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FSN-1100 ENGINEERING AND ARCHITECTURE GROUP

(TL:FSNH-13; 10-21-93)

This group includes all positions the duties of which are to perform professional, sub-professional, and technical work in the engineering and architecture fields.

Series included in this group are:

Engineering Series	FSN-1105
Architecture Series	FSN-1110

This occupational group includes a very small job population in the worldwide FSN Position Classification System. In fact, so very few architect positions will exist that no standards will be published for the Architecture Series. The few engineer positions worldwide will exist primarily in AID missions, the remaining few non-AID positions being found in embassy GSO operations, with responsibility for professional engineering services to embassy and associated agencies in connection with the mission's office buildings, residential properties and related facilities.

Care must be exercised by users of those standards to assure that (1) where fully professional knowledges, skills and abilities (KSAs) are stated requirement, they are indeed required to perform the work involved and (2) where such KSAs are required, that at least 25% of the time of the employee will clearly be spent on fully professional work. In the case of State positions, few embassies will require a professional engineer position and no more than one professional engineer position will normally be found in any GSO operation in a mission.

FSN-1105 ENGINEERING SERIES

This series includes (1) all positions the duties of which are to perform work which requires professional knowledge of one or more of the several fields of engineering, e.g. civil, mechanical, electrical, etc., gained through collegiate study and the acquisition of an engineering degree and through subsequent practical professional experience; and (2) sub-professional and technical positions the duties of which are to perform work ancillary to professional engineering duties.

The titles of professional engineering positions will be parenthetically designated to indicate the field of engineering with which the position is concerned, e.g., Engineer (Civil), Engineer (Mechanical), etc. Positions which perform work in two or more fields of engineering will be designated as general engineers, i.e., Engineer (General). AID positions will be identified by (AID) following the job title.

The series includes:

Engineer	FSN-1105-12
Engineer	FSN-1105-11
Engineering Draftsman	FSN-1105-7
Engineering Inspector	FSN-1105-7

FSN-1105-12 INTERAGENCY POSITION CLASSIFICATION STANDARDS

GROUP: Engineering and Related
TITLE: Engineer (AID)

SERIES: Engineering
LEVEL: FSN-1105-12

BASIC FUNCTION:

As recognized engineering expert serves as technically responsible FSN engineer for one or more large and complex AID program areas which involve substantial and exception-ally complex engineering aspects relating to the design, implementation and administration of technical projects for road and irrigation systems, bridges, facilities, etc.

MAJOR DUTIES AND RESPONSIBILITIES:

Serves as the technically responsible FSN professional engineer for one or more AID program areas of the scope and complexity indicated above. Develops designs, drawings, specifications, detailed engineering plans and cost estimates for projects in assigned program area(s) which include but are not limited to road systems, industrial facilities, flood control dams, etc.; and/or reviews, evaluates and makes professional recommendations concerning the engineering feasibility of plans developed by proposers of projects. Reviews invitations to bid, bids, award recommendations and contracts for engineering accuracy and technical adequacy. Monitors the adequacy and acceptability of the engineering aspects of project construction work through field inspections, review of contractor reports and meetings with project personnel. Submits reports on project progress, including professional analyses of engineering and related problems and recommendations for corrective action. Maintains Liaison with contractors and host government personnel responsible for project implementation, scheduling, procurement and compliance with local building and construction codes for the purpose of facilitating the resolution of problems. May supervise a staff of engineering draftsmen, engineering inspectors, clerical support personnel and, where needed, a lower level professional FSN engineer.

As the AID mission's sole overall expert engineer, or its sole expert engineer in a particular engineering specialty involving extremely broad scope, diverse and complex projects, exceptional reliance is placed upon the employee's professional perception of the engineering dimensions, needs, costs, feasibility and related requirements of the engineering projects involved. On the whole, there is limited, if any, technical supervision of the work at this level and the incumbents of positions at this level as recognized experts in their field, are given exceptional freedom in all stages of the work.

DESIRED QUALIFICATIONS:

EDUCATION: A B.S. or equivalent collegiate degree in civil or another appropriate field of engineering is required.

EXPERIENCE: From six to eight years of progressively responsible experience as a professional engineer are required. Preferably four years of this experience will be in AID engineering projects.

LANGUAGE: Level 4 English language ability (fluent) is required.

