

An architectural rendering of a school campus. On the left is a multi-story brick building with white balconies and a glass-enclosed ground-floor area. To the right is a taller, modern building with a dark, textured facade and large, irregularly placed windows. In the foreground, there is a paved courtyard with a brick-paved area where children are playing. A large, leafy tree stands in the center. The sky is blue with scattered white clouds.

Upgrades to Chatswood Public School and Chatswood High School

Appendix 16 - Stormwater Management Plan + Erosion & Sediment Control Plan

SSD 9483

Prepared by Wood & Grieve Engineers

For School Infrastructure NSW, Department of Education

*Artists impression of upgrades to
Chatswood Public School*

CIVIL ENGINEERING WORKS



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GENERAL NOTES

1. THE CONTRACTOR SHALL LOCATE AND LEVEL ALL EXISTING SERVICES PRIOR TO COMMENCING CONSTRUCTION AND SHALL MAKE ALL NECESSARY ARRANGEMENTS WITH THE RELEVANT AUTHORITY TO RELOCATE OR ADJUST AS REQUIRED. ALL COSTS TO BE BORNE BY THE APPLICANT, (NOT AT COUNCIL'S EXPENSE)
2. THE CONTRACTOR SHALL NOT ENTER UPON OR DO ANY WORK WITHIN ADJACENT LANDS WITHOUT PRIOR WRITTEN PERMISSION OF THE LAND OWNER.
3. SURVEY MARKS SHOWN WITH **■** SHALL BE MAINTAINED AT ALL TIMES WHERE RETENTION IS NOT POSSIBLE. THE PRINCIPAL SHALL NOTIFIED AND CONSENT RECEIVED PRIOR TO THEIR REMOVAL OR RELOCATION.
4. ALL NEW PITS SHALL MAKE SMOOTH JUNCTION WITH EXISTING CONDITIONS.
5. ALL LAND DISTURBED BY EARTHWORKS SHALL BE HYDROMULCHED, OR SIMILARLY TREATED TO ESTABLISH GRASS COVER. SEE LOCATIONS TO BE APPROVED BY THE PRINCIPAL PRIOR TO SPRAYING. ALL GRASSSED AREAS SHALL BE REGULARLY WATERED AND MAINTAINED UNTIL EXPIRATION OF THE MAINTENANCE PERIOD.
6. THE CONTRACTOR SHALL MAINTAIN DUST CONTROL THROUGHOUT THE DURATION OF THE PROJECT.
7. ALL PITS DEEPER THAN 1.2m SHALL HAVE STEP IRONS PROVIDED IN ACCORDANCE WITH CAMDEN COUNCIL'S STANDARDS.
8. SUBSOIL DRAINS SHALL BE CONSTRUCTED TO THE SATISFACTION OF THE PRINCIPAL AND IN ACCORDANCE WITH THE CIVIL SPECIFICATION.
9. MINIMUM 100mm THICK TOPSOIL SHALL BE SPREAD ON ALL FOOTPATHS, BERMS, BATTERS AND ON ALL LOTS EXCESS TOPSOIL SHALL BE STOCKPILED FOR FUTURE LANDSCAPING USE AS DIRECTED BY THE PRINCIPAL.
10. THE CONTRACTOR SHALL PROVIDE MINIMUM 48 HOURS NOTICE TO THE PRINCIPAL FOR ALL INSPECTIONS.
11. THE CONTRACTOR SHALL MAINTAIN SERVICES AND ALL WEATHER ACCESS AT ALL TIMES TO THE ADJOINING PROPERTIES.
12. THE CONTRACTOR SHALL UNDERTAKE TRAFFIC CONTROL MEASURES TO THE PRINCIPAL AND THE SATISFACTION OF MAITLAND CITY COUNCIL. APPROPRIATE WARNING SIGNS SHALL BE DISPLAYED THROUGHOUT THE DURATION OF CONSTRUCTION.
13. ALL NATURAL SURFACE DATA HAS BEEN DETERMINED BY TERRAIN MODELLING. ALL CONSTRUCTION SITE WORKS MUST BE CARRIED OUT USING THE BENCH MARKS NOTED ON THIS DRAWING.
14. 100 YEAR FLOW PATHS TO BE FORMED AT TIME OF CONSTRUCTION.

STRUCTURAL INSPECTIONS

1. STRUCTURAL INSPECTIONS ARE REQUIRED FOR STRUCTURES WHERE NOTED ON PLANS.
2. 48 HOURS NOTICE IS REQUIRED FOR ALL INSPECTIONS.

SITE COMPOUND

1. CONTRACTOR TO CONFIRM SITE COMPOUND AND FACILITIES LOCATION WITH PRINCIPAL.

SURVEY NOTES

THE EXISTING SITE FEATURES AND LEVELS SHOWN ON THE FOLLOWING DRAWINGS HAVE BEEN PROVIDED BY ADAM JOHNSON, BEING REGISTERED SURVEYORS. THE INFORMATION IS SHOWN TO PROVIDE A BASIS FOR DESIGN. WOOD & GRIEVE ENGINEERS DOES NOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THE SURVEY BASE OR ITS SUITABILITY AS A BASIS FOR CONSTRUCTION DRAWINGS.

SHOULD DISCREPANCIES BE ENCOUNTERED DURING CONSTRUCTION BETWEEN THE SURVEY DATA AND ACTUAL FIELD DATA, CONTACT WOOD & GRIEVE ENGINEERS.

THE FOLLOWING NOTES HAVE BEEN TAKEN DIRECTLY FROM THE ORIGINAL SURVEY DOCUMENTS.

PM83605
RL- 8.708
DATUM: A.H.D.

BULK EARTHWORKS NOTES

1. ORIGIN OF LEVELS: REFER SURVEY NOTES.
2. STRIP ALL TOPSOIL/ORGANIC MATERIAL (150mm NOMINAL) FROM CONSTRUCTION AREA AND REMOVE FROM SITE OR STOCKPILE AS DIRECTED BY PRINCIPAL.
3. EXCAVATED MATERIAL TO BE USED AS STRUCTURAL FILL PROVIDED THE PLACEMENT MOISTURE CONTENT OF THE MATERIAL IS +/- 2% OF THE OPTIMUM MOISTURE CONTENT.
4. CONTRACT FILL AREAS AND SUBGRADE TO NOT LESS THAN:

LOCATION	MINIMUM DRY DENSITY
UNDER BUILDING SLABS ON GROUND	95-% STD
UNDER ROADS, FOOTWAYS AND CARPARKS	100% STD
LANDSCAPED AREAS UNLESS NOTED OTHERWISE	90% STD
5. BEFORE PLACING FILL, PROOF ROLL EXPOSED SUBGRADE WITH A 12 TONNE (MM) DEADWEIGHT SMOOTH DRUM NON VIBRATORY ROLLER TO DETECT THEN REMOVE SOFT SPOTS (AREAS WITH MORE THAN 2mm MOVEMENT UNDER ROLLER).
6. TESTING SHALL BE LEVEL 1 TESTING IN ACCORDANCE WITH THE CURRENT VERSION OF AS 3798.
7. FILLING TO BE PLACED AND COMPACTED IN MAXIMUM LAYERS 200mm
8. NO FILLING SHALL TAKE PLACE TO EXPOSE SUBGRADE UNTIL THE AREA HAS BEEN PROOF ROLLED IN THE PRESENCE OF THE GEOTECHNICAL ENGINEER AND APPROVAL GIVEN IN WRITING THAT FILLING CAN PROCEED.
9. WHERE GROUNDWATER DISCHARGE OCCURS IN BULK EXCAVATIONS, OR CUT FACES, SUBSOIL DRAINAGE SHALL BE INSTALLED IN ACCORDANCE WITH THE PRINCIPAL / GEOTECH INSTRUCTIONS TO DIRECT DISCHARGE WATER TO THE NEAREST STORMWATER / SEDIMENTATION CONTROL DEVICE. THE SUBSOIL DRAINAGE MUST BE INSTALLED AS SOON AS PRACTICALLY POSSIBLE. AFTER EXCAVATION, SUBSOIL DRAINAGE SHALL ALSO BE INSTALLED AT LOW POINTS IN THE FINISHED EARTHWORK PROFILE IN ACCORDANCE WITH THE PRINCIPAL / GEOTECHS INSTRUCTIONS.
10. ENSURE TEMPORARY DIVERSION CHANNELS ARE CONSTRUCTED AROUND STOCKPILED MATERIALS AND DISTURBED AREAS, GENERALLY AS DETAILD.
11. THE CONTRACTOR SHALL ALLOW FOR AND COORDINATE ALL MONITORING AND MAINTENANCE REQUIREMENTS IN RELATION TO SOIL AND GROUNDWATER CONDITIONS DURING CONSTRUCTION.
12. WORKS TO BE IN ACCORDANCE WITH ALL GEOTECHNICAL REPORTS.

SITEWORKS NOTES

1. ORIGIN OF LEVELS: REFER SURVEY NOTES.
2. CONTRACTOR MUST VERIFY ALL DIMENSIONS AND EXISTING LEVELS ON SITE PRIOR TO COMMENCEMENT OF WORK. ANY DISCREPANCIES TO BE REPORTED TO THE PRINCIPAL.
3. ALL TRENCH BACKFILL MATERIAL SHALL BE COMPACTED TO THE SAME DENSITY AS THE ADJACENT MATERIAL.
4. SEWER, POTABLE WATER AND RECYCLED WATER MAINS BACKFILL TO BE IN ACCORDANCE WITH THE HYDRAULIC SPECIFICATION. ALL OTHER SERVICE TRENCHES UNDER VEHICULAR PAVEMENTS SHALL BE BACKFILLED WITH SAND TO 300mm ABOVE PIPE. WHERE PIPES UNDER PAVEMENTS BACKFILL REMAINDER OF TRENCH TO UNDERSIDE OF PAVEMENT WITH SAND OR APPROVED GRANULAR MATERIAL, COMPACTED IN 150mm LAYERS TO MINIMUM 98% MODIFIED MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS 1289 5.2.1, (OR A DENSITY INDEX OF NOT LESS THAN 75)
5. ASPHALTIC CONCRETE SHALL CONFORM TO R.M.S. SPECIFICATION R116.
6. ALL BASE COURSE MATERIAL SHALL BE IGNEOUS ROCK QUARRIED MATERIAL TO COMPLY WITH R.M.S. FORM 3051 (UNBOUND). R.M.S. FORM 3052 (BOUND) COMPACTED TO MINIMUM 98% MODIFIED DENSITY IN ACCORDANCE WITH AS 1289 5.2.1. FREQUENCY OF COMPACTION TESTING SHALL NOT BE LESS THAN 1 TEST PER 50m³ OF BASE COURSE MATERIAL PLACED.
7. ALL SUB-BASE COURSE MATERIAL SHALL BE IGNEOUS ROCK QUARRIED MATERIAL TO COMPLY WITH R.M.S. FORM 3051, 3051.1 AND COMPACTED TO MINIMUM 95% MODIFIED DENSITY IN ACCORDANCE WITH AS 1289 5.2.1. FREQUENCY OF COMPACTION TESTING SHALL NOT BE LESS THAN 1 TEST PER 50m³ OF SUB-BASE COURSE MATERIAL PLACED.
8. AS AN ALTERNATIVE TO THE USE OF IGNEOUS ROCK AS A SUB-BASE MATERIAL, IN (A) CERTIFIED RECYCLED CONCRETE MATERIAL, COMPLYING WITH R.M.S. FORM 3051 WILL BE CONSIDERED SUBJECT TO MATERIAL SAMPLES AND APPROPRIATE CERTIFICATIONS BEING PROVIDED TO THE SATISFACTION OF THE PRINCIPAL.
9. SHOULD THE CONTRACTOR WISH TO USE A RECYCLED PRODUCT THIS SHALL BE CLEARLY INDICATED IN THEIR TENDER AND THE PRICE DIFFERENCE BETWEEN AN IGNEOUS PRODUCT AND A RECYCLED PRODUCT SHALL BE CLEARLY INDICATED.
10. WHERE NOTED ON THE DRAWINGS THAT WORKS ARE TO BE CARRIED OUT BY OTHERS, (eg. ADJUSTMENT OF SERVICES), THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CO-ORDINATION OF THESE WORKS.

EROSION AND SEDIMENT CONTROL

NOTES

GENERAL INSTRUCTIONS

1. THE CONTRACTOR/ENGINEER/MANAGER WILL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE LOCATED AS DOCUMENTED.
2. ALL WORK SHALL BE GENERALLY CARRIED OUT IN ACCORDANCE WITH A LOCAL AUTHORITY REQUIREMENTS.
A EIPA REQUIREMENTS
LANDCOM MANAGING URBAN STORMWATER, SOILS AND CONSTRUCTION, 4th EDITION, MARCH 2004.
3. MAINTAIN THE EROSION CONTROL DEVICES TO THE SATISFACTION OF THE PRINCIPAL AND THE LOCAL AUTHORITY.
5. AT ALL TIMES A WATER CATCHY SHALL BE MAINTAINED ON SITE TO:
(A) WATER THE AREAS OF HYDROMULCH
(B) CONTROL DUST
WATERING OF MULCH, DUST OR VEGETATION MUST BE KEPT TO THE MINIMUM REQUIRED TO ACHIEVE SPECIFIED OUTCOMES. IN NO CASE SHALL AREAS BE OVER WATERED TO SATURATION OR TO THE POINT WHERE WATER POUNDS ON THE SURFACE.
6. THE WATER IN THE SEDIMENT BASINS SHALL BE LOWERED PERIODICALLY TO MAINTAIN THE MINIMUM STORAGE VOLUME REQUIRED FOR FINE SOLIDS AND THE FLOWING.
- (A) STORMWATER IN THE SETTLING ZONE SHALL BE DRAINED OR PUMPED OUT WITHIN 7 DAYS (NO LATER THAN 14 DAYS AS SITE CONDITIONS ALLOW) FOLLOWING A RAINFALL EVENT IF THE NOMINATED WATER QUALITY TARGETS CAN BE MET. THE LOWER LEVEL OF THE SETTLING ZONE SHALL BE IDENTIFIED WITH A PEG THAT SHOWS CLEARLY THE LEVEL WHICH DESIGN CAPACITY IS AVAILABLE.
- (B) STORED SEDIMENT SHALL NOT ENCRUST INTO SETTLING ZONE. SEDIMENT REMOVED FROM SEDIMENT BASIN SHALL BE DEPOSED IN PLACES THAT WILL NOT RESULT IN A FUTURE EROSION OR POLLUTION HAZARD.
- (C) TEMPORARY SEDIMENT BASIN OUTLET PIPE SHALL BE CAPPED DURING CONSTRUCTION. AFTER CONSTRUCTION BASIN SHOULD BE CLEARED OF SEDIMENTS BEFORE OUTLET PIPE CAP IS REMOVED.
7. WHEN STORMWATER PITS ARE CONSTRUCTED, PREVENT SITE RUNOFF ENTERING UNLESS SEDIMENT FENCES ARE ERECTED AROUND PITS.
8. CONTRACTOR IS TO ENSURE ALL EROSION & SEDIMENT CONTROL DEVICES ARE MAINTAINED IN GOOD WORKING ORDER AND OPERATE EFFECTIVELY. REPAIRS AND/OR MAINTENANCE SHALL BE UNDERTAKEN AS REQUIRED, PARTICULARLY FOLLOWING STORM EVENTS.

