MIAMI DADE COUNTY

TECHNICAL CERTIFICATION CATEGORIES

STRATEGIC PROCUREMENT DEPARTMENT
A&E SERVICES
PROFESSIONAL SERVICES CERTIFICATION

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CATEGORY/ SUB-CATEGORY INDEX	CATEGORY DESCRIPTION

1.00 TRANSPORTATION PLANNING

This class of work encompasses all aspects of transportation planning, necessary to generate comprehensive studies ranging in scope from the total transportation of a regional area to elements of a specific mode within an urban area. These studies may involve forecasting of short and long-range transportation needs; evaluation of alternate transportation systems and their location within a study area; and feasibility analyses in connection with specific transportation modes and their facilities, including engineering, life cycle costs, revenue, and ecological considerations. The above-mentioned transportation modes include roadway and rail systems, Freight and Logistic Master Planning and Facilities Master Planning for ports and waterway systems; and their study may concern the improvement or expansion of existing facilities, construction of new facilities and potential mass and rapid transit applications. The work may include data collection, modeling, alternate system testing, construction cost estimating, system and site selections, public interaction program and permitting process participation, conceptual systems design and planning, and preparation of summary reports on study findings with all necessary test and exhibits.

PROFESSIONAL STATUS:

Registration with the Florida State Board of Professional Engineers for the qualifier working full time for the company; **or** the American Institute of Certified Planners (AICP) certification for the qualifier, working full time for the company **and** approval Letter from Florida Department of Transportation (FDOT) for Group 13 Planning for the Firm.

ADEQUACY OF PERSONNEL:

At least one (1) Florida registered professional engineer working full time for the company, **or** the American Institute of Certified Planners (AICP) certification for the qualifier, working full time for the company **and** approval Letter from Florida Department of Transportation (FDOT) for Group 13 Planning for the Firm.
The number of Florida registered professionals and other technical support personnel required for specific projects, will be determined during the consultant selection process on a project by-project basis against the Selection Committee's estimate of the consultant personnel, required to perform the work adequately and competently in the desired time frame.

PAST RECORD, EXPERIENCE, AND CAPABILITY:

TC Category Form 2 must contain specific information as to the technical nature of projects demonstrating satisfactory experience activities required by this class by the full-time employed Florida registered professional engineer(s) working full time for the company, **or** AICP certification for the qualifier in their specific fields working full time for the company **and** approval Letter from FDOT for Group 13 Planning for the business, used by the firm to obtain County Certification. The Certification Certificate will indicate the main work class category number (1.00) preceded by the applicable work class designations (1.01 through 1.04) listed below.

The Certification Certificate will indicate the main work class category number (1.00) preceded by the applicable work class designations (1.01 through 1.04) listed below.

1.01 URBAN AREA AND REGIONAL TRANSPORTATION PLANNING

1.02 MASS AND RAPID TRANSIT PLANNING

~~1.03 AVIATION SYSTEMS AND AIRPORT MASTER PLANNING.~~

Services performed for Aviation Systems and Airport Master Planning are part of the following Technical Categories:

TC 23.00	Aviation Acoustical and Land Use Compatibility Planning Services and;
TC 25.00	Aviation Planning Consultant Services.

1.04 PORT AND WATERWAY SYSTEMS PLANNING (including Freight and Logistic Master Planning and Facilities Master Planning)

PROFESSIONAL STATUS:

Registration with the Florida State Board of Professional Engineers for the qualifier working full time for the company; **or** the American Institute of Certified Planners (AICP) certification for the qualifier, working full time for the company **and** approval Letter from Florida Department of Transportation (FDOT) for Group 13 Planning for the Firm.

Satisfactory experience must be demonstrated in the activities required by this class by the full-time employed Florida registered engineer(s) or other professional(s) used by the firm to obtain County Certification, and by the bona fide employees thereof, if required by a particular project.

CATEGORY/ SUB-CATEGORY INDEX	CATEGORY DESCRIPTION

2.00 MASS TRANSIT SYSTEMS

This class of work is defined as the development of all physical elements, Vital and non-Vital Software and Hardware Systems, Software Quality Assurance, Information Security, and operational aspects of mass transit systems comprised of one or more transportation modes.

PROFESSIONAL STATUS:

Registration with the Florida State Board of Professional Engineers.

ADEQUACY OF PERSONNEL:

At least one Florida registered professional engineer is required. The number and specialties of Florida registered professionals and other technical support personnel required for specific projects, will be determined during the consultant selection process on a project-by-project basis against the Selection Committee's estimate of the consultant personnel, required to adequately and competently perform the work in the desired period.

PAST RECORD, EXPERIENCE, AND CAPABILITY:

TC Category Form 2 must contain specific information as to the technical nature of projects demonstrating satisfactory experience activities required by this class by the full-time employed Florida registered professional engineer(s) in their specific fields, used by the firm to obtain County Certification.

The Certification Certificate will indicate the main work class category number (2.00) proceeded by the applicable work class designations (2.01 through 2.06) listed below.

2.01 MASS TRANSIT PROGRAM (SYSTEMS) MANAGEMENT

2.02 MASS TRANSIT FEASIBILITY & TECHNICAL STUDIES

2.03 MASS TRANSIT VEHICLE & PROPULSION SYSTEMS

2.04 MASS TRANSIT CONTROLS, COMMUNICATIONS & INFORMATION SYSTEMS

2.05 GENERAL QUALITY ENGINEERING

2.06 MASS TRANSIT SAFETY CERTIFICATION FOR SYSTEM ELEMENTS

Satisfactory experience must be demonstrated in the activities required by this class by the full-time employed Florida registered engineer(s) used by the firm to obtain County Certification, and also by the bona fide employees thereof, if required by a particular project.

CATEGORY/ SUB-CATEGORY INDEX

SUB-CATEGORY DESCRIPTION OF SERVICES

2.01 MASS TRANSIT PROGRAM (SYSTEMS) MANAGEMENT

The work may include: management of system development programs from concept to operational readiness, involving coordination between government agencies, consultants, contractors and vendors, and the monitoring or performance of all necessary planning, design contracting, purchasing, construction, testing and programming activities.

PROFESSIONAL STATUS:

Registration with the Florida State Board of Professional Engineers for the qualifier (s).

2.02 MASS TRANSIT FEASIBILITY & TECHNICAL STUDIES

Performance of feasibility and technical studies relative to the management, operation, design, equipment and other requirements of existing and proposed mass transit systems, including data collection and interpretation, community interaction program participation, economic assessments, engineering and environmental analyses, and preparation of funding applications and summary reports with recommendations.

PROFESSIONAL STATUS:

Registration with the Florida State Board of Professional Engineers for the qualifier (s).

2.03 MASS TRANSIT VEHICLE & PROPULSION SYSTEMS

Development of prototype vehicles or devices, associated propulsion/drive systems and operational sub-systems for mass transit applications, including comparative technical; economic and environmental analyses of state-of-the-art systems and the design, modeling, building, installation, testing, demonstration and evaluation of prototype vehicles or innovative mass transit concepts.

PROFESSIONAL STATUS:

Registration with the Florida State Board of Professional Engineers for the qualifier (s).

2.04 MASS TRANSIT CONTROLS, COMMUNICATIONS, & INFORMATION SYSTEMS

Development of prototype vehicles or devices, associated propulsion/drive systems and operational sub-systems for mass transit applications, including comparative technical; economic and environmental analyses of state-of-the-art systems and the design, modeling, building, installation, testing, demonstration and evaluation of prototype vehicles or innovative mass transit concept; and providing complete design, preparation of construction documents, administration of construction or installation contracts, testing and operational programming for modification of existing mass transit system

components or addition of new components such as: vehicle control and operational systems, communication and public information systems, elevated and underground structures for vehicle conveyance, electrical and mechanical systems, and buildings such as stations, terminals, and operations, maintenance and administration facilities. This class of work also involves the assurance of compliance of all Software categories including development, documentation, quality assurance, Project Management and standards compliance.

Lead independent evaluator certification by the Software Engineering Institute (SEI) is required on a project specific basis. The evaluation shall use the Capability Maturity Model Integrated for Systems Engineering and Software (CMMI¬ SEISW) from the Software Engineering Institute (SEI).

PROFESSIONAL STATUS:

Registration with the Florida State Board of Professional Engineers for the qualifier (s).

2.05 GENERAL QUALITY ENGINEERING

This class of work is defined as the planning, design, preparation of documentation, and administration of Transit Quality Assurance Program Plans. The work may include: development of comprehensive quality systems for transit projects; estimate of cost of quality assurance and quality control activities for projects and contracts; monitoring of implementation of quality programs; evaluation of effectiveness of quality programs; quality engineering studies to identify, evaluate and solve technical problems of processes.

PROFESSIONAL STATUS:

Preferable one member of the American Society for Quality (ASQ) with one or more of the following certifications: ASQ Certified Quality Engineer (CQE), ASQ Certified Quality Manager (CQM), ASQ Certified Reliability Engineer (CRE), ASQ Certified Quality Auditor (CQA), Registration Accreditation Board (RAB) Certified Management Systems Auditor.

ADEQUACY OF PERSONNEL:

The number of certified professionals and other supporting personnel required for specific projects will be determined during the consulting selection process on a project-by-project basis against the Selection Committee's estimate of the consultant personal required to adequately and competently perform the work in the desired period.

PAST RECORD, EXPERIENCE, AND CAPABILITY:

Documented evidence of relevant experience of firm's professionals must include specific information as to the nature of projects demonstrating leading role in the development and management of quality projects or systems in accordance with international quality standards and or federal regulations. Experience in quality projects compliant to the Federal Transit Administration Quality Assurance and Quality Control Guidelines may be evaluated.

2.06 MASS TRANSITY-SAFETY CERTIFICATION FOR SYSTEM ELEMENTS

This class of work involves the performance of safety certification for fixed guideway new starts, and extensions or replacement of existing system elements.

PROFESSIONAL STATUS:

A bachelor's degree and technical training in System Safety and/or Fixed Guideway Transit System Elements are required. Responsible participation in a Safety Certification Program for a New Start System may substitute for one year of formal education.

PAST RECORD, EXPERIENCE, AND CAPABILITY:

Eight (8) years of System Safety experience with an operating fixed guideway transit system(s) of which three years, minimum, were in a supervisory position involving the safety of the following System Elements: Automatic Train Control, Communications, Traction Power, Track, Guideway and Transit Vehicles; Central Control, Maintenance and Passenger Station Facilities, including ADA requirements; and the safety-related aspects of operations and maintenance rules, procedures and training.

The successful candidate will have demonstrated capabilities to perform Hazard Analyses, Risk Assessments and Hazard Resolution in accordance with established precedence; develop Safety Program Plans and Safety Requirements for all System Elements and have working knowledge of NFPA 130 (2000), 49 CFR 659, and FTA Technical Advisories and Guideline Documents, such as "Compliance Guidelines … for New Starts Projects", relating to Safety Certification. Responsible participation in a Safety Certification Program for a New Start System is required.

CATEGORY/ SUB-CATEGORY INDEX	CATEGORY DESCRIPTION

3.00 HIGHWAY SYSTEMS

This class of work encompasses site development, design of parking lot facilities, master planning, and complete design, preparation of construction documents and administration of construction contracts for all types of highway facilities, including roadways, bridge structures and all aspects of traffic operations and control systems. The work includes: roadway facilities ranging from two-lane or multi-lane, limited access rural interstate highways and urban expressways, with bridges, tunnels, over/underpasses, culvert crossings, interchanges, storm drainage systems, curbs and gutters, pavement markings, signing, roadway lighting and signalization, fixed bridge structures ranging from single spans of reinforced, pre-stressed concrete or steel with simple bent foundations or spread footings to multi-span, high-level structures with underwater piers or complex interchange structures with curved girders; moveable bridges of all types including swing, lift and bascule bridges above water and underwater bridge and structural inspections; collection of field data such as traffic counts, travel times, origin/destination surveys, and signal inventories; research and interpretation of collected data for preparation of reports on existing traffic conditions with improvement recommendations; and development of new or improvement of existing traffic control systems, which may involve system performance and cost analyses, hardware and software design, supervision of system installation, testing, "de-bugging" and operation, development of management plans and system documentation, and training of operating personnel.

PROFESSIONAL STATUS:

Registration with the Florida State Board of Professional Engineers.

ADEQUACY OF PERSONNEL:

At least one Florida registered professional engineer is required. The number of Florida registered professionals and other technical support personnel required for specific projects, will be determined during the consultant selection process on a project-by-project basis against the Selection Committee's estimate of the consultant personnel, required to adequately and competently perform the work in the desired period.

PAST RECORD, EXPERIENCE, AND CAPABILITY:

TC Category Form 2 must contain specific information as to the technical nature of the projects demonstrating satisfactory experience activities required by this class by the full-time employed Florida registered professional engineer(s) in their specific fields, used by the firm to obtain County Certification.

The Certification Certificate will indicate the main work class category number (3.00) proceeded by the applicable work class designations (3.01 through 3.12) listed below.

3.01 SITE DEVELOPMENT AND PARKING LOT DESIGN

3.02 MAJOR HIGHWAY DESIGN

3.02A TUNNEL DESIGN

3.02B MINOR HIGHWAY DESIGN

3.03 BRIDGE DESIGN

3.04 TRAFFIC ENGINEERING STUDIES

3.05 TRAFFIC COUNTS

3.06 TRAFFIC CALMING

3.07 TRAFFIC SIGNAL TIMING

3.08 INTELLIGENT TRANSPORTATION SYSTEMS ANALYSIS, DESIGN, AND IMPLEMENTATION

3.09 SIGNING, PAVEMENT MARKING, AND CHANNELIZATION

3.10 LIGHTING

3.11 SIGNALIZATION

3.12 UNDERWATER ENGINEERING INSPECTION

Satisfactory experience must be demonstrated in the activities required by this class by the full-time employed Florida registered engineer(s) used by the firm to obtain County Certification, and also by the bona fide employees thereof, if required by a particular project.

Firms must meet certain minimum specific requirements as detailed below, for certification in each of the following sub-categories:

CATEGORY/ SUB-CATEGORY INDEX	SUB-CATEGORY DESCRIPTION OF SERVICES

3.01 SITE DEVELOPMENT AND PARKING LOT DESIGN

This type of work includes designing, preparing construction plans, and writing specifications for site development projects and parking lot facilities. The design shall include geometric layout, pavement design, grading, and storm drainage, marking and signing.

