| ITP ITEM No. | INSPECTION / CONSTRUCTION ACTIVITY | INSPECTION / TEST / METHOD / STANDARD / SPECIFICATION | STAGE OR FREQUENCY OF SAMPLING | ACCEPTANCE CRITERIA | RECORD OF CONFORMITY | TYPE | RESPONSIBILITY | CHECKED / VERIFIED BY (INITIAL & DATE) | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| GC CIVIL | TfNSW | OTHER |
| **PRELIMINARIES & PRE-START** | | | | | | | | | | |
|  | Submit copy of Executed Contract | Desktop review  As per Conditions of Contract, & Tender | Per contract | Return of copy of Executed Contract | Document - Contract | IP | GC Project Manager |  |  |  |
|  | Provision of Security | Desktop review  2% and 4% of Contract as per Conditions of Contract | Per contract | Cash, bank cheque or unconditional undertaking (bank guarantee) | Document – Bank G’tee | IP | GC Project Manager |  |  |  |
|  | Proof of Worker’s Compensation Policy | Desktop review  As per Conditions of Contract | Prior to commencing works on site | Copy of Certificate of Currency from Workers Compensation Provider | Document – Cert. of Currency | IP | GC Project Manager |  |  |  |
|  | Proof of Motor Vehicle & Mobile, Plant Insurance Policy | Desktop review  As per Conditions of Contract | Prior to commencing works on site | Copy of Certificate of Currency from Insurer | Document – Cert. of Currency | IP | GC Project Manager |  |  |  |
|  | Quality Management – Inspection & Test Plan | Desktop review | Staged Submission 14 days prior to commencement of staged works | Submission and approval of controlled copy of Inspection & Test Plan | Document – ITP | IP | GC Project Manager |  |  |  |
|  | WHS Documentation | Desktop review | 10 days prior to commencement of work at the Site | Submit WHS Plan / Safe Work Method Statements and documentation | Document – WHS Plan and SWMS | HP | GC Project Manager |  |  |  |
|  | Environmental Documentation | Desktop review | 10 days prior to commencement of work at the Site | Submit Environmental Plan and documentation | Document – Environmental Plan | HP | GC Project Manager |  |  |  |
|  | Traffic Control Plan | Desktop review  TFNSW TCAWSM | 3 days prior to commencement of work at the Site | Submit TCP, and any ROL, SZA obtained | Document – TCP, ROL, SZA | HP | GC Project Manager |  |  |  |
|  | Fisheries Permit | Desktop review | 10 days prior to commencement of work at the Site | Apply and obtain Fisheries Permit | Document – Fisheries Permit | HP | GC Project Manager |  |  |  |
|  | Public Notification | Desktop review  Site inspection | 10 days prior to commencement of work at the Site | Distribute written notification to businesses and residents affected by the proposed works  Establish VMS signs | Document – notification | IP | Client Project Rep |  |  |  |
| **DESIGN** | | | | | | | | | | |
|  | Global Bridge design & approach roads | Desktop review  AS5100  Client review required | Before commencing fabrication or manufacture | Drawings and certification of design | Drawings  Document – Engineer certification | HP | Fairlight Engineers |  |  |  |
|  | Design of Inquik bridge superstructure | Desktop review  AS5100  Client review required | Before commencing fabrication or manufacture | Drawings and certification of design | Drawings  Document – Engineer certification | HP | Inquik |  |  |  |
| **MATERIALS PROCUREMENT** | | | | | | | | | | |
|  | Production of Concrete | Desktop review | Before initial production of each strength grade of concrete for the project | Submission of Concrete mix design  AS 1379 The specification and manufacture of concrete  AS 1012 Methods of testing concrete | Document – Concrete mix design | IP | Concrete Supplier  GC Project Manager |  |  |  |
|  | Reo cage manufacture | Shop Drawings  Structural Drawings | Prior to transport to site | Provide Reinforcement Schedule and Certificate of Conformity | Document – Reinforcement Schedule and Certificate of Conformity | IP | Reo supplier  GC Project Manager |  |  |  |
|  | Inquik Bridge units | Structural Drawings  Inquik shop drawings  AS5100 | Prior to transport to site | All bridge units / components to be inspected by Engineer | Document – Engineer Inspection report | HP | Inquik  GC Project Manager |  |  |  |
| **SITE ESTABLISHMENT & START-UP** | | | | | | | | | | |
