

HYDRAULIC SERVICES

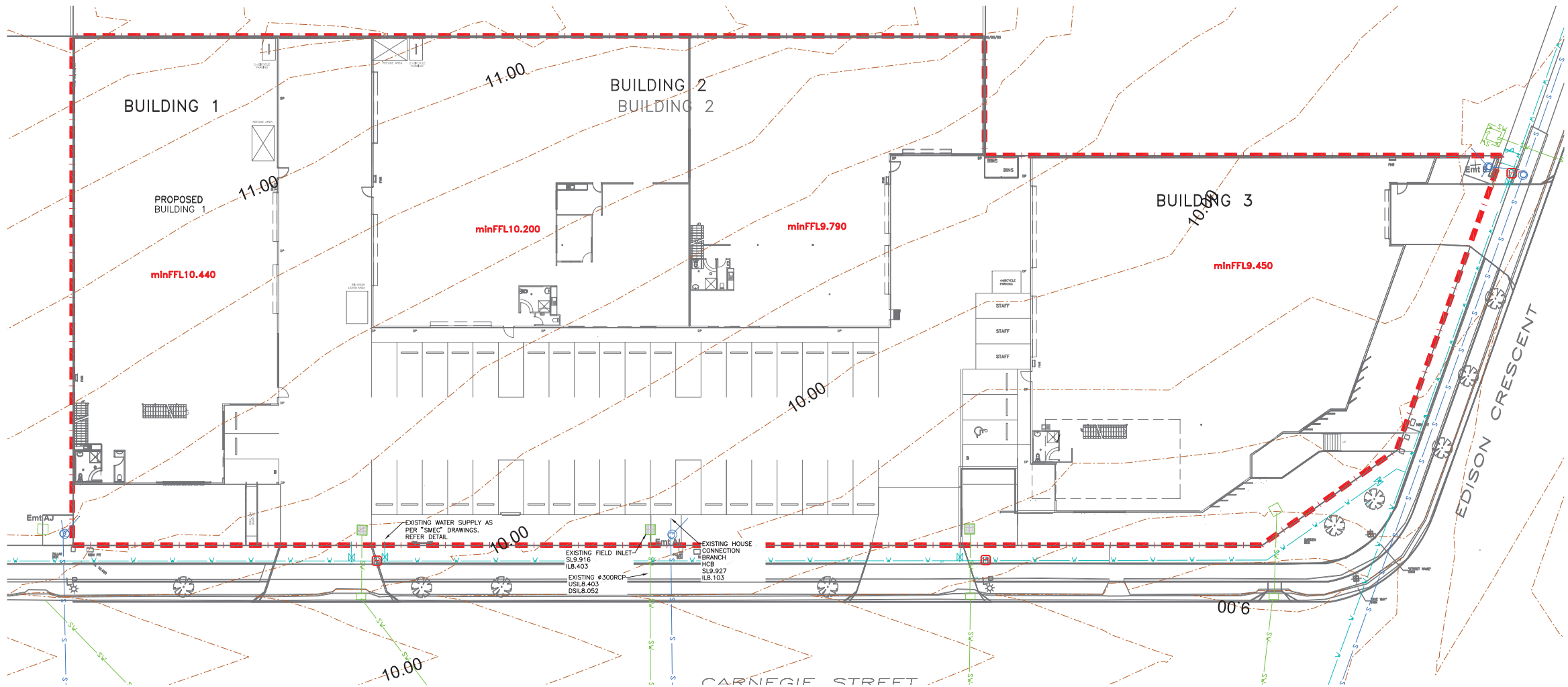
STORMWATER MANAGEMENT AND HYDRAULIC SERVICES OPERATIONAL WORKS

STREET ADDRESS:
7-13 CARNEGIE STREET
BARINGA

REAL PROPERTY DESCRIPTION:
LOTS 1174-1177 SP 287462

CLIENT NAME:
SHADCON P/L

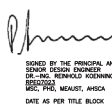
PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL
Approval no: DEV2022/1348
Date: 8 December 2022



