CONSTRUCTION TRAINING AND QUALIFICATION MANUAL

TABLE OF CONTENTS

Chapter 1 CONSTRUCTION TRAINING AND QUALIFICATION PROGRAM ADMINISTRATION

PURPOSE..... 1-1

AUTHORITY..... 1-1

REFERENCES..... 1-1

SCOPE..... 1-1

DISTRIBUTION..... 1-2

BACKGROUND..... 1-2

DEFINITIONS..... 1-3

CONSTRUCTION TRAINING AND QUALIFICATION MANUAL REVIEW..... 1-6

REVISIONS AND ADDITIONS..... 1-6

Typical Actions To Be Taken..... 1-6

New Chapter Development..... 1-6

Revised Chapter(s)..... 1-7

Training Bulletin (TB)..... 1-7

FORMS..... 1-7

1.1 CTQP PROGRAM ADMINISTRATOR RESPONSIBILITIES……..... 1-8

1.1.1 CTQP Administrator's Website…….. 1-8

1.1.2 Database……..... 1-8

1.1.2.1 Trainee Identification..... 1-9

1.1.2.2 Data Change..... 1-9

1.1.3 Administrator's Responsibilities with Approved Provider and Instructors..... 1-10

1.2 DIRECTOR, OFFICE OF CONSTRUCTION RESPONSIBILITIES..... 1-11

1.3 TECHNICAL REVIEW TEAM RESPONSIBILITIES..... 1-11

1.3.1 TRT Responsibilities with Approved Providers and Instructors..... 1-13

1.4 TECHNICAL REVIEW TEAM CHAIR RESPONSIBILITIES..... 1-14

1.5 STATE CONSTRUCTION TRAINING ADMINISTRATOR RESPONSIBILITES..... 1-15

1.6 DISTRICT CONSTRUCTION TRAINING ADMINISTRATOR RESPONSIBILITIES..... 1-17

1.7 STATE MATERIALS OFFICE RESPONSIBILITIES..... 1-17

1.8 DISTRICT MATERIALS AND RESEARCH OFFICES RESPONSIBILITIES..... 1-18

1.9 CONSULTANT PARTICIPATION RESPONSIBILITIES..... 1-18

1.10 PROVIDER RESPONSIBILITIES..... 1-18

1.10.1 Provider Approval Request..... 1-21

1.10.2 Provider Review and Evaluation..... 1-23

1.10.3 Provider Examination Handling and Return Process..... 1-25

1.10.4 Provider Suspension Process..... 1-25

1.11 INSTRUCTOR RESPONSIBILITIES…….. 1-26

1.11.1 Instructor Approval Request……. 1-26

1.11.2 Instructor Review and Evaluation……. 1 -27

1.12 PROCTOR RESPONSIBILITIES……... 1-29

1.12.1 Proctor Application Procedure……. 1-29

1.13 TRAINEE RESPONSIBILITIES……..…… 1-30

1.13.1 Trainee Application Procedure……... 1-30

1.13.2 Department Employee Performance Standards…….. 1-30

1.14 QUALIFICATIONS…….. 1-31

1.14.1 CTQP Qualification Standards……. 1-31

1.14.2 CTQP Qualification and Requalification……. 1-32

1.14.3 CTQP Extension of Qualification Duration……. 1-32

1.14.4 Waiver of Requirements for Qualification……... 1-33

1.14.5 CTQP Certificates of Qualification…….. 1-35

1.14.6 Reciprocity…….. 1-35

1.14.7 CTQP Qualification Revocation Based on Lack of Proficiency…….. 1-35

1.14.8 CTQP Qualification Revocation Based on Falsification of Records.. 1-36

1.15 COURSES…….. 1-37

1.15.1 CTQP Courses…….. 1-37

1.15.2 CTQP Course Fees…….. 1-38

1.15.3 CTQP Training Manuals…….. 1-39

1.15.4 CTQP Course Audits.....……. 1-39

1.15.5 CTQP Refresher Course Training…….. 1-39

1.15.6 Non CTQP Courses Required in CTQP Qualifications…… 1-40

1.15.6.1 Aggregates…….. 1-40

1.15.6.2 Concrete…….. 1-40

1.15.6.3 Structures……. 1-40

1.15.7 Standards and Guidelines for Course Development…… 1-41

1.16 CTQP EXAMINATIONS……. 1-43

1.16.1 Examination Security……. 1-44

1.16.2 Challenging an Examination……. 1-44

1.16.3 CTQP Examination Fees…….. 1-45

1.16.4 Examination Dispute…….. 1-45

1.17 SELF-STUDY COURSES (FDOT employees only)……. 1-45

1.17.1 Self-Study Standards……. 1-46

1.17.2 Self-Study Training Manuals……. 1-47

1.17.3 Self-Study Examination……. 1-47

1.17.4 Self-Study Course Completions Certificates…….. 1-48

1.17.5 Self-Study Special Recognitions…….. 1-48

ATTACHMENT 1-1……. 1-49

ATTACHMENT 1-2……. 1-51

Chapter 2 AGGREGATE TECHNICIAN TRAINING AND QUALIFICATION PROGRAM

2.1 PURPOSE..... 2-1
2.2 BACKGROUND……. 2-1
2.3 QUALIFICATION REQUIREMENTS BY JOB FUNCTION……. 2-1
2.3.1 Aggregate Testing Technician……. 2-1
2.3.2 Aggregate Base Testing Technician……..... 2-1
2.3.3 Qualified Sampler Technician……. 2-2
2.3.4 Limerock Bearing Ratio Technician……... 2-2
2.4 QUALIFICATIONS AND COURSES…….. 2-2
2.4.1 General Aggregate Qualification Requirements…….. 2-2
2.4.2 Aggregate Testing Technician Qualification Requirements……... 2-3
2.4.2.1 ACI Aggregate Testing Technician Level 1 Training Course…… 2-3
2.4.3 Aggregate Base Testing Technician Qualification Requirements……. 2-3
2.4.3.1 ACI Aggregate Base Testing Technician Training Course……... 2-4
2.4.4 Qualified Sampler Technician Qualification Requirements……. 2-4
2.4.4.1 Qualified Sampler Technician Course…….. 2-4
2.4.5 LBR Technician Qualification Requirements……. 2-5
2.4.5.1 LBR Technician Qualification Training Course……... 2-6