|  | Service & Utilities Search | Site inspection  DBYD services plans | Each worksite prior to commencing any groundwork’s, excavation or drilling of test pit / holes  All personnel involved in excavation works must be signed onto SWMS prior to commencing groundworks.  DBYD information is to be renewed every 6 months | Dial Before You Dig search on underground services drawings  Locate all underground and overhead utilities or services that are present near the proposed works | DBYD | IP | GC Project Manager |  |  |  |
|  | Set-up of Site Compound | Desktop review | Prior to On-site establishment of Contractor’s compound. | Submit documented location, size and relevant approvals for Contractor’s compound. | Document – layout plan | IP | GC Project Manager |  |  |  |
|  | Induction Training | Desktop review | Commencement of initial construction work | Attend pre-construction meeting  Verification that the site personnel have been inducted | Document – Meeting minutes and induction records | IP | GC Project Manager |  |  |  |
|  | Dilapidation Records | Photographic record | Prior to Commencement of construction activities. | Take photographs prior to commencement of construction activities to record the conditions of all existing structures, areas, adjoining properties, etc.  Liaise with the owners before commencing construction | Document – Dilapidation Records / photos | IP | GC Project Manager |  |  |  |
|  | Erosion Controls | Environmental Management Plan (EMP)  Site Inspection | Before commencing any excavation work on site | Installation of erosion and silt controls as per EMP | Document - photos | IP | GC Project Manager |  |  |  |
| **EXCAVATION - PILING** | | | | | | | | | | |
|  | Set-out Survey | Drawings, survey, field set-out | Each Lot, prior to commencement of pier drilling/excavation | Location, level and offset reference points  Use adequate recovery pegs and survey markers to accurately set up location and alignment for each wall and pile.  Centre of pile positions to be pegged at least one day prior to drilling rig being set up.  Datum levels for top / bottom of pile to be provided.  At least two (2) working days’ notice of the date the set-out will be completed. | Survey Records, Verification Checklist | IP | GC Project Manager  Surveyor |  |  |  |
|  | Excavation/Pile Drilling | Structural Drawings | Per lot / pile | Notify Engineer that pile excavation is complete & pile hole/s inspection required prior to reinforcement placement.  Check that the plan position, size and alignment is within tolerance  Dimensions and depth as per drawings, base clean All loose material removed from the pile hole.  Provide Engineers Certificate for inspection and adequacy of load bearing capacity  Pile must bear on granite bedrock ~2000KN | Verification Checklist | HP | Design Engineer  GC Project Manager |  |  |  |
| **FOOTING CONSTRUCTION** | | | | | | | | | | |
|  | Concrete Placement | Structural drawings | Prior to first Concrete pour & placement on this project | Develop a concrete placement Method Statement detailing:   * Delivery rate * Placement method and rate * Equipment   Bridgeworks concreting operations shall be supervised by a person holding a TfNSW Bridgeworks Concreting Grey Card. | Verification Checklist | IP | GC Project Manager |  |  |  |
|  | Pre-Pour planning activities | Weather forecast | Each concrete pour | Ensure the following are in place:  Weather forecast considered  NATA lab tester arranged  Concrete pump arranged (where required)  Concrete type & volume established & coordinated with the supplier | Verification Checklist | IP | GC Project Manager |  |  |  |
|  | Pre-Pour Check | Visual  Structural Drawings | Every lot before placement of concrete to pier | Level, alignment, clearance and member designation as per Drawings  Do not place concrete during rain  Check delivery dockets to identify correct mix is being used, time quantity & slump recorded. | Verification Checklist | IP | GC Project Manager |  |  |  |
|  | Inspect the progress of concrete pour; placement of Concrete to footing | Structural Drawings  Inspect delivery and compaction | Every delivery | Check addition of water to a batch  Temperature at point of delivery to be 5C min 35C max.  Placement of concrete – not in water, one continuous operation  Maintain placement records | Verification Checklist | IP | GC Project Manager |  |  |  |