3.02 MAJOR HIGHWAY DESIGN

This type of work includes, master planning, and complete design, preparation of construction documents and administration of construction contracts for all urban highways. The work includes new or major reconstruction projects with substantial capacity improvements such as adding two or more lanes, urban expressways, with tunnels, over/underpasses, culvert crossings, interchanges. Projects of this type generally include utility relocation, drainage design and permitting, maintenance of traffic plans, traffic engineering applications, intersection details, etc. The type of work includes arterial and collector roadways designed for the County and the Florida Department of Transportation.

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3.02A TUNNEL DESIGN

This type of work includes master planning and complete design, preparation of construction documents and administration of construction contracts for all types of tunnel facilities, both vehicular and utility (communication cables, gas, power lines, etc.). The work includes tunnel facilities ranging from two-lane to multi-lane

3.02B MINOR HIGHWAY DESIGN

This type of work includes roadway design for resurfacing and minor widening projects, which do not involve major reconstruction, new curb and gutter, or substantial capacity improvements. Projects of this type generally involve minor drainage, utility relocation, traffic operations improvements, miscellaneous design services, etc. The type of work includes local roads and roads associated with development activities

3.03 BRIDGE DESIGN

This type of work includes master planning, and complete design, preparation of construction documents and administration of construction contracts for all types of bridge structures. The work includes over/underpasses, culvert crossing, interchanges, fixed bridge structures ranging from single spans of reinforced, pre-stressed concrete or steel with simple bent foundations or spread footings to multi-span, high-level structures with underwater piers or complex interchange structures with curved girders; moveable bridge of all types including swing, lift and bascule bridges above water and underwater bridge and structural inspections.

3.04 TRAFFIC ENGINEERING STUDIES

This type of work is defined as the study of operational problems and the determination of traffic operational improvements for efficiency and safety. This work group includes studies for the following: signing, marking, and signal inventories; intersection and collision diagrams; signal warrant and intersection analysis; and travel time and delay studies. Many of the traffic engineering studies require knowledge and experience with traffic engineering computer programs such as SOAP, PASSER, and TRANSYT. This type of work requires the consultant to make specific recommendations to improve the operation efficiency at a particular location.

3.05 TRAFFIC COUNTS

This work includes conducting 24 hour, one to three day counts for approximately 450 permanent traffic count stations annually, or one-day 24 hours traffic counts, on as needed basis.

3.06 TRAFFIC CALMING

Traffic calming is the combination of physical measures that reduce the negative effects of motor vehicle use by changing the design of streets, and installing traffic calming devices to slow and reduce traffic, while encouraging pedestrians and cyclists activities. Traffic calming reduces traffic accidents, increases the safety of pedestrians, eliminates noise and pollution, enhances neighborhood aesthetics, and reduces crime.

This type of work includes operational analysis, designing, and preparing construction plans for traffic calming devices.

3.07 TRAFFIC SIGNAL TIMING

This type of work is defined as the timing of traffic signals to improve traffic flow and safety. This type of work includes data collection, intersection analysis and documentation, section analysis and documentation, timing implementation and fine-tuning and timing, and timing evaluation.

3.08 INTELLIGENT TRANSPORTAION SYSTEMS ANALYSIS, DESIGN, AND IMPLEMENTATION

This type of work is defined as the use of electrical engineering, electronics engineering, computer science, and traffic engineering to analyze, design, and implement real-time intelligent transportation systems. This includes system performance and cost analysis, system hardware and software design, development of management plans, system installation and operation, system testing and debugging, system documentation, and the training of operations personnel.

3.09 SIGNING, PAVEMENT MARKING AND CHANNELIZATION

This type of work includes designing, preparing construction plans, and writing specifications for signing, pavement marking, and channelization. Such work involves structural support and foundation calculations, and requires a basic knowledge of traffic engineering studies.

3.10 LIGHTING

This type of work includes designing, preparing construction plans, and writing specifications for roadway lighting improvements. Such work involves lighting calculations, pole location, foundation design, electrical circuit calculations and power supply and distribution design, and requires a basic knowledge of traffic engineering studies.

3.11 SIGNALIZATION

This type of work includes designing, preparing construction plans, and writing specifications for traffic signalization. Such work involves capacity calculations, signal operating plan development, timing calculations, equipment location, pole and foundation designs, etc., and requires a basic knowledge of traffic engineering studies and traffic signal retiming.

3.12 UNDERWATER ENGINEERING INSPECTIONS

All marine related engineering inspection, structural evaluation, soundings, damage assessment, design of repairs, and design of County's waterward infrastructure facilities. A Florida Registered Engineer shall perform underwater inspections and Certified Diver experienced in performing underwater inspections.

CATEGORY/ SUB-CATEGORY INDEX	CATEGORY DESCRIPTION
4.00	**AVIATION SYSTEMS**

This class of work, is defined as the planning, design, preparation of construction documents and administration of construction contracts for development of new, or improvement and/or expansion of existing aviation systems and associated facilities. The work may include: performance of studies to determine the extent and nature of airport development required to meet the long and short term aeronautical services demands of a specific area and preparation of summary reports analyzing the environmental, socio-economic, engineering feasibility and other factors affecting such development. Complete design of new and/or improvements to existing airside and landside airport facilities and equipment such as; runways, taxiways, aprons, control towers, terminal and cargo buildings, loading bridges, parking structures, access roads, traffic circulation for operational and commercial vehicles, aircraft maintenance and storage buildings. In addition to fueling, airfield pavement, lighting, marking and signage, navigational aids, foreign object detection systems, passenger circulation, baggage handling systems, passenger/baggage screening equipment, security systems, access control, PA systems, audio visual, information technology, telecommunications, aircraft rescue and firefighter facilities, radar systems, and safety during construction

PROFESSIONAL STATUS:

Registration with the Florida State Board of Professional Engineers.
Registration with the Florida State Board of Architects.

ADEQUACY OF PERSONNEL:

At least one Florida registered professional engineer and/or registered professional architect is required. The number of Florida registered professionals and other technical support personnel required for specific projects, will be determined during the consultant selection process on a project-by-project basis against the Selection Committee's estimate of the consultant personnel, required to adequately and competently perform the work in the desired time frame.

PAST RECORD, EXPERIENCE, AND CAPABILITY:

TC Category Form 2 must contain specific information as to the technical nature of projects demonstrating satisfactory experience activities required by this class by the full-time employed Florida registered professional engineer(s) and/or architect(s) in their specific fields, used by the firm to obtain County Certification.

The Certification Certificate will indicate the main work class category number (4.00) preceded by the applicable work class designations (4.01 and 4.02) listed below.

AVIATION SYSTEMS

4.01 ENGINEERING DESIGN

4.02 ARCHITECTURAL DESIGN

Satisfactory experience must be demonstrated in the activities required by this class by the full-time employed Florida registered engineer(s) and/or architect (s) used by the firm to obtain County Certification, and also by the bona fide employees thereof, if required by a particular project.

CATEGORY/ SUB-CATEGORY INDEX	CATEGORY DESCRIPTION
5.00	**PORT AND WATERWAY SYSTEMS**

This class of work, is defined as the planning, design, preparation of construction documents and administration of construction contracts for development of new, or improvement and/or expansion of existing port and waterway systems and associated facilities. The work may include: performance of feasibility and technical studies for sitting new port facilities, proposed new routes for water borne conveyance of passengers and cargo, determining the long and short range water transportation needs of a specific area, and finding solutions to system and facility operation problems; preparation of summary reports on study findings; and complete design including LEED certification, of new ports and/or improvements to existing inland and coastal port facilities such as wharfs, docks, piers, breakwaters, seawalls, ramps, cargo handling and storage facilities, terminal buildings, parking areas and access roads and related infrastructure.

PROFESSIONAL STATUS:

Registration with the Florida State Board of Professional Engineers. Registration with the Florida State Board of Architects.

ADEQUACY OF PERSONNEL:

At least one Florida registered professional engineer and/or registered professional architect is required. The number of Florida registered professionals and other technical support personnel required for specific projects, will be determined during the consultant selection process on a project-by-project basis against the Selection Committee's estimate of the consultant personnel, required to adequately and competently perform the work in the desired time frame.

PAST RECORD, EXPERIENCE, AND CAPABILITY:

TC Category Form 2 must contain specific information as to the technical nature of projects demonstrating satisfactory experience activities required by this class by the full-time employed Florida registered professional engineer(s) and/or architect(s) in their specific fields, used by the firm to obtain County Certification.

The Certification Certificate will indicate the main work class category number (5.00) proceeded by the applicable work class designations (5.01 and 5.10) listed below.

5.01 ENGINEERING DESIGN.

5.02 ARCHITECTURAL DESIGN.

5.03 CRUISE TERMINAL DESIGN

5.04 CRUISE TERMINAL EQUIPMENT DESIGN

5.05 CARGO TERMINAL DESIGN

5.06 CARGO TERMINAL EQUIPMENT DESIGN

5.07 SECURITY SYSTEMS

5.08 MARINE ENGINEERING DESIGN

5.09 ENVIRONMENTAL DESIGN

5.10 TRANSPORTATION SYSTEMS DESIGN

Satisfactory experience must be demonstrated in the activities required by this class by the full-time employed Florida registered professional as required by each category used by the firm to obtain County Certification, and also by the bona fide employees thereof, if required by a particular project.

CATEGORY/ SUB-CATEGORY INDEX

SUB-CATEGORY DESCRIPTION OF SERVICES

5.01 ENGINEERING DESIGN.

Engineering license for the firm, certifier and qualifier professionals are required. Projects with similar airport experience may qualify this certification.

5.02 ARCHITECTURAL DESIGN.

Architecture license for the firm, certifier and qualifier professionals are required. Projects with similar airport experience may qualify this certification.

5.03 CRUISE TERMINAL DESIGN

Professional knowledge and understanding relating to the operational and functional characteristics of cruise terminals intended for a range of cruise ships, including berthing positions, wharf design, passenger circulation, luggage disposition, security zones/operations, intermodals, and vehicular access for passengers and commercial vehicles. Architecture license for the firm, certifier and qualifier professionals are required.

5.04 CRUISE TERMINAL EQUIPMENT DESIGN

Including baggage handling systems, passenger boarding bridges, PA systems, audio visual, security audio visual, information technology, bollards, fenders, and passenger/baggage screening equipment. Projects with similar airport terminal equipment; including baggage handling systems, passenger boarding bridges, PA systems, audio visual, security audio visual, information technology, and passenger/baggage screening, experience shall qualify this certification.
Engineering or Architecture license for the firm, certifier and qualifier professionals are required.

5.05 CARGO TERMINAL DESIGN

Professional knowledge and understanding relating to the operational and functional characteristics of cargo terminals, yards and equipment intended to handle large cargo ships, including ship berthing positions, bulkhead and wharf design, security zones/operations, small and large cranes, gates, and traffic circulation (commercial and operational port vehicles). Engineering license for the firm, certifier and qualifier professionals are required.

5.06 CARGO TERMINAL EQUIPMENT DESIGN

Including bollards, fenders, information technology, telecommunications, security audio visual, weighing stations, wharf and cargo yard lighting, ship to shore gantry cranes, container yard cranes, intermodal yard cranes and other cargo handling equipment.
Engineering license for the firm, certifier and qualifier professionals are required.

5.07 SECURITY SYSTEMS

Security systems as required and pertaining to Coast Guard and Customs and Border Patrol, relating to cruise and cargo operations. Includes audio visual, access control, information technology, and screening equipment for cargo, passengers, and crew. Airport Customs and Border Patrol projects, relating to passenger and cargo operations including audio visual, access control, information technology, and screening equipment for cargo, passengers, and crew, experience may also qualify for this certification.
Engineering or Architecture license for the firm, certifier and qualifier professionals are required.

5.08 MARINE ENGINEERING DESIGN

For deep draft cruise and cargo ports including wharves, bulkheads, fenders, bollards, dolphins, bathemetric survey, dredging, corrosion protection and dock damage assessment with underwater inspection and mooring analysis. Engineering license for the firm, certifier and qualifier professionals are required.

5.09 ENVIRONMENTAL DESIGN

For deep draft cruise and cargo ports including all of the requirements of category 10.00 plus impact assessment, mitigation and permitting for dredging and other port industry impacts. Engineering license for the firm, certifier and qualifier professionals are required.

5.10 TRANSPORTATION SYSTEMS DESIGN

For deep draft cruise and cargo ports including all of the requirements of category 1.00, 2.00 and 3.00 plus both on and off Port intermodal systems for cruise passengers, cruise logistics and cargo transfer and shipment. Engineering license for the firm, certifier and qualifier professionals are required.

Satisfactory experience must be demonstrated in the activities required by this class by the full-time employed Florida registered professional as required by each category used by the firm to obtain County Certification, and also by the bona fide employees thereof, if required by a particular project.

CATEGORY/ SUB-CATEGORY INDEX

CATEGORY DESCRIPTION

6.00 WATER AND SANITARY SEWER SYSTEMS

This class of work is defined as the planning, design, equipment selection, preparation of construction documents, and administration of construction contracts for all types of water and sanitary sewer service and treatment facilities including utility tunneling for water and sewer pipes. These facilities include, but are not limited to: water distribution and sewage collection systems, transmission lines of all sizes and types, pumping stations, water treatment plants and sewage treatment plants. The work may include: comprehensive studies and preparation of reports, system master planning, development of new facilities, and repair, improvement or expansion of existing facilities, storm water pumping systems, Hydraulic Modeling for water and waste water systems.

PROFESSIONAL STATUS:

Registration with the Florida State Board of Professional Engineers.

ADEQUACY OF PERSONNEL:

At least one (1) Florida registered professional engineer is required. The number of Florida registered professionals and other technical support personnel required for specific projects, will be determined during the consultant selection process on a project-by-project basis against the Selection Committee's estimate of the consultant personnel, required to adequately and competently perform the work in the desired time frame.

PAST RECORD, EXPERIENCE, AND CAPABILITY:

TC Category Form 2 must contain specific information as to the technical nature of projects demonstrating satisfactory experience activities required by this class by the full-time employed Florida registered professional engineer(s) in their specific fields, used by the firm to obtain County Certification.

The Certification Certificate will indicate the main work class category number (6.00) preceded by the applicable work class designations (6.01 through 6.03) listed below.

