



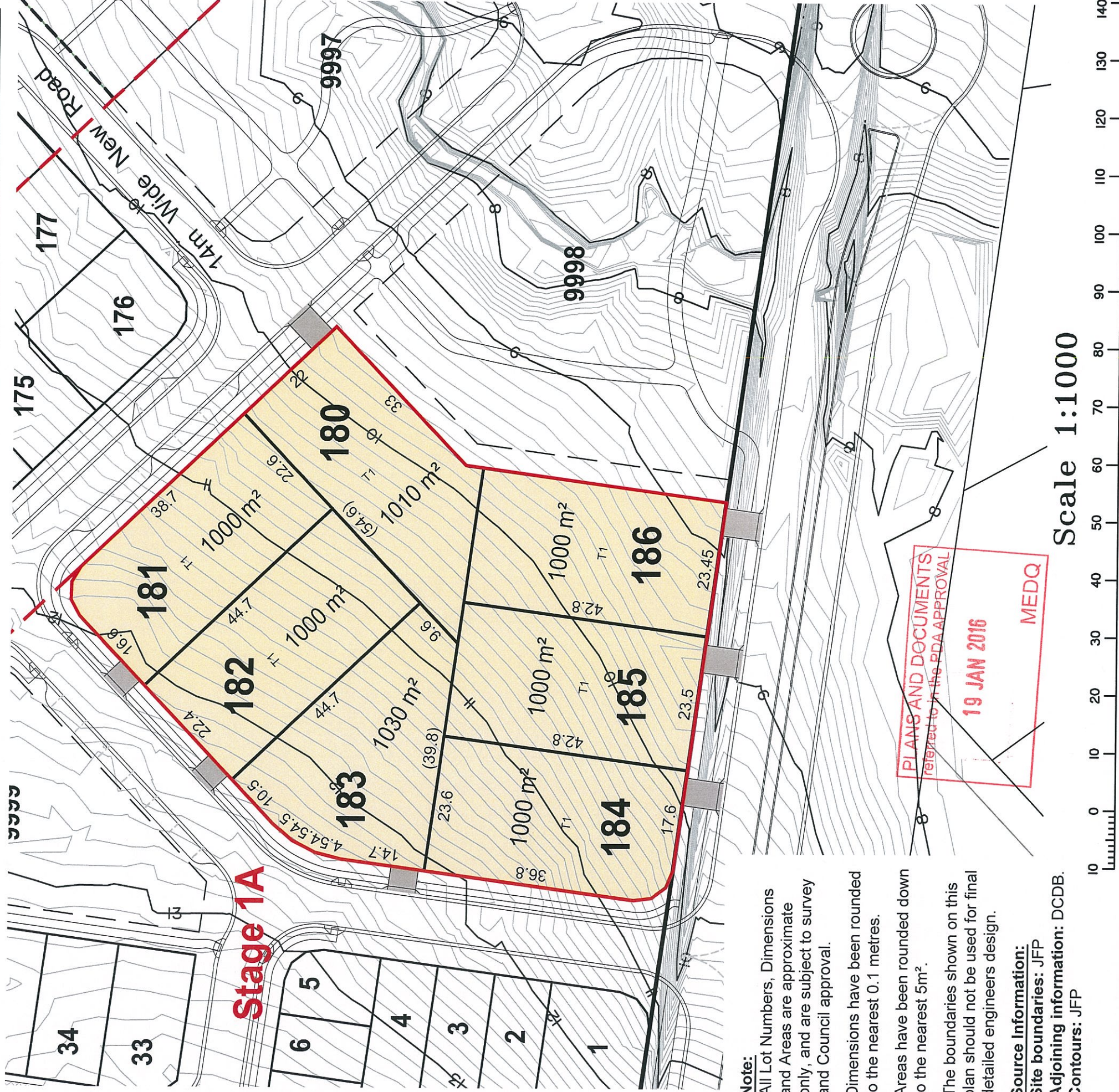
Legend

- Site Boundary
- - - Proposed Stage Boundary

DRAFT

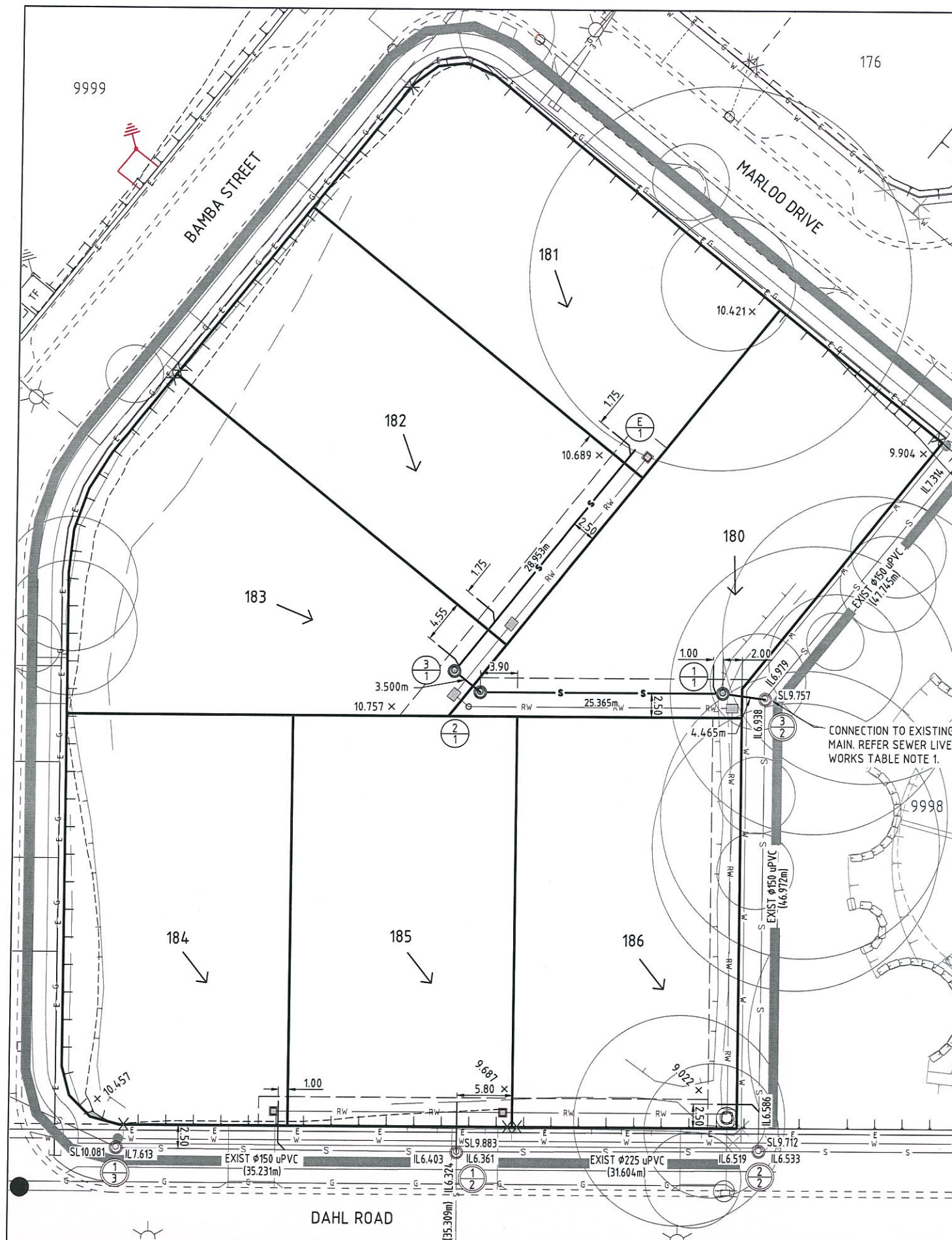
Yield Breakdown				
Residential Allotments	Typical Allotment Size		Conventional Frontage	
	Area	Dimensions	Lot Code	No. of Lots
Traditional Allotment Type 1	575m ²	18 x 32m	T1	7
TOTAL				7
Net Residential Density				9.9 dw/ha

Land Budget		
Land Use		Overall
Area of Subject Site		Area
		0.7050 ha
		Percentage
		100.0%
Saleable Area		
Residential Allotments		0.7050 ha
		100.0%
Total Area of Allotments		0.7050 ha
		100.0%



PROJECT		CLIENT	
TANNUM BLUE		ECONOMIC DEVELOPMENT QUEENSLAND	
Job Ref.	107172	Date	SEPT 2015
Comp By.	JLS	DWG Name.	107172-49
Checked By.	DG	Locality	TANNUM SANDS
Local Authority		ECONOMIC DEVELOPMENT QUEENSLAND	

		Urban Design Brisbane Design Studio 455 Brunswick Street Fortitude Valley QLD 4006	
RPS Australia East Pty Ltd ACN 140 292 762 ABN 44 140 292 762		T +61 7 3124 9300 F +61 7 3124 9399 W rpsgroup.com.au	
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Scale	1 : 1000	Sheet	A4
		Rev	B



LEGEND:

FINISHED CONTOURS	16
PROPOSED SEWERAGE MAIN	S
WATER MAIN	W
ROOFWATER DRAINAGE	RW
STORMWATER DRAINAGE	SWD
FINISHED SURFACE LEVEL AT ALLOTMENT CONTROL	× 14.50
EXISTING SEWER MAIN	S
ELECTRICITY	E
PROPOSED RETAINING WALL	---
3m WIDE EASEMENT	---
PROPOSED BRIDGING SLAB. REFER M2426/1 S04.	---
STAGE BOUNDARY	---

HOUSE CONNECTIONS HAVE BEEN DESIGNED TO CONTROL ALL OF THE BLOCK AT A GRADE OF 1:60 AT A MAXIMUM DEPTH OF PROPERTY CONNECTION OF 1500mm UNLESS OTHERWISE STATED.

