SPARK – North East Link – Primary Package

Inspection and Test Plan (ITP)

ITP Title: Traffic Signal Installation

ITP Number: NEL-CNT-SDC-2990-PQA-ITP-0099 Rev 0

LOT Number: _____

Primary Asset Location Code: _____

Discipline: _____

Security Classification: OFFICIAL

Spark NELP Approval Record

Function	Position	Name	Signature	Date
Prepared By	Quality Representative	Abiola Olulana	Abiola Olulana Digitally signed by Abiola Olulana	Date: 2022.09.09 11:15:29 +10'00'
Reviewed By	Project Engineer	Dominic Ciccone	Domenic Ciccone Digitally signed by Domenic Ciccone DN: C=AU, E=domenic.ciccone@sparknel-dc.com.au, O=SPARK, CN=Domenic Ciccone	Date: 2022.09.09 11:25:03+10'00'
Approved By	Quality Manager	Greg Iro	Digitally signed by Greg Iro	Date: 2022.09.09 13:08:34 +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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Standards: AS1012, AS/NZS3000

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							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.	V	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	PW	NR	**HP**	NR	NR	IFC Drawings InEight Reference: #_____	
1.3	SE	All Equipment calibrated	CQMP 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	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	Sub-Contractor(s) Prequalification + Quality Documents + Inspection Plans + Concrete	CQPM 610.18 (a) (c), 610.23, VR730.02, VR733.02	Ensure Sub-Contractor(s) have been prequalified and submitted quality documentation including WMS, signed ITP's and checklists along with all relevant supporting documents.	R	PW	**HP**	**HP**	**HP**	WP	HP Release InEight Reference: #_____	

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							Sub-Contractor	Spark NEL Engineer	Nominated Authority	IREA		
		Placement and Curing Procedure		Ensure ITP review checklist is complete (only applicable to sub-contractors ITP).							Approved Subcontractor's Documentation	
1.6	PE	Acceptance of Materials	VR730.06 VR730.07 VR730.09 VR730.10 VR730.11 VR733.04 IFC Drawings PSDR Part B Section 1.1 Table B.1	Ensure all materials suppled on site are free of defects, no damage, no sharp edges and of the correct components as per the specifications. Traffic signals and associated hardware must meet 20 years design lift and warranty requirement.	R	PW	**HP**	**HP**	NR	NR	[ ] Delivery Dockets [ ] Product Data Sheet [ ] Photos Material Compliance Certificates Warranty Certificates	
1.7	PE	Concrete Mix Design Acceptance	VR610	Concrete mix designs are provided to Nominated Authority for approval prior to commencement of works.	V	PW	**HP**	**HP**	**HP**	WP	HP Release InEight Reference: #_____ Approved Mix Design	
2.0	**Operations (Include Work Execution – Installation / Manufacturing Process step-by-step)**											
2.1	SE	Pre-Installation Meeting	VR 730.08 IFC Drawings	The Sub-contractor shall arrange a pre-installation meeting, to be convened by the Nominated Authority, consisting of representatives of the Sub-Contractor, VicRoads, Service Authorities, Municipalities, and others as appropriate. At the meeting, the contractor shall mark the position of pedestals, poles, controller bases, pits and conduits in accordance with the	V	PW	**HP**	**HP**	**HP**	WP	HP Release InEight Reference: #_____ Approved Pre-installation Report	

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				drawings, in the presence of and with the approval of the Nominated Authority. Where trees, poles, obstructions, services, or other site conditions prevent or adversely affect sight lines or obstruct the location as specified, the sub-Contractor shall determine an alternative location for the affected aspect of the works and obtain approval of the Nominated Authority of the nominated change. On Satisfactory completion of the pre-installation meeting, the Nominated Authority will issue to the Sub-Contractor a copy of the Pre-Installation Report. **The contractor shall not commence installation of the traffic signal pedestals, poles, controller bases or pits until the Pre-Installation Report has been approved.**							
2.2	SE	Excavation, Boring, Trenching and Bedding	VR733.05 VR733.08 IFC Drawings	Unless otherwise specified, all conduits under a road carriageway shall be installed by boring. Detailed Proposals for boring under carriageways shall be submitted to the Nominated Authority for review two (2) weeks prior to the programmed commencement of work. Bedding material shall be placed and compacted for the full width of the trench to a depth of not less than 80 mm on an earth foundation or 200 mm on a rock foundation.	V	PW	**HP**	**HP**	**HP**	WP	HP Release InEight Reference: #_____ Approved Boring Procedure	
2.3	SE	Conduits Install	VR730.09 VR733.06 VR733.12 Table 733.061	The Subcontractor shall install all conduits in accordance with Section 733 and Technical Note TCN 010.	V	PL	**HP**	**HP**	**WP**	WP	WP Release InEight Reference: #_____	