6.01 WATER DISTRIBUTION AND SANITARY SEWAGE COLLECTION AND TRANSMISSION SYSTEMS

6.01A UTILITY TUNNELING FOR WATER DISTRIBUTION AND SANITARY SEWAGE COLLECTION AND TRANSMISSION SYSTEMS

6.02 WATER AND SANITARY SEWAGE PUMPING FACILITIES

6.03 WATER AND SANITARY SEWAGE TREATMENT PLANTS

Satisfactory experience must be demonstrated in the activities required by this class by the full-time employed Florida registered engineer(s) or other professional(s) used by the

firm to obtain County Certification, and by the bona fide employees thereof, if required by a particular project.

CATEGORY/ SUB-CATEGORY INDEX	CATEGORY DESCRIPTION

7.00 SOLID WASTE COLLECTION AND DISPOSAL SYSTEMS

This class of work, is defined as the planning, design, preparation of construction documents or operation programs, and administration of facility construction or equipment installation contacts for all types of solid waste collection and disposal system facilities. These facilities include, but are not limited to: transfer stations, incinerators, shredders, truck scales, landfills, resources recovery plants, compactors, leachate collection and treatment systems, and energy reclamation composting and recycling facilities. The work may also include preparation of feasibility evaluation of pollution control devices and recommendation of pollution abatement measures, preparation of facility construction/operation permit applications and participation in public interaction programs and other aspects of the facility permitting process.

PROFESSIONAL STATUS:

Registration with the Florida State Board of Professional Engineers.

ADEQUACY OF PERSONNEL:

At least one (1) Florida registered professional engineer is required. The number of Florida registered professionals and other technical support personnel required for specific projects, will be determined during the consultant selection process on a project-by-project basis against the Selection Committee's estimate of the consultant personnel, required to adequately and competently perform the work in the desired time frame.

PAST RECORD, EXPERIENCE, AND CAPABILITY:

Satisfactory experience must be demonstrated in the activities required by this class by the full-time employed Florida registered engineer(s) or other professional(s) used by the firm to obtain County Certification, and by the bona fide employees thereof, if required by a particular project.

CATEGORY/ SUB-CATEGORY INDEX	CATEGORY DESCRIPTION
8.00	**TELECOMMUNICATIONS SYSTEMS**

This class of work is defined as the planning, design, selection of components, preparation of construction documents, administration of installation contracts, testing, and activation of telecommunication systems. These systems include, but are not limited to, microwave, switching, terminal and cable facilities.

PROFESSIONAL STATUS:

Registration with the Florida State Board of Professional Engineers.

ADEQUACY OF PERSONNEL:

At least one (1) Florida registered professional engineer is required. The number of Florida registered professionals and other technical support personnel required for specific projects, will be determined during the consultant selection process on a project-by-project basis against the Selection Committee's estimate of the consultant personnel, required to adequately and competently perform the work in the desired period.

PAST RECORD, EXPERIENCE, AND CAPABILITY:

Satisfactory experience must be demonstrated in the activities required by this class by the full-time employed Florida registered engineer(s) or other professional(s) used by the firm to obtain County Certification, and by the bona fide employees thereof, if required by a particular project.

CATEGORY/ SUB-CATEGORY INDEX	CATEGORY DESCRIPTION

9.00 SOILS, FOUNDATIONS AND MATERIALS TESTING

Technical certification for Category 9.00, Soils, Foundations, and Materials Testing Services has been subdivided into several sub-categories to better meet the needs of Miami-Dade County. It is the intention of the County to conduct periodic site inspections of each testing facility to ensure that the firm maintains adequate personnel and equipment for the sub-categories in which it is certified. It is the intent of the County that a firm certified in a given Sub-Category, and subsequently assigned any work, must be able to document its ability to meet the technical requirements. Additionally, in each sub-category, the firm must be able to perform a minimum of sixty percent (60%) of the assigned work with it's own workforce, equipment and facilities.

PROFESSIONAL STATUS:

Registration with the Florida State Board of Professional Engineers.

The firm must employ appropriately certified technicians (AWS-CWI inspectors, ACI, NICET, licensed water well contractors, etc… as specified below in each sub-category), working under the direct supervision of the firm's Professional Engineer, to provide services in each sub-category for which the firm holds technical certification.

ADEQUACY OF PERSONNEL:

At least one (1) Florida registered professional engineer is required. The number of Florida registered professionals and other technical support personnel required for specific projects, will be determined during the consultant selection process on a project-by-project basis, to adequately and competently perform the work in the required period.

PAST, RECORD, EXPERIENCE, AND CAPABILITY

TC Category Form 2(s) must contain specific information as to the technical nature of projects, demonstrating satisfactory experience activities required by this class, by the full-time employed Florida registered professional engineer(s) in their specific fields, used by the firm to obtain County Certification.

The Certification Certificate will indicate the main work class category number (9.00) followed by the applicable work class designations (9.01 through 9.06) listed below.

9.01 DRILLING, SUBSURFACE INVESTIGATIONS AND SEISMOGRAPHIC SERVICES

9.02 GEOTECHNICAL AND MATERIALS ENGINEERING SERVICES

9.03 CONCRETE AND ASPHALT TESTING SERVICES

9.04 NON-DESTRUCTIVE TESTING AND INSPECTIONS SERVICES

9.05 ROOF TESTING AND CONSULTING SERVICES

9.06 ASBESTOS

9.07 AMBIENT AIR

9.08 BIO-HAZARDOUS

9.09 OSHA

Satisfactory experience must be demonstrated in the activities required by this class, by the full-time employed Florida registered engineer(s) or other professional(s) used by the firm to obtain County Certification, and by the bona fide employees thereof, if required by a particular project.

Firms must meet certain minimum specific requirements as detailed below, for certification in each of the following sub-categories:

9.01 DRILLING, SUBSURFACE INVESTIGATIONS AND SEISMOGRAPHIC SERVICES

In order to be qualified for technical certification in Sub-Category 9.01, Drilling, Subsurface Investigations, and Seismographic Services, the firm must provide documentary evidence of the following:

- ❑ The testing firm must either own or lease and operate a drill rig capable of performing, at a minimum, standard penetration tests and monitoring well installations;
- ❑ The firm must own or lease equipment to perform open-hole percolation tests in strict accordance with South Florida Water Management District's guidelines;
- ❑ The testing firm must provide documentary evidence of relevant experience performing and overseeing utility clearances, non-destructive geophysical investigations, seismographic investigations, and open-hole test pits;
- ❑ The testing firm must employ or contract with at least one (1) water well contractor licensed by the South Florida Water Management District who works under the direction of the Florida licensed Professional Engineer; and
- ❑ The testing firm must employ a Florida licensed Professional Engineer with sufficient experience in collecting, interpreting and overseeing drilling, geophysical, and related subsurface investigation projects.

9.02 GEOTECHNICAL AND MATERIALS ENGINEERING SERVICES

In order to receive technical certification in Sub-Category 9.02, Geotechnical (Soils and Foundation Systems), and Materials Engineering Services, the firm must employ a full-time Florida-registered Professional Engineer who has experience in evaluating data and providing related professional engineering services regarding soils and foundation systems and building materials. The Professional Engineer must provide documentary evidence of relevant experience in foundation design and foundation systems such as: experience in understanding, recommending and inspecting typical local pile systems, including pre-cast, auger cast, Franki, Vibro flotation and drilled shaft; slope analysis and stability; storm water drainage, and mounding studies. Furthermore, the Professional Engineer must provide documentary evidence of relevant experience associated with materials engineering and field inspections for soils and foundation systems, concrete and asphalt. The registered Professional Engineer must include a statement indicating that he is experienced and prepared to provide professional engineering recommendations pertaining to building materials, including, but not limited to: asphalt, concrete, masonry and mortar, soils, foundation systems, and steel.

9.03 CONCRETE AND ASPHALT TESTING SERVICES

In order to meet the technical requirements for Sub-Category 9.03, the firm must provide documentary proof that it has an in-house, licensed laboratory and appropriately licensed and certified technicians in each related discipline. The testing lab must either own and operate, or lease sufficient equipment to perform soils, concrete and asphalt testing and inspection services. Specifically, the following requirements must be met in order to be certified in Sub-Category 9.03:

- At a minimum, the Construction Materials Engineering Council (CMEC) must certify the testing lab. The lab must be owned and operated by the testing lab company and cannot be leased from a third party. The equipment in the lab may be leased or owned by the testing firm, but the testing lab must be licensed and certified in the name of the testing lab;

- The testing lab must have current certification from HRS to own or lease and store/operate field nuclear density gauges;

- The testing lab must own and operate, or lease, at least one nuclear density gauge;

- The testing lab Professional Engineer, in order to perform related field-testing services in each discipline, must provide documentary evidence that it employs NICET, ACI, and FDOT certified technicians, working under the direct supervision of the Professional Engineer, to perform field tests in each discipline;

- The testing lab must provide documentary evidence of its ability, experience and equipment (owned or leased) to provide, at a minimum, the following asphalt tests: Marshall Method Asphalt paving design mix, asphalt extraction and gradation per ASTM D-992 and D-1073, Asphalt bituminous content by extraction per ASTM D-2172, asphaltic concrete extraction and stability tests per ASTM D-1559, asphaltic concrete densities and thickness measurements, Quality Assurance inspections (including placement, temperature) and certified asphalt plant inspections by FDOT certified technicians;

- The testing lab must provide documentary evidence of its ability, experience and equipment (owned or leased) to provide, at a minimum, the following concrete tests: concrete aggregate testing unit weight, LA abrasion, moisture and absorption, gradation, soundness, specific gravity, organic and salt content per applicable ASTM standards; concrete design mix per ACI 211; concrete strength testing (compressive per ASTM C-31 & C-39); flexural strength (beams) per ASTM C-293, split tensile per ASTM C-496; gunite and shot Crete test;

- Statistical analysis of break sequences; concrete field testing services (placement, slump, air content, unit weight, temperature, batch and pre-cast plant inspections); lightweight insulation testing, evaluation of cured concrete (Schmitt hammer, Windsor probe, ultrasonic testing, concrete coring, thickness measurement, compression testing); and reinforcement locations by R-meter or x-ray; and

- The testing lab must provide documentary evidence of its ability, experience and equipment (owned or leased) to provide, at a minimum, the following soils and foundation systems testing services: earthwork testing and inspections (proof rolling, qualification of fill material, soil density or compaction tests by both the nuclear and sand cone method); stripping and filling inspections; soil stabilization testing and inspections (lime rock bearing ratio (LBR) per FDOT FM-5 515, California Bearing

- Ratio (CBR), Florida Bearing Value (FBV), and plate load tests per ASTM D-1196); pile installation record logging and pile load tests per ASTM D-1143 & ASTM D-3689); and soil laboratory testing (Proctor by ASTM-1557, gradations per ASTM C-117, organic content per ASTM-2974, pH test, Atterberg limits per ASTM D-4318, Chloride content per ASTM D-516, Resistivity per ASTM F-43 and Carbonates per ASTM D-4373);

9.04 NON-DESTRUCTIVE TESTING AND INSPECTIONS SERVICES

In order to meet the technical requirements for sub-category 9.04, the firm must provide documentary evidence that it has the required in-house licenses, certifications and certified technicians. Furthermore, the required testing lab must either own/operate, or lease sufficient equipment to provide non-destructive testing and inspection services. The services must, however, be performed under the name of the testing lab that is actually performing the work. In particular, the testing lab shall meet the following minimum requirements to obtain certification in sub-category 9.04:

- The testing lab must employ or contract with at least one (1) AWS-CWI (American Welding Society-Certified Welding Inspector), working under the direct supervision of a registered Professional Engineer, for welding inspection and qualification services;

- The testing lab must document experience in conducting reinforcing steel testing and inspections (pre-stress jack equipment calibrations, tensile/elastic modulus of post tension cable, stressing inspections, post-tension tendon locations, mill certification review, tensile testing per ASTM A-370, and placement inspections). Including bolt tension testing;

- The testing lab must document experience performing and interpreting various non-destructive test methods such as radiography (RT); magnetic particle (MT); Dye Penetrant Testing (PT); Ultrasonic Testing (UT) and Holiday Testing;

- The testing lab must provide documentary evidence of experience in conducting and evaluating coating inspections and testing, which may include: fireproofing (Thickness per ASTM E-605, Unit weight per ASTM E-605 and Adhesion/Cohesion per ASTM E-736); and

- The testing lab must provide documentary evidence of experience in conducting and evaluating painting inspections and testing including: profiling sand blasted surface, and paint coating thickness measurements utilizing a Took's gauge;

9.05 ROOF TESTING AND CONSULTING SERVICES

In order to meet the technical requirements for sub-category 9.05, the firm must provide documentary evidence of licenses, certification and that the technicians employed by the firm are certified. At a minimum, the firm must employ at least one Registered Roof Observer and one Registered Roof Consultant certified by the Roof Consulting Institute working under the supervision of the testing lab's Professional Engineer to obtain certification in sub-category 9.05. Furthermore, the testing lab must also either own and operate, or lease sufficient equipment to provide both destructive and non-destructive roof testing and inspection services, and must meet the following minimum requirements to be technically certified in sub-category 9.05:

- The testing lab must employ at least one (1) Registered Roof Observer or Registered Roof Consultant by the Roof Consulting Institute, working under the direct supervision of the Professional Engineer, to oversee all the roof testing and/or inspection services;

- ❑ The testing lab must provide documentary evidence of experience and availability of equipment either owned or leased (moisture meters, dec scanners, infrared, coring equipment etc..) to conduct and evaluate roof inspections and testing services such as: wind uplift, pull tests, moisture surveys, roof cores, roof calculations and recommendations for repair or replacement;

- ❑ The testing lab must provide documentary evidence of experience in developing roof plans and technical specifications, including recommendations.

9.06 ASBESTOS

In order to meet the technical requirements for sub-category 9.06, the firm must provide documentary evidence of licenses, certifications, and that the technicians employed by the firm are certified (see below). Furthermore, the testing lab must either own and operate or lease sufficient equipment for work contemplated in each work authorization to provide asbestos remediation services. In particular, the firm must meet the following minimum requirements to be technically certified in sub-category 9.06:

- ❑ The firm must hold license with the Department of Business and Professional Regulation as a Licensed Asbestos Consulting Firm (ZA license), a copy of which must be submitted at the time of application for Sub-Category 9.06.

- ❑ The firm must provide documentary evidence of EPA certified asbestos inspectors capable of providing surveys and appropriately certified to provide abatement designs and monitoring services.