KNOWLEDGE: Must have expert professional knowledge of the field of engineering in which engaged and a sound knowledge of allied fields bearing upon the engineering work involved. Must have an expert knowledge of building and construction practices, and a comprehensive knowledge of local building and construction codes.

ABILITY: Must have professional engineer's license or other appropriate (for the host country) credentials in the appropriate field of engineering. Must have substantial skill in preparing engineering reports, specifications and related materials in English.

DISTINGUISHING FEATURES:

This is the highest level of professional engineering work recognized by the Engineering Series. Engineering positions at this level are distinguished from other positions in the Engineering Series by responsibility for serving as the technically responsible FSN engineer for one or more AID program areas in which the engineering work is so broad, diverse and complex as to fully support the need for expert engineering know-how. Where technical guidance is available, it is seldom on a local basis. In any case, engineers at this level are expected to operate with a high degree of technical independence, within the policy guidelines provided and according to AID and other agency construction, engineering and other directives, engineering reference works and established professional engineering practices, both international and local. A high degree of professional engineering originality, creativity and judgment is required and considerable tact, diplomacy and skill is involved in the extensive range of important, high level personal contacts. May supervise a staff of engineering draftsmen, engineering inspectors, clerical personnel and, in some cases, lower level professional engineers but such responsibility is not grade controlling.

In addition to the expert role, AID engineer positions at FSN-12 level differ primarily from those at FSN-11 level in that they have responsibility for one or more large and complex program areas which fully support(s) the need for the highest level engineering expertise whereas FSN-11s are normally involved only in one or more engineering projects (within one or more program areas) or serve as the sole engineer in AID missions which have smaller and less complex programs to service.

Typically, (1) an AID mission will have only one FSN-12 engineer position which will serve the engineering needs of all program areas of the mission and (2) the FSN-12 level will be found only at missions which have engineering work of such professional scope and complexity as to fully utilize this level of expertise.

FSN-1105-11 INTERAGENCY POSITION CLASSIFICATION STANDARDS

GROUP: Engineering and Related
TITLE: Engineer

SERIES: Engineering
LEVEL: FSN-1105-11

BASIC FUNCTION:

(1) Provides professional engineering services in the planning, design, maintenance of (a) one or more substantial and fairly complex AID projects; or (b) all engineering projects of a smaller, less complex AID mission which has fairly standard engineering work; or (2) serves as consulting engineer on the construction, alteration, maintenance and major repair of embassy and/or associated agency facilities and equipment.

MAJOR DUTIES AND RESPONSIBILITIES:

(1) Provides engineering advice to AID mission staff and host country officials on engineering project plans, feasibility studies, cost estimates, estimates, bills of material and work schedules for compliance with approved engineering principles and practices. Reviews invitations to bid, bids, award recommendations and contracts for accuracy and technical adequacy. Conducts on-site inspections of engineering projects to ensure that work is conducted according to sound professional engineering principles and practices and meets applicable engineering design and construction standards. Makes recommendations to correct deficiencies and resolve problems encountered.

- OR -

(2) As directed, prepares plans, designs, drawings, specifications, bills or material and cost estimates for construction, alteration and major maintenance repair projects of embassy and/or associated agency buildings, facilities and equipment. Analyzes contractors' bids and makes comments and recommendations as to contractor reliability and capability, cost of alternative specifications, designs, etc. Advises concerning the purchase of heavy machinery and equipment needed by post and concerning methods of improving and reducing the costs of maintenance programs. Maintains contact and negotiates with public utility organizations and local authorities of government-owned or leased buildings. Prepares reports on the engineering aspects of building maintenance, operations and repairs. May supervise an engineering inspector or draftsman.

DESIRED QUALIFICATIONS:

EDUCATION: A B.S. or equivalent university degree in civil or another appropriate field of engineering is required.

EXPERIENCE: From five to seven years of progressively responsible experience as a professional engineer are required. Preferably three years of the experience will be in USG engineering operations.

LANGUAGE: Level 4 English ability (fluent) is usually required.

KNOWLEDGE: Must have a thorough professional knowledge of the field of engineering in which engaged and a general knowledge of allied fields. Must have a thorough knowledge of building and construction practices and a good knowledge of local building and construction codes.

ABILITY: Must have a professional engineer's license or other appropriate (for the host country) credentials in the appropriate field of engineering. Must be able to prepare written reports in English.

