

METHOD OF WORKING PLAN [ MOWP ]

<b>AERODROME</b>	<b>NADI INTERNATIONAL AIRPORT, NADI (NAN)</b>
<b>PROJECT DESCRIPTION</b>	<b>2020 MAINTENANCE PLAN – SEST (SURFACE ENRICHMENT SPRAY TREATMENT)</b>  Pavement Maintenance involving the spraying of CAT30 emulsion from the edge line 21 metres wide on Runway 02-20, 13.5 metres wide from the edge line on runway 09-27, and adjacent Domestic Terminal Gates 11,12 and 13
<b>REFERENCE NUMBER</b>	
<b>DATES</b>	Commencement of Works: <b>2<sup>nd</sup> October 2020</b>  Completion of Work: <b>25<sup>th</sup> October 2020</b>  Expiry of MOWP: <b>30<sup>th</sup> October</b>
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# 1. WORKS INFORMATION

## 1.1 Background

**Fiji Airports** has developed a Pavement Maintenance Framework, which has resulted in a Pavement Maintenance Program involving the periodic implementation of surface treatments over the next 5 years.

FY19/20 Pavement Maintenance involves various activities: the replacement of Asphalt along Runway 02/20, sand emulsion sealing of Gates 11, 12 and 13, Surface enrichment spray treatment (SEST) of Runway 02-20 and Runway 09-27.

This MOWP is associated with Phase 3 Pavement Maintenance of FY19/20 implementation of periodic maintenance treatments to Nadi International Airport specific to Surface Enrichment Spray Treatment (SEST) on both runways and Domestic Aircraft Stands.

The construction plans for the works is included in Appendix B.

## 1.2 Description of Work

This Phase of work involves spraying CAT30 emulsion onto the existing asphalt surface on Runway 02-20 and 09-27, and also includes the area adjacent the Domestic Terminal Gates 11,12 and 13. The key scope comprise the following;

- Sweeping of existing asphalt surface near the edgeline prior to spraying CAT30 emulsion.
- Protection of existing runway lighting where required
- Spraying CAT30 emulsion onto the existing asphalt surface (RWY 02/20, RWY 09/27, Gates 11 – 14)
- Spreading cover sand on the outside of the 18m central portion. (5m wide on either side)
- Reinstating paint marking affected by the works.

### 1.2.1 Construction Traffic

It is proposed that construction traffic will enter and exit the works areas via a nominated construction access route as marked on the attached plans. Refer Appendix B.

All access to the worksites by the Contractor's personnel, plant and equipment will be under strict Works Safety Officer (WSO) escort.

Specific access routes to and from the works area will be directed by the Works Safety Officer. Movement of vehicles, plant and equipment must be confined to these routes in order to minimise tracking of dirt and debris onto aircraft movement area pavements and to prevent damage to airport lighting.

The Civil Contractor is required to keep all pavements used or traversed during the works clean to the satisfaction of the WSO. The Contractor shall use mechanical sweepers or suction trucks for the purpose of keeping the pavement surfaces clean and FOD free.

## 1.3 Commencement Date and Execution of Works

### 1.3.1 Timing

A NOTAM will be in place for all works. The actual date and time of commencement will be advised by NOTAM, and is to be issued by FA 48 hours before work commences or as soon as possible when the 48 hours' notice cannot be achieved.

The Contractor shall give two clear working days' notice prior to commencement of works.

Works will be arranged so as not to disrupt scheduled aircraft movements, emergency flights and approved special flights.

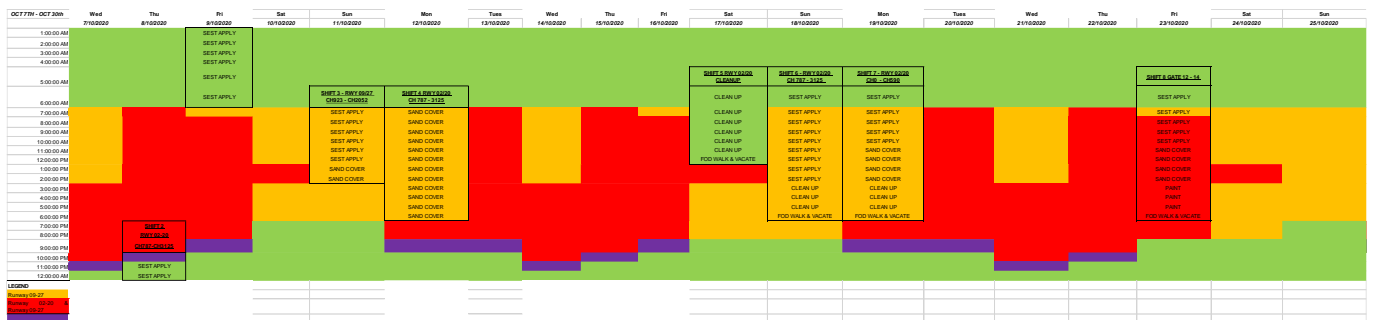
However works shall cease during the following times

- During scheduled aircraft movements as directed by the WSO
- When directed by the WSO

### 1.3.2 Working Hours

The SEST works impact Runway 02/20, Runway 09-27, gates 11-14 in staged closure.

Hours of working will be as follows (based on current airline schedules, may change as schedules alter).



All times displayed in LOCAL TIME.

### 1.3.3 Programme of Works

The following duration of works are anticipated as per below:

Mobilisation period – 1 week

Surface Enrichment Spray Treatment: 8 Shifts



RUNWAY 02/20 SEST PLAN



RUNWAY 09/27 SEST Plan



### 1.3.4 Sequence of Work

Shift 1 : Gate 11 was completed 2<sup>nd</sup> October 2020. Due to unfavourable weather the following shifts were cancelled.

Shift 2 : Runway 02/20 SEST & SAND CH 787 – CH 3125

Shift 3 : Runway 09/27 SEST & SAND CH 923 – CH2052

Shift 4 : Runway 02/20 SEST & SAND CH 787 – CH3125

Shift 5 & 6 : Runway 02/20 SEST CH 787 – CH3125

Shift 7 : Runway 02/20 SEST & SAND CH 0 – CH 590

Shift 8 : Gate 12 – 14 SEST & SAND

To ensure maximum use of the allocated time slots and favourable weather conditions, the Contractor shall confirm with the Project Manager of FA during the day at least 5 Hours Prior start of Works.

We must also take into consideration for the time required for FA staff to complete the re-marking of the existing runway marking post spraying of the SEST.

## 2. SAFETY

## 2.1 Method of Working Plan

Works shall be done in strict accordance with this Method of Working Plan (MOWP)

## 2.2 Safety of Aircraft Operations at All Times

Aircraft operations and aviation safety take precedence at all times.

## 2.3 Daily Aircraft Schedule Update

The Works Safety Officer (WSO) shall contact the tower after 20:00 every evening to obtain an update to the aircraft schedule giving any deletions, changes, special additions to the weekly schedule put out on the day before the work commences.

# 3. RESTRICTIONS TO AIRCRAFT OPERATIONS

There will be **NO** restrictions imposed on scheduled aircraft operations for Runway 02/20 and Runway 09/27 unless stated otherwise in NOTAM. During the construction work window, times tentatively noted in section 1.3.2, the Runway will be closed.

In the case of low visibility conditions being forecasted before the construction shift commences, the works will be delayed or cancelled accordingly, to facilitate continued aircraft operations.