- ❑ All Asbestos work must be signed by the Asbestos professional holding all appropriate asbestos consulting licenses and asbestos certification for asbestos-containing building materials; working full time for the Company.

- ❑ In order to accept a work assignment involving asbestos laboratory analysis, the testing firm must own and operate its own NVLAP-certified asbestos laboratory for Polarized Light (PLM), Phase contrast (PCM) and Transmission Electron Microscopy (TEM) to provide the entire necessary laboratory services. The testing lab may sub-contract with an independent NVLAP – certified asbestos lab, provided that the total value of the lab services does not exceed thirty percent (30%) of the total value of each asbestos-related work assignment.

- ❑ In order to accept a work assignment involving lead in paint, the testing firm must be licensed with EPA Region IV to conduct lead paint services and must own and operate, or show evidence that it leases at least one x-ray fluorescence (XRF) unit for non-destructive lead paint surveys.

9.07 AMBIENT AIR

- ❑ In order to meet the technical requirements for sub-category 9.07, the firm must provide documentary evidence of licenses, certifications, and that the technicians employed by the firm are certified (see below). Furthermore, the testing lab must either own and operate or lease sufficient equipment for work contemplated in each work authorization to provide indoor air and ambient air quality,

- ❑ In order to accept a work assignment involving indoor air quality, ambient air quality or bio-hazardous testing and consulting, the testing lab must employee a full-time Certified Industrial Hygienist.

9.08 BIO-HAZARDOUS

- ❑ In order to meet the technical requirements for sub-category 9.08, the firm must provide documentary evidence of licenses, certifications, and that the technicians employed by the firm are certified (see below). Furthermore, the testing lab must either own and operate or lease sufficient equipment for work contemplated in each work authorization to provide and bio-hazardous testing inspection services, and must employee a full-time Certified Industrial Hygienist.

- ❑ In order to accept a work assignment involving chemical laboratory analysis, the testing firm must own and operate its own HRS/FDEP certified chemistry lab for lead paint analysis, or sub-contract services to a qualified lab. However, the total value of the lab services may not exceed 30% of the total value of each work assignment. Furthermore, the testing lab is prohibited from marking-up on sub-contracted chemistry services.

9.09 OSHA

- ❑ In order to accept a work assignment involving training services related to any of the services outlined in Sub-Category 9.06, 9.07, 9.08, the testing lab must submit in its application, a list of all owned training equipment, the location of its training facility including capacity, and resumes of the trainers at the time of application. For asbestos and lead paint training, the testing firm must also provide evidence of certification to provide such training by the EPA and State of Florida, as appropriate.

- ❑ Professional Engineering license with the State of Florida is preferred.

CATEGORY/ SUB-CATEGORY INDEX	CATEGORY DESCRIPTION
10.00	**ENVIRONMENTAL ENGINEERING**

This class of work is defined as the estimation of the effects of man on the environment and on human, animal and plant life. Factors to be assessed include, but are not limited to: effects on natural resources; erosion and sedimentation; coastal and freshwater wetland communities; wildlife habitat and migration; air, water and soil pollution; groundwater and surface water movement and flow; and groundwater quality. The work involves the performance of studies and preparation of summary reports for environmental assessments of contaminated sites, proposed land development, transportation improvements, etc.

PROFESSIONAL STATUS:

Registration with the Florida State Board of Professional Engineers. Applicants without registration may be given a restricted certification to perform activities encompassed by the class of work indicated above which is not defined as the practice of engineering by the Florida State Board of Professional Engineers. Professional status is determined by Miami-Dade County through the evaluation of the applicant's past record, education, and capabilities in this class of work.

ADEQUACY OF PERSONNEL:

At least one (1) Florida registered professional engineer is required for those areas of work indicated above as the practice of engineering by the Florida State Board of Professional Engineers. Additional professional personnel to be certified in this category, may include a Florida licensed professional geologist, a degreed biologist, and a degreed chemist with expertise in their respective areas of work described above. The number of respective professionals in this category and other technical support personnel required for specific projects will be determined during the consultant selection process on a project-by-project basis against the Selection Committee's estimate of the consultant personnel required to adequately and competently perform the work in the desired period.

PAST RECORD, EXPERIENCE, AND CAPABILITY:

TC Category Form 2 must contain specific information as to the technical
nature of the projects demonstrating satisfactory experience activities required by this class by the full-time employed Florida registered professional engineer(s) in their specific fields, used by the firm to obtain County Certification.

The certification certificate will indicate the main work class category number (10.00) preceded by the applicable work class designations (10.01 through 10.10) listed below.

10.01 STORMWATER DRAINAGE DESIGN ENGINEERING SERVICES

10.02 GEOLOGY SERVICES

10.03 BIOLOGY SERVICES

10.04 CHEMISTRY SERVICES

10.05 CONTAMINATION ASSESMENT AND MONITORING

10.06 REMEDIAL ACTON PLAN DESIGN

10.07 REMEDIAL ACTION PLAN INTEMENTATION/ OPERATIONS/ MAINTENANCE

10.08 PATHOGEN AND CONTAMINANT RISK ANALYSIS

10.09 WELLFIELD, GROUNDWATER, AND SURFACE WATER PROTECTION AND MANAGEMENT

10.10 COASTAL PROCESSES AND OCEAN ENGINEERING

Satisfactory experience must be demonstrated in the activities required by this class by the full-time employed Florida registered engineer(s) or other professional(s) used by the firm to obtain County Certification, and also by the bona fide employees thereof, if required by a particular project.

Firms must meet certain minimum specific requirements as detailed below, for certification in each of the following sub-categories:

10.01 <u>STORMWATER DRAINAGE DESIGN ENGINEERING SERVICES</u>

In order to receive technical certification in Sub-Category 10.01, Stormwater Drainage Design Engineering Services, the firm must provide documentary evidence of the following:

- A full-time Florida-registered Professional Engineer. The PE must submit a statement indicating that he/she is familiar with Ch. 24-43 and Ch. 24-48 and Ch. 24-49, as well, as all drainage related permitting procedures. **This information must be provided on the TC Category Form 2.**

- Successful experience associated with all current standards and regulations related to drainage, such as those required by the South Florida Water Management District (SFWMD), the Florida Department of Environmental Protection (FDEP), Miami-Dade County Environmental Resources Management and Public Works departments.

- Five (5) years of experience evaluating data and providing related professional engineering services regarding stormwater drainage retrofit systems designs, soils data provided by the geotechnical firms, topographic surveys, and infrastructure as-built information related to the job sites.

- Five (5) years of experience in stormwater drainage design such as: experience in understanding, recommending and inspecting typical drainage retrofits projects, including but not limited to: full on site drainage systems, drainage systems with emergency overflows, drainage wells, and minor stormwater pump stations which can include their own emergency stand-by generators.

- Five (5) years of experience in providing professional engineering recommendations pertaining to the required engineering calculations and the use of the necessary computer software approved and used by the above-mentioned agencies. This software includes but is not limited to Interconnected Channel and Pond Routing Model (ICPR Advanced) and the RC-4 flood routing program.

- Capability to perform calculations that will require the use of the mass diagram of inflows and outflows, a backwater profile and the use of the SFWMD formulas as shown in Volume IV of the permit manual.

10.02 GEOLOGY SERVICES

In order to receive technical certification in sub-category 10.02, the firm must have Geology license and a licensed Professional Geologist (PG) on staff full-time. **The PG must include a statement indicating that s/he has a clear understanding of South Florida geology.**

10.03 BIOLOGY SERVICES

In order to receive technical certification in Sub-Category 10.03, the firm must demonstrate proof of employment of a degreed biologist on staff full-time. The qualifier agent must be a degreed biologist. A Professional Engineer is no longer required to qualify this Sub-Category.

10.04 CHEMISTRY SERVICES

In order to receive technical certification in sub-category 10.04, the firm must demonstrate proof of employment of a degreed chemist on staff full-time. The qualifier agent must be a degreed chemist. A Professional Engineer is no longer required to qualify this Sub-Category.

10.05 CONTAMINATION ASSESSMENT AND MONITORING

In order to receive technical certification in Sub-Category 10.05, Contamination Assessment, and Monitoring, the firm must provide documentary evidence of the following:

- Five (5) years' experience performing approvable Site Assessments in accordance with all applicable regulations and guidelines including Ch. 62-780 FAC and Ch. 24-44, MDCC, as applicable as well as the technical reports used in their development.

- A full-time Florida Registered Professional Engineer or Florida Registered Professional Geologist. **The PE or PG must include a statement indicating that s/he has a clear understanding of the current codes and standards relating to soil and groundwater assessment in South Florida. Furthermore, the PE must include a statement indicating that s/he has a clear understanding of South Florida geology. This information must be provided on the TC Category Form 2.**

- Adequate number of experienced field staff for the performance of sampling and analyses of a variety of media in accordance with Ch. 62-160, F.A.C., Quality Assurance.

- OSHA Certification as applicable.

- When applicable, firm must provide documentary evidence for contracting with a Water Well Contractor company properly licensed with the South Florida Water Management District (SFWMD). Documents should include: SFWMD license and services contract.

10.06 REMEDIAL ACTION PLAN DESIGN

In order to receive technical certification in Sub-Category 10.06, Remedial Action Plan Design, the firm must provide documentary evidence of the following:

- A full-time Florida Registered Professional Engineer. **The PE must include a statement indicating that s/he will comply with the current codes in South Florida, including those relating to contamination remediation.** A full-time Florida Registered Professional Geologist may substitute for the PE, as applicable and based on the type of remediation being proposed, such as soil excavation or a method of remediation not involving any remedial system design. **The PG must include a statement indicating that s/he will comply with the current codes in South Florida. This information must be provided on the TC Category Form 2.**

- Compliance with all requirements set forth in Miami-Dade County Professional Services Certification Category 10.00 Environmental Engineering.

- Capability to evaluate site-specific contamination assessment data and all related technical documentation and to perform the necessary engineering calculations in order to provide cost effective professional engineering recommendations and remedial system design.

- Successful completion of Remedial Action Plans in accordance with all applicable regulations and guidelines, including Ch. 62-780 FAC and Ch. 24-44, MDCC, as applicable, to include at least five (5) groundwater extraction systems, five (5) soil vacuum extraction systems, two (2) air sparging systems and five (5) source removal projects. For the groundwater extraction systems, soil vacuum extraction systems and air sparging systems, the designs shall have included multiple extraction/injection wells and technical calculations for groundwater/vapor conveyance systems and groundwater disposal systems, as applicable. Experience with bioremediation and new and innovative technologies are desired.

- Experience in performing fate and transport modeling and in the development of Risk Assessments in accordance with all applicable regulations and guidelines, including Ch. 62-780 FAC and Ch. 24-44, MDCC, as applicable, is desired.

- Ability to prepare approvable, engineered remedial design plans for permitting by all applicable agencies in accordance with all applicable regulations, codes and guidelines.

- Adequate number of experienced field staff for the performance of sampling and analyses of a variety of media in accordance with Ch.62-780, F.A.C., Quality Assurance.

- OSHA Certification as applicable.

10.07 REMEDIAL ACTIONPLAN IMPLEMENTATION/OPERATION/MAINETANCE

In order to receive technical certification in Sub-Category 10.07, Remedial Action Plan Implementation / Operation / Maintenance, the firm must provide documentary evidence of the following:

- A full-time Florida Registered Professional Engineer**. The PE must include a statement indicating that s/he will comply with the current codes in South Florida, including those relating to contamination remediation.** A full-time Florida Registered Professional Geologist may substitute for the PE, as applicable and based on the type of remediation being proposed, such as soil excavation or a method of remediation not involving any remedial system design. **The PG must include a statement indicating that s/he will comply with the current codes in South Florida. This information must be provided on the TC Category Form 2.**

- Ability to perform and complete the installation and start-up of a Remediation System pursuant to the permitted plans and prepare approvable engineering drawings ("as-builds") following the completion of the installation in accordance with all applicable regulations, codes, and guidelines.

- Successful installation/startup/operation of Remediation Systems in accordance with all applicable regulations and guidelines, including Ch. 62-780 FAC and Ch. 24-44, MDCC, as applicable, to include at least five (5) groundwater extraction systems, five (5) soil vacuum extraction systems, two (2) air sparging systems and five (5) source removal projects. The groundwater extraction systems, soil vacuum extraction systems and air sparging systems shall have included multiple extraction/injection wells and the installation of groundwater/vapor conveyance systems and groundwater disposal systems, as applicable. Experience with implementation of bioremediation and new and innovative technologies are desired.

- Ability to inspect, maintain, repair, and monitor existing remedial systems for continued operation and to evaluate systems to determine appropriateness to continue system operation.

- Adequate number of experienced field staff for the performance of the above duties and for sampling and analyses of a variety of media in accordance with Ch. 62-780, FAC.

- Compliance with all requirements set forth in Miami-Dade County Professional Services Certification Category 10.00 Environmental Engineering.

- OSHA Certification as applicable.

10.08 PATHOGEN AND CONTAMINANT RISK ANALYSIS

In order to receive technical certification in Sub-Category 10.08 Pathogen and Contaminant Risk Analysis, the firm must provide documentary evidence of the following:

- The firm must be capable of providing the development and application of pathogen/contaminant risk analyses for groundwater and surface water. It is highly desired that the firm will conduct quantitative and qualitative assessment in deriving risk to well fields, flora, and fauna employing state of the art interdisciplinary methods. The firm is expected to have both research and applied experiencing in determining and predicting risk for a semi-rural and urban setting. Prior publication in peer-reviewed journals is desired. . **The firm must also provide written assurance that it will follow the standards outlined in the Florida Department of Environmental Protection's *Standard Operating Procedures for Field Activities*, which became effective April 9, 2002, for applicable environmental field activities. This information must be provided on the TC Category Form 2.**

- The firm must employ or subcontract with a firm which employs an advanced degreed scientist (environmentalist, biologist, chemist, microbiologist, etc.) with significant coursework in topics such as calculus and statistics; epidemiology; ecological and chemical toxicology; quantitative and qualitative research methods; and human health, ecological and environmental risk assessment and decision analysis.

- The scientist should have a minimum of five (5) years of experience in one or more of the following areas and provide documentary evidence of: assessing pathogen/contaminant risk to drinking water supplies, predicting environmental impacts, assessing risk to terrestrial and aquatic ecosystems, conducting decision analysis for environmental restoration projects or other related health and environmental risk issues.

