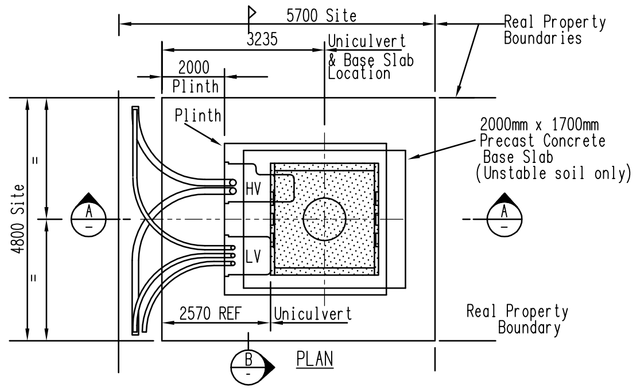
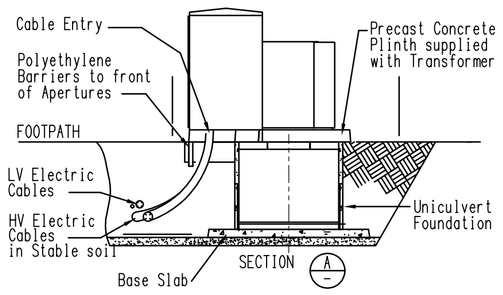
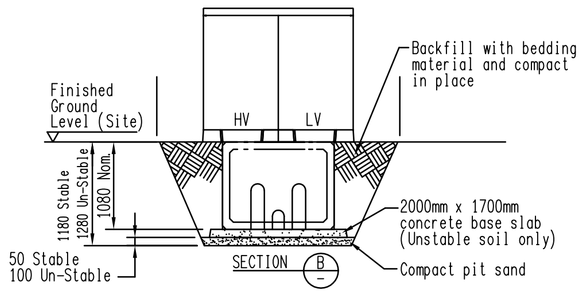


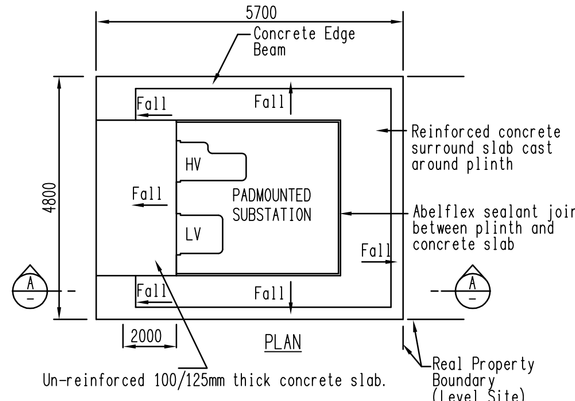
NOTES:

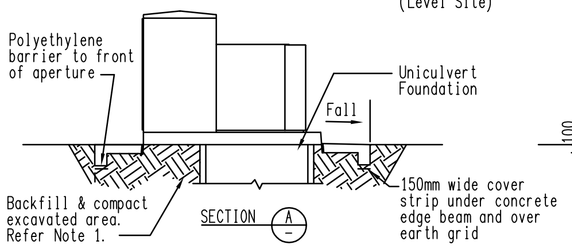
1. Foundation design details are as follows:
   - Unstable soils are soft clay to sandy gravel with a soil strength 50 - 150 kPa. These soil types REQUIRE a base slab as shown.
   - Stable soils are very stiff clay to shale/rock with soil strength of 150KPa or higher. These soil types DO NOT REQUIRE a base slab.
2. Lift uniculvert and base slab separately with 4 x 1.3t Reid Swiftlift lifting eyes.
3. Position top face of Uniculvert at finished ground level. (refer Civil Constructions drawings)
4. Installed Uniculvert shall be level.
5. If deep excavation is required under transformer cabinet and in front of foundation, plinth front edge shall be propped while excavation remains open.
6. Foundation Components:
   1 x Uniculvert (Stock Code 19959)
   2 x End Walls (Stock Code 19959)
   1 x Base Slab (Stock Code 19960)
   Uniculvert and End Walls come assembled with a Layer of Preformed Sealant to the perimeter of the Uniculvert End and between the Mating Surfaces.
7. Only remove minimum Knockout Area required to pass Conduits (Max. Conduit 150mm Nom. Dia.) or Cables through uniculvert void by tapping out Concrete.
8. Seal between conduits/cables and concrete end wall at knockout interface by grouting with high strength sand and cement grout after conduit installation to prevent entry of vermin and backfill ingress to uniculvert void.





