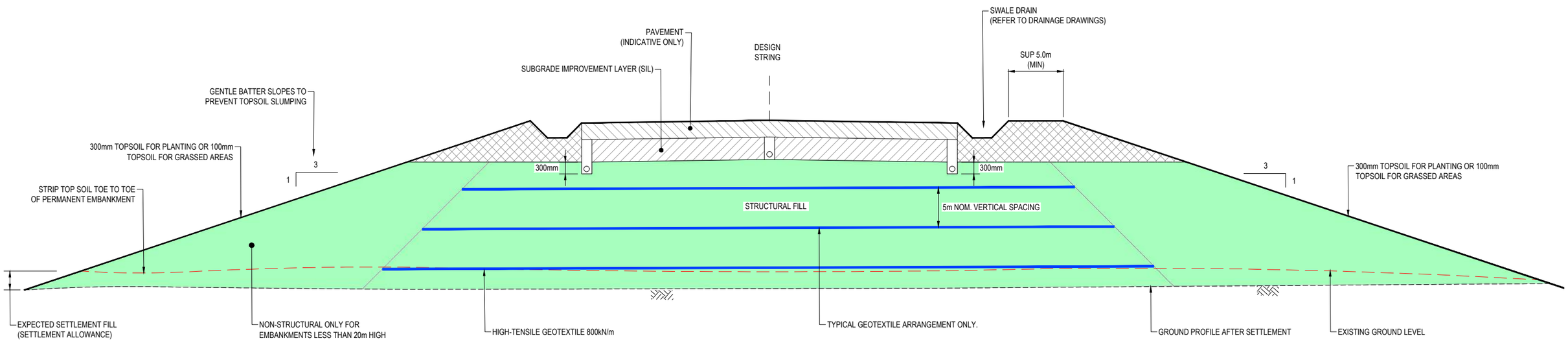
- STRUCTURAL FILL
- PAVEMENT
- SUBGRADE IMPROVEMENT LAYER (SIL)
- STRUCTURAL CLAY

NOTES

1. STRUCTURAL FILL:
   - MINIMUM 135kPa
   - LESS THAN 6% AIR VOIDS
2. NON-STRUCTURAL FILL:
   - 3H:1V TRACK ROLLED
   - FILL WITH AVERAGE Su=80kPa AND LESS THAN 10% AIR VOIDS
3. ALL REQUIREMENTS FOR GEOGRID REINFORCED EMBANKMENTS ARE SHOWN ON THE PLAN DRAWINGS. IF NOT SHOWN ON THE PLANS, NO GEOTEXTILES ARE REQUIRED.



SECTION A - TYPICAL EMBANKMENT WITHOUT GEOGRID
N.T.S.



SECTION B - TYPICAL EMBANKMENT WITH GEOGRID
N.T.S.

