

<b>Project:</b> Iron Bridge SMPEI Process Plant Construction – Dry Plant		<b>FMG Document No:</b> 662NSC2002-2000-IT-QA-0001		<b>Document No:</b> C292-QU-ITP-0001		<b>Revision:</b> 0		
<b>Project No:</b> C292		<b>Contract No:</b> 662NSC2002-0000-CO-CP-0002		<b>Prepared By:</b> P Thomson		<b>Approved By:</b> W. Bradshaw		
<b>Scope:</b> Underground Services Installation						<b>Workpack / Area:</b>		
<b>Control Point</b> <b>H</b> = Hold Point (Work must not proceed to the next step until this activity is completed and a signature obtained); <b>W</b> = Witness Point (Notify to permit witness, work can proceed if witness does not attend at agreed time); <b>S</b> = Surveillance (Monitor operations / surveillance of activity); <b>R</b> = Review Documentation (Sign to record review);								
<b>Resp. Person</b> <b>QC</b> - Quality Inspector; <b>PE</b> - Project Engineer; <b>CQR</b> - Client Quality Representative; <b>CI</b> - Coating Inspector; <b>PM</b> - Project Manager; <b>SS</b> - Site Supervisor; <b>DC</b> - Dimension Checker; <b>WE</b> - Welding Engineer; <b>PP</b> - Pre-processing Personnel								
ACT No.	DESCRIPTION OF ACTIVITY	PROCEDURE / SPECIFICATION REFERENCE	ACCEPTANCE CRITERIA	VERIFYING DOCUMENTATION	RESP. PERSON	CONTROL POINT		REMARKS
						CIVMEC	FMG	
<b>1 Submission / Approval of Documentation</b>								
1.1	Submit Underground Services Installation Inspection & Test Plan for FMG Approval	662NSC2002-2000-SW-CN-0002_4 100-ST-QA-0002_1	662NSC2002-2000-SW-CN-0002_4 10.7 100-ST-QA-0002_1 4.2	Approved ITP	QC / PE	H / R	H / R	
<b>2 Site Preparation</b>								
2.1	Survey and Setout Excavation Area	IFC Drawings	662NSC5001-5110-SP-CI-0001_1 Cl. 8.4 IFC Drawings	Signed ITP	SS	S	S	
2.2	Locate and Mark Existing Underground Services	662NSC5001-5110-SP-CI-0001_1 IFC Drawings	662NSC5001-5110-SP-CI-0001_1 Cl. 8.4 IFC Drawings	Trenching / Backfill Checksheet As-Built Drawings	SS	S	S	
<b>3 Excavation</b>								
3.1	Excavation / Dig Permit Obtained Prior to Commencing Any Excavation Works	662NSC5001-5110-SP-CI-0001_1 IFC Drawings	662NSC5001-5110-SP-CI-0001_1 Cl. 8.4 IFC Drawings	Excavation Permit	SS	H	H / R	
3.2	Inspect Trench Width and Depth is in Accordance with the Drawings Allows for Soil Conditions, Bedding, Working Space, Testing, Concrete Encasement and Cover to Services	662NSC5001-5110-SP-CI-0001_1 Cl. 8.4 100-SP-PI-0001_4 (Piping applicable only) IFC Drawings	662NSC5001-5110-SP-CI-0001_1 Cl. 8.4 100-SP-PI-0001_4 Cl. 8.2 (Piping Applicable) IFC Drawings	Trenching / Backfill Checksheet	SS	W	S	
3.3	Inspection of Subgrade Prior to Any Localised Compaction, Placement of Blinding or Waterproof Membrane.	662NSC5001-5110-SP-CI-0001 IFC Drawings	662NSC5001-5110-SP-CI-0001_1 Cl. 2.8.2 95% MMDD @ ±2% OMC	NATA Soil Compaction Test Reports Field Inspection Records	SS / PE / QC	S / R	S / R	
<b>4 Backfill Material</b>								
4.1	Sand or Approved Bedding Material Available for Bedding of Underground Services	662NSC5001-5110-SP-CI-0001 IFC Drawings	662NSC5001-5110-SP-CI-0001 Cl. 3.4 IFC Drawings	Trenching / Backfill Checksheet	QC / PE	S / R	S / R	
4.2	Structural Fill Material is to be Sourced on Site, Won from Excavations / Spoil or Borrow Pit	662NSC5001-5110-SP-CI-0001 IFC Drawings	662NSC5001-5110-SP-CI-0001 Cl. 2.6 Type 1 Fill Material - Tables 4.5 & 6 Type 2 Fill Materials - Tables 4.5 & 6 Type 3F Fill Materials - Tables 4.5 & 6 IFC Drawings	NATA Soil Test Report	QC / PE	H / R	R	