SITE PLAN & EXISTING SERVICES 1:250

LEGEND

	RW	Rain Water	Ø	Diameter
	V	Existing Water	c.o.s.	Cleanout to surface
	S	Existing Sewer	CJ	Capped Junction
	SV	Existing Storm water	CV	Control valve
	HD	Existing House drain	CS	Cleaners sink
		Sanitary Drainage	cw	Cold Water
	GV	Grey Water	DAP	Double access panel
		Vent Pipe	DCV	Double check valve
		Cold Water	Een	Eccentric Enlarger
		Hot Water	Elev	Evealed Drainage
		Storm Water Drainage	Enl	Enlarger
		Fire	FC	False ceiling
	ag	Agri Drain	FH	Fire Hydrant
			FHR	Fire hose reel
			FFL	Finished floor level
			FU	Fixture units
			GIT	Greatest Interceptor trap
			GP	Gully pit
			GMH	Gully Man Hole
			gv	Gate valve
			HW	Hot water
			HCB	House connection branch
			HD	House drain
			HL	High level
			IC	Inspection Chamber
			IL	Invert Level
			io	Inspection opening
			ios	Inspection Opening to Surface
			K&C	Kerb & Channel
			MH	Manhole
			NRV	Non return valve
			PB	Path box
			PLV	Pressure limiting valve
			PO	Plaster outlet
			RPB	Real Property Boundary
			RPD	Real Property description
			RPZD	Reduce Pressure Zone device
			RWO	Rain water outlet
			RWL	Rain water head
			SD	Sanitary Drainage
			SL	Surface Level
			Sq	Square
			s/t	Safe Tray
			SWD	Storm water drain
			T/d	Trapped Turkish
			TD	Test gate
			td	Tundish
			TG(t)	Trench grate transverse bar
			TG(l)	Trench grate longitudinal bar
			T.M.V.	Thermatic mixing valve
			TV	Tempering valve
			u/g	Underground
			u/s	Under soil
			u.n.o.	Unless noted otherwise
			WS	Water supply



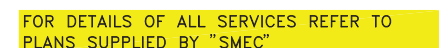
Amd	Description	Date
H	NEW ARCH SITE LAYOUT	25-11-2017
G	STORMWATER DRAINAGE OF HARDSTAND REVISED	04-11-2017
F	NEW DESIGNERS LAYOUT, NOTE RE SMEC SW INFRASTRUCTURE ADDED	25-10-2017
E	NEW DESIGNERS LAYOUT	26-09-2017
D	BIO REPLACED WITH GPT	22-09-2017
C	CATCHMENT AREAS REVISED	06-09-2017
B	FOR CONSTRUCTION ISSUE	15-08-2017
A	TRANSFORMER DELFTED	08-08-2017



