

LEGEND	
	GEOFABRIC SCOUR PROTECTION
	AREA OF FILL & SURCHARGE MATERIAL
	AREA OF STABILISED FILL MATERIAL
	BASE OF SEDIMENT BASIN
	SCOUR PROTECTION
	INLET PROTECTION
	STRAW BALE FLOW DIVERSION BANK
	DIVERSION BANK
	DIVERSION CHANNEL
	MULCH BERM
	SEDIMENT FENCE
	ROCK CHECK DAM
	CATCH DRAIN TYPE 1
	CATCH DRAIN TYPE 2
	SURFACE FLOW ARROW
	CHUTE
	LEVEL SPREADER
	SLOPE DRAIN
	OUTLET STRUCTURE
	ON GRADE GULLY PIT
	SAG GULLY PIT
	600 x 600 FIELD INLET
	900 x 600 FIELD INLET
	1050 DIA FIELD INLET
	STORMWATER LINE
	STORMWATER HEADWALL
	STORMWATER NUMBER
	ROCK FILTER DAM
	SEDIMENT FENCE WEIR

SEDIMENT FENCE LOCATION NOTE
THE LOCATION OF SEDIMENT FENCES ARE SHOWN IDICATIVE ONLY AND ARE TO BE CONSTRUCTED INSIDE THE SUBJECT PROPERTIES BOUNDARY.

NOTES:
1. SEDIMENT FENCES ARE TO BE MAINTAINED AS PER SHEET 'PESC-01'.
2. OVERFLOW WEIRS ESTABLISHED IN PERIMETER BUND (REFER SHEET 'PESC-01' FOR DETAILS) TO BE UTILIZED AS OVERFLOW WEIRS FOR SEDIMENT BASINS.
3. THE LOCATION, SIZE & SHAPE OF PROPOSED SEDIMENT BASINS ARE INDICATIVE ONLY.

EROSION & SEDIMENT CONTROL PLAN POST EARTHWORKS

SCALE 1:1000 0 10 20 30 40 50
(A1 SIZE)

**PRELIMINARY
NOT FOR CONSTRUCTION**

**WESTERA
PARTNERS**
STRUCTURAL-CIVIL-ENVIRONMENTAL ENGINEERS
www.westerapartners.com.au | ABN 52 097 417 975

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SURVEYOR
KENNEDY SURVEYING
PHONE (02) 6686-5700

DATUM
A.H.D.
SSM 64762
R.L. 1.267

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No.	DATE	REVISIONS
C	22.07.2021	REVISED DEVELOPMENT LAYOUT ISSUED FOR APPROVAL, VOLUMES
B	02.06.2021	DRAWINGS AMENDED TO SUIT REVISED LAYOUT
A	15.04.2021	ISSUED FOR D.A. APPROVAL

SHEET
PROJECT
LOCATION
CLIENT
EROSION & SEDIMENT CONTROL PLAN
PRIOR TO SITE FILLING & STAGE 1 SURCHARGE
MANUFACTURED HOME ESTATE
LOT 1 on DP124173
550-578 RIVER ST & BURNS POINT FERRY RD, WEST BALLINA
GEMPLIFE PTY LTD

APPROVED

B. ARTHUR
RPEQ 4384, NER 694962
For and on behalf of
WESTERA PARTNERS PTY LTD.

DESIGNED	T.J.M.	SHEET NUMBER	01 OF 08
DRAWN	G.J.S.	REVISION	C
DATE DRAWN	NOVEMBER 2020	PROJECT NUMBER	N19/009 PESC
FILE NAME	Pre_Erosion.dwg		



LEGEND	
	GEOFABRIC SCOUR PROTECTION
	AREA OF FILL & SURCHARGE MATERIAL
	AREA OF STABILISED FILL MATERIAL
	BASE OF SEDIMENT BASIN
	SCOUR PROTECTION
	INLET PROTECTION
	STRAW BALE FLOW DIVERSION BANK
	DIVERSION BANK
	DIVERSION CHANNEL
	MULCH BERM
	SEDIMENT FENCE
	ROCK CHECK DAM
	CATCH DRAIN TYPE 1
	CATCH DRAIN TYPE 2
	SURFACE FLOW ARROW
	CHUTE
	LEVEL SPREADER
	SLOPE DRAIN
	OUTLET STRUCTURE
	ON GRADE GULLY PIT
	SAG GULLY PIT
	600 x 600 FIELD INLET
	900 x 600 FIELD INLET
	1050 DIA FIELD INLET
	STORMWATER LINE
	STORMWATER HEADWALL
	STORMWATER NUMBER
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	SEDIMENT FENCE WEIR

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EROSION & SEDIMENT CONTROL PLAN POST EARTHWORKS

SCALE 1:1000 0 10 20 30 40 50
(A1 SIZE)

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PHONE (02) 6686-5700

DATUM
A.H.D.
SSM 64762
R.L. 1.267

No.	DATE	REVISIONS
E	22.07.2021	REVISED DEVELOPMENT LAYOUT ISSUED FOR APPROVAL
D	02.06.2021	DRAWINGS AMENDED TO SUIT REVISED LAYOUT
C	30.04.2021	RV ACCESS PATH AROUND CLUBHOUSE CHANGED
B	19.04.2021	SEDIMENT BASIN No.4 MOVED
A	15.04.2021	ISSUED FOR D.A. APPROVAL

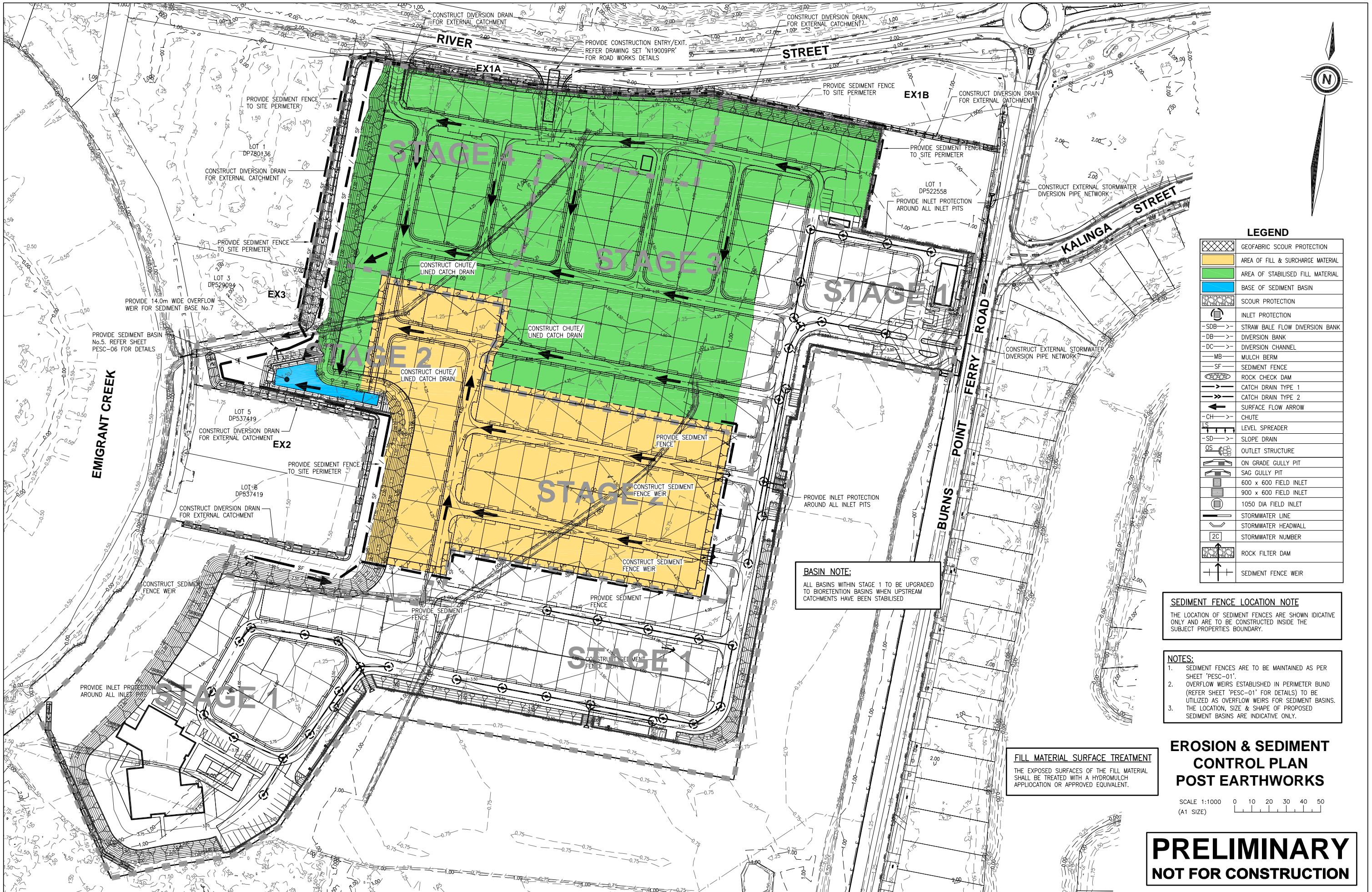
SHEET
PROJECT
LOCATION
CLIENT

**EROSION & SEDIMENT CONTROL PLAN
POST SITE FILLING & STAGE 1 SURCHARGE
MANUFACTURED HOME ESTATE**
LOT 1 on DP124173
550-578 RIVER ST & BURNS POINT FERRY RD, WEST BALLINA
GEMLIFE PTY LTD