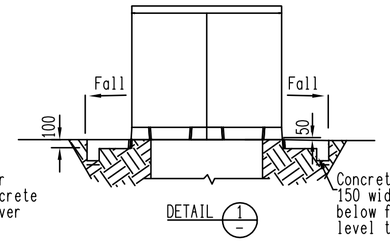
Refer Dwg: 7468-A4 | E





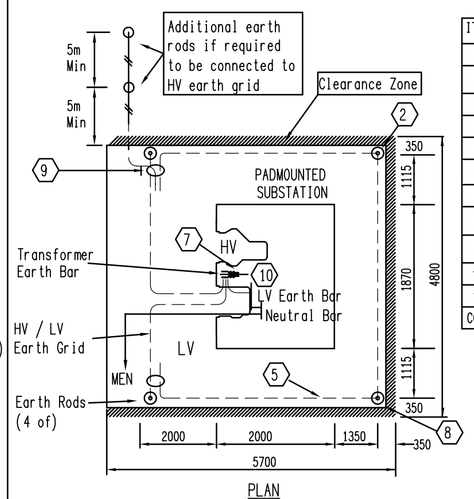
NOTE:

1. Backfill excavated area with crusher dust or pit sand and compact in place. Ensuring that only pit sand is used around direct laid cables.
2. Reinforced concrete surround slab:
   a) 100/125mm thick slab;
   b) 11 TM trench mesh reinforcement in centre of slab;
   c) 25 MPa grade concrete;
   d) Finish by wood float or by nylon broom.
3. The top face of the concrete surround slab shall be 25mm above the final surface level (when turf is laid).
4. The concrete slab is to slope away from plinth falling at a slope of 1 in 25.
5. Cable apertures through the precast concrete plinth shall be backfilled to 50mm from the top of plinth. A 30mm deep layer of 1:16 ratio weak mix concrete shall be placed to seal aperture.
6. The surface of the surround slab may be finished with a stencil pattern surface to match the surrounding pavements of the development. (Use Textcrete or equivalent product. Construct to supplier's specifications.)



TYPICAL CONCRETE SURROUND DETAIL
BY CIVIL CONTRACTOR

Refer Dwg: 7771-A4 | E

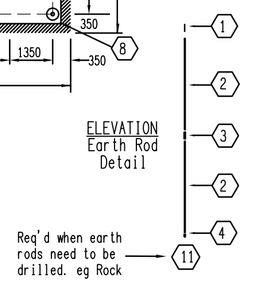


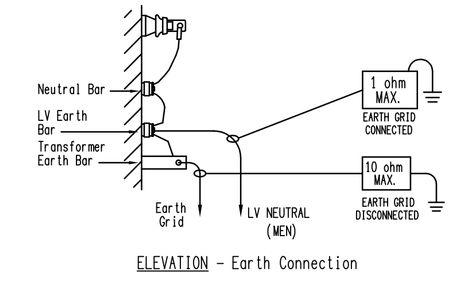
ITEM	DESCRIPTION	QTY	STOCK CODE
1	Earth Rod Driving Pin	4	06327
2	Cu Clad Earth Rod 1800 x 13mm	8	17321
3	Earth Rod Coupling Pin	4	06144
4	Conical Driving Point	4	06339
5	19/2.14mm Bare Cu Cable	25m	07053
6	Polymeric cable protection cover strip	25m	15345
7	Crimp Lug 70mm M12 Hole	2	06260
8	Cu Crimp "C" Connector Cable to Rod	6	12952
9	Cu Crimp "C" Connector Cable to Cable	2	12953
10	"Station Earth" Tag	1	06425
11	Bentonite/Gypsum (20kgs)	AR	17322

COMPATIBLE UNIT:- DSSQPMEG

NOTE:

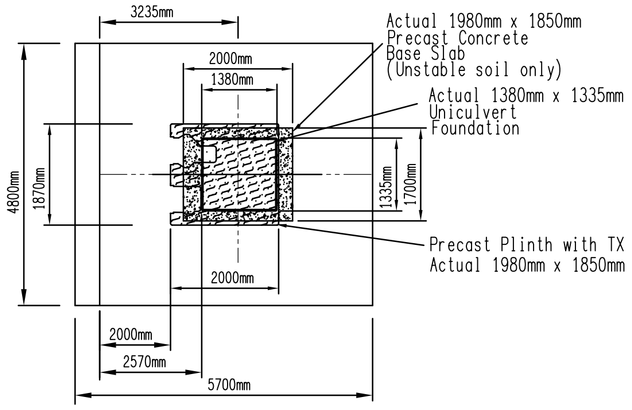
1. If 1.0 ohm cannot be achieved when earth grid is connected to system LV neutral then separate LV earthing is required.
2. Padmount earth tails to be 1500mm long with excess exposed above ground level.
3. Two earthwires from the earth grid to be connected to padmount transformer earth bar.
4. Earth Grid to be 500mm below ground level.
5. Polymeric cover strip shall be installed a minimum of 100mm above all earthing not beneath the padmount footprint.
6. Fence as required for residential and sloping sites.