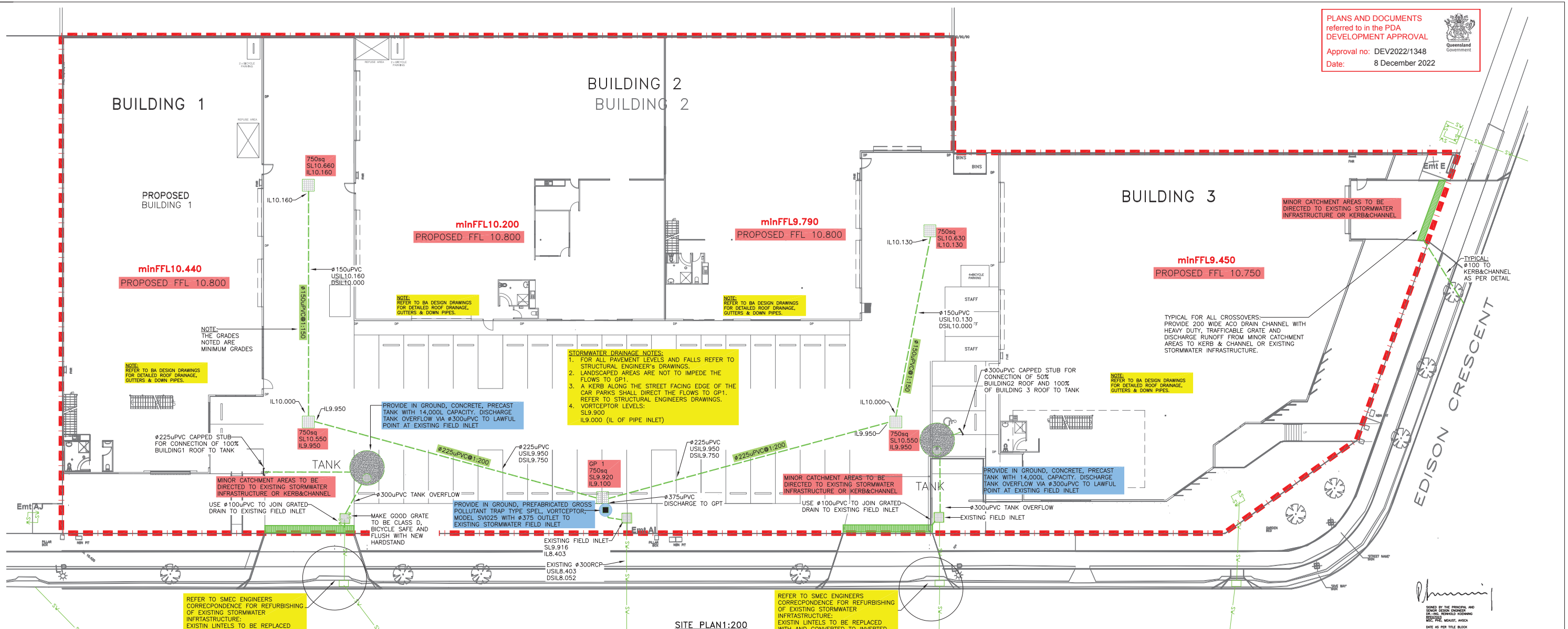
Construction
Hydraulic building
services
engineers

DRAWING TITLE: UNITYWATER CONNECTION DETAILS	
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RPD:- LOTS 1174-1177 SP 287462

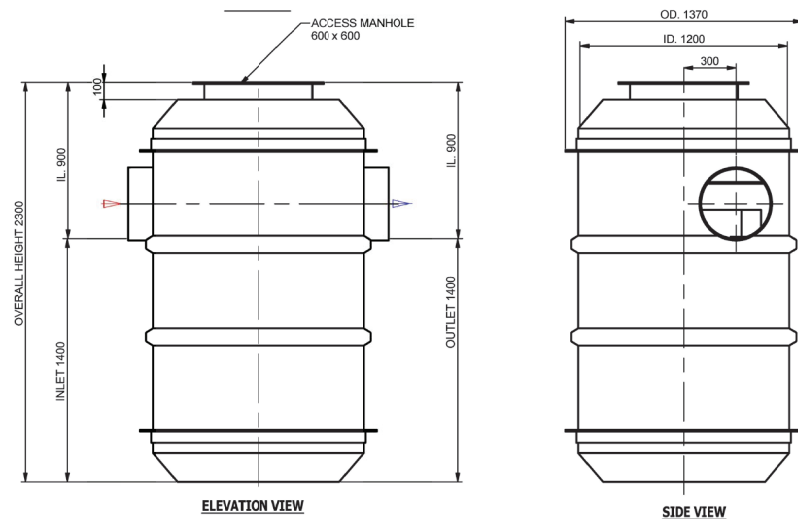
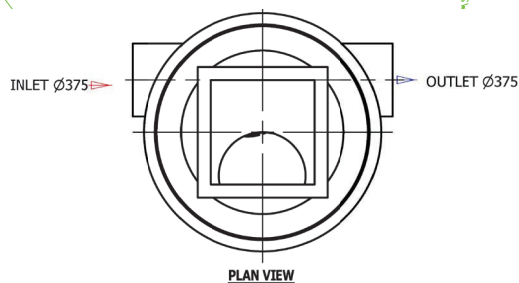


- NOTES:**
1. FLANGES ARE NOT SHOWN. FOR ALL FURTHER DETAILED INFORMATION REFER TO UNITY WATER STANDARD DRAWING W68855-1 & -2.
 2. FOR CONNECTION REFER TO STANDARD DRAWING SEQ-WAT-1105-2.
 3. ALL WORKS ON EXISTING WATER MAINS TO BE CARRIED OUT ONLY BY UNITY WATER AT THE DEVELOPERS EXPENSE.

