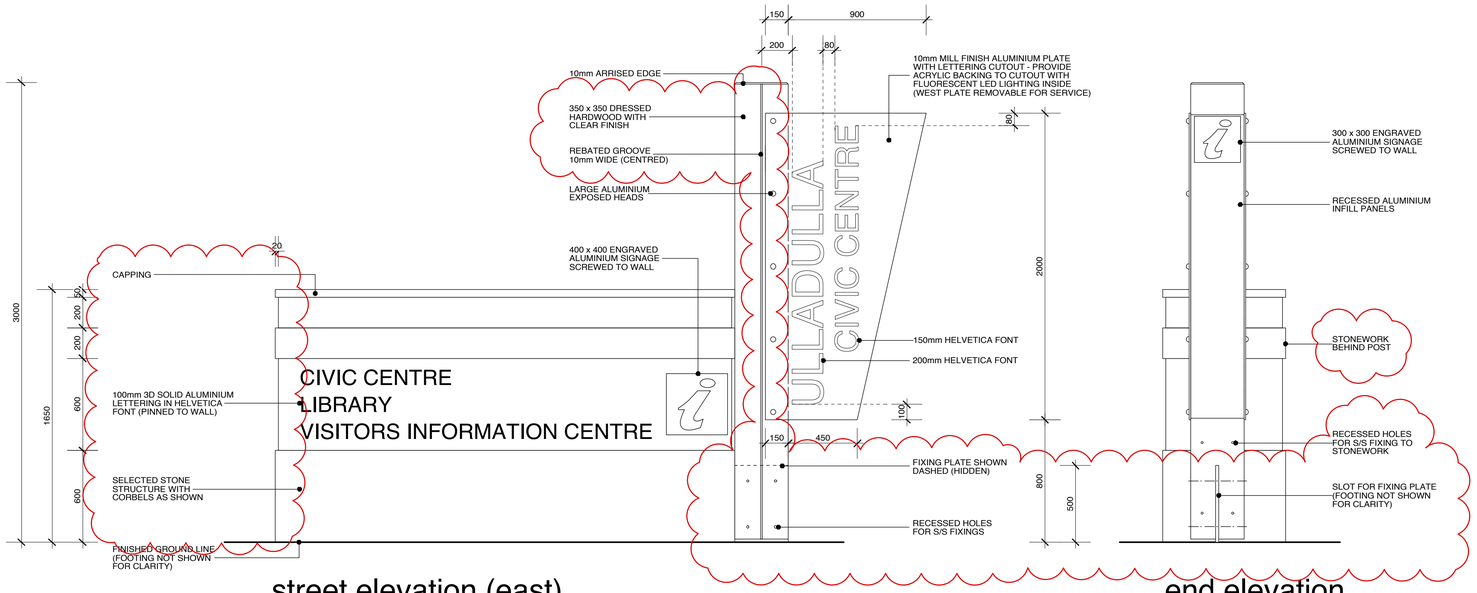
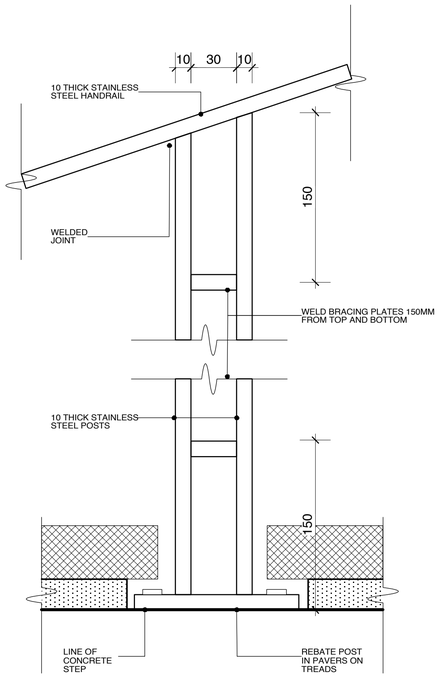
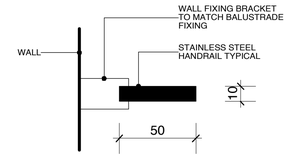


street elevation (east)

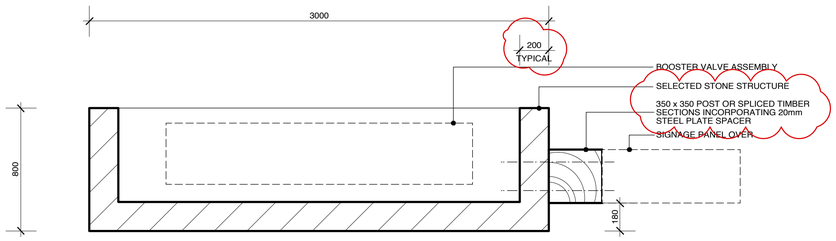
end elevation



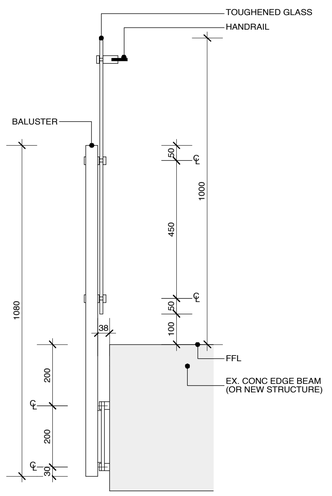
handrail to stair
TYPICAL DETAIL



handrail to wall
TYPICAL DETAIL



plan
SIGNAGE DETAILS



typical balustrade
DETAIL U

F
503

signage + balustrade
DETAILS

LEGEND

REV.	DESCRIPTION	DATE
-	TENDER ISSUE	9/11/12
A	Sign detail amended	12/2/13

ARCHITECTS EDMISTON JONES

Wollongong
10 Belmore Street
Wollongong NSW 2500
T 02 4226 1387
F 02 4228 6405

Nowra
92 North Street
Nowra, NSW 2541
T 02 4421 6822
F 02 4422 1963
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Batemans Bay
1 North Street
Batemans Bay NSW 2536
T 02 4472 7388
F 02 4422 1963