THE CONTRACTOR IS TO NOTIFY THE SUPERVISING ENGINEER OF ANY DISCREPANCIES BETWEEN THE DESIGN PLANS AND THE CONDITIONS ON SITE PRIOR TO COMMENCEMENT OF ANY PIPE LAYING.

ALL WATER AND SEWER CONSTRUCTION WORK UNDERTAKEN BY THE CONTRACTOR IS TO COMPLY WITH THE REQUIREMENTS OF THE QUEENSLAND WORKPLACE HEALTH AND SAFETY ACT 1995 CONTACT THE DIVISION OF WORKPLACE HEALTH AND SAFETY FOR INFORMATION. PHONE: (07) 1300 369915

CONSULTANT: JFP URBAN CONSULTANTS PTY LTD
CONTACT: MR. SCOTT MARSH
TELEPHONE: (07) 3012 0100

G.R.C. AND CONTRACTOR LIVE SEWER WORK

CONSULTING ENGINEERS ARE TO CONTACT COUNCIL'S SEWERAGE UTILITY SERVICES 24 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION TO ARRANGE FOR THIS WORK TO BE CARRIED OUT. (EXCAVATION, SAFE SHORING & ASSOCIATED WORKS BY CONTRACTOR)

EXCAVATION WORKS CARRIED OUT BY CONTRACTORS AT DEPTHS OF 1.5m OR GREATER MUST PROVIDE A 'SAFE WORK PLAN' AS PER WORKPLACE HEALTH AND SAFETY LEGISLATION TO COUNCIL PRIOR TO COUNCIL COMMENCING ANY WORKS.

IT IS THE DEVELOPERS RESPONSIBILITY TO ENSURE ALL LIVE SEWER WORKS ARE COMPLETE BEFORE ALLOWING PRIVATE DRAINAGE TO BE CONNECTED.

No.	DESCRIPTION	DIA SEWER	MH No.	COVER TYPE	MH TYPE	LOT No.	F.S.L.	E.S.L.	I.L.	DEPTH
1a.	THE CONTRACTOR SHALL CONSTRUCT A STUB IN THE MH 3/2 AND INSTALL A TEMPORARY PLUG IN THE STUB;	Ø150 uPVC	3/2	CONC	Ø1050	LOT 179	9.757	9.757	8.396	1.361
1b.	THE CONTRACTOR SHALL CONSTRUCT A SHORT PIPE WITH AN I.O. FROM THE STUB THEN LAY THE SEWER LINE AWAY FROM THE STUB;									
1c.	THE CONTRACTOR SHALL CONCRETE ENCASE THE I.O. AFTER COMPLETION OF TESTING PROCEDURES;									
1d.	THE CONTRACTOR SHALL REMOVE THE TEMPORARY PLUG AFTER COMPLETION OF THE "ON MAINTENANCE" TESTING AND CONFIRMATION FROM THE SUPERINTENDENT.									
2a.	PROVIDE HOUSE CONNECTION TO EXISTING SEWER.	Ø100	-	-	HC TYPE C	184	10.112	10.112	8.712	1.400
2b.	PROVIDE HOUSE CONNECTION TO EXISTING SEWER.	Ø100	-	-	HC TYPE C4	185	9.723	9.723	8.323	1.400
2c.	PROVIDE HOUSE CONNECTION TO EXISTING SEWER.	Ø100	-	-	HC TYPE C	186	9.235	9.235	7.835	1.400

FOR HC TYPES REFER TERMINOLOGY DIAGRAM ON M2410EL179 S02.

NOTES:

- LEVEL DATUM A.H.D. B.M.'s AS INDICATED.
- ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH CURRENT GLADSTONE REGIONAL COUNCIL SPECIFICATIONS AND STANDARDS.
- UNLESS SPECIFIED OTHERWISE ALL MATERIALS AND WORK SHALL COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS.
- THE CONSTRUCTION OF THE SEWERAGE WORK SHOWN ON THESE DRAWINGS SHALL BE SUPERVISED BY AN ENGINEER WHO HAS RPEQ REGISTRATION. SEWERAGE WORKS NOT COMPLYING WITH THIS REQUIREMENT WILL NOT BE PERMITTED TO CONNECT INTO THE COUNCIL'S SEWERAGE SYSTEM.
- ALL WORK ASSOCIATED WITH LIVE SEWERS AND MAINTENANCE HOLES TO BE CARRIED OUT BY G.R.C. AT DEVELOPER'S COST.
ALL SEWERS SHALL BE CLASS SN10 uPVC (100dia.) OR CLASS SN8 uPVC (150,225,300 & 375 dia's) OR K9 DICL (WRAPPED) WHERE SPECIFIED.
5.1. ALL LINES ARE 150mm dia uPVC CLASS SN8 U.N.O.
5.2. ALL HOUSE CONNECTIONS ARE 100mm dia uPVC CLASS SN10 U.N.O.
- EACH ALLOTMENT SHALL BE SERVED BY A 100mm dia. HOUSE CONNECTION.
- O.B'S SHALL BE LOCATED 1.0m FROM THE DOWNSTREAM ALIGNMENT, IF THIS IS NOT POSSIBLE, O.B'S SHALL NOT BE GREATER THAN 3.5m FROM THE DOWNSTREAM ALIGNMENT.
- PROPERTY CONNECTION BRANCHES SHALL EXTEND INTO THE PROPERTY A MINIMUM OF 300mm AND A MAXIMUM OF 750mm.
- PROPERTY CONNECTION MARKERS ARE TO BE INSTALLED ON ALL PROPERTY CONNECTIONS EXCEPT WHERE THE PROPERTY CONNECTION IS PROVIDED FROM A MAINTENANCE HOLE.
- HOUSE CONNECTIONS ARE TO BE CLEAR OF CONCRETE DRIVEWAYS.
- WHERE PIPES ARE LAID IN FILL. THE FILLING SHALL BE CARRIED OUT IN LAYERS NOT EXCEEDING 300mm (LOOSE) IN DEPTH AND SHALL BE COMPACTED UNTIL THE DRY DENSITY IS NOT LESS THAN 95% OF THE MATERIALS MAXIMUM DRY DENSITY WHEN TESTED IN ACCORDANCE WITH A.S. 1289 (STANDARD COMPACTION). TESTING SHALL BE CARRIED OUT AFTER EACH ALTERNATE LAYER. A MINIMUM OF ONE TEST SHALL BE CARRIED OUT IN EACH LOCATION. IN ALL SUCH CASES, APPROVAL OF THE CONSTRUCTED SEWERS WILL NOT BE ISSUED BY THE COUNCIL UNLESS CERTIFICATES ARE PRODUCED CERTIFYING THAT THE REQUIRED COMPACTION HAS BEEN ACHIEVED.
- MANHOLE BACK DROPS TO BE IN ACCORDANCE WITH G.R.C. STD DWG SDS-02.
- WHERE SEWERS HAVE A GRADE OF 1 IN 20 OR STEEPER, BULKHEADS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CL.8.10, 17.5 AND 17.6 OF WSA 02.
TRENCHSTOPS:
 - ARE REQUIRED ON PIPE GRADES BETWEEN 5% AND 14%.
 - TO BE EQUALLY SPACED AT MAXIMUM 10m CENTRES.**BULKHEADS:**
 - ARE REQUIRED ON PIPE GRADES BETWEEN 15% AND 29%.
 - TO BE LOCATED ON ELECTRO-FUSION COUPLINGS.
 - TO BE SPACED AT 450/GRADE(%), IN METRES, WITH INTERMEDIATE TRENCHSTOPS AT EQUAL SPACING WITH MAXIMUM 10m CENTRES.
 - WHERE PIPE GRADE IS BETWEEN 30% AND 50% SPACING TO BE REDUCED TO 100/GRADE (%), IN METRES.(NO TRENCHSTOPS)
- THE CONTRACTOR IS TO VERIFY LOCATIONS OF EXISTING SERVICES WITH ALL RELEVANT AUTHORITIES BEFORE COMMENCING CONSTRUCTION.
- CONTRACTOR SHALL VERIFY FINISHED SURFACE LEVELS ON SITE BEFORE CONSTRUCTION OF SEWERS AND PROPERTY CONNECTION BRANCHES.
- HOUSE CONNECTIONS CROSSING UNDERGROUND ELECTRICITY ALLOCATION TO HAVE A MINIMUM OF 1.100m COVER.
- OUTER FORM WORK SHALL BE USED TO CAST IN SITU MAINTENANCE HOLES.
- RODDING EYES AND 600 dia MANHOLES TO BE ON 2.25m ALIGNMENT FROM THE FRONT OF PROPERTY BOUNDARY WITHIN THE ROAD RESERVE.
- ALL SEWER LINES MUST BE SURVEYED BY CCTV. A CCTV REPORT MUST BE LODGED BY THE CIVIL CONTRACTOR WITH GLADSTONE REGIONAL COUNCIL PRIOR TO "ON MAINTENANCE" INSPECTION.
- ALL SEWER LINES TO BE LOCATED ON A 2.25m ALIGNMENT FROM THE FRONT PROPERTY BOUNDARY WITHIN THE ROAD RESERVE.
- HOUSE CONNECTION TO EXTEND 1.0m PAST ROOFWATER.

