

# STORMWATER MANAGEMENT PLAN

## PROPOSED ALTERATIONS & ADDITIONS

### Lot 2, No.30 KALANG ROAD, ELANORA HEIGHTS

#### GENERAL NOTES:

- THESE PLANS REMAIN THE PROPERTY OF NY CIVIL ENGINEERING PTY LTD AND ARE SUBJECT TO COPYRIGHT
- ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE STATED. ALL REDUCED LEVELS (SURFACE LEVELS, INVERT LEVELS) AND CHAINAGES ARE IN METERS UNLESS OTHERWISE STATED. DO NOT SCALE OFF THE DRAWINGS, SCALES ARE AS SHOWN, USE FIGURED DIMENSIONS.
- THIS PLAN IS TO BE READ IN JUNCTION WITH LATEST ARCHITECTURAL, STRUCTURAL, UTILITY AND LANDSCAPE PLANS IN ADDITION TO ANY RELEVANT GEOTECHNICAL, SOIL CLASSIFICATION OR REF/ENVIRONMENTAL REPORTS. ENGINEER IS TO BE NOTIFIED OF ANY DISCREPANCIES QUOTED ON THIS PLAN.
- ALL WORKS SHALL BE CARRIED OUT TO LOCAL COUNCIL'S DEVELOPMENT CONTROL PLAN AND SPECIFICATIONS, AS/NZS 3500.3 AND B.C.A.
- ALL LEVELS SHALL RELATE TO THE ESTABLISHED BM, PM AND/OR LM. ALL EXISTING SERVICES ARE TO BE VERIFIED FOR LOCATION AND DEPTH PRIOR TO COMMENCEMENT OF ANY WORK. CONTRACTOR TO NOIFY DESIGNER OF ANY DISCREPANCIES OF SERVICE LEVELS QUOTED ON THIS PLAN. ALL SURVEY INFORMATION, BUILDING AND FINISHED SURFACE LEVELS SHOWN IN THESE DRAWINGS ARE BASED ON LEVELS OBTAINED FROM DRAWINGS BY OTHERS.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ANY PRIOR APPROVAL REQUIRED FROM COUNCIL WITH RESPECT TO POTENTIAL IMPACT ON TREES FOR ANY WORKS SHOWN ON THIS DRAWING PRIOR TO THE COMMENCEMENT OF WORKS. NO TREES SHALL BE REMOVED WITHOUT THE WRITTEN PERMISSION OF COUNCIL.
- THE CONTRACTOR SHALL TAKE ALL DUE CARE TO USE THE ABSOLUTE MINIMUM AREA FOR CONSTRUCTION AND THAT NO UNDUE DAMAGE IS DONE TO THE EXISTING VEGETATION.
- THE CONTRACTOR SHALL COMPLY WITH CONDITIONS, AND SPECIFICATION OF COUNCIL AND ALL ACTS OF THE NSW EPA.
- THE CONTRACTOR SHALL TAKE ALL REASONABLE CARE TO PROTECT EXISTING SERVICES. DAMAGED SERVICES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- ALL NEW WORK IS TO MAKE A SMOOTH JUNCTION WITH EXISTING WORK.
- SUITABLE WARNING SIGNS AND BARRICADES ARE TO BE PROVIDED IN ACCORDANCE WITH THE AUSTRALIAN STANDARDS AND AS DIRECTED BY THE RELEVANT AUTHORITY.
- SERVICES SHOWN ARE INDICATIVE ONLY FROM AVAILABLE INFORMATION AND THE TIME OF SITE INVESTIGATION (IF ANY). THE BUILDER IS TO NOTIFY ENGINEER OF ANY DISCREPANCIES QUOTED ON THIS PLAN.
- RESTORE ALL TRAFFIC AREAS TO PRE EXISTING CONDITION. FOR ALL SURFACES OTHER THAN IN TRAFFIC AREAS RESTORE DISTURBED SURFACES TO PRE-EXISTING CONDITION AND COMPACT AS SPECIFIED.
- RESTORE ALL AUTHORITY OWNED AREAS TO COUNCIL AND/OR AUTHORITY STANDARD AND SPECIFICATION.
- THE WORK AS CONSTRUCTED WORKS SHALL BE INSPECTED BY THE ENGINEER, MINIMUM 48 HOURS NOTICE SHALL BE PROVIDED FOR ALL INSPECTION REQUESTS.
- THE DESIGN PLANS HEREIN ARE SUBJECT TO COUNCIL APPROVAL PRIOR TO CONSTRUCTION.
- WORK AS CONSTRUCTED DRAWINGS TO BE REQUESTED AND RECEIVED IN CAD/DWG FILE TYPE AND HARD COPY 'RED LINE' MARKUP FROM CONSTRUCTOR FOR VERIFICATION AND CERTIFICATION.