PROJECT
Alteration and Addition to Ulladulla Civic Centre

CLIENT
Shoalhaven City Council

SITE
Princes Highway, Ulladulla

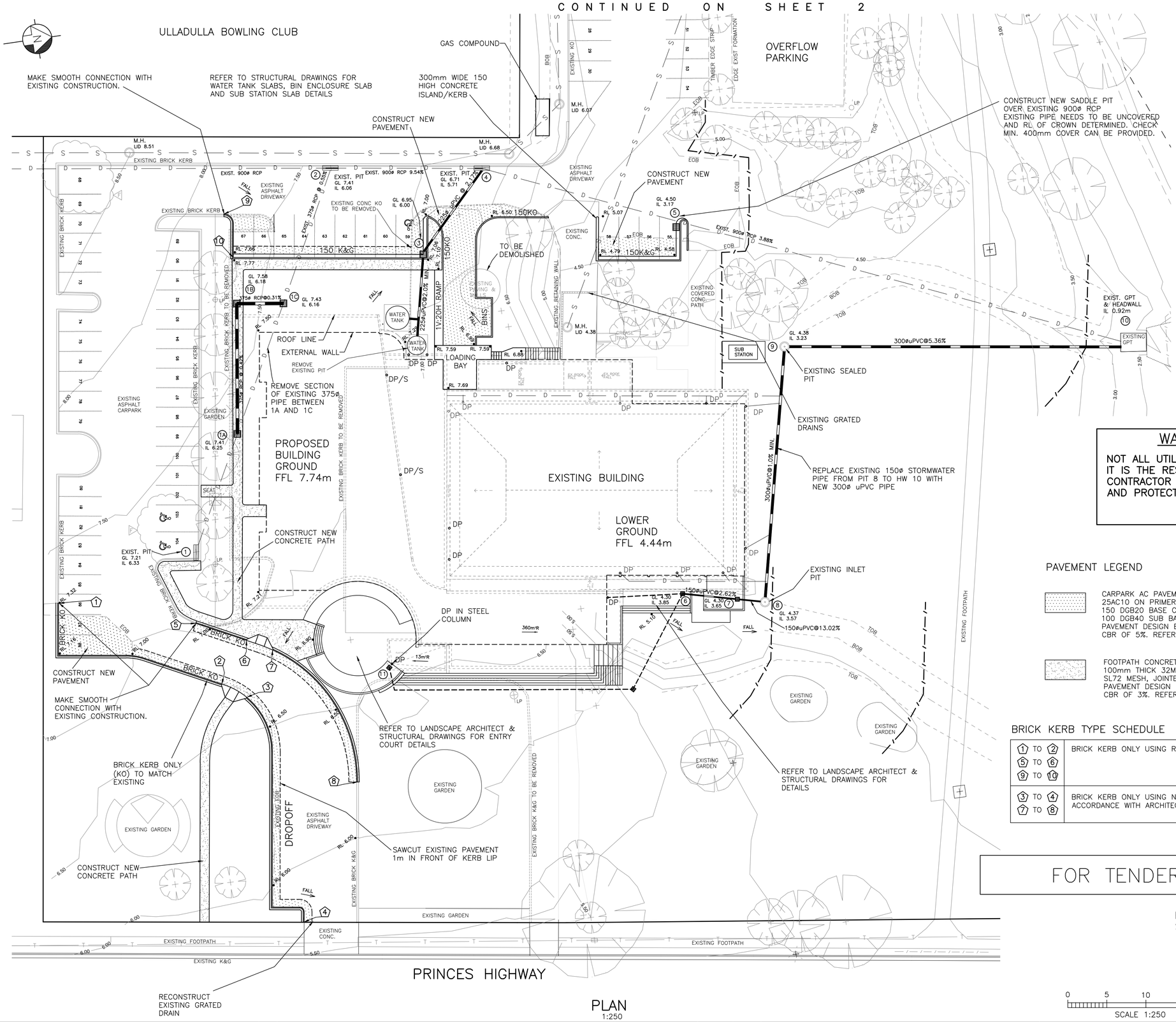
DRAWING
Signage + Balustrade Details

JOB NO
12-0027

SCALES	1:20 / 1:10 A1	SHEET NO	REV.
DATE	NOV 2012	509	A
DRAWN	AEJ		
CHECKED	SB / GR	No. IN SET	31

CONTINUED ON SHEET 2

ULLADULLA BOWLING CLUB



PLAN
1:250

LEGEND

- DESIGN SPOT LEVEL (RL 7.33)
- DRAINAGE PIT NOTATION (84) GL – GRATE LEVEL, IL – INVERT LEVEL (GL 7.60 IL 6.56)
- PROPOSED SURFACE INLET PIT (REFER DETAIL BELOW)
- PROPOSED STORMWATER DRAINAGE LINE
- PROPOSED ø150 uPVC STORMWATER PIPE AT MINIMUM 1% GRADE
- EXISTING CONTOUR LINE (0.5m INTERVAL) (33.10)
- EXISTING EDGE OF BITUMEN (EOB)
- 150mm KERB AND GUTTER (150K&G)
- 150mm KERB ONLY (150KO)
- BRICK KERB ONLY (BRICK KO)
- EROSION CONTROL MEASURES PROVIDE FILTER 'SAUSAGES' AT ALL STORMWATER PITS AND SPACED AT MAX 30m INTERVALS IN KERBS
- EXISTING STORMWATER PIPE (D)
- SILT STOP FENCE
- EXISTING SEWER LINE (S)
- EXISTING WATER MAIN (W)
- EXISTING TELSTRA CABLES (T)
- EXISTING OVER HEAD POWER LINES (E)

WARNING

NOT ALL UTILITY SERVICES ARE SHOWN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ACCURATELY LOCATE AND PROTECT ALL SERVICES.

STORMWATER DRAINAGE NOTES

1. ALL PIPES & FITTINGS TO BE 100 DIA. UPVC STORMWATER CLASSIFICATION TO AS 1254 AT 1.0% MIN. GRADE UNLESS NOTED OTHERWISE ON PLAN.
2. INSTALL TEMPORARY SEDIMENT BARRIERS TO INLET PITS, TO COUNCILS STANDARDS UNTIL SURROUNDING AREAS ARE PAVED AND TURFED.
3. CONTRACTOR IS TO VERIFY THE LEVEL OF ALL EXISTING SERVICES PRIOR TO COMMENCEMENT OF ANY EXCAVATION.
4. ALL BASES OF PITS TO BE BENCHED TO HALF PIPE DEPTH AND PROVDE GALVANISED ANGLE SURROUNDS TO GRATE. DOWNPIPES SHOWN ARE INDICATIVE ONLY.
5. ALL ROOF GUTTERINGS AND DOWNPIPES TO AS/NZS 3500.3.2003 & THE HYDRAULIC CONSULTANTS DRAWINGS.
6. STORMWATER PIT LOCATIONS MAY BE VARIED TO SUIT SITE CONDITIONS, AFTER CONSULTATION WITH THE ENGINEER.
7. ALL COURTYARD & LANDSCAPE PITS TO BE 450 SQUARE UNLESS NOTED OTHERWISE. ALL DRIVEWAY PITS TO BE 600 SQUARE UNLESS NOTED OTHERWISE.
8. HAND EXCAVATE STORMWATER PIPES IN VICINITY OF TREE ROOTS.
9. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH COUNCILS SPECIFICATIONS.

PAVEMENT LEGEND

CARPARK AC PAVEMENT
25AC10 ON PRIMER SEAL
150 DGB20 BASE COMPACTED TO 98% MMDD.
100 DGB40 SUB BASE COMPACTED TO 95% MMDD.
PAVEMENT DESIGN BASED ON MINIMUM SUBGRADE CBR OF 5%. REFER TO SHT 3 FOR DETAILS.

FOOTPATH CONCRETE PAVEMENT
100mm THICK 32MPa REINFORCED WITH SL72 MESH, JOINTED ON 75mm DGB20
PAVEMENT DESIGN BASED ON MINIMUM SUBGRADE CBR OF 3%. REFER TO SHT 3 FOR DETAILS.

BRICK KERB TYPE SCHEDULE

(1) TO (2), (5) TO (6), (9) TO (10)	BRICK KERB ONLY USING RECYCLED BRICKS AND PAVERS
(3) TO (4), (7) TO (8)	BRICK KERB ONLY USING NEW BRICKS & PAVERS IN ACCORDANCE WITH ARCHITECTS SPECIFICATIONS

