

## Minimum Skills Requirements for Work Types

### General skills requirement for all work types:

The contractor shall show verifiable knowledge and experience of having satisfactorily performed the work or have on their staff a person or persons who have verifiable knowledge and experience of being in responsible charge of the work. The Contractor shall show the ability to provide all equipment necessary to perform the work.

### There are no additional requirements beyond those listed in the general skills requirement for the following work types:

1) Clearing and Grubbing	29) Structure Repairs
6) Incidental Grading	30) Hydrodemolition
7) Soil Stabilization	35) Drainage
9) Aggregate Bases	36) Guardrail/Attenuators
11) Apply Bituminous Treatments	37) Fence
14) Concrete Texturing	38) Miscellaneous Concrete
15) Sawing	39) Maintenance of Traffic
17) Rigid Pavement Replacement	40) Waterproofing
18) Pavement Rubblizing, Breaking, Pulverizing	41) Raised Pavement Markers
19) Structure Removal	42) Signing
23) Reinforcing Steel	45) Pavement Markings
24) Structural Steel Erection	46) Landscaping
25) Stud Welding	47) Mowing
27) Expansion & Contraction Joints, Joint Sealers, Bearing Devices	48) Trucking
28) Caissons/Drilled Shafts	50) Railroad Track Construction
	53) Piling

### In addition to the general skills requirement, the experience cited by the contractor must be recent for the following work types:

2) Building Removal	44) Traffic Signals – Standard
3) Gas, Oil, Water Well Abandonments	51) Micro Tunneling
8) Temporary Soil Erosion and Sediment Control	52) Tunneling
26) Structural Steel Painting	54) Post-Tensioning Bridge Members
32) Heat Straightening	55) Fiber Optic Cable Installation, Splicing, Termination and Testing – Traffic Signal System
34) Earth Retaining Structures	56) Fiber Optic Cable Installation, Splicing, Termination and Testing – Intelligent Transportation System
43) Highway Lighting	

**The following work types have additional requirements as shown:**

#### **4) Roadway Excavation and Embankment Construction**

In addition to the general skills requirement the contractor must demonstrate experience in performing earth moving projects of over 10,000 c.y. (7646 cubic meters) of the total of excavation and embankment.

#### **5) Major Roadway Excavation**

In addition to the general skills requirement the contractor must demonstrate experience in performing earth/rock moving projects of over 750,000 c.y. (573,416 cubic meters) of excavation or projects of over 500,000 c.y. (383,278 cubic meters) of excavation that included a significant amount of rock excavation.

#### **10) Flexible Paving**

In addition to the general skills requirement the contractor must demonstrate recent experience in placing bituminous concrete mixtures with equipment using automatic grade control.

#### **12) Rigid Paving**

In addition to the general skills requirement the contractor must demonstrate recent experience in placing portland cement concrete pavements in quantities greater than 1,500 square yards per paving location with equipment using automatic line and grade control.

#### **13) Pavement Planing, Milling, Scarification**

In addition to the general skills requirement the contractor must demonstrate recent experience in performing this work using equipment with automatic grade control.

#### **20) Level 1 Bridge**

In addition to the general skills requirement the contractor must have constructed a minimum of 5 structures of the types listed for this category (no more than two may be retaining walls in excess of 8') within the last eight years.

#### **21) Level 2 Bridge**

In addition to the general skills requirement the contractor must have constructed a minimum of 3 structures of the types listed for this category (none shall be level 1 bridge types) within the past eight years or 5 structures of the following types within the past five years:

- Prestressed box beam bridges on capped pile substructures.
- Single span concrete slab.
- Continuous span concrete slab bridges on capped pile substructures.

## **22) Level 3 Bridge**

In addition to the general skills requirement the contractor must demonstrate experience in having constructed at least one structure of the type listed for this category (not a level 1 or level 2 bridge type) or at least 3 multispan rolled beam, plate girder, or concrete beam (not prestressed box beams) bridges that are at least 500 feet (152.4 meters) in length or at least 50 feet (15.2 meters) in height within the past ten years.

## **26) Structural Steel Painting**

**Experience.** In addition to the general skills requirement, the Contractor must demonstrate successful experience and substantial compliance with all contract requirements on at least three (3) structures within the last five (5) years. The experience on the structures must involve solvent cleaning, debris removal, grinding of flange edges, complete removal of paint by abrasive blasting on a steel structure to a near white condition, removal of fins, tears, and slivers, containment and disposal of solid waste (including hazardous waste), application of multiple coats of a solvent based coating system within specified limits, and caulking. Provide sufficient documentation from the owner that the structures were completed in accordance with the contract requirements.