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CLIENT

WAKA KOTAHI NZ TRANSPORT AGENCY

Te Ahu a Turanga Manawatū Tararua Highway

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A	18/10/2019	CONCEPT DESIGN - DRAFT REVIEW	D. MACKINTOSH

SCALE	SIZE
NOT TO SCALE	A1

DRAWN: J. SAINI
DESIGNED: R. KONRAD
REVIEWED: K. CHEUNG

CONSENT
NOT FOR CONSTRUCTION

APPROVED
DATE 24/02/2020
T. WATTERSON
T. WATTERSON

PROJECT: TE AHU A TURANGA: MANAWATŪ TARARUA HIGHWAY

TITLE: EARTHWORKS TYPICAL DETAILS SHEET 2

DRAWING No.	PROJECT No.	PHASE	TYPE	DISC	NUMBER	REV
	TAT	3	DG	G	1252	C

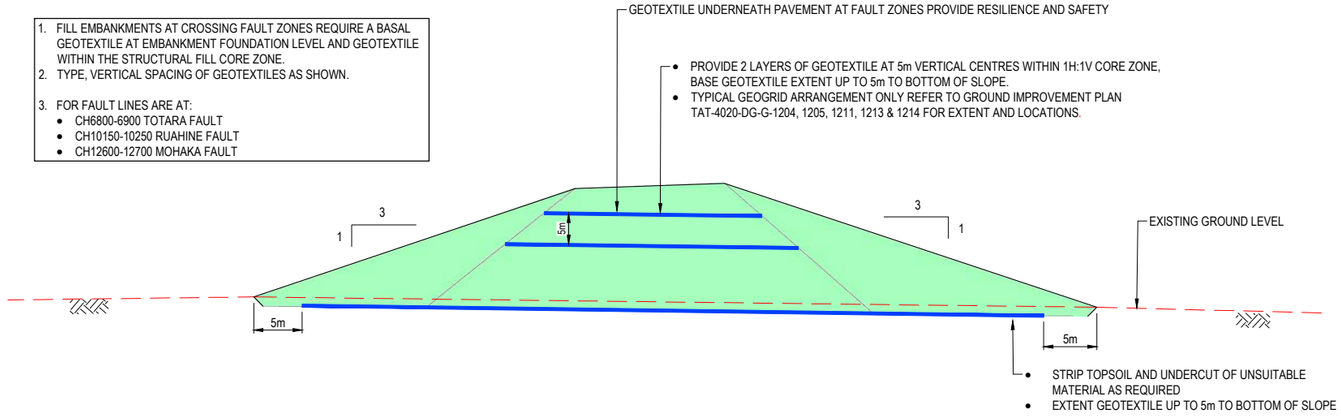
LEGEND

STRUCTURAL FILL

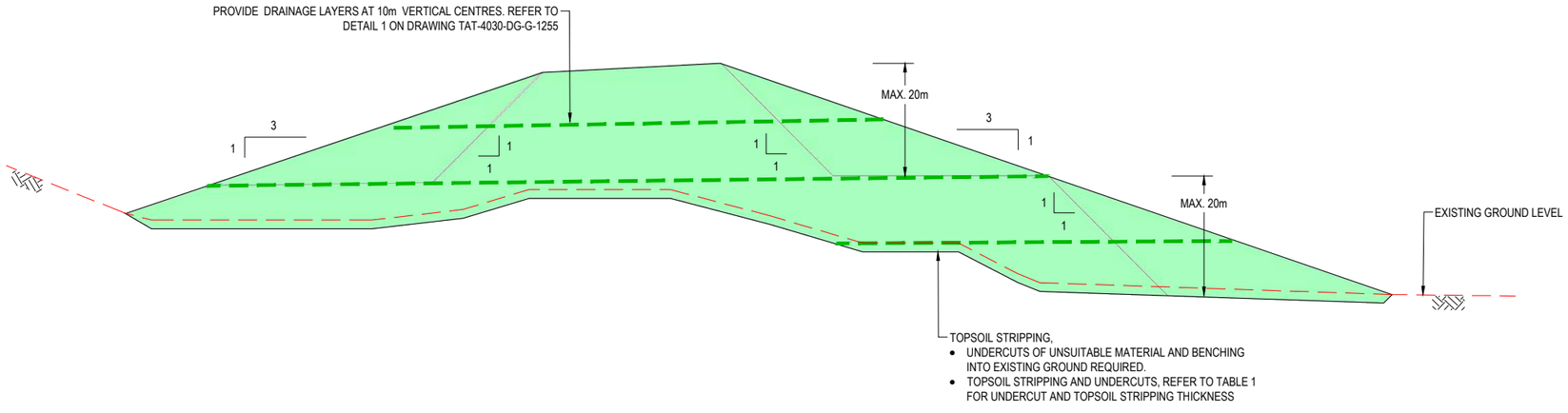
NOTES FOR EMBANKMENT FILL COMPACTION

1. NZ STANDARD COMPACTION WILL BE REQUIRED FOR THE CONSTRUCTION OF STRUCTURAL EMBANKMENT FILLS. NZ HEAVY COMPACTION FOR PAVEMENT SUBGRADE.
2. STRUCTURAL FILL:
   - MINIMUM 135kPa
   - LESS THAN 6% AIR VOIDS
3. NON-STRUCTURAL FILL:
   - 3H:1V TRACK ROLLED
   - FILL WITH AVERAGE Su=80kPa AND LESS THAN 10% AIR VOIDS

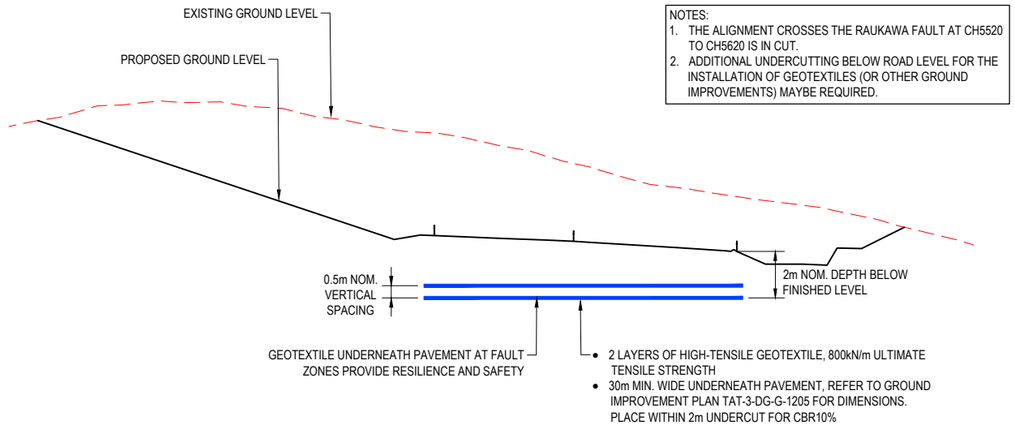
1. FILL EMBANKMENTS AT CROSSING FAULT ZONES REQUIRE A BASAL GEOTEXTILE AT EMBANKMENT FOUNDATION LEVEL AND GEOTEXTILE WITHIN THE STRUCTURAL FILL CORE ZONE.
2. TYPE, VERTICAL SPACING OF GEOTEXTILES AS SHOWN.
3. FOR FAULT LINES ARE AT:
   - CH6800-6900 TOTARA FAULT
   - CH10150-10250 RUAHINE FAULT
   - CH12600-12700 MOHAKA FAULT



SECTION A - TYPICAL EMBANKMENT ACROSS FAULT ZONES
N.T.S.



SECTION B - TYPICAL EMBANKMENT WITH DRAINAGE LAYERS
N.T.S.



SECTION C
N.T.S.

TABLE 1 : UNDERCUT AND TOPSOIL STRIPPING THICKNESS (TYPICAL)

ITEM	THICKNESS OF UNDERCUT (mm) - AVERAGE VALUE
EXISTING GRASSED AREA / PASTURE	300
EXISTING AREAS WITH TREE COVER	500
UNDERCUTS IN EXISTING GULLIES (TO BE REPLACED WITH A 400mm THICK LAYER OF DRAINAGE AGGREGATE AS PER REFER DRAWING TAT-3-DG-G-1255)	2000
BENCHING INTO EXISTING SITE SLOPES AT STEEP GULLIES (REFER TO DRAWING TAT-3-DG-G-1255)	1000
CULVERTS	AS REQUIRED BASED ON CULVERT PRICING PACKAGE. AT LEAST 500mm BELOW CULVERT INVERT LEVEL, UNLESS CULVERT IS PLACED WITHIN EMBANKMENT FILL.

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CLIENT

WAKA KOTAHI NZ TRANSPORT AGENCY

Te Ahu a Turanga Manawatū Tararua Highway

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C	24/02/2020	ISSUED FOR REGIONAL CONSENT	D. McGAHAN
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SCALE	SIZE
NOT TO SCALE	A1