NOTES

1. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH COUNCIL'S DEVELOPMENT CONSTRUCTION SPECIFICATION DCP No. 100.
2. PRIOR TO COMMENCEMENT OF EXCAVATION, THE CONTRACTOR SHALL DETERMINE THE LOCATION OF ALL SERVICES AND WILL BE RESPONSIBLE FOR ADJUSTMENT AND REPAIR OF SERVICES.
3. ALL CONSTRUCTION WORK IS TO BE CARRIED OUT SO THAT AT ANY TIME ADJOINING PROPERTY OWNERS ARE NOT DEPRIVED OF AN ALL-WEATHER ACCESS OR SUBJECTED TO ADDITIONAL STORM WATER RUN-OFF DURING THE PERIOD OF CONSTRUCTION.
4. REFER TO PAVEMENT LEGEND FOR PAVEMENT DETAILS. THE TYPE OF MATERIAL USED IS TO BE APPROVED BY COUNCIL.
5. ALL DISTURBED AREAS INCLUDING BATTERS AND FOOTPATH AREAS ARE TO BE TOPSOILED, FERTILISED AND GRASSED TO THE SATISFACTION OF COUNCIL'S SUBDIVISION MANAGER. REFER TO TABLE DRAIN STABILISATION NOTES.
6. FOLLOWING TOPSOILING OF FOOTPATH AREAS, TWO STRIPS OF TURF ARE TO BE LAID BEHIND THE KERB AND GUTTER.
7. SUBSOIL DRAINAGE TO BE PRIOVIDED BEHIND THE KERB AND GUTTER ON THE HIGHER SIDE OF ALL ROADS AND ELSEWHERE DEEMED NECESSARY BY COUNCIL'S INSPECTION OFFICER. SUBSOIL LINES ARE TO BE DIRECTED TO THE NEAREST DOWNSTREAM PIT.
8. ALL GREEN WASTE IS EITHER TO BE REMOVED FROM SITE OR MULCHED ON SITE AND SPREAD OVER DISTURBED AREAS. NO GREEN WASTE IS TO BE BURNT ON SITE.
9. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH COUNCIL'S "ENGINEERING REQUIREMENTS FOR DEVELOPMENT".
10. MAKE SMOOTH JUNCTIONS WITH EXISTING WORKS
11. ALL WORKS ARE TO BE CONDUCTED TO THE REQUIREMENTS OF THE SUBDIVISION AND DEVELOPMENT MANAGER.
12. TRAFFIC CONTROL MEASURES IN ACCORDANCE WITH AS1742.3 ARE TO BE IN PLACE AND MAINTAINED AT ALL TIMES. (PLAN TO BE SUBMITTED PRIOR TO COMMENCEMENT OF WORK.)
13. CONTRACTOR WILL BE RESPONSIBLE FOR THE REPAIR OF ANY DAMAGE TO COUNCILS INFRASTRUCTURE. SUCH REPAIR OR REINSTATEMENT TO BE CARRIED OUT TO SATISFACTION OF THE SUBDIVISION & DEVELOPMENT MANAGER
14. ADJUST ALL UTILITY SERVICE COVERS TO SUIT NEW GRADES & LEVELS TO SERVICE PROVIDERS SATISFACTION.
15. APPROVAL UNDER S 138 ROADS ACT 1993 MUST BE OBTAINED FROM COUNCIL PRIOR TO COMMENCEMENT OF WORK WITHIN COUNCILS ROAD RESERVE
16. ALL WORK IS TO BE SET OUT BY A COMPETENT SURVEYOR APPROVED BY COUNCIL.

FOR TENDER

REFER TO SHEET 2 FOR STORMWATER CALCULATIONS

0 5 10 15 20 25 METRES
SCALE 1:250

Rev.	Amendments	Approved	Date
B	FOR 90% COMPLETE DA SUBMISSION	S.P.	14.9.12
C	FOR 90% COMPLETE DA SUBMISSION revised for changes to architectural layout	S.P.	21.9.12
D	75% COMPLETE SUBMISSION	S.P.	19.10.12
E	100% COMPLETE SUBMISSION	S.P.	30.10.12
F	AS SHOWN CLOUDED	S.P.	20.10.12

PACIFIC WESTLAKE

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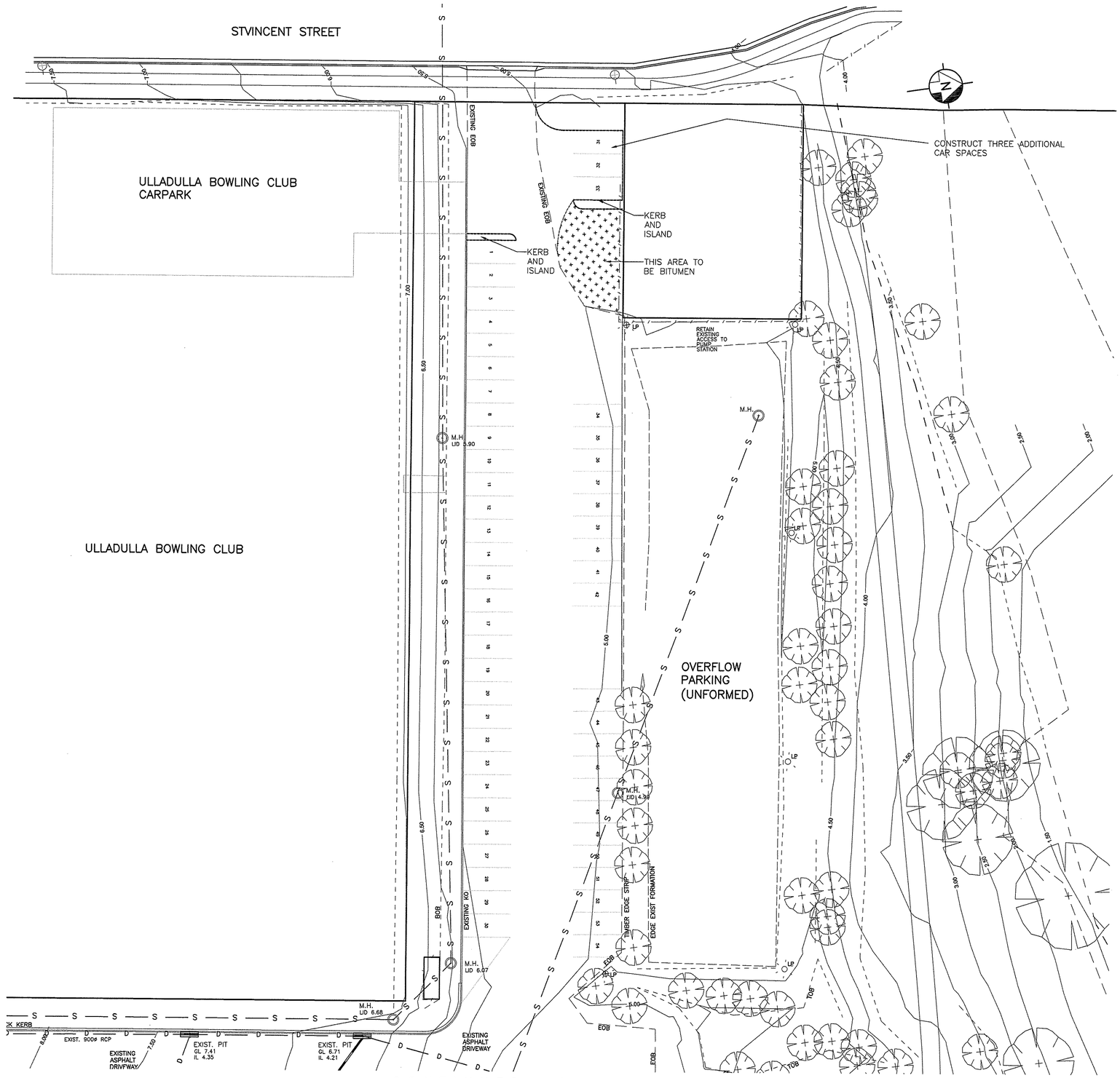
STORMWATER DRAINAGE PLAN – SHT 1 OF 2

ALTERATION AND ADDITION TO ULLADULLA CIVIC CENTRE
SHOALHAVEN CITY COUNCIL
PRINCES HIGHWAY, ULLADULLA

Design: S. Punnett
Drawn: S. Punnett
Checked:
Date: 5/9/2012
Drawing No. 12196–C01
Rev F



PLAN
1:250

STORMWATER CALCULATIONS

NOTE: EXISTING STORMWATER PIPES HAVE NOT BEEN CHECKED FOR STORMWATER FLOW FROM EXTERNAL CATCHMENTS

REFER TO SHEET 1 FOR LEGEND AND NOTES

TELSTRA
"BEFORE YOU DIG"

BEWARE Damage to telephone cables can disrupt communication services and cost YOU money. For prompt location of telephone cables ring - 1100

Calls to this number are free

WARNING

NOT ALL UTILITY SERVICES ARE SHOWN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ACCURATELY LOCATE AND PROTECT SERVICES WITHIN THE ROAD RESERVE.

