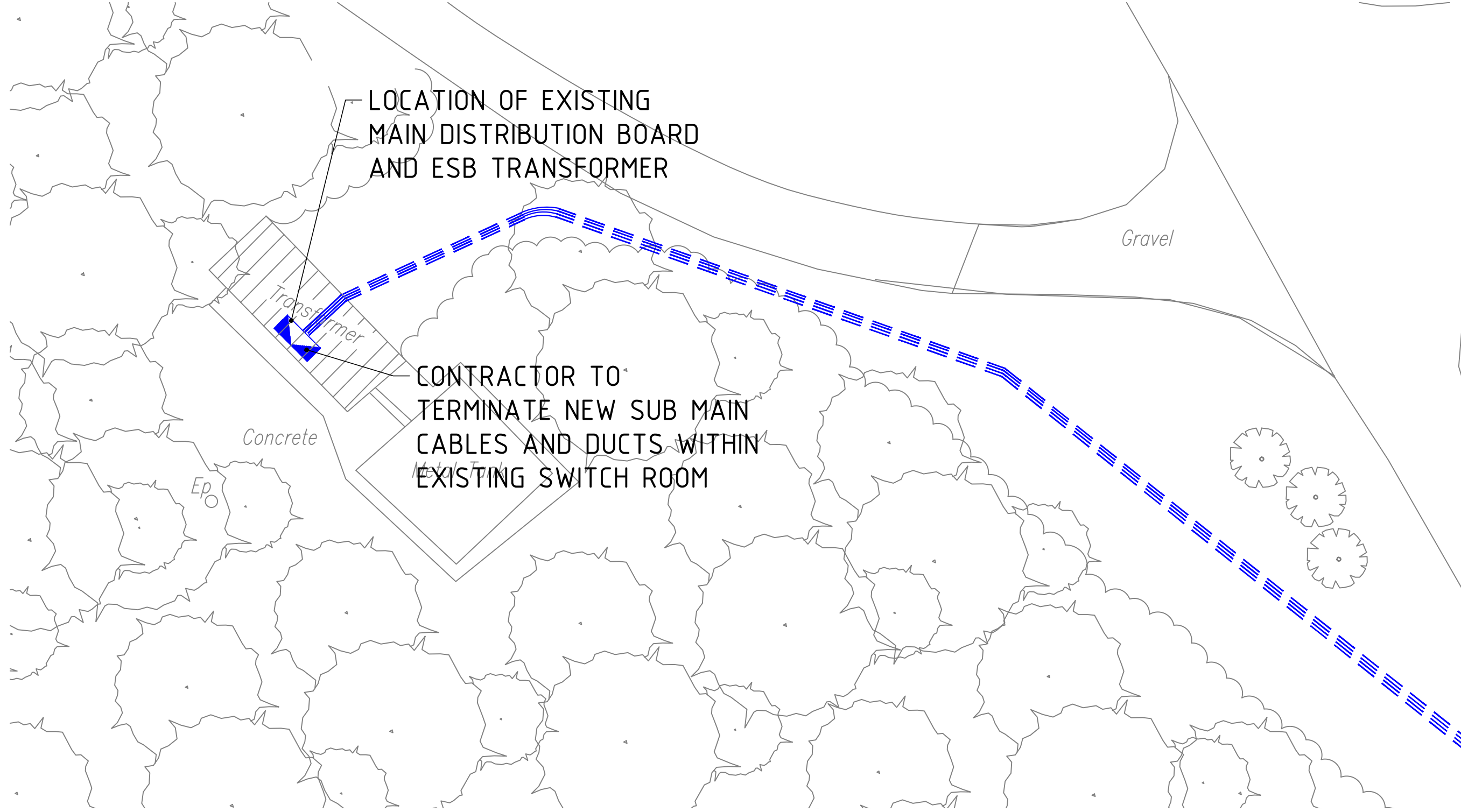
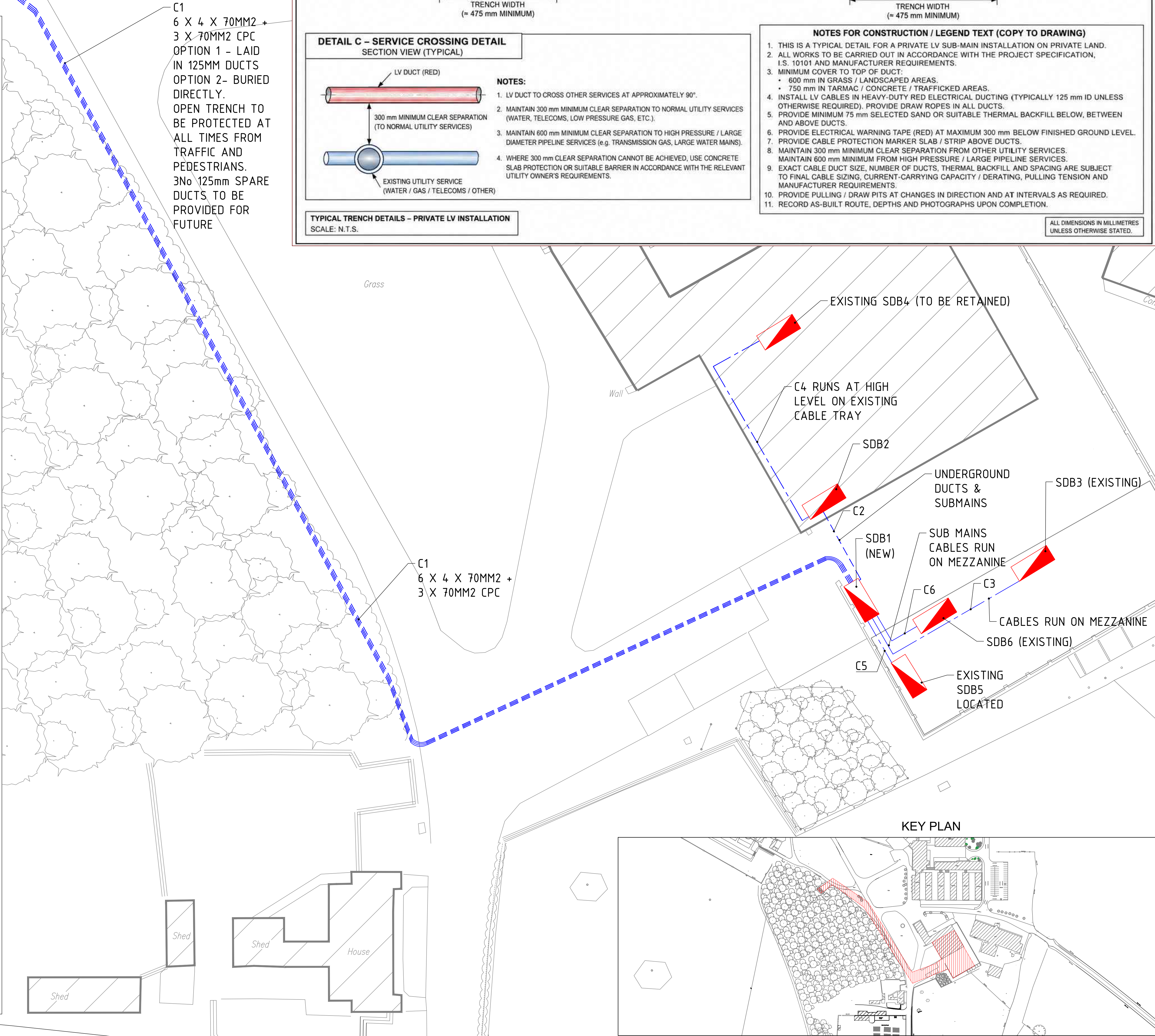
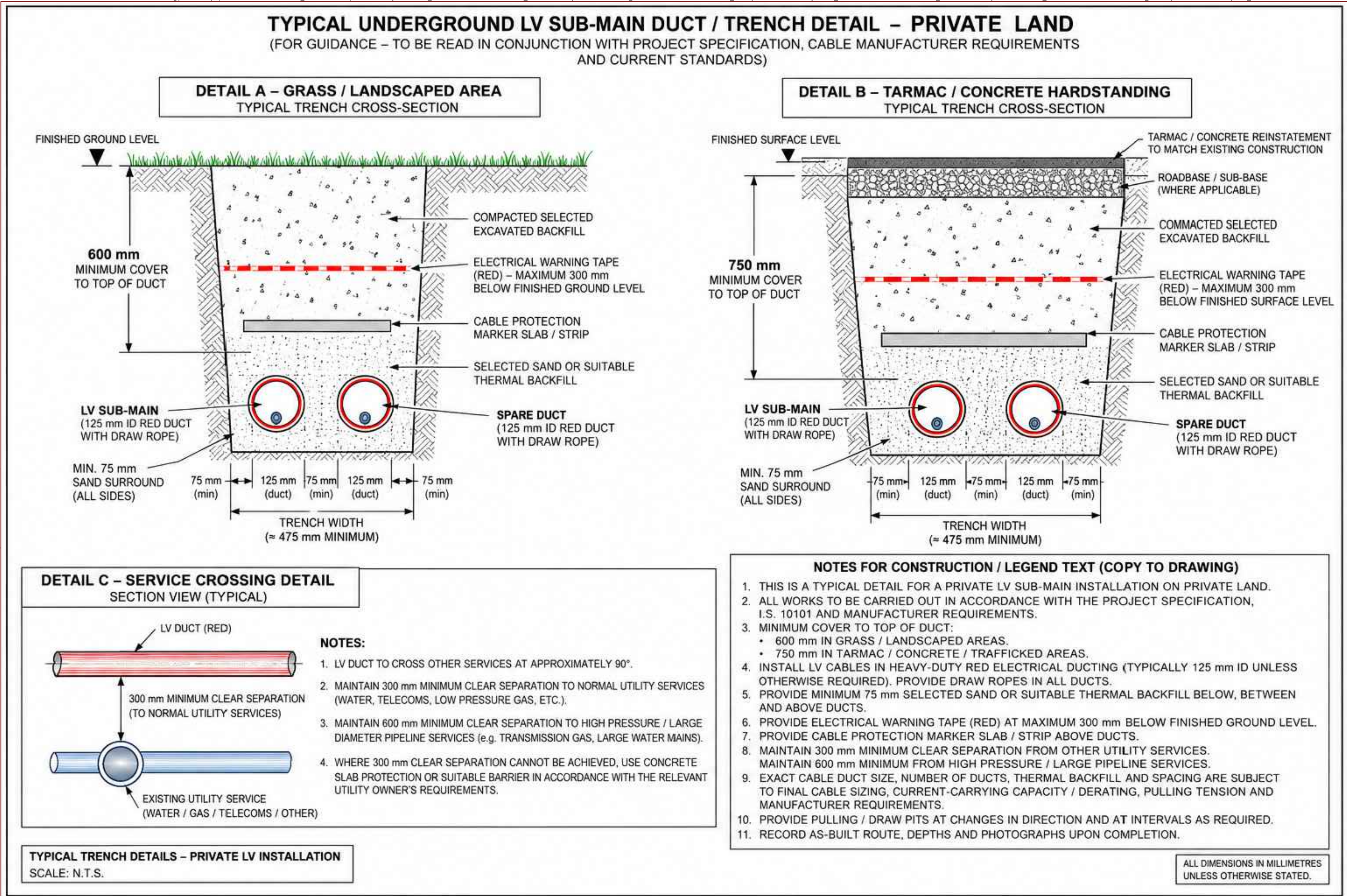




UNDERGROUND LV SUB-MAIN - TRENCH / DUCT INSTALLATION

- ALL UNDERGROUND LV SUB-MAIN CABLING SHALL BE INSTALLED IN **HEAVY-DUTY RED ELECTRICAL DUCTING SUITABLE FOR UNDERGROUND INSTALLATION**. UNLESS NOTED OTHERWISE, PROVIDE **125 MM MINIMUM INTERNAL DIAMETER DUCTING**. FINAL DUCT SIZE AND QUANTITY SHALL BE VERIFIED AGAINST THE SELECTED CABLE SIZE AND CABLE MANUFACTURER'S INSTALLATION REQUIREMENTS.