APPROVED

B. ARTHUR
RPEQ 4384, NER 694962
For and on behalf of
WESTERA PARTNERS PTY LTD.

DESIGNED	T.J.M.	SHEET NUMBER	02 OF 08
DRAWN	G.J.S.	REVISION	E
DATE DRAWN	NOVEMBER 2020	PROJECT NUMBER	N19/009 PESC
FILE NAME	Pre_Erosion.dwg		



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	STORMWATER NUMBER
	ROCK FILTER DAM
	SEDIMENT FENCE WEIR

BASIN NOTE:
ALL BASINS WITHIN STAGE 1 TO BE UPGRADED TO BIORETENTION BASINS WHEN UPSTREAM CATCHMENTS HAVE BEEN STABILISED

SEDIMENT FENCE LOCATION NOTE
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FILL MATERIAL SURFACE TREATMENT
THE EXPOSED SURFACES OF THE FILL MATERIAL SHALL BE TREATED WITH A HYDROMULCH APPLICATION OR APPROVED EQUIVALENT.

EROSION & SEDIMENT CONTROL PLAN POST EARTHWORKS
SCALE 1:1000 0 10 20 30 40 50 (A1 SIZE)

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E	22.07.2021	REVISED DEVELOPMENT LAYOUT ISSUED FOR APPROVAL
D	02.06.2021	DRAWINGS AMENDED TO SUIT REVISED LAYOUT
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B	19.04.2021	SEDIMENT BASIN No.4 MOVED
A	15.04.2021	ISSUED FOR D.A. APPROVAL

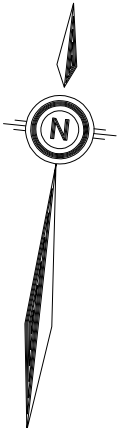
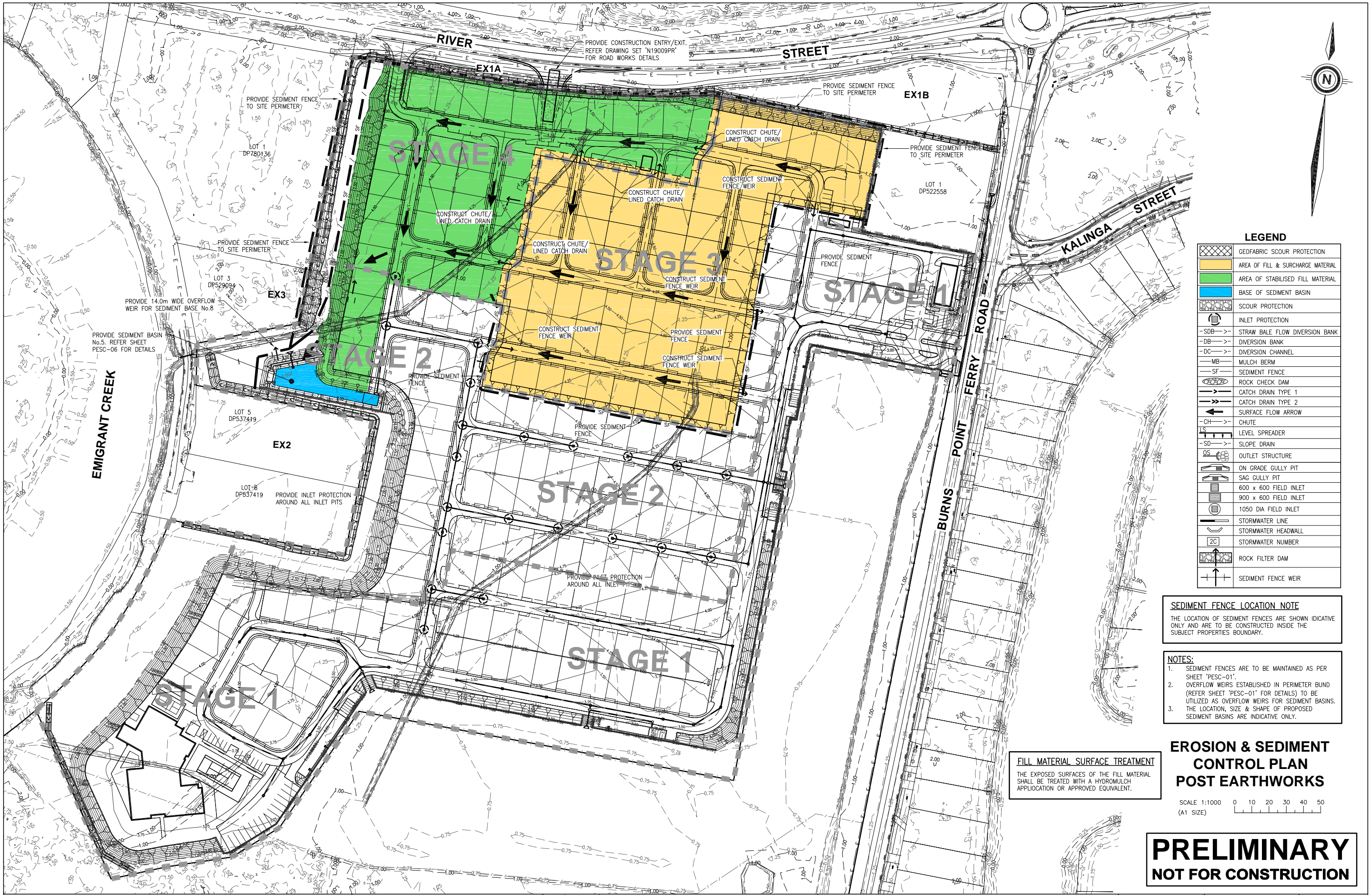
SHEET
PROJECT
LOCATION
CLIENT

EROSION & SEDIMENT CONTROL PLAN
POST STAGE 2 SURCHARGE
MANUFACTURED HOME ESTATE
LOT 1 on DP124173
550-578 RIVER ST & BURNS POINT FERRY RD, WEST BALLINA
GEMLIFE PTY LTD

APPROVED

B. ARTHUR
RPEQ 4384, NER 694962
For and on behalf of
WESTERA PARTNERS PTY LTD.

DESIGNED	T.J.M.	SHEET NUMBER	03 OF 08
DRAWN	G.J.S.	REVISION	E
DATE DRAWN	NOVEMBER 2020	PROJECT NUMBER	N19/009 PESC
FILE NAME	Pre_Erosion.dwg		



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	AREA OF FILL & SURCHARGE MATERIAL
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	INLET PROTECTION
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	DIVERSION BANK
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	CATCH DRAIN TYPE 1
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EROSION & SEDIMENT CONTROL PLAN POST EARTHWORKS

FILL MATERIAL SURFACE TREATMENT
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R.L. 1.267

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D	02.06.2021	DRAWINGS AMENDED TO SUIT REVISED LAYOUT
C	30.04.2021	RV ACCESS PATH AROUND CLUBHOUSE CHANGED
B	19.04.2021	SEDIMENT BASIN No.4 MOVED
A	15.04.2021	ISSUED FOR D.A. APPROVAL