FA will publish aeronautical Information pertaining to the Nadi aerodrome operating status via NOTAM's. Any variations to that advised above will be notified via NOTAM.

# 4. RESTRICTIONS TO THE WORKS

## 4.1 General

The Contractor shall comply with the requirements of CAAF Standard - Aerodromes, this MOWP and the provision of the specifications for these works (Refer Appendix A).

The Contractor's site representative shall contact the WSO at the start of each working shift to ascertain the status for the proposed work with respect to the operational requirements of the aerodrome.

All plant, equipment and materials shall be secured at all times during the work (on site and at laydown area) so that it is not be able to be wind borne. Plant and materials will be stored in such a manner that wing tip clearances of aircraft operating in close proximity the site are not compromised.

All lighting erected and operated by the Contractor shall comply with the Civil Aviation Authority Fiji requirements.

All vehicles and plant operating on or near aircraft operational areas shall display a flashing orange light when vehicles are moving to and from the areas of work.

## 4.2 Driving

A speed limit of 40kph applies to all vehicles on the general airport movement area and 8kph when within 15 metres of aircraft. Breaches of these speed limits will result in refusal of access to the airside for the driver involved for the remainder of the works.

All vehicle drivers requiring access onto airside shall undertake training delivered by FA.

Any non-compliance with respect to this plan shall see immediate removal of the truck and driver from the project. It is mandatory that all vehicles operating on the airside shall have third party and public liability insurance cover of not less than \$1M FJD.

Drivers must ensure that trucks are correctly loaded and where necessary covered prior to entering and leaving site to prevent any spillage. In the event of spillage the truck driver must immediately notify the project manager / safety officer who will oversee the cleaning of spilled materials by the Contractor.

#### **4.3 Pavement Cleanliness – FOD Protection**

The Contractor is required to keep all aircraft pavements used or crossed during the works clean to the satisfaction of the WSO.

No motor vehicle shall leave or enter the site laden with any materials unless the vehicle is loaded and/or covered in a manner that shall prevent the discharge or dropping of any materials.

The Contractor shall ensure that the wheels, tracks and body of all construction plant leaving the site are free from dirt or any other material, which may discharge or drop. Tracked plant or equipment shall not be used on any existing or new pavement surfaces.

Vehicles or plant not in use shall be parked and immobilised outside the 300 metre wide runway strip (150 metres either side of the runway centreline), or as nominated by the WSO.

If the Contractor fails to keep these areas clean, the WSO may arrange cleaning and the cost thereof shall be a debt due and payable by the Contractor to FA.

#### **4.4 Airport Security and Airside Safety Requirements**

Every person desiring to enter the Site shall comply with all safety and security regulations relating to site and with all conditions relating to entry to and behaviour on the Site.

#### **4.5 Marking the Unserviceable Area**

Markers will comprise white banded orange cones or white banded red marker boards to define the limits of the available movement area (if required).

#### **4.6 Emergencies, Adverse Weather and Late Aircraft**

Under certain emergency situations or in the event of adverse weather conditions, the Contractor may be denied access to the airside of the airport and to the work areas. This will only apply prior to the scheduled commencement of the daily works.

Once closed, the closed portion of the runway cannot be re-opened for any aircraft operations including emergencies or adverse weather due to works in progress unless an assessment by appropriate personnel indicate that a safe landing or take off can be achieved.

#### **4.7 After Completion of Work**

Prior to operational handover, the pavements will be inspected and accepted for operational use and safety.

Pilots should exercise caution on pavement areas treated in line with the sequence of works and NOTAM detail.

#### **4.8 NOTAM**

Works in Progress (WIP) will be arranged to minimise restrictions to schedule aircraft movements. The WSO shall be responsible for issuing NOTAMs relating to the Project and in accordance with paragraph 1.3 above. The NOTAM shall clearly define the dates and times when works will be in progress, what obstacles will be involved and procedures for clearing these obstacles prior to aircraft movement.

#### **4.9 Denial of Access to the Works**

During declared airport emergencies and/or poor visibility conditions, the Contractor may be either be refused entry to the Site or removed from the airside. Due to the unforeseen nature of these conditions, it may not be possible to give prior warning to the Contractor. In such circumstances, the Contractor shall advise the Contract Administrator on a daily basis of any claim for cost or extensions of time.

#### **4.10 Inspection Checklist**

An inspection checklist will be used during the works to ensure the airfield is left in a suitable condition for operational activities. An example checklist is provided in Appendix D.

#### **4.11 Emergency and Adverse Weather**

In case of aircraft emergencies, the Contractor will comply with all WSO Instructions for ceasing operations and removing plant and personnel from the immediate location.

In extreme adverse weather, the WSO has the authority to stop the work where personnel or operational safety is considered at risk. Work will resume when those conditions abate but at the discretion of the AFL.

In such an emergency situation the Contractor shall, if time permits, reinstate the works to a standard required at the close of each shift as follows:

- All Materials, Vehicles, Personnel and Equipment shall be removed from the worksite as required under the operational requirements in the specification. This shall be as a minimum that no plant or materials shall intrude into any transitional surface.
- The runway shall be swept and left clean of any dirt or loose detritus that may cover markings, or reduce the smoothness or skid resistance of the surface or may be sucked into engines or be thrown up by their prop wash or air blast.
- All surfaces shall be reinstated to safe condition for their use.
- Complete an inspection of the site with the ASO in accordance with the Inspection Checklist.
- Works will be confined only to the work areas on the runway, taxiway and apron as shown on the plans.
- AFL will provide a Works Safety Officer (WSO) who will have complete authority to direct the Contractor on Aerodrome Operational Requirements.

All staff involved in the works must undergo a site specific briefing in relation to works safety and security requirements prior to commencing on site. AFL will deliver the first briefing and thereafter the Contractor will be responsible for briefing new workers on safety and security requirements.

The Contractor shall comply with the requirements of the Contract Documents produced for this project and this MOWP. The Contractor's site representative shall contact the WSO at least one hour prior to the start of each working period to ascertain the status for the proposed work with respect to the operational requirements of the aerodrome.

Prior to commencing each works period, the Contractor personnel shall meet with the WSO and the Contract Administrator in order to ensure that all parties including sub-contractors are aware of the working requirements and the work restrictions for each stage.

Smoking is not permitted on airside, or within any AFL Airport buildings. A designated smoking area can be designated by AFL when requested to by the Contractor, and if a suitable location can be identified outside of the operational runway strip.

Upon completion of each work period and before each aircraft operation, the works areas are to be made serviceable to the satisfaction of the WSO.

#### **4.12 Personnel, Equipment, Plant and Materials**

The nominated personnel for key roles are specified in Section 5: Administration.

All personnel involved on this job shall be bound by any instructions issued by the Works Safety Officer either verbally and/or written. The Works Safety Officer may refuse access to persons likely, in his opinion, to compromise aircraft safety on the aerodrome.

Personnel are to be confined to the defined work area and access routes at all times.

All staffs are to wear high visibility jackets and safety boots or safety shoes whilst working on the airport. Staff must also wear hand gloves, dust protectors, safety glasses and ear muffs (as required through Contractors Health and Safety requirements).

The Contractors access will be limited to the work areas as shown on the Access Layout plan in Appendix B.

All construction work will be required to withdraw personnel and equipment from the construction area in the event of an emergency.

Only equipment, plant and materials that are required for daily construction activities shall be located within the construction site.