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							Sub-Contractor	Spark NEL Engineer	Nominated Authority	IREA		
			IFC Drawings	All electrical conduit installation work for traffic signals must be carried out by, or under the direct supervision of, a VicRoads prequalified traffic signal sub-Contractor and in accordance with the requirements of Energy Safe Victoria. All communication conduit installation works are to be carried out under the 'on site' supervision of a licensed cabler. A plan showing the as-constructed conduit location and depths shall be provided to the Nominated Authority and a copy left in the controller cabinet. The annulus between the bore and the carrier conduits shall be filled by low thermal resistivity, flowable and pumpable grout mixture (comprising sand, cement and suitable additives such as flowable fill).							As Constructed Conduit locations and Depths	
2.4	SE	Draw Cords	VR733.07	Each conduit for electrical wiring and communication cables shall be provided with one synthetic draw cord not less than 3 mm diameter and with a minimum breaking strain of 1.6 kN. Where the conduit terminates in a pit, not less than 500 mm of the draw cord shall be tied to a marker peg 25 mm x 25 mm, not less than 300 mm long, and left coiled in the pit. A length of 100mm diameter conduit not less than 200mm may be used. Where the conduit does not terminate in a pit, the draw cords shall be tied to a marker peg 100 mm x 100 mm, not less than 400 mm long, driven firmly into the ground with the top 50	V	PL	**HP**	**HP**	NR	NR	This ITP	

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				mm projecting above finished surface and painted yellow.								
2.5	SE	Inspection of Bedding and Conduits installation	VR733.08(b)(i)	Once the bedding material has been laid and the conduits put in place, works shall not proceed prior to inspection by Nominated Authority or representative.	I	PL	**HP**	**HP**	**HP**	WP	HP Release InEight Reference: #_____	
2.6	SE	Pits	VR730.10 VR733.09 VR733.10 IFC Drawings	The sub-Contractor shall install all pits in accordance with Section 733. Cable pit lids and frames shall be installed with an approved surround. All surrounds shall be installed in accordance with the appropriate VicRoads standard drawing and shall ensure that no load is placed on the cable pit . **Before the pit lid surround or pre-formed collar is cemented into position an inspection by VicRoads Nominated Authority or representative must be carried out.** Where a detector pit is installed within a grassed area with no kerbing, a round concrete collar shall be installed around the pit. The collar shall be a minimum of 200mm wide at the narrowest point and a minimum of 100mm thick.	I	PL	**HP**	**HP**	**HP**	WP	HP Release InEight Reference: #_____	
2.7	SE	Foundations	VR730.11 IFC Drawings	Foundations shall be located in accordance with the drawings and as approved at the Pre-Installation Meeting. No part of the signal hardware is to be closer than 500mm behind the face of the nearest	I	PL	WP	WP	NR	NR	This ITP	

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				kerb line, or closest vehicle path if no kerb is present. In accordance with VicRoads Standard Drawings TC-1112, the minimum clearance of 5.5m shall be achieved between the lowest part of a lantern installed on an outreach and the roadway directly beneath it. Foundations and footings shall be as specified in the VicRoads Standard Drawings for the specific item of equipment they are to support, as listed in Table 730.111 – Standard Foundation Types. See Appendix for Table.								
2.8	SE	Non-standard foundations (if required)	VR730.11 IFC Drawings	The standard foundation for an MA, JUMA and JUP shall be a bored pile. Where the installation of a bored pile foundation is not feasible and the Sub-Contractor proposes to install a spread footing, or adopt an alternative design, the Sub-Contractor shall obtain the prior approval of the Nominated Authority. Where the subcontractor proposes an alternative footing design to those shown on the VicRoads Standard Drawings, the Sub-Contractor Shall provide sufficient evidence and proof engineering to the Nominated Authority to confirm that the proposed footing arrangement is fit for purpose.	I	PL	**HP**	**HP**	**HP**	WP	HP Release InEight Reference: #_____	
2.9	SE	Inspection of Conduit, Pit and Foundation	VR730.11	All conduit, pit and foundation works shall be inspected by the Nominated Authority prior to the Sub-Contractor covering the works.	I	PL	**HP**	**HP**	**HP**	WP	HP Release InEight Reference: #_____	

