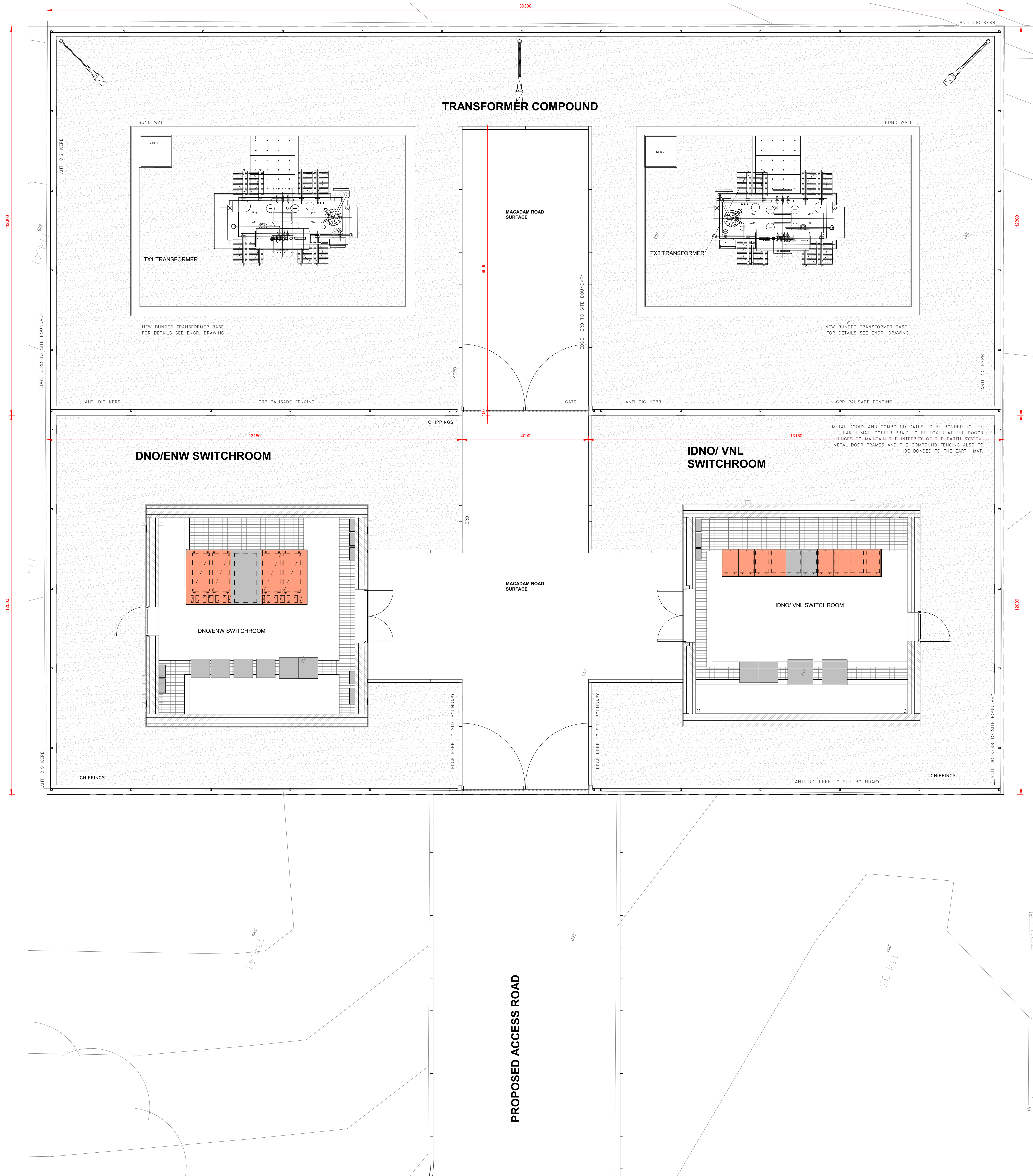
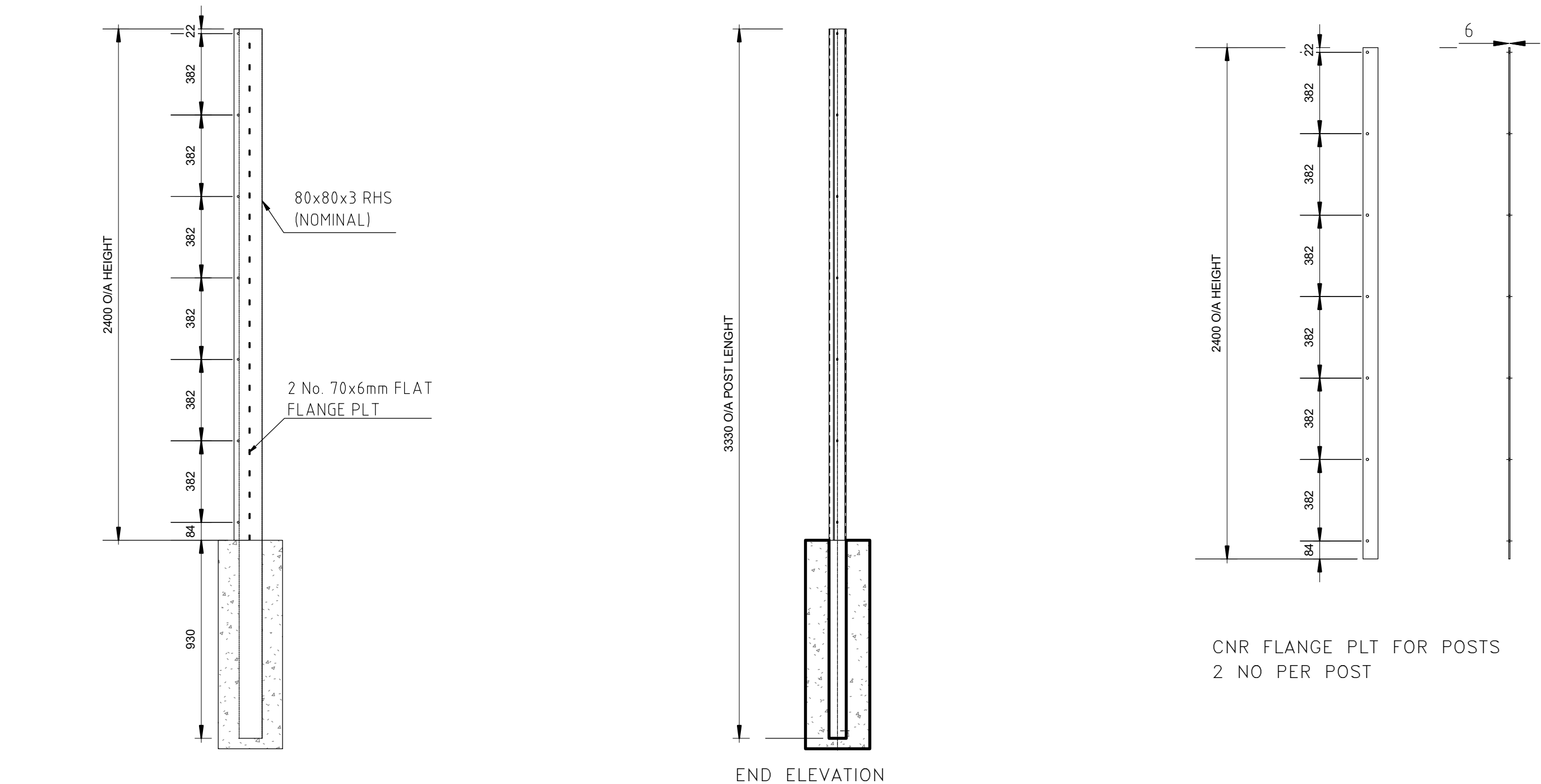
