

SPARK – North East Link – Primary Package

Inspection and Test Plan (ITP)

ITP Title: Earthworks Excavation (Including Subgrade Preparation)

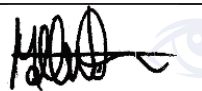

ITP Number: NEL-CNT-SDC-2990-PQA-ITP-0011 Rev 0

LOT Number: _____

Primary Asset Location Code: _____

Discipline: _____

Spark NELPP Approval Record

Function	Position	Name	Signature	Date
Prepared By	Quality Representative	Abiola Olulana	Abiola Olulana	Digitally signed by Abiola Olulana Date: 2022.08.18 16:59:17 +10'00'
Reviewed By	Senior Project Engineer	Matthew Watson		Watson, Matthew 2022.08.19 16:43:18 +10'00'
Approved By	Quality Manager	Greg Iro		Digitally signed by Greg Iro Date: 2022.08.22 09:35:30 +10'00'

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

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References:

Drawing numbers and specifications - VR204, VR290, Construction Quality Management Plan (CQMP), Project Scope and Delivery Requirement (PSDR)

Description: This ITP covers forming and grading of subgrade

Standards:

ITP No.: NEL-CNT-SDC-2990-PQA-ITP-0011 **Rev No:** 0

Lot No.: _____ **Location:** _____ **Ch:** _____ **to** _____ **Offset:** _____ **to** _____ **Layer:** _____

Item No.	Resp. Person	Inspection and Test Activity	Specification Reference	Acceptance Criteria	Test Method	Test Freq.	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	Construction Package Approval	PSDR Part F6 2 (a) to (h)	Construction Documentation shall be submitted and approved prior to commencing work at site.	R	PW	NR	HP		NR	NR	IFU Construction Package InEight Reference: #_____	
1.2	PE	Design status	PSDR Part F5, 2(b) & (c)(i)	Design to be IFC prior to works commencing	V	PL	NR	HP		NR	NR	IFC Drawings InEight Reference: #_____	
1.3	SE	All Equipment calibrated	Quality Management Plan Section 11.1	Equipment calibration certificates filed in InEight Ensure all equipment associated with the relevant works is calibrated	R	PW	HP	HP		NR	NR	Calibration Certificates InEight Reference: #_____	
1.4	PE	Survey Set Out	PSDR Part F4 Section 6 IFC Drawings VicRoads 703.17 IFC Drawings	Clearly mark limit of works; Chainage, offsets, cut/fill level etc. (if required)	V	PW	HP	HP		NR	NR	Survey Record InEight Reference: #_____This ITP Lot Map	
1.5	PE	Stabilisation – Mix Design	VR290.08	The Contractor shall not commence work until all mix design details including the stabilising binder spreading rates have been presented to the Nominated Authority for review. If the Contractor is required to determine the Design Distribution Rate of the stabilised binder(s), evidence shall be produced to show that the	V	PW	HP	HP	HP	WP		Mix Design HP Release InEight Reference: #_____	

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				material properties specified in clause 290.07(a) or clause 290.17(a) as appropriate have been met.								
1.6	SE	Stabilization Material Compliance	VR 290.05 (a) (b) (c)	<p>Material approved for use in accordance with the relevant design recommendation and specification</p> <ul style="list-style-type: none"> - Lime - Cementitious Binder <p>All quicklime and hydrated lime supplied to the job shall be provided with delivery docket showing an assigned ALI at the start of each production week. The assigned ALI shall be determined by averaging the six most recent test results for ALI. A test certificate for determination of the ALI shall be made available on request. Lime shall be stored in a moisture free environment and shall be re-tested for compliance with AS 1672.1 if stored for more than 14 days after receipt from the manufacturer</p> <p>The Contractor shall nominate the type, brand and source of cement proposed. GP or GB cement complying with AS 3972 may be used</p> <p>Water added to the material shall be potable water.</p>	T	PW	HP	HP	NR	NR	<p>Material Approval InEight Reference:</p> <p># _____</p> <p>Delivery Dockets Test Certificate</p>	
1.7	PE	Type GP (if required)	VR290.10 (a)	If Type GP is proposed, the Nominated Authority shall be first notified and	R	PW	HP	HP	HP	WP	HP Release InEight Reference:	

