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| **Project Name:** | **Otaki to North Levin Project (O2NL)** | **Prepared by:** | **Marco Edwards** | **Rev. No.** | **A** |
| **ITP No.:** | **O2NL-STH-000-CN-ITP-0008** | **Project Engineer:** | **Nico Aandewiel** |  |  |
| **Construction Process:** | **North Manakau Temporary Diversion Road** | **Approved by:** |  |  |  |

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| **LEGEND** |
| Verification Activity   |  |  |  | | --- | --- | --- | | H | Hold Point | Work shall not proceed past the Hold Point until released by the organisation imposing the Hold Point. | | W | Witness Point | An inspection point that may be witnessed by the organisation imposing the Witness Point. | | I | Inspection | Formal inspection activity to be undertaken and recorded. | | S | Surveillance | An activity that is subject to ongoing monitoring. | | R | Review | Review of text reports/records or other evidence of compliance. |   Responsible Inspectorate (RI) *(may be modified to meet site specific requirements)* |
| SA – South Alliance |
| PM – Project Manager |
| CM – Construction Manager |
| ENG – Responsible Engineer |
| SUP – Supervisor |
| SQN – Subcontractor Quality Nominee |
| QMR – Quality Management Representative |
| SMR– Safety Management Representative |
| EMR– Environment Management Representative |

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| **REFERENCE DOCUMENTS** |
| **Development:** |
| O2NL- Pavement Design DWGs - Rev2 |
| Ō2NL-STH-000-CN-CEP-0008 - North Manakau Temporary Diversion Road |
| **Implementation:** |
| Ō2NL-STH-000-CN-ITP-0008 - North Manakau Temporary Diversion Road |
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| **APPROVAL/REVISION** | | | | | |
| **Rev** | **Date** | **Details** | **App’d** **(Alliance)** | **App’d** **(Owner)** |
| A | 25/7/2025 |  |  |  |
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| **Construction Process:** | | **North Manakau Temporary Diversion road** | | | | | **ITP No.:** | **XX** | | | **Rev A** | |
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| **Item** | **Basic Job Step** | | **RI** | **Acceptance Criteria** | **Applicable Standard** | **Inspection Test** | | **Verification Activity by** | | | **Verifying Records** | **Sign-off** |
| **Method** | **Frequency** | **SubCon** | **Alliance** | **Client** |
| **1.0 Preliminaries** | | | | | | | | | | | | |
| **1.1** | **JSEA Approved Prior to Start** | | **ENG** | **Alliance Approved prior to construction start** | **Alliance Best Practice** |  |  |  | **H** |  | **Signed JSEA** |  |
| **1.2** | **ESC Plan Approved** | | **ENG** | **Alliance Approved prior to construction start Material Approval** | **Alliance Best Practice** |  |  |  | **H** |  | **ENV Manager Approval** |  |
| **1.3** | **Alliance Excavation Permit** | | **SUP** | **As required for scope of works, in place prior to any excavation** | **Alliance Best Practice** |  |  |  | **H** |  | **Signe Permit to Work** |  |
| **2.0 – Material Compliance** | | | | | | | | | | | | |
| **2.1** | **SIL GAP65 Approval** | | **ENG** | **Material complies to TNZ M/3** | **TNZ M/3 1986** | **N/A** | **Prior to Construction** |  | **H** |  | **Email Approval from QMR** |  |
| **2.2** | **Subbase GAP65 Approval** | | **ENG** | **Material complies to TNZ M/3** | **TNZ M/3 1986** | **N/A** | **Prior to Subbase Construction** |  | **H** |  | **Email Approval from QMR** |  |