|  | Test Concrete for Slump & Strength | Structural Drawings  AS 1379  AS 1012.3.1  AS 1012.9 | Slump: Each batch  Comp: 1pair/25 m³ | Check frequency of field testing & sampling correct.  Check and record the slump of the concrete within 45 minutes of batch time  Slump within ±20mm for 100mm slump (or ±40mm if using a tremie mix with nominated slump ≥ 220mm).  Compressive Strength @ 28 days one pair of cylinders per 25m3 or part thereof | Document - Tester Field Sheet | TP | GC Project Manager |  |  |  |
|  | Obtain and check concrete test results | Structural Drawings  AS 1379  AS 1012.3.1  AS 1012.9 | Per lot | NATA test certificates received, reviewed and confirm the conform to minimum strength requirements | Document – Test Report | IP | GC Project Manager |  |  |  |
| **DEMOLITION & SCOUR PROTECTION** | | | | | | | | | | |
|  | Demolition of existing bridge superstructure | Desktop review  Structural Drawings | Before demolition commences | Plan demolition activities  Consider WHS hazards and risks  Existing piles and abutments to remain. | Risk Assessment & SWMS | IP | GC Project Manager |  |  |  |
|  | Scour protection | Visual  Structural Drawings | Each lot | Shape earth filled batters to 2H to 1V  Place A39 geotextile  Place rock sized ~250-500mm sized, fill voids with smaller rocks | Verification Checklist | IP | GC Project Manager |  |  |  |
| **INQUIK BRIDGE UNIT INSTALLATION** | | | | | | | | | | |
|  | Delivery of Inquik bridge units | Visual  Structural Drawings | Each delivery | Check for qty  Check for length / size  Check for any damage | Delivery Docket | IP | GC Project Manager |  |  |  |
|  | Craneage of Inquik bridge units | Desktop review | Before any lifting operations | Undertake a lift study to plan the lifting of each unit | Document – Lift Study | IP | Craneage subcontractor  GC Project Manager |  |  |  |
|  | Installation of Inquik bridge units | Visual  Structural Drawings  Inquik drawings | Every unit | Check member, length, R.L Level, alignment, vertically, spacing, clearance and member designation as per Drawings.  Install tie bars as per Inquik drawings | Verification Checklist | IP | GC Project Manager |  |  |  |
|  | Install deck panels | Inquik design manual & Drawings | Prior to installing deck panels | InQuik Bridge Panels can be placed on the abutments and cast when the abutment concrete  compressive strength reaches a minimum of 25MPa. | Document – Test Report | IP | GC Project Manager |  |  |  |
|  | Construction traffic using new bridge | Inquik design manual & Drawings | Prior to construction traffic using the bridge deck | As per SMEC certificate, traffic can be allowed on the bridge when the superstructure concrete compressive strength  reaches a minimum of 30MPa where the traffic volume is less than 150 vehicles per day | Document – Test Report | HP | GC Project Manager |  |  |  |
| **CONCRETING OF INQUIK ABUTMENTS, BRIDGE DECK, APPROACH SLABS** | | | | | | | | | | |
|  | First pour – abutments | Inquik design manual & Drawings | During first pour and prior to second pour | * Abutments to be filled in 400mm increments to nominal 1.6m high, and concrete is to be allowed to cure to 25mpa prior to installing the deck panels. * 50mpa concrete to be used | Verification Checklist | WP | GC Project Manager |  |  |  |
|  | Second pour – abutments & bottom of deck beams | Inquik design manual & Drawings | During second pour and prior to third pour | * Fill abutments a further nominal 0.5m high * Fill both centre deck beams from centre out * Fill both outer deck beams from the centre out * Concrete is to be allowed to cure to 25mpa prior to pouring deck. * 50mpa concrete to be used | Verification Checklist | WP | GC Project Manager |  |  |  |
|  | Third pour – Bridge Deck | Inquik design manual & Drawings | During third pour and prior to traffic | * Once the deck beams have cured then fill abutments and deck slab to top of side form. * 50mpa concrete to be used * Broom finish | Verification Checklist | WP | GC Project Manager |  |  |  |
|  | Concrete Placement | Structural drawings | Prior to first Concrete pour & placement on this project | Develop a concrete placement Method Statement detailing:   * Delivery rate * Placement method and rate * Equipment   Bridgeworks concreting operations shall be supervised by a person holding a TfNSW Bridgeworks Concreting Grey Card. | Verification Checklist | IP | GC Project Manager |  |  |  |
