| **Client** | TfNSW | **INSPECTION AND TEST PLAN FOR:**  **Concrete Paving (R54)** | **Work Area:** | |
| --- | --- | --- | --- | --- |
| **Contract No.#** | 21.0000139295.2145 |  | |
| **Contract** | New Dubbo Bridge | **Inspection and Test Plan** | |
| **ITP prepared by** | Ella Vy Huynh | ITP 14 | (ITC 14) |
| **ITP approved by** |  | **Lot No:** | |

| **Legend:** | | | W = Witness | | H = Hold | S = Surveillance | | | ACPL = Abergeldie | | | S/C = Subcontractor |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Activity No.# | Description | Requirements / Reference | | Acceptance Criteria | | | Frequency | Inspection – Engineer to Sign & Date | | | | Comments / Attachments / Records |
| S/C | ACPL | Client | Date |
| 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 | | | Prior to commencing works |  | W | S |  |  |
| 2 | **Environment** | Project Environment Plan | | * Installation of soil erosion and sedimentation controls completed in accordance with Soil and Water Specs. * Air quality to be visually monitored for dust etc. as a direct result of construction activities. | | | Prior to commencing works |  | W | S |  |  |
| 3 | **Scope** | R54 | | * This Specification sets out the requirements for concrete paving for footpaths (including that behind kerbs and *channels*), bicycle paths/shared paths, medians, traffic island and driveways, including granular subbase under footpaths and bicycle paths where required. | | | Prior to commencing works |  | S | S |  |  |
| 4 | **Materials** | R54 Cl 2, Test Method TfNSW T109, TfNSW 3051, R53 | | * Select Fill Type U must consist of a granular material with a particle size grading of 100% passing the 26.5 mm sieve and a Plasticity Index, determined by Test Method TfNSW of between 2 and 12 * Class 2 DGB must comply with Specification TfNSW 3051 * Supply of concrete and steel reinforcement must comply with Specification TfNSW R53. * *Include pigmentation in the concrete paving to achieve the colour (if shown on Drawings)* | | | Prior to commencement |  | S | S |  |  |
| 5 | **Earthworks and Compaction** | R54 Cl3.1  R54 Cl3.3  R54 Cl3.4  R44 | | * Excavate or fill to the levels shown on the Drawings or as directed by the Principal in accordance with Specification TfNSW R44. Where possible, use any surplus excavated material to construct embankments as part of the works, and dispose of any remaining surplus excavated material as spoil, as per R44 * Granular Subbase * Unless shown otherwise on the Drawings, construct a subbase layer comprising Class 2 DGB beneath the concrete paving as follows, (a) Footpath: 75mm thick; (b) Bicycle path/shared path: 150 mm thick * Compaction * Compact the subbase, foundation, etc to achieve the minimum characteristic value of relative compaction specified in Table R54.1 * In the event of failed compaction tests, rework and recompact the affected material | | | Each Lot |  | S | S |  |  |

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| 6 | **Unsuitable Material** | R54 Cl3.2  R44 Cl3.1  TfNSW R44 | | * *Have the Geotechnical Engineer undertake tests and inspections of all foundations and verify that they are suitable for General Concrete Paving, or otherwise recommend a foundation treatment in accordance with TfNSW R44 Cl 3.1* * Notify the Principal of any area of the foundation which may contain material that is unsuitable to support the proposed pavement. * If the Principal agrees that the material is unsuitable, or deem any areas of the foundation to contain unsuitable material, the Principal may direct that removal and replacement of this unsuitable material or some other foundation treatment in accordance within TfNSW R44. * The Hold Point in TfNSW R44 regarding unsuitable material applies. * **HOLD POINT: Removal of unsuitable material (if applicable)** | | | | | Upon discovery of unsuitable material | |  | H | | H | |  | | | **HOLD POINT** | |
| 7 | **Foundation Levels** | R54 Cl3.5 | | * Construct the top of foundation to the design surface levels, with a tolerance of +5 mm and -10 mm * The finish surface must not deviate from the bottom of a 3 m straight edge laid in any direction, by more than 10 mm, except at grade changes | | | | | Each Lot | |  | S | | S | |  | | | * Survey report(s) | |
| 8 | **Concrete Mix Design** | R53 Cl 2.4.3 | | * Concrete manufactured and supplied in accordance to R53 and AS 1379   **HOLD POINT**  Provide either:   * The documents specified in R53 Cl 2.4.3 items (a) and (b) OR * Details of mix(es) selected from the TfNSW Register of Concrete Mixes, together with a statement certifying that the mix conforms to this Specification and is suitable for its intended use. | | | | | Prior to booking concrete delivery | |  | H | | H | |  | | | **HOLD POINT** | |
| 9 | **Steel Reinforcement** | R54 CL 4.2  R54 CL 4.2.2  R53 | | * Concrete work, including steel reinforcement, for concrete paving slabs covered by this Specification must comply with TfNSW R53. * Provide steel reinforcement for concrete paving slabs as shown on the Drawings. * Where the steel reinforcement is not shown on the Drawings; provide the reinforcement as specified in Table R54.2:      * Provide a minimum cover for the steel reinforcement in accordance with TfNSW R53, unless shown otherwise in the Drawings. For slab of thickness 120 mm and greater, fix the steel mesh within the top half of the slab. For slabs of thickness less than 120 mm, fix the steel mesh at the mid-depth of the slab. | | | | | Each Lot | |  | S | | S | |  | | |  | |