#### ROOF STORMWATER DRAINAGE NOTES:

- ALL DOWN PIPES TO BE MINIMUM DN90 OR 100x50MM FOR GUTTERS SLOPE 1:500 AND STEEPER AS PER AS 3500.3 - 3.7.8
- ALL ROOF GUTTERS TO HAVE OVERFLOW PROVISION IN ACCORDANCE WITH AS 3500.3 AND SECTIONS 3.5.3, 3.7.5 AND APPENDIX G OF AS 3500.3.
- ALL DOWNPIPES TO BE FITTED VERTICALLY TO THE SOLE OF EAVES GUTTERS, RAINHEAD AND/OR SUMP.
- ALL DOWNPIPES TO DRAIN INTO RAINWATER TANK AND OR PIT PRIOR TO DISCHARGE OFFSITE UNLESS PRIOR APPROVAL IS OBTAINED FROM COUNCIL IN WRITING OR NOTED OTHERWISE ON THIS PLAN.
- ALL EAVES GUTTERS TO BE SIZED FOR ARI 20 - AS PER AS 3500.3 - 3.5 AND APPENDIX H.
- ROOF DRAINAGE INSTALLATION TO BE IN ACCORDANCE TO AS 3500.3 SECTION 4.

#### STORMWATER DRAINAGE NOTES:

##### PIPE SIZE:

- THE MINIMUM PIPE SIZE SHALL BE:
  - DN90 FOR ALL DOWNPIPES;
  - DN100 WHERE THE LINE ONLY RECEIVES ROOF STORMWATER RUNOFF, OR;
  - DN100 WHERE THE LINE RECEIVES RUNOFF FROM PAVED OR UNPAVED AREAS.

##### PIPE GRADE:

- THE MINIMUM PIPE GRADE SHALL BE:
  - FOR DN100 - DN150 - 1.00%
  - FOR DN225 - 0.50%
  - FOR DN300 - 0.45%
  - FOR DN375 - 0.35%

##### STANDARD COVER:

- MINIMUM PIPE COVER FOR PVC PIPES SHALL BE AS PER AS 3500.3 TABLE 6.2.5:
  - NOT SUBJECT TO VEHICULAR LOADING:
    - WITHOUT PAVEMENT SINGLE DWELLINGS - 100mm
    - WITHOUT PAVEMENT OTHER THAN SINGLE DWELLINGS - 300mm
    - WITH PAVEMENT (BRICK/PAVERS) AND/OR UNREINFORCED CONCRETE - 100mm
  - SUBJECT TO VEHICULAR LOADING:
    - ROADS (SEALED) - 600mm
    - ROADS (UNSEALED) - 750mm
    - OTHER THAN ROADS (WITH PAVEMENT) - 100mm
    - OTHER THAN ROADS (WITHOUT PAVEMENT) - 450mm

##### PIPE INSTALLATION

- PIPES AND FITTINGS FOR STORMWATER DRAINAGE SHALL BE AS FOLLOWS:
  - FOR PIPE SIZES UP TO DN225 - PVC WITH SOLVENT WELDED JOINTS (IN GROUND).
  - FOR PIPE SIZES GREATER THAN DN225 - RCP WITH RUBBER RING JOINTS.
  - FOR LARGER PIPE DEPTHS AS SPECIFIED IN AS 3500.3 - RCP WITH RUBBER RING JOINTS.
  - FOR PIPES AND FITTINGS FOR SUBSOIL DRAINAGE SHALL BE SLOTTED PVS WITH SOLVENT WELDED JOINTS MINIMUM DN150.
- FOR GRATED DRAINS SHALL BE MINIMUM DN150 IN NON-TRAFFICABLE ZONES AND DN225 IN TRAFFICABLE ZONES.
- LAY AND JOINT ALL PIPES IN ACCORDANCE WITH THE MANUFACTURING RECOMMENDATIONS AND:
  - AS 3725-1989 - LOADS ON BURIED CONCRETE PIPES
  - AS 2566 - 1988 - BURIED FLEXIBLE PIPELINES
  - AS 1597.2 - 1996 - PRECAST REINFORCED CONCRETE BOX CULVERTS
  - AS 3500 - 1990 NATIONAL PLUMBING AND DRAINAGE CODE - PART 2 SANITARY PLUMBING AND SANITARY DRAINAGE - SYDNEY WATER REQUIREMENTS.
- ALLOW TO TEST ALL PIPES AND PITS TO MANUFACTURERS REQUIREMENTS.

