**Inspection and test plan – Light & Security Pole Foundations**

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| **Project no.** | CC0375 | | **Project name** | Hunter Power Project | | | | | | **Date** |  |
| **Symal ITP no.** | | CC0375-ITP-023 | **Revision no.** | 1 | **Revision date** | 09/02/2024 | **Plant and equipment used** | |  | | |
| **UGL ITP no.** | | 3200-0663-HPP-QA-ITP-123 | | | | | **SHL ITP no.** | HPP-UGL-QUA-GN-GEN-ITP-0063 | | | |
| **Lot no.** | |  | **Location (chainages, detailed description or marked up plan)** | | | | |  | | | |

Attach Dockets, Certificates and QA Documents to ITP

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| Contact Details | | Summary of Requirements | | | Principle Codes / Standards | | Records | |
| **Customer:**  **Construction Manager:**  **Project Engineer:**  **Quality Representative:**  Subcontractors    Surveillance / Inspection Key  **HOLD POINT (H):** Nominated point beyond which work shall not proceed without verified acceptance by nominee.  **WITNESS POINT (W):** Points at which the nominee shall be notified and invited to witness an activity, but further work may proceed without the presence of the nominee.  **SURVEILLANCE (S): Continuing** evaluation of the status of methods, analysis of records and monitoring of activities on a random basis to ensure quality requirements will be met.  **VISUAL (V): 100**% Visual Inspection of work / item to ensure compliance with code / specification.  **DIMENSIONAL (D): Measurement** of critical dimensions to ensure work / item is within tolerance | | **Process Qualifications**  **Traceability:**  Material:  Alloy Verification  Heat Treatment:  Pressure Testing  Consumable:  NDT:  Welder ID:  WPS:  Electrical:  Instruments  **Heat Treatment:**  **Dimensional Control:**  **Testing (NDT):**  **Acceptance Specification:**  **Pressure Testing:**  **Elect. / Instrumentation:**  Notes: | | | **AS2159-2009 Piled Footing Design & Installation**  **AS1379-2007 Specification and Supply of Concrete**  **Client Specifications**  HPP-AEC-CIV-GN-GEN-SPT-0161\_0 QUALITY (CONSTRUCTION)  HPP-AEC-CIV-RO-PAV-SPT-1133.00.IFR.00.01\_SPECIFICATION PLAIN AND REINFORCED CONCRETE  HPP-AEC-CIV-ST-GEN-DEG-5951 rev 1  HPP-AEC-GEO-GN-GEN-SPT-0001  **Engineering Procedures / WI** | | **(MDR Insert as marked )**   * Inspect Release Certs. * Deviations/Concessions * Material Certificates * Conformance Certificate * Welding Records * Welder Qual. Register * NDT Reports * Report on Repairs * Heat Treatment Records * Dimensional Records * Non-Conformance Rpts * Pressure Test Records * Drawings & Data Sheets * Misc Verification Records * Electrical Test Sheets | |
| Prepared by: |  | | Date: 09/02/24 | Approved By: | | Date: 09/02/23 | |  |