LAND DISTURBANCE

8. WHERE PRACTICAL, THE SOIL EROSION HAZARD ON THE SITE WILL BE KEPT AS LOW AS POSSIBLE. TO THIS END, WORKS SHOULD BE UNDERTAKEN IN THE FOLLOWING SEQUENCE:
(A) MAINTAIN EXISTING SECURITY / WIND FENCES INSTALLED AS PART OF THE ENABLING WORKS AND INSTALL NEW SECURITY / WIND FENCES AS SHOWN.
(B) MAINTAIN EXISTING SEDIMENT FENCES INSTALLED AS PART OF THE ENABLING WORKS AND INSTALL NEW SEDIMENT FENCES AS SHOWN.
(C) INSTALL SEDIMENT TRAPS AS SHOWN ON PLAN AND AS REQUIRED.
(D) UNDERTAKE SITE DEVELOPMENT WORKS IN ACCORDANCE WITH THE ENGINEERING PLANS. WHERE POSSIBLE, PHASE DEVELOPMENT SO THAT LAND DISTURBANCE IS CONFINED TO AREAS OF WORKABLE SIZE.
(E) DISTURBED AREAS TO BE GRASSSED TO THE FOLLOWING STANDARDS:
- EMBANKMENTS AND CHIEKS - HYDRO MULCHED.
- VERGES - HYDRO MULCHED.

EROSION CONTROL

9. DURING WINDY WEATHER, LARGE, UNPROTECTED AREAS WILL BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL.

SEDIMENT CONTROL

11. STOCKPILES WILL NOT BE LOCATED WITHIN 2 METRES OF HAZARD AREAS, INCLUDING LIKELY AREAS OF CONCENTRATED OR HIGH VELOCITY FLOWS SUCH AS WATERWAYS, WHERE THEY ARE BETWEEN 2 AND 3 METRES FROM SUCH AREAS. SPECIAL SEDIMENT CONTROL MEASURES SHOULD BE TAKEN TO MINIMISE POSSIBLE POLLUTION TO DOWNSTREAM WATERS, I.E. THROUGH INSTALLATION OF SEDIMENT FENCING.
12. ANY SAND USED IN THE CONCRETE CURING PROCESS (SPREAD OVER THE SURFACE) WILL BE REMOVED AS SOON AS POSSIBLE AND WITHIN 10 WORKING DAYS FROM PLACEMENT.
13. WATER WILL BE PREVENTED FROM ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS IT IS RELATIVELY SEDIMENT FREE, I.E. THE CATCHMENT AREA HAS BEEN PERMANENTLY LANDSCAPED AND/OR ANY LIKELY SEDIMENT HAS BEEN FILTERED THROUGH AN APPROVED STRUCTURE.
14. TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES WILL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE REHABILITATED/STABILISED.

OTHER MATTERS

15. ACCEPTABLE RECEPTORS WILL BE PROVIDED FOR CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT-WEIGHT WASTE MATERIALS AND LITTER.
16. THE APT ZONES FOR ANY EXISTING TREES NOT IDENTIFIED FOR REMOVAL WILL BE PROTECTED FROM CONSTRUCTION ACTIVITIES.


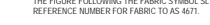

KERBING NOTES

1. ALL CONCRETE TO HAVE A MINIMUM COMPRESSIVE STRENGTH OF 25 MPa UNLESS IN REINFORCED CONCRETE NOTED ON MAITLAND CITY SPECIFICATIONS.
2. ALL KERBS, GUTTERS, DISH DRAINS AND CROSSINGS TO BE CONSTRUCTED ON 100mm GRANULAR BASECOURSE COMPACTED TO MINIMUM 95% MODIFIED DRY DENSITY (AS 1289 5.2.1).
3. EXPANSION JOINTS (E & J) TO BE FORMED FROM 10mm COMPRESSIBLE CORK FILLER BOARD FOR THE FULL DEPTH OF THE SECTION AND CUT TO PROFILE. EXPANSION JOINTS TO BE LOCATED AT DRAINAGE PITS, ON TANGENT POINTS OF CURVES AND ELSEWHERE AT MAX 10m CENTRES EXCEPT FOR INTEGRAL KERBS WHERE THE EXPANSION JOINTS ARE TO MATCH THE JOINT LOCATIONS IN THE SLABS.
4. WEAKEND PLANE JOINTS TO BE 8mm 3mm WIDE AND LOCATED AT 3m CENTRES EXCEPT FOR INTEGRAL KERBS WHERE THE WEAKEND PLANE JOINTS ARE TO MATCH THE JOINT LOCATIONS IN THE SLABS.
5. BROOMED FINISH TO ALL RAMMED AND VEHICULAR CROSSINGS. ALL OTHER KERBING OR DISH DRAINS TO BE STEEL FLOAT FINISHED.
6. IN THE REPLACEMENT OF KERBS AND GUTTERS - EXISTING ROAD PAVEMENT IS TO BE SAWCUT 900mm UNLO FROM THE LIP OF GUTTER, UPON COMPLETION OF THE NEW KERBS AND GUTTER NEW BASECOURSE AND SURFACE TO BE LAY 900mm WIDE UNLO.
7. ALLOTMENT DRAINAGE PIPES CONNECTED TO THE ROLL KERBS AND GUTTER SHALL CONSIST OF A RECTANGULAR HOLLOW SECTION (GALVANISED STEEL) AT THE LOW SIDE OF THE PROPOSED LOT.
8. PRAM RAMP GRADES SHALL BE MAX 1 IN 14. IN SPECIAL CIRCUMSTANCES GRADES SHALL BE ABSOLUTE MAX 1 IN 8.

