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**STATE OF WISCONSIN**  
**MULTI-CLASSIFICATION SPECIFICATION**

**FOR ARCHITECTS/ENGINEERS**  
**(DEPARTMENTS RESPONSIBLE FOR BUILDINGS)**  
**(SPECIFIC CLASSIFICATIONS LISTED IN INCLUSIONS STATEMENT)**

**I. INTRODUCTION**

A. Purpose of This Classification Specification

This classification specification is the basic authority under s. ER 2.04, Wis. Adm. Code, for making classification decisions relative to present and future professional architectural/engineering positions responsible for state owned buildings, or hospitals and residential care facilities regulated by the state, or in providing design assistance to communities. This classification specification will not specifically identify every eventuality or combination of duties and responsibilities of positions that currently exist, or those that result from changing program emphasis in the future; rather, it is designed to serve as a framework for classification decision making in this occupational area.

Classification decisions must be based on the “best fit” of the duties within the existing classification structure. The “best fit” is determined by the majority (i.e., more than 50%) of the work assigned to and performed by the position when compared to the class concepts and definitions of this specification or through other methods of position analysis. Position analysis defines the nature and character of the work through the use of any or all of the following: definition statements; listing of areas of specialization; representative examples of work performed; allocation patterns of representative positions; job evaluation guide charts, standards or factors; statements of inclusion and exclusion; licensure or certification requirements; and other such information necessary to facilitate the assignment of positions to the appropriate classification.

B. Inclusions

This classification specification encompasses positions providing professional architectural/engineering duties and expertise for building engineer programs. The positions are involved in architect/engineer programs related to state owned buildings, or hospitals and residential care facilities regulated by the state, or provide design assistance to communities. Positions are currently located at the Department of Administration, Department of Corrections, Department of Safety and Professional Services, Department of Health Services, Department of Military Affairs, Department of Natural Resources, Department of Transportation, University of Wisconsin System, and Wisconsin Technical College System Board. These positions devote the majority of their time and are primarily responsible for providing a full range of professional architect/engineering expertise for a specific architect/engineer field identified as an:

1. Architect.....Page 4
2. Civil Engineer.....Page 5
3. Communications Engineer.....Page 6

4. Electrical Engineer.....Page 7  
5. Electronic Engineer.....Page 7  
6. Mechanical Engineer .....Page 8

Positions allocated to these classifications perform duties that are professional in nature as defined in s. 111.81(15) Wis. Stats. Positions included in these series must meet the Qualifications prescribed under I.C.

C. Qualifications

Positions included in these series have duties and responsibilities of such a nature that it is required (by federal or state law or by position analysis) that the incumbent have one of the following:

- Registration as a Professional Engineer as determined by the Department of Safety and Professional Services per s. 443.04, Wis. Stats.;
- Registration as an Architect as determined by the Department of Safety and Professional Services per s. 443.03, Wis. Stats.;
- a specific record, issued by the professional engineering section of the Department of Safety and Professional Services, showing 4 years or more of experience in engineering work of a character satisfactory to the professional engineering section and satisfactory completion of the fundamentals of engineering exam;
- have graduated from a recognized college or university with a degree in architecture or in a related engineering field such as electrical, mechanical, civil or environmental engineering; OR
- have equivalent professional training and practical experience so as to be deemed an architect or professional engineer as defined in Department of Safety and Professional Services per s. 443.01, Wis. Stats. and also deemed to be qualified to engage in professional architectural/engineering practice as determined by the Department of Safety and Professional Services per s. 443.03, or 443.04, or 443.05, Wis. Stats.

Positions not having duties and responsibilities which require such credentials shall be allocated to a different classification series

D. Exclusions

Excluded from this classification series are the following types of positions:

1. Positions which meet the definition of management or supervisor as defined in s. 111.81(13) and (19) Wis. Stats., as administered and interpreted by the Wisconsin Employment Relations Commission.
2. Positions that do not meet the definition of professional as defined in s. 111.81(15) Wis. Stats., as administered and interpreted by the Wisconsin Employment Relations Commission.
3. Positions which do not require that the incumbent perform professional architectural/engineering duties and be a professional architect/engineer by background and training for the successful performance of the tasks assigned to the position.
4. Positions which spend the majority of their time reviewing building plans and/or inspecting buildings to assure the minimum safety codes are met and are more appropriately classified in the Engineering Consultant – Building Systems Classification Series.

5. All other positions which are more appropriately identified by other classification specifications.

E. Entrance Into and Progression Through This Classification Series

Employees enter positions within this classification series by meeting the qualifications under I.C. and by competition. Progression to the senior level will occur through reclassification and progression to the advanced level will occur through some form of competition.

