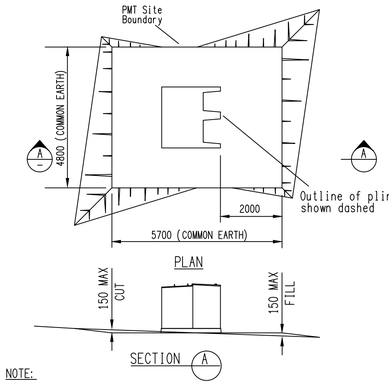


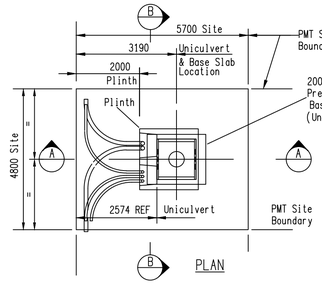
NOTE:

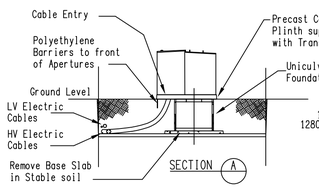
1. ENERGEX's padmount clearance zone shall be levelled and surrounding area graded to ensure no water ponding.
2. No services other than the ENERGEX's electric cables shall pass through this substation site.
3. Clear access to the transformer shall be maintained for ENERGEX's personnel and heavy equipment.
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.
6. Cut and fill levels greater than 150mm will require a Civil RPEQ certified design to ensure levels, compaction standards, drainage have been considered, Sites requiring retaining walls shall be designed in accordance with C3-2.6.

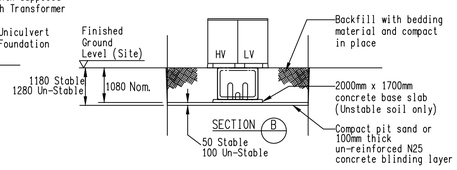
SITE PREPARATION DETAIL

REQUIRED TASKS	DATE COMPLETED YES	DATE COMPLETED NO	CHECKED BY
CUSTOMER RESPONSIBILITIES			
24 HOUR ACCESS PROVIDED.			
PADMOUNTED SUBSTATION SITE IS LEVEL.			
PADMOUNTED SUBSTATION SITE SIZE - 5.7M x 4.8M			
RETAINING WALLS (INCL. RPEQ APPROVAL IF REQUIRED).			
PADMOUNTED SUBSTATION SITE IS CLEAR OF ALL SERVICES.			
CORRECT FOUNDATION INSTALLED.			
CONDUITS ARE INSTALLED (INCLUDING BUNGS & DRAW WIRES)			
CONDUITS TRENCHES BACKFILLED & COMPACTED.			
FENCES INSTALLED.			
HAVE 2000mm DEDICATED CLEAR ZONE IN FRONT OF PLINTH.			
CUSTOMER RESPONSIBILITIES PRIOR TO COMMISSIONING			
SITE BACKFILLED & COMPACTED (INCLUDING UNDER PLINTH)			
BOUNDARY SURROUND & SITE SURFACE CONCRETED.			
AREA SUITABLY DRAINED (NO PONDING)			
SITE CLEANED-UP NEATLY.			

NOTE. × if applicable.



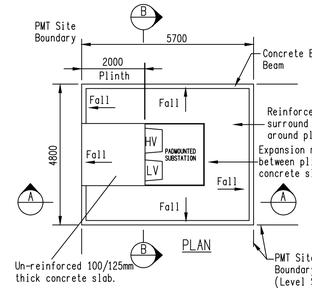




NOTES:

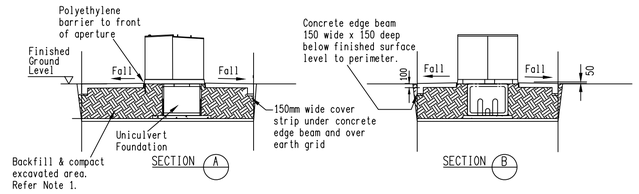
1. Foundation design details are as follows:
   - Unstable soils are soft clay to sandy gravel with a soil strength 50 - 150 kPa. These soil types REQUIRE a base slab as shown.
   - Stable soils are very stiff clay to shale/rock with soil strength of 150KPa or higher. These soil types DO NOT REQUIRE a base slab.
2. Lift uniculvert & 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.
9. Excavate to property boundaries to facilitate installation of earth grid.
10. Consumers mains (where present) shall not cross HV mains or run back under transformer.