CONCRETE NOTES

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 3600 CONCRETE WITH AMENDMENTS, EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.
2. CONCRETE QUALITY ALL REQUIREMENTS OF THE CURRENT ACCE CONCRETE SPECIFICATION DOCUMENT 1 SHALL APPLY TO THE FORMWORK, REINFORCEMENT AND CONCRETE UNLESS NOTED OTHERWISE.

ELEMENT	AS 3600 FC: MPa AT 28 DAYS	SPECIFIED SLUMP	NOMINAL AGG. SIZE
VEHICULAR BASE	32	60	20
KERBS, PATHS,	25	80	20
PITS	32	80	20

- CEMENT TYPE SHALL BE (ACSE SPECIFICATION) TYPE SL - PRODUCT CEMENT. TESTING SHALL BE CARRIED OUT IN ACCORDANCE WITH AS 1378.
- NO ADMIXTURES SHALL BE USED IN CONCRETE UNLESS APPROVED IN WRITING BY THE PRINCIPAL.
4. ALL REINFORCEMENT SHALL BE FIRMLY SUPPORTED ON MILD STEEL PLASTIC TYPED CHAIRS, PLASTIC CHAIRS OR CONCRETE CHAIRS AT NOT GREATER THAN 10m CENTRES BOTH WAYS. BARS SHALL BE TIED AT ALTERNATE INTERSECTIONS.
5. THE FINISHED CONCRETE SHALL BE A DENSE HOMOGENEOUS MASS, COMPLETELY FILLING THE FORMWORK, THOROUGHLY EMBEDDING THE REINFORCEMENT AND FREE OF STONE POCKETS. ALL CONCRETE INCLUDING SLABS ON GROUND AND FOOTINGS SHALL BE COMPACTED AND CURED IN ACCORDANCE WITH R.M.S. SPECIFICATION R63.
6. REINFORCEMENT SYMBOLS: N DENOTES GRADE 500 BARS TO AS 4671. GRADE N DENOTES 250 R ROLL ROLLED PLAIN BARS TO AS 4671. SL DENOTES COLD DRAWN WIRE REINFORCING FABRIC TO AS 4671.
- NUMBER OF BARS IN GROUP 
NOMINAL BAR SIZE IN mm 
THE FIGURE FOLLOWING THE FABRIC SYMBOL SL IS THE REFERENCE NUMBER FOR FABRIC TO AS 4671.
7. FABRIC SHALL BE LAPPED IN ACCORDANCE WITH THE FOLLOWING DETAIL: 
8. EXTERNAL CONCRETE ELEMENTS SHALL MEET THE FOLLOWING REQUIREMENTS: MINIMUM PORTLAND CEMENT CONTENT 300 kg/m³; MAXIMUM WATER 240 g/kg; AND CHLORIDE CONTENT RESTRICTED AS PER CLAUSE 4.9 OF AS 3600.

PAVEMENT NOTE

1. PAVEMENT IS TO BE SUPPLIED IN ACCORDANCE WITH CIVIL SPECIFICATION.

TRAFFIC CONTROL NOTES

1. A TRAFFIC CONTROL PLAN IS TO BE PREPARED AND LODGED WITH COUNCIL FOR APPROVAL BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF CONSTRUCTION.

REINFORCEMENT STEEL

1. WORKMANSHIP AND MATERIALS
ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 3600 AND ANY OTHER APPLICABLE CODES EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTATION.
2. REINFORCEMENT TYPE AND GRADE

REINFORCEMENT NOTATION TYPE	DESCRIPTION AND TYPE	CLASSIFICATION AND DESIGNATION TO AS/NZS 4671
N	HOT ROLLED DEFORMED BAR, MICROALLOY TEMPOCORE	D500N

3. BAR NOTATION
GIVES THE FOLLOWING INFORMATION IN THE FOLLOWING ORDER:
e.g. 20N16-20T - NO. OF BARS, TYPE, BAR SIZE (mm), SPACING (mm), LAYER (200 TOP).
4. REINFORCEMENT LAPS
LAP REINFORCEMENT ONLY AT LOCATIONS SHOWN ON THE DRAWINGS OR AS APPROVED BY THE ENGINEER IN WRITING, UNLO. LAP ALL BARS AS TABULATED BELOW:

SLAB REINFORCEMENT	
BAR SIZE	MINIMUM LAP LENGTH (mm)
N12	450
N16	650

WALL REINFORCEMENT	
BAR SIZE	MINIMUM LAP LENGTH (mm)
N12	500
N16	650
N20	800
N24	900

STORMWATER DRAINAGE NOTES

1. STORMWATER DESIGN CRITERIA:
- AVERAGE RECURRENCE INTERVAL:
ROAD DRAINAGE: 5 YEAR ARI
20 YEAR ARI
100 YEAR ARI
MINOR STORM EVENT
MAJOR STORM EVENT
MAJOR STORM EVENT
2. ALL LOTS DISCHARGING TO INTERALLOTMENT DRAINAGE SYSTEMS ARE TO CAPTURE AND CONVEY THIS SLUR RUNOFF UP THE DRAIN INTO THE INTERALLLOTMENT DRAIN - THIS CAPTURE CONDITION APPLIES FOR SUCH LOTS BOTH PRIOR TO AND FOLLOWING BUILDING DEVELOPMENT - A MINIMUM CAP OF 0.1m BELOW FENCING IS TO BE CONSTRUCTED ACROSS THE FULL WIDTH OF ALL DRAINAGE EASEMENTS TO CONVEY DRAINAGE SURCHARGE FLOWS.
3. PIPES 375 DIA. AND LARGER TO BE REINFORCED CONCRETE CLASS 'T' UNLESS NOTED OTHERWISE. APPROVED SPOUT AND SOCKET WITH RUBBER RING JOINTS. UNLO.
4. PIPES TO BE INSTALLED TO TYPE H51 SUPPORT IN ACCORDANCE WITH AS 3725 IN ALL CASES BACKFILL TRENCH WITH SAND TO 300mm ABOVE PIPE. WHERE PIPE IS UNDER PAVEMENT'S BACKFILL REMAINDER OF TRENCH TO UNDERSIDE OF PAVEMENT WITH SAND OR APPROVED GRANULAR MATERIAL, COMPACTED IN 150mm LAYERS TO MINIMUM 98% STANDARD MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS 1289 5.2.1. (OR A DENSITY INDEX OF NOT LESS THAN 75)
5. ALL INTERNAL WORKS WITHIN PROPERTY BOUNDARIES ARE TO COMPLY WITH THE REQUIREMENTS OF AS 3600 3.1 AND AS/NZS 3600 3.2.
6. WHERE SUBSOIL DRAINAGE PASSES UNDER FLOOR SLABS AND VEHICULAR PAVEMENTS, UNSLOTTED uPVC-SEWER GRADE PIPE IS TO BE USED.
7. CARE IS TO BE TAKEN WITH LEVELS OF STORMWATER LINES. GRADES SHOWN ARE NOT TO BE REDUCED WITHOUT APPROVAL.
8. GRATES AND COVERS SHALL CONFORM TO MAITLAND CITY COUNCIL REQUIREMENTS AND AS 3996.
9. AT ALL TIMES PRIOR TO CONSTRUCTION OF STORMWATER PITS, ADEQUATE SAFETY PROCEDURES SHALL BE TAKEN TO ENSURE AGAINST THE POSSIBILITY OF PERSONNEL FALLING DOWN PITS.
10. ALL EXISTING STORMWATER DRAINAGE LINES AND PITS THAT ARE TO REMAIN ARE TO BE INSPECTED AND CLEANED. DURING THIS PROCESS ANY PART OF THE STORMWATER DRAINAGE SYSTEM THAT WARRANTS REPAIR SHALL BE REPORTED TO THE PRINCIPAL/ENGINEER FOR FURTHER DIRECTIONS.
11. CCTV ALL PIPES AFTER CONSTRUCTION AND PRIOR TO COMPLETION PROVIDE CCTV FOOTAGE FOR ALL NEW PIPES AND FOR ALL EXISTING PIPES WHICH ARE TO REMAIN COMPLYING WITH THE FOLLOWING REQUIREMENTS:
(A) THE FILES SHALL BE IN MP4 FORMAT
(B) FILE RESOLUTION SHALL BE 640 BY 480 PIXELS, 3MBPS AND 25 FRAMES PER SECOND
(C) EACH PIPE REACH (I.E. BETWEEN TWO PITS) SHALL BE PROVIDED AS A SEPARATE FILE.