All plant, equipment and materials shall be secured at all times during the work so that it is not vulnerable to jet blast or be able to be wind borne. Plant and materials will be stored in such a manner that wing tip clearances of aircraft operating around the site are not compromised.

All plant, equipment and materials shall not exceed plant height restrictions.

All vehicles and personnel involved in the project will be clearly marked and held to one side of the runway at a distance of not less than 75 metres from the runway centreline during aircraft movements.

#### **4.13 Aircraft Operators**

Aircraft Operators and Airlines are requested to notify AFL of any proposed deviation to the approved flight schedules in a timely manner. Aircraft operators who do not notify changes in a timely manner may be required to re-schedule.

#### **4.14 Works Limits**

All works and the Contractors Constructor's plant, equipment, materials and personnel shall be confined to the areas established by the Contractor, in coordination with the WSO.

White banded orange cones will define the limit of the specific works area during all phases.

#### **4.15 Control of the Contractor's Personnel and Security**



The directions of the WSO shall bind all personnel associated with the work in respect of operational safety matters.

All personnel requiring access to the works site must have appropriate identification identifying them as an employee of the Contractor and have a valid Airport ID card.

Additionally, the following provisions will apply to all Contractor personnel carrying out works on the airside of the airport:

Site supervisors and foremen must attend a security briefing provided by the WSO;

- All vehicles must use only designated access routes;
- All Contractor personnel must comply with any additional security provisions, which may be imposed by AFL;
- Unauthorized sightseers or persons without permission must not enter the Works Area to visit the site;
- Persons and vehicles may be subject to a search at any time;
- Any sites controlled by the Contractor are to be secured by the Contractor's personnel against theft or interference;
- The Contractor is to maintain records of all personnel entering or leaving any site within the Security Restricted Area (this is usually done at the entry gate); and
- Children, dogs, animals and firearms are prohibited airside.

AFL reserves the right to limit or restrict access to airside areas at short notice to comply with security systems and/or procedural variations resulting from increases in aviation threat levels.

Employees of The Contractor must obey any directions given by Airport Safety Officers or FA Authorised Officers.

#### **4.16 Access to the Works Area**

Specific access routes to and from the works areas will be as directed by the WSO (The Contractor is to liaise with the WSO to confirm the access routes and update the plan attached in Appendix B).

Movement of vehicles, plant and equipment must be confined to designated routes in order to minimise tracking of dirt and debris onto airfield pavements and to prevent damage to airport lighting.

#### **4.17 Parking**

Equipment parking must only be located in areas designated by the Contractor and approved by the WSO.

#### **4.18 Contractor's Vehicles and Plant**

Vehicles allowed airside must be checked by the maintenance personnel before Aviation Security issues an Airside Vehicle Permit. The designated drivers will have to show a valid driving licence and a note from the Contractor to indicate they are designated drivers before their ID Cards show they are issued with Airside Drivers Permit.

No movement of vehicles or plant is to take place outside the works areas or designated access routes without the consent of the WSO. Only vehicles and plant actually engaged in the work shall be permitted at the works site.

At the end of each work period or in preparation for a landing, all vehicles and plant shall be moved clear of the movement area and parked in an area pre-designated for parking.

Private vehicles belonging to Contractor personnel shall be permitted to park only in the public car park areas or such other areas made available by AFL. Private vehicles will not be permitted airside.

All vehicles used airside must be covered under The Contractors full comprehensive insurance, including third party insurance.

All vehicles allowed airside must be equipped with a portable fire extinguisher.

#### **4.19 Reinstatement of Disturbed Areas**

All natural surface areas that are disturbed by SEST works or the passage of vehicles to/from any airside worksite must be stabilised against erosion and reinstated with turf at the completion of works.

#### **4.20 Cleanliness**

Measures shall be taken at all times for control of dust, debris or other nuisance materials and the Contractor shall immediately respond to any direction by the WSO to eliminate a problem.

The Contractor is to ensure that aircraft pavements used or crossed during the works are kept clean and free of debris at all times. The WSO on duty will determine when the pavement is in a sufficiently clean condition to allow the safe operation of aircraft.

The Contractors personnel are to take every precaution to prevent any spillage of material on or in the vicinity of aircraft movement areas, or in transit to and from the work site. Any spillage shall be removed by the Contractor to the satisfaction of the WSO.

#### **4.21 Security**

For airfield pavement areas that are to be returned to operational service following the completion of the work and within the remaining period, the treated pavements shall be completed and cleaned to a condition suitable for aircraft operations. Rolling, brooming, line marking, cleaning and plant removal may then be undertaken until 30 minutes prior to the completion of the stage detailed in the MOWP, at which time the work site shall be vacated.

Prior to the completion of each stage, the Contractor is to:

- Remove all personnel, equipment and rubbish from the work site;
- Ensure all pavements are swept clean and left in a condition assessed as serviceable and safe by the Safety Officer;
- Restore any damaged areas to the satisfaction of the WSO; and
- areas where work is being conducted is marked off with cones

The Contractor must employ a fully operational self-propelled vacuum sweeper, or approved equivalent, to clean each work area throughout the duration of each work period.

At the completion of each work stage, AFL representatives / WSO will undertake a commissioning inspection.

#### **4.22 Visual Ground Aids/Runway & Gates Markings**

The Contractor must protect all runway and apron edge lights in each work area through the installation of approved barriers. The barriers must be placed prior to the commencement of work and must remain in place for the duration of the work period/day that work is being carried out.

- Buckets will be placed over the top of runway lights with a traffic cone placed on top of each bucket.

- Building Paper or Protection board will be used to protect the Nose Wheel Markings at Gate 11 – 14.

Refer Appendix E Methodology Statement and Work Component Management Plan (SEST).

#### **4.23 Security**

The requirements relating to operational safety set out in CAAF Standard Document SD 139-05 shall apply and the directions of the Safety officer shall bind all personnel associated with the work in respect of operational safety matters.

All personnel requiring access to the works site must have valid ID's issued by AFL Security and comply with the above as well as any other security requirements provided by the Safety Officer from time to time.

All personnel are to wear their Security passes on the outside of their clothing / PPE at all times while on the airport. At the completion of the Works, all security passes shall be handed back to AFL.

Aviation Security officers will be monitoring all works associated with the Project airside for security reasons.

#### **4.24 Communications**

The Works Safety Officer will have possession of a portable VHF Air Band transceiver radio tuned to the Control Tower frequency. This radio will be carried at all times by the Works Safety Officer whilst works are in progress on the movement area. The Works Safety Officer shall be the primary contact for the Control Tower for all safety related communications and to warn the contractor to vacate the movement area due to aircraft movements. For general discussions and problems regarding the project, the Control Tower shall contact the AFL Project Manager.

Should contact fail to be made via the Air Band transceiver, the Tower will use the mobile phone number of the Works Safety Officer. Should this method fail to elicit a response, the Tower shall contact the Fire station or go immediately to the works area to make contact with the Works Safety Officer.

## 5. ADMINISTRATION

### **Project Manager**

This position is held by: **Ashley Kumar**  
Contact Number (s) **+679 992 9167**

Is responsible for the operational safety aspects of the project. The Project Manager's is to be represented on site by the Safety Officers who will communicate with the Contractors Representative and Contract Administrator on matters necessary for ensuring the safe progress of the work.