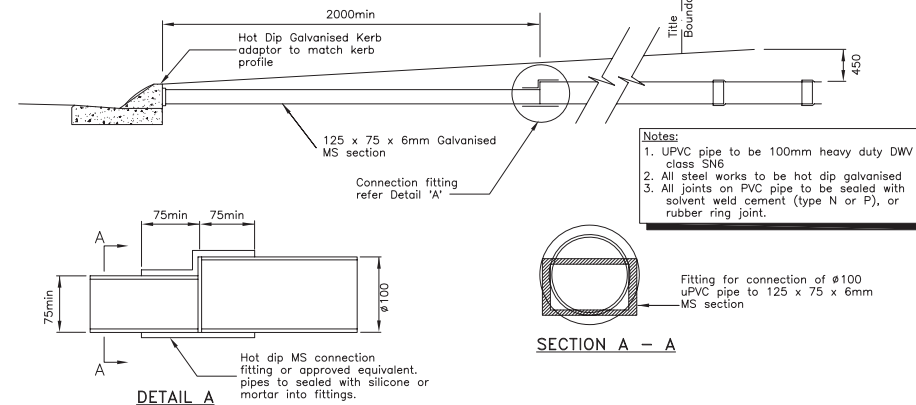


SITE PLAN 1:200

CARNEGIE STREET



GROSS POLLUTANT TRAP DETAIL nts
MANUFACTURER: SPEL, MODEL VORCEPTOR SVI.025



TYPICAL CROSS SECTION OF STORMWATER TO KERB
NOT TO SCALE

DISCLAIMER - ENSURE ORIGINAL SIZE DRAWING IS USED FOR ASSESSMENT, TENDERING AND CONSTRUCTION.

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Issue	Notes	Date
For Development Approval	X	04-08-22
For Building Approval	X	04-08-22
For Tender	X	04-08-22
For Construction	X	04-08-22
As Constructed		



