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| **SPARK – North East Link – Primary Package** |
| **Inspection and Test Plan (ITP)** | |

ITP Title: General Concrete (Footpath, Driveway, Median / Island Pavement)

ITP Number: NEL-CNT-SDC-2990-PQA-ITP-0074 Rev 0

LOT Number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Primary Asset Location Code: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Discipline: Civil Works

**Spark NELP Approval Record**

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| --- | --- | --- | --- | --- |
| **Function** | **Position** | **Name** | **Signature** | **Date** |
| Prepared By | Quality Representative | Joe Failla |  |  |
| Reviewed By | Project Engineer | Domenic Ciccone |  |  |
| Approved By | Quality Manager / Senior Quality Advisor | Joe Failla |  |  |

*Note:*

1. *Ensure all Records or Checklist References are attached and that each Inspection Requirement is clearly named, signed, and dated.*
2. *Ensure every Records or Checklist References attached are legible*
3. *This Inspection Test Plan may be generic – ensure the requirement is demographically clear to your scope of work*
4. *Verification Inspections where applicable for the IREA stated as “Witness” or “Hold” shall be formally notified for their engagement and with sufficient advance notice time (i.e. 3 days or as agreed with the Sub-IREA Representative and/or the Nominated Authority)*
5. *All Nominated Authority Hold Points are Witness Points for Sub-IREA*
6. *The Sub-IREA representative is not required to physically sign-off on ITPs*