FOUNDATION DETAIL



NOTE:

1. Backfill excavated area with crusher dust, deco 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 floot 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.)



REINSTATEMENT DETAIL

Cable conduit shall be of the following type;

125mm Dia UPVC Light Duty Rigid Pressure pipe to AS/NZS2053. 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.

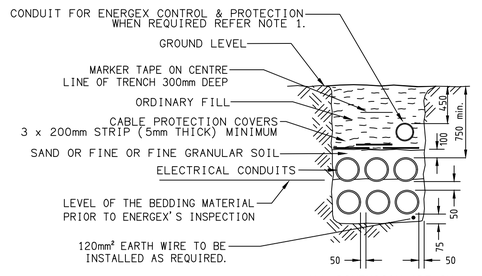
The conduits shall have 750mm minimum cover and shall be bedded on compacted sand or fine granular soil free of rocks. The socket ends of conduits shall finish 150mm beyond the R.P. alignment and shall have 750mm min cover below finished footpath level at the R.P. alignment. A bellmouth shall be provided 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 installed in each conduit (1kN min. breaking strength).

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.

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

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

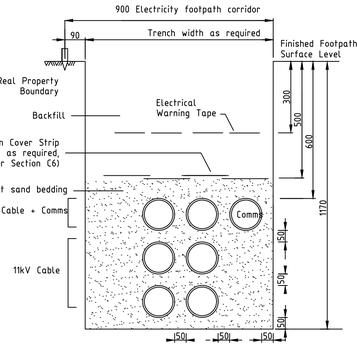
Polymeric cable protection cover shall be a minimum of 5mm thick as described in Australian Standard; AS/NZS 4702 for Polymeric Cable Protection Covers.



TYPICAL TRENCH CROSS SECTION
NTS

NOTE
1. INSTALL A NEW COMMUNICATIONS CONDUIT OF MINIMUM SIZE, 100mm LD PVC WHITE CONDUIT,

TYPICAL TRENCH CROSS SECTION FOR ENERGEX CONDUITS IN PRIVATE PROPERTY



11KV NETWORK

Notes:
(1) Energex Communication conduit to be 100mm white located top kerbside.
(2) Power cable conduits to be 125mm orange, light duty.
(3) Separation for conduits - 50mm minimum, up to 160mm desirable.
(3) Increased cover required for road crossings.
(4) Select Backfill and Pit sand bedding complying with ENERGEX UDCM Section C2
(5) For de-rating factors for cables in duct bank, refer to the Plant Rating Manual

TYPICAL CROSS SECTION - 11KV AND C&I (FOOTPATH ON PUBLIC FOOTPATHS)