2.5 REQUALIFICATION…….. 2-6

2.6 REVOCATION OF QUALIFICATION..... 2-6

2.7 RESPONSIBILITIES..... 2-6

ATTACHMENT 2-1……. 2-8

ATTACHMENT 2-2……... 2-9

ATTACHMENT 2-3……. 2-10

ATTACHMENT 2-4……. 2-11

Chapter 3 ASPHALT INSPECTION AND TRAINING QUALIFICATION PROGRAM

3.1 PURPOSE..... 3-1

3.2 BACKGROUND……...… 3-1

3.3 QUALIFICATION REQUIREMENTS BY JOB FUNCTION……... 3-1

3.3.1 Asphalt Paving Level 1……... 3-1

3.3.2 Asphalt Paving Level 2……... 3-1

3.3.3 Asphalt Plant Level 1……..…..... 3-1

3.3.4 Asphalt Plant Level 2……..... 3-2

3.3.5 Asphalt Mix Designer……..... 3-2

3.4 QUALIFICATIONS AND COURSES……..... 3-2

3.4.1 Asphalt Paving Level 1 Qualification Requirements……..... 3-2

3.4.1.1 Asphalt Paving Level 1 Training Course……..... 3-3

3.4.2 Asphalt Paving Level 2 Qualification Requirements……..... 3-4

3.4.2.1 Asphalt Paving Level 2 Training Course……..... 3-5

3.4.3 Asphalt Plant Level 1 Qualification Requirements……..... 3-6

3.4.3.1 Asphalt Plant Level 1 Training Course……..... 3-6

3.4.4 Asphalt Plant Level 2 Qualification Requirements……..... 3-7

3.4.4.1 Asphalt Plant Level 2 Training Course……..... 3-8

3.4.5 Asphalt Mix Designer Qualification Requirements……..... 3-9

3.4.5.1 Asphalt Mix Designer Training Course……..... 3-9

3.5 REQUALIFICATION..……..... 3-10

3.6 REVOCATION OF QUALIFICATION..... 3-11

3.7 RESPONSIBILITIES……..... 3-11

Chapter 4 CONCRETE TRAINING AND QUALIFICATION PROGRAM

4.1 PURPOSE..... 4-1
4.2 AUTHORITY..... 4-1
4.3 REFERENCE..... 4-1
4.4 BACKGROUND..... 4-1
4.5 QUALIFICATIONS AND TRAINING COURSES..... 4-2
4.5.1 Concrete Field Technician Level 1 Qualification Requirements..... 4-2
4.5.1.1 ACI Concrete Field Testing Technician Grade 1 Certification Training Course, Written Examination and Proficiency Examination..... 4-3
4.5.1.2 ACI Concrete Field Testing Technician Grade 1 Certification Training Course Prerequisites..... 4-3
4.5.1.3 ACI Concrete Field Testing Technician Grade 1 Certification Course Written Examination..... 4-4
4.5.1.4 ACI Concrete Field Testing Technician Grade 1 Certification Course Proficiency Examination..... 4-4
4.5.2 Concrete Field Technician Level 2 Qualification Requirements..... 4-4
4.5.2.1 ACI Concrete Transportation Construction Inspector (CTCI) Training Course..... 4-5
4.5.2.2 ACI Concrete Transportation Construction Inspector Certification Training Course Prerequisites..... 4-6
4.5.2.3 ACI Concrete Transportation Construction Inspector Certification Training Course Written Examination..... 4-6