PLANS AND DOCUMENTS referred to in the PDA APPROVAL

19 JAN 2016

MEDQ



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South Brisbane Qld 4101
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JFP URBAN CONSULTANTS PTY. LTD. A.C.N. 050 414 045

PLANNERS
URBAN DESIGNERS
SURVEYORS
ENGINEERS
LANDSCAPE ARCHITECTS

NORTH:



SCALE:

1:250
A1

THIS SCALE SHOWN IS ORIGINAL DRAWING SCALE

0 2.5 5 7.5 10 12.5 (A1) 1:250 25
(A3) 1:500

DO NOT SCALE FROM THIS DRAWING - USE ONLY DIMENSIONS PROVIDED - IF IN DOUBT PLEASE ENQUIRE

APPROVED: [Signature]
FOR AND ON BEHALF OF JFP URBAN CONSULTANTS PTY LTD

T.M. KINNEY RPEQ 5087
A. FRASER RPEQ 5691
J. PAPPAS RPEQ 6086
S. MARSH RPEQ 8068

ISSUE:

DESIGNED: CDV
DRAWN: SLW
CHECKED: SJK
DATE: 29/10/15

MINOR AMENDMENTS AS PER EDQ COMMENTS
ORIGINAL ISSUE FOR COUNCIL

TITLE:

SEWERAGE RETICULATION
LAYOUT PLAN

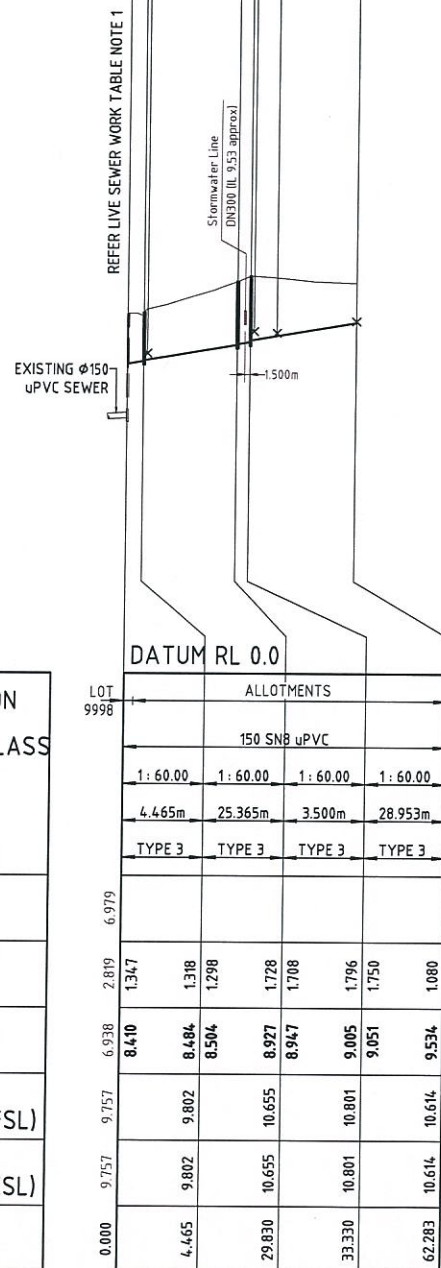
ECONOMIC DEVELOPMENT QUEENSLAND

PROPOSED DEVELOPMENT AT
CNR BAMBA STREET & DAHL ROAD, TANNUM SANDS

DETAILS:
PROJECT: M2410EL179 S01
LOCAL AUTHORITY REF: GLADSTONE REGIONAL COUNCIL
COUNCIL REF: N/A
FILE NAME: SEWERAGE.DWG

STRUCTURE No.
COVER TYPE
STRUCTURE TYPE
DROP TYPE
JUNCTION LINE No.
DEPTH TO HC
HC INVERT LEVEL
HC TYPE
HC LOT No
CH. FROM D/S STRUC.

3 2	1 1	2 1	3 1	1 1
MS	B	B	B	B
A	A	A	A	A
2				
	1200		1500	1500
	8.693		9.924	9.248
	180		183	182
	1000		1000	28.953
			7.303	181
				1042
				9.573
				1042



PROP. DESCRIPTION
PIPE Dia, TYPE, CLASS
GRADE (1 IN X)
LENGTH
EMBEDMENT TYPE
JUNCTION INVERT LEVEL
DEPTH TO INVERT BELOW FSL
INVERT LEVEL (IL)
FINISHED SURFACE LEVEL (FSL)
EXISTING SURFACE LEVEL (ESL)
CHAINAGE (CH)



LOCALITY PLAN
N.T.S.

DIAGRAMATIC DESCRIPTION OF HC TYPES - TERMINOLOGY	
	TYPE A SLOPED CONNECTION (SDS-003*)
	TYPE B SLOPED CONNECTION (SDS-003*)
	TYPE C VERTICAL RISER (SDS-003*)
	TYPE C4 VERTICAL RISER (SEQ-SEW-1106-5*)

* REFER CALLOPE SHIRE COUNCIL STD DWG
** REFER SEQ WATER & SEWER STD DWG

PLANS AND DOCUMENTS
referred to in the PDA APPROVAL

19 JAN 2016

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THE CONSTRUCTOR IS TO NOTIFY THE SUPERVISING ENGINEER OF ANY DISCREPANCIES BETWEEN THE DESIGN PLANS AND THE CONDITIONS ON SITE PRIOR TO COMMENCEMENT OF ANY PIPE LAYING.

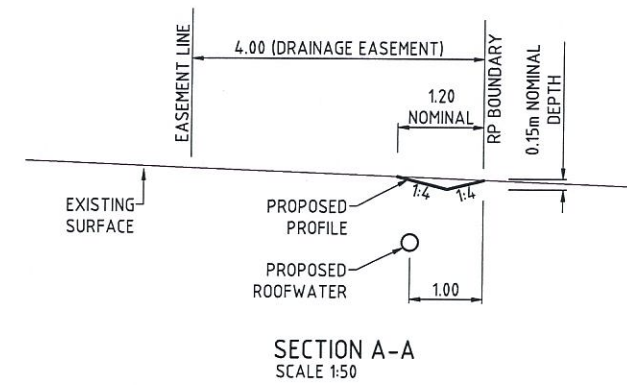
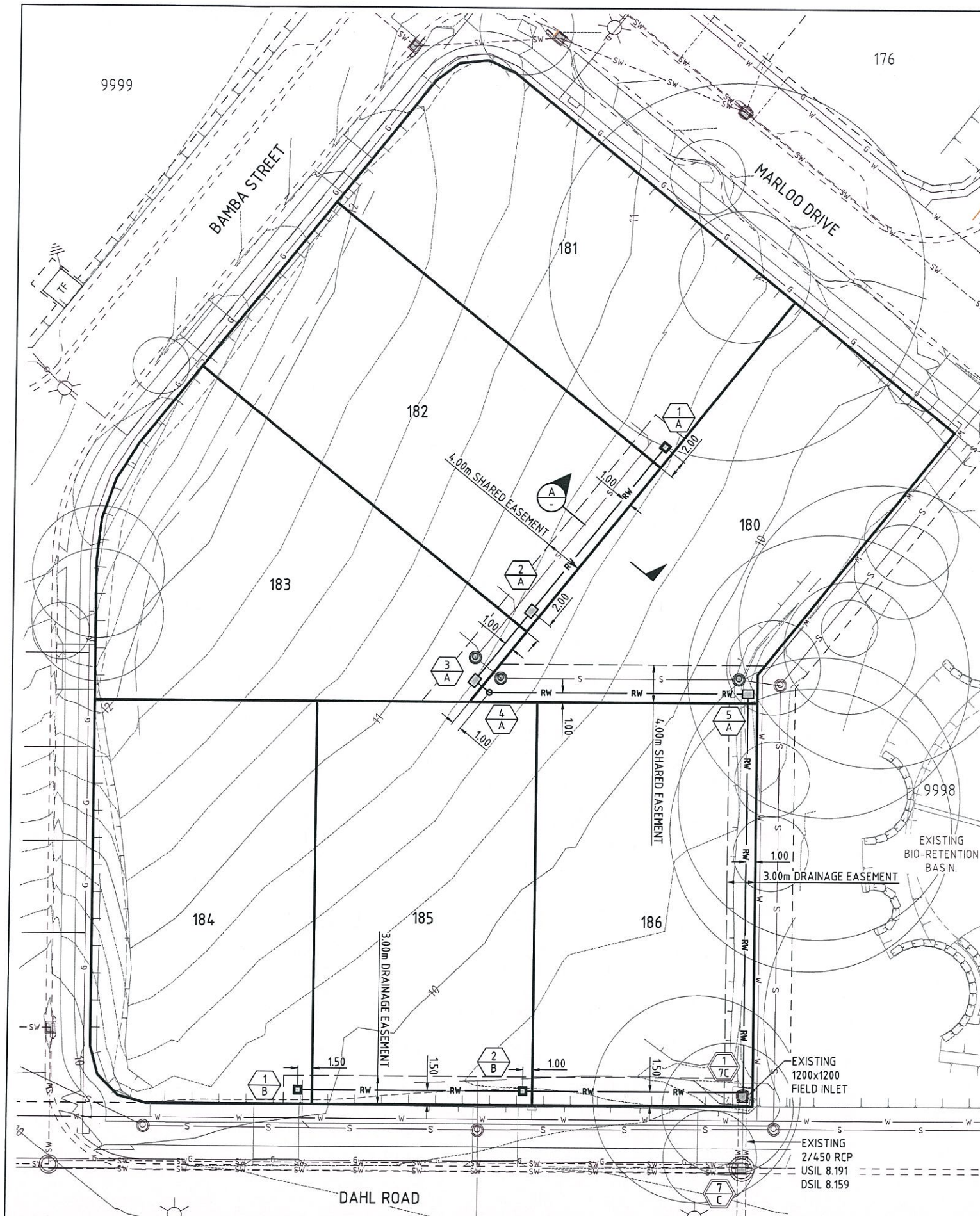
THE DESIGN AND CONSTRUCTION OF THE WORKS SHALL COMPLY WITH ALL QUEENSLAND LEGISLATION