|  | | **Project**: SPARK – North East Link Primary Package **Client:** State of Victoria and the North East Link State Tolling Corporation | | | | | | | | | | | | | | | | |
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| **ITP Title:**  General Concrete (Footpath, Driveway, Median / Island Pavement) | | | | | | | | | | | | | | **References:**  NEL-CNT-CDO-2100-CTW-DPK-1000 | | | | |
| **Description:** | | | | | | | | | | | | | | **Standards:**  VicRoads 703, AS 1379, AS 3610, VR 812, VR 610, AS 4671, AS 1379, AS 3798, VR 611 | | | | |
|  | | **ITP No**: NEL-CNT-SDC-2990-PQA-ITP-0074  **Rev No**: 0 | | | | | | | | | | | | | | | | |
| **Lot No**: **Location**: **Ch**: **to** **Offset:** **to** **Layer**: | | | | | | | | | | | | | | | | |
| **Item No.** | **Responsible Person** | **Inspection and Test Activity** | | **Specification Reference** | **Acceptance Criteria** | | **Test Method** | | **Test Frequency** | **Inspection/Verification (Name, signature & date)** | | | | | | **Records/Documents** | | **Field Notes / Comments** |
| **Sub- Contractor** | | **Spark NEL Engineer** | **Nominated Authority** | | **IREA** |  | |  |
| **1.0** | **Preliminaries (Include all aspects of Materials, Approvals, IFC Drawings, etc. Ensure all required permits have been raised prior to commencing works)** | | | | | | | | | | | | | | | | | |
| 1.1 | PE | IFC Drawings issued | | IFC Drawings | IFC Drawings, approved plans, technical specification must be issued for construction | | V | | PW | NR | | **HP** | NR | | NR | InEight Reference Document # | |  |
| 1.2 | PE | All Equipment Calibrated | | QMP | Equipment calibration NATA certificates filed in InEight Document.  Prior performing inspections, measuring and testing tasks, ensure equipment is calibrated, if damaged or out of calibration, the user will immediately tag it “out of service” and arrange for repairs / calibration. | | IP | | PW | NR | | **HP** | NR | | NR | InEight Reference Document # | |  |
| 1.3 | PE | Premixed Concrete | | VR 703.05  IFC Drawing | Concrete / Footpath Pavement Material to be in accordance with design requirements | | R | | PW | NR | | WP | NR | | NR | Concrete Mix Design | |  |
| 1.4 | PE | Survey Set-out | | VR 703.17  IFC Drawings | Clearly mark limit of works; Chainage, offsets, cut/fill level etc. (if required). | | V | | PW | NR | | WP | NR | | NR | InEight Document References:  Lot Map | |  |
| 1.5 | PE | Construction Procedure Submission | | QMP | Construction Procedure submitted and in place and all required permits from the Safety and Environmental team are obtained. | | R | | PW | NR | | WP | NR | | NR | Signed ITP | |  |
| **2.0** | **Operations (Include Work Execution – Installation / Manufacturing Process step-by-step)** | | | | | | | | | | | | | | | | | |
| 2.1 | SE | Setting Out | | VR 703.17  PSDR  (section 9 a)) | The Nominated Authority will review and confirm the set out. The work shall be constructed in accordance with the confirmed set out to the line and level and cross-sectional profiles as shown on the IFC drawings. | | V | | PW | NR | | WP | **HP** | | WP | InEight Survey Report References:  Photos | |  |
| 2.2 | SE | Excavation and Foundation | | VR 703.20 | The Contractor shall box out to a sufficient depth to allow for the required compacted thickness of bedding material under the full width of concrete paving. Excavation not to extend more than 150mm from the adjacent face of existing pavement. | | V | | PL | NR | | WP | NR | | NR | Signed ITP | |  |
| 2.3 | SE | Bedding materials and compaction | | VR 812.12  VR 703.21  IFC Drawings  AS 3798 | Bedding material shall be compacted 20mm Class 3 or Class 4 Crushed Rock to 98% standards compaction unless shown otherwise on the drawings  Material properties, testing and testing frequency shall be in accordance with section 812.12 | | IP | | PL | NR | | WP | NR | | NR | NATA Test Reports | |  |
| 2.4 | SE | Bedding depths (compacted) | | VR 703.21  (a) (c)  IFC Drawings | (a) Edgings: Where not constructed over pavement layers, bedding not less than 100 mm compacted.  (c) Footpaths and other Surfacing:  ▫ Bedding not less than 100 mm compacted.  ▫ Bedding trimmed to appropriate levels, moistened as necessary, and firmly compacted. | | IP | | PL | NR | | WP | NR | | NR | Material Delivery Docket | |  |
| 2.5 | SE | Ambient weather for concreting | | VR 703.09  VR 610.17 (a)(b)(c) (d)  VR 610.13 | Restrictions and treatments to be applied for concreting in hot, cold and wet weather.  The temperature of concrete, measured immediately prior to placing, shall not be less than 10˚C or greater than 32˚C.  Ambient temperature not to be less than 5˚C and no more than 35˚C. | | V | | PL | NR | | WP | NR | | NR | Signed ITP  QC Checklist | |  |
| 2.6 | SE | Steel reinforcing grade and placement | | VR 703.13,  VR 611  PSDR Part B Section 17.4 | 1/ Steel reinforcement shall comply with the relevant requirements of AS/NZS 4671  2/ Galvanising where specified shall be in accordance with the requirements of AS/NZS 4680  3/ Minimum cover shall be 50 mm unless shown on the drawings  4/ Concrete or plastic chairs to be used. Wire chairs (with or without plastic tips), bricks, pieces | | V | | PL | NR | | WP | NR | | NR | Reinforcement Steel Delivery Dockets  Product Conformity Certificate  QC Checklist | |  |
| 2.7 | SE | Formwork | | VR 703.12  AS 3610.1  2018 (TableC2) | Construction and stripping of formwork shall comply with the relevant requirements of AS3610. Joints in formworks shall be constructed such that loss of mortar is prevented.  Stripping of Formwork after casting shall not be less than:  ▫ 2 days (Between 12˚C & 20˚C).  ▫ 1 day (> 20 ˚C).  ▫ 3 days (Between 5˚C & 12˚C).  Minimum time shall also not be less than:  a). 2 days for vertical formwork on external surfaces and,  b). 1 day for vertical forms on permanently hidden surfaces. | | V | | PL | NR | | WP | NR | | NR | Signed ITP  QC Checklist | |  |
| 2.8 | SE | Concrete Placing, Compacting | | IFC Drawings  AS 1379  VR 703.01  VR 703.08  VR 610.121  VR 703.11 | Concrete strength to comply with detail on IFC drawings and AS1379  Concrete shall be thoroughly compacted by means of continuous tamping and internal vibration and shall be worked around any embedment and into corners of formwork or excavations to produce a dense concrete free from voids. Workable concrete mixes are exempt from vibration requirement.  **Minimum testing requirements for aggregates to comply to VR Table 610.121 and VR 703.11** | | IP | | X1 | NR | | WP | NR | | NR | NATA Test Result  Delivery Docket  QC Checklist | |  |