F. Definition of Terms Used in This Classification Specification and Representative Program Areas

**Section A, Levels**, describes the appropriate placement of an employee based upon the specific level of skills, knowledge, and abilities required of the position and the amount of supervision received for the majority of time within the specific professional engineer program area.

**Section B, Classification and Functional Work Activities**, describes the full range of duties performed at the objective level, which is the level an employee can reasonably expect to obtain if he/she performs the full range of functional work activities.

Employees may also perform the following types of duties, but they are usually performed at the Senior or Advanced levels:

Lead Worker: An employee who trains, assigns the work and reviews the work of other professional employees and which may also include technical employees. Lead Worker functions will cease for Entry level architects/engineers when they have successfully attained the Senior level. Lead Worker functions are a permanent assignment but are dependent upon having developmental levels (below the Senior level) of engineer staff.

Program Leader: An employee who is the technical expert for a specific area(s) and who may have some oversight to assure uniformity within a specific architectural/engineering program area(s).

Project Leader: An employee who has the responsibility for coordinating the work of another professional architect(s)/engineer(s) when a project requires two or more architects/engineers for completion and which may also include other technical and professional employees. This function would last only as long as the project takes. An employee can be a project leader and a team member for another project simultaneously. **OR** A project leader can be an employee who has the responsibility of oversight of non-permanent, non-state, or contract engineers and related staff.

## II. DEFINITIONS

### A. Levels

#### **ARCHITECT/ENGINEER**

This classification level is used as an entry level progressing to the objective level. Engineering principles and practices have been learned prior to entrance to this series. The primary emphasis is in developing skills in working with and/or understanding the program, state systems, user group(s), and the mechanics of the program. Positions receive specific guidelines and instructions on work assignments and the supervisor determines the priorities and provides clearly defined objectives. Work assignments are established by the supervisor on a short or long term basis as

the employee progresses. Positions initially exercise little discretion in decision-making. Over time positions at this level make higher level contacts without the supervisor's direction and make decisions on items of a narrower scope and impact. Positions work under close progressing to limited supervision.

### **ARCHITECT/ENGINEER SENIOR**

This is the objective level for positions that perform the full range and scope of their specific program duties. The majority of the assignments are complex. Positions at this level have extensive authority in carrying out their assigned responsibilities involving independently implementing the assigned responsibilities. The work at this level requires a high degree of interpretation and creativity in evaluating architectural/engineering aspects of new technologies. Positions at this level make decisions independent of supervisory oversight, with the work being reviewed after the decisions have been made. Positions work under general supervision.

### **ARCHITECT/ENGINEER ADVANCED**

This is the advanced level for positions that provide advanced professional architectural/engineering expertise in their assigned program under general policy review. Positions at this level function as (1) the primary architect/engineer for a specific aspect of a department program or (2) a program architect/engineer within an assigned geographic area. Architect/engineer positions at this level perform the most complex, difficult, and advanced architectural/engineering work which includes multi- and cross-program issues and which often include policy-making responsibilities. Employees at this level have architectural/engineering responsibilities which require continually high level contacts with public and private officials and architect/engineer consultants on highly sensitive and complex architectural/engineering reviews. The architectural/engineering knowledge at this level includes a broader combination than found at the senior level. Assignments are broad in scope and continually require the incumbent to use independent judgment in making professional architectural/ engineering decisions. Positions at this level make independent decisions and perform work in response to program needs as interpreted by the employee with the work being reviewed after the decisions have been made. Positions work under general supervision.

## **B. Classification Definitions and Functional Work Activities**

### **1. ARCHITECT**

Positions allocated to this classification series provide professional architectural services relating to developing building designs and reviewing consultant's work. Positions provide a full range of architectural services for projects including: program confirmation, construction supervision, contract administration, and construction management; act as project managers for the design and construction of projects; direct the work of project architects/engineers, building construction representatives, and owner agency staff; and assure that construction of state buildings is completed in accordance with approved programs, schedules, and budgets. Or, positions provide architectural services to communities with design issues including building improvements, historic preservation, public improvements and visual merchandising.

Specific program responsibilities and examples of architectural work performed include:

*Chief Architect or Program Manager - Other Agencies:* Serve as the key department professional resource person in the field of Architecture in matters relating to building design, construction, remodeling, and maintenance as delegated by, or in working with, the Department

of Administration. Consult on departmental building and remodeling programs. Aid in the preparation of credible biennium capital building programs. Prepare cost estimates, concept and budget reports, and plans and specifications. Evaluate bids. Oversee construction. Prepare change orders. Expedite implementation of the approved programs through conferences with the design consultants. Review consultant's plans and specifications. Investigate building failures, codes deficiencies, and other building deficiencies. Recommend solutions. Prepare environmental assessments. Serve as a public hearing examiner. Manage department's energy/space program. Depending upon the specific department, the building projects will be specialized as to their use.

