

**STATE OF MINNESOTA
BOARD OF WATER AND SOIL RESOURCES**

POSITION DESCRIPTION: Part A

Classification Title Engineering Specialist Senior	Working Title (if different) Engineering Technician, Senior	Position Control Number
Bargaining Unit MGEC	Section Engineering	Office/District
Employee's Name (Print)		Supervisor's Name (Print) Thomas Wenzel
Reports To (Classification Title(s)) Administrative Engineer		Prepared By Tom Wenzel, Senior Water Resources Engineer

Employee's Signature	Date	Supervisor's Signature	Date 8/19/2024
<i>(Position description accurately reflects current job)</i>			

POSITION PURPOSE

The position exists to perform high level para-engineering technician work for investigation, design, and construction supervision of conservation practices for soil erosion control, water quality protection and fish and wildlife habitat restoration with an emphasis on restoration of drained and degraded wetlands and shallow lakes.

The incumbent serves as a senior engineering technician providing project management and engineering assistance to a wide range of civil and agricultural engineering projects across a specified geographical region, all under the direction of a professional engineer.

The position purpose includes development and coordination of effective engineering technician assistance, in partnership with Soil and Water Conservation Districts (SWCDs), other local, state, and federal governmental units, and project partners.

The position may include lead worker responsibilities to direct, coordinate, and manage work assigned to and completed by other engineering technicians and engineering aides.

REPORTABILITY

Reports Directly to: Administrative Engineer
 Reports Indirectly to: Other Section Engineers
 Supervises: No supervisory responsibilities

DIMENSIONS

Budget: None
 Clientele: *Primary:* SWCDs, project partners and participating landowners.
Secondary: Other BWSR staff, other state/federal agencies, and conservation organizations.

POSITION DESCRIPTION: Part B

PRINCIPAL RESPONSIBILITIES, TASKS AND PERFORMANCE INDICATORS

1. Review and research new project proposals, collect project data, and perform site investigations.

Priority: A	Percent of Time: 20%	Discretion: A
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Tasks:

- a) Provide effective leadership and support in reviewing potential and/or new project applications/proposals, initial determinations of project feasibility, and defining opportunities and constraints with respect to desired wetland restorations.
- b) Perform research of available information including files, records, maps, aerial photographs, property boundaries, watershed boundaries, soils information, drainage system information, etc.
- c) Serve as survey crew leader to collect important and necessary project data. Data collection will be accomplished using Global Positioning System (GPS), total station or other applicable survey equipment. Use a tile probe, Back Saver soil sampler, or soil boring equipment, and/or direct subsurface tile investigations and soil sampling via test excavations.
- d) Operate all-terrain vehicles (ATVs) to assist with data collection efforts.
- e) Ensure that detailed and accurate field notes and photos are kept, and help develop and maintain comprehensive, well organized project files.
- f) Maintain survey and other field equipment needed for technical investigations.

2. Prepare accurate, clear, comprehensive, and well organized concept plans, feasibility studies, preliminary designs, and design reports to address the engineering needs of assigned projects.

Priority: A	Percent of Time: 20%	Discretion: A
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Tasks:

- a) Reduce, plot, and interpret field data to prepare accurate and well laid out site maps.
- b) Determining project needs through preparation of accurate, comprehensive, and well organized preliminary concept plans that meet agency standards for appearance and content. Concept plans and related correspondence shall accurately define project needs, opportunities and constraints.
- c) Conduct advanced engineering calculations, evaluations and studies for feasibility determinations and preliminary designs.
- d) Operate personal computers and designated software for hydrologic and hydraulic analyses, quantity calculations, cost estimates, CAD design/drawings and report development. Includes word processors, spreadsheets, various engineering programs, and GIS systems.
- e) Prepare preliminary engineering plans and reports that are appropriate for the project scope and include relevant background data, drawings, photos, analysis, discussions and recommendations.
- f) Maintain good communications with clientele when managing projects. Includes identifying project needs ensuring that all identified project constraints are clearly understood and addressed.
- g) Able to identify and communicate project alternatives, conduct necessary project meetings and attend necessary public meetings/hearings.
- h) Maintain current, accurate and orderly project files.
- i) Periodically communicates with supervising engineer to check in and relay status of assigned projects.

3. Prepare accurate, clear, comprehensive, and well-organized final designs, construction plans, specifications, and associated project construction documents.