ALL ENVIRONMENT PROTECTION MEASURES SHOULD BE IMPLEMENTED PRIOR TO ANY CONSTRUCTION WORK, INCLUDING CLEARING COMMENCING.

CONSULTANT: JFP URBAN CONSULTANTS PTY LTD
CONTACT: MR. SCOTT MARSH
TELEPHONE: 3012 0100



BRISBANE - SUNSHINE COAST - CENTRAL QLD BRISBANE JFP House - 76 Ernest Street, South Brisbane Qld 4101 P 07 3012 0100 W www.jfp.com.au PLANNERS URBAN DESIGNERS SURVEYORS ENGINEERS LANDSCAPE ARCHITECTS	NORTH: SCALE: Horizontal 1:1000 Vertical 1:100 A1 THIS SCALE SHOWN IS ORIGINAL DRAWING SCALE 0 1 2 3 4 5 6 7 8 9 10 Meters 0 10 20 30 40 50 (A1) 1:1000 100 DO NOT SCALE FROM THIS DRAWING - USE ONLY DIMENSIONS PROVIDED - IF IN DOUBT PLEASE ENQUIRE	ISSUE: DESIGNED CDV DRAWN SLW CHECKED SJK DATE: 29/10/15 INIT:	TITILE: SEWERAGE LONGITUDINAL SECTION LINE 1 ECONOMIC DEVELOPMENT QUEENSLAND PROPOSED DEVELOPMENT AT CNR BAMBA STREET & DAHL ROAD, TANNUM SANDS	DETAILS: PROJECT: M2410EL179 S02 PLAN: B LOCAL AUTHORITY REF: GLADSTONE REGIONAL COUNCIL COUNCIL REF: N/A FILE NAME: SEWERAGE SECTIONS.DWG



LEGEND:

EXISTING STORMWATER DRAINAGE: SWD

FINISHED CONTOURS: 16

PROPOSED STORMWATER DRAINAGE: RW

PROPOSED ROOFWATER DRAINAGE: RW

SEWERAGE: S

WATER MAIN: W

ROOFWATER DRAINAGE KERB ADAPTORS (FULL DEPTH TYPE): KA

STRUCTURE NUMBERS: 1/16, 1/A, 1/108

EXISTING / PROPOSED / FUTURE: * (dashed line)

EXTEND Ø100 uPVC PIPE UNDER CONCRETE FOOTPATH

THE CONTRACTOR IS TO NOTIFY THE SUPERVISING ENGINEER OF ANY DISCREPANCIES BETWEEN THE DESIGN PLANS AND THE CONDITIONS ON SITE PRIOR TO COMMENCEMENT OF ANY PIPE LAYING.

- STORMWATER DRAINAGE NOTES:**
1. SURFACE CONTOURS SHOWN ON THIS PLAN ARE FOR THE FINISHED SURFACE DERIVED FROM FIELD SURVEY & ROAD/EARTHWORKS DESIGN.
 2. PIPES FROM DRAIN LINE SHALL BE REINFORCED CONCRETE CONFORMING WITH AS 1342 1973 "PRECAST CONCRETE DRAINAGE PIPES".
 3. RUBBER RINGED SPIGOT AND SOCKET JOINTS SHALL BE USED FOR ALL SIZES OF PIPE. BANDAGE JOINTS ARE NOT PERMITTED.
 4. ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH CURRENT G.R.C. STANDARD SPECIFICATIONS AND DRAWINGS.
 5. ROOFWATER DRAINAGE LINES ARE Ø150 uPVC OR Ø225 uPVC & TO BE LAID 1.0m FROM PROPERTY BOUNDARY U.N.O.
 6. ROOFWATER DRAINAGE PIPES SHALL BE APPROVED uPVC STORMWATER CLASS PIPES. (Dia. 150, 225 & 300). DIA. 90 STORMWATER DRAINAGE PIPES ARE NOT TO BE USED.
 7. KERB ADAPTER - FULL DEPTH TYPE TO BE USED AT KERB LINE. CONTRACTOR IS TO VERIFY ALL FINISHED SURFACE LEVELS OF PROPOSED ROOFWATER PITS BEFORE CONSTRUCTION TO FINISHED LEVELS.
 8. ALL ROOFWATER HOUSE CONNECTIONS ARE TO EXTEND 1.0m BEYOND SEWER LINE UNLESS DIRECTED OTHERWISE BY THE SUPERINTENDENT.
 9. ALL ROOFWATER HOUSE CONNECTIONS SHALL BE CONSTRUCTED TO MAINTAIN A MINIMUM HORIZONTAL CLEARANCE OF 0.5m TO THE SEWER HOUSE CONNECTION UNLESS DIRECTED OTHERWISE.
 10. FOR STRUCTURE SETOUT REFER TO LONGITUDINAL SECTIONS.
 11. ROOFWATER PITS TO BE STANDARD HARDIES FRC PIT SYSTEM WITH GRATED LIDS U.N.O.
 12. ROOFWATER HOUSE CONNECTIONS ARE NOT TO EXCEED 1.0m IN DEPTH.
 13. ALL STORMWATER STRUCTURES INCLUDING KERB INLETS, FIELD INLETS AND ACCESS CHAMBERS LOCATED ON STORMWATER PIPELINES MUST INCORPORATE SUBSOIL DRAINAGE STUBS ON THE UPSTREAM SIDE OF THE STRUCTURE TO DE-WATER THE UPSTREAM TRENCH. REFER IMEAQ STANDARD DWG D-0010 (LATEST REVISION). THE MINIMUM LENGTH OF SUBSOIL STUBS TO TRENCHES MUST BE 1.0m. THE MINIMUM SIZE OF THE SUBSOIL DRAINAGE STUBS SHALL BE EQUIVALENT TO 100mm DIAMETER, HOWEVER, THE CONTRACTOR SHALL INCREASE THE LENGTH AND/OR SIZE OF SUBSOIL DRAINS IN AREAS WHERE LARGER GROUNDWATER FLOWS COULD REASONABLY BE ANTICIPATED AS DIRECTED ON SITE BY THE SITE SUPERVISING ENGINEER.