- PROVIDE MINIMUM COVER MEASURED FROM FINISHED GROUND LEVEL TO THE **TOP OF THE ELECTRICAL DUCT** AS FOLLOWS:
 - 600 MM MINIMUM** IN GRASSED AND LANDSCAPED AREAS.
 - 750 MM MINIMUM** BENEATH TARMAC, CONCRETE, PAVED OR TRAFFICKED AREAS.
- DUCTS SHALL BE INSTALLED ON AND SURROUNDED BY A MINIMUM **75 MM SELECTED SAND OR APPROVED THERMAL BACKFILL**, FREE FROM STONES, SHARP MATERIAL OR OTHER DEBRIS LIABLE TO DAMAGE THE DUCT OR CABLE.
- PROVIDE CONTINUOUS **RED ELECTRICAL WARNING TAPE - "CAUTION ELECTRIC CABLE BELOW"** ALONG THE FULL ROUTE, INSTALLED APPROXIMATELY **300 MM BELOW FINISHED GROUND LEVEL**.
- PROVIDE PROPRIETARY **ELECTRICAL CABLE PROTECTION MARKER SLABS / STRIPS** CONTINUOUSLY ABOVE THE DUCT INSTALLATION.
- ALL DUCTS SHALL BE PROVIDED WITH SUITABLE CONTINUOUS **DRAW ROPES**. SPARE DUCTS SHALL BE CAPPED AND SEALED AT BOTH ENDS AGAINST INGRESS OF WATER, SILT, DEBRIS AND VERMIN.