### **Works Safety Officer**

Is nominated as being: **Airside Safety Officer**  
Contact Number (s) **+679 9906021**

The WSO shall be responsible for the safe and effective implementation of project and includes;

- Ensure safety of aircraft operations in accordance with directions in the MOWP during project implementation;
- Ensure that, where applicable, works are notified by issue of a NOTAM;
- Liaise daily with ATC on information pertinent to the safety of aircraft operations;
- Discuss daily with the Resident Engineer and Contractor's Representative, any matters necessary for the safety of aircraft operations;
- Ensure that unserviceable portions of the movement area, temporary obstructions, and the limits of the works area are correctly marked in accordance with the MOWP;
- Ensure that all other requirements relating to vehicles, plant and equipment and materials are complied with;
- Establish access routes for the maintenance team to and from the work areas; and
- Report immediately to ATC and the Executive Chairman any incident, or damage to facilities, likely to affect the safety of aircraft.

### **Engineer's Representative**

Is nominated as being: **Ronil Raj**  
Contact Number (s) **8952572**

The responsibilities of the Engineer's Representative is as follows:

- Ensure that work is carried out in accordance with the MOWP;
- Ensure safety of aircraft operations in accordance with directions in the MOWP during project implementation;
- Ensure that work is carried out in accordance with the Technical Specification;
- Ensure the Contractors personnel follow directions given by the WSO.

### **Contractor's Representative**

Is nominated as being: **Llyal Mathewson**  
Contact Number (s) **+679 2215914**

The responsibilities of the Contractor's Representative is as follows:

- Ensure that the Contractors personnel involved in the Project are well trained and briefed on safety requirements, the rules and regulations associated within this MOWP, the Contract Technical Specification and Higgins Project Delivery procedures and systems.
- Inducted frequently on Health and Safety Requirements and wear the appropriate PPE.
- Ensure that all the contract and related works are carried out carefully so as not to damage existing facilities and services and in accordance with the Contract technical specifications and best practice.
- Ensure that vehicles, plant and equipment involved in the project are licensed, appropriately marked and equipped with flashing orange beacons.
- Ensure that work is carried out in accordance with the recognised standards.
- Ensure the contracted personnel follow directions given by the WSO.

## **Distribution List**

To include:

Airports Fiji Limited, Engineering Supervisor, Contractor's Representative, Works Safety Officer, Air Traffic Control, Aviation Security, Manager ARFF, Airlines, CAAF, General Aircraft Operators

## **6. AUTHORITY**

### **6.1 Issue**

This MOWP is issued in accordance with the Aerodrome Manual – Aerodrome Works Safety Section 4.8-1.

All works will be carried out in accordance with the MOWP.

### **6.2 Variation**

No variation to this MOWP is to take place without the written approval of the FA Project Manager in consultation with the Contractor.

### **6.3 Expiry**

This MOWP will remain in force until 30<sup>th</sup> October 2020, unless extended by an amendment.

## 6.4 Approval

This MOWP is authorised by FA & all works will be carried in compliance with these requirements and approved by FA Management.

**Project Manager**

*Q*

**Manager Airside Operations**

*[Signature]*

**Manager Safety & Risk Management**

*[Signature]*

**Contractor's Representative**

*[Signature]*

*[Signature]*

02/09/2020

**Consultant Engineer (GHD)**

**Fiji Airports General Manager ATM & Ops**

*LT MORT...*

## 7. DRAWING

To be used as guide drawings only. Final and as-maintained design drawings.

## 8. DISTRIBUTION

Fiji Airports, Project Manager, Contractor's Representative, MAO, GM ATM & OPS, Safety Officer, Air Traffic Control, MASS, MARFFS,MSRM, and CAAF.



# FIJI AIRPORTS

## NADI AIRPORT FY19/20

# PAVEMENT MAINTENANCE PROGRAMME

## 12504408

### DRAWING LIST

DRG No.	DRAWING TITLE
12504408 - C000	COVER SHEET, LOCALITY PLAN AND DRAWING LIST
12504408 - C001	LAYOUT PLAN
12504408 - C002	SURFACE ENRICHMENT SEAL TREATMENT - SHIFT ALLOCATION PLAN