*Main Street Program - Department of Safety and Professional Services:* Provide professional and technical design assistance to property owners in Main Street Communities. Train local managers and volunteers regarding downtown design issues including building improvements, historic preservation, public improvements, and visual merchandising. Monitor the progress of local Main Street design projects. Act as a clearinghouse on design and historic preservation information for traditional business districts throughout Wisconsin.

## 2. CIVIL ENGINEER

Positions allocated to this classification series provide professional civil engineering services relating to the design, construction, operation, and maintenance of facilities. Responsibilities include providing troubleshooting and evaluation services in the assigned civil engineering specialty; providing consulting services; developing and implementing design requirements and required levels of quality for new construction as well as remodeling/renovation (including design development, bidding, project management and construction supervision on construction projects designed in-house); and budgetary control and contract administration of construction projects including review and approval of payment requests and change orders. Responsibilities may also include conducting on-site surveys of hospitals, long-term care facilities, community based residential facilities and other health care facilities.

### Specific program responsibilities and examples of engineering work performed include:

*Chief Civil Engineer or Project Manager - Other Agencies:* Administer building program for maintenance and construction for department structures, streets, bridges, walks and parking lots as delegated by, or in working with, the Department of Administration. Plan, develop and review short and long term goals. Develop information and formulate annual budget requirements for projects for the department. Prepare plans and specifications. Review the work of contractors. Review and approve design changes, contract change order, additions and/or deletions to contract quantities, and approve payments. Review plans for proper site considerations, sewer and water connections, etc. Conduct an annual inspection of all department structures. Analyze proposals and consult with customers concerning site conditions. Analyze and provide design recommendations. Develop scope, budget estimates and preliminary design. Establish schedules, determine resources required and provide coordination. Prepare construction documents and final project budgets. Act as the project manager for the bid and construction of projects. Investigate and recommend solutions for structural engineering problems in the department. Depending upon the specific department, the building projects will be specialized as to their use.

*Power Plant - University of Wisconsin (UW):* Oversee Shop supervisors and prepare maintenance and capital budgets. Coordinate construction and remodeling projects with engineers and craftsmen to perform work. Provide advice and consultation to UW departments, City of Madison, Bureau of Engineering, etc., and consult with UW regarding proposed building plans, buildings under construction, and problems in new buildings. OR Administer remodeling programs. Estimate costs, select materials and equipment, plan work schedules, coordinate and

supervise construction, and prepare cost reports. Oversee trades crews (electrical, sheet metal, plumbing, painting, carpentry, masonry, plaster, steam fitter, and concrete). Review and assess structural framing of campus buildings. Recommend locations of loads and structural supports. Prepare specifications for materials and equipment review plans and specifications prepared by the State Bureau of Engineering, consult with the supervisor in charge of water and sewage distribution systems, develop status remodeling reports, and advise UW administrators and staff regarding remodeling projects and issues. OR Plan, develop, and implement integrated maintenance and operations management systems for Facilities Planning and Management. Review and evaluate current programs and procedures within the Division. Identify methods for integrating existing programs into a new maintenance management system and develop specific recommendations for implementation. Design and develop appropriate specifications for the necessary software programs to accommodate the short and long-term needs of each project. Serve as a liaison with University System office to coordinate maintenance management programs and expectations. Develop preventive and predictive maintenance programs. Develop a work order management and job cost system. Develop a custodial management system.

*Health Facility Program - Department of Health Services:* Conduct on-site surveys of hospitals, long-term care facilities, community based residential facilities and other health care facilities. Evaluate the total physical plant to ensure quality and appropriateness of buildings and compliance with state and federal statutes and regulations. Provide expert professional engineering consultation to hospital boards, county agencies, nursing homes, professional architectural and engineering consultants, and interagency personnel to promote the improvement of the physical plant in long-term care facilities, hospitals, and other health care facilities. Conduct reviews of new construction plans for approval prior to construction. Conduct on-site construction inspections to assure compliance with approved plans and specifications. Conduct pre-licensure inspection to assure compliance with state health codes prior to occupancy. Analyze and interpret existing and proposed federal/state legislation and its requirements. Provide pertinent information and expert testimony in a variety of situations to legislators, legislative committees, public officials, public and private organizations and the general public.