DRAWN: J. SAINI
DESIGNED: R. KONRAD
REVIEWED: K. CHEUNG

CONSENT
NOT FOR CONSTRUCTION

APPROVED
DATE 24/02/2020
T. WATTERSON
T. WATTERSON

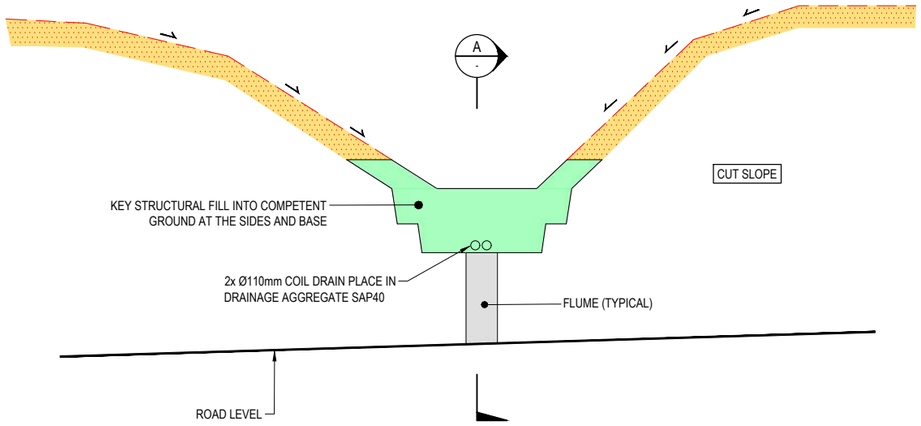
PROJECT: TE AHU A TURANGA: MANAWATŪ TARARUA HIGHWAY

TITLE: EARTHWORKS TYPICAL DETAILS SHEET 3

DRAWING No.: PROJECT No. TAT – PHASE 3 – TYPE DG – DISC G – NUMBER 1253 – REV C

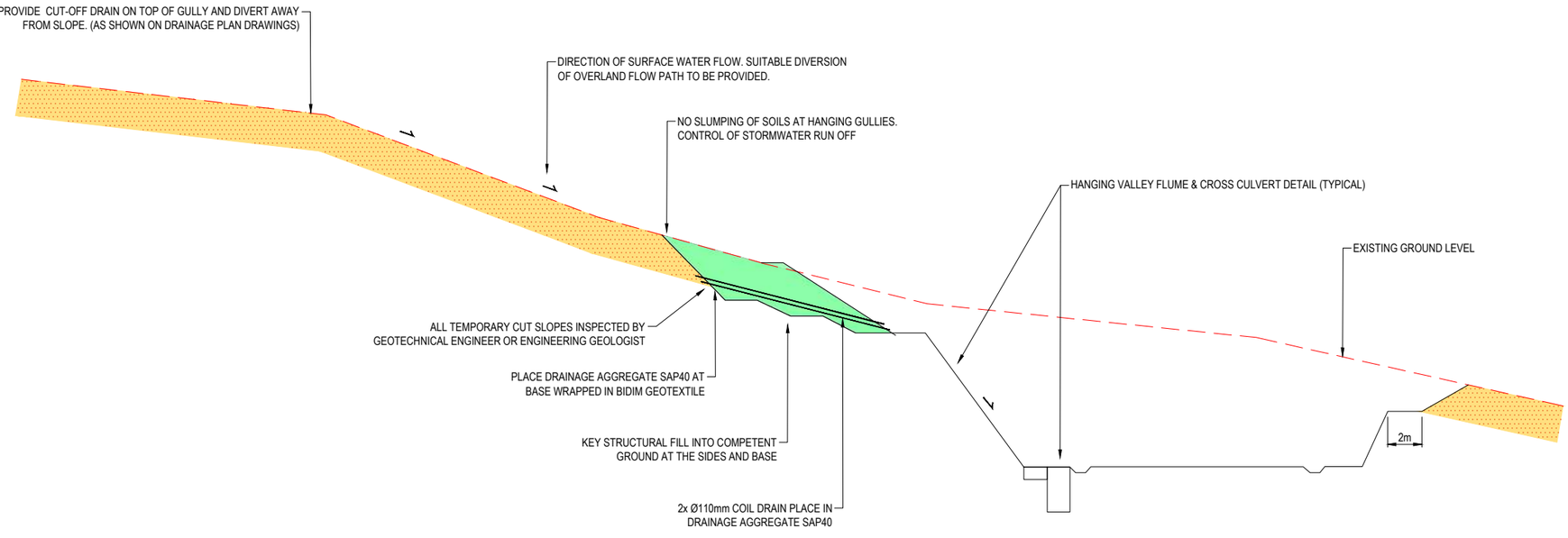
LEGEND

- STRUCTURAL FILL
- SHOTCRETE
- CAPPING SOIL LAYER, TYPICAL OVER-WET SILTS AND CLAYS



DETAIL 1 - HANGING GULLY TREATMENT TYPICAL DETAIL

N.T.S.



SECTION A - HANGING GULLY TREATMENT TYPICAL CROSS SECTION

N.T.S.

Plot Date: 2020-02-11 11:46:27 Office: NZAKL Filename: N:\MANAWATU TARARUA HIGHWAY\PHA PHASE\03 TECHNICAL - DESIGN WORKING AREA\DRAFTING\DELIVER\DESIGN\2 DRAWING\ DRAWINGS\3. CONCEPT AND CONSENT\NGTAT3-DGG-1251-1252.DWG