| 10 | **Placing of Concrete** | R54 Cl 4.3  R53 Cl 3.3.1 | | Comply with Clause 3.3.1 of TfNSW R53  The Hold Point in TfNSW R53 for placing of concrete applies.  The Principal may inspect the completed reinforcement and formwork prior to authorising the release of the Hold Point.  Before commencing placement of concrete, remove all dirt, and other foreign matter from the forms  Do not place nonconforming mix. Either reject the load or seek dispensation with the Client at the time of pouring  **HOLD POINT: Pre-pour inspection of concrete.**  Notify the Principal of:  expected completion time of fixing of the formwork and reinforcement (if applicable) AND  expected commencement date and time of placement of concrete | | | | | Prior to placing concrete | |  | H | | H | |  | | | **HOLD POINT** | |
| 11 | **Proposed joint layout and reinforcement details** | R54 Cl 4.4  R54 Cl 4.4.2 | | * Construct transverse joints at right angles ±6° to the longitudinal edge of the paving slab, otherwise the slab will be treated as odd shaped. Where possible, avoid creating odd shaped and mismatched slabs. * **HOLD POINT: Steel reinforcement fixing and concrete placing** * If joint layout is not shown on the Drawings, submit a drawing showing the proposed joint layout and reinforcement details. | | | | | Prior to commencing works  For odd shaped and mismatched slabs | |  | H | | H | |  | | | **HOLD POINT** | |
| 12 | **Movement Joints** | R54 CL 4.4.3  TfNSW 3204  R83 | | * Footpaths and Medians:   + Contraction joints 3 mm wide and 25 mm deep at every 1.5 m length. Expansion joints at intervals not exceeding 6 m and at the location of expansion joints in adjacent kerbs. Isolation joints along median paving where the paving abuts against kerbs, gully pits, retaining walls and bridges. Expansion and isolation joints must be 10 mm in width for the full depth of the paving and filled with a preformed joint filler conforming to Specification TfNSW 3204. The top 10 mm of the joint must be sealed with silicone sealant conforming to Specification TfNSW R83. * Bicycle Paths / Shared Paths / Driveways: * Provide joints to locations and to the details shown on the Standard Drawings or on the relevant Council’s standard drawings | | | | | Required Frequency | |  | S | | S | |  | | |  | |
| 13 | **Surface Finish** | R54 CL 5.1  R54 Table R54.3  R54 Cl 5.3 | | * *Unless shown otherwise on the Drawings provide* on the top surface of concrete paving (except patterned concrete paving) the surface finish specified in Table R54.3. The finished paving surface must be uniform in colour and appearance. * The finished paving surface must be uniform in colour and appearance. * All edges, except for those abutting other paving or structures, must be neatly rounded to a radius of 10 mm. Edges abutting other paving or structures must be neatly rounded to 5 mm radius.      * Construct the finished surface of the concrete paving to the design surface levels, with a tolerance of +10mm and -5mm * The finished surface must not deviate from the bottom of a 3m straight edge laid in any direction, by not more than 5mm, except at grade changes. Where the concrete paving abuts an adjacent structure, any vertical step across the joint must not exceed 5mm unless shown otherwise on the Drawings | | | | | Every Lot | |  | S | | S | |  | | | * Survey report(s) | |
| 14 | **Patterned Concrete Paving Details** | R54 Cl 5.2.1 | | * **HOLD POINT: Placing of patterned concrete paving** * Provide details of pattern, colour, class of finish and experience of personnel in producing patterns on concrete paving, at least 5 working days prior. The Principal may require a sample panel to be prepared and submitted | | | | | 5 Working days prior  Each lot for patterned concrete paving | |  | H | | H | |  | | | **HOLD POINT** | |
| 15 | **Tactile Indicators** | R54 Cl 6.1 | | * Tactile indicators must conform to AS/NZS 1428.4.1 and must be stain, slip, impact and UV resistant * Performance levels (refer AS 3958.1 for definition) is specified as “Commercial”. Comply with the installation guidelines in AS 3958.1 Clause 3.3.1.2 (Exterior floors – General applications, using cement-based adhesive or modified mortar) where applicable. * **HOLD POINT: Construction of paving with tactile indicators** * Submit details of proposed tactile indicator tiles, associated materials (such as adhesive), and installation method. | | | | | Prior to commencing works | |  | H | | H | |  | | | **HOLD POINT** | |
| 16 | **Close out of Lot** | R54  R53 | | * Provide all required documentation for close out of the Lot * In the event of failed concrete test results, either repair or remove and replace the lot. Otherwise seek dispensation from the Client | | | | | Prior to closure of the Lot | |  | S | | S | |  | | | * Concrete delivery docket(s) * Concrete test report(s) | |
| **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 | | |  | | |