PLANS AND DOCUMENTS referred to in the PDA APPROVAL

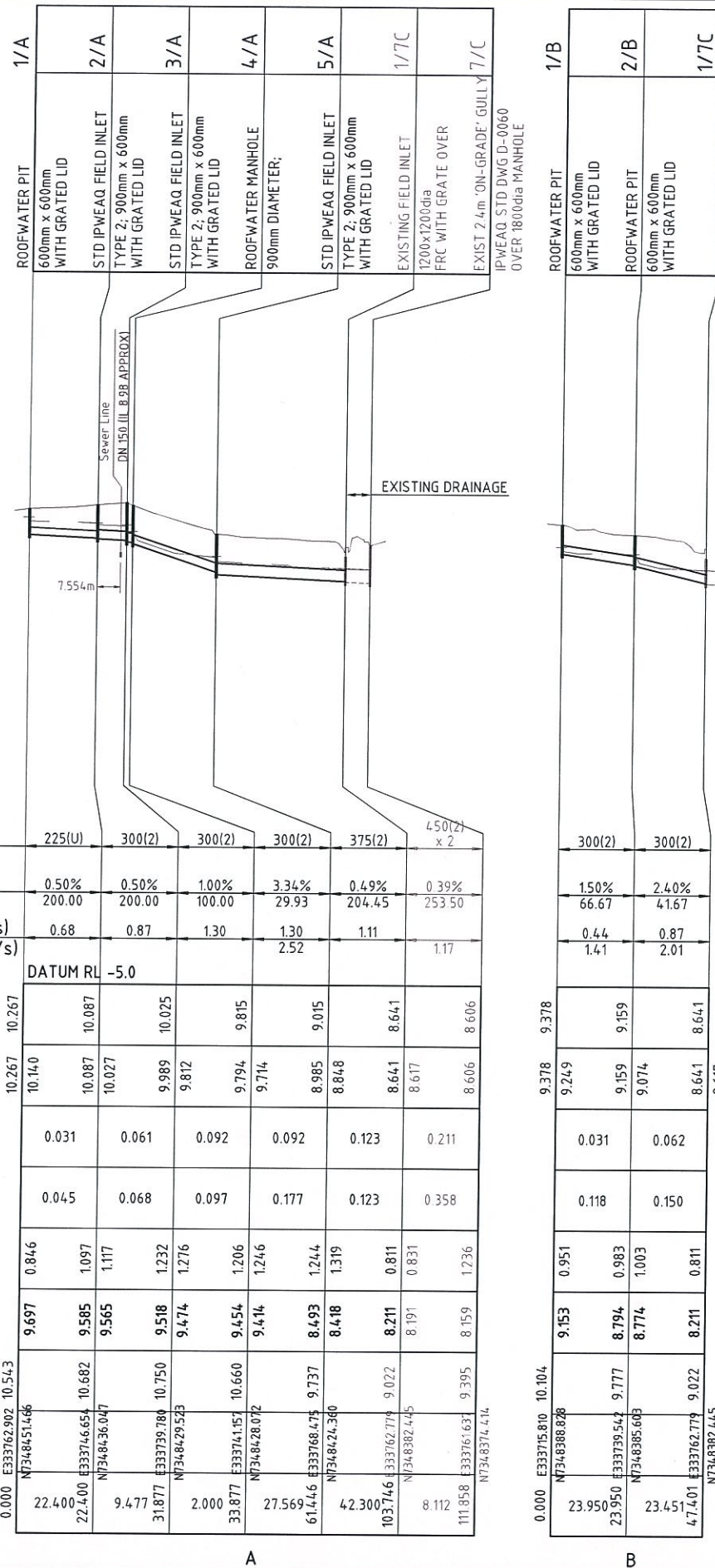
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BRISBANE - SUNSHINE COAST - CENTRAL QLD BRISBANE JFP House - 76 Ernest Street, South Brisbane Qld 4101 P 07 3012 0100 W www.jfp.com.au PLANNERS URBAN DESIGNERS SURVEYORS ENGINEERS LANDSCAPE ARCHITECTS	NORTH: SCALE: 1:250 THIS SCALE SHOWN IS ORIGINAL DRAWING SCALE 0 2.5 5 7.5 10 12.5 (A1) 1:250 25 Metres DO NOT SCALE FROM THIS DRAWING - USE ONLY DIMENSIONS PROVIDED - IF IN DOUBT PLEASE ENQUIRE	ISSUE: A1 DESIGNED: CDV DRAWN: SLW CHECKED: SJK DATE: 29/10/15 MINOR AMENDMENTS AS PER EDQ COMMENTS ORIGINAL ISSUE FOR COUNCIL	TITLE: DRAINAGE LAYOUT PLAN ECONOMIC DEVELOPMENT QUEENSLAND PROPOSED DEVELOPMENT AT CNR BAMBA STREET & DAHL ROAD, TANNUM SANDS	DETAILS: PROJECT: M2410EL179 D02 ISSUE: B LOCAL AUTHORITY REF: GLADSTONE REGIONAL COUNCIL COUNCIL REF: N/A FILE NAME: DRAINAGE.DWG

STRUCTURE NAME
STRUCTURE DESCRIPTION



PIPE SIZE (mm)	225(U)	300(2)	300(2)	300(2)	375(2)	450(2) x 2
AND PIPE CLASS						
PIPE GRADE %	0.50%	0.50%	1.00%	3.34%	0.49%	0.39%
PIPE SLOPE 1 in X	200.00	200.00	100.00	29.93	204.45	253.50
FULL PIPE FLOW VELOCITY (m/s)	0.68	0.87	1.30	1.30	1.11	
PART FULL FLOW VELOCITY (m/s)				2.52		1.17

WATER LEVEL IN STRUCTURE
HYDRAULIC GRADE LEVEL
PIPE FLOW (Cumecs)
PIPE CAPACITY AT GRADE (Cumecs)
DEPTH TO INVERT
INVERT LEVEL OF DRAIN
DESIGN SURFACE LEVEL
STRUCTURE SETOUT CO-ORDINATES
RUNNING CHAINAGE

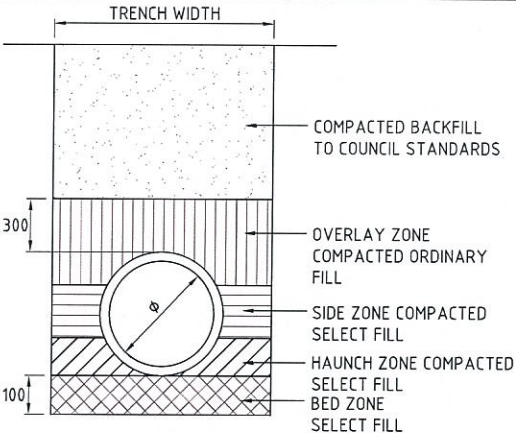
CONSTRUCTION EQUIPMENT	PIPE CLASS	MINIMUM COMPACTION COVER TO PIPE OBVERT								
		Ø375	Ø450	Ø525	Ø600	Ø675	Ø750	Ø825	Ø900	Ø1050
VIBRATORY RAMMER (UP TO 75kg)	2	0.450	0.400	0.400	0.350	0.350	0.300	0.300	0.250	0.250
	3	0.300	0.300	0.300	0.250	0.250	0.200	0.200	0.200	0.200
VIBRATORY TRENCH ROLLER (UP TO 2t)	2	0.400	0.400	0.350	0.250	0.250	0.200	0.200	0.200	0.200
	3	0.250	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
VIBRATORY SMOOTH DRUM ROLLER (7t)	2	0.700	0.700	0.650	0.650	0.650	0.600	0.600	0.400	0.400
	3	0.450	0.450	0.450	0.350	0.350	0.200	0.200	0.200	0.200
VIBRATORY SMOOTH DRUM ROLLER (10t)	2	0.850	0.850	0.800	0.800	0.800	0.750	0.750	0.750	0.750
	3	0.550	0.550	0.500	0.500	0.500	0.200	0.200	0.200	0.200
EXCAVATOR AND COMPACTION WHEEL (15t)	2	0.700	0.650	0.650	0.650	0.650	0.600	0.600	0.550	0.550
	3	0.450	0.450	0.450	0.450	0.450	0.350	0.350	0.250	0.250
EXCAVATOR AND COMPACTION WHEEL (25t)	2	1.050	1.000	0.950	0.900	0.900	0.850	0.850	0.750	0.750
	3	0.650	0.650	0.650	0.650	0.650	0.600	0.600	0.500	0.500
GRADER (CAT120H) (14.5t)	2	0.600	0.600	0.450	0.200	0.200	0.200	0.200	0.200	0.200
	3	0.600	0.450	0.450	0.200	0.200	0.200	0.200	0.200	0.200
GRADER (CAT140H) (17.0t)	2	0.600	0.600	0.600	0.200	0.200	0.200	0.200	0.200	0.200
	3	0.600	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
SCRAPER (CAT613C11) (27.2t)	2	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.200	0.200
	3	0.600	0.600	0.600	0.600	0.600	0.200	0.200	0.200	0.200
SCRAPER (CAT621F) (53.8t)	2	0.700	0.700	0.650	0.650	0.600	0.600	0.600	0.600	0.600
	3	0.650	0.650	0.600	0.600	0.600	0.600	0.600	0.600	0.600
DOZER (CATD7 G)	2	0.600	0.600	0.600	0.200	0.200	0.200	0.200	0.200	0.200
	3	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
DOZER (CATD9 R)	2	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.600	0.200
	3	0.600	0.600	0.600	0.600	0.600	0.200	0.200	0.200	0.200
EXCAVATOR (CAT315B) (15.8t)	2	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
	3	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
EXCAVATOR (CAT317) (17.3t)	2	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
	3	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
EXCAVATOR (CAT325B) (25.9t)	2	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200
	3	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200

TYPE HS2 SUPPORT:

1. THE HAUNCH ZONE GOES FROM THE BASE OF THE PIPE TO A HEIGHT OF 0.3m TIMES THE DIAMETER OF THE PIPE (ie TO 3/10 OF THE DIAMETER OF THE PIPE).
2. THE HAUNCH ZONE IS COMPACTED TO A MINIMUM DRY DENSITY RATIO OF 90% (DI=60)
3. THE SIDE ZONE GOES FROM THE TOP OF THE HAUNCH ZONE TO A HEIGHT OF 0.7 TIMES THE DIAMETER OF THE PIPE (ie TO 7/10 OF THE DIAMETER OF THE PIPE).
4. THE SIDE ZONE IS COMPACTED TO A MINIMUM DRY DENSITY RATIO OF 90% (DI=60)
5. THERE IS A 300mm OVERLAY ZONE OF COMPACTED ORDINARY FILL.

