Underground Drainage

**Hayden Brett**

Created Tue, 16 Jan 2024, 3:50 PM (UTC+11)

**Subcontractor (if applicable)**

**ITP Details:**

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| **Client** | **Construction Process** | **Contract Number:** | **Speciﬁcations** | **Structure / Component** | **Prepared By** | **Approved By** |
| *Regional Roads Victoria* | **Underground Storm** |  | *Vicroads Speciﬁcation* | Drainage |  |  |
|  | **water Drains** | *Section 173, 175, 205,* |  |
|  |  | *210, 290, 304, 702 and* |  |
|  |  | *720, VR Code of Practice* |  |
|  |  | *500.2* |  |

**Project Location Lot no.**

**Lot details**

**Lot size/qtys**

**Date** Start: - End: -

**Text Legend:**





1. **Preliminary Works**

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| **Task/Activity Description** | **Acceptance Criteria** | **Reference Documents** | **Method & Record of conformity** | **Responsibility** | **Signature** | **Comments** |
| **1.1** Obtain MOA and Traﬃc Management Plans. Ensure Traﬃc Management Plan is adhered to. | Refer to the VicRoads Traﬃc Management speciﬁcation 166 | Traﬃc Mgmt. Plan | **Method**: Visual Inspection | IHP  SWA Project Manager |  |  |
|  |  |  | **Record**: Signed ITP |  |
| **Frequency**  Prior to commencing works |  |  |  |  |
| **1.2** Purchase of pre-cast pits, pipes and end-walls | Refer to Construction Drawings | Vic roads Standard drawings | **Method**: Review and approval of documentation | IHP  SWA Project Manager |  |  |
|  |  |  | Visual inspection |  |
| **Frequency** Approval prior to placement of order |  |  |  |  |
|  |  |  | **Record**: Signed ITP |  |

1. **Construction works**

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| **Task/Activity Description** | **Acceptance Criteria** | **Reference Document s** | **Inspection method & Record of conformity** | **Responsib ility** | **Signature** | **Reports** | **Photos** | **Comments** |
| **2.1** CONFORMITY WITH DRAWINGS  - The  Contractor shall set out the drainage work in accordance with the drawings or as speciﬁed. | Prior to commencement of excavation for the culverts the Contractor shall conﬁrm the position of all culverts with the Superintendent. | Vicroads std sec 701.09 | **Method**: Construction Drawings  **Record**: Signed ITP | IHP  SWA  Project Manager  Site Supervisor |  |  |  |  |
| **Frequency**:Each lot as required |  |  |  |  |

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| **2.2** CONFORMITY WITH DRAWINGS – The  culverts constructed shall be constructed true to line and level  **Frequency**:Each Lot | Unless speciﬁed otherwise the tolerance on location of pipes compared to the design or a change to the design notiﬁed in accordance with this clause shall be:   1. oﬀset of entry pits required to match lines of kerbs or barriers ±20 mm 2. plan location of pits other than oﬀsets to kerb lines or barriers ±100 mm 3. invert level of pipes at pits ±50 mm (d) departure from design grade of pipe runs ±10 mm in 10 m provided minimum grade is not less than 1:250 | Vicroads std sec 701.09 | **Method**: Construction Drawings  **Record**: Signed ITP | IHP  SWA  Project Manager  Site Supervisor |  |  |  |  |
| **2.3** EXCAVATION  **Frequency**:Each Lot | For pipe culverts, the width of trench at and below the level of the top of the pipe shall be such that the horizontal clearance from the outside of the pipe to the wall of the trench is within the limits Min 300mm and Max.  600mm | VicRoads Std Specs 701.14 | **Method**: On-site Measurement  **Record**: Signed ITP & Drainage Checklist | WP  Project Engineer  Site Supervisor |  |  |  |  |

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| **2.4** CULVERT BEDDING –  Bedding material shall be provided and placed for the full width of the trench or, where the culvert is to be placed without trenching, to a width 0.8 m greater than the overall width of the culvert  **Frequency**:Each Lot  . | The compacted thickness of bedding material following any shaping necessary shall be not less than: • 100 mm where D < 1500 mm   * 200 mm where D ≥ 1500 mm where D is the nominal pipe diameter or culvert width. | VcRoads Std Specs 701.15 | **Method**: Site Inspection  **Record**: Signed ITP | WP  Project Engineer  Site Supervisor |  |  |  |  |