CLIENT

WAKA KOTAHI NZ TRANSPORT AGENCY

Te Ahu a Turanga Manawatū Tararua Highway

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SCALE	SIZE
NOT TO SCALE	A1

DRAWN: J. SAINI

DESIGNED: R. KONRAD

REVIEWED: K. CHEUNG

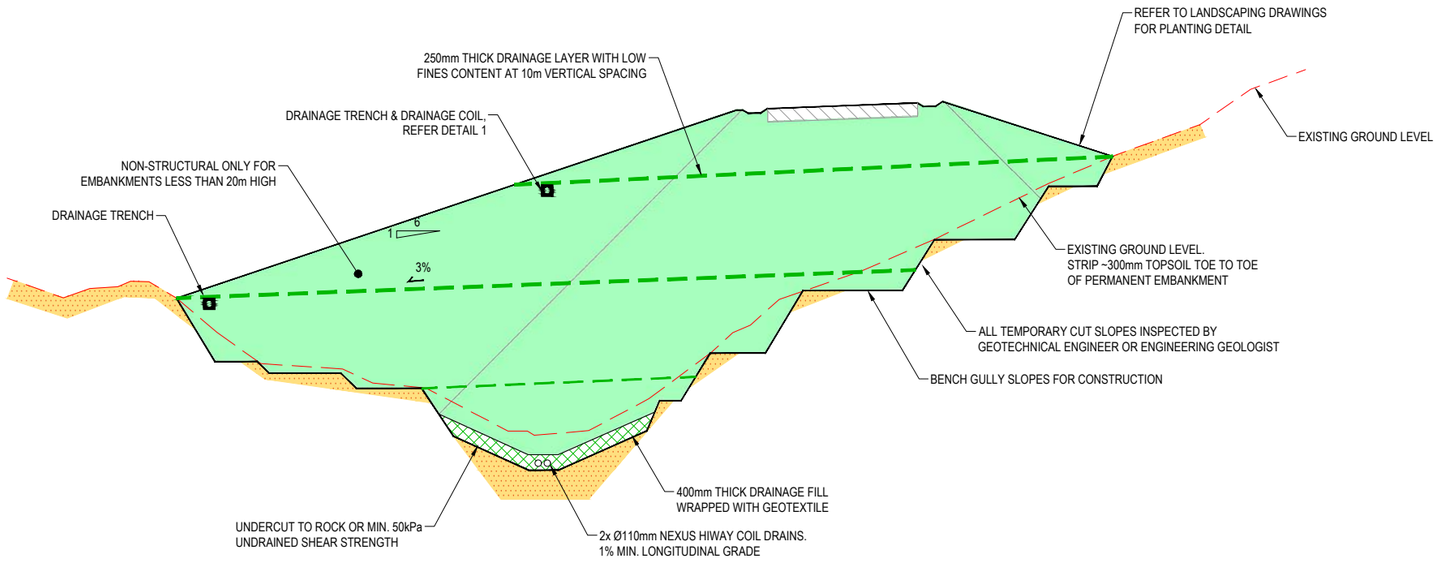
CONSENT
NOT FOR CONSTRUCTION

APPROVED
DATE 24/02/2020
T. WATTERSON
T. WATTERSON

PROJECT: TE AHU A TURANGA: MANAWATŪ TARARUA HIGHWAY

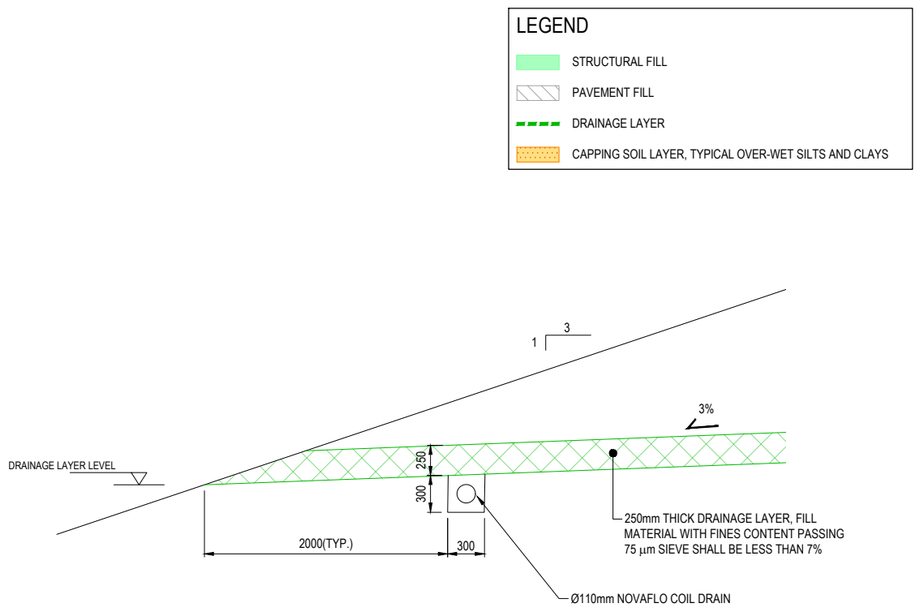
TITLE: EARTHWORKS TYPICAL DETAILS SHEET 4

DRAWING No. TAT – 3 – DG – G – 1254 – C
(PROJECT No. – PHASE – TYPE – DISC – NUMBER – REV)



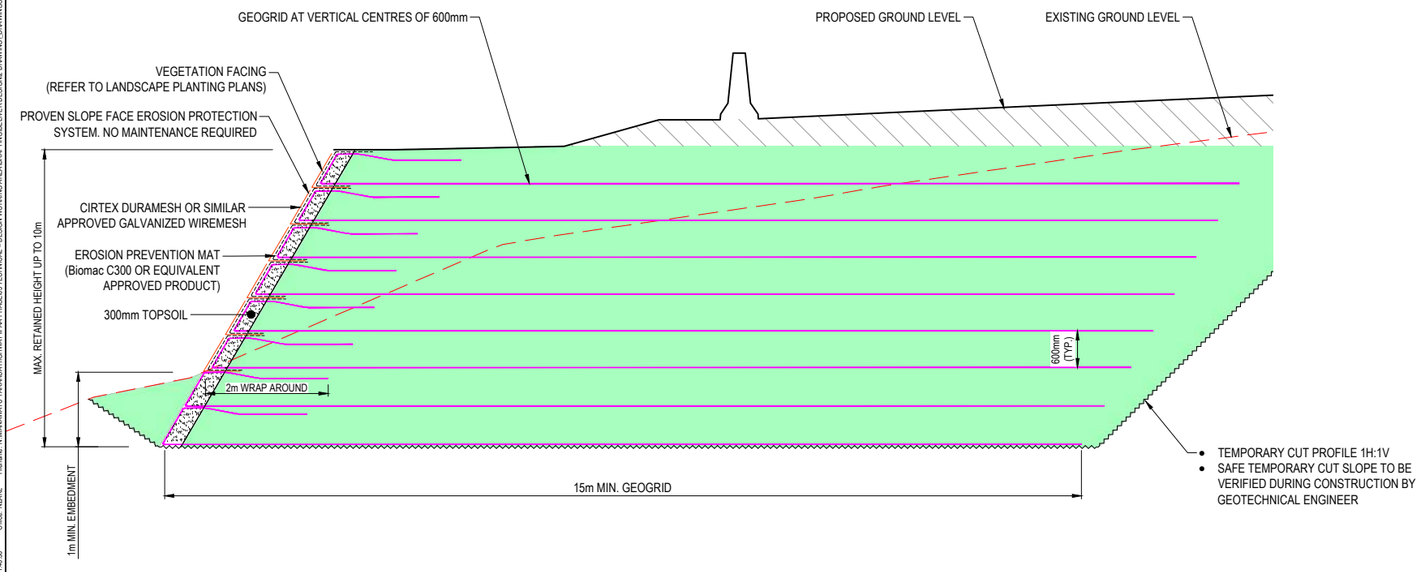
SECTION A : EMBANKMENT TYPICAL CROSS SECTION

N.T.S.



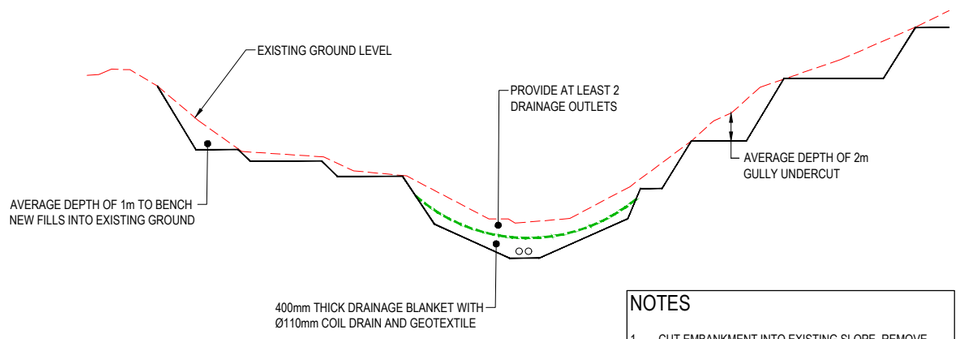
DETAIL 1 : DRAINAGE TRENCH DETAIL

N.T.S.



SECTION B : GEOGRID REINFORCED MSE SLOPE CH3895-CH3970

N.T.S.



NOTES

1. CUT EMBANKMENT INTO EXISTING SLOPE. REMOVE MATERIAL AND CUT TO WASTE.
2. THE DRAINAGE LAYER IS REQUIRED IN THE BASE OF THE GULLIES.
3. ADDITIONAL DRAINAGE WILL BE REQUIRED WITHIN THE BENCHES IF GROUNDWATER SEEPAGE IS ENCOUNTERED.