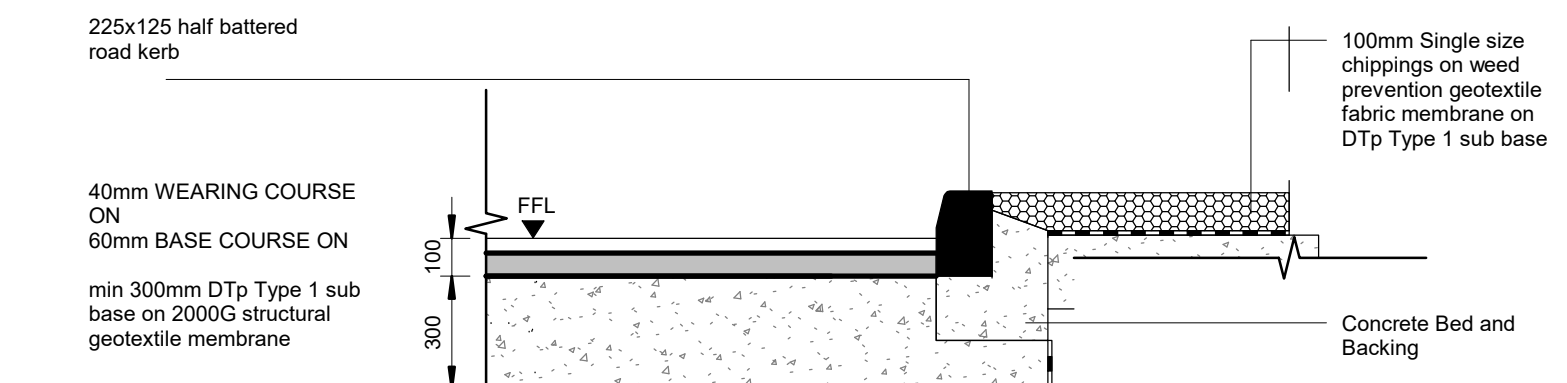