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CLIENT : SHADCON P/L

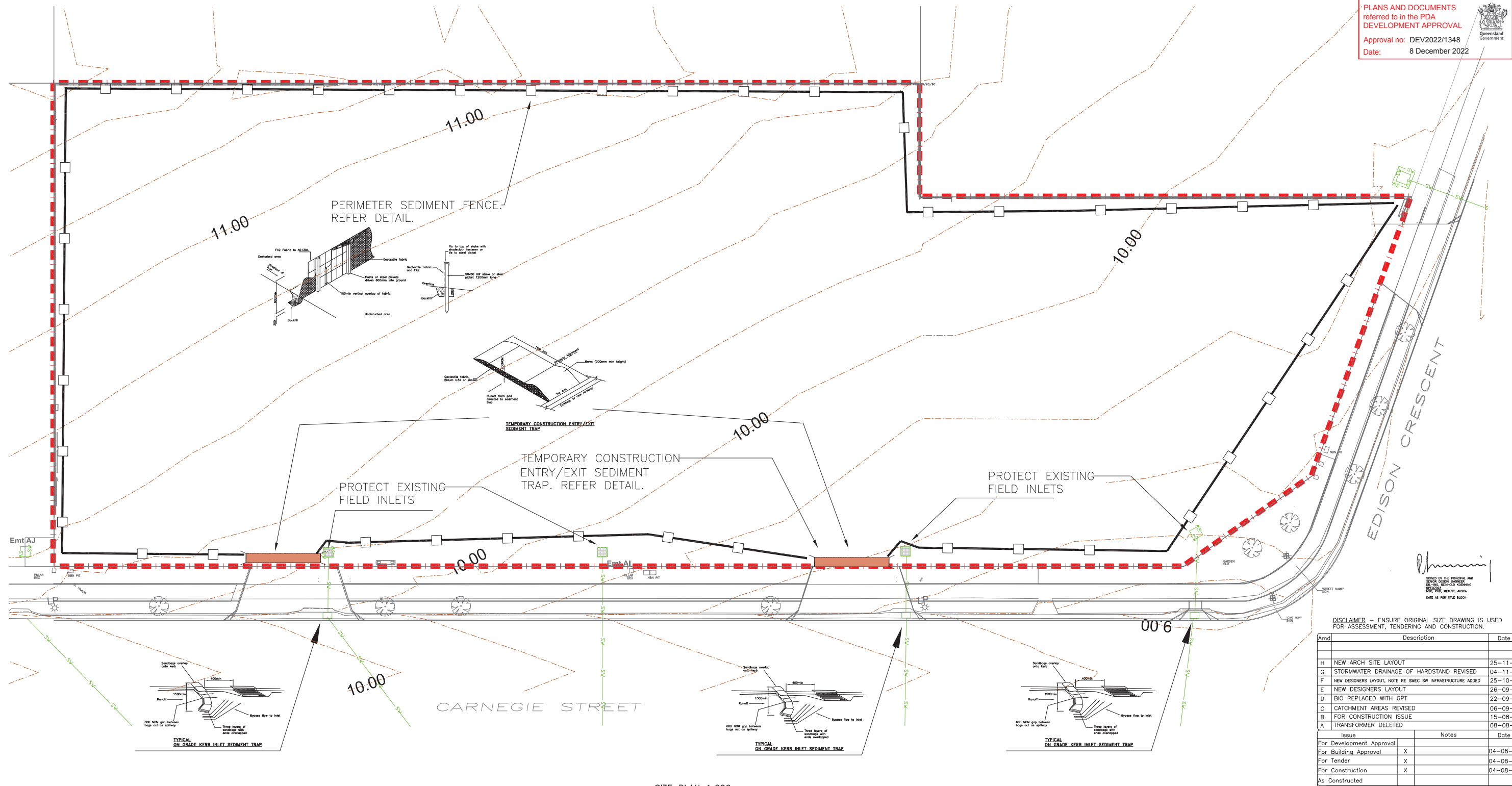
DESIGN BY: BUILDING SUNCOAST GREEN

PROJECT: 9-13 CARNEGIE STREET
BARINGA INDUSTRIAL

DRAWING TITLE:

STORMWATER
DRAINAGE
PLAN





SITE PLAN 1:200

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CLIENT :
SHADCON P/L

DESIGN BY:
BUILDING SUNCOAST GREEN

PROJECT: 9-13 CARNEGIE STREET
BARINGA INDUSTRIAL

DRAWING TITLE:

EROSION
& SEDIMENT
CONTROL PLAN



Design	Checked	Date	04-08-22	Dwg. No.	3654-OP6	AMD
SCALE : 1 : 200	ON A1 U.N.O.	6 of 7				

RPD:- LOTS 1174-1177 SP 287462



SEDIMENT & EROSION CONTROL NOTES

- Erosion and sediment control devices shall be installed and maintained in accordance with these drawings unless an alternative proposal is approved in writing by the superintendent. Additional erosion and sediment controls shall also be installed as necessary during construction.
- All erosion and sedimentation control devices shall be installed prior to stripping topsoil or commencing earthworks anywhere else on site unless otherwise approved by the superintendent. An inspection hold point is required at this point prior to the works proceeding.
- Where erosion and sediment control devices cannot be installed due to earthworks or other work operations, they shall be installed at the earliest possible date.
- Permanent coverage of disturbed areas with topsoil and turf, hydromulch or mulch (and jute matting if required) is to be undertaken at the earliest practical time.
- Turf shall be laid behind kerb and channel for full verge width.
- In order to prevent erosion from concentrated flow paths, the contractor shall follow the following site protection principles:
 - Install turf in permanent open drain;
 - Install geofabric in temporary open drains where shown on drawing;
 - Install sand bags, rock check dams or mulch bunds at 20m centres in all concentrated flow paths including cut-off drains along kerb and channel, along sediment fences, mulch or earth bunds except where drains are lined with turf or geofabric.
- All disturbed areas shall be covered with 100mm of topsoil prior to turfing, seeding, hydromulching or mulching.
- All batters 1 on 4 and steeper shall be tined to a depth of 200mm in accordance with Main Roads specifications prior to topsoiling and mulching (75mm thick). Batters steeper than 1 on 2 shall also have heavy duty jute matting installed over the mulch, all other disturbed areas shall be covered with hydromulch.