**LOCATION PLAN**  
NOT TO SCALE

**FOR CONSTRUCTION**

No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date
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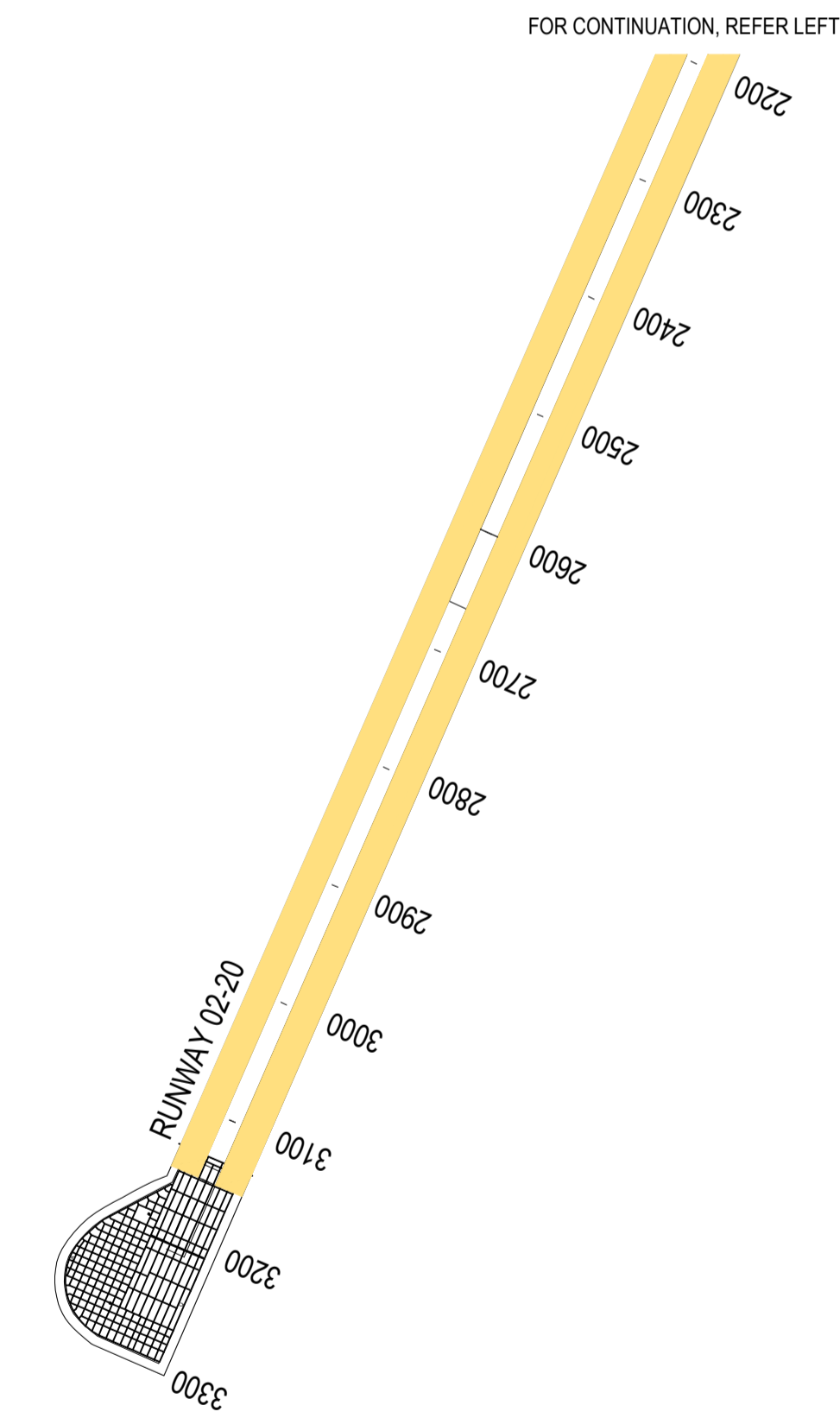
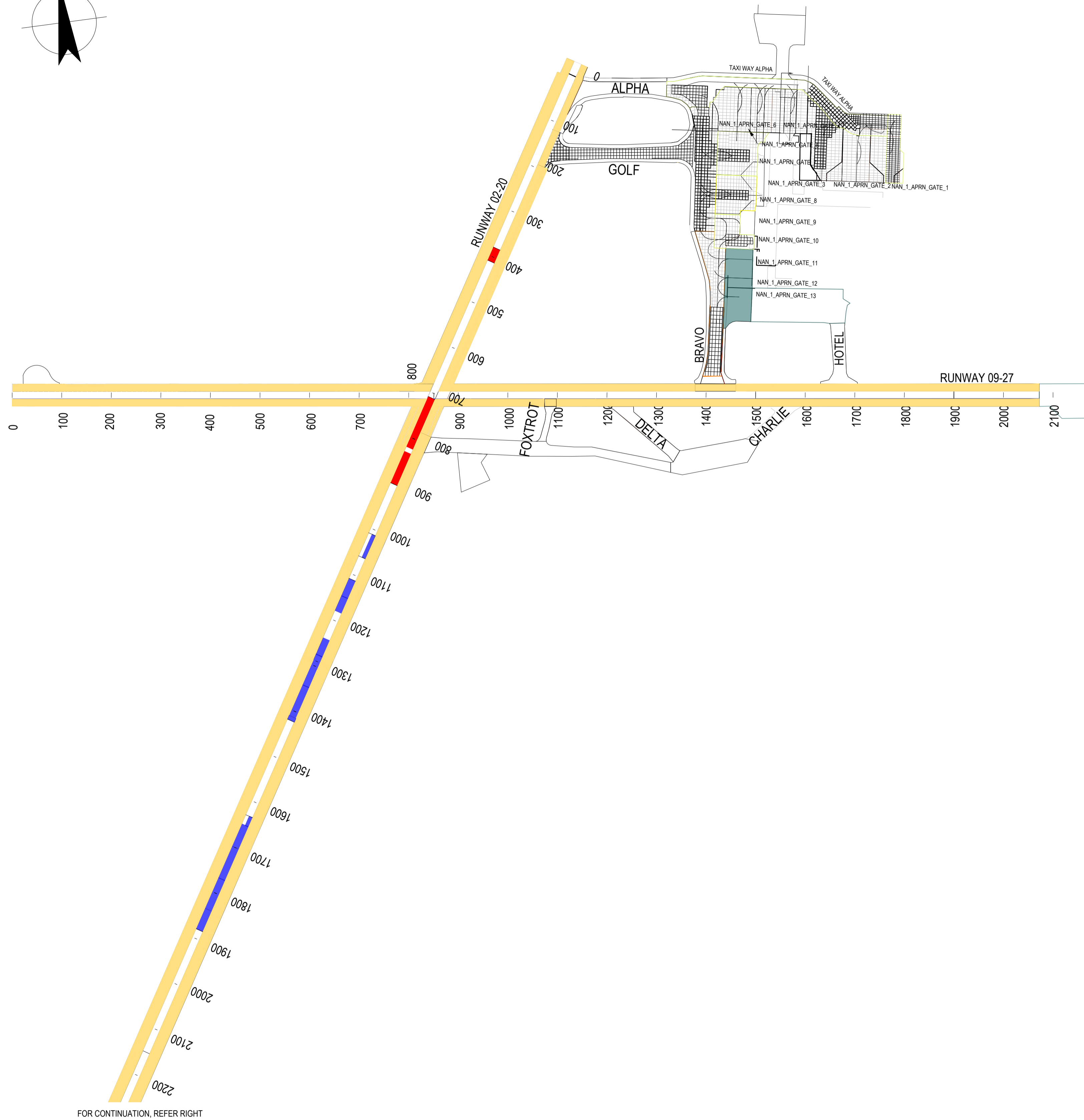
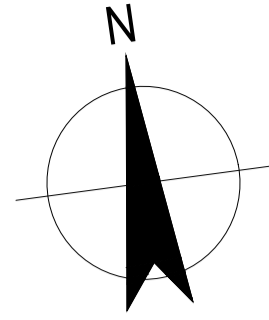
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Drafting Check	J.CZASTKA	Design Check	J.LARSEN
Approved (Project Director)	Date		
Scale	NOT TO SCALE		

Client	<b>FIJI AIRPORTS LIMITED</b>		
Project	<b>NADI AIRPORT FY 19/20 PAVEMENT MAINTENANCE</b>		
Title	<b>COVER SHEET , LOCALITY PLAN &amp; DRAWING LIST</b>		
Original Size	<b>A1</b>	Drawing No:	<b>12504408-C000</b>
		Rev:	<b>0</b>



**NOTES**

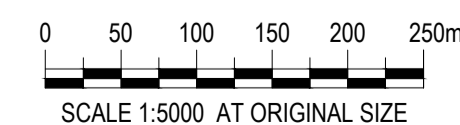
1. ALL SURFACE ENRICHMENT SEAL TREATMENT AND SANDED BITUMEN EMULSION TO RECEIVE CRACK SEALING PRIOR TO WORKS.
2. HIGGINS/ FIJI AIRPORTS WILL CARRY OUT REINSTATEMENT OF PAINT MAKING AFFECTED IN THE MILL AND FILL AREA AND SURFACE ENRICHMENT SEAL TREATMENT.
3. ANY PAINT MARKINGS TAINTED BY CONSTRUCTION ACTIVITY OUTSIDE OF MILL/FILL AREAS ARE TO BE REPLENISHED AT THE CONTRACTORS EXPENSE.
4. FOR TYPICAL DETAILS REFER TO 12504408-C004.
5. SHIFT PLAN SHOWN IS REFLECTIVE OF CONTRACTORS PROGRAMME.
6. ALL AERONAUTICAL GROUND LIGHTING AND OTHER STRUCTURES ARE TO BE PROTECTED, ALONG WITH THEIR PAINT MARKING.
7. A SURVEY TO BE DONE AT ALL LOCATIONS WHERE PAINT MARKING WAS AFFECTED.