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				evidence provided to show that the earthworks material can be mixed and compacted to the specified density within the Maximum Allowable Working Time for Type GP Cement.							# _____	
1.8	PE	Stabilization Procedure	VR290.10	Lime and cement stabilisation procedure must be approved prior to commencement of works	R	PW	HP	HP	NR	NR	Approved Stabilization Procedure	
1.9	PE	Material Category	VR 204.06 (c)	Prior to commencing excavation in any area and during excavation work, the Nominated Authority and the Contractor shall inspect each type of material encountered and subject to verification by appropriate laboratory testing, agree on the category of the material in accordance with Clause 204.04	T	PW	HP	HP	HP	WP	HP Release InEight Reference: # _____ Test Results	
2.0	Operations (Include Work Execution – Installation / Manufacturing Process step-by-step)											
2.1	SE	Subgrade Quality Assessment	VicRoads 204.06 (d) 204.07 (d)	In situ material below at Cut Floor Level shall be visually assessed to identify the location and extent of excessively wet, unstable and otherwise unsuitable materials. The Nominated Authority must be informed of the location and area of the unsuitable material and its proposed in situ treatment or extent of excavation to the Superintendent for	V	PL	HP	HP	HP	WP	HP Release InEight Reference: # _____	

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							Sub- Contractor	Spark NEL Engineer	Nominated Authority	IREA		
				review. This must be accompanied by a Geotechnical Assessment. Oversize material shall be treated in accordance with clause 204.08								
2.2	PE	Subgrade Quality: Treatment of Unsuitable Material	VicRoads 204.06 (e) 204.07(b)	Where unsuitable material is encountered the following treatments are available (i) In situ material below Cut Floor, shall be removed to a depth of 400 mm below Cut Floor Level and replaced with conforming Type B material to the underside of the capping or selected material layer, or where no capping or selected material is required, to subgrade level. (ii) Where removal and replacement of material below the Cut Floor Level is not required, the surface shall be loosened to a depth of 150 mm and re-compacted to meet the specified requirements.	V	PW	HP	HP	NR	NR		
2.3	SE	Stabilisation Preliminary Trial (if required)	VR290.11	Stabilisation shall not proceed outside the trial sections until the Nominated Authority has reviewed all aspects of the work. If the Specification requirements are not met for the trial, the Nominated Authority may direct that another trial be undertaken or that the work be re stabilised and presented for re assessment.	V	PW	HP	HP	HP	WP	HP Release InEight Reference: # _____	

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2.4	SE	Stabilization Construction	VR290.10	Unless otherwise specified, stabilisation work undertaken each day shall be completed across the full pavement width.	V	PL	WP	WP	NR	NR	- Daily Work Record - Binder spreading Record	
2.5	PE	Subgrade Quality: Treatment of Rock Subgrade (if required)	VicRoads 204.06(f)	<p>Prior to construction of the regulating layer, the areas of rock subgrade shall be presented to the Nominated Authority for acceptance. The Contractor shall submit details of any necessary amendments to the subsurface drainage design including transverse subsurface drainage at the interfaces to the Nominated Authority for review.</p> <p>Where rock exists in a cut below subgrade level, the material shall be excavated to a depth of not less than 150mm below subgrade (Top of capping) level and all loose material and soil shall be removed from the rock floor. Any resulting depressions lower than 150mm below subgrade level shall be cleaned of loose material and backfilled with 20 mm Class 3, 3% cement treated crushed rock and compact to refusal. A regulating layer of Class 4, 20 mm Crushed Rock shall then be placed above the rock to subgrade level in</p>	V	PL	HP	HP	HP	WP	HP Release InEight Reference: # _____	