STORMWATER DRAINAGE NOTES

- (B) THE CCTV INSPECTION SHALL BE UNDERTAKEN IN ACCORDANCE WITH THE IPWEA CONDITION ASSESSMENT AND ASSET PERFORMANCE GUIDELINES. PRACTICE NOTE 5, STORMWATER DRAINAGE.
- (E) THE SPEED AND PANNING OF THE FOOTAGE SHALL BE SUFFICIENT TO DEMONSTRATE THAT THERE ARE NO SIGNIFICANT CRACKS IN THE PIPE AND THAT THE JOINTS HAVE BEEN PROPERLY CONSTRUCTED.
- (F) THE FILES SHALL HAVE A NAME CORRESPONDING WITH THE UNIQUE LABEL PROVIDED IN THE ASSOCIATED STAMPED APPROVED DRAWINGS AND
- (G) A SUMMARY REPORT (PDF) SHALL ACCOMPANY THE DATA.
12. PIPES ARE DESIGNED FOR OPERATIONAL TRAFFIC LOADS ONLY. APPROPRIATE MEASURES SHOULD BE TAKEN TO PROTECT PIPES DURING CONSTRUCTION.

EXISTING UNDERGROUND SERVICES NOTES

1. THE LOCATIONS OF UNDERGROUND SERVICES SHOWN IN THIS SET OF DRAWINGS HAVE BEEN PLOTTED FROM SURVEY INFORMATION AND SERVICE AUTHORITY INFORMATION. THE SERVICE INFORMATION HAS BEEN PREPARED ONLY TO SHOW THE APPROXIMATE POSITIONS OF ANY KNOWN SERVICES AND MAY NOT BE AS CONSTRUCTED OR ACCURATE. ARCADES CAN NOT GUARANTEE THAT THE SERVICES INFORMATION SHOWN ON THESE DRAWINGS ACCURATELY INDICATES THE PRESENCE OR ABSENCE OF SERVICES OR THEIR LOCATION AND WILL ACCEPT NO LIABILITY FOR INACCURACIES IN THE SERVICES INFORMATION SHOWN FROM ANY CAUSE WHATSOEVER.
2. CONTRACTORS SHALL TAKE DUE CARE WHEN EXCAVATING ON SITE INCLUDING HAND EXCAVATION WHERE NECESSARY.
3. CONTRACTORS ARE TO CONTACT THE RELEVANT SERVICE AUTHORITY PRIOR TO COMMENCEMENT OF EXCAVATION WORKS.
4. CONTRACTORS ARE TO UNDERTAKE A SERVICES SEARCH PRIOR TO COMMENCEMENT OF WORKS ON SITE. SEARCH RESULTS ARE TO BE KEPT ON SITE AT ALL TIMES.

PROPOSED SERVICES NOTES

1. THE CONTRACTOR SHALL ATTEND, MANAGE & SUPERVISE THE PROVISION OF PUBLIC UTILITY SERVICES TO THE WORKS GENERALLY AS INDICATED ON THE SERVICES PLANS. NOTING THAT PRIOR DURING CONSTRUCTION THE PUBLIC UTILITY AUTHORITIES WILL FINALISE THEIR DOCUMENTATION TO CONSTRUCTION ISSUE STANDARD THE FOLLOWING GENERAL ARRANGEMENTS SHALL APPLY IN RESPECT OF EACH PUBLIC UTILITY SERVICE.
CONDUIT ROAD CROSSING
THE CIVIL CONTRACTOR SHALL ALLOW IN THEIR PRICE FOR CONDUIT CROSSINGS UNDER THE PROPOSED ROADS AS SHOWN ON THE "SERVICES PLAN".
2. THE CIVIL CONTRACTOR (TRENCH PROVIDER) IS TO ARRANGE ON SITE MEETING WITH ALL SERVICE AUTHORITIES PRIOR TO THE INSTALLATION OF CONDUITS.
3. THE CIVIL CONTRACTOR TO CO-ORDINATE INSTALLATION OF ELECTRICITY, GAS AND TELECOMMUNICATION SERVICES.
4. ELECTRICITY, GAS AND TELECOMMUNICATION SERVICES ARE TO BE LAY FOLLOWING THE INSTALLATION OF STORMWATER, SEWER AND WATER SERVICES AND KERB AND GUTTER.
5. ALL UTILITY AUTHORITY REPRESENTATIVES TO INSPECT ROAD CROSSINGS PRIOR TO SEALING.
6. ALL ELECTRICAL ROAD CROSSINGS TO BE CLASS 5 (DRAINAGE) uPVC CONDUITS.
7. ALL GAS ROAD CROSSINGS TO BE uPVC GREY SEWER GRADE CONDUITS.
8. ALL STREET POLES TO BE POSITIONED 300mm FROM BOUNDARY TO CENTRELINE OF POLE.
9. WHERE FOOTPATHS ARE TO BE CONSTRUCTED, ALL SERVICE PIT COVERS AND MARKERS ARE TO BE AND UNWILLY WITHIN OR WHOLLY OUTSIDE THE CONCRETE FOOTPATH. CONTACT PRINCIPAL SHOULD DIFFICULTIES ARISE.
10. ELECTRICITY CONDUITS ARE SHOWN FOR CLARITY HOWEVER, CABLES MAY BE DIRECTLY BURIED. APPROVAL BY AUSGRID REQUIRED.
11. SERVICES MARKERS ARE TO BE PLACED ON THE KERB & GUTTER AT ALL ROAD CROSSING POINTS, ON BOTH SIDES OF THE ROAD.
12. ALL SERVICE PIT COVERS TO BE INSTALLED FLUSH WITH PROPOSED VERGE LEVELS AND GRADES.