| 2.9 | SE | Surface Finish | | VR 703.25  (a) (b)  IFC Drawings | Footpaths, and other surfacings: Finish with a wooden float to produce a lightly textured non-skid surface. Compact with internal vibration and worked until mortar comes to the top.  Edgings: All edgings shall be rendered and have a steel trowel finish. Rendering applied within 30 minutes of placing or extruding concrete. Thickness not exceeding 3 mm. Mortar shall be 2 parts fine aggregate, 1 part cement & sufficient water to produce suitable consistency  Surface finish to comply to VR 703.25. All discoloured concrete shall be cleaned or replaced. | | IP | | PL | NR | | WP | NR | | NR | Signed ITP  QC Checklist | |  |
| 2.10 | SE | Jointing between concrete elements | | VR 703.26 | Transverse joints shall be constructed at right angles to the back of edgings and the edge of footpaths and shared use paths. Joints in footpaths and shared use paths shall align with joints in adjacent edgings.  a). Edgings  (i) Transverse joints & expansion joints  (ii) Expansion joints & control joints  b). Footpaths, other Surfacing and Shared Use Paths  (i) Expansion Joints  (ii) Control Joints  (c) Details on de-bonding methods  Sawcut or tooled joints shall be provided at maximum 2m centres to all footpaths or pedestrian paving. A 19mm expansion joint shall be provided where rigid pavements abut fixed structures or at max 15m centres to footpaths. | | V | | PL | NR | | WP | NR | | NR | Signed ITP  QC Checklist | |  |
| 2.11 | SE | Curing of concrete | | VR 703.10  (a), (b) | Exposed concrete surfaces shall commence curing treatment immediately after finishing operations are progressively completed and shall continue uninterrupted for a period of not less than 7 days  (a) General  (b) Geopolymer concrete | | IP | | PL | NR | | WP | NR | | NR | Signed ITP  QC Checklist | |  |
| 2.12 | SE | Marking of Conduit Positions | | VR 703.28 | Existing conduits passing under edgings shall be marked by a chase in the edge immediately above the conduit together with a suitable identification mark. | | V | | PL | NR | | WP | NR | | NR | Photos | |  |
| 2.13 | SE | Tolerances on line, level, and shape | | VR 703.15 | All surfaces shall be finished in conformity with the lines, grades, thicknesses and cross sections shown on the drawings or as specified, within the following limits:  (a) Paving within 5mm  (b) Departure of finished work from line & level shall not exceed 10mm at any point  (c) Section dimensions overall width shall not exceed >15mm  (d) Median surfacing cross fall between 1% and 3% towards the edges | | V | | PL | NR | | WP | NR | | NR | Tick Off to confirm compliance as per the required acceptance criteria:  (a) Paving [ ]  (b) Finished work [ ]  (c) Dimension [ ]  (d) Median Surface [ ]  QC Checklist | |  |
| 2.14 | SE | Concrete repairs | | VR 703.08  VR 703.30  Crack Repair Procedure | Any concrete repairs shall be carried out using a method and materials accepted by the Superintendent. | | V | | PL | NR | | WP | **HP** | | WP | Crack Repair Procedure  QC Checklist | |  |
| **3.0** | **Post Operations (Include Inspection and Testing)** | | | | | | | | | | | | | | | | | |
| 3.1 | PE | Red-Line | | VR 703.15    IFC Drawings | ▫ Ensure As-Built survey is compared within the required tolerance to Design specification.  ▫ Ensure all locations and work area highlighted as per Construction Lot in Work Lot Map. | | V | | PL | NR | | WP | NR | | NR | Red-Line Mark-Up Drawings | |  |
| 3.2 | PE | Final Inspection Site Walk | | QMP | Ensure at the end of each work conducted that Quality Control conduct an Inspection walk with Engineer to identify potential defects. | | IP | | PL | NR | | WP | **HP** | | WP | [  ] Surveillance Report  [  ] Punch List Report | |  |
| 3.3 | PE | RFI’s, DRFI’s & DCN’s | | QMP  DMP | ▫ Ensure all Design Change(s) are noted within the scope of the Construction Lot.  ▫ Link all relevant RFI’s included only to the specific Construction Lot.  ▫ Ensure RFI’s are closed out prior to Construction Lot close out. | | V | | PL | NR | | WP | NR | | NR | [  ] RFI’s InEight Reference Form # | |  |
| 3.4 | PE | NCR Close out | | QMP | All NCR’s presented for closure | | V | | PL | **HP** | | **HP** | **HP** | | WP | [  ] NCR InEight Reference Form # | |  |
| **4.0** | **Quality** | | | | | | | | | | | | | | | | | |
| 4.1 | QSR | Identification and control of non-conforming products or services  (if applicable) | | CQMP | Review and confirm closure of NCR’s and associated RFI’s prior to closing of construction lot | | R | | PL | NR | | **HP** | NR | | NR | NCR closed with related documentation | |  |
| 4.2 | QSR | Check all quality records for lot closure | | CQMP | All applicable quality records are complete | | R | | PL | NR | | **HP** | NR | | NR | Compiled documents  (all data reports and records) | |  |
| **Legend:** | | | | | | | | | | | | | | | | | | |
| **Responsibility** | | | | | | **Method** | | **Inspection / Verification** | | | **Test Frequency** | | | | | | **Other** | |
| SS: Site Supervisor  SE: Site Engineer  PE: Project Engineer  SPE: Senior Project Engineer  GE: Geotechnical Engineer  PS: Project Surveyor | | | PSM: Project Systems Manager  QSR: Quality Site Rep.  STR: Structural Engineer  SSR: Site Safety Rep.  EMR: Environmental Management Rep.  NA:Nominated Authority (Release of HP)  IREA:Independent Reviewer (Observer) | | | V: Verify  I: Inspection  R: Review  T: Test | | HP: Hold Point  WP: Witness Point  NR: Not Required | | | PW: Prior to Works  PL: Per Lot  F: Full or 100% Inspection or Testing  X1: Inspect or Test at Specified Frequency  X2: Random Inspection or Test | | | | | | QP: Quality Plan  RFI: Request for Information  NCR: Non-Conformance  VC: Verification Checklist  XXXX: Sequential Number from Doc Control | |
| **DDD – Types:** B – Building, C – Civil, G – General, M – Mechanical & Electrical, I – Motorway Operations System (ITS), S – Structure, O – Tolling, T – Tunnel, U – Urban Design & Landscape | | | | | | | | | | | | | | | | | | |
| **Supplier/Subcontractor:**  **(If applicable)** | | **Name** | | | **Signature and Date** | | **Spark-NELPP REP** | | | **Name** | | | | | | | | **Signature and Date** |
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**Lot closure comments**:

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**Spark NELP QA Rep**:

**Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**