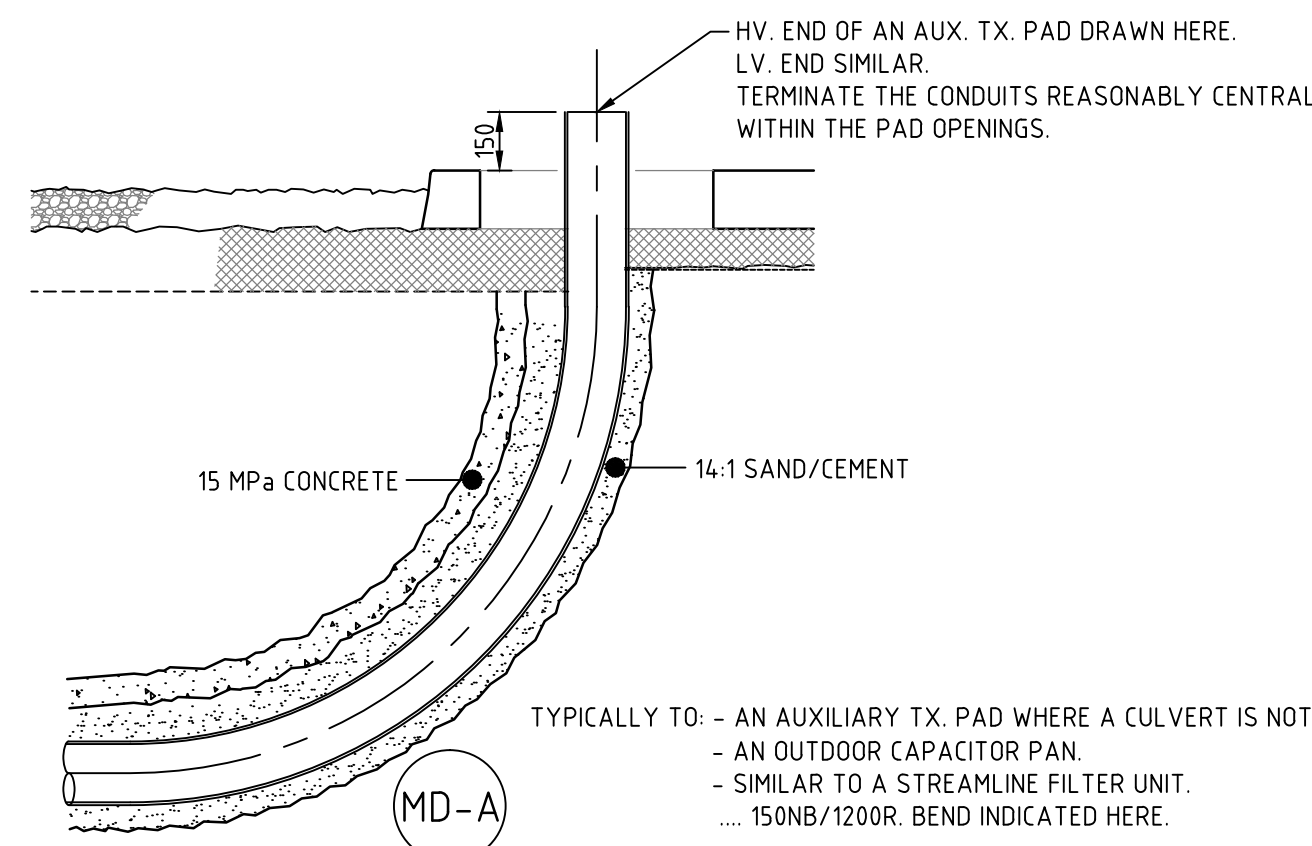




NOTES:
CONDUITS

ALL CONDUITS TO BE ORANGE ELECTRICAL HEAVY DUTY SMOOTH BORE.
ALL SERVICES ARE TO BE LOCATED WITH NON DESTRUCTIVE MEANS PRIOR TO ANY EXCAVATION COMMENCING.

ALL CONDUITS ENTERING THE BASEMENT OF SUBSTATIONS AND EXTERNAL PITS ARE TO BE HORIZONTAL FOR ONE METRE PRIOR TO ENTERING BASEMENT AND PIT WALLS AND BE SUPPLIED WITH BELLMOUTHS AT ALL WALL TERMINATIONS.