**LEGEND**

- SANDED BITUMEN EMULSION SPRAY SEAL WITH CRACK REPAIRS THROUGHOUT.
- SURFACE ENRICHMENT SEAL TREATMENT WITH CRACK SEALING REPAIRS THROUGHOUT
- PHASE 2 REMEDIAL WORKS
- PHASE 3 MILL AND FILL
- OLD CONCRETE SLAB
- NEW CONCRETE SLAB

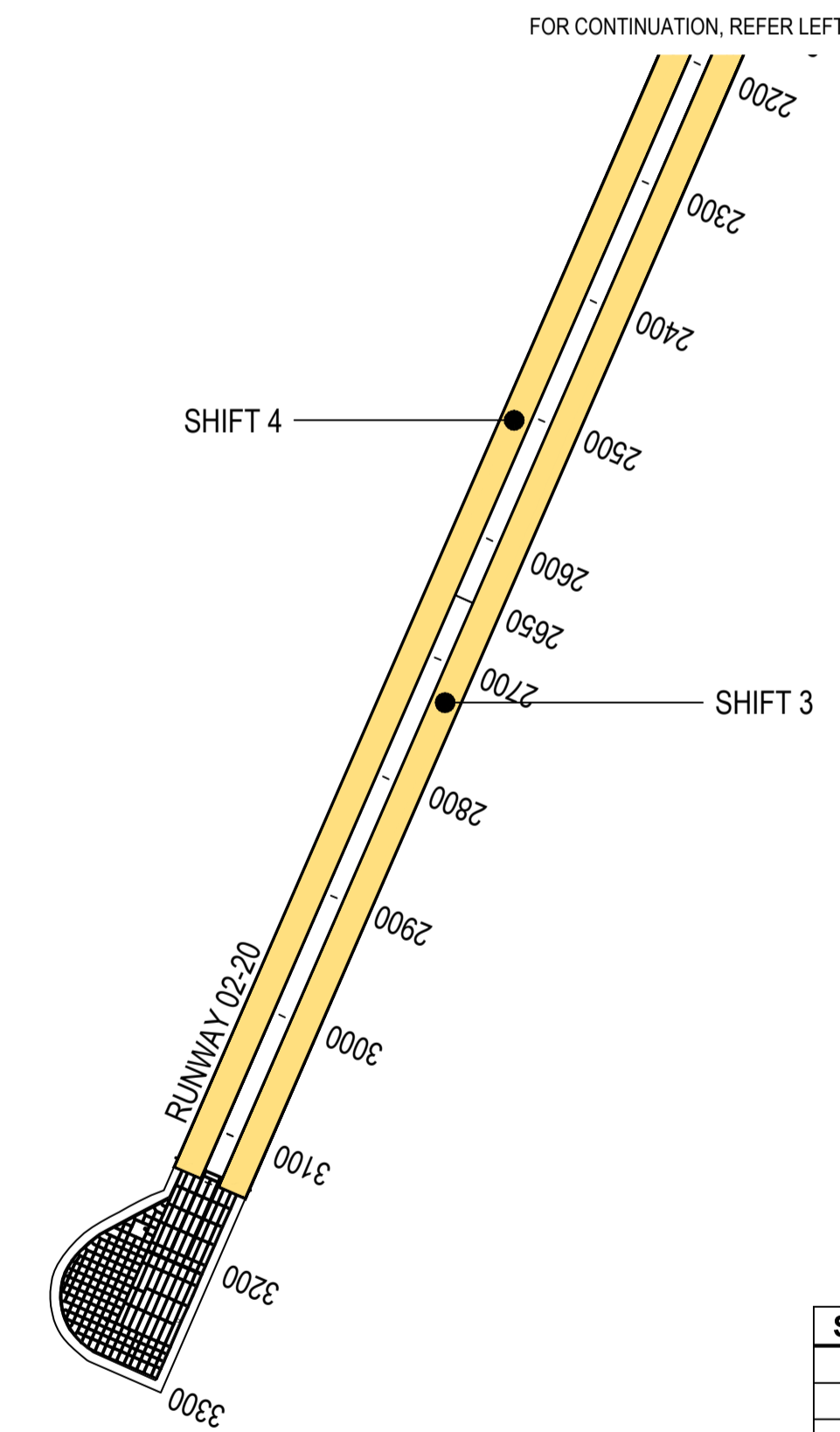
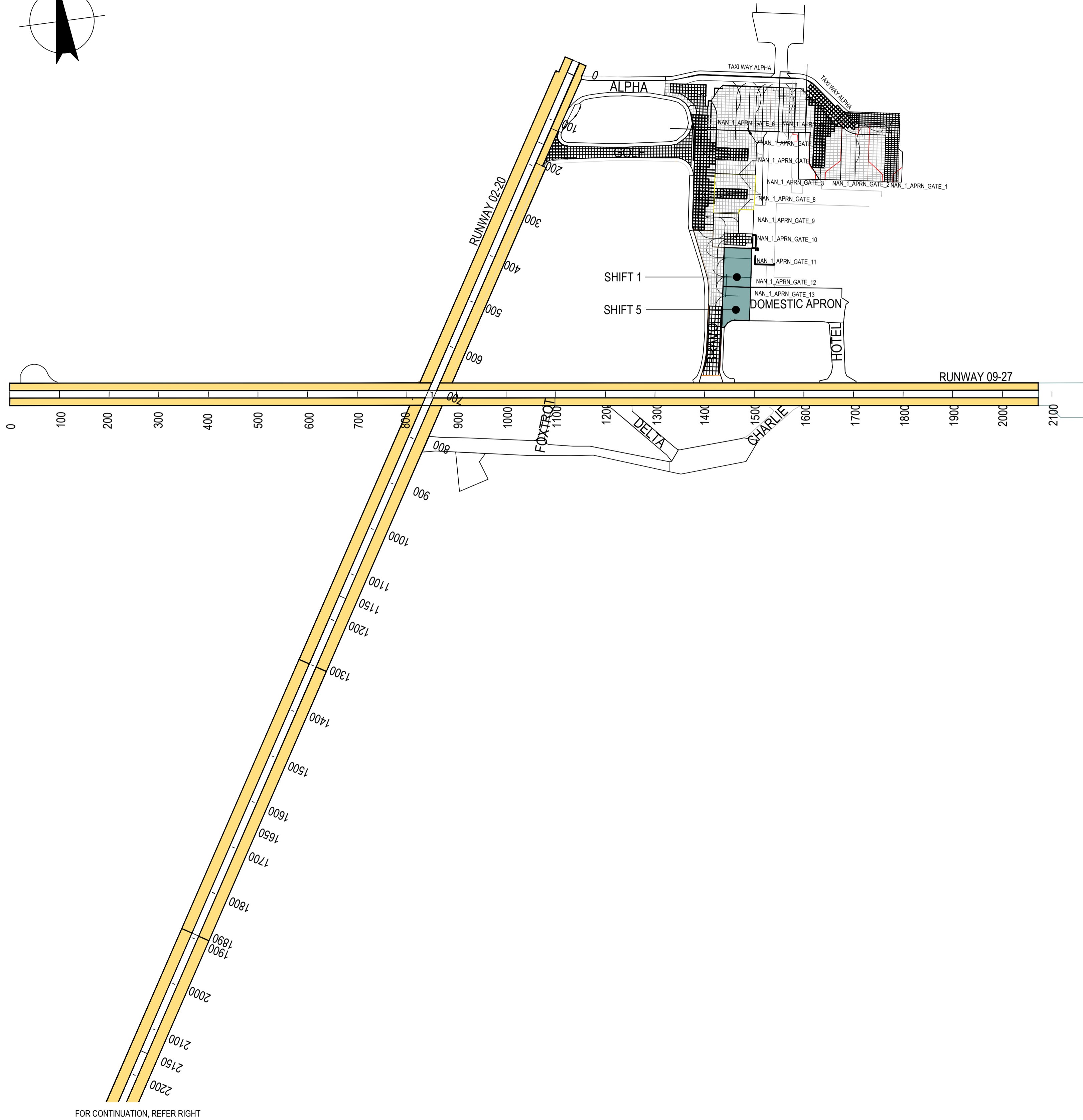
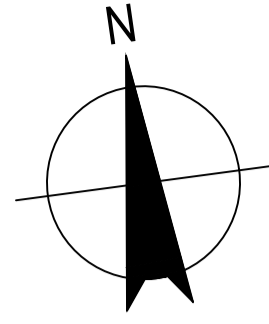
**FOR CONSTRUCTION**