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2.10	SE	Backfilling	VR733.05 VR733.08 IFC Drawings	Detailed proposals for the compaction of backfill materials of nominal size greater than 40 mm shall be submitted to the Nominated Authority for review before commencing work. Before backfilling the bore access excavation, the pressure grouting shall be inspected by the Nominated Authority or representative. All surface areas shall be reinstated to the satisfaction of the Nominated Authority.	I	PL	**HP**	**HP**	**HP**	WP	HP Release InEight Reference: #_____ NATA Compaction Test Results	
2.11	SE	Minimum Conduit Cover	VR733.05 Table 733.051 IFC Drawings	Unless otherwise shown on the drawings or specified, borings and trenches shall comply with the depth requirements Listed in Table 733.051 : • 1200mm from pavement surface to top of conduit for freeways and arterial roads • 600mm for local roads • Top of conduit to invert level drains shall be 750mm • For footpaths or unpaved areas – 600mm for LV and 300mm for extra LV lines	I	PL	WP	WP	NR	NR	This ITP	
2.12	SE	Installation on Bridge Decks and Other Concrete Structures (if applicable)	VR730.12 IFC Drawings	Where traffic signals are to be installed onto a bridge deck or other concrete structure and the thickness of the bridge deck does not allow for the standard conduit, pit and foundation arrangements, the following process shall be followed. (a)Conduits Where conduits are required to be placed within a bridge deck, or other concrete structure, and the standard conduit size or	I	PL	**HP**	**HP**	**WP**	WP	WP Release InEight Reference: #_____	

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				depth of cover is not achievable, alternative conduit arrangements may be considered. A reduced diameter conduit may be considered where additional quantity of conduits is provided to compensate for the reduced capacity. Any variation to standard conduit arrangements must be approved by the Nominated Authority prior to installation. (b)Pits Where pits are required to be placed within a bridge deck, or other concrete structure, the pits may be shallower than standard where standard depth is not achievable or smaller where a standard pit is not achievable. Any variation to a standard pit arrangement must be approved by the Nominated Authority prior to installation. (c)Foundations Where foundations are required to be placed within a bridge deck, or other concrete structure and the standard foundation or rag-bolt assembly is not achievable, an alternative foundation will be required. Any alternative foundation arrangement shall be proof engineered and approved by the Nominated Authority prior to installation.									
2.13	SE	Conduit and Pit Documentation	VR733.13	All documentation relating to conduit and pit installation required under the contract specific requirements shall be provided. Notwithstanding the contract specific	V	PL	H	H	NR	NR	AS Built Drawings CoES Compliance Certificate / Letter	

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				documentation requirements, the contractor shall provide, as a minimum, the following: (i)'As built' drawings showing the complete conduit network including conduit types, sizes and depths. (ii)The above 'as built' drawings shall also show all pits, pit types and pit sizes. (iii)Certificates of electrical safety for all conduits and pits installed. (iv)Documentation demonstrating that all pits and conduits installed, have been installed in accordance with the requirements of this specification.								
2.14	SE	Supply and Placement of Concrete in Foundations	VR730.13 VR610.18(a)(c) IFC Drawings	Concrete used in foundations shall be constructed in accordance with the requirements of Section 610 using a minimum concrete grade of VR330/32 Where concrete shall be placing in a bore hole, it shall be compacted with immersion type, high frequency vibratos. Concrete shall be placed through a tremie tube and shall not be dropped from a height greater than 2m.	I	PL	**HP**	**HP**	**HP**	WP	HP Release InEight Reference: #_____	
2.15	SE	Concrete Testing	VR730.13 VR610.16 AS1012	Sampling of concrete shall be carried out in accordance with Section 610.16. The frequency of sampling shall be in accordance with Section 610, Table 610.161. All grade 32MPa concrete shall be sampled and tested in accordance with Australian Standards and tested for compressive strength and slump.	T	X1	**HP**	**HP**	**WP**	WP	WP Release InEight Reference: #_____ Site Sampling and testing procedure NATA Test Reports	