DETAIL 2 : GULLY UNDERCUT AND DRAINAGE BLANKET

N.T.S.

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CLIENT

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Te Ahu a Turanga Manawatū Tararua Highway

REV	DATE	REVISION DETAILS	APPROVED
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A	18/10/2019	CONCEPT DESIGN - DRAFT REVIEW	D. MACKINTOSH

SCALE	SIZE
NOT TO SCALE	A1

DRAWN: J. SAINI
DESIGNED: R. KONRAD
REVIEWED: K. CHEUNG

CONSENT
NOT FOR CONSTRUCTION

APPROVED
DATE 24/02/2020
T. WATTERSON
T. WATTERSON

PROJECT: TE AHU A TURANGA: MANAWATŪ TARARUA HIGHWAY

TITLE: EARTHWORKS TYPICAL DETAILS SHEET 5

DRAWING No.: TAT – 3 – DG – G – 1255 – C

PROJECT No.	PHASE	TYPE	DISC	NUMBER	REV
TAT	3	DG	G	1255	C

NOTES:

1. GENERAL

1.1 THE EXISTING NATURAL SLOPE IS TYPICALLY 40-50° STEEP AND IS PARTIALLY COVERED WITH LARGE TREES, SHURBS AND LOOSE TOPSOIL. THE SLOPE SURFACE MAY BE SENSITIVE TO DISTURBANCE AND HEAVY MACHINERY CANNOT BE USED FOR CONSTRUCTION WITHOUT ADDITIONAL SUPPORT OR TEMPORARY WORKS.

1.2 AN APPROPRIATE CONSTRUCTION METHODOLOGY IS TO BE PREPARED BY THE CONTRACTOR AND PROVIDED TO THE DESIGNER PRIOR TO CONSTRUCTION COMMENCEMENT. ALLOWANCE SHALL BE MADE FOR COMPRESSED AIR FLUSHING, CASINGS OR SIMILAR MEANS TO ENSURE THAT THE DRILL HOLES ARE CLEAN AND FREE OF LOOSE MATERIAL PRIOR TO GROUTING.

1.3 SEPARATE TEMPORARY WORKS DESIGN IS TO BE UNDERTAKEN IF SLOPE CUTTINGS AT THE TOE OF THE GULLY SLOPES AND LARGE STOCKPILES ARE PLACED ON TOP OF THE SLOPE OR HEAVY MACHINERY IS USED FOR CONSTRUCTION.

1.4 THE EXISTING SLOPE FACE IS LIKELY PRONE TO EROSION ONCE THE VEGETATION HAS BEEN CLEARED. PERMANENT OR TEMPORARY SLOPE FACE EROSION PROTECTION SHALL BE PLACED IMMEDIATELY (AS SOON AS PRACTICAL) AT THE SLOPE FACE.

2. SITE CLEARING AND PREPARATION

2.1 ALL VEGETATION SHALL BE CLEARED FROM THE SLOPE FACE AND TREE STUMPS LARGER THAN Ø100mm SHALL BE CUT CLOSE TO GROUND LEVEL AND COVERED WITH TOPSOIL. THE ENDS OF EXPOSED TREE STUMPS SHALL BE COATED WITH SUITABLE APPROVED TIMER SEALANT TO DEFER ROTTING.

2.2 ALL VEGETATION AND BRANCHES COVERING THE SLOPE SHALL BE REMOVED FROM SITE.

2.3 WHERE SLUMPED SOIL IS OBSERVED AT THE SURFACE, IT SHALL BE REMOVED PRIOR TO INSTALLATION OF SOIL NAILS.

2.4 TEMPORARY EROSION PROTECTION IS TO BE PLACED IF THE SLOPE IS LIKELY TO BE EXPOSED FOR PROLONGED PERIODS.

3. SLOPE DRAINAGE

3.1 DRAINAGE DRILL HOLES ARE NOT REQUIRED AT THE SLOPE FACE.

3.2 FURTHER GEOTECHNICAL ASSESSMENT WILL BE REQUIRED TO DETERMINE APPROPRIATE MEASURES.

4. SOIL NAILS

4.1 ALL SOIL NAILS SHALL BE SET-OUT ON SITE PRIOR TO INSTALLATION AND THEIR FINAL POSITIONS ARE TO BE VERIFIED ON SITE BY A GEOTECHNICAL ENGINEER OR APPOINTED DESIGNER'S REPRESENTATIVE. THE SOIL NAILS SHALL BE WITHIN 200mm OF THE VERIFIED SOIL NAIL POSITION.

4.2 THE SOIL NAILS SHALL BE INSTALLED BY APPROPRIATE EQUIPMENT SELECTED BY THE CONTRACTOR TO DRILL BOREHOLE IN CONGLOMERATE.

4.3 THE SOIL NAILS ARE SPACED AT 2m HORIZONTAL CENTRES AND 1.5m VERTICAL CENTRES, MINIMUM 3 SOIL NAILS PER VERTICAL SECTION ARE REQUIRED. ALLOW FOR 1.5m LONG SOIL NAIL FOR TIE BACK OF PONGA LOGS. ALLOW FOR 65 SHORT NAILS (1.5m LONG)

4.4 THE SOIL NAILS SHALL BE INSTALLED AT 20° DOWNWARD DIP ANGLE MEASURED FROM THE HORIZONTAL PLANE, THE DIP ANGLE SHALL BE MEASURED BY APPROPRIATE MEANS TO ENSURE ACCURACY. THE ACCURACY SHALL BE WITHIN ± 3°.

4.5 ADDITIONAL SOIL NAILS MAY BE REQUIRED SUBJECT TO OBSERVATION AND GEOTECHNICAL CONDITIONS AS DETERMINED BY THE DESIGNER ON SITE.

4.6 ALL SOIL NAILS SHALL BE 9m LONG.

4.7 THE DRILL HOLES FOR THE SOIL NAILS SHALL HAVE LEAST Ø150mm. THE DRILL HOLE SHALL BE CLEAN AND FREE OF LOOSE MATERIAL.

4.8 THE SOIL NAILS SHALL COMPRISE STEEL BARS WITH 150mm LONG THREADED ENDS TO TIE DOWN THE SLOPE FACE EROSION PROTECTION LINER WITH ANCHOR PLATES AND LOCK NUTS. THE STEEL BAR SHALL HAVE A DIAMETER OF 25mm. THE YIELD STRENGTH OF THE STEEL BARS SHALL BE AT LEAST fy=300MPa. SINGLE CORROSION PROTECTION USING HOT DIP GALVANISED STEEL BARS SHALL BE ADOPTED. HOT DIP GALVANISING SHALL COMPLY WITH AS/NZS 4680:2006. THE GALVANISING SHALL HAVE A MINIMUM COVERAGE RATE OT 610g/m² AND A MINIMUM THICKNESS OF 0.086mm.