##### CONNECTIONS TO STORMWATER SYSTEMS UNDER BUILDINGS:

IN ACCORDANCE WITH AS 3500.3 SECTION 9.2

##### CONNECTIONS TO COUNCIL STORMWATER SYSTEMS:

CONNECTION TO COUNCIL STORMWATER SYSTEM TO BE IN ACCORDANCE TO LOCAL COUNCIL DCP AND STANDARDS. NO CONNECTIONS TO BE MADE UNTIL PROPER PERMIT/APPROVALS ARE OBTAINED FROM LOCAL COUNCIL IN WRITING.

##### WARNING:

EXISTING SERVICES SHOWN ON THESE PLANS ARE NOT GUARANTEED COMPLETE OR CORRECT AND FURTHER INFORMATION IS REQUIRED FROM THE RELEVANT AUTHORITY AND FIELD INVESTIGATION AND ARE TO BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

#### LEGEND

SURFACE INLET PIT		GRADED TRENCH DRAIN	
SURFACE INLET PIT (WITH ENVIROPOD 200 MICRON)		ABSORPTION TRENCH	
ACCESS GRATE (WITH GROSS POLLUTANT TRAP)		PROPOSED ROOF GUTTER FALL	
450 SQUARE INTERVAL	450 X 450	PROPOSED DOWNPIPE SPREADER	
GRATE LEVEL = 75.50	SL 75.50	STORMWATER PIPE 100mm DIA. MIN. UNO	
INVERT LEVEL = RL 75.20	IL 75.20	SUBSOIL PIPE	
PROPOSED DOWNPIPE 90mm DIA. OR 100mm x 50mm MIN.		EXISTING STORMWATER PIPE	
NATURAL GROUND FINISHED DESIGN LEVEL	×	INSPECTION RISER	
		RAINWATER HEAD	

#### STORMWATER PIT/STRUCTURES NOTES:

##### PIT SIZES AND DEPTHS:

- PIT SIZES WILL BE AS FOLLOWS:


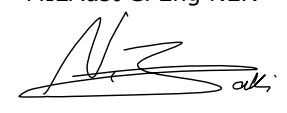
DEPTH (mm)	MIN. PIT SIZE (mm)
UP TO 450	350x350
450 – 600	450x450
600 – 900	600x600
900 – 1200	600x900
1200+	900x900 (WITH STEP IRONS)