REV	DESCRIPTION	DRAWN	APPD	DATE
F	SSDA ISSUE	CPO	RET	11.03.20
E	DRAFT SSDA	CPO	RET	27.02.20
D	DRAFT	CPO	RET	18.02.20
C	ISSUED FOR SSDA	CPO	RET	11.12.19
B	ISSUED FOR INFORMATION	CPO	RET	29.04.19
A	ISSUED FOR INFORMATION	CPO	RET	27.03.19

DRAWN:	CPO
DESIGNED:	RET
VERIFIED:	- J.J.
APPROVED:	- J.J.
FOR TENDER:	- J.J.
APPROVED FOR CONSTRUCTION:	- J.J.

UPGRADES TO
CHATSWOOD PUBLIC
SCHOOL AND CHATSWOOD
HIGH SCHOOL

GENERAL NOTES

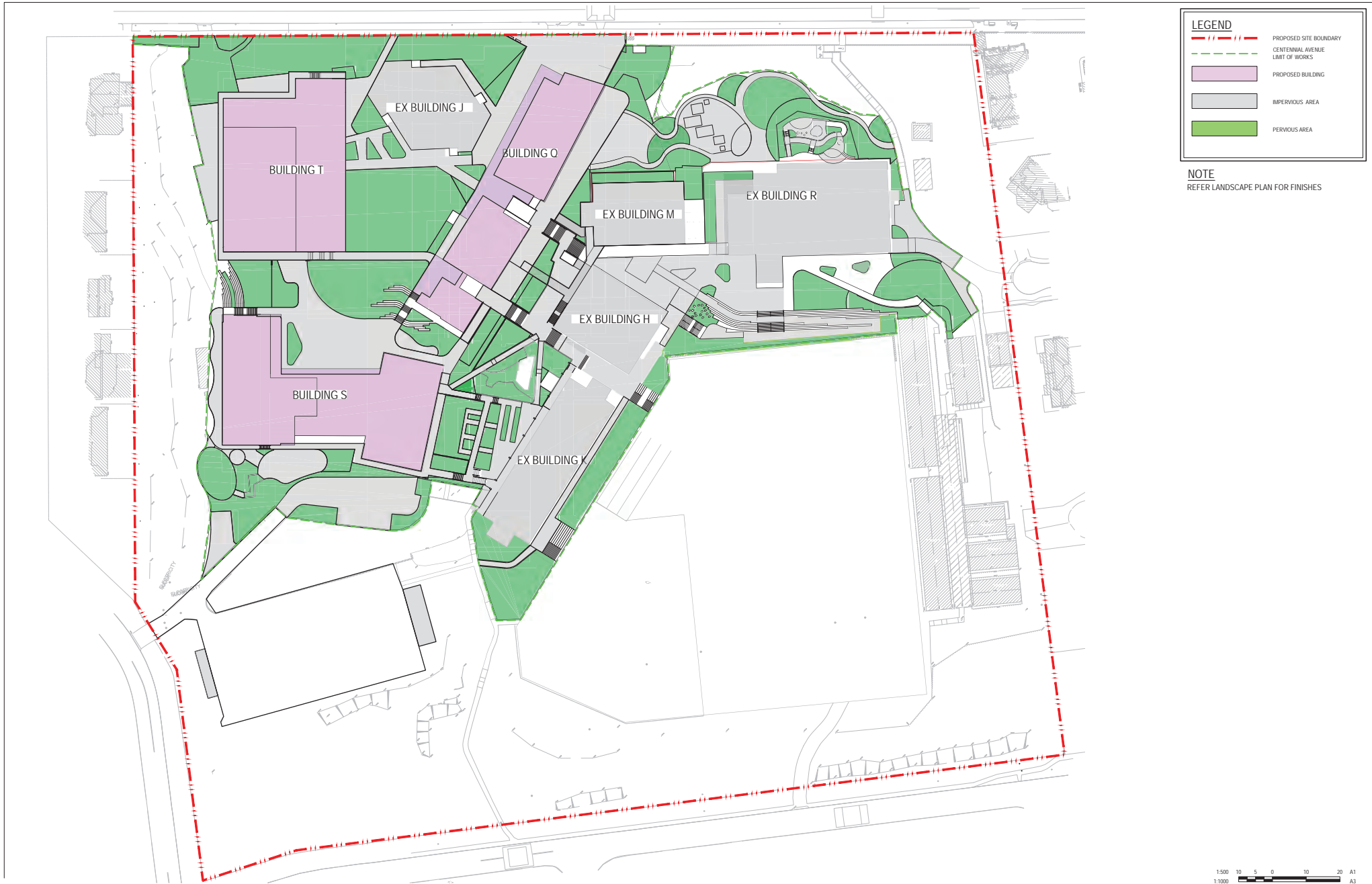
PROJECT	TITLE	AS SHOWN	40623	CI-007-001	F
ARCHITECT/CIENT	PROJECT	SCALE: @ A1	PROJECT No	DRAWING No	REV



FOR APPROVAL
NOT FOR CONSTRUCTION

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40623 CI-007-001.dwg



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REV	DESCRIPTION	DRAWN	APPD	DATE
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D	SSDA	CPO	RET	18.02.20
C	ISSUED FOR SSDA	CPO	RET	11.12.19
B	ISSUED FOR INFORMATION	CPO	RET	29.04.19
A	ISSUED FOR INFORMATION	CPO	RET	27.03.19

DRAWN	CPO
DESIGNED	RET
VERIFIED	- J.L.
APPROVED	- J.L.
FOR TENDER	- J.L.
APPROVED FOR CONSTRUCTION	- J.L.

ARCHITECT/CLEMENT

UPGRADES TO
CHATSWOOD PUBLIC
SCHOOL AND CHATSWOOD
HIGH SCHOOL

GENERAL ARRANGEMENT PLAN -
CENTENNIAL AVENUE

PROJECT

TITLE

40623 CI-060-001.dwg



FOR APPROVAL
NOT FOR CONSTRUCTION

AS SHOWN	40623	CI-060-001	F
SCALE: @ A1	PROJECT No	DRAWING No	REV

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LEGEND

PROPOSED SITE BOUNDARY

CENTENNIAL AVENUE
LIMIT OF WORKS

PROPOSED BUILDING

IMPERVIOUS AREA

PERVIOUS AREA

NOTE
REFER LANDSCAPE PLAN FOR FINISHES



REV	DESCRIPTION	DRAWN	APPD	DATE
D	ISSUED FOR SSQA	CPO	RET	11.03.20
C	DRAFT SSQA	CPO	RET	27.02.20
B	DRAFT SSQA	CPO	RET	18.02.20
A	ISSUED FOR SSQA	CPO	RET	11.12.19

DRAWN	CPO
DESIGNED	RET
VERIFIED	- J.L.
APPROVED FOR TENDER	- J.L.
APPROVED FOR CONSTRUCTION	- J.L.