### **3. COMMUNICATIONS ENGINEER**

This series encompasses professional engineering positions which administer and manage the complex telecommunications contract providing statewide long-distance telephone, teleconferences, data communications, and image telecommunications services; evaluates state of the art telecommunication network T1 backbone facilities and interfaces for voice, advanced teleconferencing, microwave and video transmissions; administer a complex set of administrative provisions contained in the Sate Network Contract and the Consolidated Data Network Amendment, or any other kinds of communication engineering functions. Provide oversight to communications engineering and plan specification development, oversight of network implementation, coordination of joint planning efforts between contractors and state agencies, long-range planning, and policy development.

No representative positions.

### **4. ELECTRICAL ENGINEER**

This series encompasses professional electrical engineering positions which provide services relating to design, construction, operation and maintenance of facilities. Responsibilities include provision of troubleshooting and evaluation services as the technical expert in the assigned engineering specialty; providing consulting services for the proper design and construction of electrical systems; development and implementation of electrical design requirements and

required levels of quality for new construction as well as remodeling/renovation (including design development, bidding, project management and construction supervision on construction projects designed in-house; budgetary control and contract administration of construction projects, including review and approval of payment requests and change orders).

Specific program responsibilities and examples of engineering work performed include:

*Chief Electrical Engineer or Project Manager - Other Agencies:* Provide electrical and/or electronic engineering expertise to a department in the areas of building electrical and/or electronic systems design, construction, remodeling, and maintenance which have highly complex electrical power and/or electronic security systems. Design complex electrical systems and/or electronic security systems for institutions. Develop, implement and monitor the approved construction program. Eliminate building and security systems' deficiencies, failures and code violations. Develop and implement the energy conservation program, including cost estimates, budgets, and timetables.

*Physical Plant:* Develop plans for the maintenance, operation, and future improvements to the electrical distribution system. Prepare layouts, drawings, and specifications for electrical work on new construction, remodeling, and maintenance projects involving electrical distribution, signals, and communications systems, special lighting installations, grounds lighting, fire alarm systems, and emergency electrical systems.

*Statewide Communications Network - Department of Transportation:* Provide electrical engineering support for the Statewide Microwave Network and assist with that support for the Statewide Communications Network. Assist with the application of engineering data processing to the statewide communications systems and manage the Bureau's special projects program. Assist with administrative duties and provide consulting services as required.

## 5. ELECTRONIC ENGINEER

This series encompasses professional electronic engineering positions relating to design, construction, operation and maintenance of all state agencies' facilities. Responsibilities include provision of troubleshooting and evaluating services as the technical expert in the assigned engineering specialty; providing consulting services for the proper design and construction of electronics systems; development and implementation of electronic design requirements and required levels of quality for new construction as well as remodeling/ renovation (including design development, bidding, project management and construction supervision on construction projects designed in-house; budgetary control and contract administration of construction projects, including review and approval of payment requests and change orders), or other kinds of electronic engineering functions such as designing electronic security systems.

Specific program responsibilities and examples of engineering work performed include:

*Chief Electronic Engineer or Project Manager - Other Agencies:* Plan, design, and review the designs of private consultants for very complex systems which involve entire building or institution-wide systems such as telecommunication and data systems, fire alarm and smoke detection systems, radio and personal security systems, overall security systems, paging and intercom systems, and other related systems. Prepare project cost estimates and various other activities relating to construction, performance and maintenance of electronic systems in state facilities. Perform project management duties which include reviewing and approving design documents, coordinating activities with institution staff and consultants, and managing related engineering services and construction contracts on delegated design project.

*Electronic Engineer - Department of Natural Resources:* Function as a technical expert for the engineering design, evaluation, construction, operation, and maintenance of specialized air pollution monitoring instruments, data acquisition, and ancillary equipment. Utilize electronic test and related equipment. Train District and Bureau staff in telemetry operations, servicing, and calibration. Provide complex engineering design, construction, installation, maintenance, troubleshooting, and calibration of real-time telemetry system for the purpose of data acquisition and instrument control at remote air monitoring stations. Provide instruments which provide ambient air data to assess ambient air quality and modeling related to permitting and conditions affecting industry throughout Wisconsin. Provide qualified and accurate ambient data for air quality matter.

*Electronic Unit Leader - Department of Natural Resources:* Coordinate, review and perform engineering design, project evaluation, construction and execution, operation, and troubleshooting of specialized air pollution monitoring instruments, data acquisition, and ancillary equipment. Utilize and maintain electronic test and related equipment. Guide and train staff in telemetry operations, servicing, and calibration of equipment. Perform complex engineering design, construction, installation, maintenance, repair, and calibration of real-time telemetry system for purposes of data acquisition and instrument control at remote air monitoring stations. Provide instruments which provide ambient air data to assess ambient air quality and modeling related to permitting and conditions affecting industry throughout Wisconsin. Provide qualified and accurate ambient data for air quality matters.