- The underground drainage system shall be used to convey runoff throughout construction. All drainage pits shall be constructed prior to placement of sub-base material and shall contain a suitable cut-out to capture run-off from base of boxing during construction.
- The underground drainage system including all pits, pipes and GPT shall be cleaned of sediment prior to on maintenance. Unless otherwise approved by the Superintendent all temporary erosion and sediment control measures shall be removed at the completion of construction.
- However such removal shall not proceed until the site is stabilised to the Superintendent's satisfaction.
- All construction vehicles shall be cleaned of mud and/or loose dirt prior to leaving the site.
- No release, or flow is permitted from the site, throughout the earthworks and construction period, to any waterway, or stormwater drain or drainage line leading to a waterway or area of native vegetation, unless the level of total suspended solids does not exceed a concentration of 50 milligrams per litre.
- An effective water quality self-monitoring program, including at least one representative measurement of the total suspended solids quality of any flow or release from the site on each day runoff to water occurs, must be implemented continuously throughout the life of the works which are the subject of this approval. Where the findings of the required performance self-monitoring program indicate that the 50mg/L TSS compliance limit is being or is likely to be exceeded, remedial action must be taken without delay to ensure ongoing compliance.
- Sufficient stockpiles of mulch and/or other similar required erosion and sediment control materials and stores must be maintained on site at all times to enable ongoing erosion control, as well as site contingencies e.g. imminent wet weather, to be dealt with, until commencement of on maintenance.