Failure to satisfactorily perform prior ODOT work in accordance with contract requirements shall be sufficient grounds for the Director to deny the request for a certificate of qualification in accordance with the Ohio Revised Code-Section 5525.03.

**Training.** All principals within the Contractor's organization must complete a Bridge Painting pre-qualification course once every four (4) years. Principals are defined as owners, officers and key personnel. In addition, the Contractor's superintendent assigned to supervise the Contractor's structural steel painting on a project must complete the Bridge Painting pre-qualification course within not more than four (4) years prior to working on the project.

The Bridge Painting pre-qualification course will be offered twice a year through the Department's Office of Construction Administration. Each individual who successfully completes the training course will receive a course certificate. A copy of the certificate of training must be furnished with the application for qualification for each principal as defined above. Also, a copy of the certificate of training for the superintendent must be furnished before the Contractor will be permitted to commence structural steel painting activities on a project.

Prior to the commencement of bridge painting activities, the Contractor's field supervision personnel and quality control specialist must be trained by a National Association of Corrosion engineers certified coating inspector or by a Society for protective Coatings protective coating specialist as specified in the contract documents.

## **31) Structural Steel Repairs**

In addition to the general skills requirement the contractor must demonstrate past history of the ability to design or provide designs for temporary support systems and ability to install temporary support systems.

### **33) Tieback Installation**

In addition to the general skills requirement the contractor must provide evidence of preparing or providing designs for tieback bond zones and conducting various performance tests.

### **49) Herbicidal Spraying**

In addition to the general skills requirement the contractor must be a licensed applicator by the Department of Agriculture.

### **54) Post-Tensioning Bridge Members**

In addition to the general skills requirement the contractor must demonstrate satisfactory successful experience in performing post-tensioning operations for bridge members on at least four previous bridge projects within the last ten years. These bridges must have been over 250 ft. total length and have multi-strand bonded (grouted in duct) tendons. The contractor must furnish an experienced grouting supervisor on the site during all grouting operations. The contractor's grouting supervisor must have supervisory experience grouting post-tensioning ducts on at least four bridge projects as described above and hold a current American Segmental Bridge Institute (ASBI) Certified Grouting Technician certificate.

### **55) Fiber Optic Cable Installation, Splicing, Termination and Testing – Traffic Signal System**

In addition to the general skills requirement, the Contractor must demonstrate successful experience in the splicing of at least 200 single-mode and/or multimode fiber.

The Contractor must furnish a Supervising Fiber Optic Technician (SFOT) who has successfully completed a comprehensive training course for inside or outside plant installation, splicing, termination, and performance testing of single mode and multimode fiber optic cable. The course must be a minimum of 32 hours total of instruction of which a minimum of 16 hours must be hands-on instruction. The Contractor must demonstrate that the course curriculum included, at a minimum, the following topics:

- Fiber optic theory and principles
- Fiber types
- Cable types
- Panels and enclosures
- Design
- Safety
- Inside and outside plant installation
- Cable preparation
- Connectors and connectorization
- Splicing and terminations
- OTDR and test equipment theory, setup, measurement, and documentation
- Restoration and repair

In addition, the SFOT must have a minimum of one (1) year of work experience in the installation, splicing, and termination of fiber optic cable and in the testing of fiber optic cable using an optical time domain reflectometer (OTDR) and a power meter as primary job responsibilities.

The Contractor's installers performing any type of fiber optic work shall have successfully completed a minimum 16 hours total of instruction of which a minimum

of 8 hours must be hands-on instruction. The Contractor must demonstrate that the course curriculum included, at a minimum, the following topics:

- Fiber optic theory and principles
- Fiber types
- Cable types
- Safety
- Cable preparation
- Connectors and connectorization
- Splicing and terminations
- ODTR operation
- Restoration and repair

Detailed course curricula showing topics, total hours of instruction and hours of hands-on instruction along with a copy of a certificate of completion of the courses must be submitted for evaluation purposes.

### **56) Fiber Optic Cable Installation, Splicing, Termination and Testing – Intelligent Transportation System**

In addition to the general skills requirement and the minimum skill requirements for Work Type 55 – Fiber Optic Cable Installation, Splicing, Termination and Testing – Traffic Signal System, the Contractor must demonstrate successful experience in performing each of the following:

1. a minimum of one thousand (1,000) splices of single mode and/or multimode fiber;
2. a minimum of two hundred (200) terminations of single mode and/or multimode fiber;
3. a minimum of five (5) miles in length of installation of outside plant fiber optic cable including at least one (1) contiguous segment at least one (1) mile in length.