##### PIT DESIGNS:

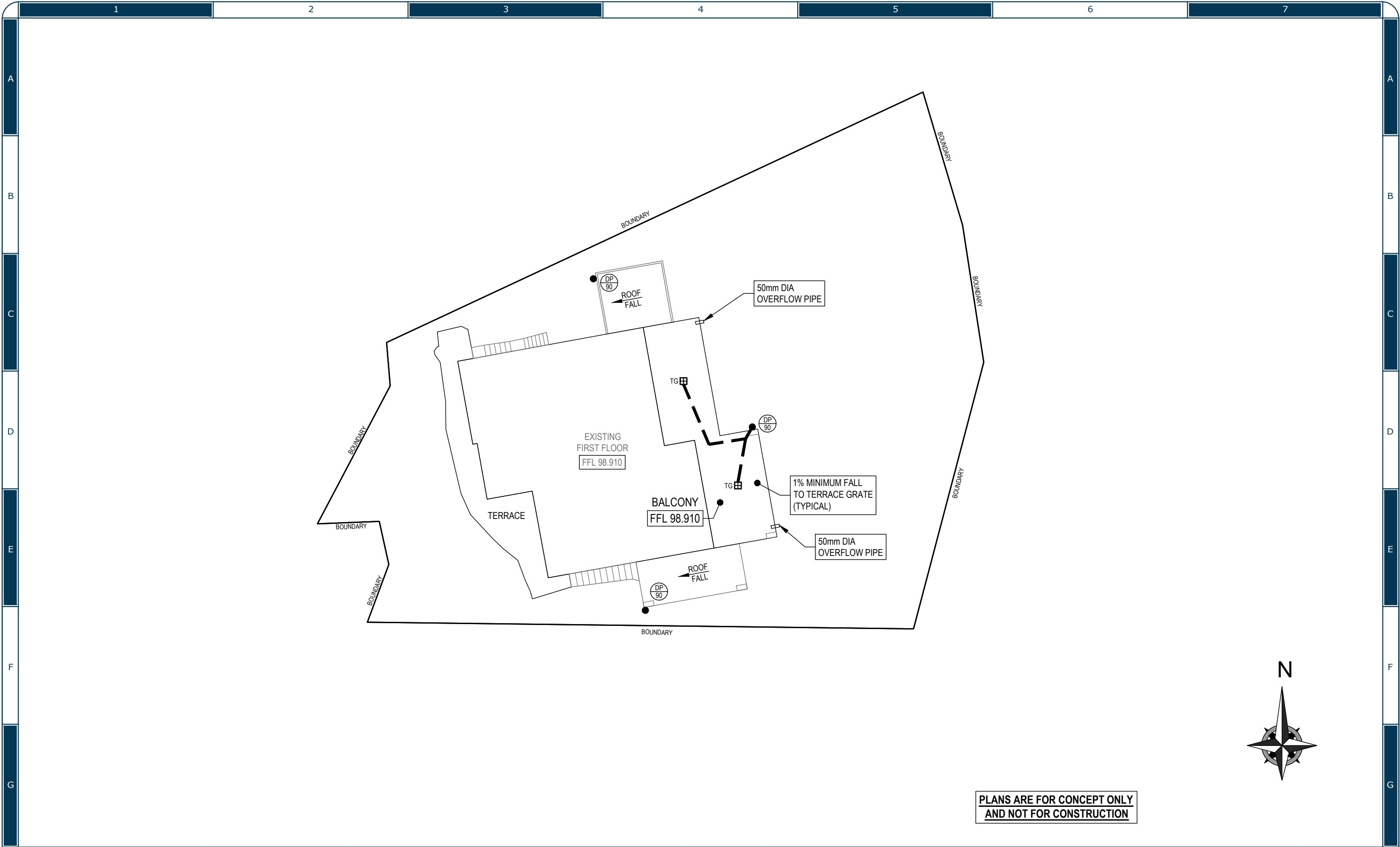
- TRENCH DRAINS:** CONTINUOUS TRENCH DRAINS ARE TO BE MIN. DN150 AND MIN. 100mm DEPTH. THE BARS OF THE GRATE ARE TO BE PARALLEL TO THE DIRECTION OF SURFACE FLOW.
- STEP IRONS:** PITS BETWEEN 1.2m AND 6m ARE TO HAVE STEP IRONS IN ACCORDANCE WITH AS 1657. FOR PITS GREATER THAN 6m OTHER MEANS OF ACCESS MUST BE PROVIDED.
- PLASTIC/PVC PITS:** PVC PITS WILL ONLY BE PERMITTED IF THEY ARE MAX. 450x450 AND MAX. 450mm DEPTH AS WELL AS BEING HEAVY DUTY.
- IN-SITU PITS:** IN-SITU PITS ARE TO BE CONSTRUCTED ON A CONCRETE BED OF AT LEAST 150mm THICK. THE WALLS ARE TO BE DESIGNED TO MEET THE MINIMUM REQUIREMENTS OF CLAUSE 4.6.3 OF AS 3500.4. PITS DEEPER THAN 1.8m SHALL BE CONSTRUCTED WITH REINFORCED CONCRETE.
- GRATES:** GRATES ARE TO BE GALVANIZED STEEL GRID TYPE. GRATES ARE TO BE OF HEAVY-DUTY TYPE IN AREAS WHERE THEY MAY BE SUBJECT TO VEHICLE LOADING.