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| **2.5** PLACEMENT OF FILLING  **Frequency**:Each lot as required | (a) Unless the culvert is installed through an existing paved area, selected and ordinary backﬁll shall be placed as follows under, around, and above the culvert after the sections are bedded and compacted as speciﬁed in Clause 701.15.  (I) Culvert Under Area not to be Paved  The trench shall be backﬁlled with selected backﬁll material to a level  0.3 m above the top of the culvert and with ordinary backﬁll material above that level. | VcRoads Std Specs 701.18 | **Method**: Site Inspection  **Record**: Signed ITP | WP  Project Engineer  Site Supervisor |  |  |  |  |

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| **2.6** INSPECTION OF DRAINAGE LINES BENEATH PAVEMENTS  **Frequency**:Each lot as required | Unless approved otherwise by the Superintendent, all drainage lines constructed beneath pavements shall be inspected, after completion of earthworks to subgrade level and prior to construction of pavement layers, by an independent testing organisation using closed circuit television  (CCTV). Reporting of the CCTV inspections shall be in accordance with WSA 05 2013 – Conduit Inspection Reporting Code of Australia, published by Water Services Association of Australia. | VcRoads Std Specs 701.28 | **Method**: Visual inspection  **Record**: Signed ITP | HP  Project Engineer  **AP**  Clients Superinten dent |  |  |  |  |

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| **2.7** Where required installation of Geofabric or Jute matting and beaching material in swale drains  **Frequency**:After installation of pipes, pits, end-walls and placement of asphalt wearing coarse | Rock used, should be an assortment of sizes where possible. The smallest rock size must be able to resist dislodgment in peak ﬂows.  Rock shall be placed with a geo-textile liner. | NIL | **Method**: Visual inspection  **Record**: Signed ITP | IHP  Project Engineer/Si te Supervisor |  |  |  |  |

1. **Testing Requirement**

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| **Task/Activity Description** | **Acceptance Criteria** | **Reference Document s** | **Inspection method & Record of conformity** | **Responsib ility** | **Signature** | **Reports** | **Photos** | **Comments** |
| **3.1** REQUIREMENTS FOR TESTING AND ACCEPTANCE OF COMPACTION AND MOISTURE CONTENT –  Bedding and backﬁll materials shall be placed and compacted in layers not exceeding 150 mm loose thickness.  **Frequency**:3 per Lot  (A lot shall consist of one layer of bedding or backﬁll for a culvert length between adjacent pits or endwalls) | 1. Bedding Bedding shall be compacted to refusal using hand held mechanical   equipment. Bedding material which has a swell equal to or greater than 2.5% shall be maintained at a mean moisture ratio of 92% between the completion of rolling and the placement of the overlying layer. (b) Backﬁll   * 1. Material of Nominal Size 40 mm or Less After Compaction Backﬁll material which will have a nominal size after compaction of 40 mm or less shall be compacted to a mean value of density ratio of not less than 97%. Backﬁll material which has a swell equal to or greater than 2.5% shall be maintained at a mean moisture ratio of 92% between the completion of rolling and the placement of the overlying layer.   2. Material of Nominal Size Greater than 40 mm After Compaction Backﬁll | Vicroads std sec 701.19 | **Method**: Lab Test  **Record**: Signed ITP | IHP  SWA  Project Manager |  |  |  |  |

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| **Task/Activity Description** | **Acceptance Criteria** | **Reference Document s** | **Inspection method & Record of conformity** | **Responsib ility** | **Signature** | **Reports** | **Photos** | **Comments** |
|  | material which will have a nominal size after compaction greater than 40 mm shall be compacted using a grading, mixing, watering and rolling procedure.  Backﬁll material which has a swell equal to or greater than 2.5% shall be maintained at a mean moisture ratio of 92% between the completion of rolling and the placement of the overlying layer. |  |  |  |  |  |  |  |

**Photo and video**

**Final Inspection Comments**

**Project Team signature** -

**Photo and video**

**Final Inspection Comments**

**Client Signature** -