SHEET
PROJECT
LOCATION
CLIENT

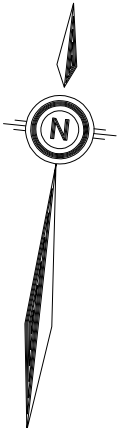
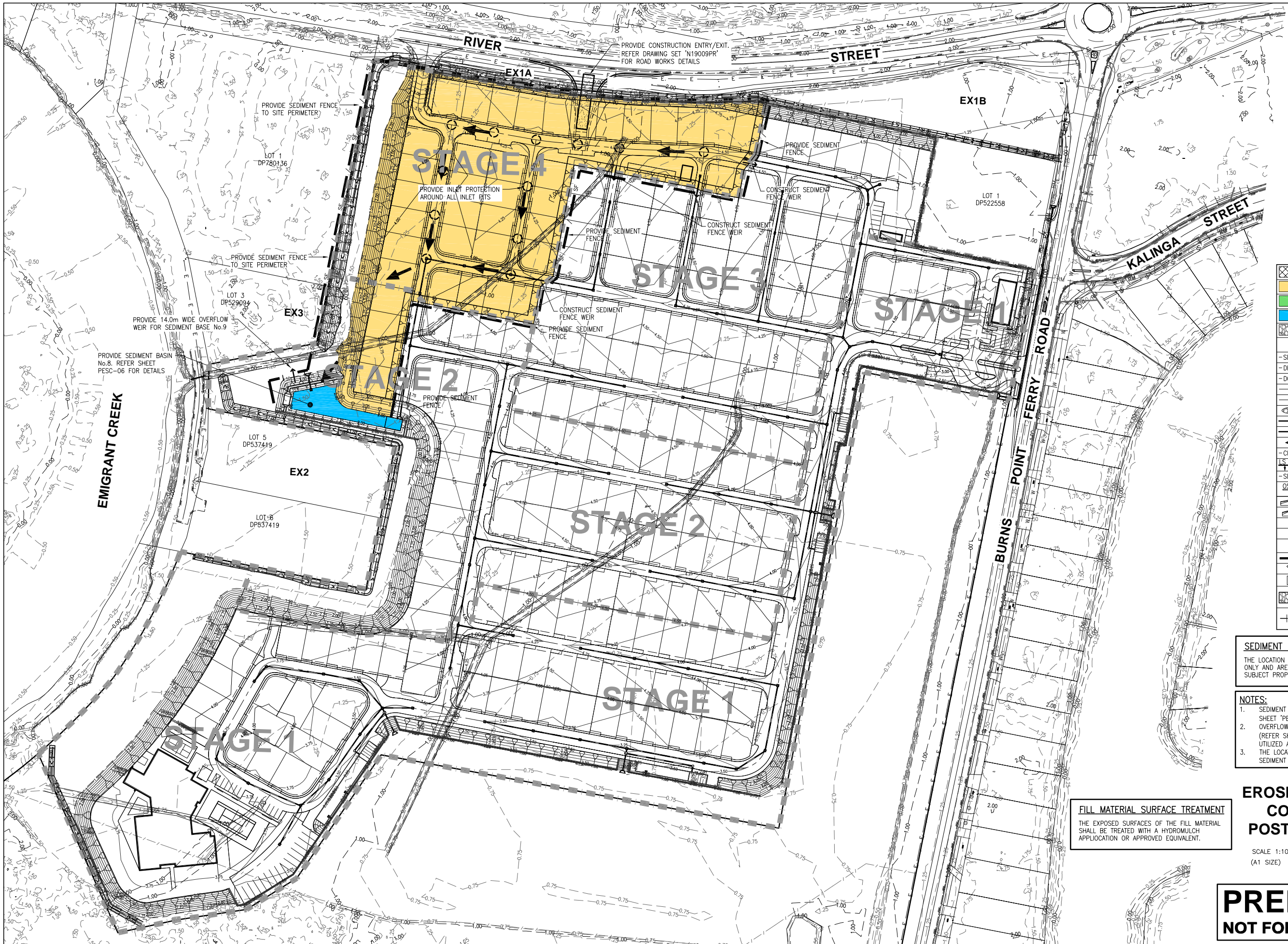
EROSION & SEDIMENT CONTROL PLAN
POST STAGE 3 SURCHARGE
MANUFACTURED HOME ESTATE
LOT 1 on DP124173
550-578 RIVER ST & BURNS POINT FERRY RD, WEST BALLINA
GEMLIFE PTY LTD

APPROVED



B. ARTHUR
RPEQ 4384, NER 694962
For and on behalf of
WESTERA PARTNERS PTY LTD.

DESIGNED	T.J.M.	SHEET NUMBER	04 OF 08
DRAWN	G.J.S.	REVISION	E
DATE DRAWN	NOVEMBER 2020	PROJECT NUMBER	N19/009 PESC
FILE NAME	Pre_Erosion.dwg		



LEGEND	
	GEOTEXTILE SCOUR PROTECTION
	AREA OF FILL & SURCHARGE MATERIAL
	AREA OF STABILISED FILL MATERIAL
	BASE OF SEDIMENT BASIN
	SCOUR PROTECTION
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EROSION & SEDIMENT CONTROL PLAN POST EARTHWORKS

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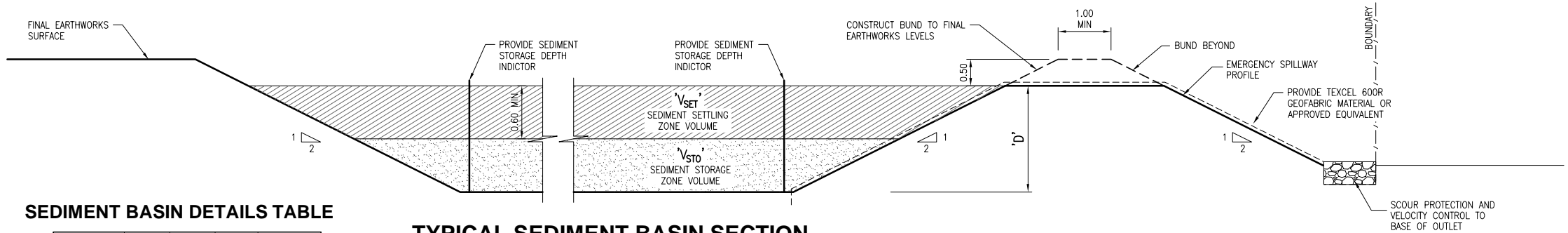
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SHEET
PROJECT
LOCATION
CLIENT
EROSION & SEDIMENT CONTROL PLAN
POST STAGE 4 SURCHARGE
MANUFACTURED HOME ESTATE
LOT 1 on DP124173
550-578 RIVER ST & BURNS POINT FERRY RD, WEST BALLINA
GEMLIFE PTY LTD

APPROVED

B. ARTHUR
RPEQ 4384, NER 694962
For and on behalf of
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DESIGNED	T.J.M.	SHEET NUMBER	05 OF 08
DRAWN	G.J.S.	REVISION	E
DATE DRAWN	NOVEMBER 2020	PROJECT NUMBER	N19/009 PESC
FILE NAME	Pre_Erosion.dwg		



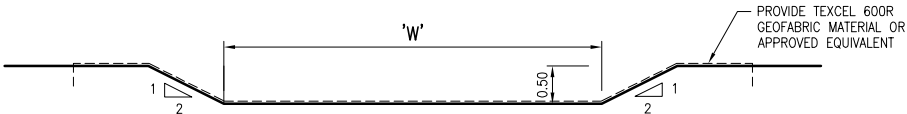
SEDIMENT BASIN DETAILS TABLE

BASIN No.	V _{SET}	V _{STO}	D*	WEIR (W)
1	716m ³	358m ³	2.00m	4.00m
2	332m ³	166m ³	2.00m	4.00m
3	517m ³	258m ³	2.00m	4.00m
4	558m ³	279m ³	2.00m	6.00m
5	1617m ³	808m ³	2.00m	14.00m

*NOTE: SEDIMENT BASIN DEPTH IS TO BE CONFIRMED ON SITE.

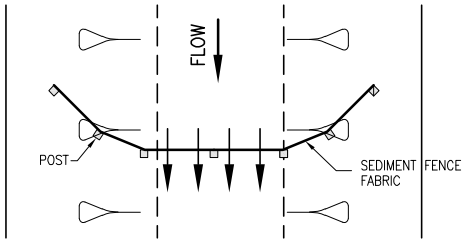
TYPICAL SEDIMENT BASIN SECTION

SCALE 1:50
(A1 SIZE)

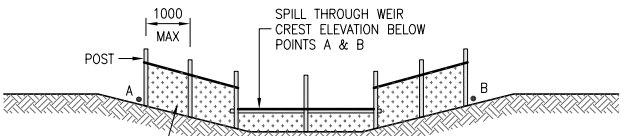


OVERFLOW WEIR SECTION

SCALE 1:50
(A1 SIZE)



TOP VIEW



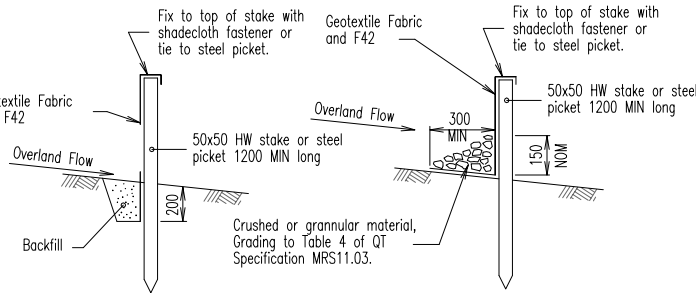
FRONT VIEW

FABRIC
POLYPROPYLENE, POLYAMIDE, NYLON, POLYESTER OR POLYETHYLENE WOVEN OR NON-WOVEN FABRIC, AT LEAST 700mm IN WIDTH AND A MINIMUM UNIT WEIGHT OF 140g/m². ALL FABRICS TO CONTAIN ULTRAVIOLET INHIBITORS AND STABILISERS TO PROVIDE A MINIMUM OF 6 MONTHS OF USEABLE CONSTRUCTION LIFE (ULTRAVIOLET STABILITY EXCEEDING 70%).