##### INSTALLATION NOTES:

- ALL PIPES INTO PITS TO BE CUT FLUSH WITH PIT WALL.
- ALL PITS THAT ARE INSTALLED AT GREATER THAN 600mm DEEP TO BE MIN. 600x600 PIT.
- GRATED COVERS ON PITS GREATER THAN 600mm TO BE HINGED.
- BASE OF PIT TO BE SAME LEVEL OF INVERT OF OUTLET.
- OUTLET PIPE FROM ANY PIT TO BE 20mm LOWER THAN INLET PIPE/S

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	NADER ZAKI MIEAust CPEng NER	A	MR	ISSUED FOR DA	15.09.2021	DETAILS, NOTES & LEGEND		DESIGNED	MR	E210372
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	T 0416 334 977 E <a href="mailto:admin@nvcivilengineering.com.au">admin@nvcivilengineering.com.au</a> W <a href="http://www.nvcivilengineering.com.au">www.nvcivilengineering.com.au</a>					PROJECT TITLE		ISSUE	A	No. IN SET
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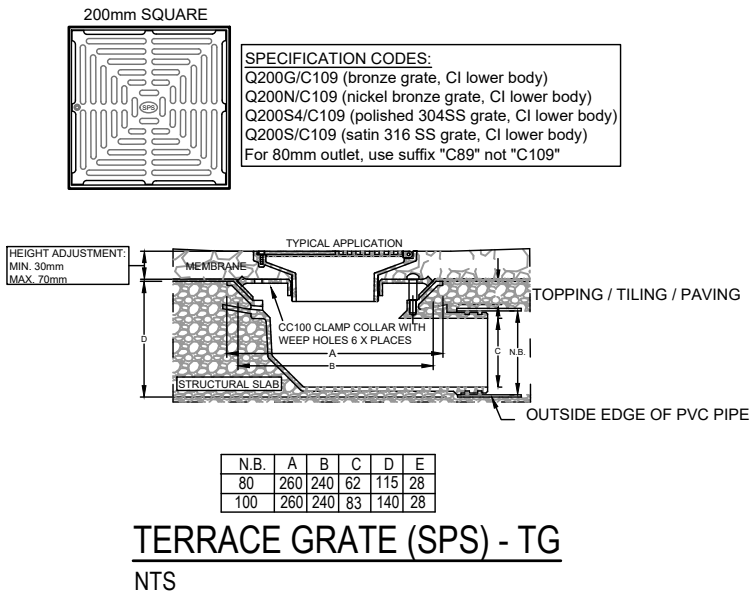
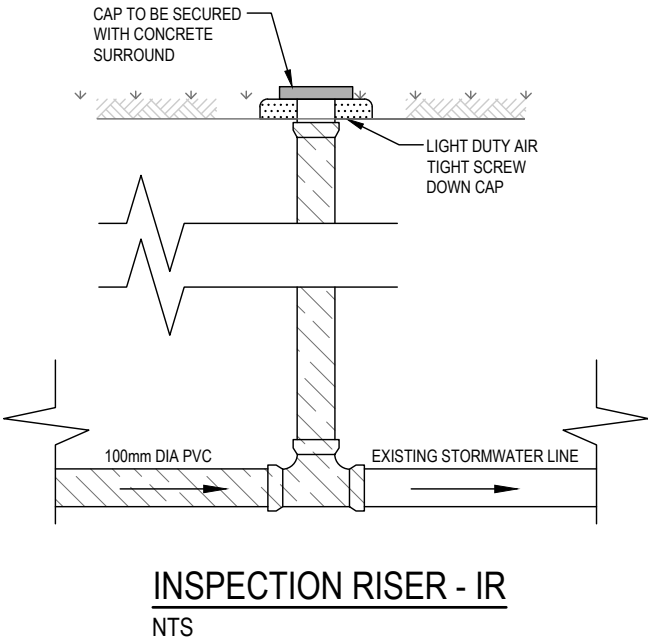
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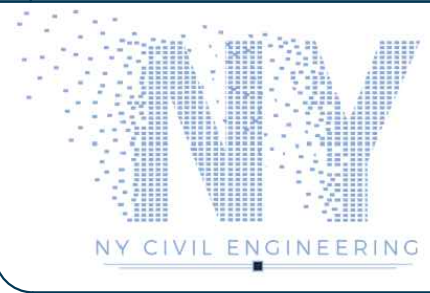