UPGRADES TO
CHATSWOOD PUBLIC
SCHOOL AND CHATSWOOD
HIGH SCHOOL

GENERAL ARRANGEMENT PLAN -
PACIFIC HIGHWAY

PROJECT

TITLE

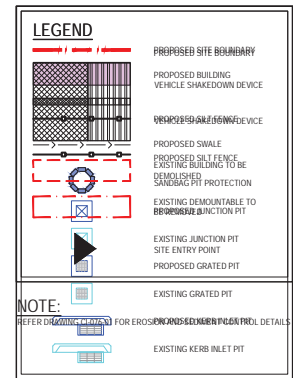
FOR APPROVAL
NOT FOR CONSTRUCTION

AS SHOWN
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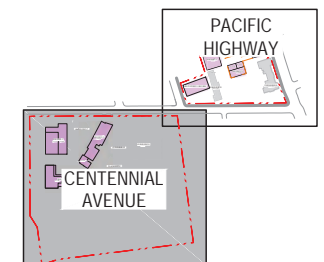
40623
PROJECT No

CI-060-011
DRAWING No

D
REV



NOTE:
 REFER DRAWING C1-076-01 FOR EROSION AND SEDIMENT CONTROL DETAILS



KEY PLAN
 N.T.S.



REV	DESCRIPTION	DRAWN	APPD	DATE
F	SSDA ISSUE	CPO	RET	11.02.20
E	DRAFT SSDA	CPO	RET	27.02.20
D	SSDA	CPO	RET	18.02.20
C	ISSUED FOR SSDA	CPO	RET	11.12.19
B	ISSUED FOR INFORMATION	CPO	RET	29.08.19
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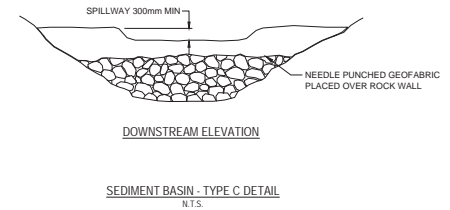
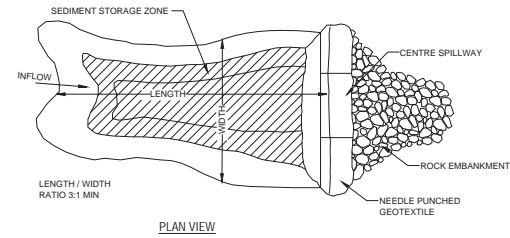
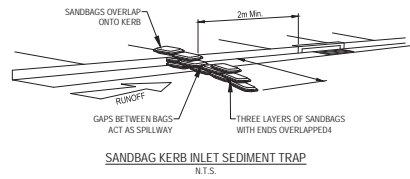
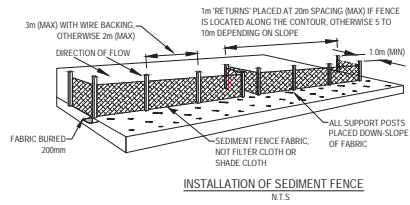
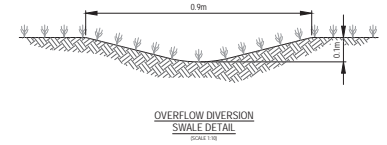
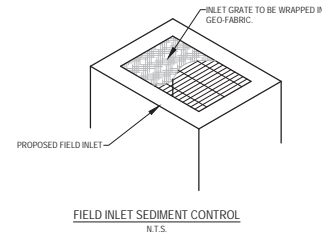
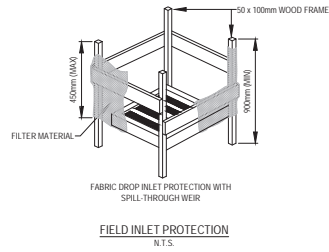
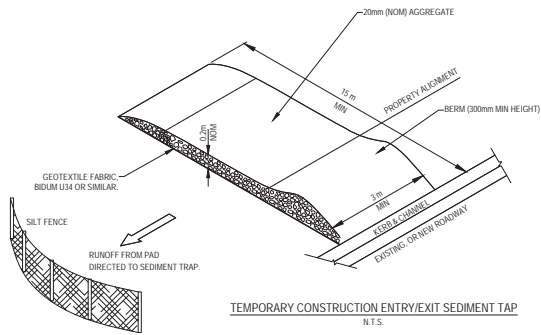
DESIGNED:	RET
VERIFIED:	- J.L.
APPROVED:	- J.L.
FOR TENDER:	- J.L.
APPROVED FOR CONSTRUCTION:	- J.L.

PROJECT	UPGRADES TO CHATSWOOD PUBLIC SCHOOL AND CHATSWOOD HIGH SCHOOL
TITLE	EROSION AND SEDIMENT CONTROL PLAN - CENTENNIAL AVENUE

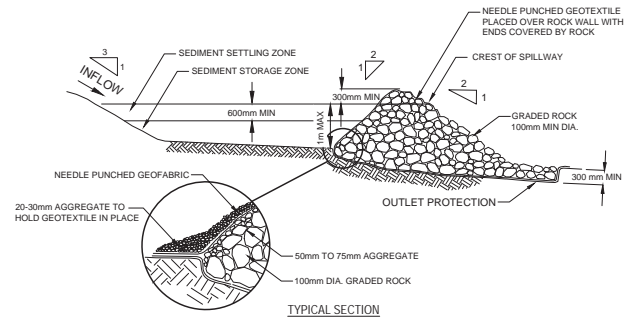
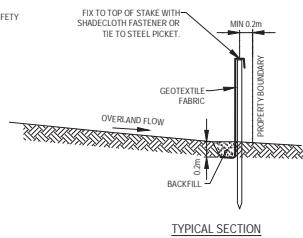
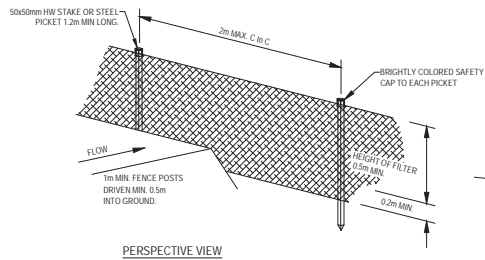
WOOD & GRIEVE ENGINEERS	FOR APPROVAL NOT FOR CONSTRUCTION	40623	CI-070-002	F
AS SHOWN	SCALE: 40:1	PROJECT No	DRAWING No	REV

40623 CI-070-002.dwg

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NOTES:
1. INSTALL MARKER POST SHOWING MAX. STORAGE AND SETTING ZONE DEPTHS.