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				Each sample of concrete for standard compressions tests shall comprise a minimum number of 3 cylinders. A minimum of 1 cylinder per sample shall be tested at 7 days and a minimum of 2 cylinders shall be tested at 28 days								
2.16	SE	Traffic Signal Hardware	VR730.14 VR730.15 IFC Drawings PSDR Part B Section 11	Traffic Signal Hardware, including Pedestals and Poles, Lanterns, Target Boards, Visors, Louvers, Push Buttons etc must be installed in accordance with Requirements set out in VicRoads Section 730.14. All Installed Hardware shall be inspected by the Nominated Authority prior to any works proceeding.	I	PL	**HP**	**HP**	**HP**	WP	HP Release InEight Reference: #_____	
2.17	SE	Traffic Signal Cabling	VR730.17(a) – (f) AS/NZS 3000	All traffic signal site cabling shall be installed in accordance with VicRoads section 730.17 Only type approved traffic signal cables shall be used. No cable joints in any cable type shall be allowed in any conduits, pits or other non-approved location or in any non-approved manner.	I	PL	WP	WP	NR	NR	This ITP	
2.18	SE	Cabling scheme for large signal installation (where applicable)	VR730.17(b)	For large signal installations where the arrangements detailed in standard drawings TC 1214 or TC 1215 are required to be adopted, the Contractor shall draw up a proposed cabling scheme and submit this to the Nominated Authority for approval.	V	PW	**HP**	**HP**	**HP**	WP	HP Release InEight Reference: #_____	
2.19	SE	Point of Supply	VR730.16(a)(b)	All electrical works, conduits, fittings, materials and installations related to the point of supply shall comply with the requirements of AS/NZS 3000 Wiring Rules.	V	PL	**HP**	**HP**	**WP**	WP	WP Release InEight Reference: #_____	

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				At any location, only a single point of supply shall be allowed. A second point of supply shall not be installed within 100 m of an existing point of supply. Point of supply for traffic signal installation shall be in accordance with the following requirements: (1)the 'Application for Supply of Power' shall be completed and submitted by the Nominated Authority or Nominated Authority's representative (2)the Contractor shall arrange for the installation of the point of supply with the local power distribution company, at the location approved at the pre-installation meeting (3)where permitted by the distribution company, the point of supply shall be installed in accordance with Standard Drawing TC 1206 (4)where required by the distribution company, the point of supply shall be an approved, unmetered, supply pillar (5)where the distribution company requires a metered supply a distribution cabinet shall be provided as detailed in Table 730.161 (6)the supply enclosure should be located between 3 m and 6 m from the controller cabinet to minimise the risk of both the controller and the point of supply being hit by an errant vehicle in the same incident (7)the main switchboard shall contain a main switch and/or suitably sized circuit breaker						Application for Supply of Power Distribution Company Permit	

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				(8)access to the main switchboard shall be via a VicRoads Power Industry Lock key (9)the earth stake shall be installed in the associated earth pit (10)the main switchboard shall contain the MEN (Multiple Earthed Neutral) link (11)if a street lighting distribution cabinet is to be installed as part of the project, the point of supply for the traffic signals shall be provided by means of a separately metered circuit within the cabinet (12)the circuit breaker controlling the traffic signals shall be clearly marked. The Contractor shall lodge all relevant associated documentation to comply with the requirements of the Office of the Chief Electrical Inspector and the local Distribution Business for the provision of a 240 v 50 Hz single phase power supply for final termination on not less than a 32 amp service fuse. NOTE: Any arrangements for the supply of power that are not consistent with current VicRoads practice shall be submitted to the Nominated Authority for approval.							
2.20	SE	Testing of Electrical Works	VR730.17(g)	The electrical installation shall be tested for correct cabling by the Contractor. The Contractor shall be responsible for all testing associated with the proving of the electrical circuits in accordance with the requirements of AS/NZS 3000 Wiring Rules and AS/NZS 3017.	T	F	**HP**	**HP**	**HP**	WP	HP Release InEight Reference: #_____ Electrical Test Results Flash Test Report	

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							Sub-Contractor	Spark NEL Engineer	Nominated Authority	IREA		
				In particular, the following tests shall be carried out prior to installation of lanterns and hardware: (1)continuity of all active conductors (2)continuity of neutral and ELV conductors (3)continuity of earthing system in accordance with clause 8.3.3 of AS/NZS 3000. (4)insulation resistance test of all field cables in accordance with the requirements of AS/NZS 3000. The results of the above tests shall be recorded on the forms provided at the end of this section and a copy provided to the Nominated Authority. Following the installation of all lanterns and hardware, the Sub-Contractor shall carry out a flash test.								
2.21	SE	Electrical Work for Street Lighting (where applicable)	VR730.18	Where DoT (Roads) owned and operated street lighting is to be installed, all works shall be carried out in accordance with DoT (Roads) Standard Section 731. Where the isolation switch for a traffic signal installation is located within a street lighting distribution cabinet, the Sub-Contractor shall ensure that a key to the street lighting cabinet is installed in the traffic signal controller cabinet. Any Distribution Company (VESI) street lighting to be installed shall be installed in accordance with the local distribution company standards and requirements.	V	PL	**HP**	**HP**	NR	NR	This ITP	