|  | Pre-Pour planning activities | Weather forecast | Each concrete pour | Ensure the following are in place:  Weather forecast considered  NATA lab tester arranged  Concrete pump arranged (where required)  Concrete type & volume established & coordinated with the supplier | Verification Checklist | IP | GC Project Manager |  |  |  |
|  | Pre-Pour Check | Visual  Structural Drawings | Every lot before placement of concrete to pier | Level, alignment, clearance and member designation as per Drawings  Do not place concrete during rain  Check delivery dockets to identify correct mix is being used, time quantity & slump recorded. | Verification Checklist | IP | GC Project Manager |  |  |  |
|  | Inspect the progress of concrete pour; placement of Concrete to footing | Structural Drawings  Inspect delivery and compaction | Every delivery | Check addition of water to a batch  Temperature at point of delivery to be 5C min 35C max.  Placement of concrete – not in water, one continuous operation  Maintain placement records | Verification Checklist | IP | GC Project Manager |  |  |  |
|  | Test Concrete for Slump & Strength | Structural Drawings  AS 1379  AS 1012.3.1  AS 1012.9 | Slump: Each batch  Comp: 1pair/25 m³ | Check frequency of field testing & sampling correct.  Check and record the slump of the concrete within 45 minutes of batch time  Slump within ±20mm for 100mm slump (or ±40mm if using a tremie mix with nominated slump ≥ 220mm).  Compressive Strength @ 28 days one pair of cylinders per 25m3 or part thereof | Document - Tester Field Sheet | TP | GC Project Manager |  |  |  |
|  | Obtain and check concrete test results | Structural Drawings  AS 1379  AS 1012.3.1  AS 1012.9 | Per lot | NATA test certificates received, reviewed and confirm the conform to minimum strength requirements | Document – Test Report | IP | GC Project Manager |  |  |  |
| **ROADWORKS** | | | | | | | | | | |
|  | Backfill abutments | Structural drawings | Each lot | * 18mm Coredrain sheet at back of abutment wall * 100mm socked ag-line at base of each abutment, draining to site sump. | Verification Checklist | IP | GC Project Manager |  |  |  |
|  | Subgrade | Structural drawings | Each lot | * Use site won or imported material with min 3% CBR * compacted to 95% modified | Delivery dockets  Verification Checklist  Compaction records | IP | GC Project Manager |  |  |  |
|  | Subbase | Structural drawings | Each lot | * 275mm thick * DGS40 * Min 30% CBR * compacted to 98% modified | Delivery dockets  Verification Checklist  Compaction records | IP | GC Project Manager |  |  |  |
|  | Basecourse | Structural drawings | Each lot | * 100mm thick * DGB20 * Min 80% CBR * compacted to 98% modified | Delivery dockets  Verification Checklist  Compaction records | IP | GC Project Manager |  |  |  |
|  | Table drains | Structural drawings | Each lot | * Drain towards creek * 2m batter 1 in 4 from road * 1 in 2 batter up to existing surface | Verification Checklist | IP | GC Project Manager |  |  |  |
|  | Approach slabs | Structural drawings | Each lot | * 28 dia. Stainless steel dowel bars G250Mpa @ 250mm centres, Chemset 501 250mm embedment into deck panel * 2 x N24 bars site welded across tops of all dowels * Pour hard against Inquik deck panel, and seal joint * 300mm thick approach slab | Verification Checklist | IP | GC Project Manager |  |  |  |
|  | Spray Seal | Structural drawings | Each lot | * Two coat flush seal * 14mm / 7mm | Delivery dockets  Verification Checklist | IP | GC Project Manager |  |  |  |
|  | Guardrail | Structural drawings  Safe Direction shop drawing | Each lot | * Thrie Beam barriers on bridge * Transition to W-beam Bridge approach guardrails * Fleat TL6 terminals | Delivery dockets  Verification Checklist  Compaction records | IP | Guardrail installer  GC Project Manager |  |  |  |
|  | Line marking | Structural drawings | Each lot | * Edgeline E1 – 150mm wide line * Dividing barrier line BB – 100mm wide line 100mm gap * Semi flexible guideposts as per TfNSW Delineation Manual Section 16 | Delivery dockets  Verification Checklist  Compaction records | IP | GC Project Manager |  |  |  |
| **DISESTABLISHMENT & PROJECT CLOSE-OUT** | | | | | | | | | | |
|  | Disestablishment | Visual | Prior to disestablishment of plant from site | * All rubbish & excess materials removed off site * Areas graded with appropriate falls for natural drainage without undulation | Document - photos | IP | GC Project Manager |  |  |  |