FOR DA APPROVAL

0 5 10 15 20 25 METRES
SCALE 1:250

Rev.	Amendments	Approved	Date
B	FOR 90% COMPLETE DA SUBMISSION	S.P.	14.9.12
C	FOR 90% COMPLETE DA SUBMISSION revised for changes to architectural layout	S.P.	21.9.12

PACIFIC WESTLAKE

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STORMWATER DRAINAGE PLAN – SHT 2 OF 2

ALTERATION AND ADDITION TO ULLADULLA CIVIC CENTRE
SHOALHAVEN CITY COUNCIL
PRINCES HIGHWAY, ULLADULLA

Design:	S. Punnett
Drawn:	S. Punnett
Checked:	
Date:	5/9/2012
Drawing No.	12196–C02
Rev	C

SUBGRADE NOTES

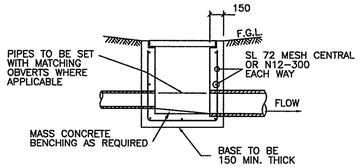
1. BULK EARTHWORKS TO BE COMPLETED IN ACCORDANCE WITH CONTRACT PLANS PROVIDED. FOLLOWING ESTABLISHMENT ON SITE CONTRACTOR TO PROOF ROLL EXPOSED SUBGRADE IN THE PRESENCE OF THE GEOTECHNICAL ENGINEER TO CONFIRM THAT THE REQUIREMENTS OF THE SPECIFICATION HAVE BEEN MET.
2. THE SUBGRADE IS TO BE COMPACTED TO ACHIEVE A MINIMUM 98% STANDARD MAXIMUM DRY DENSITY, (AS1289E1.1), AT A MOISTURE CONTENT WITHIN 2% OF STANDARD OPTIMUM, OR ALTERNATIVE INSTRUCTION IS TO BE OBTAINED FROM THE GEOTECHNICAL ENGINEER.
3. REMOVE ANY SOFT, HEAVING, WET OR UNSTABLE AREAS IDENTIFIED DURING PROOF ROLLING AND REPLACE USING SELECT IMPORTED FILL COMPACTED IN LAYERS NOT EXCEEDING 200MM MEASURED LOOSE TO ACHIEVE 98% STANDARD COMPACTION AS SPECIFIED ABOVE. OBTAIN WRITTEN APPROVAL FROM CLIENT PRIOR TO PROCEEDING WITH THE ABOVE WORK.
4. ANY FILL REQUIRED TO RAISE LEVELS TO UNDERSIDE OF PROPOSED SLAB OR PAVEMENT FORMATION TO BE APPROVED GRANULAR MATERIAL COMPACTED IN LAYERS NOT EXCEEDING 200MM MEASURED LOOSE TO ACHIEVE A MINIMUM 98% STANDARD MAXIMUM DRY DENSITY AT A MOISTURE CONTENT WITHIN 2% OF STANDARD OPTIMUM.
5. IMPORTED FILL IS TO CONSIST OF IMPORTED WELL-GRADED MATERIAL WITH A MAXIMUM PARTICLE SIZE OF 75MM, WITH 80% LESS THAN 20MM, AND A SOAKED C.B.R. GREATER THAN 15% AND PLASTICITY INDEX LESS THAN 12%.
6. BACKFILLING FOR SERVICE TRENCHES UNDER SLABS AND PAVEMENTS SHALL BE APPROVED WELL-GRADED GRANULAR MATERIAL. EITHER SELECT INSITU OR IMPORTED FILL COMPACTED AS SPECIFIED ABOVE.
7. DO NOT PROCEED WITH ANY EARTHWORKS WHICH WILL BE SUBJECT TO A VARIATION CLAIM WITHOUT PRIOR APPROVAL FROM CLIENT. VARIATIONS FOR EARTHWORKS WILL NOT BE APPROVED UNLESS FORMAL INSTRUCTION, INCLUDING VARIATION VOLUMES, IS OBTAINED FROM ENGINEER.

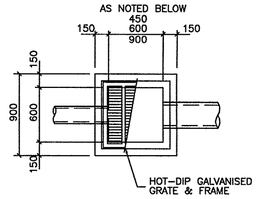
PAVEMENT NOTES

1. PAVEMENT DETAILS HAVE BEEN DESIGNED ASSUMING A SUBGRADE WITH A MINIMUM SOAKED C.B.R. OF 7% (SEE NOTE 4). TESTING IS REQUIRED TO CONFIRM ADOPTED DESIGN C.B.R.
2. BASE COURSE SHALL BE COMPACTED TO 98% MODIFIED MAXIMUM DRY DENSITY AS A MOISTURE CONTENT WITHIN 2% OF STANDARD OPTIMUM, MINIMUM SOAKED C.B.R. 80% UNO.
3. SUB BASE COURSE SHALL BE COMPACTED TO 95% MODIFIED MAXIMUM DRY DENSITY, MINIMUM SOAKED C.B.R. 45% UNO.
4. SUBGRADE SHALL BE APPROVED NATURAL SUBGRADE OR IMPORTED FILL. PROOF ROLL AND COMPACTED TO 98% STANDARD MAXIMUM DRY DENSITY UNO.
5. MINIMUM CONCRETE STRENGTH FOR PAVEMENTS SHALL BE F'c = 32 MPa AT 28 DAYS AND F90 FLEXURAL = 4.25 MPa.
6. FILL MATERIALS WHICH ARE PRONE TO ACCELERATED WEATHERING WILL NOT BE ACCEPTED EG. SOME MUDSTONES, CLAYSTONES, SILTSTONES, SHALES AND OTHER ROCKS. ENDORSEMENT OF THE SUITABILITY OF THE PROPOSED FILLING MATERIAL IS TO BE MADE BY A GEOTECHNICAL ENGINEER PRIOR TO APPROVAL.
7. IT IS THE INTENT THAT PAVING SHALL BE DESIGNED FOR THE FOLLOWING MINIMUM TRAFIC LOADINGS:
   - 7.1. DRIVEWAY CONCRETE PAVEMENT 1 – 1 x 10^5 ESA
   - 7.2. PARKING AREA – 2 x 10^4 ESA
   - 7.3. DRIVEWAY CONCRETE PAVEMENT 2 – 1 x 10^6 ESA
   - 7.4. YALWAL ROAD PAVEMENT 1 x 10^6

KERB NOTES

1. KERB PROFILE DIMENSIONS ARE INDICATED AS A GIUIDE ONLY, AND MAY BE VARIED BY CIVIL ENGINEER TO SUIT STATE ROAD AND LOCAL GOVERNMENT SPECIFICATIONS.
2. MINIMUM CONCRETE STRENGTH FOR KERBS SHALL BE F'c = 25 MPa AT 28 DAYS.
3. PROVIDE FULL DEPTH CONTRACTION JOINTS AT 2400 CTS. MAX. BY USING 3mm STEEL TEMPLATE. JOINTS SHALL COINCIDE WITH PAVEMENT JOINTS WHERE POSSIBLE.
4. ROAD BASE COURSE TO EXTEND BENEATH AND 300mm BEYOND THE FACE OF KERB AND GUTTERING, APRONS AND CROSSINGS.



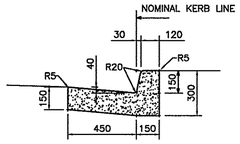


TYPICAL SURFACE INLET PIT

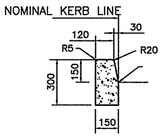
NOTE: DEPTHS OF 450 SQUARE PITS NOT TO EXCEED 600 DEEP. DEPTHS OF 600 SQUARE PITS NOT TO EXCEED 900 DEEP, OTHERWISE INCREASE ONE DIRECTION BY 300. (ie : 600x900 PIT). PITS TO BE 900 SQUARE WHERE DEPTH TO INVERT EXCEEDS 1200.

CLIMB IRONS SHALL BE PROVIDED UNDER LID AT 300 CTRS TO COUNCIL STANDARDS WHERE PIT DEPTH IS DEEPER THAN 1200.