FABRIC REINFORCEMENT (IF USED)
WIRE OR STEEL MESH MINIMUM 14-GAUGE WITH A MAXIMUM MESH SPACING OF 200mm.

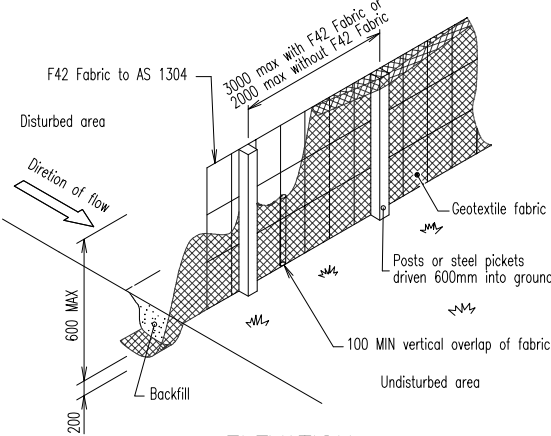
SUPPORT POSTS/STAKES
1500mm² (MINIMUM) HARDWOOD, 2500mm² (MINIMUM) SOFTWOOD OR 1.5kg/m (MINIMUM) STEEL STAR PICKETS SUITABLE FOR ATTACHING FABRIC.

SEDIMENT WEIR DETAIL



ALTERNATIVE 1

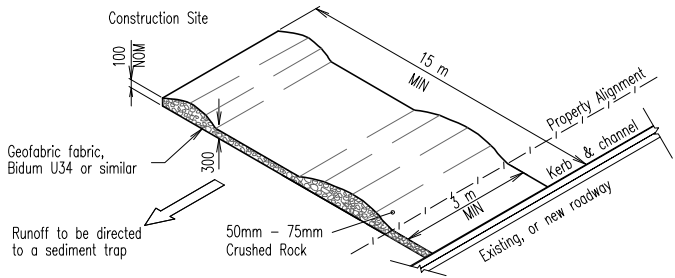
ALTERNATIVE 2



ELEVATION

SEDIMENT FENCE DETAILS

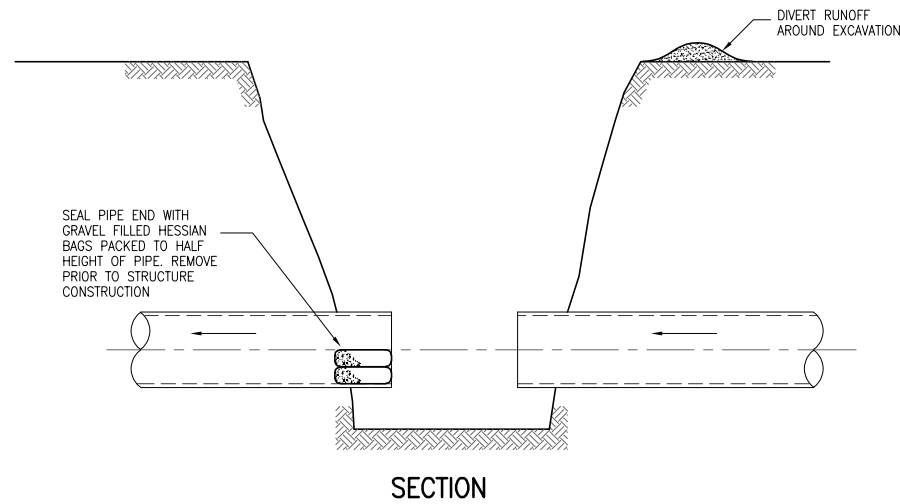
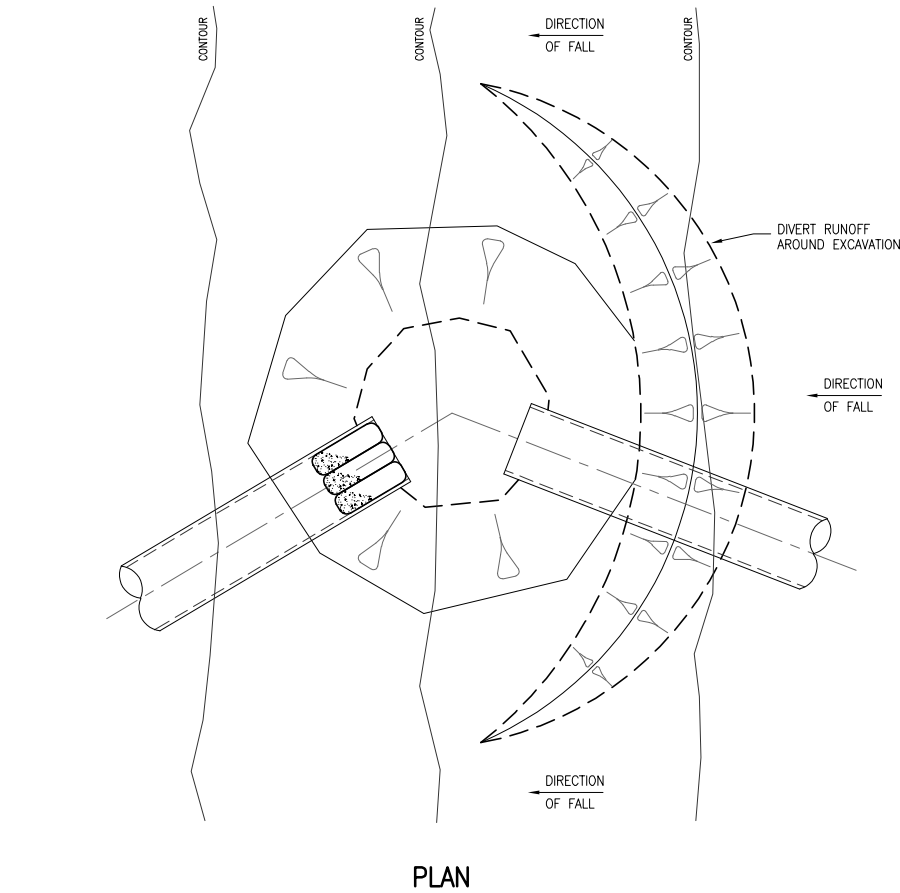
CONSTRUCTION ENTRY/EXIT
SEDIMENT TRAP



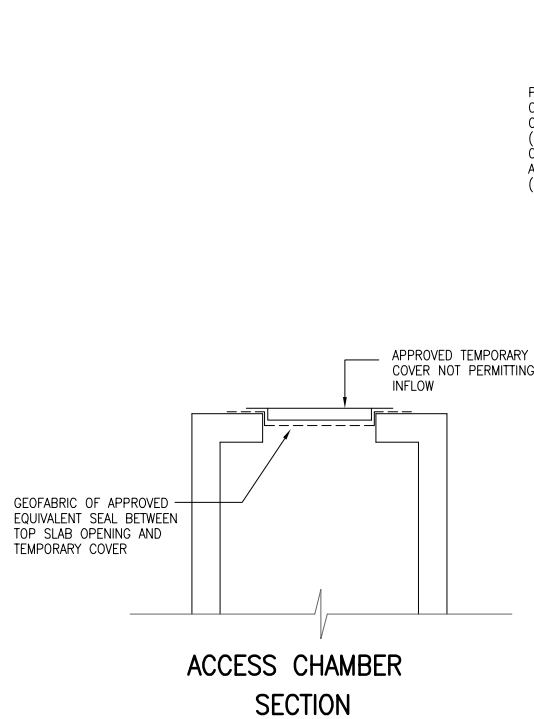
No.	DATE	REVISIONS
C	22.07.2021	REVISED DEVELOPMENT LAYOUT ISSUED FOR APPROVAL
B	03.06.2021	SEDIMENT BASIN TABLE REVISED
A	15.04.2021	ISSUED FOR D.A. APPROVAL

SHEET	EROSION & SEDIMENT CONTROL DETAILS 1 of 2
PROJECT	MANUFACTURED HOME ESTATE
LOCATION	LOT 1 on DP124173 550-578 RIVER ST & BURNS POINT FERRY RD, WEST BALLINA
CLIENT	GEMLIFE PTY LTD

