



STATE OF MONTANA JOB PROFILE AND EVALUATION

The job profile is a streamlined position description and may serve as the core document for all human resource functions such as recruitment, selection, performance management and career and succession planning. It was developed, initially, for use in classifying positions in Pay Plan 020.

If you are converting a position to Pay Plan 020 and the position has not changed simply cut and paste the information needed from the current position description. The position description contains sections that are no longer used to classify the position, such as: Working Conditions and Physical Demands; Management and Supervision of Others; Supervision Received; Scope and Effect; and Personal Contacts. These may still be important to the position and may be included in **Section IV – Other Important Job Information**.

When working with a new position, classification request or change to a position in Pay Plan 020, complete the information below to provide the required documentation for classification.

SECTION I – Identification

Working Title Engineering Project Aide (Old Grade 8)	Job Code Number 005902	Job Code Title Engineering Technician
Pay Band 2	Position Number	Check ONE box : <input type="checkbox"/> FLSA Exempt <input checked="" type="checkbox"/> FLSA Non-Exempt
Department Transportation		Division and Bureau
Section and Unit Field Construction		Work Address and Phone
Profile Produced By		Work Phone

Work Unit Mission Statement or Functional Description - This section should include a complete statement of the mission or function as it relates to the work unit.

Personnel in the construction program are responsible for supervising highway and bridge construction from the time a construction contract is awarded to a private contractor until the project is completed and the work approved. They perform preliminary survey work and ensure roads and bridges are built or reconstructed to established standards. During highway construction projects, district personnel work closely with the contractor, conducting construction surveys, inspecting the work, and monitoring traffic control.

Describe the Job's Overall Purpose:

This position is an Engineering Project Aide responsible for basic survey, inspection and office work related to highway and bridge construction projects. Duties include routine staking and surveying; basic inspection and materials sampling/testing; assisting with location survey work by performing basic survey support; construction staking and surveying; and a variety of clerical and administrative tasks in support of construction activities. The position reports to a higher-level Engineering Project Technician (a Crew Chief or lead worker), and does not supervise others.

SECTION II - Major Duties or Responsibilities	% of Time
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This section should be a clear concise statement of the position’s duties. Well written thorough task/duty statements are required here to accurately evaluate the position.

1. What are the major duties or responsibilities assigned to this position? What are the specific tasks involved in accomplishing those duties. Group duties in order of importance and estimate the percent of time needed to perform each duty (estimates are not required for individual tasks). **NOTE:** Because you are identifying **major** duties usually 3-5, the quantity of time probably will not be less than **20%**. If a duty is essential but not performed routinely you should list it. For example, lobbying during the legislative session may not take up a large percent of total work time, but can be an essential duty.

<p>A. <u>Location Surveying</u> Perform location survey work to set control and reference points and to gather preliminary site and survey information used for project design. This involves representing and documenting topographic, hydraulic, property and other survey data; and collecting and documenting related site information (e.g., soil and gravel pit surveys). This work requires knowledge of highway construction methods and techniques; topographical, hydraulic, and property surveying; the Montana Construction Manual, the Montana Survey Manual, and Standard Specifications for Road and Bridge Construction. The work requires skill and ability in the operation of conventional and radial stake out surveying equipment and in survey methods and techniques.</p> <ol style="list-style-type: none"> 1. Mark survey reference points as instructed, and install monuments by measuring distance, direction and elevation from pre-existing monuments, including reference points for aerial surveys. 2. Determine when and where to place rod or picket to gather and record survey data based on topographic features and surrounding terrain (e.g. looking at the bottom of a ditch) by observing breaks in elevation and other visual assessment. Communicate with the Crew Chief through verbal or hand signals to coordinate placement and measurements. 3. Identify the topographic, hydraulic or other feature surveyed, and relay the information to the Crew Chief for the proper assignment and recording of feature codes. 4. Locates and marks property boundaries and utility right-of-ways by identifying and marking points based on distance from established 	30%
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references and instructions from the Crew Chief.