NOTES:

1. SOIL TYPE USED FOR THIS TABLE IS CLAYEY SAND. ALL OTHER SOIL TYPES MUST BE REFERRED IMMEDIATELY TO THE SUPERVISING ENGINEER SO MINIMUM COVERS CAN BE CALCULATED.
2. INSTALLATION TYPE FOR THIS TABLE IS HS2. (REFER DETAIL)
3. ANY CONSTRUCTION EQUIPMENT, INSTALLATION TYPE, PIPE CLASS OR PIPE DIAMETER NOT COVERED IN THIS TABLE SHOULD BE REFERRED ONTO THE SUPERVISING ENGINEER BEFORE ANY CONSTRUCTION COMMENCES
4. DISTANCES SHOWN ARE THE ABSOLUTE MINIMUM COMPACTION COVER TO THE OBVERT OF THE STORMWATER PIPE FOR THE NOMINATED MACHINERY. THE CONTRACTOR IS TO ENSURE THAT MACHINES THAT REQUIRE HIGHER COMPACTION COVER ARE KEPT CLEAR OF STORMWATER PIPES AND TRENCHES UNTIL THEIR NECESSARY COMPACTION COVER IS ACHIEVED.
5. CONSTRUCTION EQUIPMENT LISTED IN THIS TABLE ARE EXAMPLES ONLY AND EQUIVALENT MACHINERY MAY BE USED.



INSTALLATION TYPE HS2

NOTE:
CRACKED PIPES WILL NOT BE ACCEPTED AT 'ON MAINTENANCE' AND IT IS TO BE DEMONSTRATED IN ACCORDANCE WITH COUNCIL STANDARDS THAT THE STORMWATER SYSTEM IS ACCEPTABLE TO COUNCIL WITH REGARD TO CRACKED PIPES. (THE CONTRACTOR IS TO REFER TO SECTION 6.5.1 OF THE SUBDIVISION AND DEVELOPMENT GUIDELINES FOR FURTHER INFORMATION.)

REFERENCE POINT LOCATION FOR STORMWATER DRAINAGE STRUCTURES

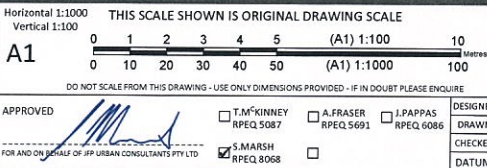
STRUCTURE TYPE	HORIZONTAL REFERENCE LOCATION (STRUCTURE SETOUT CO-ORDINATES)	VERTICAL REFERENCE LEVEL
MANHOLE AND ROOFWATER PIT	℄ MAIN SHAFT	FINISHED SURFACE LEVEL - MANHOLE/PIT COVER
TYPE 'A' GULLY PIT, LIP IN LINE	CENTRE OF GULLY	LIP OF KERB
FIELD INLET AND ROOFWATER PIT	CENTRE OF GULLY	TOP OF GRATE OR COVER
HEADWALL	℄ OF HEADWALL (END OF OUTLET PIPE)	INVERT OF OUTLET PIPE.

PLANS AND DOCUMENTS referred to in the PDA APPROVAL
19 JAN 2016
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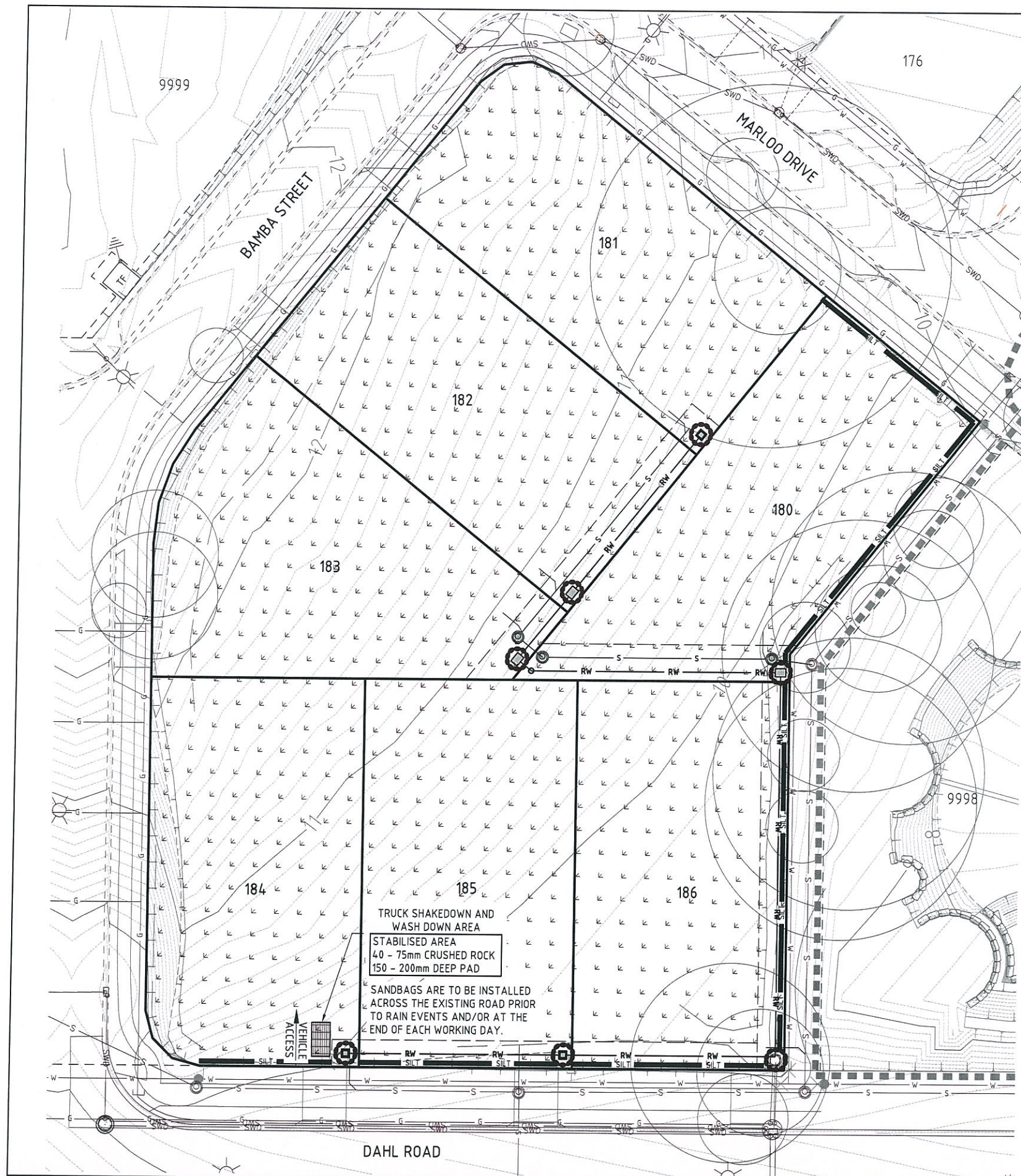


APPROVED	DESIGNED	CDV
CHECKED	DRAWN	SLW
DATUM: AHD	ISSUE: A	ISSUE: A

DRAINAGE LONGITUDINAL SECTIONS
LINES A & B
ECONOMIC DEVELOPMENT QUEENSLAND
PROPOSED DEVELOPMENT AT
CNR BAMBA STREET & DAHL ROAD, TANNUM SANDS



PROJECT: M2410EL179 D03
PLAN: A
ISSUE: A
LOCAL AUTHORITY REF: GLADSTONE REGIONAL COUNCIL
COUNCIL REF: N/A
FILE NAME: DRAINAGE SECTIONS.DWG



FOR NOTES AND SEDIMENT MANAGEMENT
DEVICES REFER TO DWG No. M2410EL179 ES02

THE CONTRACTOR IS TO NOTIFY THE SUPERVISING
ENGINEER OF ANY DISCREPANCIES BETWEEN THE
DESIGN PLANS AND THE CONDITIONS ON SITE PRIOR
TO COMMENCEMENT OF ANY WORK.