|  | |  | |  |  |  | **Verification of acceptance by** | | | | | | **Remarks / record (eg. test frequency, reports, certificates, checklist etc)** | |
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|  | |  | |  |  |  | **Symal** | | **HPP CON** | | **HPP QA** | |
| **Item no.** | | **Activity** | | **Ref docs** | **Acceptance criteria** | **Acceptance** | **Key** | **Sign date** | **Key** | **Sign date** | **Key** | **Sign date** |
| **1.0 Preliminaries** | | | | | | | | | | | | | | |
| **1.1** | | Documentation | | Drawings | Check the latest site and engineering drawings BEFORE starting each task/set of tasks. | Yes  No  N/A | S |  | S |  | S |  |  | |
| **1.2** | | Lot Traceability | | Spec. 0161 Quality [Cl 7.3] | Prepare a lot map for traceability of the work area | Yes  No  N/A | S |  | S |  | S |  | Lot map | |
| **1.3** | | Set out | | Drawings | Setout to the location and levels on the drawings. This shall be presented for inspection by the superintendent. | Yes  No  N/A | S |  | S |  | S |  |  | |
| **1.4** | | DCP Test | | Drawings Note 8 | Conduct DCP test for each pole location.  Allowable minimum bearing capacity =100kPA must be verified by a qualified Geotechnical Engineer.  Ground improvement shall be made If existing soil profile is inadequate.  **HOLD POINT** | Yes  No  N/A | **H** |  | **H** |  | **H** |  | Geo report | |
| **2.0 Base Bore** | | | | | | | | | | | | | | |
| **2.1** | | Bore Excavation | | Drawings | Bore to the correct diameter and depth nominated on the drawings and remove any loose material at the base.  **450mm – Light Pole & Joint Use Pole**  **600mm – Security Pole**  Depth to be verify by qualified Geotechnical Engineer.  Base must be clean and dry to be inspected by the Superintendent.  **HOLD POINT** | Yes  No  N/A | **H** |  | **H** |  | **H** |  |  | |
| **2.2** | | Formwork Sleeve | | Spec. 0319  Minor Concrete Works [Cl 4.3]  Drawings | Formwork to be set as per drawings and adequately supported and RL checked.  Completed formwork to be inspected by the Superintendent prior to concrete placement.  **HOLD POINT** | Yes  No  N/A | **H** |  | **H** |  | **H** |  | Pre-pour inspection | |
| **2.3** | | Placement of reinforcement cage, HD Bolts and Earth Lugs  (Supplied by Client) | | Spec. 0319  Minor Concrete Works [Cl 4.5]  Drawings | Ensure that cage is clean and straight. Plunge the cage centrally to bore hole and ensure spacers are attached at correct locations.  Reinforcement cages and embedment to conform with drawings and specification.  **4-M20 HD Bolts grade 8.8/S**  **500mm min embedment**  **130mm projection**  Or  **4-M24 Bolts grade 4.6/S**  **600 min embedment**  **150mm projection**  **HOLD POINT** | Yes  No  N/A | **H** |  | **H** |  | **H** |  | Pre-pour inspection | |
| **3.0 Concrete** | | | | | | | | | | | | | | |
| **3.1** | | Concrete supply and placement | | Spec. 0319  Minor Concrete Works [Cl 4.8, 4.9, 4.10, 4.11]  Drawings | Concrete strength of cast in-situ units shall be min. Grade **N32** or as otherwise stated on drawings.  Design slump shall not exceed 75mm unless shown otherwise on the drawings.  Ensure the temperature of freshly mixed concrete is maintained in between 5°C and 35°C. Ensure elapsed time between batching and discharge of the mix complies with the below table.   |  |  | | --- | --- | | **Concrete temp at discharge (°C)** | **Max elapsed time (hours)** | | 10-24 | 2.00 | | 24-27 | 1.50 | | 27-30 | 1.00 | | 30-32 | 0.75 |   Concrete placed in layers ≤ 300mm thick and adequately vibrated avoiding over-vibration. | Yes  No  N/A | S |  | S |  | S |  | Material dockets | |
| **3.2** | | Concrete sampling | | Spec. 0319  Minor Concrete Works [Cl 4.2] | The nominal rate of sampling shall be taken:   1. Compressive strength: One set per pour or as otherwise directed by the Superintendent; 2. Slump: One per batch of concrete   Average compressive strength at 28 days meets minimum design requirements. Slump within tolerances specified in AS 1379   |  |  | | --- | --- | | **Specified Slump (mm)** | **Tolerance (mm)** | | <60 | ± 10 | | ≥60 ≤80 | ± 15 | | >80 ≤110 | ± 20 | | >110 ≤150 | ± 30 | | >150 | ± 40 | | Yes  No  N/A | S |  | S |  |  | S | Material dockets | |
| **4.0 Conformance check** | | | | | | | | | | | | | | |
| **4.1** | | Survey | | Spec. 0003 Piling [3.10] | All piles shall be constructed within the tolerance specified below:   * The centreline at the top of the piles shall be within 50mm of the specified position * The tolerance on the level of the top of the piles shall be ± 10mm * Piles shall be constructed to the minimum diameters specified on the drawings * Length of pile/pile liner shall not be less than total length shown on drawings * Review survey as build report. | Yes  No  N/A | S |  | R |  | R |  | As-Built Surveys | |
| **4.2** | | Concrete Test Results | | Spec. 0002 [Cl 8.2] | Certificates received, reviewed and conforming to requirements for each pour. | ☐ Yes ☐ No ☐ N/A | S |  | R |  | R |  | Test reports | |
| **4.3** | | Acceptance and closure of non-conforming items | | Spec. 0161 Quality [Cl 3.8] | NCRs to be opened for non-conforming items and closed prior to closing construction lot.  **HOLD POINT** | ☐ Yes ☐ No ☐ N/A | **H** |  | **H** |  | **H** |  |  | |
|  | **Comments**: | |  | | | | | | | | | | |  |
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| **Acceptance of works:** | | | | |  | |
| Symal Infrastructure representative name |  |  | Symal Infrastructure representative signature |  | Date |  |
| HPP Construction representative name |  |  | HPP Construction representative signature |  | Date |  |
| HPP Quality representative name |  |  | HPP Quality representative signature |  | Date |  |