TASK	ISSUES	EROSION & SEDIMENT CONTROL	STORMWATER QUALITY
PERFORMANCE		MINIMIZE SOIL EROSION SITE DURING CONSTRUCTION AND REHABILITATION STAGES AND AT ALL TIMES PREVENT THE TRANSPORT OF SEDIMENT FROM THE SITE.	AVOID DETRIMENTAL IMPACT ON THE WATER QUALITY AND AQUATIC ENVIRONMENT OF DOWNSTREAM WATER BODIES AS A RESULT OF DISCHARGE OF CONTAMINATED STORMWATER RUNOFF FROM CONSTRUCTION WORKS AND COMPLY WITH THE ENVIRONMENTAL ACT ON ENVIRONMENTAL PROTECTION POLICY FOR WATER.
MANAGEMENT STRATEGY		- INSTALL THE CONTROL DEVICES AND FOLLOW THE STABILIZATION PROCEDURES DESCRIBED ON PLANS. - LIMIT THE EXTENT OF STRIPPING TO THE STAGE AREA PRESENTLY UNDER CONSTRUCTION. - ALL MUD AND SILT DEPOSITED ON THE ADJACENT ROADWAY SHALL BE REMOVED BY SWEEPING. - PROTECT STORMWATER DRAINAGE INLETS AS SHOWN BELOW UNTIL THE SITE HAS BEEN STABILIZED. - WASH FROM EXPOSED AGGREGATE CONCRETING SHALL BE WHOLLY CONTAINED ON SITE. CEMENT RESIDUE SHALL BE ALLOWED TO DRY THEN REMOVED FROM SITE.	- COMPLY WITH THE ENVIRONMENTAL PROTECTION ACT AND ENVIRONMENTAL PROTECTION POLICY (WATER) - ALL CONTROL MEASURES SHALL BE IN PLACE PRIOR TO COMMENCING SITE STRIPPING. - CONSTRUCTION MATERIALS AND STOCKPILES STORED ON SITE SHALL BE PLACED IN PREPARED LOCATIONS, AND PROTECTED AS SHOWN. - FUELS AND OILS SHALL BE SAFELY STORED TO AVOID INUNDATION. ANY SPILLAGES WITHIN THESE COMPOUNDS SHALL BE IMMEDIATELY ATTENDED TO SO AS TO LIMIT THE POTENTIAL FOR IMPACT OFF-SITE. - PROVIDE CONTROL MEASURES TO PREVENT SOIL EROSION, SCOURING, SEDIMENT TRANSPORT AND DEPOSITION. THESE MEASURES ARE IDENTIFIED IN THE SOIL & EROSION CONTROL PLAN BUT MAY BE EXTENDED AS REQUIRED AND MAY INCLUDE: - TEMPORARY RETARDATION BASIN - TEMPORARY SILT FENCE - DIVERSION OF UPSTREAM CATCHMENT AROUND DISTURBED AREAS - IN AREAS WHERE RUNOFF TURBIDITY IS TO BE CONTROLLED, EXPOSED SURFACES SHALL BE MULCHED OR STABILIZED WITH TURF IF EARTHWORKS ARE EXPECTED TO EXTEND FOR THAT TWO WEEKS. - PERMANENT CONTROL MEASURES WILL BE IN PLACE UPON COMPLETION OF CONSTRUCTION, HOWEVER MAINTENANCE WILL BE REQUIRED OF SOME TEMPORARY FACILITIES UNTIL FULL SITE REHABILITATION HAS BEEN ACHIEVED.
MONITORING		THE PRINCIPAL CONTRACTOR SHALL AT ALL TIMES ENSURE THAT CONTROL DEVICES ARE CORRECTLY INSTALLED AND ADEQUATELY MAINTAINED, IN PARTICULAR PRIOR TO FORECAST PERIODS OF RAIN OR STORMS.	THE PRINCIPAL CONTRACTOR SHALL ENSURE NO SUSPENDED SOLIDS OR CONTAMINANTS ARE VISIBLE IN SURFACE RUNOFF LEAVING THE SITE.
CORRECTIVE ACTIONS		- EMPTY AND REPAIR TRAPS REGULARLY. - REPAIR OR REPLACE DAMAGED CONTROL DEVICES. - PLACE ADDITIONAL CONTROL DEVICES WHERE EXISTING INSTALLATIONS ARE INADEQUATE.	- REPAIR OR EXTEND CONTROL DEVICES TO OPERATE ADEQUATELY. - INSTALL ADDITIONAL SEDIMENTS TRAPS TO RETARD SURFACE RUNOFF ACROSS THE WORKS AREA.
REPORTING		WEEKLY REPORTS BY THE PRINCIPAL CONTRACTOR TO THE CONSULTANT DETAILING MAINTENANCE PROGRAM, ADDITIONAL WORKS AND THE PERFORMANCE OF CONTROL MEASURES.	WEEKLY REPORTS BY THE CONTRACTOR TO THE CONSULTANT OUTLINING THE EFFECTIVENESS OF CONTROL MEASURES AND DETAILS OF ANY CORRECTIVE ACTIONS TAKEN

SEDIMENT & EROSION MANAGEMENT PLAN

DESIGNED BY THE PRINCIPAL AND
SEEN AND REVIEWED BY THE
PRINCIPAL
DATE AS PER TITLE BLOCK

Prior to the commencement of any construction activities the following measures shall be incorporated:

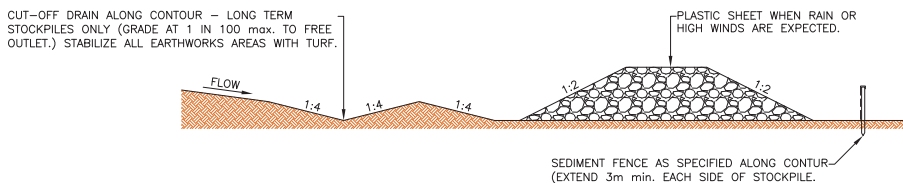
- Provide education of site personnel
- Set up action plans as a precaution in case of disturbances occurring especially after an unexpected strong rainfall event
- Provide regular inspection and maintenance of all structures including the temporary structures.