4.9 AFTER DRILLING OF THE HOLES, THE SOIL NAIL STEEL BARS SHALL BE POSITIONED AT THE CENTRE OF EACH HOLE BY NON-METALLIC NON-CORRODIBLE CENTRALISERS.

4.10 CENTRALISERS SHALL BE SPACED AT 2m CENTRES ALONG THE SOIL NAILS OR AS REQUIRED.

4.11 THE DRILL HOLES SHALL BE FILLED WITH CEMENTITIOUS GROUT WITH A COMPRESSIVE STRENGTH OF AT LEAST 30MPa. THE GROUT SHALL BE INSERTED BY GROUT TUBES AND FILLED FROM THE END OF THE SOIL NAIL TO AVOID AIR INCLUSIONS. THE WATER-CEMENT RATIO SHALL NOT BE LESS THAN W/C = 0.40 AND NO MORE THAN W/C = 0.45.

4.12 GROUTING OF DRILL HOLES SHALL BE CARRIED OUT WITHOUT DELAY ON THE SAME DAY.

4.13 IF GROUNDWATER IS ENCOUNTERED DURING DRILLING OF THE HOLES, THE CONTRACTOR SHALL ENSURE THAT CEMENTITIOUS GROUT STRENGTH AND GROUND-GROUT BOND CAPACITY ARE NOT REDUCED BY THE GROUNDWATER.

4.14 THE SOIL NAILS SHALL BE CONSTRUCTED IN A TOP DOWN SEQUENCE.

5. VERIFICATION AND QUALITY CONTROL

5.1 THE GROUND-GROUT BOND STRENGTH SHALL BE VERIFIED BY TWO SACRIFICIAL TRIAL SOIL NAILS PRIOR TO CONSTRUCTION. THE SACRIFICIAL SOIL NAILS ARE NOT CONSIDERED IN THE DESIGN LAYER BUT SHALL REMAIN IN THE GROUND AFTER TESTING.

5.2 THE JACKS FOR THE SACRIFICIAL SOIL TRIAL NAILS SHALL BE CAPABLE OF AT LEAST 150kN. THE TEST LOAD INCREMENTS SHALL BE 5kN STARTING AT 5kN. A HOLD TIME OF AT LEAST 15 MINUTES SHALL BE MAINTAINED BETWEEN EACH TEST INCREMENT TO RECORD POTENTIAL CREEP. DISPLACEMENTS AT EACH LOAD INCREMENT SHALL BE RECORDED. THE GROUND SURFACE AT THE REACTION BLOCK SHALL BE PREPARED TO ENSURE ACCURATE TEST RECORDS.

5.3 SOIL NAIL TESTING SHALL BE CARRIED IN ACCORDANCE WITH AS-4678-2002 B4.5. QUALITY CONTROL ACCEPTANCE TEST OF 25% OF SOIL NAILS WILL BE REQUIRED. THE TEST LOAD FOR ACCEPTANCE TESTING IS SUBJECT TO THE RESULTS OF THE SACRIFICIAL TRIAL TESTS. AT THE STAGE, A TEST LOAD OF 75kN, WHICH IS 125% OF THE DESIGN LOAD, IS ANTICIPATED.

5.4 AN AS-BUILT SURVEY OF ALL SOIL NAIL HEADS IS TO BE CARRIED OUT AFTER COMPLETION.

5.5 DRILL HOLE LENGTH AND GROUT VOLUMES SHALL BE RECORDED FOR EACH SOIL NAILS.

6. SLOPE FACE EROSION PROTECTION LINER

6.1 A MacMat R EROSION PROTECTION LINER IS REQUIRED TO PROTECT THE SLOPE FACE AGAINST EROSION.

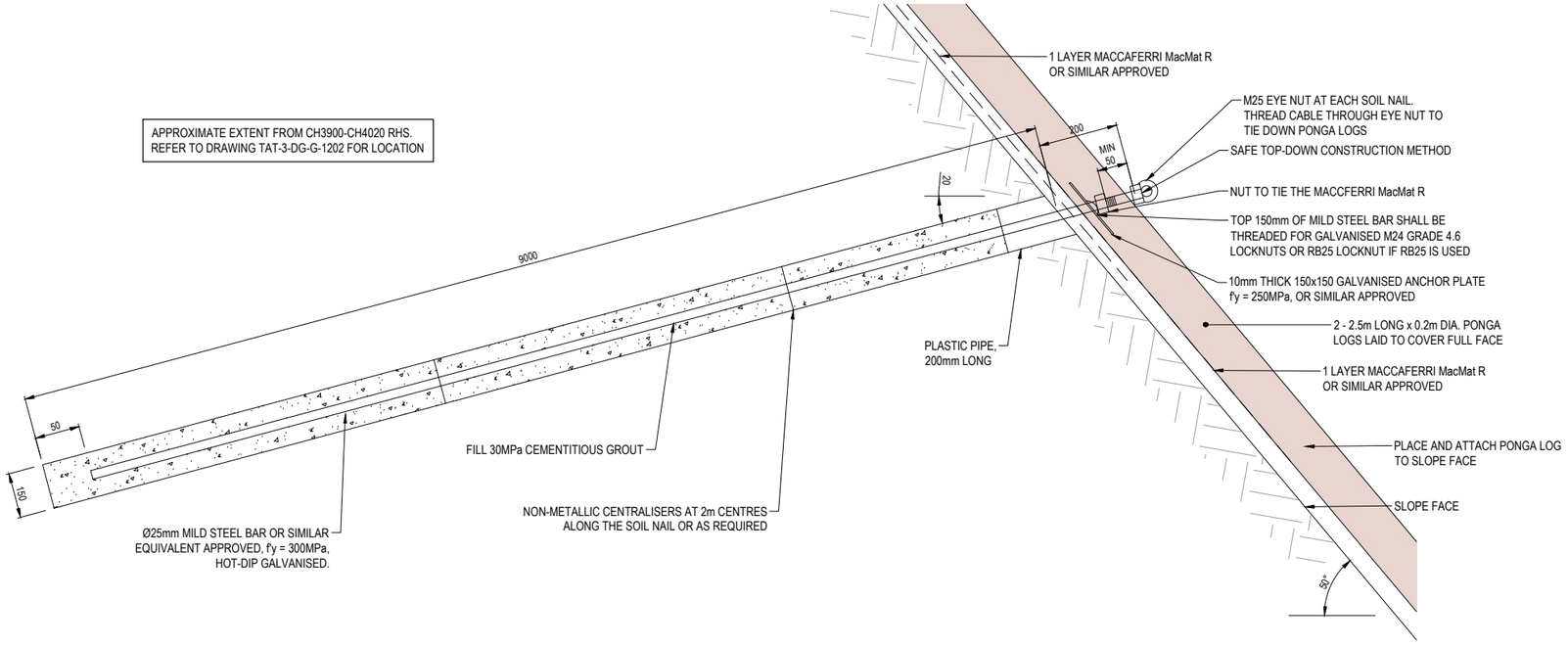
6.2 THE INSTALLATION OF THE MacMat R SHALL BE IN COMPLIANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