- Documented evidence of relevant experience must include grants, project reports and publications in scientific journals in the professional's area of expertise wherein the professional is listed as project principal or co-principal.

10.09 WELLFIELD, GROUNDWATER, AND SURFACE WATER PROTECTION AND MANAGEMENT

In order to receive technical certification in Sub-Category 10.09, Wellfield, Groundwater, and Surface Water Protection and Management, the firm must provide documentary evidence of the following:

- The firm must be capable of providing the development, calibration and utilization of applicable groundwater, surface water, stormwater routing, contaminant transport, and hydrologic/hydraulic simulation models, coupled density-dependent flow models, stochastic models, including but not limited to MODFLOW, XP-SWMM (version 7.5 or higher), and Visual Hydro, along with the appropriate pre and post processing packages for modeling projects. Ancillary software must include, but not be limited to, Auto-CAD Land Development Desktop 2000 (with Auto-CAD 2000 engineering design tool or latest version), CORPSCON (U.S. Army Corps of Engineers system coordinates translator tool), and PEAKFQ and ANNIE (U.S. Geological Survey statistical hydrology analysis tools). The firm must provide documentary evidence of five years successful experience associated with conducting the above referenced tasks.

- ❑ The firm must have the capability to evaluate and delineate wellfield protection zones and applicable hydraulic travel times.

- ❑ The firm must be capable of performing wellfield protection planning and monitoring activities, including but not limited to, installation of monitoring sites and characterization of aquifer properties and provide documentary evidence of five years of practical field and/or laboratory experience associated with conducting these tasks. **The firm must also provide written assurance that it will follow the standards outlined in the Florida Department of Environmental Protection's *Standard Operating Procedures for Field Activities*, which became effective April 9, 2002, for applicable environmental field activities. This information must be provided on the TC Category Form 2.**

- ❑ Five (5) year successful experience in investigating contamination incidents, including evaluation of data and production of written reports describing findings.

- ❑ Five (5) year successful experience in evaluating and modeling regionally and locally proposed hydrologic modifications, including infrastructure and operational changes as they relate to natural systems protection and enhancement, wellfield and water quality protection, salt-water intrusion control, flood protection, and control of sediment transport and settling within water conveyance systems.

- ❑ The firm must be capable of providing specialized expertise in statistics, microbiology, environmental chemistry, hydrology, geology, hydrogeology (and other technical disciplines on an as needed basis) and provide documentary evidence of at least five 5 years of relevant experience associated with these scientific disciplines.

- ❑ Five (5) years successful experience in reviewing and providing written commentary on County and /or third party technical reports relating to the above described activities to assist in project planning and providing technical, graphical, and expert assistance at public forums and presentations.

10.10 COASTAL PROCESSES AND OCEAN ENGINEERING

In order to receive technical certification in Sub-Category 10.10, Coastal Processes and Ocean Engineering, the firm must provide documentary evidence of the following:

- ❑ A full-time Florida Registered Professional Engineer. **The PE must include a statement indicating that he/she is familiar and will comply with the current codes in South Florida. This information must be provided on the TC Category Form 2.**

- ❑ Five (5) year experience in preparing approvable federal, state and local permit applications for beach re-nourishment, dredging or filling in Biscayne Bay or other estuaries designated as Outstanding Florida Waters, state submerged land easements or leases, artificial reefs and mangrove alteration. Documentation will include actual permits for the above types of projects.

- ❑ Five (5) years successful experience in performing hydrographic, circulation and/or sediment transport modeling in estuaries or offshore waters.

- ❑ Successful experience in designing at least two (2) coastal wetland, coral reef, or beach restoration and re-vegetation projects.

- ❑ Adequate equipment and staff experienced in data collection and analysis using advanced underwater mapping and sampling technology, remote sensing technology,

and geologic sampling for modeling or monitoring coastal and wetland processes or biological communities.

- ❑ Five (5) year experience in preparing approvable designs and supervision of construction of docks, piers, or coastal erosion control structures.

- ❑ Five (5) year experience conducting coastal wetland delineation pursuant to Section 373.421(1) F.S. and employing habitat assessment criteria used in connection with state, federal, and local permitting programs for work in wetlands and tidal waters.

- ❑ Adequate number of experienced field staff certified to perform underwater assessment or sampling using SCUBA apparatus.

- ❑ Demonstrated experience and knowledge of the development, implementation and utilization of GIS databases in the analysis of Coastal resources

- ❑ The firm must meet all the requirements set forth by Category 10.00.

CATEGORY/ SUB-CATEGORY INDEX	CATEGORY DESCRIPTION

11.00 GENERAL STRUCTURAL ENGINEERING

This class of work is defined as the planning, design, preparation of construction documents and administration of construction contracts for all types of structural engineering projects, including but not limited to buildings and support facilities for communications systems. The work also includes inspection of existing structures and preparation of reports with assessments of their condition and recommendations as to their repair or renovation.

PROFESSIONAL STATUS:

Registration with the Florida State Board of Professional Engineers.

ADEQUACY OF PERSONNEL:

At least one (1) professional engineer registered in Florida. The number of Florida registered professionals and other technical support personnel required for specific projects, will be determined during the consultant selection process on a project-by-project basis against the Selection Committee's estimate of the consultant personnel, required to adequately and competently perform the work in the desired time frame.

PAST RECORD, EXPERIENCE, AND CAPABILITY:

Satisfactory experience must be demonstrated in the activities required by this class by the full-time employed Florida registered engineer(s) or other professional(s) used by the firm to obtain County Certification, and by the bona fide employees thereof, if required by a particular project.

CATEGORY/ SUB-CATEGORY INDEX	SUB-CATEGORY DESCRIPTION
11.00A	**THRESHOLD INSPECTION**

This class of work is defined as structural field inspections on Threshold Buildings per the so-called "Threshold Building Law" – F.S. Section 553.79. It is the responsibility of the Threshold Inspector only to observe the placement and installation of structural components, to prepare a report, and to issue a final Statement of Compliance at the end of the structural work. In addition, observe that the structural portions of the work are performed in substantial compliance with the official documents and any subsequent written revisions or clarifications issued by the Architect or Engineer of record. The official documents comprise the plans approved by the Building Official, addendums issued, the specifications with all amendments, and the approved Threshold Inspector guidelines and Threshold Inspector Plan.

PROFESSIONAL STATUS:

Professional engineer/architect registered and licensed with the State of Florida **and** licensed with a Florida Threshold Building Inspector's License.

Professional engineers/architects offering threshold building inspection services pursuant to Section 553.79, F.S., Permits; applications; issuance; inspections, shall be certified by the Board to be a Special Inspector under the qualifications set forth in Chapter 61G15-35.003, F.A.C., Qualification Program for Special Inspectors of Threshold Buildings.

- If inspecting concrete components: certification from the American Concrete Institute (ACI) in concrete construction special inspection pursuant to the qualifications of such certification established by ACI on Jan. 1, 2017;
- If inspecting masonry components: certification from the International Code Council (ICC) in structural masonry special inspection pursuant to the qualifications for such certification established by ICC on Jan. 1, 2017;
- If inspecting post-tensioned components: certification from the Post-Tensioning Institute (PTI) in post-tensioning inspection pursuant to the qualifications for such certification established by PTI on Jan. 1, 2017;
- If inspecting structural steel components: certification from the International Code Council or American Institute of Steel Construction (AISC) in structural steel special inspection pursuant to the qualifications for such certification established by ICC on Jan. 1, 2017, or AISC on Jan. 1, 2017;
- If inspecting soil related components: certification from the International Code Council in basic soil special inspection pursuant to the qualifications for such certification established by ICC on Jan. 1, 2017.

ADEQUACY OF PERSONNEL:

At least one (1) Professional engineer/architect registered and licensed with the State of Florida **and** licensed with a Florida Threshold Building Inspector's License. The number of Florida registered professionals and other technical support personnel required for specific projects, will be determined during the consultant selection process on a project-by-project basis against the Selection Committee's estimate of the consultant personnel, required to adequately and competently perform the work in the desired time frame.

Should the Threshold Inspector work for an Engineering Laboratory that is also involved in materials testing and choose to delegate on-site observations to a member of his staff, then the staff member doing the inspections must be different from any other person doing routine testing on-site (compaction, concrete cylinders, etc.).

PAST RECORD, EXPERIENCE, AND CAPABILITY:

Satisfactory experience must be demonstrated in the activities required by this class by the full-time employed Florida registered engineer(s)/architects(s) or other professional(s) used by the firm to obtain County Certification, and by the bona fide employees thereof, if required by a particular project.

CATEGORY/ SUB-CATEGORY INDEX

CATEGORY DESCRIPTION

12.00 GENERAL MECHANICAL ENGINEERING

This class of work is defined as the planning, design selection of equipment, preparation of construction documents and administration of installation contracts for all types of mechanical systems. These systems include, but are not limited to: heating, ventilation and air conditioning systems; plumbing, piping and air/fluid flow systems; refrigeration systems; fire protection; coilers, turbines, heat exchangers, fans, pumps and blowers; fueling systems for aircraft and specialized mechanical equipment for mass transit systems. The work also includes inspections of existing systems and preparation of reports with assessments of their condition and recommendations as to their repair or refurbishment.

PROFESSIONAL STATUS:

Registration with the Florida State Board of Professional Engineers.

ADEQUACY OF PERSONNEL:

At least one (1) professional engineer registered in Florida. The number of Florida registered professionals and other technical support personnel required for specific projects, will be determined during the consultant selection process on a project-by-project basis against the Selection Committee's estimate of the consultant personnel, required to adequately and competently perform the work in the desired period.

PAST RECORD, EXPERIENCE, AND CAPABILITY:

Satisfactory experience must be demonstrated in the activities required by this class by the full-time employed Florida registered engineer(s) or other professional(s) used by the firm to obtain County Certification, and by the bona fide employees thereof, if required by a particular project.

CATEGORY/ SUB-CATEGORY INDEX	CATEGORY DESCRIPTION
13.00	**GENERAL ELECTRICAL ENGINEERING**

This class of work is defined at the planning, as-built, design, selection of equipment, preparation of construction documents, and construction administration for all types of AC and DC electrical systems. These systems include, but are not limited to: motors, generators, transformers, interior and outdoor lighting, and lightning arrestors; electrical heating, ventilation and air conditioning loads; and specialized electrical equipment for mass transit systems. The work also includes inspections of existing systems and preparation of reports with assessments of their condition and recommendations as to their repair or refurbishment.

PROFESSIONAL STATUS:

Registration with the Florida State Board of Professional Engineers.

ADEQUACY OF PERSONNEL:

At least one (1) professional engineer registered in Florida. The number of Florida registered professionals and other technical support personnel required for specific projects, will be determined during the consultant selection process on a project-by-project basis against the Selection Committee's estimate of the consultant personnel, required to adequately and competently perform the work in the desired time frame.

PAST RECORD, EXPERIENCE, AND CAPABILITY:

Satisfactory experience must be demonstrated in the activities required by this class by the full-time employed Florida registered engineer(s) or other professional(s) used by the firm to obtain County Certification, and by the bona fide employees thereof, if required by a particular project.

CATEGORY/ SUB-CATEGORY INDEX	CATEGORY DESCRIPTION
14.00	**ARCHITECTURE**

This class of work is defined as the planning, programming, design, preparation of construction documents, permitting and construction supervision for single and multi-purpose facilities and their sites. These facilities may include, but may not be limited to: terminals, parking garages, stations, fleet maintenance and storage buildings, operation centers, toll plazas, bridge tender housing, equipment maintenance, fabrication shops, etc.

PROFESSIONAL STATUS:

Registration with the Florida State Board of Architecture.

ADEQUACY OF PERSONNEL:

At least one (1) professional architect registered in Florida. The number of Florida registered professionals and other technical support personnel required for specific projects, will be determined during the consultant selection process on a project-by-project basis against the Selection Committee's estimate of the consultant personnel, required to adequately and competently perform the work in the desired time frame.

PAST RECORD, EXPERIENCE, AND CAPABILITY:

Satisfactory experience must be demonstrated in the activities required by this class by the full-time employed Florida registered architect(s) used by the firm to obtain County Certification, and also by the bona fide employees thereof, if required by a particular project.

CATEGORY/ SUB-CATEGORY INDEX	CATEGORY DESCRIPTION
14.00 A	**INTERIOR DESIGN**

This class of work, is defined as the design, consultation, study, drawing, specifications, and administration of design construction contracts relating to nonstructural interior elements of a building or structure, and the analysis, planning, programming, management, and design concepts for interior spaces. This may include interior architectural finishes, furniture selection, preparation of interior furniture as well as flooring specifications and budget, administration of the furniture contracts, space planning, millwork designs, and preparation of a complete Interior Design package and miscellaneous contracts related to the interior design such as window treatments, artwork, interior plants, accessories, etc.

PROFESSIONAL STATUS:

Registration with the Florida State Board of Interior Design is required.

ADEQUACY OF PERSONNEL:

At least one (1) professional Interior Designer registered in the State of Florida. The number of Florida registered professionals and other technical support personnel required for the specific projects, will be determined during the consultant selection process on a project by project basis against the Selection Committee's estimate of the consultant personnel that is required to adequately and competently perform the work.

PAST RECORD, EXPERIENCE, AND CAPABILITY:

The qualified professional interior designer(s) shall demonstrate a minimum of 5 years of satisfactory experience in the class of work described for the particular project. This shall include extensive experience with multiple purpose facilities as well as in working with the Architects, Engineers, Contractors and Furniture Vendors (Dealers or manufacturers).

CATEGORY/ SUB-CATEGORY INDEX	CATEGORY DESCRIPTION
15.00	**SURVEYING AND MAPPING**

This class of work is defined as the provision of all types of surveying and mapping services for land, water, and space, and the competent recording of field data. The work may include, but may not be limited to: photogrammetric control; the monumentation and re-monumentation of property boundaries and subdivisions; the measurement and preparation of plans showing existing improvements after construction; the layout of proposed improvements; the preparation of descriptions for use in legal instruments of conveyance of real property and property rights; the preparation of subdivision planning maps and record plats; the determination of, but not the design of, grades and elevations of roads and land in connection with subdivisions or divisions of land; and the creation and perpetuation of alignments related to maps, record plats, field note records, reports, property descriptions, and plans and drawings that represent them, additionally this class of work includes light detection and ranging (Lidar) technology on terrestrial, airborne and mobile applications and photogrammetry using drones, aircraft, or similar airborne technology. This work class category also includes the provision of topographic, hydrographic, and geodetic surveying and mapping services.