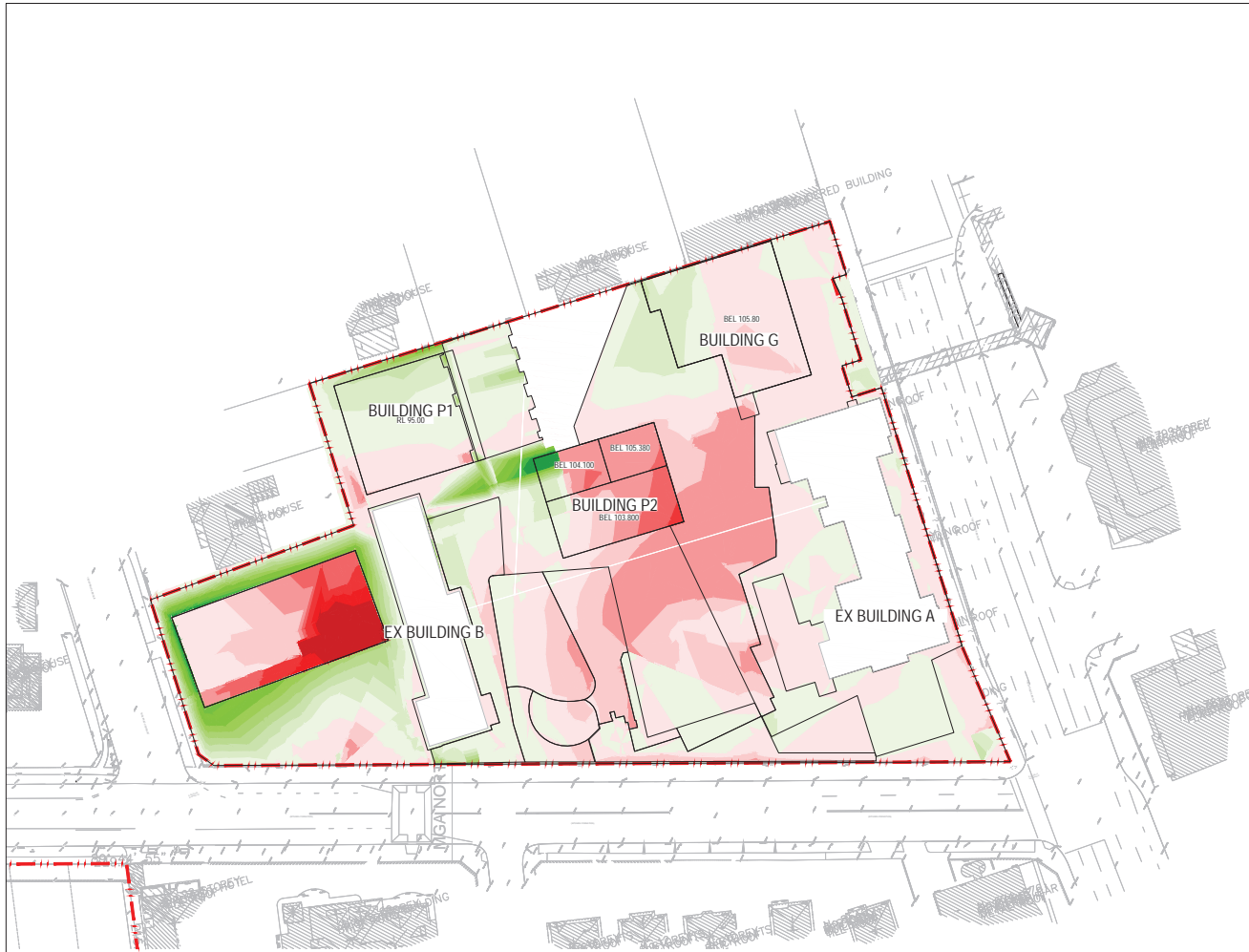
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REV	DESCRIPTION	DRAWN	APPD	DATE
F	SSDA ISSUE	CPO	RET	11.02.20
E	DRAFT SSDA	CPO	RET	27.02.20
D	SSDA	CPO	RET	18.02.20
C	ISSUED FOR SSDA	CPO	RET	11.12.19
B	ISSUED FOR INFORMATION	RET	RET	29.04.19
A	ISSUED FOR INFORMATION	CPO	RET	27.03.19

DESIGNED:	CPO
VERIFIED:	RET
APPROVED FOR TENDER:	J.J.
APPROVED FOR CONSTRUCTION:	J.J.

PROJECT	40623 CI-076-001.dwg
TITLE	EROSION AND SEDIMENT CONTROL DETAILS

WOOD & GRIEVE ENGINEERS	FOR APPROVAL NOT FOR CONSTRUCTION	CI-076-001	F
SCALE: @ A1	PROJECT No	DRAWING No	REV



CUT/FILL DEPTH RANGES

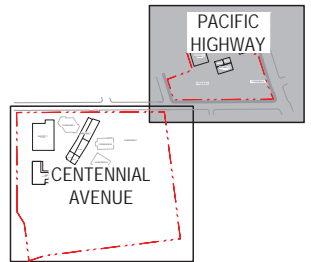
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	-3.5	-3.0
	-3.0	-2.5
	-2.5	-2.0
	-2.0	-1.5
	-1.5	-1.0
	-1.0	-0.5
	-0.5	0.0
	0.0	0.5
	0.5	1.0
	1.0	1.5
	1.5	2.0
	2.0	2.5
	2.5	3.0
	3.0	3.5
	3.5	4.0
	4.0	4.5
	4.5	5.0
	5.0	5.5
	5.5	6.0
	6.0	6.5

CUT AND FILL VOLUME

CUT: 4,550 m³
FILL: 3,620 m³
NET: 930 m³ (Cut)

NOTES:

- VOLUMES ARE BASED ON A COMPARISON BETWEEN THE DESIGN SURFACE AND THE SURVEYED SURFACE.
- NO STRIPPING OF THE EXISTING SURFACE HAS BEEN APPLIED.
- NO RELIEFING FACTORS HAVE BEEN APPLIED.
- NO ALLOWANCE FOR PAVEMENT BOXING HAS BEEN APPLIED.
- CUT/FILL NUMBERS ARE TAKEN TO THE TOP OF SLAB LEVEL INSIDE BUILDING FOOTPRINTS.
- CUT/FILL EXTERNAL TO BUILDING IS NOT CONSIDERED.
- IT IS NOTED THAT THE MAJORITY, IF NOT ALL, CUT MATERIAL IS NOT SUITABLE FOR FILL PURPOSES.



KEY PLAN
N.T.S.



REV	DESCRIPTION	DRAWN	APPD	DATE
H	SSDA ISSUE	CPO	RET	11.03.20
G	DRAFT SSDA	CPO	RET	10.03.20
F	DRAFT SSDA	CPO	RET	27.02.20
E	DRAFT SSDA	CPO	RET	18.02.20
D	ISSUED FOR SSDA	CPO	RET	11.12.19
C	ISSUED FOR INFORMATION	CPO	RET	12.11.19
B	ISSUED FOR INFORMATION	CPO	RET	29.08.19
A	ISSUED FOR INFORMATION	GLE	RET	29.03.19

DRAWN	CPO
DESIGNED	RET
VERIFIED	...
APPROVED	...
FOR TENDER	...
APPROVED FOR CONSTRUCTION	...

ARCHITECT/CIENT

UPGRADES TO
CHATSWOOD PUBLIC
SCHOOL AND CHATSWOOD
HIGH SCHOOL

BULK EARTHWORKS PLAN -
PACIFIC HIGHWAY

PROJECT

TITLE

40623-CID-BE-HIGH.dwg



FOR APPROVAL
NOT FOR CONSTRUCTION

AS SHOWN	40623	CI-100-011	H
SCALE: @ A1	PROJECT No	DRAWING No	REV

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