6.3 FULL COVER, OVERLAP BETWEEN INDIVIDUAL ROLLS AND/OR CONNECTION BETWEEN INDIVIDUAL ROLLS IS REQUIRED.

6.4 THE MacMat R IS TO BE TIED BACK AT THE SOIL NAILS BY MEANS OF ANCHOR PLATES AND LOCK NUTS.

6.5 ADDITIONAL BIDIM A19 GEOTEXTILE IS REQUIRE BENEATH THE MacMat R WHERE THE RISK OF FINES PENETRATION THROUGH THE GEOCOMPOSITE AFFECTS THE EROSION.

6.6 SLOPE SURFACE TREATMENT AS PER PLANTING DESIGN PACKAGE.



SOIL NAILS & EROSION PROTECTION DETAILS
N.T.S.

FIGURE 1 - PONGA LOGS FIXED OVER THE SHOTCRETE (SH3 MOKAU)
N.T.S.

FIGURE 2 - PONGA LOG WALL VEGETATIVE GROWTH (SH3 MOKAU)
N.T.S.

Plot Date: 2020/02/11 11:46:44 Office: NZAKL Filename: N:\MANAWATU TARARUA HIGHWAY\PA4 PHASE\05 TECHNICAL - DESIGN\WORKING AREA\DRAFTING\DELIVERABLES\DESIGN\2 DRAWING_DRAWINGS_CONCEPT AND CONSENTING\TAT-3-DG-G-1251-1255.DWG

CLIENT

WAKA KOTAHI NZ TRANSPORT AGENCY

Te Ahu a Turanga Manawatū Tararua Highway

REV	DATE	REVISION DETAILS	APPROVED
C	24/02/2020	ISSUED FOR REGIONAL CONSENT	D. McGAHAN
B	19/11/2019	ISSUED FOR CONCEPT DESIGN	D. MACKINTOSH
A	18/10/2019	CONCEPT DESIGN - DRAFT REVIEW	D. MACKINTOSH