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PROFESSIONAL STATUS:

Registration with the Florida State Board of Professional Surveyors and Mappers required for all requested sub-categories.

ADEQUACY OF PERSONNEL:

At least one (1) Florida registered professional surveyor and mapper with expertise in the areas of work described above is required. The number of Florida registered professionals and other technical support personnel required for specific projects, will be determined during the consultant selection process on a project-by-project basis against the Selection Committee's estimate of the consultant personnel, required to adequately and competently perform the work in the desired period.

PAST RECORD, EXPERIENCE, AND CAPABILITY:

TC Category Form 2 must contain specific information as to the technical
Nature of projects demonstrating satisfactory experience activities required by
This class by the full-time employed Florida registered professional surveyor(s)
Mapper (s) in their specific fields, used by the firm to obtain County Certification.

Certification Certificate will indicate the main work class category number (15.00) preceded by the applicable work class designators (15.01, 15.02, 15.03 and 15.04) listed below.

15.01 LAND SURVEYING
15.02 AERIAL PHOTOGRAMMETRY
15.03 UNDERGROUND UTILITY LOCATION
15.04 HYDROGRAPHIC SURVEYS

In order to receive technical certification in Sub-Category 15.03, Underground Utility Location, the firm must demonstrate evidence of the following:

- Minimum three (3) years demonstrated experience in utility conflict analysis and/or utility location.

- A minimum of three (3) years demonstrated experience in the utilization in any of the following equipment: Ground Penetrating Radar (GPR), Metal Detector, Terrain Conductivity, Infrared, etc.

Satisfactory experience must be demonstrated in the work covered by this class by the full-time employed Florida registered professional surveyor(s) and mapper(s) used by the firm to obtain Dade County Certification, and by the other bona fide employees thereof, if required by a particular project.

15.04 HYDROGRAPHIC SURVEYS

In order to receive technical certification in **Sub-Category 15.04**, Hydrographic Surveys, the firm must meet the general requirements of category 15.00, Surveying and Mapping as well as demonstrate evidence of the following:

- ❑ A minimum five (5) years demonstrated combined experience in port and harbor maintenance surveys, coastal engineering (beach erosion and replenishment studies), nautical charting, and coastal zone management (establishing tidal dependent lines such as Mean High Water and Mean Low Water lines).

- ❑ The firm should demonstrate knowledge in the use of various techniques used by the trade including but not limited to: Sonar, Multi-beam Echo Sounders, Lidar, and Differential Global Positioning Systems.

CATEGORY/ SUB-CATEGORY INDEX	CATEGORY DESCRIPTION
16.00	**GENERAL CIVIL ENGINEERING**

This class of work is defined as the planning design, preparation of construction documents for all types of civil engineering projects, including but not limited to: highways; storm drainage; water distribution and sewage collection systems; minor bridges; culverts; traffic control; site planning, which may include paving, grading and drainage design plans for buildings and other facilities, etc.

PROFESSIONAL STATUS:

Registration with the Florida State Board of Professional Engineers.

ADEQUACY OF PERSONNEL:

At least one (1) professional engineer registered in Florida. The number of Florida registered professionals and other technical support personnel required for specific projects will be determined during the consulting selection process on a project-by-project basis against the Selection Committee's estimate of the consultant personal required to adequately and competently perform the work in the desired time frame.

PAST RECORD, EXPERIENCE, AND CAPABILITY:

Satisfactory experience must be demonstrated in the activities required by this class by the full-time employed Florida registered engineer(s) or other professional(s) used by the firm to obtain County Certification, and also by the bona fide employees thereof if required by a particular project.

CATEGORY/ SUB-CATEGORY INDEX	CATEGORY DESCRIPTION

17.00 ENGINEERING CONSTRUCTION MANAGEMENT

This class of work is defined as the administration of single or multiple construction/installation contracts for engineering projects. The work also includes the inspection and certification of the construction of engineering elements projects such as structural, mechanical and electrical systems. Services will generally require the development of a comprehensive management system for pre-construction, construction and post-construction activities, which may include: identification of potential problems, utility coordination, inspection of all stages of the construction/installation, scheduling and cost estimation, claims review, shop drawing review and approval, inspection reporting and documentation, and preparation and submittal of punch lists, as-built plans, record drawings and close-out documents.

PROFESSIONAL STATUS:

Registration with the Florida State Board of Professional Engineers.

ADEQUACY OF PERSONNEL:

At least one (1) professional engineer registered in Florida with the experience necessary to perform the above work will be required to act in the capacity of Resident Engineer. Additional professional support personnel may be required to properly supervise and inspect work not within the professional capacity of the Resident Engineer. Other technical support will be required as necessary depending on the nature, extent, and complexity of the work under the contract. The number of Florida registered professionals and other technical support personnel required for specific projects, will be determined during the consultant selection process on a project-by-project basis against the Selection Committee's estimate of the consultant personnel, required to adequately and competently perform the work in the desired time frame.

PAST RECORD, EXPERIENCE, AND CAPABILITY:

Satisfactory experience must be demonstrated in the activities required by this class by the full-time employed Florida registered professional engineer(s) used by the firm to obtain County Certification, and also by the bona fide employees thereof, if required by a particular project.

CATEGORY/ SUB-CATEGORY INDEX

CATEGORY DESCRIPTION

18.00 ARCHITECTURAL CONSTRUCTION MANAGEMENT

This class of work is defined as the administration of single or multiple construction/installation contracts for architectural projects. The work also includes the inspection and certification of the construction of architectural elements of projects. Services will generally require the development of a comprehensive management system for pre-construction, construction and post-construction activities, which may include: identification of potential problems, utility coordination, inspection of all stages of the construction/installation, scheduling and cost estimation, claims review, shop drawing review and approval, inspection reporting and documentation, and preparation and submittal of punch lists, as-built plans, record drawings and close-out documents.

PERSONAL STATUS:

Registration with the Florida State Board of Architecture.

ADEQUACY OF PERSONNEL:

At least one (1) Florida registered architect with the experience necessary to perform the above work will be required to act in the capacity of Construction Manager. Additional professional support personnel may be required to properly supervise and inspect work not within the professional capacity of the Construction Manager. Other technical support will be required as necessary depending on the nature, extent and complexity of the work under the contract. The number of Florida registered professionals and other technical support personnel required for specific projects, will be determined during the consultant selection process on a project-by-project basis against the Selection Committee's estimate of the consultant personnel, required to adequately and competently perform the work in the desired time frame.

PAST RECORD, EXPERIENCE, AND CAPABILITY:

Satisfactory experience must be demonstrated in the activities required by this class by the full-time employed Florida registered architect(s) used by the firm to obtain County Certification, and also by the bona fide employees thereof, if required by a particular project.

CATEGORY/ SUB-CATEGORY INDEX	CATEGORY DESCRIPTION
19.00	**VALUE ANALYSIS AND LIFE-CYCLE COSTING**

This class of work, is defined as the provision of the value analysis and life-cycle costing services required by Dade County Ordinance No. 94-73, adopted by the Board of County Commissioners on May 4, 1994; thereafter amended on October 7, 1997 under Miami-Dade County Ordinance 97-172 and implemented by Administrative Order 3-26, effective August 2, 1998. "Value Analysis/Engineering" (VA/E) is defined as the systematic application of recognized techniques which identify the function(s) of a product or service, establish a monetary value for the function(s), and provide the necessary function(s) reliably at the lowest overall cost. The terms Value Engineering and Value Analysis are considered synonymous. Value Analysis/Engineering, is a discipline, which applies teamwork and a systematic analysis of function(s) to remove unnecessary costs from products and services. Properly executed, VA/E will maintain all the required characteristics of performance, safety, reliability, and interchangeability and user acceptance and provide them at least cost. "Life-cycle costing" is defined as the process whereby all the expenses associated with the operation, maintenance, repair, replacement and alteration costs of a facility or piece of equipment are identified and analyzed.

Formal VA/E procedures will be performed as described herein on projects whose construction cost is estimated to be Five Million Dollars ($5,000,000) or more. VA/E studies are to be performed by an entity other than the project Architect/Engineer. For projects whose construction cost estimate is below the Five Million Dollar ($5,000,000) threshold, a formal VA/E study is not mandated. Principles and objectives of a VA/E study will be utilized for such projects in an informal manner and as determined by each department director and the professional staff within the department. The VA/E study will be conducted at the completion of the Design Development Phase or other appropriate stage of the project, as determined by the department, which will allow the project Architect/Engineer to consider alternative design concepts prior to the start of construction documents. A VA/E team will be composed of representatives of all applicable disciplines and estimators as determined by the Project Manager, based on scope, complexity, and size of the project. The VA/E process will consist of steps as contained in Ordinance 97-172.

PROFESSIONAL STATUS:

Registration with the Florida State Board of Professional Engineers, Architecture and Interior Design, Landscape Architecture and/or Surveyors and Mappers. Firms without registration may be given an approval to perform Life-Cycle Costing, which is not defined as the practice of the professions regulated by the above-mentioned Boards.

ADEQUACY OF PERSONNEL:

- A firm seeking to perform value analysis studies services must employ at least one (1) Florida registered engineer or architect on staff full-time with the experience necessary to perform the above-described work. The entity retained shall be qualified in performing VA/E studies, as outlined in the American Society for Testing Materials E 1699-95 "Standard Practice for Performing Value Analysis of Building and Building Systems." Certification as a Certified Value Specialists (CVS's) through SAVE International **or** qualified in performing the "Value Methodology Standard" of SAVE International (Society for Advancement of Value Engineering) is **preferred.** The VA/E study, as mandated by Administrative Order 3-26, will be performed by an entity other than the project

Architect/Engineer. Members of the project Architect/Engineer (A/E) team will assist, on an as needed basis, in the VA/E process.

PAST RECORD, EXPERIENCE, AND CAPABILITY:

- TC Category Form 2(s) must contain specific information as to the technical nature of projects and their association with the other professional work class categories, demonstrating satisfactory experience activities required by this class by the full-time employed Florida professional engineer(s) and/or architects(s) registered in their specific fields, used by the firm to obtain County Certification. Certification in this category shall be granted based on qualifications and the adequacy of professionals and their Value Analysis and Life-Cycle Costing experience.

- **A firm that does not meet the above-stated criteria may receive an approval certification in the applicable work designations provided for in Category 19 – A Life-Cycle Costing. The entity must meet the following criteria:**

  1. The qualifying agent must possess a bachelor's degree in a related field; and
  2. The qualifying agent must have a minimum of three (3) years' experience as a team facilitator and have knowledge of VA/E study activities and standards.

  The Certification Certificate will indicate the main work class category number (19.00) preceded by the applicable work class designations (19.01 through 19.20) listed below.

19.01 TRANSPORTATION PLANNING
Certification on this technical sub-category includes Value Analysis Services and Life-Costing for Florida Licensed firms.

19.01A TRANSPORTATION PLANNING-LIFE CYCLE COSTING SERVICES
Certification on this technical sub-category does not include Value Analysis Services. Services under this sub-category are related to cost estimating only.

19.02 MASS TRANSIT SYSTEMS
Certification on this technical sub-category includes Value Analysis Services and Life-Costing for Florida Licensed firms.

19.02A MASS TRANSIT SYSTEMS-LIFE CYCLE COSTING SERVICES
Certification on this technical sub-category does not include Value Analysis Services. Services under this sub-category are related to cost estimating only.

19.03 HIGHWAY SYSTEMS
Certification on this technical sub-category includes Value Analysis Services and Life-Costing for Florida Licensed firms.

19.03A HIGHWAY SYSTEMS-LIFE CYCLE COSTING SERVICES
Certification on this technical sub-category does not include Value Analysis Services. Services under this sub-category are related to cost estimating only.

19.04 AVIATION SYSTEMS
Certification on this technical sub-category includes Value Analysis Services and Life-Costing for Florida Licensed firms.

19.04A AVIATION SYSTEMS-LIFE CYCLE COSTING SERVICES
Certification on this technical sub-category does not include Value Analysis Services. Services under this sub-category are related to cost estimating only.

19.05 PORT AND WATERWAY SYSTEMS
Certification on this technical sub-category includes Value Analysis Services and Life-Costing for Florida Licensed firms.

19.05A PORT AND WATERWAY SYSTEMS-LIFE CYCLE COSTING SERVICES
Certification on this technical sub-category does not include Value Analysis Services. Services under this sub-category are related to cost estimating only.

19.06 WATER AND SANITARY SYSTEMS
Certification on this technical sub-category includes Value Analysis Services and Life-Costing for Florida Licensed firms.

19.06A WATER AND SANITARY SYSTEMS-LIFE CYCLE COSTING SERVICES
Certification on this technical sub-category does not include Value Analysis Services. Services under this sub-category are related to cost estimating only.

19.07 SOLID WASTE COLLECTION AND DISPOSAL SYSTEMS
Certification on this technical sub-category includes Value Analysis Services and Life-Costing for Florida Licensed firms.

19.07A SOLID WASTE COLLECTION AND DISPOSAL SYSTEMS-LIFE CYCLE COSTING SERVICES
Certification on this technical sub-category does not include Value Analysis Services. Services under this sub-category are related to cost estimating only.

19.08 TELECOMMUNICATION SYSTEMS
Certification on this technical sub-category includes Value Analysis Services and Life-Costing for Florida Licensed firms.

19.08A TELECOMMUNICATION SYSTEMS-LIFE CYCLE COSTING SERVICES
Certification on this technical sub-category does not include Value Analysis Services. Services under this sub-category are related to cost estimating only.

19.09 SOILS, FOUNDATIONS, AND MATERIALS TESTING
Certification on this technical sub-category includes Value Analysis Services and Life-Costing for Florida Licensed firms.

19.09A SOILS, FOUNDATIONS AND MATERIALS TESTING -LIFE CYCLE COSTING SERVICES
Certification on this technical sub-category does not include Value Analysis Services. Services under this sub-category are related to cost estimating only.

19.10 ENVIRONMENTAL ENGINEERING
Certification on this technical sub-category includes Value Analysis Services and Life-Costing for Florida Licensed firms.

19.10A ENVIRONMENTAL ENGINEERING-LIFE CYCLE COSTING SERVICES
Certification on this technical sub-category does not include Value Analysis Services. Services under this sub-category are related to cost estimating only.

19.11 GENERAL STRUCTURAL ENGINEERING
Certification on this technical sub-category includes Value Analysis Services and Life-Costing for Florida Licensed firms.