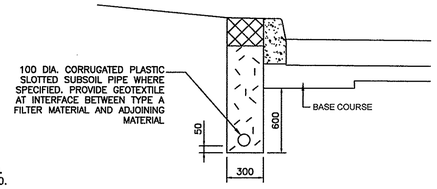
CONCRETE STRENGTH F'c = 20MPa



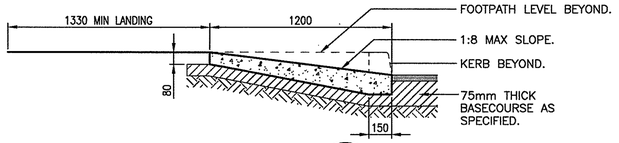
KERB & GUTTER



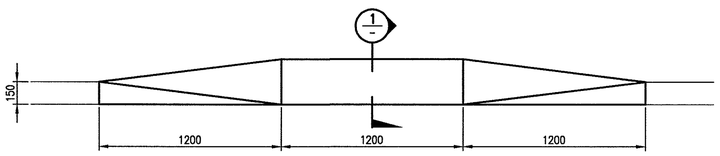
KERB ONLY



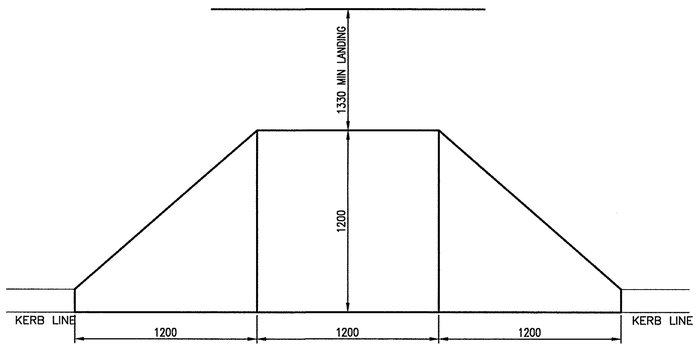
SUBSOIL DRAINAGE DETAIL
N.T.S



SECTION 1/–

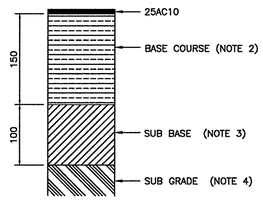


ELEVATION

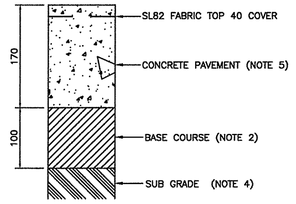


PLAN

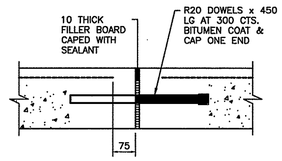
KERB RAMP CROSSING
SCALE 1:20



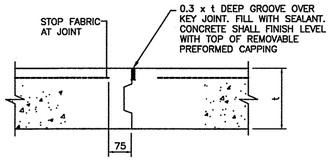
FLEXIBLE PAVEMENT DETAIL
N.T.S



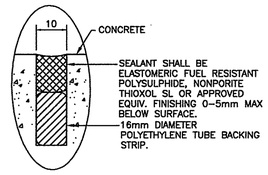
DRIVEWAY CONCRETE PAVEMENT
N.T.S



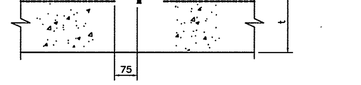
DOWLLED JOINT (DJ)
SCALE 1:5



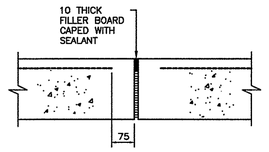
KEY JOINT (KJ)



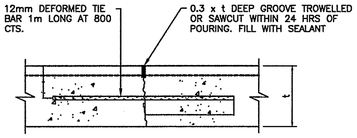
SEALANT DETAIL



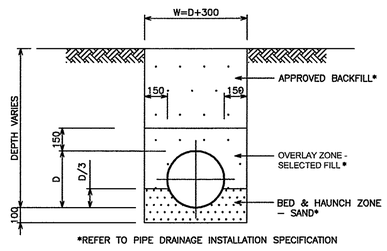
CONTROL JOINT (CJ)



EXPANSION JOINT (EJ)

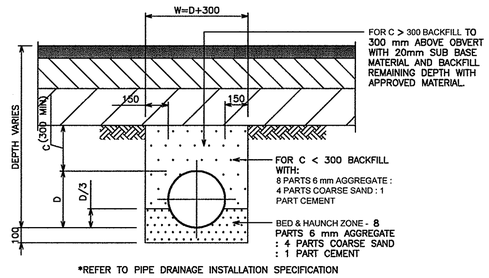


LONGITUDINAL JOINT (LJ)



*REFER TO PIPE DRAINAGE INSTALLATION SPECIFICATION

STORMWATER PIPE BEDDING
NOT **UNDER** PAVEMENT



*REFER TO PIPE DRAINAGE INSTALLATION SPECIFICATION

STORMWATER PIPE BEDDING
UNDER PAVEMENT

FOR DA APPROVAL

Rev.	Amendments	Approved	Date
B	FOR 90% COMPLETE DA SUBMISSION	S.P.	14.9.12

PACIFIC WESTLAKE

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CONSTRUCTION DETAILS

ALTERATION AND ADDITION TO ULLADULLA CIVIC CENTRE
SHOALHAVEN CITY COUNCIL
PRINCES HIGHWAY, ULLADULLA

Design: S. Punnett
Drawn: S. Punnett
Checked:
Date: 2/4/2012
Drawing No. 12196–C03
Rev B

SOIL AND WATER MANAGEMENT NOTES

1. THE SOIL AND WATER MANAGEMENT PLAN IS TO BE READ IN CONJUNCTION WITH THE ENGINEERING PLANS AND COUNCIL'S WRITTEN GUIDELINES FOR THE DEVELOPMENT OF LAND.

2. CONTRACTORS SHALL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE UNDERTAKEN AS SPECIFIED ON THE PLAN AND IN ACCORDANCE WITH THE GUIDELINES SHOWN IN 'MANAGING URBAN STORMWATER – SOILS AND CONSTRUCTION 4TH EDITION 2004' (THE BLUE BOOK).

3. ALL CONTRACTORS AND SUBCONTRACTORS ARE RESPONSIBLE FOR REDUCING THE SOIL EROSION AND POLLUTION OF DOWNSLOPE AREAS.

4. THE SOIL EROSION HAZARD ON THE SITE IS TO BE KEPT AS LOW AS POSSIBLE AND GENERALLY IN ACORDANCE WITH THE FOLLOWING SCHEDULE.

LAND USE	LIMITATION	COMMENTS
CONSTRUCTION AREAS	DISTURBANCE TO BE NO FURTHER THAN 5m (pref.2m) FROM THE EDGE OF ANY ESSENTIAL ENGINEERING ACTIVITY AS SHOWN ON THESE PLANS	ALL SITE WORKERS WILL CLEARLY RECOGNISE THESE ZONES – WHERE APPROPRIATE THE CONSTRUCTION AREAS ARE TO BE IDNTIFIED WITH BARRIER FENCING (UPSLOPE) & SEDIMENT FENCING (DOWNSLOPE) OR SIMILAR MATERIAL.
ACCESS AREAS	LIMITED TO A MAX. WIDTH OF 10m.	THE SITE MGR. SHALL DETERMINE AND MARK THE LOCATION OF THESE ZONES ONSITE. THEY CAN VARY IN POSITION TO BEST CONSERVE THE EXISTING VEGETATION AND PROTECT DOWNSTREAM AREAS WHILE BEING CONSIDERATE OF THE NEEDS OF EFFICIENT WORKS ACTIVITIES. ALL SITE WORKERS SHALL CLEARLY RECOGNISE THEIR BOUNDARIES – WHERE APPROPRIATE THE ACCESS AREAS ARE TO BE MARKED WITH BARRIER MESH, SEDIMENT FENCING OR SIMILAR MATERIALS
REMAINING LANDS	ENTRY PROHIBITED EXCEPT FOR ESSENTIAL THINNING OF PLANT GROWTH.	THINNING OF GROWTH MAY BE REQUIRED FOR FIRE HAZARD REDUCTION

NOTE: WORKS WITHIN WATERWAYS AND CREEKS SHALL BE RESTRICTED AS DIRECTED – ALL LANDS WITHIN CREEKS AND WATERWAYS SHALL HAVE C–FACTORS BELOW 0.05 FROM 1 JAN. TO 15 MAY USING MATERIALS THAT CAN CATER FOR CONCENTRATED FLOWS.