| **2.3** | **Basecourse AP40 Approval** | | **ENG** | **Material Complies to TNZ M04** | **TNZ M04 2024** | **N/A** | **Prior to Basecourse Construction** |  | **H** |  | **Email Approval from QMR** |  |
| **2.4** | **Subgrade CBR** | | **ENG** | **Soaked CBR: Min. 3 per section (IANZ-accredited laboratory), Unsoaked CBR: Min. 3 per section, Moisture Content: Min. 3 per section** | **Design notes** | **N/A** | **Minimum 3 tests per site** |  | **R** |  | **Lab Reports to Design Verifier** |  |
| **2.5** | **Culvert Pipe & Rubber Ring Joints** | | **ENG** | **Approved through Alliance Engineering/Quality Team** |  |  | **Prior to Construction** |  | **R** |  | **Email Acceptance from QMR** |  |
| **2.6** | **Culvert Bedding Material** | | **ENG** | **Complies to NZTA F/3 Pipe Bedding and Backfilling for Flexible Pipes – Class A** | **Pipe Bedding and Backfilling for Flexible Pipes** | **N/A** | **Prior to Construction** |  | **R** |  | **Email Acceptance from QMR** |  |
| **3.0 Construction – Subgrade** | | | | | | | | | | | | |
|  | **Topsoil Strip** | | **SUP** | **Area stripped of all topsoil and organic material** | **Alliance Best Practice** | **Excavation** | **Prior to Subgrade cut** |  | **W** |  | **Site Record Sheet, Photos** |  |
|  | **Cut to subgrade level** | | **ENG** | **Cut to design levels – Topographic survey 5m x5m Grid** | **Alliance Best Practice** | **Survey** | **Post subgrade cut** |  | **I** |  | **As-built Survey Record** |  |
| **3.1** | **Subgrade CBR Verification** | | **ENG** | **Scala Penetrometer (NZS 4402:1986 Sec. 6.5.2) at 50 mm intervals to 1000 mm depth, every 10 m chainage** | **NZS 4402:1986 Sec. 6.5.2** | **Test** | **10m x 10m grid** |  | **I** |  | **Scala Record Sheet** |  |
| **3.2** | **Subgrade Proof Rolling** | | **ENG / SUP** | **Visual inspection & roller observation - No soft spots, deflection, or pumping** | **TNZ B/02: 2005** | **Test** | **Continuous** |  | **I** |  | **Site Records** |  |
| **3.3** | **Backfill Undercuts** | | **ENG** | **Unsuitable subgrade material removed, and excavation backfilled in 200mm layers (GAP65) to 95% MDD** | **Alliance Best Practice** | **Excavation** | **As required** |  | **H** |  | **Site Records / NDM test sheet** |  |
| **3.4** | **Subgrade Approval** | | **ENG** | **Approval to proceed with Subbase** | **Alliance Best Practice** | **N/A** | **On completion of Subgrade testing** |  | **H** |  | **Approval to proceed from Design Verifier** |  |
| **4.0 – Subgrade Improvement Layer (SIL)** | | | | | | | | | | | | |
| **4.1** | **Layer Thickness** | | **ENG** | **SIL Thickness as per SIL Design note, 200mm – 300mm** | **Design notes** | **Excavation** | **During Sil construction** |  | **I** |  | **Site Records** |  |
| **4.2** | **Density** | | **ENG** | **Mean percentage of MDD not less than 95% with no single result less than 92%** | **TNZ B/02** | **NZS 4402 – Test 4.1.3** | **Not less than one test per 150m2** |  | **I** |  | **Site Records / NDM test sheet** |  |
| **4.3** | **SIL Proof Roll** | | **ENG** | **Visual inspection & roller observation - No soft spots, deflection, or pumping** | **TNZ B/02: 2005** | **Test** | **One pass on each lane** |  | **I** |  | **Site Records** |  |
| **5.0 Construction – Subbase** | | | | | | | | | | | | |
| **5.1** | **Density** | | **ENG** | **Mean percentage of MDD not less than 95% with no single result less than 92%** | **TNZ B/02** | **NZS 4402 – Test 4.1.3** | **Not less than one test per 150m2** |  | **I** |  | **Site Records / NDM test sheet** |  |
