| **INSPECTION AND TEST CHECKLIST FOR:**  **Precast Reinforced Concrete Box Culverts (R16)** |
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| Activity No.# | Description | Requirements / Reference | | Acceptance Criteria | | | | | | | Comments / Attachments / Records | | | | Engineer Signoff | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | **Safety Review** | Project Safety Plan | | * All site personnel inducted (includes environment and cultural) * Required Safe Work Method Statements completed and signed * Subcontractor’s safety plan/procedure approved | | | | | | |  | | | |  | |
| 2 | **Environment** | Project Environment Plan  G36 CL 3.1  G38, G40 | | * Installation of soil erosion and sedimentation controls completed in accordance with ESC Plan and EMP, as well as Specification TfNSW G38 * All work undertaken under this Specification must be approved by the Environmental Site Representative (refer TfNSW G36) and comply with Abergeldie’s CEMS and CEMP | | | | | | |  | | | |  | |
| 3 | **Basic Requirement** | R16 Cl 1.4 | | * Design, test, manufacture and deliver all culverts and link slabs in accordance with AS 1597.2 and the additional requirements of this Specification | | | | | | |  | | | |  | |
| 4 | **Concrete Work** | R16 Cl 4 | | Concrete, reinforcement and embedments must comply with TfNSW B80  *At 28 days after concrete placement, measure and classify any defects in accordance with AS 1597.2. Mark defects and cracks larger than 0.1mm as nonconforming. Map nonconforming cracks and defects*   * *Unless directed otherwise, defects Type 1 and 4 may be accepted without repair, defects Type 2 and 5 may be accepted after repair, and reject units with defects Type 3 and 6. Repair defects in accordance with TfNSW B80* | | | | | | | * *Map of nonconforming cracks and defects (if applicable)* | | | |  | |
| 5 | **Design Requirements and Procedures** | R16 Cl 2 | | Design requirements and procedures of AS 1597.2 *and where required, AS 5100 also applies*  Include in the design records the calculations produced during both the design and verification processes. *Include construction plant loadings in the calculations.*  Provide certificate demonstrating compliance with these requirements   * **HOLD POINT: Delivery to site of culverts.** Submit to the Principal design output and certification of compliance at least 5 working days prior to commencement of delivery to site | | | | | | |  | | | |  | |
| 6 | **Design Based on Load Testing** | R16 Cl 3 | | Where the culvert design is based on load testing, provide certification, supported by testing and calculation records, demonstrating that the design complies with AS 1597.2 *and AS 5100 as necessary* for each different culvert / load combination.  Refer to Annexure R16/E for a table of basic test loads for standard small culvert units and link slabs   * **HOLD POINT: Delivery to site of culverts.** Submit to the Principal testing and calculation records and certification of compliance at least 5 working days prior to commencement of delivery to site | | | | | | |  | | | |  | |
| 7 | **Delivery to Site *and Storage*** | R16 Cl 7 | | Do not transport any unit until at least seven days after casting and until the concrete has reached the specified 28 day strength   * *Design (and provide any necessary certification by a qualified engineer) and make suitable storage areas for delivery of box culvert units, link slabs and associated components, taking into account any double stacking being proposed* | | | | | | | * Design certification (if required) | | | |  | |
| 8 | **Sampling and Testing** | R16 Cl 5 | | Routinely sample and test for each quality parameter (except concrete strength) in accordance with AS 1597.2. Sample and test for concrete strength in accordance with TfNSW B80   * **WITNESS POINT: Crack serviceability test.** Provide at least two working days’ notice of intention prior to carrying out the test. Before starting testing, submit a certificate of compliance of test loads, and other relevant details supported by verification checklists | | | | | | |  | | | |  | |
| 9 | **Contractor Certification** | R16 Cl 6 | | *Do not supply any damaged and subsequently repaired units, link slabs or associated components without the prior approval of the Principal. Submit details of any nonconformities and the proposed repair methods to the Principal for their approval prior to undertaking repairs*  Proposed repair methods include repair of Type 2 and 5 defects as per TfNSW B80. In the case of cracks and patching, clean the affected area with a wire bristle brush, apply a suitable primer / bonding, and then patch with a B80-suitable product such as Renderoc HB40 Plus, HB70 Plus or similar. Take care with the finished surface and apply a suitable finish to match the surrounding concrete, curing where necessary. These repair methods must be submitted to the Principal for their approval prior to being used.   * Prior to incorporating the units into the works, provide the Principal with a certificate for each item, stating that the units conform to the Specification and that all nonconformities have been rectified *in accordance with the Principal’s approved extent and method* | | | | | | | * Certificate(s) of compliance | | | |  | |
| 10 | ***WAE Records*** | R16 Cl 8 | | *Provide works-as executed records for the precast crown units manufactured for the box culverts, showing all dimensions, reinforcement and date of manufacture*  *Include concrete target compressive strength, strength at 28 days, and strengths when forms are stripped in your records*   * *Include details of approved repairs in accordance with Clause 6, if any* | | | | | | | * WAE records | | | |  | |
| **REVIEW BY PROJECT ENGINEER** | | | | | | | | | | | | | | | | |
| Any non-conformances? | | | YES | | NO | | Nos: | | | Closed Out | | | YES | | | NO |
| Other QA details – NCRs, CARs, Identified Records etc | | |  | | | | | | | | | | | | | |
| All work has been satisfactorily completed | | | | | | YES | | | NO | | | | | | | |
| Name | | | | | | | | Signature | | | | Date | |  | | |