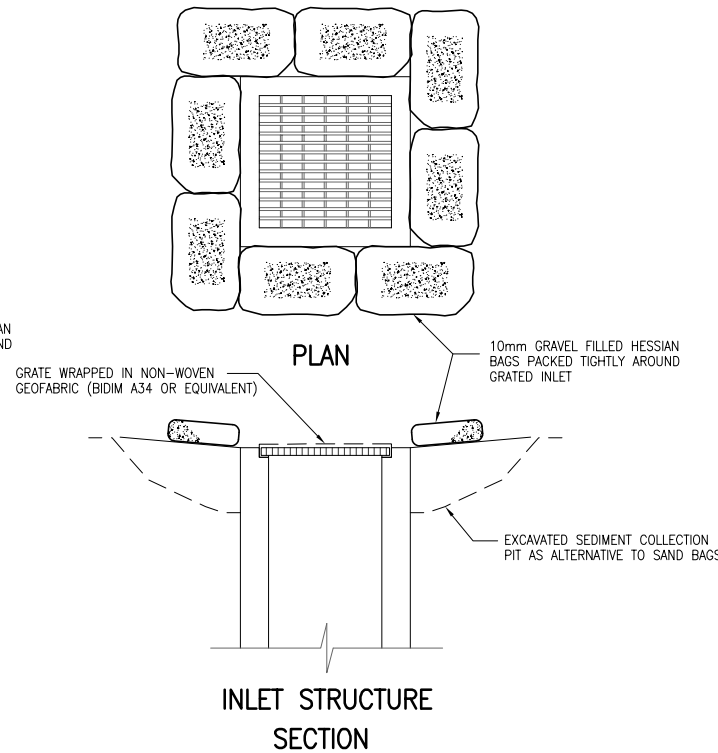
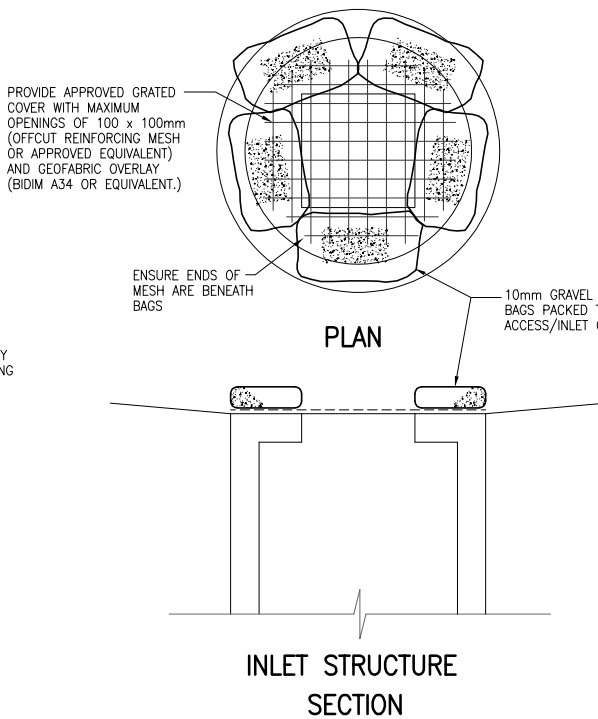
APPROVED	DESIGNED T.J.M.	SHEET NUMBER
	DRAWN G.J.S.	06 of 08
B. ARTHUR RPEQ 4384, NER 694952 For and on behalf of WESTERA PARTNERS PTY LTD.	DATE DRAWN NOVEMBER 2020	REVISION C
	FILE NAME Pre_Eros_det.dwg	PROJECT NUMBER N19/009 PES



STAGE 1
EXCAVATION AND PIPE INSTALLATION



STAGE 2
STRUCTURE COMPLETE UP TO TOP SLAB



STAGE 3
STRUCTURE COMPLETE

ACCESS CHAMBER / INLET STRUCTURE PROTECTION

PRELIMINARY
NOT FOR CONSTRUCTION

No.	DATE	REVISIONS
B	22.07.2021	REVISED DEVELOPMENT LAYOUT ISSUED FOR APPROVAL
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SHEET	EROSION & SEDIMENT CONTROL DETAILS 2 of 2
PROJECT	MANUFACTURED HOME ESTATE
LOCATION	LOT 1 on DP124173 550-578 RIVER ST & BURNS POINT FERRY RD, WEST BALLINA
CLIENT	GEMLIFE PTY LTD

APPROVED	
B. ARTHUR RPEQ 4384, NER 694962 For and on behalf of WESTERA PARTNERS PTY LTD.	

DESIGNED	T.J.M.
DRAWN	G.J.S.
DATE DRAWN	NOVEMBER 2020
FILE NAME	Pre_Eros_det.dwg

SHEET NUMBER	07 of 08
REVISION	B
PROJECT NUMBER	N19/009 PES

GENERAL NOTES

- THE CONSULTING ENGINEER AND/OR COUNCIL INSPECTOR MAY ISSUE INSTRUCTIONS TO THE CONTRACTOR REGARDING EROSION AND SEDIMENT CONTROL THAT MAY VARY TO THE MEASURES SHOWN ON THIS DRAWING DUE TO CONSTRUCTION METHODOLOGIES AND VARYING SITE CONDITIONS.
- A SITE SPECIFIC GEOTECHNICAL INVESTIGATION SHALL BE CARRIED OUT PRIOR TO COMMENCEMENT OF CONSTRUCTION. THE GEOTECHNICAL INVESTIGATION SHALL BE COMPLETED IN ACCORDANCE WITH BALLINA SHIRE COUNCILS SOIL SAMPLING AND TESTING GUIDELINE FOR EROSION POTENTIAL. THE EROSION AND SEDIMENT CONTROL MEASURES ON THIS DRAWING MAY BE ALTERED TO SUIT THE RESULTS OF THE GEOTECHNICAL INVESTIGATION AS DIRECTED BY THE CONSULTING ENGINEER.
- THIS ESCP DOES NOT OUTLINE ACID SULPHATE SOIL (ASS) MANAGEMENT REQUIREMENTS. IF ENCOUNTERED, ASS SHALL BE MANAGED IN ACCORDANCE WITH AN APPROVED ASS MANAGEMENT PLAN.
- SEDIMENT BASIN OPERATION AND MAINTENANCE SHALL BE IN ACCORDANCE WITH BALLINA SHIRE COUNCIL'S SEDIMENT BASIN DESIGN GUIDELINES.
- REFER TO CONCEPTUAL SOILS AND WATER MANAGEMENT PLAN BY WESTERA PARTNERS DATED JUNE 2021 FOR FURTHER EROSION AND SEDIMENT CONTROL DETAILS AND REQUIREMENTS.
- TREATMENT AND DOSING RATES FOR APPROVED FLOCCULATING AGENTS TO BE DETERMINED FOLLOWING GEOTECHNICAL INVESTIGATION OF ON SITE SOILS.
- THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL SEDIMENT CONTROL DEVICES IN A FUNCTIONAL ORDER.
- ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES MUST BE IMPLEMENTED AND A REVISED EROSION AND SEDIMENT CONTROL PROGRAM (ESCP) MUST BE SUBMITTED FOR APPROVAL BY THE SUPERINTENDENT AND INSPECTING ENGINEER IF CONSTRUCTION METHODOLOGIES OR SITE CONDITIONS VARY FROM THOSE CONSIDERED WITHIN THE ESCP. A REVISED ESCP IS ALSO REQUIRED IN THE EVENT THAT THE IMPLEMENTED WORKS FAIL TO ACHIEVE THE STATED "OBJECTIVE" OF THE ESCP, THE LOCAL GOVERNMENT ESC STANDARD, OR THE STATE'S ENVIRONMENTAL PROTECTION REQUIREMENTS.
- IN CIRCUMSTANCES WHERE IT IS CONSIDERED NECESSARY TO PREPARE AN AMENDED ESCP, AND WHERE THE DELIVERY OF SUCH AN AMENDED ESCP IS NOT IMMINENT, THEN ALL NECESSARY NEW OR MODIFIED EROSION AND SEDIMENT CONTROL WORKS MUST BE IN ACCORDANCE WITH THE I.E.C.A. TECHNICAL NOTES AND DRAWINGS AS DIRECTED BY THE SUPERINTENDENT AND INSPECTING ENGINEER. UPON APPROVAL OF THE AMENDED ESCP, ALL WORKS MUST BE IMPLEMENTED IN ACCORDANCE WITH THE AMENDED PLAN.
- ALL CONSTRUCTION AND MAINTENANCE IS TO BE CARRIED OUT IN ACCORDANCE WITH THE LOCAL AUTHORITIES SPECIFICATIONS AND THE I.E.C.A. TECHNICAL NOTES AND DRAWINGS TO THE SATISFACTION OF THE SUPERINTENDENT AND LOCAL AUTHORITY. THIS ESCP IS BASED ON THE WORKS OUTLINED IN THE CIVIL ENGINEERING DRAWINGS BY WESTERA PARTNERS PROJECT No. N19/009.