0 FOR CONSTRUCTION		RK			
No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director
					Date



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	Drafting Check	Design Check	Project <b>NADI AIRPORT FY 19/20 PAVMENT LAYOUT PLAN</b>
	Approved (Project Director) Date		Title
Scale AS SHOWN	This Drawing must not be used for Construction unless signed as Approved		Original Size <b>A1</b> Drawing No: <b>12504408-C001</b> Rev: <b>0</b>





**NOTES**

1. ALL SURFACE ENRICHMENT SEAL TREATMENT AND SANDED BITUMEN EMULSION TO RECEIVE CRACK SEALING PRIOR TO WORKS.
2. HIGGINS/ FIJI AIRPORTS WILL CARRY OUT REINSTATEMENT OF PAINT MAKING AFFECTED IN THE MILL AND FILL AREA AND SURFACE ENRICHMENT SEAL TREATMENT.
3. ANY PAINT MARKINGS TAINTED BY CONSTRUCTION ACTIVITY OUTSIDE OF MILL/FILL AREAS ARE TO BE REPLENISHED AT THE CONTRACTORS EXPENSE.
4. FOR TYPICAL DETAILS REFER TO 12504408-C004.
5. SHIFT PLAN SHOWN IS REFLECTIVE OF CONTRACTORS PROGRAMME.
6. ALL AERONAUTICAL GROUND LIGHTING AND OTHER STRUCTURES ARE TO BE PROTECTED, ALONG WITH THEIR PAINT MARKING.
7. A SURVEY TO BE DONE AT ALL LOCATIONS WHERE PAINT MARKING WAS AFFECTED.

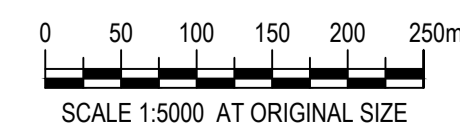
**LEGEND**

- SANDED BITUMEN EMULSION SPRAY SEAL WITH CRACK REPAIRS THROUGHOUT.
- SURFACE ENRICHMENT SEAL TREATMENT WITH CRACK SEALING REPAIRS THROUGHOUT

SHIFT	CHAINAGE	AREA
1	-	GATE 11 - 12
2	0-1300	RWY 02/20: BOTH SIDES
3	1890 - 3140	RWY 02/20: TERMINAL SIDE
4	1890 - 3140	RWY 02/20: NOT TERMINAL SIDE
5	-	GATE 12 - 13
6	1300 - 1890	RWY 02/20: BOTH SIDES
7	0 - 790	RWY 09/27: BOTH SIDES
8	850 - 2090	RWY 09/27: BOTH SIDES

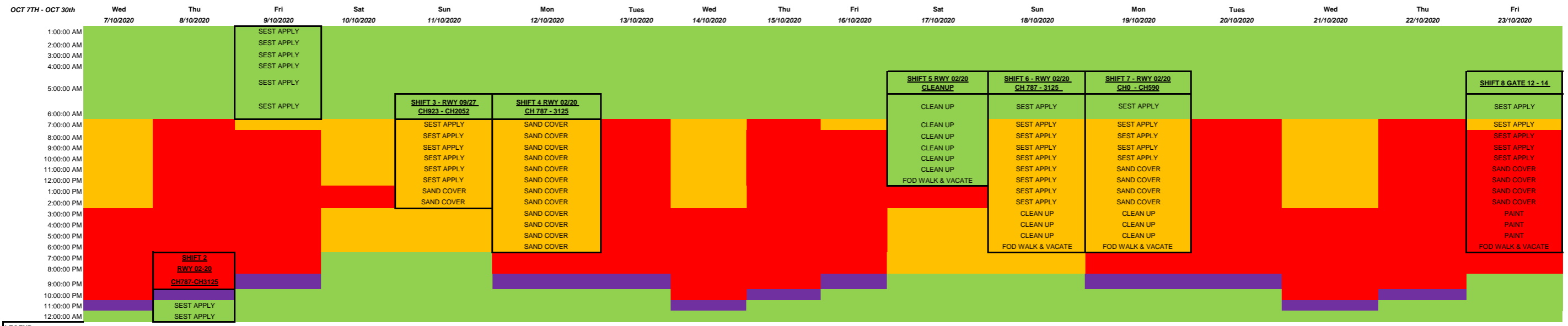
**FOR CONSTRUCTION**

0	FOR CONSTRUCTION	RK				
No	Revision	Note: * indicates signatures on original issue of drawing or last revision of drawing	Drawn	Job Manager	Project Director	Date



<b>DO NOT SCALE</b>	Drawn R. KARAVAKI	Designer V. PRAKASH
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	Approved (Project Director) Date	
	Scale AS SHOWN	This Drawing must not be used for Construction unless signed as Approved

Client	<b>FIJI AIRPORTS LIMITED</b>
Project	<b>NADI AIRPORT FY 19/20 PAVMENT</b>
Title	<b>SURFACE ENRICHMENT SEAL TREATMENT SHIFT ALLOCATION</b>
Original Size	<b>A1</b>
Drawing No:	<b>12504408-C002</b>
Rev:	<b>0</b>



**LEGEND**  
 Runway 09-27  
 Runway 02-20 & Runway 09-27

**APPENDIX D:**

**INSPECTION CHECKLIST**

**AIRPORT:** .....

**DATE:** ..... **TIME:** .....

**LOCATION AND BRIEF DESCRIPTION OF WORKS:**

.....  
 .....

*(Note for non-critical task where Engineer is not required Contractor to sign off as required)*

<b>ITEM</b>	<b>DESCRIPTION</b>	<b>YES / NO</b>	<b>COMMENTS</b>	<b>Responsibility Engineer / Contractor</b>
1	The Engineer has confirmed that the surface has been prepared to specification and fit for the Aircraft Operation			
2	All operational area has been restored to fully operational condition before reopening			
3	All pavement markings are correct and that any unserviceable markers in place during the work have been removed; and			
4	No damage has been done to other equipment or facilities in the vicinity of the work			
5	No hazardous conditions have been created (equipment left in safety areas, unacceptable pavement edges created by ground alteration work, ruts from equipment); and			
6	All area worked on or constructed / pavement meets current specifications			
7	Construction or maintenance materials are properly stored or stockpiled to prevent them being moved by wind, jet blast, or propeller wash; and			
8	All Quality checks are done to ensure works completed as per the Technical Specification.			
9	All Site reports are checked and compliant to requirements to open Aerodrome			
10	Construction and maintenance areas are managed to ensure all debris or foreign objects is contained within the work site.			
11	<b><i>Other specific works checks by Engineer</i></b>			

<b>ROLE</b>	<b>NAME</b>	<b>SIGNATURE</b>
<b>CONTRACTORS REPRESENTATIVE</b>		
<b>ENGINEERING SUPERVISOR</b>		

**Safety Officer Sign Off**

ITEM	DESCRIPTION	YES / NO	COMMENTS	N / A
1	Are all Navigation aids, airfield ground lighting and paint markings are in working order, correctly located and clean?			
2	Has all construction materials, equipment and plant been removed from the works area and located a safe distance from the operational pavements and OLS?			
3	Has all soiled pavement surfaces within the works area been thoroughly cleaned via appropriate means, removed from the operational strips and free from FOD?			
4	Has all operational pavement surfaces used as access to the site been thoroughly cleaned and free from FOD?			
5	Has all excavations been appropriately backfilled, or appropriately marked with red/white stakes or cones, for safe aircraft operations?			
6	Has an appropriate NOTAM been issued in accordance with the progress of the works and is a true representation of the present airfield pavement condition?			
7	Are all personnel involved with the works removed from the operational strips?			