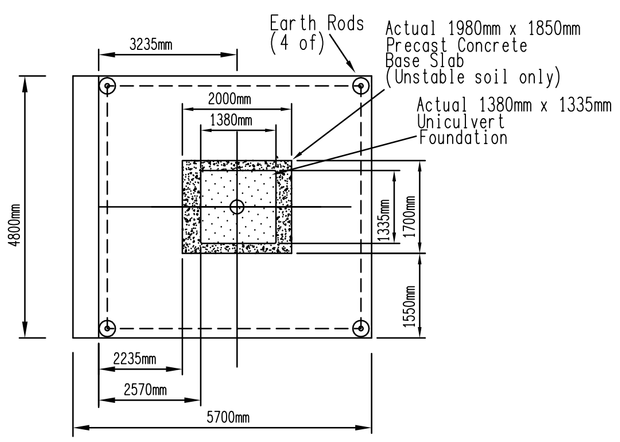


ELEVATION - Earth Connection

Refer Dwg: 7478-A4 | C

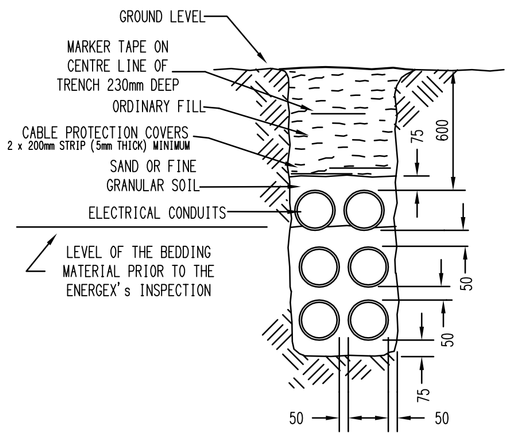


SITE SHOWING ENERGEX PRECAST PLINTH POSTIONING ON UNICULVERT



SITE LAYOUT SUMMARY TO POSITION DEVELOPERS UNICULVERT & BASE SLAB

METHOD OF LAYING UNDERGROUND ELECTRICAL CONDUITS IN PRIVATE PROPERTY



TYPICAL CONDUIT DETAIL

Cable conduit shall be of the following type:-

125mm Dia UPVC Orange Rigid Light Duty conduit to AS2053. Conduit bends shall have a Minimum radius of 1830mm.

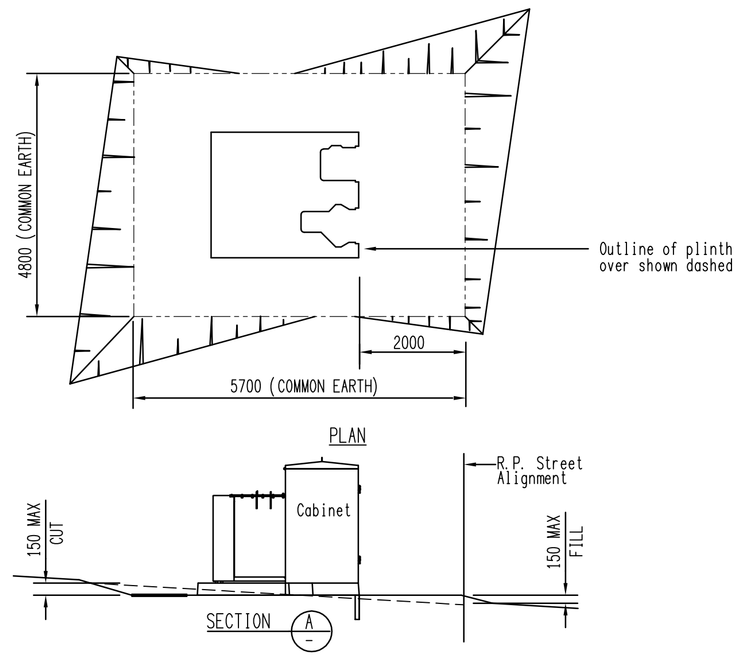
The conduits shall be laid in a straight line with sealed joints. Should any deviation be required in conduit route, 1830mm radius bends shall be used. Bends shall not be greater than 30 degrees. Cable pits shall be used for greater deviations. Refer to ENERGEX Planner for details.

The conduits shall have 600mm minimum cover and shall be bedded on compacted sand or fine granular soil free of rocks. The socket ends of conduits shall finish 150mm beyond the R.P. alignment and shall have 600mm minimum - 750mm maximum cover below finished footpath level at the R.P. alignment. A bellmouth shall be provided where the conduits terminate in the substation wall or wall of a substation trench. A 2.5mm plastic coated steel draw wire or 6mm braided Polypropylene Rope "BORAL KA10850" shall be left in each conduit.