B. Construction staking and surveying

30%

Perform technical construction staking and surveying work to prepare the location for project construction. This involves slope staking, culvert staking, channel change staking, reestablishing centerline from reference points, blue topping subgrade and gravel courses, and related staking and surveying work. This work requires knowledge of construction surveying and highway construction methods and operations, Montana Construction Manual, the Montana Survey Manual, and Standard Specifications for Road and Bridge Construction. The work also requires the ability to use plans and specifications and follow instructions.

1. Mark the exact location of highway centerline, traverse points, property boundaries and design feature layouts such as horizontal and vertical curves, culverts, embankments and guardrails by surveying distances and elevations from reference points established in the preconstruction survey as instructed by the Crew Chief.
2. Serve as chainman or rodman for construction survey activities by holding the picket, pogo rod, and/or tape and placing them in the proper location as directed by the Crew Chief. Use pins or tacks to ensure placement on the exact location on established hubs or caps.
3. Correctly locate stakes to correlate design plan to site terrain based on verbal instructions from the Crew Chief. Mark stakes with letters and number codes to provide a description of the point (e.g., placement and slope of an embankment, property corners or boundaries, hydraulic features, etc.), point name or number, distance from centerline, etc.

25%

C. Inspection and testing

Perform basic project inspection and material sampling/testing tasks under the guidance of higher level technicians to assist in determining the acceptability of materials, ensuring compliance with contract specifications and construction standards, and to provide information for the Project Manager. This involves gathering information regarding the placement and installation of materials, performing or monitoring material sampling and testing, and ensuring samples and related documentation are collected and labeled according to MDT guidelines. This work requires knowledge of inspection, survey, sampling and laboratory testing protocols and procedures; the Montana Materials Manual, Montana Construction Manual, and Standard Specifications for Road and Bridge Construction; basic mathematics; and the ability to operate survey, sampling and testing equipment.

1. Review materials plans and specifications in conjunction with the crew chief or higher level technician to ensure familiarity with project requirements and to identify inspection tasks and requirements.
2. Take measurements and collect samples from backfill, embankments and

road surface, to provide information used to ensure placement, materials, moisture content, lift depths and compaction methods are in compliance with specifications. Prepare and maintain field notes including documentation of quantities by recordation of ticket collection, depth checks and measurements.

3. Review material certifications provided by the contractor to ensure the actual materials on-site are covered by certifications by comparing identification numbers on materials (e.g., milling stamps) to certifications.
4. Collect samples, or oversee sample collection by contractors under the direction of the Crew Chief or lead worker by applying established sampling methods and techniques and/or operating a variety of sampling equipment. Samples must be collected or observed by MDT personnel in order to be considered official.
5. Prepare samples for testing based on the type of material, and procedures outlined in the manual. This involves technical processes such as preparing molds, pouring concrete cylinders, weighing, washing, shaking, crushing, and splitting samples. This involves observations as to the height, width, volume, dryness and other physical properties of the sample, and making adjustments as needed (e.g., extending drying times, reshaking, etc.).
6. Conduct a wide variety of specialized testing procedures on materials. This work involves following detailed procedures outlined in the materials manual for tests such as sieve analysis, specific gravity, compaction, moisture content, density, liquid limit, plastic limit, plasticity index, and slump of concrete, % fracture, concrete tests, air tests, concrete batching, weight per cubic foot, loss by wash, cylinders, slump, etc. The aide does not deviate from established procedures, and will seek assistance from higher level technicians on situations which are unclear.
7. Calculate test results and prepare proposed results for review by higher level technicians. Enter approved information on appropriate forms or into the computer. This work involves the application of conversion factors and tables, algebraic equations and noting deviations from standard specifications.
8. Inspect guardrail, signing, compaction testing (PMS), electrical, concrete (curbs, sidewalks, gutters, structures, etc.), chip seals, seeding, fencing, striping and other project aspects. This involves assessing material types and certifications, reviewing placement and installation through taking measurements and taking and testing samples of materials to ensure compliance with department standards and contract requirements. At this level, the position focuses on sampling and testing, with higher level technicians responsible for assessment of processes and methods.
9. Document all aspects of construction inspection including quantities;

locations; explanation of changes; conversations with contractors, MDT personnel and the public; contract equipment, personnel and shift worked; and problems encountered; and any instructions received.