DISTINGUISHING FEATURES:

This is the lower of two levels of professional engineering work defined by the Engineering Series. Engineer positions at this level provide professional engineering advice and service in the design, implementation and evaluation of the engineering aspects of one or more AID projects or in the construction, alteration, maintenance and major repair of buildings, grounds and equipment of embassies and/or associated agencies. Professional supervision is normally available on unusual engineering problems but engineers at this level are expected to operate in the independent manner characteristic of fully qualified professionals. There is a considerable volume of agency guidelines available in addition to standard engineering reference works and handbooks and established professional engineering practices, both international and local. A high degree of professional judgment and experience is required to apply these guidelines correctly as well as considerable skill in dealing with people of all levels. Engineers FSN-11 may supervise an Engineering Inspector or Engineering Draftsman but supervision over others is not a requirement for classification to this level. Engineers FSN-12 are found only in AID Missions. They differ from AID Engineers FSN-11 in having responsibility for one or more AID engineering program areas of exceptional scope, diversity and complexity whereas FSN-11 AID Engineers serve primarily as project engineers (although some may serve as sole engineers responsible for all engineering programs in smaller and less complex AID missions). Also each FSN-12 serves as the AID Mission's FSN engineering expert in the specific area of professional engineering expertise, with responsibilities going well beyond those of typical FSN-11 engineer positions.

SUPPLEMENTARY NOTES:

Users of this standard should assure that GSO-type embassy construction and maintenance work fully supports the need for professional engineering education and experience. This is possible primarily in posts which have a substantial amount of continuing involvement in major construction projects, as opposed to the usual GSO-type buildings and grounds maintenance, repair and operation activities. At those embassies where the function of providing professional engineering consultative services is combined with responsibility for management of the buildings and grounds maintenance programs, the position should be classified in accordance with the Mixed Position Rule, considering this standard and the standards for the Maintenance Management Series, FSN-1205. In any cases and as previously stated, care should be taken to assure that the position does indeed have a paramount requirement of fully professional engineering education and training, and professional knowledges, skills and abilities, and that such requirement is truly job related (i.e., that the stated professional qualification requirements are utilized fully in that performance of professional engineering work for at least 25% of the time). In any case, no more than one engineer position will normally be found at an embassy.

FSN-1105-7 INTERAGENCY POSITION CLASSIFICATION STANDARDS

GROUP: Engineering and Related
TITLE: Engineer Inspector

SERIES: Engineering
LEVEL: FSN-1105-7

BASIC FUNCTION:

Makes on-site engineering inspections of construction projects and reports on compliance or noncompliance with project plans and specifications to engineer supervisor.

MAJOR DUTIES AND RESPONSIBILITIES:

Makes on-site engineering inspections of specific segments of work on construction projects such as road building, bridge building, construction of flood control dams, erection of industrial facilities, etc. Specific segments of construction work inspected include grading, excavation, back-filling, and compaction of fill, various stages of foundation and structural concrete work, the erection of a structural steel work, the building of frame and masonry buildings, etc. Observes and inspects work in progress and upon completion to insure compliance with project plans and specifications and acceptable work practices and workmanship. Inspects materials and equipment prior to use or installation to see that they meet specifications. Checks on compliance with prescribed safety laws, rules, and practices. Notifies contractor's representatives of deficiencies and attempts to secure their correction. May have authority to reject materials, equipment, work, and workmanship which do not conform with the project plan and specifications in some cases. Makes regular oral and written reports to engineer supervisor.

DESIRED QUALIFICATIONS:

EDUCATION: Completion of secondary school is desirable. Completion of vocational or technical training in engineering inspection, or vocational training or apprenticeship recognized as producing a journeyman mechanic in the construction trades, plus on-the-job training in engineering inspection is required.

EXPERIENCE: One year's experience as an engineering inspector, or three years experience as a construction supervisor and construction journeyman mechanic, plus on-the-job training in engineering inspection.

LANGUAGE: Level 3 English language ability (good working knowledge) is required.

KNOWLEDGE: Must have good knowledge of engineering inspection practices and procedures, of construction practices and techniques, and of the work of the principal construction trades. Must be able to read and interpret engineering plans, specifications and blueprints. Must know safety practices applicable to the construction industry and local safety laws.