LEGEND:

- FINISHED CONTOURS
- PROPOSED STORMWATER DRAINAGE
- SILT FENCE
- SAND BAGS
- ROCK FILTER CHECK DAM
- TRUCK SHAKEDOWN AND WASH DOWN AREA
- AREA TO BE TOPSOILED AND GRASS SEED
- AREA TO BE FULLY TURFED
- NO GO FENCE (3.0m CLEARANCE TO BOTTOM OF BATTERS)

NOTE:
CONSTRUCTION VEHICLES TO
ACCESS SITE VIA DAHL ROAD.
(NOT MARLOO DRIVE)

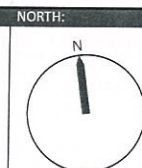
PLANS AND DOCUMENTS
referred to in the PDA APPROVAL

19 JAN 2016

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SCALE:
1:250
A1
THIS SCALE SHOWN IS ORIGINAL DRAWING SCALE
0 2.5 5 7.5 10 12.5 (A1) 1:250 25
(A3) 1:500
DO NOT SCALE FROM THIS DRAWING - USE ONLY DIMENSIONS PROVIDED - IF IN DOUBT PLEASE ENQUIRE

ISSUE:
DESIGNED CDV
DRAWN SLW
CHECKED SJK
DATE: 29/10/15
INIT: CDV
MINOR AMENDMENTS AS PER EDQ COMMENTS
ORIGINAL ISSUE FOR COUNCIL

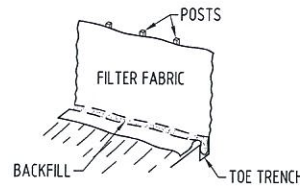
TITLE:
EROSION AND SEDIMENT CONTROL
LAYOUT PLAN
ECONOMIC DEVELOPMENT QUEENSLAND
PROPOSED DEVELOPMENT AT
CNR BAMBA STREET & DAHL ROAD, TANNUM SANDS



DETAILS:
PROJECT: M2410EL179 ES01
PLAN: B
LOCAL AUTHORITY REF: GLADSTONE REGIONAL COUNCIL
COUNCIL REF: N/A
FILE NAME: EROSION.DWG

GENERAL NOTES

- THIS DESIGN FOR EROSION AND SEDIMENT CONTROL IS CONCEPTUAL ONLY. THE CONTRACTOR SHALL INSTALL ADDITIONAL/ALTERNATIVE MEASURES DURING THE CONSTRUCTION AND MAINTENANCE PERIOD IN ORDER TO COMPLY WITH BEST PRACTICE/STANDARDS IN ACCORDANCE WITH THE MANUAL FOR EROSION AND SEDIMENT CONTROL (Ver 1.2) AND ALL STATUTORY REQUIREMENTS.
- NOTWITHSTANDING THE DESIGN SHOWN ON THE DRAWINGS THE CONTRACTOR IS RESPONSIBLE TO IMPLEMENT SEDIMENT CONTROL DEVICES USING BEST PRACTICES IN ACCORDANCE WITH SRCR SPECIFICATIONS AND GUIDELINES AS NECESSARY TO MINIMIZE THE QUANTITY OF SEDIMENT LEAVING THE SITE.
- THE CONTRACTOR IS TO TAKE ALL NECESSARY PRECAUTIONS TO CONTROL EROSION AND DOWNSTREAM SEDIMENTATION DURING ALL THE STAGES OF CONSTRUCTION INCLUDING THE MAINTENANCE PERIOD.
- WHERE IT IS REQUIRED TO SLASH EXISTING VEGETATION EITHER PRIOR TO THE COMMENCEMENT OF WORKS, DURING THE CONSTRUCTION WORKS AND/OR DURING THE MAINTENANCE PERIOD, THE VEGETATION SHALL BE SLASHED TO A MINIMUM HEIGHT OF 75mm TO ASSIST WITH THE RETENTION OF SOILS ON SITE (ie. ASSIST IN THE PREVENTION OF EROSION)
- WHERE THE EXISTING VEGETATION WITHIN THE PROPOSED LOTS AND/OR PARKLAND IS DISTURBED AS A RESULT OF THE CONSTRUCTION WORKS, THE EARTHWORKS ARE TO BE TOPSOILED AND GRASS SEEDDED/HYDROMULCHED WITHIN FIVE DAYS (OR EARLIER IF RAIN IS EXPECTED) OF FINAL ALLOTMENT EARTHWORKS, UNLESS NOTED OTHERWISE.
- ALL CONSTRUCTION VEHICLES ARE TO ACCESS THE SITE VIA A SINGLE POINT OF ACCESS; THE POINT OF ACCESS, TOGETHER WITH THE MEASURES TO BE IMPLEMENTED, ARE TO BE AGREED WITH COUNCIL'S DESIGNATED REPRESENTATIVE ON SITE. THE PRINCIPLE AIM OF THE MEASURES TO BE IMPLEMENTED IS TO LIMIT THE TRACKING OF DELETERIOUS MATERIALS ONTO THE SURROUNDING ROAD NETWORK,
- PROVIDE GULLY INLET PROTECTION TO ALL GULLY INLET STRUCTURES LOCATED, DIRECTLY DOWNSTREAM OF THE PROPOSED DEVELOPMENT WORKS.
- APPROPRIATE PROVISIONS ARE TO BE PROVIDED TO THE INTERFACE BETWEEN THE EXISTING ROADWAY PAVEMENTS AND THE NEW ROADWORK'S CONSTRUCTION. THE PROVISIONS SHALL ADDRESS WORKPLACE HEALTH AND SAFETY CONCERNS (ie. RESTRICTING ACCESS BY THE GENERAL PUBLIC TO THE SITE).
- THE LOCATION OF THE CONSTRUCTION VEHICLE COMPOUND, SITE OFFICE AND THE VEHICLE SERVICING AREA SHALL BE AGREED WITH COUNCIL'S DESIGNATED REPRESENTATIVE ON SITE. PRIOR TO THE COMMENCEMENT OF WORKS.
- CLEARED VEGETATION IS NOT TO BE BURNED ON SITE, ALL VEGETATIVE WASTE SHALL BE MULCHED AND THEREAFTER RETAINED ON SITE FOR USE AS PART OF THE LANDSCAPING OR REVEGETATION WORKS. ALL STUMPS AND/OR OTHER ORGANIC MATTER NOT SUITABLE FOR MULCHING SHALL BE DISPOSED OF AT AN APPROVED WASTE DISPOSAL FACILITY.
- SEDIMENT FENCE AND TURFING RUNNING DOWNSLOPES SHALL HAVE REGULAR FLOW DISSIPATORS AT 45° TO SLOPE AS DIRECTED CONSISTING OF SAND BAGS OR SIMILAR AS REQUIRED.
- DURING THE CONSTRUCTION PROCESS INCLUDING THAT PERIOD DURING WHICH THE WORKS ARE "ON MAINTENANCE" SHOULD COUNCIL'S DESIGNATED REPRESENTATIVE REQUEST ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES BE IMPLEMENTED THESE MEASURES SHALL BE IMPLEMENTED AT THE EARLIEST TIME POSSIBLE. NOTWITHSTANDING THE ABOVE REQUIREMENT ANY MEASURES REQUESTED TO BE IMPLEMENTED BY COUNCIL'S DESIGNATED REPRESENTATIVE SHALL BE IMPLEMENTED WITHIN 24 HOURS OF THE TIME OF THE REQUEST.
- ALL ROADWATER/SEWER RETICULATION TRENCHES EITHER ADJACENT TO EXISTING DEVELOPMENT OR PERPENDICULAR TO THE CROSSFALL OF THE LAND ARE TO BE TOPSOILED (75mm MINIMUM) AND TURFED FOR A MINIMUM 900mm WIDTH.
- CONTRACTOR SHALL CONSTRUCT LINED CUTOFF DRAINS SO AS TO LIMIT SLOPE LENGTHS TO A MAXIMUM OF 80m.
- THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT NO RELEASE OR FLOW IS PERMITTED FROM THE SITE. THROUGHOUT THE EARTHWORKS AND CONSTRUCTION PERIOD TO ANY WATER WAYS OR STORMWATER DRAINLINES LEADING TO A WATERWAY OR AREA OF NATIVE VEGETATION UNLESS THE LEVELS OF TOTAL SUSPENDED SOLIDS DOES NOT EXCEED A CONCENTRATION OF 50 MGL.
- ALL SEDIMENT CONTROL DEVICES SHALL BE MONITORED, CLEANED AND/OR REPAIRED WHENEVER THE ACCUMULATED SEDIMENT REDUCES THE CAPACITY BY 50%
- ALL PERIMETER BANK/SWALE SHALL HAVE UNINTERRUPTED POSITIVE OUTLET TO AN OUTLET.
- AT ALL TIMES THE CONTRACTOR SHALL MONITOR THE PREVAILING WEATHER CONDITIONS TO PROTECT ANY DOWNSTREAM CONSTRUCTION AND GULLY INLETS
- INLETS TO HAVE SILT PROTECTION IN ACCORDANCE WITH KERB INLET PROTECTION DETAILS AT LOCATIONS SHOWN OR AS DIRECTED BY THE SUPERVISING ENGINEER
- CLEARING OF SITE AND STOCK PILE AREAS TO BE AS DIRECTED BY THE SUPERVISING ENGINEER.
- WHERE PRACTICAL THE CONTRACTOR SHALL DIVERT CLEAN WATER ENTERING THE SITE FROM EXTERNAL CATCHMENTS AND DIRECT IT TO THE STORMWATER SYSTEM. THIS DISCHARGE POINT SHOULD BE ROCK LINED. REGULAR ROCK CHECK DAMS SHOULD BE POSITIONED ALONG THE VEGETATED DRAINAGE LINE LEADING TO THIS DISCHARGE POINT.
- REGULAR INSPECTIONS AND MAINTENANCE OF VEHICLE WASHDOWN AREA. SITE AND STORAGE COMPOUND TO BE CARRIED OUT BY CONTRACTOR.
- AREAS USED FOR STORAGE OF CHEMICALS USED FOR CONSTRUCTION PURPOSES SHALL HAVE STORMWATER CONTROL DEVICES ERECTED ADJACENT TO THEM (ie. EARTH BUND AND SEDIMENT FENCES). UPON COMPLETION OF ROADWORKS WASTE PRODUCTS ARE TO BE DISPOSED OF AS PER LOCAL AUTHORITY GUIDELINES AND TEMPORARY DEVICES ARE TO BE REMOVED AND AREA REHABILITATED.