INSPECTION AND TEST PLAN (ITP)

Project: SPARK – North East Link Primary Package **Client:** State of Victoria and the North East Link State Tolling Corporation

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Description: This ITP covers the installation of traffic signals

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Standards: AS1012, AS/NZS3000

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				A separate conduit and pit network shall be installed in accordance with the local Distributor's requirements for VESI lighting cables. VESI lighting cables shall not be installed in DoT (Roads) traffic signal conduits.								
2.22	SE	Provision of Communication Lines (if applicable)	VR730.19 IFC Drawings	Where an ADSL line is required, it is the responsibility of the contractor to liaise with the Communications Carrier or any other third party to ensure the ADSL line is available at the location. The Sub-Contractor shall supply and install a 20 mm white 'Telstra' communication conduit together with a two pair telecommunication cable from the controller to the associated P2 pit as shown in Standard Drawing TC 1207. The P2 pit is the demarcation point between DoT's asset and the Communication Carriers asset. A minimum of 1.5 m of telecommunications cable shall be left coiled in the P2 pit. The P2 pit shall be installed as close as practicable to the controller foundation apron and not more than 3 metres from the traffic signal controller by the Sub-Contractor. The Communications Carrier is responsible for all works from the P2 pit to the nearest Communications Carrier pit. The Sub-Contractor shall not undertake any works between the P2 pit and the Communication Carriers pit	V	PL	**HP**	**HP**	**WP**	WP	WP Release InEight Reference: #_____	
2.23	SE	Signal at Railway level Crossings	VR730.20	The Contractor shall obtain all the necessary permits and approvals for working on and	V	PL	**HP**	**HP**	NR	NR	This ITP	

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							Sub-Contractor	Spark NEL Engineer	Nominated Authority	IREA		
		and Tram Detection (if applicable)		adjacent to the rail track owner's, or the railway operator's, property and equipment. Where specified on the drawings, the Contractor shall install a 10 pair approved communication cable (colour coded) between the traffic signal controller and the railway control equipment. Where traffic signals are to be installed on each side of the railway, the Contractor shall supply and install 2 x 100 mm diameter conduits with draw cords as shown on the drawings and agreed by the railway track owner. Tram detection shall be installed by the Contractor as shown on the drawings							Track Owner's Permit and Approval	
2.24	SE	Co-ordination with Emergency Vehicle Operation (if applicable)	VR730.21(a)(b) IFC Drawings PSDR Part D section 5.6	(a)Emergency Vehicle Pre-Emption Where specified in individual contract documents the Contractor shall install an approved Emergency Vehicle Pre-Emption system and associated equipment in accordance with TCS 055, on nominated poles. All associated cabling shall be installed and connected at the receiver. (b)Emergency Station Input Where specified in individual contract documents and on associated drawings the Sub-Contractor shall provide a suitable cable (refer to Table 730.162) within a 50 mm conduit, between the controller and the Emergency Panel located within the emergency premises (i.e. Fire, Ambulance or Police).	V	PL	**HP**	**HP**	**WP**	WP	WP Release InEight Reference: #_____	

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				The location of the emergency panel shall be in a location approved by the Nominated Authority and the owner of the affected properties. For details of the Emergency Panel and cabling connections, refer to TCS 016. ECB traffic signals used to support carriageway closures as required by PSDR section 11 of Part B must be in the 'blank' state when not in use. When ECB traffic signals are used to reopen a carriageway, the following sequence must be followed: (i) the red aspect is turned off; (ii) the green aspect immediately turns on for 60 seconds; and (iii) all aspects are turned off.							
2.25	SE	Pre-Commissioning	VR730.22(a)(b)	Upon completion of the installation works, a complete pre-commissioning inspection shall be undertaken by the Sub-Contractor. The Sub-Contractor shall provide 24 hours' notice to the Nominated Authority of the time of the inspection. The Contractor shall arrange for the submission of all necessary paperwork, inspections, payment of fees, etc., to obtain connection to mains supply. The Contractor shall advise the Nominated Authority when power is available at the site.	I	PL	**HP**	**HP**	**WP**	WP	WP Release InEight Reference: #_____ Pre-Commissioning Report CoES	
2.26	SE	Traffic Signal Controller Installation	VR730.23 PSDR Part B Section 11(c)	The traffic signal controller shall ONLY be installed by the controller Supplier (if the Supplier holds STS1 prequalification) or an	V	PL	**HP**	**HP**	**WP**	WP	WP Release InEight Reference:	