DISTINGUISHING FEATURES:

This is the only level of engineering inspection work described in the Engineering Series. Engineering Inspector is distinguished from other types of work in the Engineering Series by performance of on-site inspections of materials, equipment, work, and workmanship at construction project sites on the basis of knowledge of the engineering plans and specifications for the project, and knowledge of engineering inspection practices and procedures, construction practices and procedures, and the work of the principal construction trades. Only general supervision is received, and guidelines consist mainly of the engineering plans and specifications for the project, and procedures. Considerable judgment is employed in accepting or rejecting materials, equipment, work and workmanship. Contacts with contractor representatives require self confidence and resolution.

Most of these positions will be found in the larger original construction projects (such as those involved in AID technical projects). Normally, they will not be found in an embassy's typical GSO-type buildings, grounds, and facilities maintenance and operation program.

SUPPLEMENTARY NOTES:

Final authority to accept or reject the engineering aspects of construction work is almost invariably the responsibility of the professional engineer who is designated as the technically responsible engineer in charge of the project or a major segment of the project. The Engineering Inspector serves as the responsible engineer's eyes for segments of a project which the engineer cannot monitor personally, and, in some cases, the Engineering Inspector is given authority to accept or reject materials, equipment, work and workmanship within the stated specifications and requirements of the project.

This standard depicts what is usually the only level of engineering inspection; however, in rare cases, lower levels of engineering inspection work may exist where assignments involve little or no judgment.

FSN-1105-7 INTERAGENCY POSITION CLASSIFICATION STANDARDS

GROUP: Engineering and Related
TITLE: Engineering Drafter

SERIES: Engineering
LEVEL: FSN-1105-7

BASIC FUNCTION:

Provides engineering drafting services.

MAJOR DUTIES AND RESPONSIBILITIES:

Performs complex drafting work. On the basis of general information, usually supplied by a professional engineer, prepares detailed working drawings and specifications for construction and alteration projects. May visit the site of the proposed project to obtain measurements and other necessary data which will form the basis for drawing details relative to electrical lines and water, sanitary, and other piping systems. Maintains files of engineering drawings and specifications for government-owned or leased property, and updates or reworks them in connection with maintenance, repair, or alteration operations. Makes complex tracings of details on existing plans and drawings. Enlarges sections of drawings. Operates blueprint machine to make blueprints. May maintain contact with local authorities on routine matters related to building regulations.

DESIRED QUALIFICATION:

EDUCATION: Completion of secondary school is desirable. Completion of vocational or technical school recognized as producing a fully qualified engineering draftsman is required.

EXPERIENCE: One to three years of engineering draftsman experience is required.

LANGUAGE: Level 3 English language ability (good working knowledge) is required.

KNOWLEDGE: Must have a good knowledge of engineering drafting practices. Must have a good general knowledge of local building codes and requirements.

ABILITY: Must possess local engineering draftsman's certificate if this is a local requirement.

DISTINGUISHING FEATURES:

This is the only level of engineering drafting work recognized by the Engineering Series. Engineering Drafter is distinguished from other positions classified in this series by the performance of complex engineering drafting work and other sub-professional engineering related work, usually under the direction of a professional engineer who assigns duties and reviews completed drawings and other work. Guidelines are provided by established drafting practices, engineering reference tables, and supervisory instruction and guidance.

Few of these positions exist throughout the worldwide system, most of the few are in AID missions, and the very few embassy positions exist in posts which have a substantial amount of continuing involvement in major construction projects, as opposed to the usual GSO-type buildings and grounds maintenance, repair and operation activities.

This standard will not be used in the many GSO-type situations which require infrequent drafting services that involve minor changes to existing drawings and the preparation of rough (not-to-scale) sketches of buildings and system. Such work is not at FSN-7 level and is typically a minor task of a mixed position (e.g., the Maintenance Supervisor's position) which should be classified based on the mixed position principle.

FSN-1110 ARCHITECTURE SERIES

This series includes all positions the duties of which require the professional and business capacity, creative and artistic sense, and technical ability of architects to program, plan, design, evaluate, coordinate, advise on, administer, supervise or perform research for the creation, construction, alteration, rehabilitation, or restoration of buildings and facilities. The series also includes sub-professional and technical positions the duties of which are to perform work ancillary to professional architectural duties.

No position classification standards have been prepared for this series because of the extremely limited incidence of local positions which would be properly classified in the series.