ALL CONDUIT JOINTS ARE TO BE SEALED WITH APPROVED PVC SOLVENT CEMENT SUPPLIED BY THE CONTRACTOR.

ALL CONDUITS TO BE PROVIDED WITH GREEN DRAW ROPE. DRAW ROPE IS TO BE TO ENDEAVOUR ENERGY STANDARDS.

ALL CONDUIT BENDS SHALL BE SMOOTH, FLAT AND TRUE, HAVE A MINIMUM RADIUS OF 6 METERS UNLESS OTHERWISE SPECIFIED. ALL CONDUIT BENDS TO BE ENCASED IN 15MPa CONCRETE, MINIMUM 75mm THICKNESS ALL ROUND FOR A DISTANCE OF 500mm ALONG THE STRAIGHT CONDUIT FROM THE JOINT.

UNLESS OTHERWISE ADVISED, ALL CONDUITS, CONDUIT BENDS, ASSOCIATED CONDUIT FITTINGS, CONDUIT DRAW ROPE AND TRENCH CONSUMABLES ARE TO BE SUPPLIED BY THE CONTRACTOR. ALL CONDUITS AND FITTINGS ARE TO BE IN ACCORDANCE WITH ENDEAVOUR ENERGY REQUIREMENTS AND/OR AS NOMINATED BY THE ENDEAVOUR ENERGY INSPECTOR/REPRESENTATIVE.

ALL CONDUITS TO BE PROVIDED WITH APPROVED END CAPS WITH THE INSTALLED DRAW ROPE RETAINED AT THE CONDUIT END CAP.

ALL CONDUITS SHALL BE PROVEN INTERNALLY WITH AN APPROVED MANDREL TEST PRIOR TO THE INSTALLATION OF ANY CABLES. THE MANDREL TEST IS TO BE PERFORMED BY THE CIVIL CONTRACTOR AND WITNESSED BY THE ENDEAVOUR ENERGY INSPECTOR.

ALL CONDUIT INSTALLATION WORK IS TO BE APPROVED BY THE ENDEAVOUR ENERGY INSPECTOR. ALL DEFECTIVE WORK SHALL BE REPAIRED IMMEDIATELY BY THE CONTRACTOR.

COMPACTED BACKFILL

THE EARTH GRID DESIGN IS BASED ON THE SOIL RESISTIVITY TEST RESULTS CARRIED OUT FOR THE SITE AND THEREFORE THE ORIGINAL EXCAVATED MATERIAL SHOULD BE USED WHEN BACKFILLING.

ALL BACKFILL MATERIAL SHALL COMPLY WITH THE FOLLOWING:

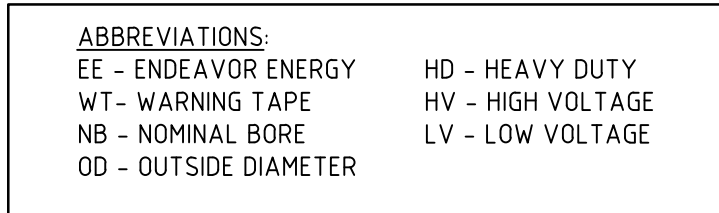
- BE FREE FROM ORGANIC, COMBUSTABLE AND PERISHABLE MATTER
- HAVE A MAXIMUM PARTICLE SIZE OF 25mm.
- HAVE A PLASTICITY INDEX BETWEEN 2% AND 15%

WHERE THE ORIGINAL SOIL IS INSUFFICIENT TO FULLY BACKFILL, ADDITIONAL MATERIAL OF SIMILAR ELECTRICAL RESISTIVITY TO THE ORIGINAL IS TO BE USED.