SCALE	SIZE
NOT TO SCALE	A1

DRAWN: J. SAINI
DESIGNED: R. KONRAD
REVIEWED: K. CHEUNG

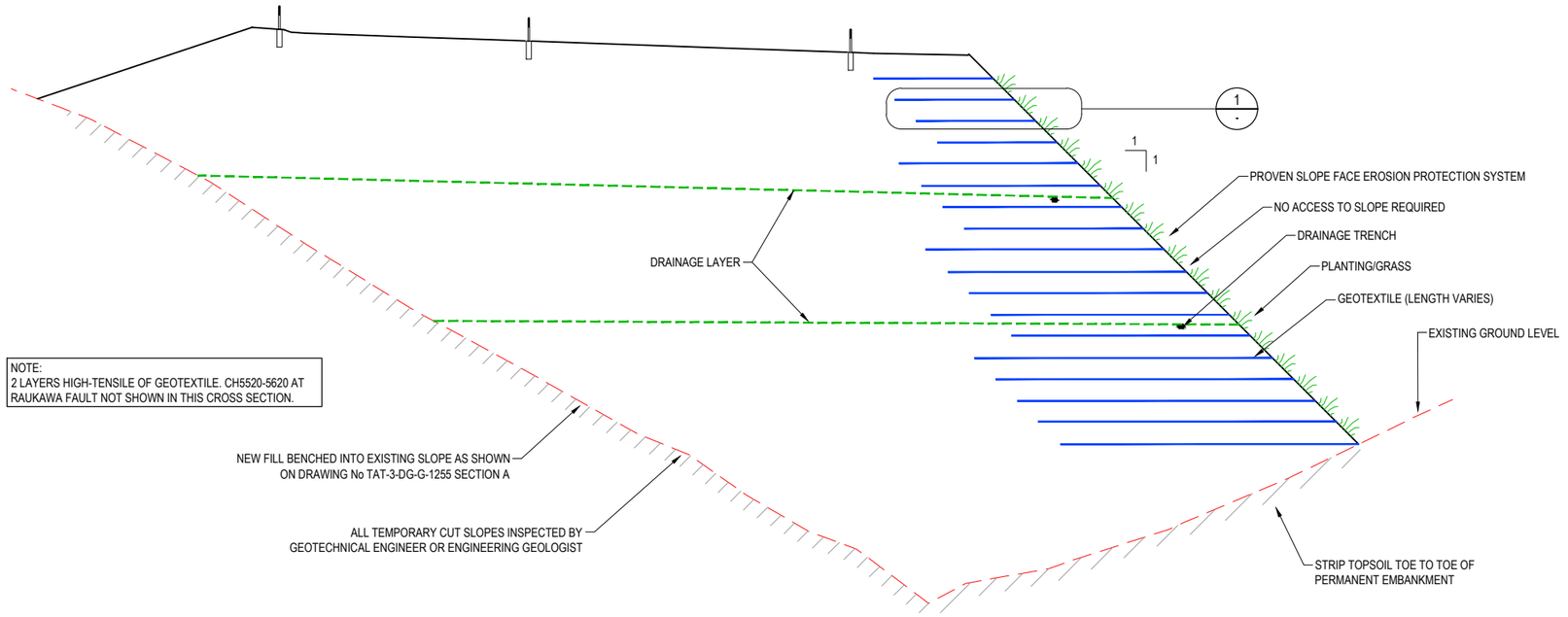
CONSENT
NOT FOR CONSTRUCTION

APPROVED
DATE 24/02/2020
T. WATTERSON
T. WATTERSON

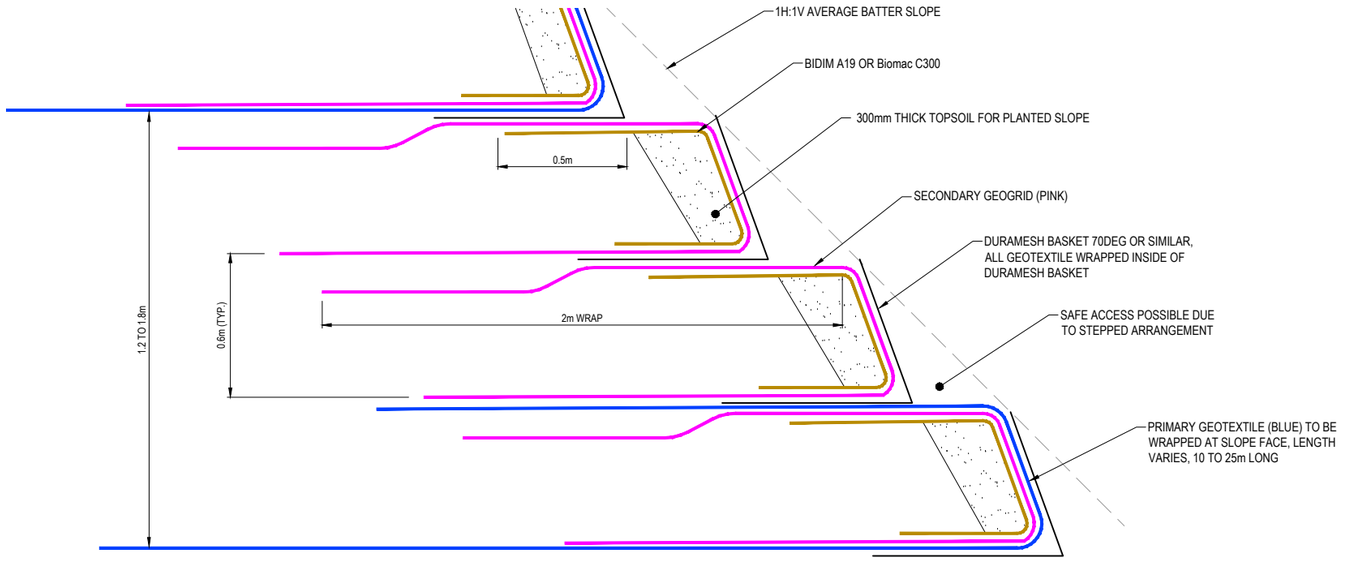
PROJECT: TE AHU A TURANGA: MANAWATŪ TARARUA HIGHWAY

TITLE: EARTHWORKS TYPICAL DETAILS SHEET 6

DRAWING No.: PROJECT No. TAT – PHASE 3 – TYPE DG – DISC G – NUMBER 1256 – REV C



TYPICAL SECTION CH5505-CH5615 RHS
N.T.S.



DETAIL 1/-
N.T.S.

NOTES:

1. ALL PRIMARY GEOTEXTILE REINFORCEMENT SHALL BE HIGH-TENSILE GEOTEXTILE AT 1.2 TO 1.8m VERTICAL SPACING.
2. LENGTH VARIES FROM 10 TO 25m.
3. THE PRIMARY GEOTEXTILE SHALL BE PLACED PERPENDICULAR TO THE SLOPE FACE.
4. ALL PRIMARY GEOTEXTILES SHALL BE PLACED WITHOUT LAPPING IN MAIN STRENGTH DIRECTION.
5. GEOTEXTILE OVERLAPS PERPENDICULAR TO THE SLOPE FACE SHALL BE 200mm NOMINAL.
6. SECONDARY GEOGRID WITH A MINIMUM WRAP AROUND LENGTH OF 2m ARE REQUIRED AT 0.6m VERTICAL CENTRES.
7. UNDERFILL DRAINS AND DRAINAGE LAYERS ARE REQUIRED AS SHOWN ON DRAWING TAT-3-DG-G-1255.
8. STRUCTURAL FILL SHALL BE USED FOR THE ENTIRE GEOGRID/GEOTEXTILE REINFORCED EMBANKMENT.
9. BIDIM A19 OR Biomac C300 FOR TEMPORARY EROSION PROTECTION AND PLANTING. PLANT SPECIES TO BE CONFIRMED AT DETAILED DESIGN

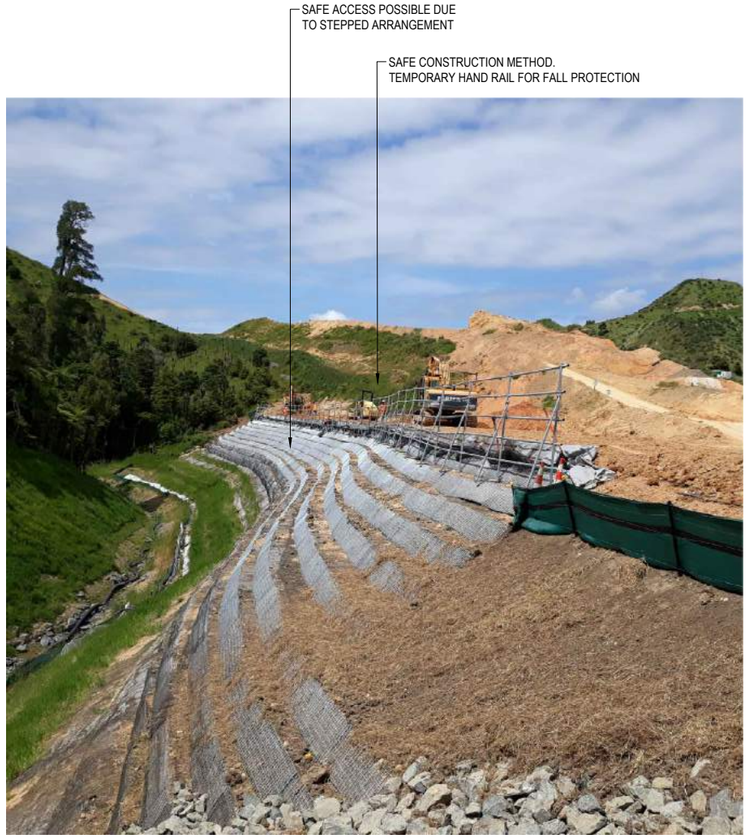


FIGURE 1 - 22m HIGH GEOGRID REINFORCED SLOPE WITH DURAMESH FACING AT SH1 HUNTLY BYPASS
N.T.S.

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SCALE	SIZE
NOT TO SCALE	A1

DRAWN: J. SAINI
DESIGNED: R. KONRAD
REVIEWED: K. CHEUNG

CONSENT
NOT FOR CONSTRUCTION

APPROVED
DATE 24/02/2020
T. WATTERSON
T. WATTERSON

PROJECT: TE AHU A TURANGA: MANAWATŪ TARARUA HIGHWAY

TITLE: EARTHWORKS TYPICAL DETAILS SHEET 7

DRAWING No.: PROJECT No. TAT – PHASE 3 – TYPE DG – DISC G – NUMBER 1257 – REV C