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**Inspection Checklist Report**

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| **Project no.** | CC0375 | **Project name** | Hunter Power Project | | **Date** |  |
| **Symal ITP no.** | CC0375-ITP-023 | | | | | |
| **UGL ITP no.** | 3200-0663-HPP-QA-ITP-123 | | **SHL ITP no.** | | HPP-UGL-QUA-GN-GEN-ITP-0063 | |
| **Symal Lot no.** |  | | | | **Symal Sub Lot no.** |  |
| **Location (chainages, detailed description or marked up plan)** | | | |  | | |

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|  | | **Verify of acceptance by** | | | | | | | | | **Remarks / records** |
|  | | **Symal** | | | **HPP CON** | | | **HPP QA** | | |
| **ID No.** | **Activity to be verified** | **ITP Step No.** | **Items conforms?** | | | **NCR / Test Report No.** | | **Key** | | **Sign Date** | **Key** | | **Sign Date** | **Key** | | **Sign Date** |  | |
| Yes | No | NA |
| **Preliminaries** | | | | | | | | | | | | | | | | | | |
| 1. | Documentation | 1.1 |  |  |  |  | | S | |  | S | |  | S | |  |  | |
| 2. | Lot Traceability | 1.2 |  |  |  |  | | S | |  | S | |  | S | |  | Lot map | |
| 3. | Set out | 1.3 |  |  |  |  | | S | |  | S | |  | S | |  |  | |
| 4. | DCP Test  **HOLD POINT** | 1.5 |  |  |  |  | | **H** | |  | **H** | |  | **H** | |  | Geo report | |
| **Base Bore, Formwork and Rebar** | | | | | | | | | | | | | | | | | | |
| 5. | Bore Excavation  **HOLD POINT** | 2.1 |  |  |  |  | | **H** | |  | **H** | |  | **H** | |  | Pre-pour inspection | |
| 6. | Formwork Sleeve | 2.2 |  |  |  |  | | **H** | |  | **H** | |  | **H** | |  | Pre-pour inspection | |
| 7. | Placement of reinforcement cage, HD Bolts and Earth Lugs  **HOLD POINT** (Supplied by Client) | 2.3 |  |  |  |  | | **H** | |  | **H** | |  | **H** | |  | Pre-pour inspection | |
| **Concrete** | | | | | | | | | | | | | | | | | | |
| 8. | Concrete supply and placement | 3.1 |  |  |  |  | | S | |  | S | |  | S | |  | Material dockets | |
| 9. | Concrete Sampling and Testing | 3.2 |  |  |  |  | | S | |  | S | |  | S | |  | Material dockets | |
| **Conformance Check** | | | | | | | | | | | | | | | | | | |
| 10. | Survey | 4.1 |  |  |  |  | | S | |  | R | |  | R | |  | As built reports | |
| 11. | Concrete Test Results | 4.2 |  |  |  |  | | S | |  | R | |  | R | |  | Test reports | |
| 12. | Acceptance and closure of non-conforming items  **HOLD POINT** | 4.3 |  |  |  |  | | **H** | |  | **H** | |  | **H** | |  |  | |

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| I certify that this Lot conforms to the requirements of the design and specifications; that all associated NCRs have been closed out: and all survey, conformance testing and inspections have been undertaken in accordance with the specified requirements. | | | | |
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| **Symal Representative** |  | **Signature** |  | **Date** |
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| **HPP Construction Representative** |  | **Signature** |  | **Date** |
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|  |  |  |  |  |
| **HPP Quality Representative** |  | **Signature** |  | **Date** |
| **Comments:** | | | | |
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