LAND CLEARING

- ANY BULK CLEARING AND GRUBBING OF THE SITE MUST BE IMMEDIATELY FOLLOWED BY SPECIFIED STABILISATION MEASURES (e.g. TEMPORARY GRASSING OR MULCHING) PRIOR TO COMMENCEMENT OF EACH STAGE OF CONSTRUCTION WORKS.
- DISTURBANCE TO NATURAL WATERCOURSES (INCLUDING BED AND BANKS) AND THEIR ASSOCIATED RIPARIAN ZONES MUST BE LIMITED TO THE MINIMUM PRACTICABLE.
- NO LAND CLEARING SHALL BE UNDERTAKEN UNLESS PRECEDED BY THE INSTALLATION OF ADEQUATE DRAINAGE AND SEDIMENT CONTROL MEASURES.
- LAND CLEARING MUST BE LIMITED TO 5M FROM THE EDGE OF PROPOSED CONSTRUCTED WORKS, 2M OF ESSENTIAL CONSTRUCTION TRAFFIC ROUTES, AND A TOTAL OF 10M WIDTH FOR CONSTRUCTION ACCESS, UNLESS OTHERWISE APPROVED BY THE SUPERINTENDENT.
- PRIOR TO LAND CLEARING, AREAS OF PROTECTED VEGETATION MUST BE CLEARLY IDENTIFIED AND PROTECTED FROM CONSTRUCTION ACTIVITY FOR THE PURPOSE OF MINIMISING THE RISK OF UNNECESSARY LAND CLEARING.
- LAND CLEARING SHALL BE LIMITED TO THE MINIMUM PRACTICABLE DURING PERIODS WHEN SOIL EROSION DUE TO WIND, RAIN OR SURFACE WATER IS POSSIBLE.

SITE ACCESS

- PRIOR TO THE COMMENCEMENT OF SITE WORKS, THE LOCATION OF THE SITE ACCESS POINT MUST BE VERIFIED WITH THE SUPERINTENDENT.
- SITE EXIT POINTS MUST BE APPROPRIATELY MANAGED TO MINIMISE THE RISK OF SEDIMENT BEING TRACKED ONTO SEALED, PUBLIC ROADWAYS.
- THE PUBLIC ROAD AT THE SITE ENTRY/EXIT POINT MUST BE KEPT CLEAN OF SEDIMENT. DIRTY ROADS MUST BE BROOMED IMMEDIATELY, NOT WASHED OFF INTO COUNCILS STORMWATER SYSTEM.
- STORMWATER RUNOFF FROM ACCESS ROADS AND STABILISED ENTRY/EXIT POINTS MUST DRAIN TO AN APPROPRIATE SEDIMENT CONTROL DEVICE.
- WHEEL – WASH OR SPRAY UNIT MAY BE REQUIRED DURING WET WEATHER.

SOIL AND STOCKPILE MANAGEMENT

- STOCKPILES OF ERODIBLE MATERIAL THAT HAS THE POTENTIAL TO CAUSE ENVIRONMENTAL HARM IF DISPLACED, MUST BE:
 - APPROPRIATELY PROTECTED FROM WIND, RAIN, CONCENTRATED SURFACE FLOW AND EXCESSIVE UP-SLOPE STORMWATER SURFACE FLOWS.
 - LOCATED AT LEAST 2M FROM ANY HAZARDOUS AREA, RETAINED VEGETATION, OR CONCENTRATED DRAINAGE LINE.
 - LOCATED UP-SLOPE OF AN APPROPRIATE SEDIMENT CONTROL SYSTEM.
 - PROVIDED WITH AN APPROPRIATE PROTECTIVE COVER (SYNTHETIC, MULCH OR VEGETATIVE) IF THE MATERIALS ARE LIKELY TO BE STOCKPILED FOR MORE THAN 28 DAYS.
 - PROVIDED WITH AN APPROPRIATE PROTECTIVE COVER (SYNTHETIC, MULCH OR VEGETATIVE) IF THE MATERIALS ARE LIKELY TO BE STOCKPILED FOR MORE THAN 10 DAYS DURING THOSE MONTHS THAT HAVE A HIGH EROSION RISK.
 - PROVIDED WITH AN APPROPRIATE PROTECTIVE COVER (SYNTHETIC, MULCH OR VEGETATIVE) IF THE MATERIALS ARE LIKELY TO BE STOCKPILED FOR MORE THAN 5 DAYS DURING THOSE MONTHS THAT HAVE A EXTREME EROSION RISK.
- A SUITABLE FLOW DIVERSION SYSTEM MUST BE ESTABLISHED IMMEDIATELY UP-SLOPE OF A STOCKPILE OF ERODIBLE MATERIAL THAT HAS THE POTENTIAL TO CAUSE ENVIRONMENTAL HARM IF DISPLACED, IF THE UP-SLOPE CATCHMENT AREA DRAINING TO THE STOCKPILE EXCEEDS 1500M2.
- SITE MANAGEMENT
 - SEDIMENT (INCLUDING CLAY, SILT, SAND, GRAVEL, SOIL, MUD, CEMENT AND CERAMIC WASTE) DEPOSITED OFF THE SITE AS A DIRECT RESULT OF AN ON-SITE ACTIVITY, MUST BE COLLECTED AND THE AREA APPROPRIATELY CLEANED/REHABILITATED AS SOON AS REASONABLE AND PRACTICABLE, AND IN A MANNER THAT GIVES APPROPRIATE CONSIDERATION TO THE SAFETY AND ENVIRONMENTAL RISKS ASSOCIATED WITH THE SEDIMENT DEPOSITION.
 - ADEQUATE WASTE COLLECTION BINS MUST BE PROVIDED ON-SITE AND MAINTAINED SUCH THAT POTENTIAL AND ACTUAL ENVIRONMENTAL HARM RESULTING FROM SUCH MATERIAL WASTE IS MINIMISED.
 - CONCRETE WASTE AND CHEMICAL PRODUCTS, INCLUDING PETROLEUM AND OIL-BASED PRODUCTS, MUST BE PREVENTED FROM ENTERING AN INTERNAL WATER BODY, OR AN EXTERNAL DRAIN, STORMWATER SYSTEM, OR WATER BODY.
 - ALL FLAMMABLE AND COMBUSTIBLE LIQUIDS, INCLUDING ALL LIQUID CHEMICALS IF SUCH CHEMICALS COULD POTENTIALLY BE WASHED OR DISCHARGED FROM THE SITE, ARE STORED AND HANDLED ON-SITE IN ACCORDANCE WITH RELEVANT STANDARDS SUCH AS AS1940 THE STORAGE AND HANDLING OF FLAMMABLE AND COMBUSTIBLE LIQUIDS.
 - TRENCHES NOT LOCATED WITHIN ROADWAYS MUST BE BACKFILLED, CAPPED WITH TOPSOIL, AND COMPACTED TO A LEVEL AT LEAST 75MM ABOVE ADJOINING GROUND LEVEL AND APPROPRIATELY STABILISED.
 - ALL STORMWATER, SEWER LINE AND OTHER SERVICE TRENCHES, NOT LOCATED WITHIN ROADWAYS, MUST BE MULCHED AND SEEDED, OTHER OTHERWISE APPROPRIATELY STABILISED WITHIN 7 DAYS AFTER BACKFILL.
 - NO MORE THAN 150M OF A STORMWATER, SEWER LINE OR OTHER SERVICE TRENCH MUST TO BE OPEN AT ANY ONE TIME.
 - SITE SPOIL MUST BE LAWFULLY DISPOSED OF IN A MANNER THAT DOES NOT RESULT IN ONGOING SOIL EROSION OR ENVIRONMENTAL HARM.