SILT FENCE

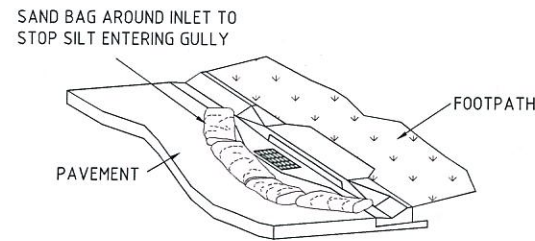
N.T.S.

MAINTENANCE PROGRAM FOR SILT FENCES

- REGULAR INSPECTIONS WILL BE REQUIRED TO CONTROL DAMAGE CAUSED BY ON SITE VEHICLES OR MOVEMENT OF STOCKPILES.
- INSPECTED AFTER EACH STORM EVENT THAT RESULTS IN RUN-OFF.
- REMOVE EXCESS SEDIMENT DEPOSITS.
- INVESTIGATE THE SOURCE OF ANY EXCESSIVE SEDIMENT. (REFER B.C.C. EBMP GROUP 5 FIG.5.6).

NOTE : SILT MANAGEMENT

SILT FENCES ARE TO BE EMPLOYED WHERE CONDITIONS DURING CONSTRUCTION REQUIRE THE CONTROL OF ANY POSSIBLE SILT MOVEMENT ON THE SITE, AS DIRECTED BY THE SUPERVISOR.



GULLY INLET PROTECTION

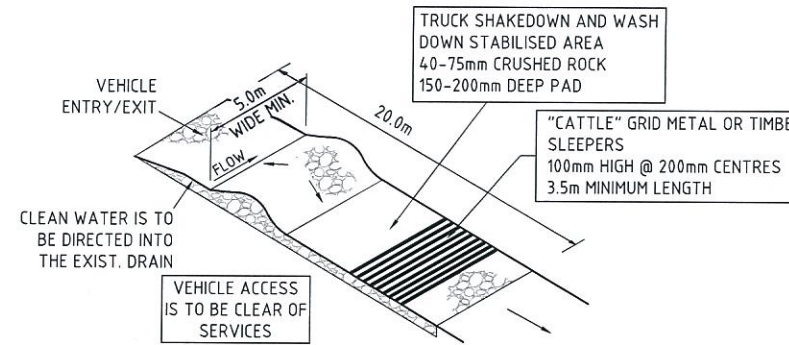
N.T.S.

MAINTENANCE PROGRAM FOR GULLY INLET PROTECTION

- REGULAR INSPECTIONS AFTER EACH RUNOFF EVENT TO ENSURE THAT THE PROTECTION DEVICE IS STILL IN PLACE AND ANY EXCESSIVE SEDIMENT DEPOSITS ARE TO BE REMOVED.
- THE TOP OF THE SANDBAGS ARE TO BE LOWER THAN THE TOP OF THE KERB AND CHANNEL.

THIS FORM OF GULLY INLET PROTECTION WORK SHALL BE IMPLEMENTED ONCE BACKSTONES ARE IN PLACE. UPON SUCCESSFUL COMPLETION OF 'ON MAINTENANCE' INSPECTION, MEASURES ARE TO BE REMOVED.

SILT MANAGEMENT DETAILS AND MAINTENANCE PROGRAMS.

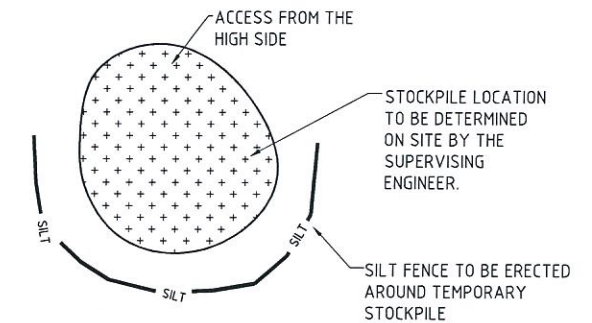


TRUCK SHAKEDOWN DETAIL

N.T.S.

MAINTENANCE PROGRAM FOR TRUCK SHAKEDOWN

THE CONTRACTOR IS TO INSPECT THE ENTRY/EXIT AND WASH DOWN AREA TO ENSURE THAT IT IS NOT SILTED UP OR DAMAGED. ALL WATER USED DURING WASHING AND MAINTAINING THE AREA IS TO BE DIRECTED TO THE BUND.



STOCKPILE DETAIL

N.T.S.

SILT CONTROL PHASES DURING CONSTRUCTION

THE VARIOUS SILT CONTROL METHODS DURING CONSTRUCTION SHALL COMPLY WITH THE OPERATIONAL WORKS APPROVED DRAWINGS. THE FOLLOWING PROGRAM SHALL BE USED AS A GENERAL GUIDE.

PHASE 1- PRELIMINARIES

- TRUCK SHAKEDOWN AREA TO BE CONSTRUCTED AS PER DETAILS ON DRAWINGS.
- BUND WALLS, CUT OFF DRAINS & SILT FENCES ARE TO BE INSTALLED AS SHOWN.
- AFTER RAINFALL EVENTS THE CONTRACTOR IS TO INSPECT THE SILT CONTROL DEVICES, ANY DAMAGE IS TO BE RECTIFIED IMMEDIATELY.

ALL MEASURES ARE TO BE REGULARLY MAINTAINED.

PHASE 2- CONSTRUCTION

- MAINTAIN THE USE OF 1a, 1b AND 1c ABOVE.

ALL MEASURES ARE TO BE REGULARLY MAINTAINED.

PHASE 3- FINAL WORKS AND RE-ESTABLISHMENT OF GROUND COVER

- ALL EXPOSED AREAS ARE TO BE STABILISED AS SOON AS PRACTICAL WITH A MINIMUM OF 80% OF THE NOMINATED GRASS COVER TO BE ACHIEVED WITHIN 30 DAYS OF COMPLETION OF WORKS.
- MAINTAIN ALL SILT FENCES. ERECT ADDITIONAL SILT FENCES IF REQUIRED.
- BUND WALLS, SILT FENCES AND GULLY PROTECTION MEASURES ARE TO REMAIN UNTIL 80% OF GRASS COVER IS ACHIEVED TO NOMINATED AREAS.
- ONCE 80% OF NOMINATED GRASS COVER HAS BEEN ACHIEVED (AND CONFIRMED WITH SUPERVISING ENGINEER & B.C.C OFFICER). ANY REMAINING TEMPORARY BUND WALLS, SILT FENCES TO GRASS PROTECTED LOTS, GULLY PROTECTION ARE TO BE REMOVED

PLANS AND DOCUMENTS
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19 JAN 2016

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NOT TO SCALE THIS SCALE SHOWN IS ORIGINAL DRAWING SCALE

A1

DO NOT SCALE FROM THIS DRAWING - USE ONLY DIMENSIONS PROVIDED - IF IN DOUBT PLEASE ENQUIRE

APPROVED: [Signature]
FOR AND ON BEHALF OF JFP URBAN CONSULTANTS PTY LTD
DESIGNED: T.M'KINNEY RPEQ 5087
DRAWN: A.FRASER RPEQ 5691
CHECKED: S.MARSH RPEQ 8068
DATE: AHD
ISSUE: DETAILS: A
ORIGINAL ISSUE FOR COUNCIL
19/10/15
CDV
INIT:

EROSION AND SEDIMENT CONTROL NOTES AND DETAILS PLAN

ECONOMIC DEVELOPMENT QUEENSLAND

PROPOSED DEVELOPMENT AT
CNR BAMBA STREET & DAHL ROAD, TANNUM SANDS

PROJECT: M2410EL179 ES02
PLAN: A
ISSUE: A
LOCAL AUTHORITY REF: GLADSTONE REGIONAL COUNCIL
COUNCIL REF: N/A
FILE NAME: EROSION.DWG