Priority: A	Percent of Time: 30%	Discretion: B
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Tasks:

- a) Develop high level project designs that conform to accepted engineering standards and agency/program policies. When necessary, arrange for and/or attend meetings, conference calls, or other types of communications with section staff, agency staff, other governmental agencies, partners, landowners, etc. to achieve necessary design information, input, review, and approvals.
- b) Use sound engineering principles and methods of analysis in preparing final project designs, plans, specifications, cost estimates, bid schedules and other applicable construction documents.
- c) Both manual and computer-aided-design methods, including AutoCAD and other software, are utilized, as appropriate.
- d) Construction plans, specifications and bid documents are to be complete, accurate, easily read, checked for spelling and grammar, and well organized.
- e) Coordinate with other project team members and supervising engineer, as appropriate, when developing final project design and construction documents. Ensure necessary reviews and approvals are completed and completion schedules met.

4. Provide necessary inspection, supervision and construction management of assigned projects.

Priority: A	Percent of Time: 20%	Discretion: A
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Tasks:

- a) Assist clientele and landowners in selecting and hiring qualified construction contractors.
- b) Arrange for and/or attend pre-bid and/or pre-construction and other related meetings to prepare for construction. Meeting summaries, reports, and other written correspondence are prepared in a neat, professional manner and appropriately disseminated.
- c) Ensure necessary and appropriate construction staking and layout are completed, as necessary.
- d) Perform and/or ensure necessary and appropriate construction supervision and inspection of projects is provided and that work is performed in accordance with project plans/specifications.
- e) Provide timely, technically sound and cost effective construction supervision and oversight across geographic work area often while simultaneous project construction work is occurring.
- f) Identifying construction problems in a timely manner and provide leadership in negotiating a prompt and reasonable resolution to these problems.
- g) In consultation with the designer of record, appropriately address and manage necessary design or specification modifications and negotiate and prepare necessary change orders and other contract modifications.
- h) Perform timely final review of assigned completed projects. Includes accurately measuring and/or reviewing quantities, completing records, reports, and preparing as-builts for project close-out and final certification.
- i) Assist field offices in review of project invoices and payment requests, ensuring they are accurate and in accordance with program policies, procedures and technical approval authority.

5. Provide assistance and technical support to Section and other agency staff to help maintain agency/unit operations and perform other related duties as assigned.

Priority: B	Percent of Time: 10%	Discretion: A
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Tasks:

- a) Lead the development, documentation and integration of standardized operational procedures for surveying, CADD and other related operations.
- b) Develop and provide technical materials, assistance, and training to BWSR staff and clientele.
- c) Maintain engineering support operations and provide recommendations to keep them current.
- d) Assist with sorting, scanning, data entry, and archiving of engineering project files.
- e) Assist with addressing data/information requests from partners and others.

6. Performs work in a safe and responsible manner and is accountable for acting in accordance with established safety procedures protecting themselves from injury and associated work equipment from damage.

Priority: A	Percent of Time: *	Discretion: A
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* No separate percentage of time is shown for this responsibility since safety must be part of all tasks performed.

Tasks:

- a) Acts and performs work in a safe and responsible manner.
- b) Is accountable for safety performance in accordance with established safety procedures.
- c) Attends all required safety meetings and training.
- d) Uses and follows available safety resource and information.
- e) Uses Personal Protective Equipment (PPE) and follows all policies regarding PPE.
- f) Practices Hazard, Injury and Incident Prevention and Reporting.

Summary of Responsibility Priority, Percent of Time and Discretion

Responsibility	Priority	Percent of Time	Discretion
1.	A	20%	A
2.	A	20%	A
3.	A	30%	B
4.	A	20%	A
5.	B	10%	A
6.	A	*	A

* No separate percentage of time is shown for this responsibility since safety must be part of all tasks performed.

Definitions:

Priority A: Results are essential and must be accomplished.

Priority B: Results are important and should be accomplished, but not at the expense of A priorities.

Discretion Level A: Employee investigates situation, makes decisions, and takes appropriate actions and reports by exception through normal communication and review processes.

Discretion Level B: Employee investigates situation, makes decisions or recommendations and confers with supervisor before, or immediately after, action is taken, depending on time sensitivity of action.

POSITION DESCRIPTION: Part C

RELATIONSHIPS

The incumbent serves as a senior engineering technician working under the direction and supervision of a licensed Engineer. The incumbent provides high level para-engineering work and is responsible to plan, design, implement, and manage a variety of statewide conservation projects with the primary focus being wetland restorations on private land completed in partnership with local units of government.

The incumbent provides leadership, technical support and advice, and direction to many local government units and other state and federal agency staff as part of project management responsibilities.