10. Directly inform the contractor of work that is clearly not in compliance with contract plans or project specifications (e.g., inappropriate materials or placement), or notify the crew chief or higher level technician of more complex aspects of the project that appear to be out of compliance (e.g., inappropriate construction methods, materials not meeting specifications, DBE requirements, etc.)

10%

D. Office work

Perform a variety of clerical and administrative tasks in support of construction activities. This involves compiling notes and reports, maintaining electronic databases, and performing mathematical calculations. This work requires knowledge of highway construction terminology; business English, spelling, grammar and punctuation; mathematics including algebra and geometry; and skill in the operation of general office equipment including a programmable calculator and personal computer including typical business applications (e.g., word processing, spreadsheets, data entry screens, etc.).

1. Enter control points from plans, field survey notes, pay quantities, locations, etc. into the computer system using proper formats and coding. Ensure accuracy of data entry by checking system data against plans.
2. Perform miscellaneous support duties such as cleaning equipment, observing and reporting unsafe conditions, delivering supplies to various sites, running errands, etc.
3. Check field survey notes and construction field notes documenting pay quantities for accuracy and completeness by checking mathematical calculations, ensuring all notes and forms are complete, etc.

E. Other duties as assigned

Perform a variety of other technical and administrative work in support of district activities as assigned by the supervisor. This includes assisting other MDT programs on special projects and attending training and education as required.

5%

2. Give specific examples of the types of problems solved, decisions made or procedures followed when performing the most frequent duties.

[Fill in]

3. What do you consider the most complicated part of the job?

[Fill in]

4. What laws, regulations, guidelines, manuals or other written established procedures are available to the incumbent?

[Fill in]

5. Which of the duties and/or specific tasks listed under 1. (above) are considered “essential functions” which must be performed by this position (with or without accommodations)? (If you need information or training on the identification of essential functions, please contact MDT Human Resources Division.)

[Fill in]

6. If this position supervises other positions, complete the following information.

The number of FTE employees directly supervised is _____.

List the complexity levels/pay bands of each those subordinates _____.

Please list the Position Numbers for those directly supervised _____.

Is this position responsible for (please check ONLY those boxes which apply to the position and for which the position has “signatory” authority.)

- Hiring Layoffs/termination of temporary or seasonal workers
 Performance Management (conducting and signing performance appraisals as the direct supervisor or the reviewing manager) Promotions
 Direct /Line Supervision Leadworker Discipline
 Other:

7. Please attach an up-to-date Organizational Chart (or copy from a Power Point document into space below).

SECTION III - Minimum Qualifications - List the minimum requirements for **first day** of work. (These will be the minimum qualifications utilized for **recruitment and performance management purposes**; this information is not used for classification purposes.)

Please list the main knowledge and skill areas required for the job:

The position requires knowledge of highway construction methods and techniques; topographical, hydraulic, and property surveying; the Montana Materials Manual, Montana Construction Manual, Montana Survey Manual, and Standard Specifications for Road and Bridge Construction; highway construction terminology; business English, spelling, grammar and punctuation; and mathematics including algebra and geometry.

The work requires skill in operating survey equipment, sampling and testing equipment (e.g., a nuclear densometer), personal computers and laptops, and skill in survey methods and techniques.

What behaviors are required to perform the duties? **NOTE:** Identifying behaviors used for recruitment and selection and other HR functions are part of building a competency model (see **Creating Competency Models** in Guide). A position description will provide helpful information if a model has not been developed. Often “abilities” from the current PD can be stated as desired and observable behaviors. For example, “the ability to communicate clearly in writing” can be restated “writes clearly and concisely”.

Learns work processes and procedures quickly; follows instructions; performs mathematical calculations accurately; and communicates and works cooperatively with others.

Education and experience: Please indicate the **minimum educational** requirements for this job, as it relates to a new employee on the **first day** of work (not the educational background of the person now in the position), the specific fields of study that are acceptable, and whether a Master's degree (in which fields) will substitute for any of the required job related experience.

High school graduation or GED with coursework in algebra, geometry, and trigonometry.