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							Sub-Contractor	Spark NEL Engineer	Nominated Authority	IREA		
				STS1 prequalified contractor authorised by the controller Supplier. The controller Installation Contractor shall provide copies of pre-controller installation completed reports to the Nominated Authority. The Controller Installation Contractor shall advise the Nominated Authority when the site is complete and tested and ready for the traffic signal controller to be installed.							#_____ CoES, Continuity Test Report, Insulation Resistance Report, Pre-Commissioning Report	
3.0	**Post Operations (Include Inspection and Testing)**											
3.1	PE	Completion of Site Works	VR 730.24 (a)(b)(c)(d)	Prior to switching the signals on, the Sub-Contractor, together with the controller installer, shall carry out a 'flash' test of the installation to ensure that each lantern is connected to the correct cable core. The flash test shall be witnessed by the Nominated Authority and confirmed as acceptable.	T	F	**HP**	**HP**	**HP**	WP	HP Release InEight Reference: #_____ Flash Test Report	
3.2	SE	Commissioning	VR730.24(d)	Once steps detailed in 3.1 above have been successfully completed, the site shall be deemed to have been commissioned. Upon the completion of commissioning of the site, the Nominated Authority shall ensure that the RAI database is updated within 24 hours. The Nominated Authority shall provide to the Maintenance Team, within 5 business day, the following: (1)notification that the site has been commissioned (2)a copy of the Commissioning report (3)details of any building warranty or defects liability period affecting the site	R	PL	**HP**	**HP**	**WP**	WP	WP Release InEight Reference: #_____ Commissioning Report Warranty Details	

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							Sub-Contractor	Spark NEL Engineer	Nominated Authority	IREA		
				(4)the date of scheduled handover.								
3.3	SE	Site Clean-up and Hardware Removal	VR733.11 VR730.24(e)	Surplus excavated material shall be removed from the road reserve. Areas affected by the work shall be restored to a condition similar to that which existed prior to the commencement of the work. All surface areas such as footpaths, paved areas, grassed areas, etc., shall be reinstated to a finish and condition that is not inferior to the original surface finish and condition (e.g. grass to grass, concrete to concrete, asphalt to asphalt, etc.). All surfaces areas shall be reinstated to the satisfaction of the Nominated Authority. Any disused cable pits shall be backfilled to the satisfaction of the Nominated Authority.	I	F	**HP**	**HP**	**WP**	WP	WP Release InEight Reference: #_____	
3.4	PE	Redline Drawings	DMP NEL-CNT-SDC-2990-PDM-MPL-0001 Section 5.4	Redline Drawings submitted to Project for creation of As-Built Drawings.	V	PL	**HP**	**HP**	NR	NR	Red-Line Marked Up IFC Drawing(s)	
3.5	SE	Handover	VR730.24(f)	The 'hand over' process shall be managed by the Nominated Authority who shall provide the Maintenance Team with the following: (1)opportunity to carry out an audit of the site to ensure compliance with DoT (Roads) specifications and requirements (2)a completed 'maintenance hand-over' form (available from the Maintenance Team)	V	PL	**HP**	**HP**	**WP**	WP	WP Release InEight Reference: #_____ Maintenance Team Written Acceptance	

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							Sub-Contractor	Spark NEL Engineer	Nominated Authority	IREA		
				(3)copies of all Certificates of Electrical Safety for all electrical works (4)copies of the 'electrical test report' (5)copies of the switch-on report (6)details of the installation subcontractor (7)details of all hardware installed on site (8)copies of the 'as-built' drawings							
3.6	SE	Verification and lot records compilation.	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 Record	
3.7	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**											
4.1	QSR	Identification and control of non-conforming	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	

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							Sub-Contractor	Spark NEL Engineer	Nominated Authority	IREA		
		products or services (if applicable)										
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-NELP REP	Name	Signature and Date

Lot closure comments:

Spark NELP QA Rep:

Name_____ **Signature:** _____**Date:** _____