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	T 0416 334 977 E admin@nycivilengineering.com.au W www.nycivilengineering.com.au					PROPOSED ALTERATIONS & ADDITIONS No.30 KALANG ROAD ELANORA HEIGHTS				

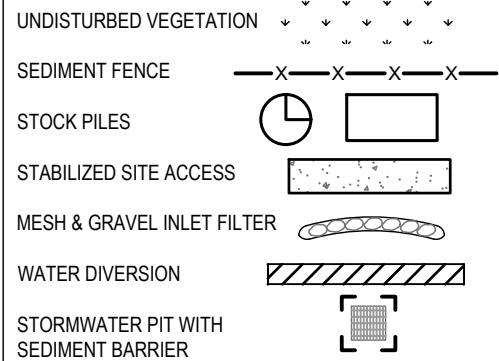
DUST CONTROL:

NOTE: DURING EXCAVATION, DEMOLITION AND CONSTRUCTION, ADEQUATE MEASURES SHALL BE TAKEN TO PREVENT DUST FROM AFFECTING THE AMENITY OF THE NEIGHBORHOOD.

THE FOLLOWING MEASURES MUST BE ADOPTED:

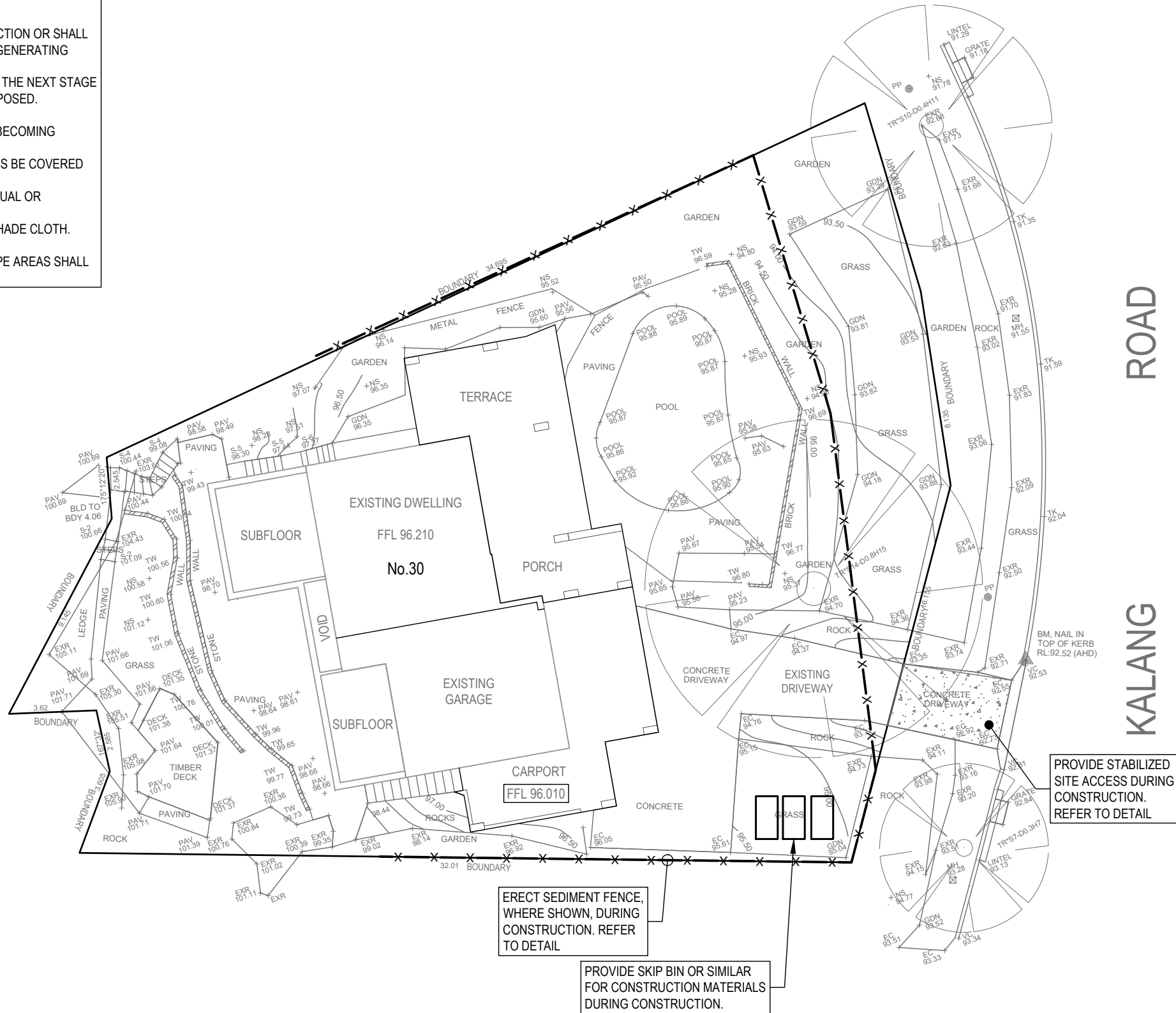
1. PHYSICAL BARRIERS SHALL BE ERECTED AT RIGHT ANGLES TO PREVENT WIND DIRECTION OR SHALL BE PLACED AROUND OR OVER DUST SOURCES TO PREVENT WIND OR ACTIVITY FROM GENERATING DUST.
2. EARTHWORKS AND SCHEDULING ACTIVITIES SHALL BE MANAGED TO COINCIDE WITH THE NEXT STAGE OF DEVELOPMENT TO MINIMISE THE AMOUNT OF TIME THE SITE IS LEFT TO CUT OR EXPOSED.
3. ALL MATERIALS SHALL BE STORED OR STOCKPILED AT THE BEST LOCATIONS.
4. THE GROUND SURFACE SHOULD BE DAMPENED SLIGHTLY TO PREVENT DUST FROM BECOMING AIRBORNE BUT SHOULD NOT BE WET TO THE EXTENT THAT RUN-OFF OCCURS.
5. ALL VEHICLES CARRYING SOIL OR RUBBLE TO OR FROM THE SITE SHALL AT ALL TIMES BE COVERED TO PREVENT THE ESCAPE OF DUST.