Other training (e.g., software, specific machinery, etc.), certification (e.g., CPA, Professional Engineer, etc.), or licensing (e.g., commercial driver's, pilot, psychologist, etc.) required (please specify):

Please indicate the minimum, amount of **job-related work experience** needed as a new employee on the first day of work (not the experience of the person now in the position). Please indicate the specific types of experience that will be considered job-related.

six months experience with basic highway/road construction methods including surveying and sampling procedures and techniques.

This agency will accept alternative methods of obtaining necessary qualifications.

For recruiting purposes please list specific examples of acceptable alternative methods of obtaining those qualifications. **These examples will appear on a vacancy announcement.**

An employee in the CE Aide 1 classification will be promoted to CE Aide 2 upon completion of six months of civil engineering technician related experience.

SECTION IV – Other Important Job Information

List any other important information associated with this position, such as working conditions or other factors which are deemed critical or non-negotiable to the position and which will need to be included on the vacancy announcement or other recruitment documents. (This information will be NOT be used for classification purposes.) For example: The position is required to travel throughout the state in excess of 12,000 miles per year and to perform duties on active construction sites in proximity to heavy equipment, hot asphalt, and high speed traffic, requiring use of hard hats and specialized safety training. OR, This position is not subject to alternative work schedules or working from home as it is required to answer the phone and receive visitors for the agency between the hours of 8am to 5pm, Monday through Friday.

The work environment involves harsh or caustic fumes, dust, extreme temperatures, wind, rain, and snow. Hazards associated with the work can be significant. The majority of the work is performed at construction sites or fabrication plants involving traffic passing the work site and working around heavy machinery such as front-end loaders, pavers, scrapers, rollers, and forklifts. The work also involves and risks associated with working with hazardous materials such as hot asphalt, lime, acids, and other chemicals. The risks of the work are such that extensive training in safety practices and procedures is required. Due to the nature of work elements (hot asphalt, heavy equipment, etc.) and hazardous tasks such as work around moving traffic and taking samples from hot plants, there is potential for significant injury.

SECTION V – Signatures

My signature below indicates the statements in Section I to IV are accurate and complete.		
Employee:		
Signature	Title	Date
Immediate Supervisor:		
Signature	Title	Date
Name:		
Signature	Title	Date
Division/District Administrator:		
Signature	Title	Date
Departmental Designee:		
Signature	Chief, Employee Relations Bureau, Human Resources Division Title	Date

Recruitment Review: My signature below attests to my review of and determination that the minimum qualifications (education and experience) listed in this profile meet the established recruitment standards of MDT.	
Signature	Date:
Name:	Title: Human Resource Specialist (District/Helena) Montana Department of Transportation

Upon completion of this section the preparer, district human resource specialist, or other signing authority should forward the signed hard copy and the electronic copy of this job profile (JP), along with an Agency Classification Request (ACR) and an up-to-date Organizational Chart (if not included in the body of the JP) to the Chief of the Employee Relations Bureau, Human Resources Division, MDT in Helena.

The electronic copy naming convention for JPs sent by the District or from Helena supervisors to Human Resources in Helena should be: (Position#)JP-MDT.doc (e.g., 34015JP-MDT.doc).

*******DO NOT FILL IN THIS PORTION*******

JOB EVALUATION FORM

This section is to be completed by a trained classifier in or contracted by the Human Resources Division, MDT or by State Personnel Division.

Prepared By

Date

Position Status: Reclassified Vacant New Position

Choice of Class Series:

Position Summary:

Benchmark Factoring

Classification Factor Level:

The predominate work of this position consists of:

Factor level Comparison:

Benchmark Comparisons:

Classifier Signature

Title

Date

Agency Approval:

Title

Date

Upon completion of this section the classifier should make certain that the Job Code Number, Job Code Title and Pay Band on the first page of this document accurately reflect the Choice of Class Series and classification factor level determined above. Attach Organizational Chart, Audit Notes or other pertinent information.

This completed document should now be filed by the classifier in: I:\Classref\Agencyjp\agency#\filename).
File naming convention is: (jobcode&position#)jp(date).doc (e.g. 01850421001jp0201.doc, where date is: month year).