## 6. MECHANICAL ENGINEER

This series encompasses professional mechanical engineering positions which provide services relating to design, construction, operation, and maintenance of all state agency facilities. Responsibilities include troubleshooting and evaluation services as the technical expert in the assigned mechanical engineering specialty. Provide professional engineering consulting services for the proper design and construction of mechanical systems controls. Develop and implement mechanical design requirements and required levels of quality for new construction as well as remodeling/renovation (including design development, bidding, project management and construction supervision on construction projects designed in-house); and budgetary control and contract administration of construction projects, including review and approval of payment requests and change orders.

Specific program responsibilities and examples of engineering work performed include:

*Chief Mechanical Engineer or Program Manager - Other Agencies:* Provide mechanical and civil engineering expertise to a department in the areas of building mechanical systems design, construction, remodeling, and maintenance. Design complex mechanical systems and related site utilities for institutions. Implement and monitor the approved construction program to ensure the quality of work and compliance with state codes, Life Safety Code, and departmental and federal regulations. Manage environmental hazards at all institutions including asbestos and underground fuel tanks. Eliminate building and heating plant deficiencies, failures, and code violations. Develop construction programs, including cost estimates, budgets, and timetables. Eliminate functional and code deficiencies in institutional water supply and storm and sanitary sewers. **OR** Analyze and evaluate systems performance and needs assessment in the areas of mechanical and electrical systems, custodial and grounds operations, and equipment services. Review and evaluate current programs and procedures. Identify methods for integrating existing programs into a new maintenance management system and develop specific recommendations for implementation. Develop necessary training and safety coordination programs. Evaluate software



packages currently used and coordinate with staff on the implementation of approved plans and programs.

*Specialty Area:* Review and develop engineering calculations for energy conservation measures on schools and hospitals. Provide technical assistance to engineering/ architectural firms in the preparation of energy audits and energy conservation recommendations. Provide training regarding grant applications. Provide on-site monitoring to review the installation and perform troubleshooting where necessary. Act as a liaison between manufactures, schools, and hospitals and their consultant engineers. **OR** Review and approve designs and analysis work done by consultants and agency staff. Develop plans and specifications for projects not assigned to outside consultants. Provide specialized technical support for plumbing and fire protection system design requirements. Direct and provide mechanical engineering troubleshooting, inspection, and evaluation services to state agencies. Provide project management and contract administration services.

### III. QUALIFICATIONS

The qualifications required for these positions will be determined at the time of recruitment. Such determinations will be made based on an analysis of the goals and worker activities performed and by an identification of the education, training, work, or other life experiences which would provide reasonable assurance that the knowledge and skills required upon appointment have been acquired.

### IV. ADMINISTRATIVE INFORMATION

These classification series were created effective October 12, 1997 and announced in Bulletin CC/SC-74 to describe positions which perform various types of engineering work for state agencies. The creation of these classifications resulted from the Governor's Human Resource Reform Commission recommendation to simplify the classification system. This action resulted in the abolishment of the following classification series (Architect class codes 26201 through 26205, Civil Engineer class codes 26501 through 26505, Communications Engineer class codes 29001 through 29005, Electrical Engineer class codes 29301 through 29305, Electronic Engineer class codes 29201 through 29205, Mechanical Engineer class codes 29801 through 29805, and Specification Writer class codes 26601 through 26605).

This classification specification, which previously described both represented and nonrepresented positions, was modified effective March 12, 2000, and announced in Bulletin CLR/SC-109, in order to reflect the removal of nonrepresented (i.e., management positions) from the specifications and the abolishment of the following classifications: Architect-Advanced-Management, Civil Engineer-Advanced-Management, Communications Engineer-Advanced-Management, Electrical Engineer-Advanced-Management, Electronic Engineer-Advanced-Management, Mechanical Engineer-Advanced-Management, and Specification Writer-Advanced-Management. The abolished classifications were replaced with the Architect/Engineer Management classification which was created effective March 12, 2000, and announced in Bulletin CLR/SC-109. This classification series was modified effective October 14, 2007 and announced in bulletin OSER-0171-MRS/SC to reflect the abolishment of the Specification Writer from 2006 and to update the format of the specification.

The classification specification series was modified effective June 30, 2013 and announced in Bulletin OSER-0327-MRS/SC to reflect changes to the qualification language that better communicate the minimum qualifications that are required for positions in this series.

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26271; 26561; 29061; 29361; 29261; 29861