5. WORKS ARE TO BE UNDERTAKEN IN THE FOLLOWING SEQUENCE. EACH SUBSEQUENT STAGE IS NOT TO COMMENCE UNTIL THE PREVIOUS ONE IS COMPLETE:–
a) INSTALL ALL BARRIER AND AND SEDIMENT FENCING WHERE SHOWN ON THE PLAN AND TO DETAIL (SD) 6–8,
b) CONSTRUCT STABILISED SITE ACESS AS SHOWN ON THE PLAN AND TO DETAIL (SD) 6–14,
c) CONSTRUCT LOW FLOW EARTH BANKS WHERE SHOWN ON THE PLAN AND TO DETAIL (SD) 5–5,
d) PROVIDE TEMP, ACCESS TO THE SEDIMENT BASINS AND PROTECT THIS WITH SEDIMENT FENCING (SD) 6–8 OR BARRIER FENCING AND EARTH BANKS (SD) 5–5,
e) PLACE SEDIMENT FENCING (SD) 6–8 DOWNSLOPE OF LANDS TO BE DISTURBED FOR CONSTRUCTION OF SEDIMENT BASINS,
f) CONSTRUCT SEDMENT BASIN GENERALLY IN ACCORDANCE WITH (SD)6–4,
g) STABILISE LAND SURFACES DISTURBED BY CONSTRUCTION OF THE SEDIMENT BASINS AS SOON AS FINAL LEVELS ARE ESTABLISHED,
h) CLEAR THE SITE AND STRIP AND STOCKPILE THE TOPSOIL IN THE LOCATIONS SHOWN ON THE PLANS OR AS DIRECTED BY THE SITE SUPERINTENDENT TO DETAIL (SD)4–1,
i) UNTERTAKE ALL ESSENTIAL CONSTRUCTION WORKS,
j) INSTALL MESH AND GRAVEL INLET PROTECTION (SD)6–11 FOR ADJACENT KERB INLETS NOT SHOWN,
k) INSTALL GEOTEXTILE INLET FILTERS (SD)6–12 AROUND ALL DROP INLETS ONSITE. (NOT SHOWN),
l) COMPLETE TRIMMING TO FINAL GRADES AND APPLY TURF TO DISTURBED AREAS WITHIN 5 DAYS OF COMPLETION OF CONSTRUCTION WORKS,
m)REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER THE PERMANENT LANDSCAPING HAS BEEN COMPLETED.

6. CLEARLY VISIBLE BARRIER FENCING SHALL BE INSTALLED WHERE DIRECTED BY THE SITE SUPERINTENDENT TO CONTROL AND PROHIBIT UNNECESSARY SITE DISTURBANCE.

7. EARTH BATTERS SHALL BE CONSTRUCTED WITH AS LOW A GRADIENT AS PRACTICABLE BUT NO STEEPR THAN:
a) 2(h) – 1(v) WHERE SLOPE LENGTH IS LESS THAN 7m
b) 2.5(h) – 1(v) WHERE SLOPE LENGTH IS BETWEEN 7m AND 10m
c) 3(h) – 1(v) WHERE SLOPE LENGTH IS BETWEEN 10m AND 12m
d) 4(h) – 1(v) WHERE SLOPE LENGTH IS BETWEEN 12m AND 18m
e) 5(h) – 1(v) WHERE SLOPE LENGTH IS BETWEEN 18m AND 27m
f) 6(h) – 1(v) WHERE SLOPE LENGTH IS GREATER THAN 27m

SLOPE LENGTHS CAN BE SHORTENED BY USING LOW FLOW EARTH BANKS AS CATCH DRAINS ABOVE THE EARTH BATTER AREA.

8. PROTECTION FROM EROSIVE FORCES SHALL BE UNDERTAKEN ON ALL LANDS TO MEET THE REQUIREMENTS OF TABLE 9–7 'MAXIMUM ACCEPTABLE C–FACTORS AT NOMINATED TIMES DURING WORKS' FROM 'MANAGING URBAN STORMWATER – SOILS AND CONSTRUCTION 3RD EDITION'

9. TEMPORARY GROUND COVER IN SHEET FLOW AREAS IS TO BE IN ACCORDANCE WITH TABLE 9–7 'PLANT SPECIES FOR GROUND COVER' FROM ' MANAGING URBAN STORMWATER – SOILS AND CONSTRUCTION 3RD EDITION'. WHERE PRACTICAL FOOT AND VEHICULAR TRAFFIC SHALL BE KEPT AWAY FROM REHABILITATION AREAS.

10. WHERE POSSIBLE THE CONSTRUCTION PROGRAM IS TO BE SCHEDULED SO THAT THE TIME FROM STARTING LAND DISTURBANCE ACTIVITIES TO STABILISATION IS A DURATION OF LESS THAN 6 MONTHS THIS MEANS ACHIEVING A C–FACTOR OF LESS THAN 0.1 AND SETTING IN MOTION A PROGRAM THAT ENSURES THAT IT DROPS PERMANENTLY, (BY VEGETATION, PAVING, ARMOURING etc.) TO LESS THAN 0.05 WITHIN A FURTHER 60 DAYS. LOCAL WATER RESTRICTIONS PERMITTING. LANDS THAT HAVE BEEN NEWLY PLANTED WITH GRASS SPECIES SHALL BE WATERED REGULARLY UNTIL AN EFFECTIVE COVER HAS BEEN ESTABLISHED AND PLANTS ARE GROWING VIGOROUSLY. FOLLOW–UP SEED AND FERTILISER SHALL BE APPLIED AS NECESSARY IN AREAS OF MINOR SOIL EROSION AND/OR INADEQUATE VEGETATIVE PROTECTION. NOTWITHSTANDING THIS SCHEDULE OF WORKS SO THAT THE DURATION FROM THE CONCLUSION OF LAND SHAPING TO THE COMPLETION OF FINAL STABILISATION IS LESS THAN 20 WORKING DAYS.

11. THE VEGETATION SHALL BE AIMED AT RE–ESTABLISHING NATURAL SPECIES. THEREFORE, THE NATURAL SURFACE SOILS SHALL BE REPLACED AND NON PERSISTENT ANNUAL COVER CROPS SHALL BE USED.

12. SEDIMENT FENCES (SD)6–8 SHALL:

a) BE INSTALLED WHERE SHOWN ON THE PLAN AND AS DIRECTED AT THE DISCRETION OF THE SITE SUPERINTENDENT DURING THE COURSE OF CONSSTRUCTION TO CONTAIN THE COARSER SEDIMENT FRACTIONS AS NEAR AS POSSIBLE TO THEIR SOURCE.
b) HAVE A CATCHMENT AREA NOT EXCEEDING 720sq.m. AND A STORAGE DEPTH OF AT LEAST 0.6m.
c) PROVIDE AN UPSLOPE RETURN OF 1m AT INTERVALS ALONG THE FENCE WHERE THE CATCHEMNT AREA EXCEEDS 720sq.m. TO LIMIT THE DISCHARGE REACHING EACH SECTION TO 40litres/sec IN A MAX. 20yr Tc DISCHARGE.