NOTES FOR STOCKPILING:

PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL PROVIDE A PLAN FOR STOCKPILING, MATERIALS STORAGE AND WASTE MANAGEMENT. THIS PLAN MAY BE A HAND DRAWN SKETCH BUT SHALL BE VISIBLY PLACED IN THE SITE OFFICE.

ADVICE:

- LOCATE STOCK PILES ON LEVEL GROUND AWAY FROM AREAS SUBJECT TO CONCENTRATED OVERLAND FLOW.
- CONSTRUCT A PERMANENT BANK OR CATCH DRAIN ABOVE STOCK PILE TO PROTECT IT FROM UPHILL RUNOFF.
- CONSTRUCT A SEDIMENT FENCE BELOW THE STOCKPILE TO TRAP SEDIMENTS BEING WASHED OFF THE PILE.
- PROVIDE ACCESS TO STOCKPILE FROM SIDE SO AS TO AVOID RUNOFF PASSING THROUGH.



- PLACE STOCKPILES 5m min. UPSTREAM OF EXISTING VEGETATION, CONCENTRATED WATER FLOW, ROADS, AND HAZARD AREAS.
- CONSTRUCT ALONG THE CONTOUR AS LOW, FLAT, ELONGATED MOUNDS (2m max. HEIGHT.)

SEDIMENT AND EROSION CONTROL MANAGEMENT PLAN:

- OBJECTIVE:**
To minimise erosion on site and ensure sediment is not washed down to the receiving waterways due to construction activities

- LEGISLATION:**
Environment Protection Act 1994
Environmental Protection Water Policy 1997
The Integrated Planning Act 1997

- RESPONSIBILITY:**
The responsibility for all measures regarding the sediment and erosion control during construction shall be with the CONTRACTOR. The contractor shall appoint one staff member, ideally the foreman, to be responsible for:

- the location of drain paths such as swales and trenches, cut off swales, catch drains and perimeter banks. All of these measures shall ensure the runoff is directed to the sedimentation basin during construction.
- the waste and wash down of materials and goods in particular concrete and cement shall be separated, set to dry and disposed of
- Installation and maintenance of the sediment control fences all around the perimeter as shown in plan
- control of fences, sandbags and bales as well as the sedimentation basin after each rainfall event
- control of the entry/exit path and the minimization of sediment transfer to the street in particular control of concrete and earthmoving vehicles
- supervise other members of staff and lead by example
- ensure enough litter collection devices are provided for the collection of daily litter such as cans, bottles, paper, butts and also building material cut offs.
- ensure all stockpiles for both incoming and outgoing goods in particular soils and sands are clearly marked and not blocking drain paths and kept neat and clean.
- control the flow path of stormwater at all times during construction and use swales, sandbags, bales and other measures to ensure the runoff is directed to the sedimentation basin at all times.

- ACTIONS:**
In case of major rainfall events the following action plan shall be followed and responsibility looked after by the CONTRACTOR:

- "DON'T WAIT UNTIL IT IS TOO LATE!"
be on site during the rainfall period and monitor the drain paths, Redirect where required,
- "check the fences after every rainfall and replace the fences where required. Check and replace all barriers, bales, sandbags and temporary swales, cut off drains and trenches where required.
- "clean out sedimentation material as soon as the moisture content allows it,
- "check the receiving pit and improve the barriers if required.
- "REMEMBER: EACH RAINFALL IS THE EVENT TO ACTIVELY WATCH AND CONTROL THE RUNOFF!"

LEGEND

- SV Existing storm water
- Storm Water Drainage
- Ag Drain
- FWG Floor Waste gully
- GP1 Gully Pit
- Sediment Fence
- Boundary
- Diameter
- c.o.s. Cleanout to surface
- Een Eccentric Enlarger
- FFL Finished floor level
- GP Gully pit
- GMH Gully Man Hole
- IC Inspection Chamber
- IL Invert Level
- K&C Kerb & Channel
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