|  | Practical Completion | Visual Inspection  Client inspection required | Completion of Works | Conformance to Drawings and Contract Documents including close out of any non-conformance  Conduct a joint inspection, to be undertaken with Client to confirm asset completion and handover  Any defects raised must be actioned prior to Final Completion item  Confirm bridge concrete strength has reached 50Mpa before opening to public traffic | Document – Certificate of PC  Test Reports | IP | GC Project Manager  Client Project Rep |  |  |  |
|  | Work-As-Executed Survey | Survey  Measurement | Each lot | Survey of completed bridge structure location & level | Work-as-executed survey file | IP | GC Project Manager  Surveyor |  |  |  |
|  | Work-As-Executed Drawings | Drawings  Site Records  Measurement | Each lot | Mark up any changes to Design Drawings  On completion of construction, provide the Project Representative with a set of “Work-as-Executed” drawings, incorporating approved modifications made to any details during construction | Work-as-executed drawings | IP | GC Project Manager |  |  |  |
|  | Inquik Material Data Record (MDR) | Desktop review | Completion of Works | On completion of construction, provide Inquik MDR | Document – MDR, Inquik install checklists | HP | Inquik  GC Project Manager |  |  |  |
|  | Final Completion | Drawings and Contract Document | Completion of Contract | Conformance to Drawings and Contract Documents including close out of any non-conformance | Document – Final Completion Certificate | HP | GC Project Manager |  |  |  |

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| **LEGEND AND SIGN-OFF** | | | | | | | |
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| **INSPECTION REQUIREMENT** | | **RESPONSIBILITY** | | **RECORDS** | | **RECORDS** | |
|  |  | GC CIVIL | |  |  |  |  |
| AP | Approval Point (Written or verbal approval must be given) | PM | Project Manager | CC | Contract Correspondence | HR | Hold Point Release |
| HP | Hold Point (work shall not proceed until the HP is released) | PQR | Project Quality Representative | CD | Contract Documents | MR | Maintenance Report |
| CM | Construction Manager | COC | Certificate of Currency of Insurance | NCR | Non-Conformance Report |
| WP | Witness Point (give notice to allow inspect) | SM | Site Manager | CPC | Certificate of Practical Completion | PER | Permit |
| TL | Team Leader | CR | Construction Records | PC | Proof Engineer’s Certificate |
| IP | Inspection point (Formal Inspection to be done and recorded) | CLIENT (XXXXX) | | DD | Delivery Documents | QCC | Quality Control Checklists |
| CPR | Client’s Project Representative | DR | Structural Design report | QMP | Quality Management Plan |
| TP | Test point (Product compliance test to be undertaken and recorded/reported) | CSR | Client’s Site Representative | DWG | Drawings | ROL | Road Occupancy License |
| SR | Superintendent’s Project Representative | DWR | Daily Works Record | SI | Site Instruction |
|  |  | SO | Surveillance Officer | EC | Engineer’s Certificate | SV | Survey Record |
| PROJECT CONSULTANTS | | EMP | Environmental Management Plan | SZA | Speed Zone Authorization |
|  |  | RS | Registered Surveyor | ESCP | Erosion & Sedimentation Control Plan | TR | Laboratory Test Report |
|  |  | GE | Geotechnical Engineer | FC | Final Certificate | TCP | Traffic Control Plan |
|  |  | SD | Structural Design Engineer | GR | Geotechnical Report | TMP | Traffic Management Plan |
|  |  | PE | Proof Engineer | BR | Building Report | VMP | Vehicle Movement Plan |
|  |  | OTHER | |  |  | WAE | Work-As-Executed Drawings |
|  |  | SUB | Subcontractor |  |  |  |  |
|  |  | SUP | Supplier |  |  |  |  |
|  |  | NL | NATA Certified Testing Laboratory |  |  |  |  |
|  |  | TMC | TFNSW Traffic Management Centre |  |  |  |  |
|  |  | PR | Client Project Rep |  |  |  |  |

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| --- | --- | --- | --- | --- | --- |
|  | Amendment | Date: | Reviewed: | Validation | Acceptance |
|  |  |  |  | I certify that the works have been constructed in accordance with this Inspection & Test Plan | I have inspected and accept the completed works have been constructed in accordance with this Inspection & Test Plan |
|  |  |  |  | GC Civil Representative: | Client’s Project Representative: |
|  |  |  |  | Signed: | Signed: |
|  |  |  |  | Date: | Date: |