4.5.3 Concrete Laboratory Technician Level 1 Qualification Requirements..... 4-6
4.5.3.1 ACI Concrete Strength Testing Technician Certification Course..... 4-7
4.5.3.2 ACI Concrete Strength Testing Technician Certification Course Prerequisites..... 4-7
4.5.3.3 ACI Concrete Strength Testing Technician Certification Course Written Examination..... 4-7
4.5.3.4 ACI Concrete Strength Testing Technician Proficiency Examination.. 4-7
4.5.3.5 ACI Concrete Laboratory Testing Technician Grade 1 Certification Course..... 4-8
4.5.3.6 ACI Concrete Laboratory Testing Technician Grade 1 Course Prerequisites..... 4-8

4.5.3.7 ACI Concrete Laboratory Testing Technician Grade 1 Certification Course Written Examination…….. 4-8
4.5.3.8 ACI Concrete Laboratory Testing Technician Grade 1 Certification Course Proficiency Examination…… 4-8
4.5.4 Concrete Laboratory Testing Technician Level 2 Qualification Requirements……. 4-9
4.5.4.1 ACI Concrete Laboratory Testing Technician Grade 2 Course…… 4-10
4.5.4.2 ACI Concrete Laboratory Testing Technician Grade 2 Course Prerequisites……. 4-10
4.5.4.3 ACI Concrete Laboratory Testing Technician Grade 2 Course Written Examination…….. 4-10
4.5.4.4 ACI Concrete Laboratory Testing Technician Grade 2 Proficiency Examination……... 4-10
4.5.5 Concrete Batch Plant Operator Qualification Requirement……..…… 4-11
4.5.5.1 Concrete Batch Plant Operator Qualification Course…… 4-11
4.5.5.2 Concrete Batch Plant Operator Examination……... 4-12
4.5.6 FDOT Concrete Laboratory Specification Course and Examination……... 4-12
4.5.7 FDOT Concrete Field Inspector Specification Course and Examination……..….. 4-12
4.6 QUALIFICATION REQUIREMENTS BY JOB FUNCTION AND IMPLEMENTATION SCHEDULE……... 4-12
4.7 REQUALIFICATION……. 4-13
ATTACHMENT 4-1- Concrete Field Technician Level 1 Qualification Flowchart..... 4-14
ATTACHMENT 4-2- Concrete Field Technician Level 2 Qualification Flowchart..... 4-15
ATTACHMENT 4-3- Concrete laboratory Technician Level 1 Qualification Flowchart..... 4-16
ATTACHMENT 4-4- Concrete Laboratory Technician Level 2 Qualification Flowchart……..... 4-17
ATTACHMENT 4-5- Concrete Batch Plant Operator Qualification Flowchart……..... 4-18
ATTACHMENT 4-6- ACI Concrete Field Testing Technician Grade 1 Certification Training Course……..... 4-19
ATTACHMENT 4-7- ACI Concrete Transportation Construction Inspector (CTCI) Requirements……. 4-20
ATTACHMENT 4-8- ACI Concrete Transportation Construction Inspector (CTCI) Training Course…… 4-22
ATTACHMENT 4-9- ACI Concrete Strength Testing Technician Certification Course.. 4-24