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				lieu of the specified capping or selected material, in layers not exceeding a compacted thickness of 150 mm in accordance with Section 304								
2.6	PE	Groundwater Seepage	VR 204.06(h)	Where groundwater or seepage is encountered the Contractor shall notify the Nominated Authority and submit the proposed action to be taken to the Nominated Authority for review.	V	PL	HP	HP	HP	WP	HP Release InEight Reference: # _____ Approvals from relevant authorities	
2.7	SE	Fill Construction	VR204.10	The Contractor shall not commence placing any fill on the prepared areas until the area has been reviewed by the Nominated Authority	V	PL	HP	HP	HP	WP	HP Release InEight Reference: # _____	
2.8	PE	Proof Roll	VR204.12, VR204.13, VR173	Areas upon which fills are to be constructed, all layers of fill, and material within 150 mm of the cut floor level in cuts, shall be test rolled in accordance with section 173. Compliance with the test rolling requirements shall be when an area exhibits deformation or springing but still allows for the effective placement and compaction of the overlaying fill material. Arrange for the Nominated Authority to be present during all test rolling.	V	PL	HP	HP	HP	WP	HP Release InEight Reference: # _____ Test Roll Record	

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				Where areas in excess of 20% of the area being test rolled do not meet the requirements, the whole area shall be ripped and re compacted re compacted as specified above, and re presented for test rolling.								
2.9	SE	CBR and Percentage Swell Testing	VR 204.14 (a), 290.14 (d), Table 204.141 290.15, Table 290.151	The initial lot of the stabilised material shall be tested to determine the Assigned CBR in accordance with RC 500.20. Unless otherwise approved by the Superintendent, sampling for CBR testing shall be undertaken after field compaction of the initial lot in accordance with treatment of unsuitable material	V	X1	WP	WP	WP	WP	WP Release InEight Reference: # _____	
2.10	SE	Subgrade Compaction and Moisture Content Testing	VR 204.13, 204.14 (c) Table 204.142 204.15 290.14 Table 290.142	Subgrade compaction and moisture content testing shall be done to Scale requirements specified by the designer. Material within 150 mm of subgrade shall be maintained such that its moisture content is not less than 70% of optimum moisture content prior to the placement of any pavement layer	V	X1	WP	WP	WP	WP	WP Release InEight Reference: # _____ NATA Compaction Test Report	
2.11	SE	Subgrade Finish Level and Conformance	VicRoads 204.03 (g) Table 204.031	The surface shall be assessed by random levelling and shall comply with the requirements of Clause 204.03(h) The level at any point on the subgrade shall not lie more than 20 mm below a 3 m straightedge laid in any direction,	V	X1	WP	WP	WP	WP	WP Release InEight Reference: # _____	

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				except across a crown and water shall not pond at any point.								
2.12	SE	Disposal of Excess Material	PSDR Part F6 Section 15.2 (b)(xv)(c)	Tracking sheet to be filled out for every load not passing a SPARK weighbridge.	V	PL	WP	WP	NR	NR	Certified Weighbridge Docket Material tracking form	
3.0	Post Operations (Include Inspection and Testing)											
3.1	PE	Verification and Lot Records complete	CQMP Section 8.3	Progressive monitoring and signoff of Checklists occurs, and test records are collected. Ensure completed work checklists, inspection and test results and Subcontractor conformance records are progressively and permanently saved and stored as soon as possible after they are received. Completed construction lot records are transferred to the project Quality Team for final record verification prior to being closed	V	PL	HP	HP	NR	NR	This ITP Lot Map	
3.2	PE	NCR Close out (if applicable)	CQMP Section 8.3	All NCR's presented for closure	R	PL	HP	HP	HP	WP	HP Release InEight Reference: # _____ NCR InEight Reference: # _____	
4.0	Quality											

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4.1	QSR	Identification and control of non-conforming products or services (if applicable)	CQMP Section 8.3	Review and confirm closure of NCR's and associated RFI's prior to closing of construction lot	R	PL		HP			NCR closed with related documentation	
4.2	QSR	Check all quality records for lot closure	CQMP Section 8.3	All applicable quality records are complete	R	PL		HP			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

Lot closure comments:

INSPECTION AND TEST PLAN (ITP)



Spark NELP QA Rep:

Name _____ Signature: _____ Date: _____