19.11A GENERAL STRUCTURAL ENGINEERING-LIFE CYCLE COSTING SERVICES
Certification on this technical sub-category does not include Value Analysis Services. Services under this sub-category are related to cost estimating only.

19.12 GENERAL MECHANICAL ENGINEERING
Certification on this technical sub-category includes Value Analysis Services and Life-Costing for Florida Licensed firms.

19.12A GENERAL MECHANICAL ENGINEERING-LIFE CYCLE COSTING SERVICES
Certification on this technical sub-category does not include Value Analysis Services. Services under this sub-category are related to cost estimating only.

19.13 GENERAL ELECTRICAL ENGINEERING
Certification on this technical sub-category includes Value Analysis Services and Life-Costing for Florida Licensed firms.

19.13A GENERAL ELECTRICAL ENGINEERING-LIFE CYCLE COSTING SERVICES
Certification on this technical sub-category does not include Value Analysis Services. Services under this sub-category are related to cost estimating only.

19.14 ARCHITECTURE
Certification on this technical sub-category includes Value Analysis Services and Life-Costing for Florida Licensed firms.

19.14A ARCHITECTURE -LIFE CYCLE COSTING SERVICES
Certification on this technical sub-category does not include Value Analysis Services. Services under this sub-category are related to cost estimating only.

19.16 GENERAL CIVIL ENGINEERING
Certification on this technical sub-category includes Value Analysis Services and Life-Costing for Florida Licensed firms.

19.16A GENERAL CIVIL ENGINEERING -LIFE CYCLE COSTING SERVICES
Certification on this technical sub-category does not include Value Analysis Services. Services under this sub-category are related to cost estimating only.

19.20 LANDSCAPE ARCHITECTURE
Certification on this technical sub-category includes Value Analysis Services and Life-Costing for Florida Licensed firms.

19.20A LANDSCAPE ARCHITECTURE-LIFE CYCLE COSTING SERVICES
Certification on this technical sub-category does not include Value Analysis Services. Services under this sub-category are related to cost estimating only.

CATEGORY FORM:

The qualifying professional must acknowledge the following statement.

"I hereby certify, that the above employees are qualified in performing Value Analysis and Life-Cycle Costing studies as outlined in ASTM E 1699-95, "Standard Practice for Performing Value Analysis of Building and Building Systems" **or** certified as Certified Value Specialists (CVS's) through SAVE International and qualified in performing the "Value Methodology Standard" of SAVE International and that to the best of my knowledge, the information contained in these forms is true and correct."

CATEGORY/ SUB-CATEGORY INDEX	CATEGORY DESCRIPTION
20.00	**LANDSCAPE ARCHITECTURE**

This class of work, is defined as the analysis, planning, design, management, preservation and rehabilitation of the land, preparation of construction documents and administration of construction contracts for landscape planting plans, setting of grades, determination of drainage and provision for storm drainage and irrigation systems, site planning, park and recreation planning, regional planning, town or urban planning, environmental restoration and historic preservation. These services may include but may not be limited to creation of public parks and parkways, site planning for office buildings, design of residential gardens, management of wilderness areas, design of gazebos, fences, waterfalls, pools, etc.

PROFESSIONAL STATUS:

Registration with the Florida State Board of Landscape Architecture.

ADEQUACY OF PERSONNEL:

At least one (1) professional Landscape Architect registered in Florida. The number of Florida registered professionals and other technical support personnel required for specific projects, will be determined during the consultant selection process on a project-by-project basis against the Selection Committee's estimate of the consultant personnel, required to adequately and competently perform the work in the desired period.

PAST RECORD, EXPERIENCE, AND CAPABILITY:

Satisfactory experience must be demonstrated in the activities required by this class by the full-time employed Florida registered landscape architect (s) used by the firm to obtain County Certification, and also by the bona fide employees thereof, if required by a particular project.

CATEGORY/ SUB-CATEGORY INDEX

CATEGORY DESCRIPTION

21.00 **LAND-USE PLANNING**

A land use plan is the policy framework that communities use to guide development and land use activities. Land use includes: housing, roads, commercial and industrial uses, recreation, open space, natural resources, and public facilities.

This class of work encompasses the systematic assessment of land and water potential, alternative patterns of land use and other physical, social and economic aspects of communities, for the purpose of selecting and adopting land-use options which are most beneficial to the entire population without degrading land and water resources and/or the environment, together with the selection of measures most likely to encourage such land uses. Land-use planners work with many types of communities, small villages, large cities, counties, states and federal agencies. It may include planning of infrastructures, services, and industrial settlements in order to promote the socio-economic growth of certain land regions.

The planning process typically involves the performance of the following of roles:

- Formulation of plans and policies to meet the social, economic, and physical needs of communities, and develop strategies to make these plans work.
- Development of plans for land use patterns, housing needs, parks and recreation facilities, highways and transportation systems, and economic development.
- Planners must be technically competent and creative.
- Planners work with the public to develop a vision of the future and to build on that vision.
- Planners often function as mediators among conflicting community interests; they may also become facilitators, using their professional judgment to help identify the best resolutions to the issues creating conflicts.
- Planners analyze problems, visualize futures, compare alternatives, and describe implications, so that public officials and citizens can make knowledgeable choices.
- Planners design and manage the planning process itself, in order to involve interest groups, citizens, and public officials.

PROFESSIONAL STATUS:

Certification with the American Institute of Certified Planners (AICP) is recommended.

ADEQUACY OF PERSONNEL:

The number of personnel required for specific projects, to adequately and competently perform the work in the desired period, will be determined during the consultant selection process on a project-by-project basis.

PAST RECORD, EXPERIENCE, AND CAPABILITY:

TC Category Form 2(s) must contain specific information as to the nature of projects demonstrating satisfactory experience activities required by this class by the full-time employees used by the firm to obtain County Certification.

CATEGORY/ SUB-CATEGORY INDEX	CATEGORY DESCRIPTION
22.00	ADA TITLE II CONSULTANT

This class of work is defined as the identification and documentation of physical accessibility barriers in public facilities that need to be removed to comply with Title II program access requirements of the ADA and/or Section 504 of the Rehabilitation Act of 1973 and federal Fair Housing Act requirements relating to disability and design. It includes the preparation of ADA surveys, the analysis of existing public programs, and the development of barrier removal plans that include architectural solutions, plans, and program modification recommendations to satisfy Title II and/or or Section 504, and Fair Housing compliance requirements.

PROFESSIONAL STATUS:

Registration with the Florida State Board of Architecture.

ADEQUACY OF PERSONNEL:

The number of professionals and other supporting personnel required for specific projects will be determined during the consulting selection process on a project-by-project basis. The Selection Committee will determine if the consultant's available personal is adequate to competently perform the work in the desired frame.

PAST RECORD, EXPERIENCE, AND CAPABILITY:

A minimum of one (1) year of proven experience is required in a leading role identifying and documenting architectural barriers, analyzing program compliance for ADA Title II and/or Section 504 of the Rehabilitation Act of 1973 and federal Fair Housing Act requirements relating to disability and design and providing barrier removal plans that include architectural solutions, plans and program modification recommendations. Documented evidence of the consultant's relevant experience must include specific information on the nature of previous ADA Title II barrier removal projects and/or Section 504 of the Rehabilitation Act of 1973 and federal Fair Housing Act requirements relating to disability and design and/or examples of architectural solutions prepared by the consultant. Some specific projects may require barrier removal plans and architectural solutions in CAD.

CATEGORY/ SUB-CATEGORY INDEX

CATEGORY DESCRIPTION

23.00 AVIATION ACOUSTICAL AND LAND USE COMPATIBILITY PLANNING SERVICES

This class of work is defined as Aviation Acoustical and Land Use Compatibility Planning Services and includes, but is not limited to, addressing airport/community land use compatibility issues, aircraft noise monitoring studies, airspace flight track management studies, environmental assessments, environmental impact statements, aircraft noise abatement studies, Federal Aviation Administration (FAA) Federal Aviation Regulations (FAR) Part 150 noise compatibility studies, and noise modeling using the latest available FAA models.

PROFESSIONAL STATUS:

- In-house aircraft noise modeling experience utilizing the latest FAA Integrated Noise Modeling (INM) software.
- Development of aircraft noise exposure maps.
- Must be capable to perform acoustical testing (portable aircraft noise monitoring).
- Ability to provide sound insulation programs / studies.
- Must be able to develop, perform, and manage FAR Part 150 noise compatibility studies.
- Must be able to perform aviation noise compatibility land-use studies.
- Must be able to manage public outreach programs for controversial airport & aviation related development projects.
- Must be able to evaluate and recommend aircraft noise abatement procedures.
- Ability to prepare FAA guided Environmental Impact Statements (EIS), and Environmental Assessments.
- Ability to develop aircraft fleet mix and runway use studies.

ADEQUACY OF PERSONNEL:

The number of professionals and other supporting personnel required for specific projects will be determined during the consulting selection process on a project-by-project basis. The Selection Committee will determine if the consultant's available personnel is adequate to competently perform the work in the desired frame.

PAST RECORD, EXPERIENCE, AND CAPABILITY:

A minimum of seven (7) to ten (10) years of proven experience is required in all leading roles of Aviation Acoustical and Land Use Compatibility Planning Services to include but not limited to, addressing airport / community land use compatibility issues, aircraft noise monitoring studies, airspace flight track management studies, environmental assessments, environmental impact statements, noise abatement studies, FAA FAR Part 150 studies, and noise modeling using the latest available FAA models. Documented evidence of the consultant's relevant experience must include specific information on the nature of previous Aviation Acoustical and Land Use Compatibility Planning Services, including:

- Aviation Land-use planning and study projects.
- Aviation Environmental Assessments (EA).
- Aviation Environmental Impact Statements (EIS).
- FAR Part 150 noise compatibility studies.
- INM Noise Contours.
- FAR Part 150 noise compatibility studies.

At the time of application, you must provide a copy of one of the following:

1. Environmental Impact Statement study;
2. FAA FAR Part 150 Noise Compatibility study; or
3. Environmental Assessment.

For all submitted reports, provide the associated FAA Finding of No Significance (FONSI) or an FAA Record of Decision (ROD).

CATEGORY/ SUB-CATEGORY INDEX	CATEGORY DESCRIPTION
24.00	**BUILDING PRODUCT EVALUATION SERVICES**

This class of work is defined as Product Evaluation Services and includes, but is not limited to, reviewing the testing protocols, reviewing the test reports, certifying the qualifying calculations, and reviewing drawings for these products for compliance with the Florida Building Code. The work may include plan review and/or peer review, preferably in the areas of building envelope components such as panel walls, exterior doors, roofing products, skylights, windows, shutters, and structural components. In order to meet requirements, the firm needs to prove Product Approval experience in reviewing products for issuance of a Miami-Dade Notice of Acceptance (NOA). The firm must also provide written assurance that it shall not have any conflict or affiliation with the State of Florida Product Approval System. This statement must be provided on the TC Category Form 2.

PROFESSIONAL STATUS

Registration with the Florida State Board of Professional Engineers or Architecture as applicable.

ADEQUACY OF PERSONNEL:

At least one (1) professional engineer or architect registered in Florida. The number of Florida registered professionals and other technical support personnel required for specific projects, will be determined during the consultant selection process on a project-by-project basis against the Selection Committee's estimate of the consultant personnel, required to adequately and competently perform the work in the desired period.

PAST RECORD, EXPERIENCE, AND CAPABILITY:

The firm is required to have at least 2 years' experience in Product Approval consulting experience. Satisfactory experience must be demonstrated in the activities required by this class by the full-time employed Florida registered engineer(s) or architect (s) used by the firm to obtain County Certification.

The Certification Certificate will indicate the main work class category number (24.00) proceeded by the applicable work class designations (24.01 through 24.07) listed below:

24.01 PANEL WALLS – Professional engineering license with the State of Florida is required.

24.02 EXTERIOR DOORS - Professional engineering or architecture license with the State of Florida is required**.**

24.03 ROOFING PRODUCTS- Professional engineering or architecture license with the State of Florida is required.

24.04 SKYLIGHTS - Professional engineering license with the State of Florida is required.

24.05 WINDOWS - Professional engineering or architecture license with the State of Florida is required.

24.06 SHUTTERS - Professional engineering or architecture license with the State of Florida is required.

24.07 STRUCTURAL COMPONENTS – roof straps, truss straps, joint windows to doors, and structural beams (made of laminated wood) **Professional engineering license with the State of Florida is required.**

CATEGORY/ SUB-CATEGORY INDEX	CATEGORY DESCRIPTION
25.00	**AVIATION PLANNING CONSULTANT SERVICES**

This class of work is expected to provide a wide variety of skills and capabilities to directly support the work assigned to the Miami-Dade Aviation Department's Aviation Planning Division, as related to aviation planning services to the Miami-Dade County airport system. The airport system consists of the Miami International Airport (MIA), Opa-locka Executive Airport (OPF), Kendall Tamiami Executive Airport (TMB), Homestead General Aviation Airport (X-51) and Dade-Collier Training and Transition Airport (TNT).

The work to be completed under these services cover a broad spectrum of specialized airport and aviation planning activities defined as "Aviation Planning" related to airfield, airspace and terminal planning, aircraft and airport operational analysis, airport master planning, airport strategic planning, aviation regional planning, ALP/iALP development and support, capital improvement program (CIP), Joint Automated Capital Improvement Program (JACIP), development and support, airspace analysis, zoning airport planning technology applications, operations of planning models and planning support functions, economic impact analysis, management of planning data, planning support to airport management, individual planning project studies, and other activities normally associated with planning at large commercial and general aviation airports.

PROFESSIONAL STATUS:

Registration with the Florida Board of Professional Engineers is preferred

Affiliations with the following professional organizations recommended:

- Airports Council International - North America - ACI-NA
- Airports Consultants Council – ACC
- Florida Aviation Council – FAC
- American Association of Airport Executives – AAAE
- American Institute of Certified Planners (AICP) certification

ADEQUACY OF PERSONNEL:

A minimum of eight (8) to ten (10) years of experience in aviation planning is required. The number of professionals and other supporting personnel required for specific projects will be determined during the consulting selection process on a project-by-project basis. The Selection Committee will determine if the consultant's available personnel is adequate to competently perform the work in the desired frame.