NOTES

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20 GA SECTION AT KERB DETAILS

:20 **GA FENCE DETAILS - ELEVATION**

FENCING
EARTHING AND ALL PROPERTY AND DANGER NOTICES TO FENCE PANELS SHALL BE THE
CONSTRUCTOR'S RESPONSIBILITY.

FENCING TO OUTDOOR EQUIPMENT SHALL BE A MINIMUM OF 2.4M OVERALL HEIGHT ABOVE ANTI-DIG SECURITY KERB OR BUND WALL LEVEL WHERE APPLICABLE.

ALL FENCING SHALL BE HOT DIP GALVANISED STEEL. HOT DIP GALVANISED MATERIALS SHALL NOT BE POST DRILLED; FIXINGS TO BE MADE AFTER GALVANISING SHALL BE MADE WITH CLAMPED FIXINGS BY PRIOR AGREEMENT WITH ENERGYNETWORKS.

ANTI-CLIMB MEASURES SHALL BE INCORPORATED WITHIN SECURITY FENCING SYSTEMS WHERE THIS PRESENTS. INTERNAL CORNERS EXTERNAL TO THE FENCE, ABUTS SUBSTATION BUILDINGS OR EXTERNAL FENCES OR HAS POTENTIAL CLIMBING AIDS WITHIN 2.0M EXTERNAL OR 1.5M INTERNAL.

CONSTRUCTION OF FENCING IMMEDIATELY ADJACENT TO THE POSITION OF A TRANSFORMER OR REACTOR SHALL BE SUCH THAT IT IS READILY DEMOUNTABLE TO ALLOW EQUIPMENT TO BE REMOVED FOR MAINTENANCE OR REPLACEMENT.

FENCING SHALL BE ALTERNATIVE MESH. ALTERNATIVE MESH SECURITY FENCING SYSTEMS SHALL BE OPEN MESH STEEL PANEL SYSTEMS WITH CATEGORY 4 (EXTRA-HIGH SECURITY) STANDARD OF FIXINGS AND MESH PANEL DETAILS TO BS 1722 PART 14 THAT INCORPORATE:

TAMPER RESISTANT CUP HEADED BOLTS INTO FULL HEIGHT FLAT METAL PLATE FIXING STRIPS BOLTED FULL DEPTH THROUGH POSTS TO NUTS ON INNER REAR FACE.

THE DESIGN AND FABRICATION OF FENCING SYSTEMS SHALL MAKE ALLOWANCE FOR ADEQUATE CONNECTION OF EARTHING

WELDED MESH TYPE PANELS WITH MAXIMUM 12.5 X 75MM MESH SPACING, MINIMUM 4MM THICK WIRE AND ADDITIONAL STIFFENING WIRES. OR EXPANDED METAL TYPE PANELS WITH MAXIMUM 10MM X 70MM MESH SPACING WITH 3MM THICK STRAND (5.5MM WIDE MAIN STRAND).

MINIMUM 80 X 80 X 3.5MM THICK SQUARE HOLLOW SECTION POSTS.

POST POCKETS
GROUND MOUNTED POSTS SHALL BE SET WITHIN IN SITU CONCRETE MINIMUM 0.9 X 0.9 X 0.3M DEEP PADS OR MINIMUM 0.45 X 0.45 X 0.9M POCKETS.