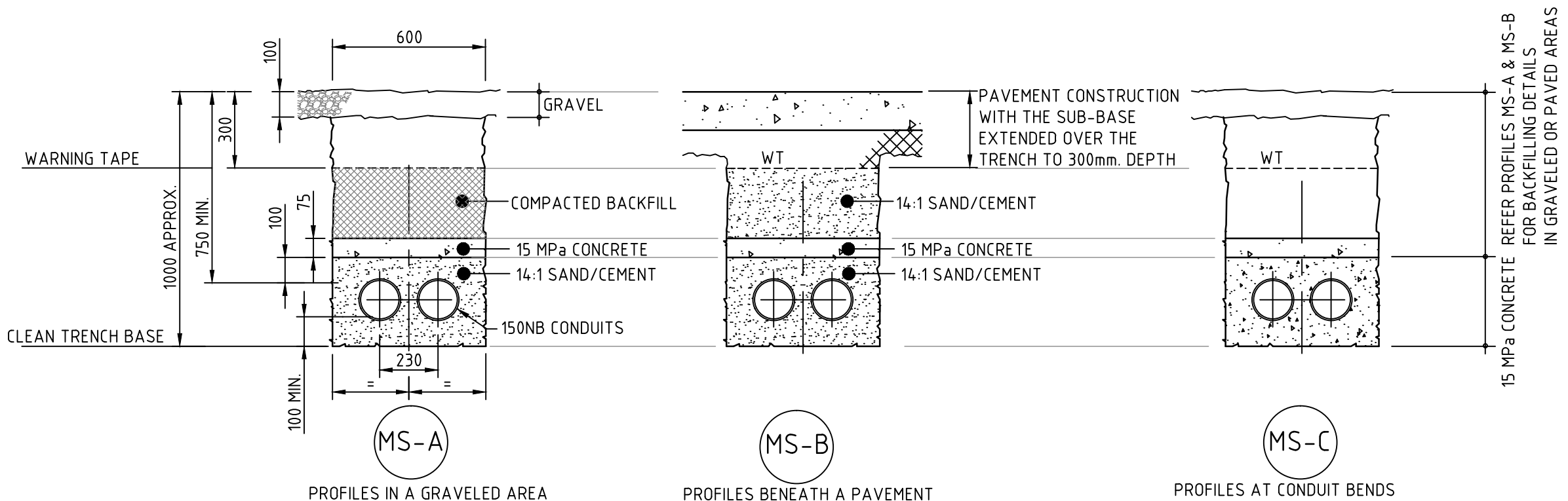
ALL BACKFILL MATERIAL SHALL BE PLACED IN HORIZONTAL LAYERS, 200mm MAXIMUM THICKNESS AND COMPACTED AT OPTIMUM MOISTURE CONTENT ($\pm 2\%$) TO ACHIEVE A DRY DENSITY EQUIVALENT OF 98% OF MAXIMUM DRY DENSITY WHEN TESTED BY THE COMPACTION TEST FROM AS1289

14:1 SAND/CEMENT

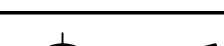
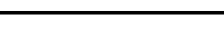
TO HAVE A THERMAL RESISTIVITY (g) LESS THAN 0.9 °C m/W MOISTURE EXTRACTED. THE SAND SHALL BE A "FATTY" SAND. A "FATTY" SAND/CEMENT MIX OF 14:1 WILL GENERALLY PROVIDE $g=0.8$ TO 0.9 °C m/W MOISTURE EXTRACTED.



NOTE: - MAINS FEEDER CABLE CONDUITS END FROM A LOCATION 1.0M OUTSIDE THE BOUNDARY FENCE USUALLY AT A STREET FRONTAGE TO THE BASEMENT WALLING OF A CONTROL BUILDING WHERE ALL INDOOR SWITCHING EQUIPMENT IS USED



NOTE: - SINGLE CONDUITS SUCH AS ISOLATION TRANSFORMER & CAPACITOR CONDUITS SIMILAR WITH 300 mm WIDE TRENCH

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 ORIGINAL SCALE 1:20		APPROVED GREG SIMPSON		DO NOT SCALE DIMENSIONS IN MILLIMETRES		REFERENCE DRAWINGS		AUTHORISED D. ASVESTAS	
DRAWN BM/GNS				STANDARD TRENCH PROFILES WITHIN A SUBSTATION MAINS FEEDERS AND AUXILIARY TRANSFORMER CONDUITS					
DATE 13/10/2011									
CH'D G. SCHAFER									
				MGR TRANSMISSION PROJECT DEVELOPMENT		1-03-2012		Rev. C	
				A1		366060			
						SHEET No 1 OF 1 SHEETS			