PAST RECORD, EXPERIENCE, AND CAPABILITY:

TC Category Form 2(s) must contain specific information as to the nature of projects demonstrating satisfactory experience as required by this category.

- ❑ Conducting airspace, terminal, and roadway planning analysis, including simulation modeling.
- ❑ Ability to model terminal passenger movements, circulation patterns, and queuing using modeling programs such as Simmod, Path Planner, TAAMS, and Forecasting, etc.
- ❑ Assessing aircraft performance characteristics and translating these into airfield or facility needs for the County's system of public airports.

- Preparation of aviation activity forecasting, economic analysis, conducting passenger and cargo surveys, preparing statistical databases for the purposes of modeling.
- Conducting airspace assessments and obstruction analysis for compliance with Federal Aviation Regulation (FAR) PART 77 and Terminal Instrument Procedures (TERPS).
- Conducting siting and operational analysis for existing and or new navigational aids such as GS, LOC, ALS, PAPI, MASLR, REIL, etc.
- Preparation and update of the Height and Land Zoning Ordinances for the County's system of public airports.
- Preparation and maintenance of a Capital Improvement Program for the airport system, to include scope development and detailed cost estimates as well as financial feasibility, cost benefit analysis and FAA, DHS and FDOT grant applications.
- Preparation of Airport Improvement Program (AIP) project justification for grant funding in support of airport development or enhancement projects.

CATEGORY FORM:

The following statement must be inserted at the last page of the TC Category Form 2 or on the company's letterhead and must include signature, title, and date for the qualifying personnel.

"I hereby certify, that the above employees are familiar with FAA planning and design criteria (Advisory Circulars 150/5300 series, 150/5070, Regional/Local ALP checklists, AIP handbook, Regional guidance letters, and orders) and also know the State of Florida Statues related to aviation planning (Chapters 330, 331, 332, and 186), FASP, CFASPP and State System Planning, ALP guidebook and any new airport land use compatibility standards. The employees also have an understating of State of Florida's aviation programs such as JACIP, 3DAAP, and iALP. The employees also have knowledge of Department of Homeland Security component mandates that impact aviation security and airport planning."

CATEGORY/ SUB-CATEGORY INDEX	CATEGORY DESCRIPTION
26.00	**CLAIMS ANALYSIS SERVICES**

This class of work involves analyzing the complex technical and design issues arising in connection with design and construction disputes. Claims analysis services include preparation, evaluation, analysis, presentation and when required, testimony relating to; contract documents and subcontract relationships, estimates, bids and budgets. Evaluation of Critical Path Method (CPM), and other schedules and schedule updates, management procedures and performance, delays, disruption, acceleration and productivity and claims prevention and dispute avoidance is required. Evaluation of defective work/product s, delay time and cost damages quantification, entitlement assessment, productivity and manpower evaluation, responsibility matrix analysis, creation of initial project/product schedules and development of precedence diagrams and I-J networks (Primavera and Primavera Suretrak), analyzing resource expenditures, bills of quantities, estimating, job site and home office overhead, preparation of demonstrative exhibits, assessing all impacts on schedule, costs and project/product constraints. Knowledge of rules of procedure, discovery, litigation support and expert witness in trial is desired.

PROFESSIONAL STATUS:

Affiliation with the following professional organizations is preferred:

- The Association for the Advancement of Cost Estimating - AACE International
- Project Management Institute – PMI
- American Arbitration Association

ADEQUACY OF PERSONNEL:

A degree in architecture, engineering, construction management, or other “claim related” advanced degree, accounting, Masters in Business Administration, is required. The number of professionals and other supporting personnel required for specific projects will be determined during the consulting selection process on a project-by-project basis. The Selection Committee will determine if the consultant’s available personnel is adequate to competently perform the work in the desired timeframe.

PAST RECORD, EXPERIENCE, AND CAPABILITY:

Minimum ten years of experience in completing above type tasks and the preparation of written reports, such as Eichleay Formula Analysis, Time Impact Analysis, Requests for Equitable Adjustments and Expert Reports, and giving depositions and expert testimony before mediation and arbitration panels, administrative hearing. Proficient knowledgeable of the following types of software: scheduling, data analysis, excel, access, milestone, litigation support software and other management software as required.

CATEGORY/ SUB-CATEGORY INDEX

CATEGORY DESCRIPTION

27.00 BUILDING PERFORMANCE EVALUATION SERVICES

This class of work encompasses all aspects of Building Performance Evaluation (BPE) which is a tested and defined method that can be adopted to measure and monitor building performance before, during and after building projects. The BPE shall have the experience to monitor the results by establishing a robust energy monitoring systems, providing results to agreed timescales and ensure that identified anomalies are resolved.

Energy, water, or wastewater cost savings means a measured reduction in the cost of fuel, energy or water consumption, or wastewater production; stipulated operation and maintenance savings; improvements in supplied utility systems, including, without limitation, revenue enhancements or reduction in net operating costs resulting from increased meter accuracy or performance; and identified capital savings, created from the implementation of one or more energy, water, or wastewater efficiency or conservation measures when compared with an established baseline for the previous cost of fuel, energy or water consumption, wastewater production, stipulated operation and maintenance, meter accuracy or performance, and identified capital costs.

The Certification Certificate will indicate the main work class category number (27.00) preceded by the applicable work class designations (27.01 through 27.03) listed below.

27.01 ENERGY, WATER AND WASTEWATER AUDIT

The goal of an energy, water and wastewater audit is to identify energy, water and wastewater -saving opportunities, but also to increase asset values, lower ownership costs and promote environmental stewardship, human comfort, health and safety. This is done by taking a comprehensive look at the energy consumption data associated with a commercial building, as well as the energy and resource consuming infrastructures, to identify fiscally responsible, sustainable energy efficiency measures that reduce energy usage and carbon emissions.

PROFESSIONAL STATUS:

An Energy, Water and Wastewater performance savings Auditor must be in compliance with Florida Statues 489.145 in order to provide professional services related to Technical Certification Category (TC) 27.01.

The Auditor must work directly under the supervision of a qualifier who is a Professional Engineer or Architect (A/E) working full time for a company Prequalified and Technically Certified with Miami-Dade County; or an individual Professional A/E Prequalified and Technically Certified with Miami-Dade County.

The Auditor means an individual who is not on the staff of the property being audited and possesses such qualifications as determined to perform or directly supervise individuals performing energy, water and wastewater audits, and to certify audit reports required by this work type. To obtain technical certification under TC 27.01 the Auditor must hold one or more of the below listed certifications:

a. An accredited certification that has been designated a “Better Buildings Recognized Program” by the U.S. Department of Energy meeting the criteria set

forth in the Better Buildings Workforce Guidelines (BBWG) for Building Energy Auditors or Energy Managers;

b. Certified Energy Auditor (CEA) or certified Energy Manager (CEM), issued by the Association of Energy Engineers (AEE);
c. Certified Facilities Manager (CFM), issued by the International Facility Management Association (IFMA);
d. System Maintenance Administrator (SMA) or System Maintenance Technician (SMT), issued by Building Owners and Managers Institute (BOMI) International;
e. High Performance Building Design Professional (HBPD) or Building Energy Assessment Professional (BEAP), issued by the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE);
f. For audits of multifamily residential buildings only, a Multifamily Building Analyst (MFBA), issued by the Building Performance Institute (BPI);
g. Certified RESNET (Residential Energy Services Network); or
h. Federally recognized certification standards for water auditors.

ADEQUACY OF PERSONNEL:

At least one (1) "Auditor" is required to obtain this TC certification. The number of certified professionals and other technical support personnel required for specific projects, will be determined during the consultant selection process on a project-by-project basis against the Selection Committee's estimate of the consultant personnel, required to adequately and competently perform the work in the desired time frame.

PAST RECORD, EXPERIENCE, AND CAPABILITY:

TC Category Form 2 must contain specific information as to the technical nature of projects demonstrating satisfactory experience activities required by this class in their specific fields, used by the firm to obtain County Certification.

To obtain technical certification under TC 27.01 the Auditor must provide at least three (3) completed projects related to guaranteed energy, water and waste water performance savings audits.

27.02 COMMISSIONING/RETRO-COMMISSIONING

Commissioning and Retro-Commissioning is the process of reviewing a building's operations to ensure that all systems are working as designed. Commissioning and Retro-Commissioning identifies where building equipment/systems are not operating as designed and include the implementation of the necessary "re-tuning" measures that can be implemented by itself, or that can be an outcome/recommendation from an energy audit.

PROFESSIONAL STATUS:

Re-tuning professional for Commissioning and Retro-Commissioning, must be in compliance with Florida Statues 489.145 in order to provide professional services related to Technical Category Certification (TC) 27.02.

The Re-tuning professional must work directly under the supervision of a qualifier who is a Professional Engineer or Architect (A/E) working full time for a company Prequalified and Technically Certified with Miami-Dade County; or an individual Professional A/E Prequalified and Technically Certified with Miami-Dade County.

Re-tuning professional means an individual who is not on the staff of the property being retuned and possesses such qualifications as determined to perform or directly supervise individuals performing the retuning work required by this work type. To mean a systematic process for optimizing building performance through the assessment,

identification and correction of deficiencies in existing base building systems, including but not limited to repairs of defects, cleaning, adjustments of valves, sensors, controls or programmed set points, and/or changes in operational practices.

The Re-tuning professional means an individual who is not on the staff of the property being audited and possesses such qualifications as determined to perform or directly supervise individuals performing Commissioning and Retro-Commissioning services. To obtain technical certification under TC 27.02 the Re-tuning professional must hold one or more of the below listed certifications:

a. An accredited certification that has been designated a "Better Buildings Recognized Program" by the Department of Energy meeting the criteria set forth in the Better Buildings Workforce Guidelines (BBWG) for Building Commissioning Professionals;
b. Certified Commissioning Professional (CCP), issued by the Building Commissioning Association (BCA);
c. Certified Commissioning Authority (CxA) or Certified Commissioning Technician (CxT), issued by the AABC Commissioning Group (ACG);
d. Certified Building Commissioning Professional (CBCP) or Existing Building Commissioning Professional (EBCP), issued by the Association of Energy Engineers (AEE);
e. Existing Building Commissioning Professional (EBCP);
f. Certified Professional certified by the National Environmental Balancing Bureau (NEBB);
g. Commissioning Process Management Professional (CPMP), issued by American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE);
h. Accredited Commissioning Process Authority Professional (ACPAP) approved by the University of Wisconsin.

ADEQUACY OF PERSONNEL:

At least one (1) "Re-tuning professional" is required to obtain this TC certification. The number of certified professionals and other technical support personnel required for specific projects, will be determined during the consultant selection process on a project-by-project basis against the Selection Committee's estimate of the consultant personnel, required to adequately and competently perform the work in the desired time frame.

PAST RECORD, EXPERIENCE, AND CAPABILITY:

TC Category Form 2 must contain specific information as to the technical nature of projects demonstrating satisfactory experience activities required by this class in their specific fields, used by the firm to obtain County Certification.

To obtain technical certification under TC 27.02 the Re-tuning professional must provide at least three (3) completed projects related to Commissioning and Retro-Commissioning.

27.03 ESCO SERVICES

An energy service company (ESCO) is a commercial or non-profit business providing a broad range of energy solutions including designs and implementation of energy savings projects, retrofitting, energy conservation, energy infrastructure outsourcing, power generation and energy supply, and risk management. The ESCO must provide an investment grade energy audit, detailing energy, water and wastewater audit, along with

an accompanying analysis of proposed energy, water, and wastewater efficiency and conservation measures through energy performance contracts. A guaranteed energy, water, and wastewater performance savings contract must include a written guaranty that may include, but is not limited to the form of, a letter of credit, insurance policy, or corporate guaranty by the guaranty energy, water, and wastewater performance savings contractor that annual cost savings will meet or exceed the amortized cost of energy, water, and wastewater efficiency and conservation measures.

The ESCO must demonstrate the technical and managerial competence to develop comprehensive energy efficiency projects, defined to include lighting measures; efficient motors and drives; and measures involving heating, ventilation, and air conditioning systems; the technical and managerial competence to provide a full range of energy services, defined to include conducting energy audits; providing or arranging for project financing; design engineering; providing operations and maintenance services; and verifying energy savings according to accepted industry practice; and the regular business practice of developing performance-based projects, defined to mean projects for which the developer's compensation is contingent upon the projects realizing verified cost savings.

PROFESSIONAL STATUS:

Any ESCO, must be in compliance with Florida Statues 489.145 in order to provide professional services related to Technical Category Certification (TC) 27.03.

To render services under TC 27.03 the ESCO must work directly with a qualifier who is a Professional A/E Prequalified and Technically Certified with Miami-Dade County, or an A/E company Prequalified and Technically Certified with Miami-Dade County; in addition the ESCO must hold one or more of the below certifications:

a. NAESCO (National Association of Energy Service Companies);
b. Prequalification for work through the U.S. Department of Energy for federal facilities; or
c. Prequalification for work through the U.S. Department of Defense.

For solar projects certification by the North American Board of Certified Energy Practitioners (NABCEP) is preferred, on one or more of the following certifications:

a. PV Installation Professional (PVIP) Certification,
b. PV Design Specialist,
c. PV Installer Specialist, and
d. PV Commissioning & Maintenance Specialist.

ADEQUACY OF PERSONNEL:

The number of certified professionals and other technical support personnel required for specific projects, will be determined during the consultant selection process on a project-by-project basis against the Selection Committee’s estimate of the consultant personnel, required to adequately and competently perform the work in the desired time frame.

To render services under TC 27.03 the ESCO certified company must work directly with a qualifier who is an A/E Prequalified and Technically Certified with Miami-Dade County, or an A/E company Prequalified and Technically Certified with Miami-Dade County.

PAST RECORD, EXPERIENCE, AND CAPABILITY:

Satisfactory experience must be demonstrated in the activities required by this class by the full-time employed professional(s) used by the firm to obtain County Certification, and by the bona fide employees thereof, if required by a particular project.

The ESCO must provide at least three (3) performance contracts referenced on TC Category Form 2 which must contain specific information as to the technical nature of projects demonstrating satisfactory experience activities required by this class in their specific fields, used by the firm to obtain County Certification.

ESCOs must demonstrate the ability to provide the full range of services required for a comprehensive energy efficiency project, including but not limited to:

- Energy Audits
- Design Engineering
- Providing or Arranging Project Financing
- Construction Management
- Commissioning
- Operations and Maintenance of Energy Efficiency Technologies
- Verifying Energy Savings