| **INSPECTION AND TEST CHECKLIST FOR:**  **Earthworks Stabilisation (R50)** |
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| Activity No.# | Description | Requirements / Reference | | Acceptance Criteria | | | | | | | Comments / Attachments / Records | | | | Engineer Signoff | |
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| 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 | **General Notes** | R50 Cl 3 | | Where the Principal has not nominated a mix design, prepare one to meet the material properties specified in Clause 3.2.2. Submit the proposed mix design (if applicable) to the Principal for approval at least 10 working days before commencing stabilisation works  Unless specified otherwise, the proposed mix design must not result in a post-stabilisation UCS value (after 7 days accelerated curing) greater than 1.5 MPa (TfNSW Test Method T131). When used for R44 Specification works, the CBR and PI values must meet the requirements of TfNSW R44, following stabilisation  Do not carry out stabilisation works during wet weather or if rain is likely to fall during the process. Do not stabilise during periods of high wind which could cause loss of stabilising agent or cause a nuisance or danger to people, the environment or property *(See also TfNSW G36). ACI Environmental Site Representative must confirm in writing that weather conditions are suitable for stabilising*   * Where subsoil drains are required for pavement drainage, carry out any stabilisation of the SMZ prior to construction of the subsoil drains | | | | | | | * Proposed mix design (if applicable) | | | |  | |
| 4 | **Trial Section** | R50 Cl 7 | | Prior to completing stabilising works, construct a trial section of stabilising at a location agreed with the Principal, using the same materials, equipment and methods as will be used for the other works.  The trial section, if conforming, will become part of the project works  The trial section must be between 100-200m long for the proposed Lot width  In the event of nonconformities refer Cl 7.2  A new trial may be required if stabilisation materials, plant or methods change   * **HOLD POINT: Stabilisation of earthworks using a particular combination of materials, equipment and methods not previously trialed**. Submit to the Principal, documentation, including test results, verifying that the trial section conforms to the specified requirements | | | | | | |  | | | |  | |
| 5 | **Stabilisation – Insitu Mixing** | R50 Cl 4 | | Prior to mixing, compact the layer to a minimum of 95% relative compaction (Test Method T166) and trim the surface parallel to the Designed Finished Surface Level  Prior to spreading the binder, tyne and/or rip the insitu material to facilitate insitu mixing, taking care not to disturb any lower layers  Provide binder type, spread rate and stabilisation depth at least 5 working days before commencing any stabilisation work.  Determine the spread rate of the binder as per the specified or proposed mix design. *When using lime, adjust the spread rate to accommodate any variation in lime index between the source of lime used in the mix design testing, and the lime delivered to site*  Determine the actual spread rate achieved for each spreader run using Test Method T136  Where quicklime is used as a binder, commence slaking of the quicklime within 30 minutes after spreading by spraying water on the spread quicklime. Repeat until slaking is complete.  Apply water uniformly and avoid allowing water to concentrate in ruts or hollows. Use town water where suitable and where approved for use in the works. Water to be free from oils, acids, organic matter and any other matter which could affect the stabilisation reaction  Provide sufficient water storage capacity at the plant and ensure a continuous water supply throughout the stabilisation operation  Develop a work method with a target moisture content envelope for the work. Moisture must be uniformly distributed throughout the depth immediately prior to compaction  For insitu stabilisation, use purpose built mixing equipment which is suitable for the depth and area to be stabilised, such as a stabiliser  Replace worn or damaged mixing blades or tynes to maintain mixing efficiency | | | | | | | * Relevant Lot Records | | | |  | |
| 6 | **Stabilisation – Plant Mixed Material** | R50 Cl 5 | | Carry out premixing of the material in a stationary ‘driven pugmill’ mixing plant. Before commencing the mixing, calibrate the mixing plant to determine the rate of addition of the binder at various plant speeds. Method of calibration of mixing plant to be determined by Subcontractor and reviewed by Abergeldie. Typically this will be done with calibration certificates. Additionally, prior to commencement of main works a trial section will be completed as per R50 Clause 7.1. A new trial will be required if there are any changes in equipment, materials, mix, plant or rate of work  Continuously feed the component materials of the mix (including water where necessary) into the pugmill. Mix together for at least 30 seconds once all materials have entered the pugmill  The mixing operation must avoid segregation occurring in the mix. Do not use quicklime as the binder when mixing by stationary plant. Remove any split binder within 4 hours  Maintain the actual rate of incorporation of binder to within 10% of the specified rate.  If the mix is delivered in open bodied vehicles, cover the load to minimise moisture loss during transportation to site. Control the moisture of the delivered mix to 60-90% of optimum moisture content (OMC) using Test Method T162  Take samples of the mixed material before placing to determine the field moisture content. Complete testing as per T162 as soon as practicable after mixing but no later than 8 hours after mixing   * Immediately prior to placement, lightly scarify or tyne the target surface to a depth not more than 25mm. Do not incorporate segregated or non-uniformly mixed material into the works. Place and spread the plant mixed material such that it can be compacted and trimmed to achieve the requirements of TfNSW R44 Spec. | | | | | | | * Relevant Lot Records | | | |  | |
| 7 | **Completion of Works** | R50 Cl 6 | | Ensure the entire process of mixing the material, placement, and the final compaction and trimming are a continuous operation  After spreading the plant mixed material or mixing the binder into the insitu material, commence compaction immediately. Compact material to achieve the requirements of R44 and Table R44.10  Following compaction, trim the surface to the required heights shown on the drawings and within the tolerances of R44 and Table R44.11. Do not reuse any cut material taken during the trimming, re-use it as earth fill or dispose of it  For quicklime, hydrated lime, or slag/lime blend binders, complete compaction and trimming within 24 hours after commencing the mixing. Reworks may be carried out up to 24 hours after mixing following the Principal’s approval  For cement binders, complete the compaction and trimming within 2 hours after commencing the mixing. Reworking is not permitted  Compact construction joints such that all material complies with this Specification and the material on either side of the joint is not damaged  Take note of any Construction Joints- Longitudinal and Traverse Joint for both Insitu and Plant Mixing and Placing.  Protect stabilised layers against rapid drying by keeping the surface continuously damp until a covering layer is placed  If stabilised layer lies immediately beneath the pavement, and a pavement layer will not be placed within 5 days of the completion of stabilisation, apply a layer of rapid setting bitumen emulsion at the rate of at least 0.5L/m2, within 2 days of the completion of compaction and trimming.   * Do not allow any trafficking from unrelated plant or equipment until compaction of the stabilised surface is complete | | | | | | | * Relevant test and survey records (where applicable) | | | |  | |
| 8 | **Conformity** | R50 Cl 8 | | For insitu mixing, determine the uniformity of mixing across the vertical direction by comparing the added binder content of the top and bottom halves of a test hole as per AS 5101.3.2.  Determine the characteristic relative compaction as per TfNSW R44 Clause 7.3, noting that the sample for determination of the maximum density of the stabilised material in the layer must be taken as soon as practicable after mixing (insitu mixing) or placement (plant mixed), and before compaction. Compact the sample within 3 hours of sampling. The compaction results must conform to the requirements of TfNSW R44   * Where stabilisation is undertaken to meet the CBR and/or PI requirements of TfNSW R44, the stabilised material must conform to these requirements, following completion of stabilisation | | | | | | |  | | | |  | |
| **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 | |  | | |