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<b>5 Installation of Services</b>								
5.1	Refer to Piping Installation ITP	C292-QU-ITP-0006	C292-QU-ITP-0006	C292-QU-ITP-0006	SS / PE	R	R	
5.2	Refer to Electrical Installation ITP	Relavant Electrical Area ITP	Relavent Electrical Area ITP	Relavent Electrical Area ITP	SS / PE	R	R	
5.3	Survey of installed services inc invert levels	662NSC5001-5110-SP-CI-0001 662NSC2002-2000-SW-CN-0002_4 IFC Drawings	662NSC5001-5110-SP-CI-0001 Cl. 8.4	Survey Reports	SS / PE	H	R	
<b>6 Backfill Placement, Compaction &amp; Testing</b>								
6.1	Placed Bedding Material is Correct Type, Depth and Cover	662NSC5001-5110-SP-CI-0001 IFC Drawings	662NSC5001-5110-SP-CI-0001 Cl. 3.6 IFC Drawings	Trenching / Backfill Checksheet	SS / PE	H	S	
6.2	Placed Fill is Correct Type and Depth	662NSC5001-5110-SP-CI-0001 IFC Drawings	662NSC5001-5110-SP-CI-0001 Cl. 3.4 IFC Drawings	Trenching / Backfill Checksheet	SS / PE	S	S / R	
6.3	Service Identification Tape is Correct Type and Depth	100-SP-PI-0001_Rev 4 100-SP-EL-0008_Rev 3 AS 2648.1 AS 3000 AS 3007 IFC Drawings	100-SP-PI-0001_Rev 4 Cl. 8.2 100-SP-EL-0008_Rev 3 Cl. 13.1 AS 2648.1 AS 3000 AS 3007 IFC Drawings	Trenching / Backfill Checksheet	SS / PE	S	S / R	
6.4	Compaction Frequency is Carried Out in Accordance with Specifications	662NSC5001-5110-SP-CI-0001 AS 3798	662NSC5001-5110-SP-CI-0001 Cl. 8.3.4 Table 12: Material Testing Frequency Table 14 frequencies of Field Densities AS3798 Table 8.1: Field Density Test Frequency	Trenching / Backfill Checksheet NATA Soil Compaction Test Records	SS / PE	S / R	S / R	
6.5	Required Soil Density has Been Achieved Through Compaction	662NSC5001-5110-SP-CI-0001 AS 1289	662NSC5001-5110-SP-CI-0001_1 Cl. 2.8.2 95% MMDD @ ±2% OMC (no structure above) 98% MMDD @ ±2% OMC (structure above)	NATA Soil Compaction Test Records	SS / PE	S / R	S / R	
6.6	Backfilled Level is Within Finished Level Tolerances	662NSC5001-5110-SP-CI-0001 IFC Drawings	662NSC5001-5110-SP-CI-0001 Cl. 2.9 Table 9: Earthwork Tolerances	Trenching / Backfill Checksheet Survey Report	SS / PE	S / R	S / R	
6.7	Cable Markers (if applicable) Placed at Correct Locations and Intervals	AS 3000 AS 3007 IFC Drawings	AS 3000 AS 3007 IFC Drawings	Trenching / Backfill Checksheet Survey Report	SS / PE	S / R	S / R	

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7	Finalise Documentation							
7.1	Submit Survey Results to FMG Survey Team	662NSC2002-2000-SW-CN-0002_4 100-ST-QA-0002_1	662NSC2002-2000-SW-CN-0002_4 Cl. 9.1 100-ST-QA-0002_1 Cl. 2.8	Survey Reports	QC / PE	R	R	
7.2	Complete Construction Verification & Punchlisting	662NSC2002-2000-SW-CN-0002_4 100-ST-QA-0002_1	662NSC2002-2000-SW-CN-0002_4 Cl. 9.1 100-ST-QA-0002_1 Cl. 2.8	Approved Construction Verification Documentation Signed-off Punchlist	QC / PE	R	R	

**SIGNATURE IDENTIFICATION REGISTER**

NO	NAME	SIGNATURE	POSITION TITLE	ORGANISATION
1				
2				
3				
4				
5				
6				