6. ALL EQUIPMENT WHEELS SHALL BE WASHED BEFORE EXISTING THE SITE USING MANUAL OR AUTOMATED SPRAYERS AND DRIVE - THROUGH WASHING BAYS.
7. GATES SHALL BE CLOSED BETWEEN VEHICLE MOVEMENTS SHALL BE FITTED WITH SHADE CLOTH.
8. CLEANING OF FOOTPATHS AND ROADWAYS SHALL CARRIED OUT DAILY.
9. ALL BUILDERS REFUSE, SPOIL AND/OR MATERIAL UNSUITABLE FOR USE IN LANDSCAPE AREAS SHALL BE REMOVED FROM SITE ON COMPLETION OF THE BUILDING WORKS.

LEGEND:



NOTES:

1. ALL EROSION AND SEDIMENT CONTROL MEASURES TO BE INSPECTED AND MAINTAINED DAILY BY SITE MANAGER IN ACCORDANCE WITH COUNCIL REQUIREMENTS.
2. ALL STOCKPILES TO BE CLEAR FROM DRAINS, GUTTERS AND FOOTPATHS.
3. DRAINAGE IS TO BE CONNECTED TO STORMWATER SYSTEM AS SOON AS POSSIBLE.
4. ROADS AND FOOTPATH TO BE SWEEPED DAILY AS REQUIRED BY COUNCIL.
5. IF YOU DO NOT COMPLY WITH COUNCIL REQUIREMENTS & DOCUMENTATION, YOU MAY BE LIABLE TO PROSECUTION FROM GOVERNMENT AUTHORITIES.



APPROVED BY	REVISION	DRAWN	DESCRIPTION	DATE	DRAWING TITLE	SHEET SIZE	JOB REFERENCE
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						SCALE	1:200
					PROJECT TITLE		DRAWING No.
					PROPOSED ALTERATIONS & ADDITIONS		D6
					No.30 KALANG ROAD		No. IN SET
					ELANORA HEIGHTS		7

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