NOTES

1. CABLE CONDUIT SHALL BE OF THE FOLLOWING TYPE: LIGHT DUTY ELECTRICAL CONDUIT TO AS/NZS 2053. CONDUIT BENDS SHALL HAVE A MINIMUM RADUIS OF 1830mm.
2. CONDUITS SHALL BE 125mm ORANGE FOR ELECTRICAL AND 100MM WHITE (LOCATED TOP KERBSIDE) AS SPECIFIED BY ENERGEX AND SHALL BE SUPPLIED AND INSTALLED BY THE DEVELOPER OR ENERGEX. CONDUITS SHALL BE SECURELY SEALED TO PREVENT INGRESS OF DIRT UNTIL CABLE INSTALLATION AND THEN RESEALED.
3. EACH CONDUIT TO BE FITTED WITH A 6mm BRAID POLYPROPYLENE DRAW ROPE TO PULL IN HAULAGE ROPE. (MINIMUM BREAKING STRENGTH OF 1.0kN.)
4. ENERGEX MAY NEED TO INSTALL AN EARTH WIRE AND EARTH RODS IN CONDUIT TRENCHES FROM THE SUBSTATION SITE.
5. ELECTRICITY SUPPLY CONDUITS AND CABLES SHALL HAVE POLYMERIC CABLE PROTECTION COVER STRIPS PLACED 100mm ABOVE THE TOP CONDUIT FACE OF THE ELECTRICITY SUPPLY CONDUITS AND CABLES. CABLE PROTECTION COVER STRIP SHALL BE LAPPED WHEN PLACED TOGETHER; 100mm MINIMUM ALONG THE LONGITUDINAL AXIS, 40mm MINIMUM ALONG THE TRAVERSE AXIS AND SHALL EXTEND 40mm MINIMUM PAST THE EXTERNAL EDGES OF THE CONDUIT/CABLE BANK.
6. POLYMERIC CABLE PROTECTION COVER SHALL BE A MINIMUM OF 5mm THICK AS DESCRIBED IN THE AUSTRALIAN STANDARD; AS4702 FPR POLYMETRIC CABLE PROTECTION COVERS.
7. REDUCED CONDUIT SEPARATION MAY BE ACCEPTED TO AVOID SPECIFIC OBSTACLES
8. MIN. DEPTHS SHOWN ARE THOSE DEPTHS REQUIRED BY CODE OF PRACTICE, WORKS (MINOR ROADS) AND DMR (ARTERIAL ROADS).

Note

ENERGEX will not commision the transformer until the transformer site has been completed to ENERGEX specifications (including the concrete surround).

ENERGEX specifications for construction of the transformer site and installation of conduits on private property are available at the following web address.
https://swp.energex.com.au/service_providers/technical_docs/asp/technical_documents.asp

Underground Distribution Construction Manual 00305 v16
Section C1 - Conduits
Section C2 - Excavations & Reinstatements
Section C3 - Padmount Transformer Sites

Commercial and Industrial Substations Manual 00293 v11
Section 14 - Drawing 11040-A4-14-33 Sht 2

The site contractor is to refer all substation construction queries to their electrical consultant.

ENERGEX ACCEPTANCE

NAME .....

OFFICE .....

SIGNED .....

DATE / /

ENERGEX takes no responsibility for the accuracy of the information provided on this drawing

BEFORE YOU DIG www.byda.com.au

REV:	DESCRIPTION:	DATE:
B	CONSTRUCTION	18/01/2024

ELECTRICAL DESIGN GROUP BRISBANE PTY LTD
ACN 092 710 793

TRADING AS:
ELECTRICAL DESIGN GROUP

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USE FIGURED DIMENSIONS IN PREFERENCE TO SCALE.

ALL DIMENSIONS TO BE VERIFIED ONSITE.

CULVERT INSPECTION REQUIRED BEFORE TRANSFORMER IS DELIVERED - 5 BUSINESS DAYS PRIOR NOTICE NEEDED.
CONTACT _____ PH: _____ EMAIL: _____

TRANSFORMER WILL NOT BE ENERGISED UNTIL ALL REQUIREMENTS ARE MET.

ELECTRICAL DESIGN GROUP
ELECTRICAL BUILDING SERVICES CONSULTANTS
BRISBANE GOLD COAST
P.O.Box 15, Sherwood Q.4075
Phone: (07) 3278 4375
Email: brisbane@edg.net.au
Web: www.edg.net.au

PROJECT:
CURRUMBIN WILDLIFE SANCTUARY
SITE MSB

28 TOMEWIN STREET, CURRUMBIN, QUEENSLAND

DRAWING:
ELECTRICAL SERVICES
ENERGEX PADMOUNT SUBSTATION STANDARD DETAILS

SCALE:	PROJECT NO:	DRAWING NO:	REVISION:
NOT TO SCALE AT A1	C3112a	E04	B