13. STOCKPILES (SD) 4–1 SHALL BE LOCATED AS SHOWN ON THE PLANS AND AT DISCRETION OF THE SITE SUPERINTENDENT.

14. DURING WINDY WEATHER LARGE UNPROTECTED AREAS ARE TO BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL. IN THE EVENT WATER IS NOT AVAILABLE IN SUFFICIENT QUANTITIES SOIL BINDERS AND/OR DUST RETARDENTS SHALL BE USED OR THE SURFACE SHALL BE LEFT IN A CLODDY STATE THAT RESISTS REMOVAL BY WIND.

15. NOTWITHSTANDING NOTE 5d STOCKPILES SHALL NOT BE LOCATED WITHIN 5m OF HAZARD AREAS, INCLUDING LIKELY AREAS OF HIGH VELOCITY FLOWS SUCH AS WATERWAYS, PAVED AREAS OR DRIVEWAYS.

16. THE SEDIMENT RETENTION BASINS (SD) 6–4 SHALL:
a) BE CONSTRUCTED WHERE SHOWN ON THE PLANS.
b) BE FLOCULTATED (APPENDIX E MANAGING URBAN STORMWATER SOILS & CONSTRUCTION 3rd ED.) BEFORE DISCHARGE OCCURS (UNLESS THE DESIGN STORM EVENT IS EXCEEDED)
c) HAVE ONE OR MORE PEGS PLACED ON THE FLOOR TO CLEARLY INDICATE THE LEVEL AT WHICH DESIGN CAPACITY OCCURS AND WHEN SEDIMENT SHALL BE REMOVED.

17. STORED CONTENTS OF THE BASINS SHALL BE TREATED WITH GYPSUM (APPENDIX E MANAGING URBAN STORMWATER SOILS & CONSTRUCTION 3rd ED.) OR OTHER FLOCCULATING AGENTS WHERE THEY CONTAIN MORE THAN 50mg/litre OF SUSPENDED SOLIDS. TREATMENT SHALL BE AS FOLLOWS:–
a) LOWER SUSPENDED SOLIDS TO LESS THAN 50mg/litre WITHIN 24hrs OF FILLING
b) THE BASINS SHALL THEN BE ALLOWED TO STAND 36 TO 48hrs FOR FLOCCULATED PARTICLES TO SETTLE
c) THE BASINS SHALL THEN BE DRAINED SO THAT FULL STORAGE CAPACITY IS REGAINED WITHOUT DISCHARGING SEDIMENT FROM THE SITE.

18. SEDIMENT REMOVED FROM ANY TRAPPING DEVICE SHALL BE DISPOSED IN LOCATIONS WHERE FURTHER EROSION AND CONSEQUENT POLLUTION TO DOWNSLOPE LANDS AND WATERWAYS SHALL NOT OCCUR

19. WATER SHALL BE PREVENTED FROM DIRECTLY ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS IT IS RELATIVELY SEDIMENT FREE (ie THE CATCHMENT HAS BEEN LANDSCAPED AND/OR ANY LIKELY SEDIMENT HAS BEEN TREATED IN AN APPROVED DEVICE) NEVERTHELESS STORMWATER INLETS SHALL BE PROTECTED (SD)6–11 & 6–12

20. TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES SHALL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE STABILISED

21. ACCEPTABLE BINS SHALL BE PROVIDED FOR ANY CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHTWEIGHT WASTE MATERIALS AND LITTER. CLEARANCE SERVICES SHALL BE PROVIDED AT LEAST ONCE A WEEK.

SITE INSPECTION AND MAINTENANCE

22. A SELF AUDITING PROGRAM SHALL BE ESTABLISHED BASED ON A CHECK SHEET. A SITE INSPECTION USING THE CHECK SHEET SHALL BE MADE BY THE SITE MANAGER:–
a) AT LEAST WEEKLY
b) IMMEADIATELY BEFORE SITE CLOSURE
c) IMMEADIATELY FOLLOWING RAINFALL EVENTS IN EXCESS OF 5mm IN ANY 24hr PERIOD. THE SELF AUDIT SHALL INCLUDE:–
a) RECORDING THE CONDITION OF EVERY 'BEST MANAGEMENT PRACTICE'
c) RECORDING MAINTENANCE REQUIREMENTS (IF ANY) FOR EACH 'BEST MANAGEMENT PRACTICE'
d) RECORDING THE SITE WHERE SEDIMENT IS DISPOSED
e) FORWARDING A SIGNED DUPLICATE OF THE COMPLETED CHECK SHEET TO THE PROJECT MANAGER/DEVELOPER FOR THEIR INFORMATION.

23. IN ADDITION A SUITABLY QUALIFIED PERSON SHALL BE RESPONSIBLE FOR OVERSEEING THE INSTALLATION AND MAINTENANCE OF ALL SOIL AND WATER MANAGEMENT WORKS IN THE SITE. THE PERSON SHALL BE REQUIRED TO SPEND A MIN. OF:–
a) 2hrs ONSITE EACH FORTNIGHT UP UNTIL COMPLETION OF ROAD AND DRAINAGE WORKS AND/OR THE COMMISIONING OF SEDIMENT BASINS/WATER QUALITY CONTROL FACILITIES AND DURING THE DECOMMISIONING OF SAME AND/OR FINAL SITE STABILISATION. TO PROVIDE A SHORT MONTHLY WRITTEN REPORT.
b) ONE HOUR ONSITE EACH 2 MONTHS DURING THAT PHASE WHERE THE DEVELOPERS RESPONSIBILITIES ARE LIMITED TO MAINTENANCE OF THE SEDIMENT DEVICES AND/OR SEDIMENT BASINS (ie DURING THE STAGE WHEN BUILDING WORKS CAN BE UNDERTAKEN TO PROVIDE A SHORT WRITTEN REPORT EACH 4 mths.
THE RESPONSIBLE PERSON SHALL ENSURE THAT:–
a) THIS PLAN IS BEING IMPLEMENTED CORRECTLY
b) REPAIRS ARE BEING UNDERTAKEN AS REQUIRED
c) ESSENTIAL MODIFICATIONS TO THIS PLAN ARE MADE IF AND WHEN NECESSARY AND EACH REPORT SHALL CERTIFY THAT WORKS HAVE BEEN CARRIED OUT ACCORDING TO THE APPROVED PLANS.

24. WASTE BINS SHALL BE EMPTIED AS NECESSARY. DISPOSAL OF WASTE SHALL BE IN A MANNER APPROVED BY THE SITE SUPERINTENDENT.

25. PROPER DRAINAGE OF THE SITE SHALL BE MAINTAINED. TO THIS END DRAINS (INCLUDING INLET AND OUTLET WORKS) SHALL BE CHECKED TO ENSURE THAT THEY ARE OPERATING AS INTENDED, ESPECIALLY THAT:–
a) NO LOW POINTS EXIST WHICH CAN OVERTOP IN LARGE STORM EVENTS.
b) AREAS OF EROSION ARE REPAIRED (eg LINED WITH SUITABLE MATERIAL) AND/OR VELOCITY OF FLOW IS REDUCED APPROPRIATELY THROUGH CONSTRUCTION OF SMALL CHECK DAMS OR INSTALLING ADDITIONAL DIVRESIONS UPSLOPE.
c) BLOCKAGES ARE CLEARED (THESE MIGHT OCCUR BECAUSE OF SEDMINET POLLUTIONS, SAND/SOIL/SPOIL BEING DEPOSITED IN OR TOO CLOSE TO THEM, BREACHED BY VEHICLE WHEELS etc)

26. SAND/SOIL/SPOIL MATERIAL PLACED CLOSER THAN 2m FROM HAZARD AREAS SHALL BE REMOVED, SUCH HAZARD AREAS INCLUDE ANY AREAS OF HIGH VELOCITY WATER FLOWS (eg WATERWAYS AND GUTTERS) PAVED AREAS AND DRIVEWAYS.