DRAINAGE CONTROL

- ALL DRAINAGE CONTROL MEASURES MUST BE APPLIED AND MAINTAINED IN ACCORDANCE WITH THE APPROVED ESCP.
- WHEREVER REASONABLE AND PRACTICABLE, STORMWATER RUNOFF ENTERING THE SITE FROM EXTERNAL AREAS, AND NON-SEDIMENT LADEN (CLEAN) STORMWATER RUNOFF ENTERING A WORK AREA OR AREA OF SOIL DISTURBANCE, MUST BE DIVERTED AROUND OR THROUGH THAT AREA IN A MANNER THAT MINIMISES SOIL EROSION AND THE CONTAMINATION OF THAT WATER FOR ALL DISCHARGES UP TO THE SPECIFIED DESIGN STORM DISCHARGE.
- DURING THE CONSTRUCTION PERIOD, ALL REASONABLE AND PRACTICABLE MEASURES MUST BE IMPLEMENTED TO CONTROL FLOW VELOCITIES IN SUCH A MANNER THAN PREVENTS SOIL EROSION ALONG DRAINAGE PATHS AND AT THE ENTRANCE AND EXIT OF ALL DRAINS AND DRAINAGE PIPES DURING ALL STORMS UP TO THE RELEVANT DESIGN STORM DISCHARGE.
- TO THE MAXIMUM DEGREE REASONABLE AND PRACTICABLE, ALL WATERS DISCHARGED DURING THE CONSTRUCTION PHASE MUST DISCHARGE ONTO STABLE LAND, IN A NON-EROSIVE MANNER, AND AT A LEGAL POINT OF DISCHARGE.
- WHEREVER REASONABLE AND PRACTICABLE, "CLEAN" SURFACE WATERS MUST BE DIVERTED AWAY FROM SEDIMENT CONTROL DEVICES AND ANY UNTREATED, SEDIMENT-LADEN WATERS.
- DURING THE CONSTRUCTION PERIOD, ROOF WATER MUST BE MANAGED IN A MANNER THAT MINIMISES SOIL EROSION THROUGHOUT THE SITE, AND SITE WETNESS WITHIN ACTIVE WORK AREAS.
- DEWATERING DURING EXCAVATION MUST BE CARRIED OUT IN ACCORDANCE WITH BSC AND I.E.C.A. STANDARD DRAWINGS AND SPECIFICATIONS. ALL WATER DISCHARGED FROM SITE MUST BE TREATED FOR SEDIMENT AND BE APPROPRIATELY MANAGED IN A MANNER THAT DOES NOT CAUSE ENVIRONMENTAL HARM, FLOODING, DAMAGE OR NUISANCE TO NEIGHBOURING PROPERTIES.

EROSION CONTROL

- ALL EROSION CONTROL MEASURES MUST BE APPLIED AND MAINTAINED IN ACCORDANCE WITH THE APPROVED ESCP.
- THE APPLICATION OF LIQUID-BASED DUST SUPPRESSION MEASURES MUST ENSURE THAT SEDIMENT-LADEN RUNOFF RESULTING FROM SUCH MEASURES DOES NOT CREATE A TRAFFIC OR ENVIRONMENTAL HAZARD.
- ALL TEMPORARY EARTH BANKS, FLOW DIVERSION SYSTEMS, AND EMBANKMENTS ASSOCIATED WITH CONSTRUCTED SEDIMENT BASINS MUST BE MACHINE-COMPACTED, SEEDED AND MULCHED FOR THE PURPOSE OF ESTABLISHING A TEMPORARY VEGETATIVE COVER WITHIN 10 DAYS AFTER GRADING.
- THE CONSTRUCTION AND STABILISATION OF EARTH BATTERS STEEPER THAN 6:1 (H:V) MUST BE STAGED SUCH THAT NO MORE THAN 3 VERTICAL-METRES OF ANY BATTER IS EXPOSED TO RAINFALL AT ANY INSTANT.
- SYNTHETIC REINFORCED EROSION CONTROL MATS AND BLANKETS MUST NOT BE PLACED WITHIN, OR ADJACENT TO, RIPARIAN ZONES AND WATERCOURSES IF SUCH MATERIALS ARE LIKELY TO CAUSE ENVIRONMENTAL HARM TO WILDLIFE OR WILDLIFE HABITATS.

SEDIMENT CONTROL

- ALL SEDIMENT CONTROL MEASURES MUST BE APPLIED AND MAINTAINED IN ACCORDANCE WITH THE APPROVED ESCP.
- OPTIMUM BENEFIT MUST BE MADE OF EVERY OPPORTUNITY TO TRAP SEDIMENT WITHIN THE WORK SITE, AND AS CLOSE AS PRACTICABLE TO ITS SOURCE.
- SEDIMENT TRAPS MUST BE INSTALLED AND OPERATED TO BOTH COLLECT AND RETAIN SEDIMENT.
- THE POTENTIAL SAFETY RISK OF A PROPOSED SEDIMENT TRAP TO SITE WORKERS AND THE PUBLIC MUST BE GIVEN APPROPRIATE CONSIDERATION, ESPECIALLY THOSE DEVICES LOCATED WITHIN PUBLICLY ACCESSIBLE AREAS.
- ALL REASONABLE AND PRACTICABLE MEASURES MUST BE TAKEN TO PREVENT, OR AT LEAST MINIMISE, THE RELEASE OF SEDIMENT FROM THE SITE.
- SUITABLE ALL-WEATHER MAINTENANCE ACCESS MUST BE PROVIDED TO ALL SEDIMENT CONTROL DEVICES.
- SEDIMENT CONTROL DEVICES MUST BE DE-SILTED AND MADE FULLY OPERATIONAL AS SOON AS REASONABLE AND PRACTICABLE AFTER A SEDIMENT-PRODUCING EVENT, WHETHER NATURAL OR ARTIFICIAL, IF THE DEVICE'S SEDIMENT RETENTION CAPACITY FALLS BELOW 75% OF ITS DESIGN RETENTION CAPACITY.
- MATERIALS, WHETHER LIQUID OR SOLID, REMOVED FROM SEDIMENT CONTROL DEVICES DURING MAINTENANCE OR DECOMMISSIONING, MUST BE DISPOSED OF IN A MANNER THAT DOES NOT CAUSE ONGOING SOIL EROSION OR ENVIRONMENTAL HARM.
- AS-CONSTRUCTED PLANS MUST BE PREPARED FOR ALL CONSTRUCTED SEDIMENT BASINS AND ASSOCIATED EMERGENCY SPILLWAYS. SUCH PLANS MUST APPROPRIATELY VERIFY THE BASIN'S DIMENSIONS, LEVELS AND VOLUMES, AND MUST BE SUBMITTED TO THE SUPERINTENDENT WITHIN 14 CALENDAR DAYS OF THE CONSTRUCTION OF EACH BASIN.
- SEDIMENT BASINS AND CONTROL DEVICES MUST BE MAINTAINED AND FULLY OPERATIONAL THROUGHOUT THE CONSTRUCTION PERIOD AND UNTIL EACH DEVICE'S CATCHMENT AREA ACHIEVES 70% GROUND COVER ON ALL SOIL SURFACES.
- SETTLED SEDIMENT MUST BE REMOVED FROM SEDIMENT BASINS WHEN THE VOLUME OF THE SEDIMENT EXCEEDS THE DESIGNATED SEDIMENT STORAGE VOLUME, OR THE DESIGN MAXIMUM SEDIMENT STORAGE ELEVATION.
- IN AREAS WHERE RUNOFF TURBIDITY IS TO BE CONTROLLED, EXPOSED SURFACES ARE TO BE EITHER MULCHED, COVERED WITH EROSION CONTROL BLANKETS OR TURFED IF EARTHWORKS ARE EXPECTED TO BE DELAYED FOR MORE THAN 14 DAYS.
- STRAW BALE SEDIMENT TRAPS ARE A SECONDARY OPTION WHICH GENERALLY SHOULD NOT BE USED IF OTHER OPTIONS ARE AVAILABLE.
- SEDIMENT FENCE
 - NOT TO BE LOCATED IN AREAS OF CONCENTRATED FLOW.
 - NORMALLY LOCATED ALONG THE CONTOUR WITH A MAXIMUM CATCHMENT AREA 0.6 HA PER 100M LENGTH OF FENCE.
 - ONLY WOVEN FABRICS ARE TO BE USED, NON-WOVEN FABRICS ARE TO BE AVOIDED UNLESS OTHERWISE DIRECTED BY THE SUPERVISING ENGINEER.
 - WHERE FENCES NEED TO BE LOCATED ACROSS THE CONTOUR THE LAYOUT SHALL BE AS DIRECTED BY THE MANAGER.
 - FENCES ARE REQUIRED 2M MIN FROM THE TOE OF CUT AND FILL BATTERS, WHERE NOT PRACTICAL ONE FENCE CAN BE AT THE TOE WITH A SECOND FENCE 1M MIN AWAY. FENCE SHOULD NOT BE LOCATED PARALLEL WITH TOE IF CONCENTRATION OF FLOW WILL OCCUR BEHIND THE FENCE.
- ALL STORMWATER INLET STRUCTURES IN THE IMMEDIATE DOWNSTREAM VICINITY OF THE WORK AREA SHALL HAVE APPROVED INLET PROTECTION TO PREVENT INGRESS OF WATER BORNE SEDIMENTS.
- SANDBAGS TO BE INSTALLED AT REGULAR INTERVALS ON ROAD PROFILE TO REDUCE EROSION & STEM FLOWS BY ACTING AS SMALL CHECK DAMS.
- EXTRA CATCH DRAINS MAY BE CONSTRUCTED BY CONTRACTOR IN ACCORDANCE WITH THESE DRAWINGS & I.E.C.A. TECHNICAL NOTES & DRAWINGS.