**The Inspection has been completed by:**

The work site and access routes have been cleaned to an acceptable level by the Contractor, the Airfield has been left in a safe and operable condition, has been inspected by the Works Safety Officer and the Airfield can formally be 'handed-over' for full control by Airports Fiji Limited.

**WORKS SAFETY OFFICER: PRINT NAME:** ..... **SIGNED:** .....

## **Toolbox and Prestart Meeting**

Prior to each work shift commencing, the FAL Engineer and Higgins Project Manager will confirm favourable weather conditions to proceed

With the combined decision to proceed, all of the Higgins team will meet at the FAL Entry Point to Nadi International Airport located adjacent the FAL Fire Station to carry out prestart checks on plant and equipment. A toolbox will be carried out at this location to discuss the objectives of the nightworks

## **Site Set-Up**

1. Once we have approval from FAL to enter the runway, traffic cones marking our haul path to the runway will be set out. We will set up our staging area for the loading of emulsion and place the lighting towers strategically along the runway section to be completed. Buckets will be placed over the top of runway lights with a traffic cone placed on top of each bucket.

## **Surface Preparation**

2. Sweeping of the outer edge of the runway will commence to remove any detritus prior to the spraying starting. Sand and paper will be placed around drainage pits as required to eliminate any likelihood of emulsion entering the existing drainage system. All work vehicles will keep inside the work zone to minimise our clean up time at the end of the shift.

## **Emulsion Spraying**

3. Our methodology is based on spraying approx. 18,450ltr/hr of CAT30 emulsion to cover areas on each shift by working between the hours as per the flight schedule programme. With good weather conditions and full access to the runways, we anticipate to complete the SEST treatment within 8 shifts
4. The emulsion sprayer will move into position at each shift, and complete up to 6 individual runs in each nominated section. As each run of CAT30 emulsion @ 1.3lt/m<sup>2</sup> is completed, manual dipping of the emulsion tank will be recorded to confirm our application rates. Due to the location of runway lights on Runway 02-20, we will hand spray directly around these light fixtures with our emulsion trailer being towed behind our Crewcab. We will have one of our trucks fitted with a roller spreader carrying sand as a contingency should any of the emulsion not break during a shift

## **Site Clean-Up**

As the completion of each section is carried out, all redundant plant will be removed from site. The tractor broom will be employed to sweep any site debris, which will be picked up by the bobcat. Following this the FOD broom will be towed around the site to ensure the work areas are free from any remaining FOD, before the light towers and traffic cones are picked up and removed from site

**SEST****Plants**

<b>Equipment Description</b>	<b>Rego Number</b>	<b>Fleet Number</b>
Sprayer	JO 998	5082
4 Axle Bitumen Trailer	JR 569	5009
Bitumen Bridger Truck	JT 877	5057
4 Axle Transport Trailer	HB 992	2174
2 Axle Bitumen Trailer	HD 134	5027
PTR Vibe Roller	KI 902	4057
Tractor broom	JN 681	4653
Tractor Broom Trailer	JN 679	2919
Tractor Broom	HB 314	4329
Crew Cab	HQ 644	2967
Ute	KG 600	10369
6-Wheeler Truck	JO 996	2352
4 Axle Transport Trailer	HD 133	2267
1 Axle Emulsion Trailer	HB 789	5007
JCP Lighting Tower 1		20017
JCP Lighting Tower 2		Hire
JCP Lighting Tower 3		Hire
JCP Lighting Tower 4		Hire

**Team for SEST**

<b>Employee Name</b>	<b>Employee Number</b>	<b>Roles</b>
Ariyan Kumar	768	Leading Hand
Meri Tuisue	982	QA
Danish Singh	699	Tractor Broom Operator
Mohammed Shakib	674	Sprayer Operator
Keshwan Goundar	685	Bitumen Bridger Operator
Avimeleki Vikila	625	Crewcab Operator
Alex Duckworth	629	Sprayer Operator Assistant
Mohammed Shayl	760	Truck Operator
Mohammed Taslim	663	Sprayer Operator

**Mill and Fill****Plants**

Equipment Description	Rego Number	Fleet Number
Paver – BB740	HX 583	5370
Paver – BB632	HX 582	5530
7T Double Drum Roller – Cat CB434D	HQ 640	4533
4T Double Drum Roller – Cat CB34	HQ 639	4535
PTR Roller – Sakai GW750	KI 902	4057
Tractor Broom	HB 314	4329
Crewcab	JZ 674	20185
Crewcab	JW 912	20194
Bobcat	HB 194	3602
Ham HD70VO Roller		4668
7.5T Sakai Vuibe PTR Roller		4033
Paver – Voegle 1803 - 03		5374

**Team for Mill & Fill**

Employee Name	Employee Number	Roles
Rajen Samy		Mill and Fill Supervisor
Saten Kumar		Asphalt Supervisor
Ritesh Ram	736	Leading Hand
Asesela Serau	752	Paver side screed
Mesake Beranaliva	717	Roller & Paver Operator
Sanjay Pratap	725	PTR Roller Operator
Kasimiro Saraqara	652	Roller Operator
Sanaila Vunisa	158	Labourer
Malakai Moala	747	Labourer

**Subcontractor – Sahibs Earthmoving Contractors Ltd****Plants**

Equipment Description	Rego Number
Milling machine 1.3m	IW 039
Milling machine 2.0m	IW 084
Bobcat	IX 130
Dump Truck	IW 984
Dump Truck	KE 043
Dump Truck	JU 519
Dump Truck	JG 087
Dump Truck	IZ 546

**Subcontractor Staff**

<b>Names</b>	<b>Roles</b>
Mohammed	Miller Operator
Sami	Truck Operator
Tazim	Truck Operator
Nilesh	Truck Operator
Patrick	Truck Operator
Ameer	Truck Operator

**Subcontractor – Mohammed Sadiq and Sons Contractor Ltd**

<b>Equipment Description</b>	<b>Rego Number</b>
Dump Truck	FZ 828
Dump Truck	FZ 829
Dump Truck	HE 458
Dump Truck	HI 383
Dump Truck	HT 758
Dump Truck	JL 800
Dump Truck	JL 801
Dump Truck	JL 802
Dump Truck	KF 798

**Subcontractor Staff**

<b>Names</b>	<b>Roles</b>
Afzal Hassan	Truck Operator
Rajnesh Vimal Prasad	Truck Operator
Mohammed Ayub	Truck Operator
Riyaz Dean	Truck Operator
Abdul Majid	Truck Operator
Faiz Kaiyum	Truck Operator
Mohammed Shaheem	Truck Operator
Faiyaz Ali	Truck Operator
Abdul Shazaad	Truck Operator
Razak Ali	Truck Operator
Praveen Dayal	Truck Operator
Mohammed Zahid Rahman	Truck Operator