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## Physical Demands Analysis

### Surface Labourer

Prepared for:  
Alberta Construction Association

<b>Job Title:</b>	Surface Labourer	<b>Assessment Location:</b>	Calgary, AB	<b>Data Collection Date:</b>	June 25, 2021
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<b>Completed By:</b>	Terilyn Miranda, OT	<b>Submitted on:</b>	July 30, 2021
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<b>Disclaimer:</b>	The Physical Demands noted in this report may vary depending on company and location. Please contact the company directly to confirm this physical demands analysis is an accurate representation of the specific job title for the specific location.
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<b>Work Schedule:</b>	<b>Shift Duration:</b> 7:00 a.m. to 5:00 p.m. <b>Break Schedule:</b> Breaks as able throughout shift. <b>Shift Rotation:</b> Not applicable <b>On call is required:</b> No <b>Overtime required:</b> No
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<b>Education / Experience:</b>	<b>Education required:</b> Completion of grade 12. On site Standard General orientation provided on hire. Required to have valid class 5 Alberta Driver's License. <b>Tickets that may be required (not limited to):</b> First Aid, WHMIS 2015, Roadbuilder Safety Training Systems (RSTS), and Basic Safety Orientation (BSO).
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<b>Job Overview:</b>	As a Surface Labourer the worker is required to complete all tasks required to assist heavy equipment in preparing roadways prior to application of asphalt and paving. The ground labourer works in a 2-person crew, with a foreman providing assignments for completion during each shift. The worker is required to communicate with the crew members, and other crews as needed, to ensure the task is completed safely, efficiently, and as directed.		
	% of shift	Job Task	Task Description
	25-75	Clearing roadways and preparing following roller	<ul style="list-style-type: none"><li>• Use of shovel and rake to clear debris as required on roadways to prepare for paving</li><li>• Use of tamper to level out roadway edges and areas not able to be accessed by the Packer</li><li>• Ensuring roadways are level, and sloped appropriately to encourage drainage</li></ul>
	25-50	Use of GPS Rover to ensure roadways are within appropriate	<ul style="list-style-type: none"><li>• Set up GPS in central location to measure gradients throughout work site and ensure the gradient is within specified regulations for the given zone</li><li>• Use the Rover to measure gradient of the entire roadway prior to paving</li></ul>

		slope regulations	<ul style="list-style-type: none"> <li>The worker is required to walk the entire length of the roadway with the Rover to measure gradients on 3 or 5-point charting</li> <li>The ground is often uneven and sloped</li> </ul>
	5-10	Load/unload required equipment from work trucks	<ul style="list-style-type: none"> <li>Carrying shovel, rake, rover, etc. to vehicle for transport between sites</li> <li>Ensuring the appropriate equipment is available on site to complete a given task.</li> </ul>

<b>Equipment/ Tools:</b>	<ul style="list-style-type: none"> <li>Tamper</li> <li>Shovel (3.85 lbs.)</li> <li>Landscaping Rake (2.25 lbs.)</li> <li>Packer, CAT C556</li> <li>Grader</li> <li>GPS Rover (8.35 lbs.)</li> <li>Level</li> </ul>
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<b>Exposures / Environment:</b>	<ul style="list-style-type: none"> <li>Exposure to vibration when driving on uneven surfaces</li> <li>Exposure to inclement weather including high heat, rain, sleet, and mild snow (required to work in up to 10 ml of rain; do not work in temperatures below -15°C or above 34°C)</li> <li>Exposure to environmental dust, debris, and allergens</li> </ul>
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<b>Personal Protective Equipment as Required:</b>	<ul style="list-style-type: none"> <li>Hard hat</li> <li>Steel toed boots</li> <li>Gloves</li> <li>Safety vest or high visibility stripes</li> <li>Eye protection</li> <li>Ear protection as needed</li> </ul>
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NOC STRENGTH LEVEL KEY	
Strength Level	Definition
Limited (Lim)	Up to 5 kg (11 pounds)
Light (L)	5 kg to 10 kg (11 – 22 pounds)
Medium (M)	10 kg to 20 kg (22 – 44 pounds)
Heavy (H)	Greater than 20 kg (44 pounds plus)

*\*Strength Level Key based on the National Occupational Classification*

FREQUENCY KEY		
Frequency	% of Workday	Hours – Based on 8 hour Workday
Not Required (N/R)	0%	0
Rarely (R)	1 – 5%	<25 min/day

<b>Occasionally (O)</b>	6 – 33%	25 min to 2 hours 40 min/day
<b>Frequently (F)</b>	34 – 66%	2 hours 41 min to 5 hours 17 min/day
<b>Constantly (C)</b>	67 – 100%	5 hours 18 min to 8 hours/day