SITE MONITORING AND MAINTENANCE

- ALL WATER QUALITY DATA, INCLUDING DATES OF RAINFALL, DATES OF TESTING, TESTING RESULTS AND DATES OF WATER RELEASE, MUST BE KEPT IN AN ON-SITE REGISTER. THE REGISTER IS TO BE MAINTAINED UP TO DATE FOR THE DURATION OF THE APPROVED WORKS AND BE AVAILABLE ON-SITE FOR INSPECTION BY THE LOCAL AUTHORITY ON REQUEST.
 - AT NOMINATED INSTREAM WATER MONITORING SITES, A MINIMUM OF 3 WATER SAMPLES MUST BE TAKEN AND ANALYSED, AND THE AVERAGE RESULT USED TO DETERMINE QUALITY.
 - SEDIMENT BASIN WATER QUALITY SAMPLES MUST BE TAKEN AT A DEPTH NO GREATER THAN 200MM ABOVE THE LEVEL OF SETTLED SEDIMENT.
 - ALL ENVIRONMENTALLY RELEVANT INCIDENTS MUST BE RECORDED IN A FIELD LOG THAT MUST REMAIN ACCESSIBLE TO ALL RELEVANT REGULATORY AUTHORITIES.
 - ALL EROSION AND SEDIMENT CONTROL MEASURES, INCLUDING DRAINAGE CONTROL MEASURES, MUST BE MAINTAINED IN PROPER WORKING ORDER AT ALL TIMES DURING THEIR OPERATIONAL LIVES.
 - ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES, INCLUDING DRAINAGE CONTROL MEASURES, MUST BE FULLY OPERATIONAL AND MAINTAINED IN PROPER WORKING ORDER AT ALL TIMES DURING THE MAINTENANCE PERIOD AS SPECIFIED BY THE LOCAL AUTHORITY.
 - ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES, INCLUDING DRAINAGE CONTROL MEASURES, MUST BE REMOVED AFTER THE SITE HAS BEEN ADEQUATELY STABILISED OR AS DIRECTED BY THE SUPERINTENDENT.
 - ALL DRAINAGE, EROSION AND SEDIMENT CONTROL MEASURES MUST BE INSPECTED:
 - AT LEAST DAILY (WHEN WORK IS OCCURRING ON-SITE);
 - AT LEAST WEEKLY (WHEN WORK IS NOT OCCURRING ON-SITE);
 - WITHIN 24 HOURS OF EXPECTED RAINFALL; AND
 - WITHIN 18 HOURS OF A RAINFALL EVENT OF SUFFICIENT INTENSITY AND DURATION TO CAUSE RUNOFF ON-SITE).
 - WASHING/FLUSHING OF SEALED ROADWAYS MUST ONLY OCCUR WHERE SWEEPING HAS FAILED TO REMOVE SUFFICIENT SEDIMENT AND THERE IS A COMPELLING NEED TO REMOVE THE REMAINING SEDIMENT (E.G. FOR SAFETY REASONS). IN SUCH CIRCUMSTANCES, ALL REASONABLE AND PRACTICABLE SEDIMENT CONTROL MEASURES MUST BE USED TO PREVENT, OR AT LEAST MINIMISE, THE RELEASE OF SEDIMENT INTO RECEIVING WATERS. ONLY THOSE MEASURES THAT WILL NOT CAUSE SAFETY AND PROPERTY FLOODING ISSUES SHALL BE EMPLOYED. SEDIMENT REMOVED FROM ROADWAYS MUST BE DISPOSED OF IN A LAWFUL MANNER THAT DOES NOT CAUSE ONGOING SOIL EROSION OR ENVIRONMENTAL HARM.
 - SEDIMENT REMOVED FROM SEDIMENT TRAPS AND PLACES OF SEDIMENT DEPOSITION MUST BE DISPOSED OF IN A LAWFUL MANNER THAT DOES NOT CAUSE ONGOING SOIL EROSION OR ENVIRONMENTAL HARM.
 - MAINTENANCE MOWING OF ALL ROAD SHOULDERS, TABLE DRAINS, BATTERS AND OTHER SURFACES LIKELY TO EXPERIENCE ACCELERATED SOIL EROSION MUST AIM TO LEAVE THE GRASS LENGTH NO SHORTER THAN 50MM WHERE REASONABLE AND PRACTICABLE.
 - MAINTENANCE MOWING MUST BE DONE IN A MANNER THAT WILL NOT DAMAGE THE PROFILE OF FORMED, SOFT EDGES, SUCH AS THE CREST OF EARTH EMBANKMENTS.
- SITE REHABILITATION
- ALL DISTURBED AREAS IDENTIFIED AS VERY LOW, LOW, MEDIUM, HIGH OR EXTREME RISK MUST BE SUITABLE WITHIN 30, 30, 20, 10 OR 5 DAYS RESPECTIVELY, OR PRIOR TO ANTICIPATED RAINFALL, WHICHEVER IS THE GREATER, FROM THE DAY THAT SOIL DISTURBANCES ON THE AREA HAVE BEEN FINALISED.
 - A MINIMUM 60% GROUND COVER MUST BE ACHIEVED ON ALL COMPLETED EARTHWORKS EXPOSED TO ACCELERATED SOIL EROSION WITHIN 30 DAYS DURING THOSE MONTHS WHEN THE EXPECTED RAINFALL IS LESS THAN 30mm; MINIMUM 70% COVER WITHIN 30 DAYS IF BETWEEN 30 AND 45mm; MINIMUM 70% COVER WITHIN 20 DAYS IF BETWEEN 45 AND 100mm; MINIMUM 75% COVER WITHIN 10 DAYS IF BETWEEN 100 AND 225mm; AND MINIMUM 80% COVER WITHIN 5 DAYS IF GREATER THAN 225mm.
 - DURING TIMES OF DECLARED WATER RESTRICTIONS, REFER TO BALLINA SHIRE COUNCIL'S 'DROUGHT CONDITIONS SPECIFICATION V2' FOR A DEEMED TO COMPLY SOLUTION TO ACHIEVING 70% GROUND COVERAGE.
 - THE TYPE OF GROUND COVER APPLIED TO COMPLETED EARTHWORKS IS COMPATIBLE WITH THE ANTICIPATED LONG-TERM LAND USE, ENVIRONMENTAL RISK, AND SITE REHABILITATION MEASURES.
 - UNLESS OTHERWISE DIRECTED BY THE SUPERINTENDENT OR WHERE DIRECTED BY THE APPROVED REVEGETATION PLAN, TOPSOIL MUST BE PLACED AT A MINIMUM DEPTH OF 75mm ON SLOPES 4:1 (H:V) OR FLATTER, AND 50mm ON SLOPES STEEPER THAN 4:1.
 - TEMPORARY SITE STABILISATION PROCEDURES MUST COMMENCE AT LEAST 30 DAYS PRIOR TO THE NOMINATED SITE SHUTDOWN DATE. AT LEAST 70% STABLE COVER OF ALL UNSTABLE AND/OR DISTURBED SOIL SURFACES MUST BE ACHIEVED PRIOR TO COMPLETION OF WORKS. THE STABILISATION WORKS MUST NOT RELY UPON THE LONGEVITY OF NON-VEGETATES EROSION CONTROL BLANKETS, OR TEMPORARY SOIL BINDERS.
 - ALL UNSTABLE OR DISTURBED SOIL SURFACES MUST BE ADEQUATELY STABILISED AGAINST EROSION (MINIMUM 70%) PRIOR TO COMMENCEMENT OF USE, OR SURVEY PLAN ENDORSEMENT.

PRELIMINARY
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C	22.07.2021	REVISED DEVELOPMENT LAYOUT ISSUED FOR APPROVAL
B	03.06.2021	GENERAL NOTE 5 REVISED
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EROSION & SEDIMENT CONTROL NOTES
MANUFACTURED HOME ESTATE
LOT 1 on DP124173
550-578 RIVER ST & BURNS POINT FERRY RD, WEST BALLINA
GEMLIFE PTY LTD

APPROVED



B. ARTHUR
RPEQ 4384, NER 694962
For and on behalf of
WESTERA PARTNERS PTY LTD.

DESIGNED	T.J.M.	SHEET NUMBER	08 of 08
DRAWN	G.J.S.	REVISION	C
DATE DRAWN	NOVEMBER 2020	PROJECT NUMBER	N19/009 PESC
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