- MAINTAIN A MINIMUM **300 MM CLEAR SEPARATION FROM OTHER NORMAL UNDERGROUND SERVICES**, INCLUDING WATER, DRAINAGE, TELECOMMUNICATIONS AND ELECTRICAL SERVICES, WHEREVER PRACTICABLE.
- MAINTAIN A MINIMUM **600 MM CLEAR SEPARATION FROM HIGH-PRESSURE GAS MAINS, STRATEGIC WATER MAINS, LARGE-DIAMETER PIPELINES OR OTHER HIGH-RISK SERVICES**, UNLESS OTHERWISE AGREED WITH THE ENGINEER AND RELEVANT SERVICE OWNER.
- ELECTRICAL DUCTS SHALL CROSS EXISTING SERVICES AT APPROXIMATELY **90° WHEREVER PRACTICABLE**. EXTENDED PARALLEL INSTALLATIONS DIRECTLY ABOVE OR BELOW OTHER SERVICES SHALL BE AVOIDED.
- PRIOR TO EXCAVATION, THE CONTRACTOR SHALL ESTABLISH THE LOCATION OF ALL EXISTING UNDERGROUND SERVICES BY REVIEW OF AVAILABLE SERVICE RECORDS, ELECTRONIC SERVICE DETECTION AND **TRIAL HOLES WHERE REQUIRED**. HAND EXCAVATION SHALL BE UNDERTAKEN ADJACENT TO KNOWN OR SUSPECTED LIVE SERVICES.
- DUCT ROUTES SHALL BE INSTALLED AS STRAIGHT AS REASONABLY PRACTICABLE. CHANGES IN DIRECTION SHALL UTILISE LONG-RADIUS BENDS SUITABLE FOR THE FINAL CABLE AND SHALL COMPLY WITH THE CABLE MANUFACTURER'S **MINIMUM BENDING RADIUS**.
- PROVIDE SUITABLE **DRAW PITS / CABLE PULLING CHAMBERS** AT SIGNIFICANT CHANGES IN DIRECTION AND AT INTERMEDIATE LOCATIONS AS REQUIRED TO FACILITATE CABLE INSTALLATION.
- FINAL DRAW-PIT LOCATIONS AND SPACING SHALL BE DETERMINED HAVING REGARD TO THE SELECTED CABLE MANUFACTURER'S REQUIREMENTS, INCLUDING:
 - MAXIMUM CABLE PULLING TENSION;
 - MINIMUM BENDING RADIUS;
 - SIDE-WALL PRESSURE;
 - CABLE DRUM LENGTHS; AND
 - PRACTICAL CABLE PULLING ARRANGEMENTS.
- PRIOR TO FINAL BACKFILLING, THE COMPLETED DUCT INSTALLATION SHALL BE INSPECTED AND RECORDED. THE CONTRACTOR SHALL PROVIDE **PHOTOGRAPHIC RECORDS AND SURVEYED AS-BUILT INFORMATION**, INCLUDING DUCT ROUTES, DEPTHS, DRAW PITS, CHANGES IN DIRECTION AND SERVICE CROSSINGS.
- THE UNDERGROUND CABLE INSTALLATION SHALL COMPLY WITH THE CURRENT EDITION OF **I.S. 10101**, THE PROJECT ELECTRICAL SPECIFICATION, FINAL ELECTRICAL DESIGN CALCULATIONS AND CABLE MANUFACTURER'S RECOMMENDATIONS.

C1
6 X 4 X 70MM2 +
3 X 70MM2 CPC
OPTION 1 - LAID
IN 125MM DUCTS
OPTION 2- BURIED
DIRECTLY.
OPEN TRENCH TO
BE PROTECTED AT
ALL TIMES FROM
TRAFFIC AND
PEDESTRIANS.
3No 125mm SPARE
DUCTS TO BE
PROVIDED FOR
FUTURE



T02	06/10/26	TENDER ISSUE
T01	07/09/26	TENDER ISSUE
T	16/07/26	TENDER ISSUE
Rev	Date	Amendments
ISO 9001:2015 ✓ BSI LOW CARBONCONSULTANTS LEED GREEN ASSOCIATE 7 Patrick Street Kilbenny Telephone 056 7721115 Email info@lawlerconsulting.com Web www.lawlerconsulting.com LAWLER CONSULTING		
Title		
5 HL BREWERY /DISTILERY - TEAGASC OAKPARK SITE PLAN ELECTRICAL SERVICES		
Drawn by:	LI	Scale 1:200@A0
		Date JULY26
Checked by	RB	Drawing no. 1811-E100