*\*Frequency Key based on WCB Alberta Recommendations*

Job Demand	Frequency / NOC Strength Level					Details/ Measurements
	N/R	R	O	F	C	
Material Handling:						
Floor to Waist Level Lifting		Lim				Handling hand level, GPS Rover, shovel and rake.
Knee to Waist Level Lifting		H				Loading Tamper into work truck for transport.
Waist to Waist Level Lifting		Lim				Transferring hand held equipment between work trucks as needed.
Waist to Chest Level Lifting		Lim				Loading hand held equipment into truck.
Waist to Shoulder Level Lifting	X					None.
Waist to Overhead Level Lifting	X					None.
Front Carry		Lim				Transporting equipment throughout work site as needed.
Right / Left-handed Carry (Dominant Hand)		Lim				Carrying shovel, rake, level and GPS Rover and other materials throughout site.
Shoulder Carry			Lim			Moving GPS Rover, shovel, or rake throughout work site.
Static Pushing/Pulling (Force)		Lim				Shovelling and raking debris.
Dynamic Pushing/Pulling (Force)		Lim-H				Maneuvering self-propelling tamper along roadways, or maneuvering tamper when off to relocate tamper as needed.

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
Upper Extremity Work:						
Hand Gripping				X		Carrying GPS Rover, shovel, or rake throughout site. Steering and driving Packer and Grader. Using tamper to level gradient on roadways.
Pinch Gripping		X				Interacting with various controls within Packer and Grader.
Upper Extremity Coordination			X			Maneuvering tamper to level roadways. Driving Packer and Grader. Positioning and interacting with GPS Rover.

Reaching Forward		X				Positioning GPS Rover. Driving machinery. Raking debris.
Overhead Shoulder Level Reaching		X				Utilizing controls within Grader or Packer as required.
Below Shoulder Level Reaching		X				Shovelling and raking ground surface. Powering on/off Tamper.
Throwing	X					None.

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
Positional Work:						
Trunk Flexion (Bending)		X				Shovelling and raking debris.
Trunk Rotation (Twisting)			X			Shovelling and raking debris. Viewing environment while driving Packer and Grader.
Kneeling	X					None.
Crawling	X					None.
Crouching		X				Using level on ground to verify gradient. Powering on tamper.
Squatting		X				Using level to ground to verify gradient.
Neck Flexion				X		Shoveling or raking roadways. Viewing and reading the GPS Rover. Viewing work site and environment as needed.
Neck Extension		X				Viewing work site and environment as needed.
Neck Rotation			X			Viewing work site and environment as needed. Driving Grader and Packer; shoulder checking and viewing roadways.

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
Static Work:						
Sitting			X			When driving the Packer or Grader.
Static Standing			X			Raking, shovelling and using the tamper to even out roadways following use of Packer. Utilizing GPS rover to monitor gradient.
Balancing	X					None.

Job Demand	Frequency					Details/Measurements
	N/R	R	O	F	C	
Ambulation:						
Walking: Level Surfaces			X			Paved ground within work area and stock yard.
Walking: Uneven Surfaces				X		Ground within work sites are typically unpaved, gravel, mud, or packed/unpacked soil.

<b>Walking: Slopes</b>			X			Pathways prepared for asphalt can be various slopes dependent on gradient regulations for the area.
<b>Jumping</b>	X					None.
<b>Running</b>	X					None.

<b>Job Demand</b>	<b>Frequency</b>					<b>Details/Measurements</b>
	<b>N/R</b>	<b>R</b>	<b>O</b>	<b>F</b>	<b>C</b>	
<b>Climbing:</b>						
<b>Stairs</b>		X				Steps to climb into the Packer and Grader.
<b>Ladder</b>	X					None.
<b>Other</b>	X					None.

**PHOTOS OF TASKS AND WORK ENVIRONMENT**

**Figure 1: Using tamper to level out roadway**



**Figure 2: Shovelling debris off of roadway to allow for level surface**



**Figure 3: Neck flexion to view screen of Rover while reviewing gradient**



**Figure 4: Using level to verify gradient**





Physical Demands Analysis  
Job Title: Surface Labourer  
Date Prepared: July 14, 2021  
Prepared for: Alberta Construction Association



If you have any questions, and/or would like to discuss this assessment and report further, I can be reached at (780) 429-4761.

Sincerely,

A handwritten signature in blue ink, appearing to read "T. Miranda".

Terilyn Miranda, M.Sc.OT, B.H.Sc  
Occupational Therapist

### Validation Agreement

<b>Job Title:</b>	Surface Labourer
<b>Data Collection Date:</b>	June 25, 2021

We the undersigned have reviewed the Physical Demands Analysis for this position and agree that the physical demands documented in this report are representative of the true demands of the tasks associated with the job title as assessed on the date listed above.

<b>Completed by:</b>	Terilyn Miranda, M.Sc.OT, B.H.Sc Occupational Therapist	Lifemark Clinician Name and Credentials
<b>Approved by:</b>		Management Representative
<b>Approved by:</b>		Worker Representative
<b>Approved by:</b>		Labour Provider Representative