27. RECENTLY STABILISED LANDS SHALL BE CHECKED TO ENSURE THAT THE EROSION HAZARD HAS BEEN EFFECTIVELY REDUCED. ANY REPAIRS SHALL BE INITIATED AS APPROPRIATE.

28. EXCESSIVE VEGETATION GROWTH SHALL BE CONTROLLED THROUGH MOWING OR SLASHING.

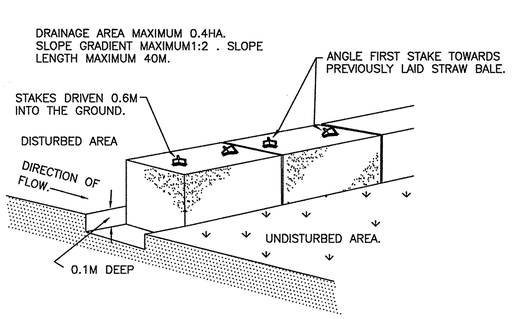
29. ALL SEDIMENT DETENTION SYSTEMS SHALL BE KEPT IN GOOD WORKING CONDITION. IN PARTICULAR ATTENTION SHALL BE GIVEN TO:–
a) RECENT WORKS TO ENSURE THAT THEY HAVE NOT RESULTED IN DIVERSION OF SEDIMENT LADEN WATER AWAY FROM THEM.
b) DEGRADEABLE PRODUCTS TO ENSURE THAT THEY ARE REPLACED AS REQUIRED
c) SEDIMENT REMOVAL TO ENSURE THE DESIGN CAPACITY OR LESS REMAINS IN THE SETTLING ZONE.

30. ADDITIONAL EROSION AND/OR SEDIMENT CONTROL WORKS SHALL BE CONSTRUCTED AS MIGHT BECOME NECESSARY TO ENSURE THE DESIRED PROTECTION IS GIVEN TO DOWNSLOPE LANDS AND WATERWAYS (ie MAKE ONGOING CHANGES TO THIS PLAN WHERE IT PROVES INADEQUATE IN PRACTICE OR IS SUBJECTED TO CHANGES IN CONDITIONS AT THE WORKS SITE OR ELSEWHERE IN THE CATCHEMNT.

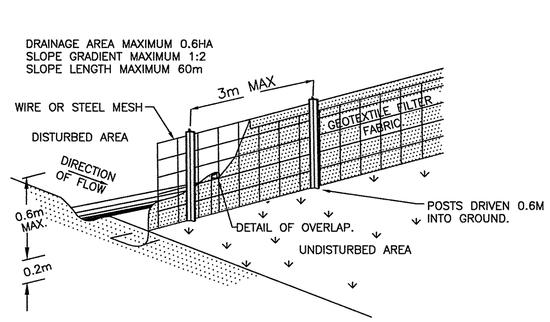
31. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED IN A FUNCTIONING CONDITION UNTIL ALL EARTHWORKS ACTIVITIES ARE COMPLETED AND THE SITE STABLISED.

32. WATERS IN SEDIMENT RETENTION BASINS THAT OCCUPY MORE THAN ¼ OF THE DESIGN CAPACITY DURING THAT STAGE OF THE WORKS UP UNTIL COMMISIONING OF THE BASIN(s) SHALL BE:–
a) TREATED WITH A FLOCCULATING AGENT (APPENDIX E MANAGING URBAN STORMWATER SOILS & CONSTRUCTION 3rd ED.)
b) DISCHARGED WITHIN 5 days FROM THE CONCLUSION OF ANY STORM EVENT LARGE ENOUGH TO FILL THE BASIN TO THAT LEVEL.

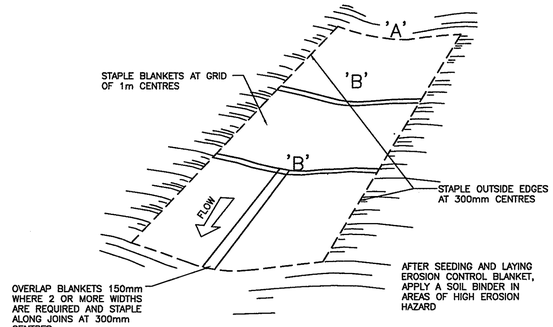
33. LITTER, DEBRIS AND COARSE SEDIMENT SHALL BE REMOVED FROM THE GROSS POLLUTANT TRAPS AND TRASH RACKS AS REQUIRED.



STRAW BALE SEDIMENT FILTER
NTS



SILT FENCE DETAIL
NTS



CONSTRUCTION NOTES

1. REMOVE ANY ROCKS, CLODS, STICKS OR GLASS FROM SURFACE BEFORE LAYING MATTING.

2.TOPSOIL TO BE MINIMUM 75mm DEEP.

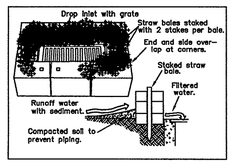
3. FERTILISING AND SEEDING TO BE COMPLETED BEFORE MATTING.

4. ENSURE FABRIC IS CONTINUOUSLY IN CONTACT WITH THE SOIL GRADING THE SURFACE CAREFULLY.

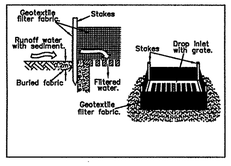
5. LAY IN 'SHINGLE–FASION' WITH THE END OF THE UPSTREAM ROLL OVERLAPPING THE NEXT ROLL PLACED.

6. FULL WIDTH OF FLOW IN CHANNEL TO BE COVERED BY MATTING

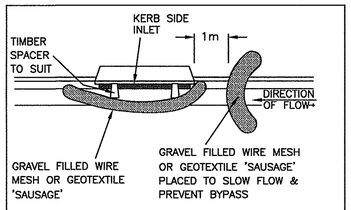
7. WATER TO BE DIVERTED AWAY FROM TREATED SLOPES UNTIL VEGETATION IS ESTABLISHED UNLESS CHANNEL IS SPRAYED WITH A SLOW–SETTING ANIONIC SOIL BINDER.



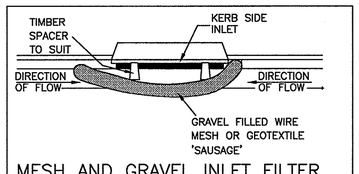
STRAW BALE DROP INLET SEDIMENT TRAP



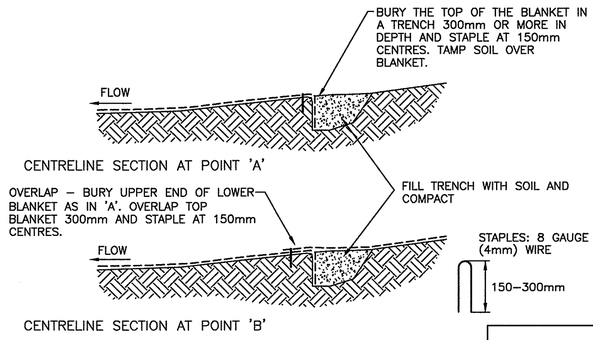
GEOTEXTILE FILTER FABRIC DROP INLET SEDIMENT TRAP.



MESH AND GRAVEL INLET FILTER TYPE A – LINTEL INLET



MESH AND GRAVEL INLET FILTER TYPE B – SAG LINTEL INLET



JUTE MATTING DETAIL

FOR DA APPROVAL

Rev.	Amendments	Approved	Date
B	FOR 90% COMPLETE DA SUBMISSION	S.P.	14.9.12

PACIFIC WESTLAKE

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SOIL & WATER MANAGEMENT DETAILS

ALTERATION AND ADDITION TO ULLADULLA CIVIC CENTRE
SHOALHAVEN CITY COUNCIL
PRINCES HIGHWAY, ULLADULLA

Design:	S. Punnett
Drawn:	S. Punnett
Checked:	
Date:	2/4/2012
Drawing No.	12196–C04
Rev	B