The incumbent must have the ability to interact and maintain good working relationships with agency staff, its clientele and with construction contractors. The incumbent must coordinate as appropriate with his/her Engineering Supervisor and other project team members to ensure effective and efficient technical assistance is provided for investigation, design and construction of assigned projects. The position requires the use of independent judgment and acceptance of responsibility in performing difficult technical tasks, both in the office and in the field. The position is expected to operate under limited supervision and to oversee/manage simultaneous projects of varying complexities across a broad geographic region. Their supervisor directs and reviews the incumbent's work for procedural and technical accuracy, as appropriate.

KNOWLEDGE, SKILLS AND ABILITIES

This position requires extensive experience and advanced knowledge of current civil and agricultural engineering design principals, practices, and standards enabling effective management and design of large scope and/or complex conservation projects. Includes the ability to; interpret maps and aerial photographs, perform complex mathematical and geometric calculations, perform basic hydrologic and hydraulic analyses, perform geotechnical investigations, and interpret results, and prepare advanced level engineering plans using AutoCAD Civil 3D Computer Aided Design for Civil Engineering software.

The position also requires extensive experience and advanced knowledge of construction project management and legal principles that relate to and govern construction contracts necessary to effectively oversee construction implementation of complex conservation projects. Incumbent must also have the ability to be assertive with clientele and contractors, as appropriate, to assure program and plan compliance as well as construction quality. Also includes being able to effectively negotiate construction modifications and use dispute resolution techniques to resolve construction issues, address poor performance or unacceptable work.

The incumbent must also have advanced knowledge of survey principals and processes and be able to use a variety of survey equipment including survey grade GPS. Must be able to effectively collect relevant project data, download and process survey data, and use AutoCAD Civil 3D software to prepare comprehensive and maps and plans from collected survey data.

Advanced knowledge of federal, state, and local government permitting programs as well as Minnesota's drainage laws and rights with respect to both public and private drainage is also necessary.

The incumbent must be able to perform fieldwork on rough terrain, steep slopes, and in adverse weather conditions. The incumbent must be able to operate all field equipment including pickup trucks, all-terrain vehicles (ATVs/UTV's), survey equipment, and both mechanical and manually operated equipment for performing geotechnical investigations. Extensive travel across a broad geographic area should be expected and possession of a valid state of Minnesota Driver's License will be required. The incumbent is expected to work in wet and humid conditions and be able to lift and/or move heavy objects and equipment. The incumbent must have adequate vision levels to successfully perform expected duties including the ability to see close, far, colors, peripherally, to adjust/focus and to have depth perception.

The incumbent must be able to communicate in a professional environment with clarity and authority, have a thorough and complete understanding of complex technical and program subject matter, and be able to translate that information to affected parties possessing varying amounts of knowledge and expertise. This requires excellent oral and written communication skills enabling effective correspondence, formal and informal meetings, reports, presentations, training, as well as daily interactions with their supervisor, section staff, agency staff, and all external partners and clientele. The incumbent must be able to interact positively with landowners, agency clientele, and other individuals involved in completing work assignments.

The incumbent must be able to provide positive leadership to staff, local government, state and federal partners and conservation program's clientele to meet project goals and objectives. The incumbent must also be able to professionally represent BWSR at public and private meetings, convey information accurately, simulate feedback and discussion, and confirm decisions made.

PROBLEM SOLVING

The incumbent must be able to evaluate technical problems and develop recommendations or solutions at a para-professional level, in cooperation with others involved in projects and in accordance with applicable policies and procedures. The incumbent will be challenged to develop solutions that are practical, cost effective and enduring. This will require risk assessment and development of recommendations or solutions that balance resource protection, cost, and clientele acceptance. The incumbent will be responsible to report all major problems to their supervising engineer and to suggest possible solutions to these problems. Timely and clear communication, including pertinent questions and information sharing, are expected to be critical for effective problem solving. Working with involved landowners, clientele, and other interested parties can require effective listening, constructive solutions, and compromise. Problem solving skills should be at a high level, reflecting substantial experience.

The incumbent will also be challenged to help provide and coordinate assistance to resolve problems encountered during project development and implementation. This will involve development of strong working relationships with team members having different areas of expertise, as well as a good working knowledge of applicable agency program policies, procedures, roles, and responsibilities.

FREEDOM TO ACT

Within established policy guidelines, this position has considerable independence and freedom to act in areas related fulfillment of job responsibilities. Decisions can be made so far as they do not run contrary to established policy guidelines, in which case he/she shall defer judgment until direction is received from his/her Supervisor.