Chapter 5 EARTHWORK TRAINING AND QUALIFICATION PROGRAM

5.1 PURPOSE…… 5-1

5.2 BACKGROUND…….. 5-1
5.3 QUALIFICATION REQUIREMENTS BY JOB FUNCTION…….. 5-1

5.4 EARTHWORK CONSTRUCTION INSPECTION (ECI) QUALIFICATIONS AND COURSES…… 5-2

5.4.1 ECI Level 1 Qualification…….. 5-2
5.4.1.1 ECI Level 1 Training Course……... 5-2

5.4.1.1.1 ECI Level 1 Written Examination…….. 5-3
5.4.1.1.2 ECI Level 1 Proficiency Examination…… 5-3

5.4.2 ECI Level 2 Qualification Requirements…… 5-4

5.4.2.1 ECI Level 2 Training Course……... 5-4
5.4.2.1.1 ECI Level 2 Course Prerequisites…… 5-5

5.4.2.1.2 ECI Level 2 Written Examination…….. 5-5

5.5 REQUALIFICATION…….. 5-6

5.5.1 ECI Level 1 Requalification…… 5-6

5.5.2 ECI Level 2 Requalification…….. 5-6

5.6 REVOCATION OF QUALIFICATION..... 5-7

5.7 DEPARTMENT RESPONSIBILITIES…….. 5-7

5.7.1 TRT Committee…….. 5-7

5.7.2 State Construction Training Office…….. 5-7

5.7.3 State Materials Office…… 5-7

Chapter 6 GEOTECHNICAL TRAINING PROGRAM

6.1 PURPOSE..... 6-1

6.2 BACKGROUND……... 6-1

6.3 QUALIFICATION REQUIREMENTS BY JOB FUNCTION……... 6-1

6.3.1 Pile Driving Inspector Qualification…….. 6-1
6.3.2 Drilled Shaft Inspector Qualification……... 6-1
6.3.3 MSE Wall Inspection…….. 6-1
6.3.4 Auger Cast Pile Inspection……... 6-2
6.4 GEOTECHNICAL QUALIFICATIONS AND COURSES……... 6-2

6.4.1 Pile Driving Inspector Qualification Requirements……... 6-2

6.4.1.1 CTQP Pile Driving Inspection Course Details…….. 6-3
6.4.2 Drilled Shaft Inspector Qualification Requirements…….. 6-4
6.4.2.1 Drilled Shaft Inspection Training Course……... 6-5
6.4.3 Administration of MSE Wall Training Course……... 6-6
6.4.4 Administration of Auger Cast Pile Training Course…….. 6-7
6.5 REQUALIFICATION PDI/DSI TRAINING COURSES……... 6-7

6.6 PILE DRIVING AND DRILLED SHAFT INSPECTOR QUALIFICATION REVOCATION BASED ON LACK OF PROFICIENCY……. 6-7

6.6.1 Qualification Revocation Based on Falsification of Records……... 6-9

6.7 RESPONSIBILITIES..... 6-10

Chapter 7 QUALITY MANAGEMENT

7.1 PURPOSE..... 7-1
7.2 BACKGROUND..... 7-1
7.3 QUALIFICATION REQUIREMENTS BY JOB FUNCTION..... 7-1
7.3.1 Quality Control Manager..... 7-1
7.4 QUALIFICATIONS AND COURSE..... 7-2
7.4.1 Quality Control Manager Qualification Requirements..... 7-2
7.4.2 Quality Control Manager Training Course..... 7-2
7.5 REQUALIFICATION..... 7-3
7.6 SUSPENSION OF A QUALITY CONTROL MANAGER..... 7-3
7.6.1 Background..... 7-3
7.6.2 Causes for Letters of Warning..... 7-3
7.6.3 QC Manager Suspension Process..... 7-3
7.6.4 Tasks by Responsible Office..... 7-4
7.6.4.1 Resident Construction Office..... 7-4
7.6.4.2 State Construction Office..... 7-5
7.7 DEPARTMENT RESPONSIBILITIES..... 7-5
ATTACHMENT 7-1..... 7-6
ATTACHMENT 7-2..... 7-7