WHERE POSTS ARE SET WITHIN OR ATOP REINFORCED CONCRETE WALLS (INCLUDING TO BUNDS) THESE WALLS SHALL NOT BE LESS THAN 300MM THICK.

POST FOUNDATION DESIGN SHALL ALLOW FOR ANY HEIGHT/LOAD INCREASE ASSOCIATED WITH ATTACHED OR PROPOSED FUTURE ANTI-CLIMB BARRIERS OR ELECTRIC PULSE POWER FENCE.

ANTI-DIG SECURITY KERB
SECURITY FENCING SHALL INCORPORATE A REINFORCED IN SITU CONCRETE ANTI-DIG SECURITY KERB, SET A MAXIMUM OF 50MM BENEATH FENCE PANELS. ANTI-DIG SECURITY KERBS SHALL BE NOT LESS THAN 200MM WIDE WITH A MINIMUM 35MM UPSTAND AND BURIED NOT LESS THAN 300MM BELOW GROUND LEVEL. ANTI-DIG SECURITY KERBS SHALL INCORPORATE 25MM CHAMFERS TO TOP EDGES.

COLOURED FENCING SYSTEMS
APPROPRIATE PAINTED SYSTEMS MAY BE APPLIED AFTER ERECTION BUT PRE-COATED SYSTEMS THAT IMPAIR ELECTRICAL CONTINUITY FOR EARTHING PURPOSES SHALL NOT BE ACCEPTABLE.

COLOUR: RAL 6005 MOSS GREEN

WHERE ENERGY NETWORKS WILL SUBSEQUENTLY ADOPT THE CIVIL FABRIC OF THE SUBSTATION AND PAINT SYSTEMS TO GALVANISED FENCING ARE NECESSARY THEN THESE SHALL COMPRISE:

- ETCH COAT AND WASH PREPARATION, INCLUDING SPOT PRIMING WITH ONE COAT ZINC PHOSPHATE PRIMER TO ANY AREAS WHERE THE GALVANISING HAS BEEN DAMAGED OR BARE FERROUS METAL IS EXPOSED.
- 80 MICRONS: SINGLE COAT BUILD-UP OF GLOSS FINISH BASE METAL PRIMER DESIGNED TO PROVIDE EXCELLENT ADHESION TO THE SURFACE OF NEW BRIGHT OR WEATHERED GALVANISED METAL SURFACES.
- 80 MICRONS: TWO-COAT BUILD-UP OF GLOSS FINISH SPECIALLY FORMULATED FOR METAL WITH A QUICK DRYING SOLVENT-BASED FORMULATION THAT CAN BE OVER-COATED WITHIN 2 TO 6 HOURS (DEPENDING ON CONDITIONS).

GATES
GATES SHALL PROVIDE THE SAME (MINIMUM) LEVEL OF SECURITY AS, AND BE COMPATIBLE WITH, THE ASSOCIATED FENCE TO EITHER SIDE.

COLOUR: RAL 6005 MOSS GREEN

GATES SHALL ACCOMMODATE ENERGY NETWORKS PADLOCKS. LOCKS, HANDLES AND CUT-OUTS FOR LOCKING MECHANISMS SHALL INCORPORATE INTEGRAL SHROUDS SUCH THAT THEY DO NOT PRESENT POTENTIAL CLIMBING AIDS.

PREVENTED POTENTIAL CLIMBING AIDS, THE SPIGOT OF THE TOP HINGE SHALL BE REVERSED TO POINT DOWNWARDS TO REVENT THE GATE BEING LIFTED OFF.

VEHICULAR GATES SHALL HAVE CLEAR OPENINGS NOT LESS THAN THE WIDTH OF THE ASSOCIATED ROAD OR 4.0M WHICHEVER IS THE GREATER. PERSONNEL GATES SHALL HAVE CLEAR OPENINGS APPROPRIATE FOR THEIR REQUIRED OPERATIONAL USE SUBJECT TO A MINIMUM OF 900MM.

THE MAXIMUM CLEAR SPACE BENEATH A GATE IN THE CLOSED POSITION SHALL BE 85MM.

PAVEMENTS
ROAD CROSSINGS FROM HIGHWAYS
WHERE VEHICULAR CROSSINGS ARE REQUIRED TO HIGHWAY FOOTWAYS OR VERGES THE
DESIGN AND CONSTRUCTION SHALL BE TO THE LOCAL AUTHORITY'S APPROVAL AND THE
CONSTRUCTOR SHALL BE RESPONSIBLE FOR ALL NOTIFICATIONS TOGETHER WITH ANY
ASSOCIATED FEES.