Because of the physical distortion likely in large groups of buried UPVC conduits, High Density conduits shall be used for groups of more than 6 conduits. Conduits shall be 125mm or 150mm as specified by ENERGEX and shall be supplied and installed by the developer. Conduits shall be securely sealed by builder to prevent ingress of dirt until cable installation by ENERGEX and then resealed by ENERGEX.

Electricity Supply Conduits and Cables shall have polymetric cable protection covers placed 75mm above the top conduit face of the electricity supply conduits and cables. Cable protection covers covers shall be lapped when placed together; 100mm minimum along the logitudinal axis, 40mm minimum along the traverse axis and shall extend 40mm minimum past the external edges of the conduit/cable bank.

Polymeric cable protection cover shall be a minimum of 5mm thick as described in the Australian Standard; AS94102 for Polymeric Cable Protection Covers.



For SEPARATE LV & HV earthing a clearance zone of 12.6m wide by 8.9m deep is required.
The clearance zone is to be maintained free from metallic objects, buildings and structures, including their foundations.

NOTE:

1. ENERGEX's padmount clearance zone shall be levelled and surrounding area graded to ensure no water ponding.
2. No services other than the ENERGEX's electric cables shall pass through this substation site.
3. Clear access to the transformer shall be maintained for ENERGEX's personnel and heavy equipment.
4. After installation is complete the site surface is to be finished with a concrete slab.
5. Mature landscaping (including trees, sprinklers etc.) shall not encroach onto the substation site.

TYPICAL SITE PREPARATION DETAIL
BY CIVIL CONTRACTOR

Refer Dwg: 7472-A4 | C

UNDERGROUND SERVICES

UNDERGROUND SERVICES SHOWN IN VICINITY OF WORK SITES HAVE BEEN TAKEN FROM PAPER RECORDS AND ARE INDICATIVE ONLY.

CONSTRUCTION CONTRACTOR IS TO PROVE THAT THE NOMINATED SITE IS CLEAR OF ANY UNDERGROUND SERVICES BEFORE EXCAVATION.

QUEENSLAND DIAL BEFORE YOU DIG SERVICES
PHONE 1100 : FAX 1300 652 077

NOTES:

1.00 ACCESS

1.1 Personnel:-
ENERGEX's staff shall have access to the substation at all times without having to enter security areas. The onus will be on the customer to maintain said access 24 hours a day, 7 days a week.

1.2 Heavy Equipment - Stable Ground Sites:-

Transformers are hauled by flat bed trucks with self contained cranes.

Any access or maneuvering area which will be used for the purpose of off loading or loading transformers should be constructed to take the loading in all weather conditions.

Any reinstatement which may be necessary in the event of damage to concrete slab, paving tiles or road surfaces etc. is the responsibility of the owner of the property.

2.00 CONDUIT SPECIFICATION
All conduits, associated fittings and bends shall comply with the requirementsof AS/NZS 2053 and all above ground shall be U.V. stabilised.

CONDUITS
11kV Feeders
125mm min LD orange PVC

A continuous length of draw rope having a minimum breaking strength of 1.0kN, shall be left in the full length of conduits.

CONDUIT BENDS
Refer to drawing 7455-A4 for the range of available conduit bends. All conduit couplings shall be fitted in accordance with the manufacturer's instructions.

ENERGEX may need to install an earth wire and earth rods in conduit trenches from the substation site.

3.00 CUSTOMER'S CABLES

Where supply is made available from a circuit of a low voltage distribution board, the customer shall supply all connectors, stainless steel bolts, nuts, washers and connect to the terminals as directed by ENERGEX.

4.00 TRANSFORMER SITE

4.1 Transformer site to be surveyed as road reserve.
4.2 Maximum 150mm cut and fill acceptable at transformer site as per ENERGEX UDC manual page 7472-A4.
4.3 Sloping sites that require additional cutting or filling must have a retaining wall constructed by the civil contractor as per ENERGEX UDC manual page 7473-A4 or page 7474-A4.

SUMMARY OF ENERGEX STANDARD DRAWINGS REFER TO CONTROL COPIES FOR ADDITIONAL DETAILS

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PROJECT:
129 BARRACK ROAD

MURRARIE

REV:	DESCRIPTION:	DATE:
A	TENDER	31/07/2009

DRAWING:
ELECTRICAL SERVICES
ENERGEX PADMOUNT SUBSTATION ARRANGEMENTS

SCALE:	PROJECT NO:	DRAWING NO:	REVISION:
AS SHOWN AT A1	C0757a	E04	A