Chapter 8 STRUCTURES TRAINING AND QUALIFICATION PROGRAM

8.1 PURPOSE..... 8-1
8.2 BACKGROUND…….. 8-2
8.3 QUALIFICATION REQUIREMENTS BY JOB FUNCTION……. 8-2
8.3.1 Grouting Technician Qualification..... 8-2
8.3.2 Post-Tensioning (PT) Technician Qualification……..……... 8-2
8.3.3 Bridge Coating Inspector (non-CTQP qualification)…… 8-2
8.3.4 Lead Paint Removal Training (non-CTQP qualification)……..… 8-3
8.4 STRUCTURAL QUALIFICATIONS AND COURSES……..… 8-3
8.4.1 Grouting Technician Requirements…….……..... 8-3
8.4.1.1 Grouting Technician – Level 1..... 8-3
8.4.1.1.1 Grouting Technician Training – (Levels 1 and 2)..... 8-3
8.4.1.2 Grouting Technician – Level 2....……. 8-4
8.4.2 Post-Tensioning (PT) Technician Requirements……. 8-4
8.4.2.1 PT Technician – Level 1……. 8-4
8.4.2.1.1 PT Training (Levels 1 and 2)…….....……...…..... 8-4
8.4.2.2 PT Technician – Level 2……..…….. 8-5
8.4.3 Bridge Coating Inspector Requirements…….. 8-5
8.4.3.1 Bridge Coating Inspector Training…… 8-5
8.4.4 Lead Paint Removal Requirements…….....…….. 8-5
8.4.4.1 Lead Paint Removal Training…… 8-6
8.4.5 Grouting and PT Course Accreditation..... 8-6
8.5 REQUALIFICATION .....……. 8-6
8.6 REVOCATION OF QUALIFICATION..... 8-6
8.7 DEPARTMENT RESPONSIBILITIES……. 8-7
8.7.1 Office of Construction……... 8-7
8.7.2 Districts/District Construction Training Administrators……. 8-7
8.7.3 CTQP Administrator's Office……... 8-7

Chapter 9 FINAL ESTIMATES TRAINING AND QUALIFICATION PROGRAM

9.1 PURPOSE..... 9-1
9.2 BACKGROUND..... 9-1
9.3 QUALIFICATION REQUIREMENTS BY JOB FUNCTION..... 9-1
9.3.1 Final Estimates Level 1 Qualification..... 9-1
9.3.2 Final Estimates Level 2 Qualification..... 9-1
9.4 QUALIFICATIONS AND COURSE..... 9-2
9.4.1 FE 1 Qualification Requirements..... 9-2
9.4.1.1 FE Level 1 Training Course Details..... 9-2
9.4.2 FE Level 2 Qualification Requirements..... 9-3
9.4.2.1 FE Level 2 Training Course Details..... 9-4
9.5 REQUALIFICATION..... 9-5
9.5.1 FE Level 1 Requalification..... 9-5
9.5.2 FE Level 2 Requalification..... 9-5
9.6 SUSPENSION AND REVOCATION OF QUALIFICATION..... 9-6
9.6.1 Suspension..... 9-6
9.6.2 Disqualification..... 9-6
9.7 DEPARTMENT RESPONSIBILITIES..... 9-7
9.7.1 State Construction Office..... 9-7
9.7.2 District Construction Engineer or Designee..... 9-7
9.7.3 Final Estimates Technical Review Team..... 9-7

Chapter 10 CTQP COURSE PROVIDER ADMINISTRATION

This chapter has been combined with ***Section 1 Administration***. Please refer to ***Section 1*** for information.

Chapter 11 CONSTRUCTION SAFETY AWARENESS COURSE

11.1 PURPOSE..... 11-1
11.2 BACKGROUND..... 11-1
11.3 QUALIFICATION REQUIREMENTS BY JOB FUNCTION..... 11-1
11.4 QUALIFICATIONS AND COURSES..... 11-1
11.4.1 FDOT Construction Employees..... 11-1
11.4.1.1 New Employees..... 11-2
11.4.2 Authorized Instructors..... 11-2
11.4.3 Courses..... 11-2
11.4.3.1 Training Methods..... 11-2
11.4.3.2 OSHA Modules..... 11-3
11.5 REQUALIFICATION..... 11-4
11.6 SUSPENSION AND REVOCATION OF QUALIFICATION..... 11-4
11-7 RESPONSIBILITIES..... 11-4