| **5.2** | **Surface Level** | | **ENG** | **+15mm/-15mm from design level. Thickness of subbase shall be within 15mm of design thickness** | **TNZ F/1** | **Survey** | **5m x5m Grid** |  | **I** |  | **As-built Survey Record** |  |
| **5.3** | **Subbase Proof Roll** | | **ENG** | **Visual inspection & roller observation - No soft spots, deflection, or pumping** | **TNZ B/02: 2005** | **TEst** | **One pass on each lane** |  | **I** |  | **Site Records** |  |
| **6.0 Construction - Basecourse** | | | | | | | | | | | | |
| **6.0** | **Density** | | **ENG** | **Mean percentage of MDD not less than 98% with no single result less than 95%** | **TNZ B/02** | **NZS 4402 – Test 4.1.3** | **Not less than one test per 150m2** |  | **I** |  | **Site Records / NDM test sheet** |  |
| **6.1** | **Surface Level** | | **ENG** | **+5mm/-15mm from design level. Thickness of subbase shall be within 15mm of design thickness** | **TNZ F/1** | **Survey** | **5m x5m Grid** |  | **I** |  | **As-built Survey Record** |  |
| **6.2** | **Surface tolerance** | | **ENG** | **Finished surface shall not vary more than +-15mm when tested with a 3m straightedge** | **TNZ B/02** | **Test** | **20m grid** |  | **I** |  | **Site Records / Photos** |  |
| **6.3** | **Basecourse Approval** | | **ENG** | **Approval to proceed with Surfacing** | **Alliance Best Practice** | **N/A** |  |  | **H** |  | **Approval to Proceed from Design Verifier** |  |
| **7.0 Construction – Culverts** | | | | | | | | | | | | |
| **7.1** | **Survey Set-Out** | | **ENG** | **Culverts shall be set out and laid where shown in the drawings** | **Alliance Best Practice** | **SUrvey** | **Before excavation of drain lines** |  |  |  |  |  |
| **7.2** | **Culvert Trench Excavation** | | **SUP** | **Trench Excavated to subgrade level, If excavation exceeds 1.5m trench battered at 1:1 or benched as required, 600m cover to top of pipe.** | **JSEA** | **Excavation** | **During Trench Excavation** |  | **H** |  | **Site Records** |  |
| **7.3** | **Subgrade Suitability** | | **ENG/SUP** | **Assumed subgrade CBR 4%, visual inspection on site, organic material removed, geotextile prior to Bedding placement** | **Alliance Best Practice** | **Inspection** | **Prior to placing Bedding material** |  | **I** |  | **Site Records** |  |
| **7.4** | **Bedding Material** | | **SUP** | **Min 100mm thickness** | **TNZ F/03** | **N/A** | **Check during bedding placement** |  | **I** |  | **Site Records** |  |
| **7.5** | **Placing Culvert Pipe** | | **ENG** | **As per design levels and grades** | **N/A** | **Survey** | **Post pipe placement** |  | **I** |  | **As-Built Survey Record** |  |
| **7.6** | **Pipe Jointing** | | **ENG** | **As per manufacturers specification** | **N/A** | **N/A** | **Inspection post jointing** |  | **I** |  | **Site Records** |  |
| **7.7** | **Trench Backfill** | | **ENG** | **Approved material compacted in 150mm lifts to 95% MDD** | **TNZ F/03** | **N/A** | **Backfill post pipe placement** |  | **I** |  | **Site Records / NDM Report** |  |

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| **4.0 Post-Construction** | | | | | | | | | | | |
| **4.1** | **As-Built Records** | **ENG** | **All As-Builts provided Alliance Quality Team within one month of completion** | **Alliance Best Practice** |  |  |  | **R** |  | **As-Built Data** |  |
| **4.2** |  |  |  |  |  |  |  |  |  |  |  |
| **4.3** |  |  |  |  |  |  |  |  |  |  |  |
| **4.4** |  |  |  |  |  |  |  |  |  |  |  |