SUBSTATION ACCESS/SERVICE ROADS
PRIMARY SUBSTATIONS SHALL HAVE ACCESS ROADS THAT PROVIDE VEHICULAR ACCESS ADEQUATE FOR THE SAFE OPERATION, MAINTENANCE AND REPLACEMENT OF THE ENTIRE SUBSTATION (EQUIPMENT AND CIVIL INFRASTRUCTURE), INCLUDING ACCESS ROADS THAT FACILITATE TRANSFORMER AND SWITCHGEAR INSTALLATION AND FUTURE REMOVAL TOGETHER WITH ACCESS FOR ALL OTHER VEHICLES NECESSARY FOR GENERAL MAINTENANCE.

WHEREVER PRACTICABLE, SUBSTATION ACCESS ROADS SHALL INCORPORATE PARKING AND/OR TURNING AREAS FOR VEHICLES THAT DESIGN OUT THE RISK ASSOCIATED WITH REVERSING OUT OF THE SITE.

OVERALL SUBSTATION DESIGN SHALL FACILITATE THE USE OF ALL SUBSTATION ACCESS ROADS OUTSIDE DAYLIGHT HOURS.

- 3.5M GENERALLY.
- 4.5M FOR PRIMARY TRANSFORMER OR REACTOR ACCESS, INCREASED AS NECESSARY AT BENDS.

ACCESS ROADS SHALL BE TO THE CONSTRUCTOR'S OWN SITE-SPECIFIC DESIGN TO SUIT ACTUAL GROUND CONDITIONS BUT SHALL NOT BE LESS THAN 400MM OVERALL CONSTRUCTION THICKNESS, INCLUSIVE OF A STRUCTURAL GEOTEXTILE MEMBRANE BENEATH SUB-BASE WHERE APPLICABLE.

PAVED AREAS FOR PERSONNEL ACCESS
PAVED AREAS SHALL COMPRISE MAXIMUM 600X600MM SIZED 50MM THICK PRECAST PAVING SLABS ON A COMBINED MINIMUM 125MM OVERALL THICKNESS OF SAND-CEMENT BED ON COMPACTED IMPORTED NGTS CLASS D (DTP TYPE 1) CLEAN GRADED STONE SUB-BASE. PERIMETERS TO PAVED AREAS THAT ARE NOT OTHERWISE CONTAINED BY BUILDINGS OR ROAD KERBS SHALL BE EDGED WITH A 200X500MM PRECAST CONCRETE EDGING SET IN A CONCRETE HAUNCH AND FOUNDATION.

ENCLOSURES SHALL INCORPORATE APPROACH AND PERIMETER EDGED-PAVING SURFACING TO AND BETWEEN DOORS (AND TO GATES TO TRANSFORMER/REACTOR BAYS) TO FACILITATE PERSONNEL ACCESS.

SURFACED AREAS FOR EQUIPMENT ACCESS
ENHANCED SURFACE CONSTRUCTION FOR EQUIPMENT INSTALLATION/REMOVAL SHALL BE AGREED WITH ENERGYNETWORKS ON A SITE-SPECIFIC BASIS PRIOR TO CONSTRUCTION.

CABLE DUCT CROSSINGS
CABLE CROSSINGS TO ROADS WITHIN SUBSTATIONS SHALL BE ROBUST RIGID ENERGY NETWORKS APPROVED PVC DUCTED SYSTEMS WITH A MINIMUM 150MM THICK CONCRETE SURROUND AND SHALL INCLUDE DRAW CORDS AND PROPRIETARY EXPANDING FOAM OR OTHER APPROVED TEMPORARY STOP-ENDS TO SPARE WAYS.

DUCTED SYSTEMS TO EACH CABLE ROAD CROSSING SHALL ACCOMMODATE ALL CABLE REQUIREMENTS, INCLUDING TREFOIL FORMATIONS WHERE APPLICABLE AND CABLE REQUIREMENTS FOR IDENTIFIED FUTURE CIRCUITS/INSTALLATIONS, TOGETHER WITH NO LESS THAN 10% OVERALL SPARE CAPACITY OR TWO ADDITIONAL DUCTS OF THE SAME TYPE AND DIAMETER (I.E. WHICHEVER IS THE GREATER).