



## NORTH CAROLINA

Department of Transportation

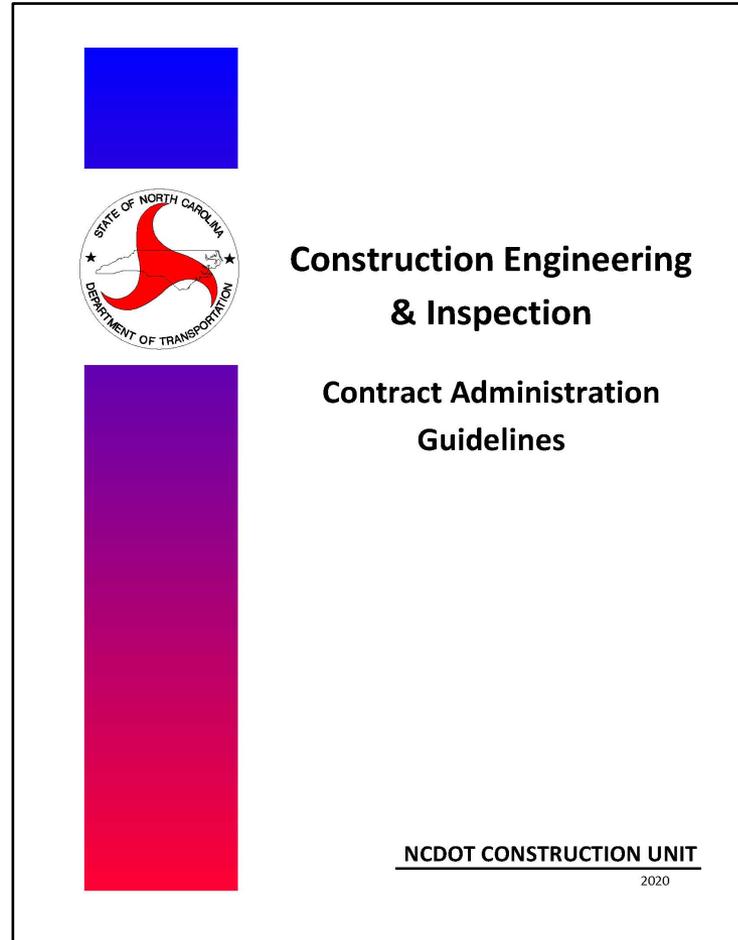


# NCDOT 2021 Construction Engineering and Inspection Guideline

Sherell Williams

June 30, 2021

# NCDOT Construction Engineering and Inspection Guidelines



# Discussion Topics

- Determining CEI needs
- Types of CEI Agreements
- CEI Selection Process
- Contract Administration

# Determining CEI Needs

- Division Workload Analysis
  - Projects
    - Current
    - Future Projects (STIP )
    - Purchase Order/Division Let Projects
    - Resurfacing
- Staffing
  - Field Technicians
  - Survey Technicians
  - Office Technicians

# Division Workload

## Division Project Staffing Chart

		PROJECT A	PROJECT B	PROJECT C	PROJECT D	PROJECT E	PROJECT F	PROJECT G		
BRIDGE(B)	\$ AMOUNT (MILLIONS)	<0.5	0.5-1	1-1.5	1.5-2	2-5	5-10	>10		
	MONTHS	9	12	15	18	28	30	36+		
	PROPOSED # OF INSPECTORS	1	1	1	1	2	2	4		
INTERSTATE (I)	\$ AMOUNT (MILLIONS)	<1	1-2	2-5	5-10	10-25	25-50	50-100	>100	
	MONTHS	9	12	15	18	27	30	40	50	
	PROPOSED # OF INSPECTORS	2	2	3	4	5	8	8	20	
RURAL(R)	\$ AMOUNT (MILLIONS)	<1	1-2	2-5	5-10	10-25	25-50	50-100	>100	
	MONTHS	12	18	20	26	36	50	60	60	
	PROPOSED # OF INSPECTORS	1	1	2	2	4	5	10	18	
URBAN(U)	\$ AMOUNT (MILLIONS)	<1	1-2	2-5	5-10	10-25	25-50	50-100	>100	
	MONTHS	12	15	20	26	36	50	50	60	
	PROPOSED # OF INSPECTORS	1	1	2	2	4	6	12	17	
REST AREA (K)	\$ AMOUNT (MILLIONS)	ALL								
	MONTHS	9								
	PROPOSED # OF INSPECTORS	1								
SAFETY (W)	\$ AMOUNT (MILLIONS)	<2	2-5	5-10	<10					
	MONTHS	12	20	24	30					
	PROPOSED # OF INSPECTORS	1	2	2	4					

# Division Workload

## Division Project Staffing Chart

		PROJECT A	PROJECT B	PROJECT C	PROJECT D	PROJECT E	PROJECT F	PROJECT G
BRIDGE(B)	\$ AMOUNT (MILLIONS)	<0.5	0.5-1	1-1.5	1.5-2	2-5	5-10	>10
	MONTHS	9	12	15	18	28	30	36+
	PROPOSED # OF INSPECTORS	1	1	1	1	2	2	4

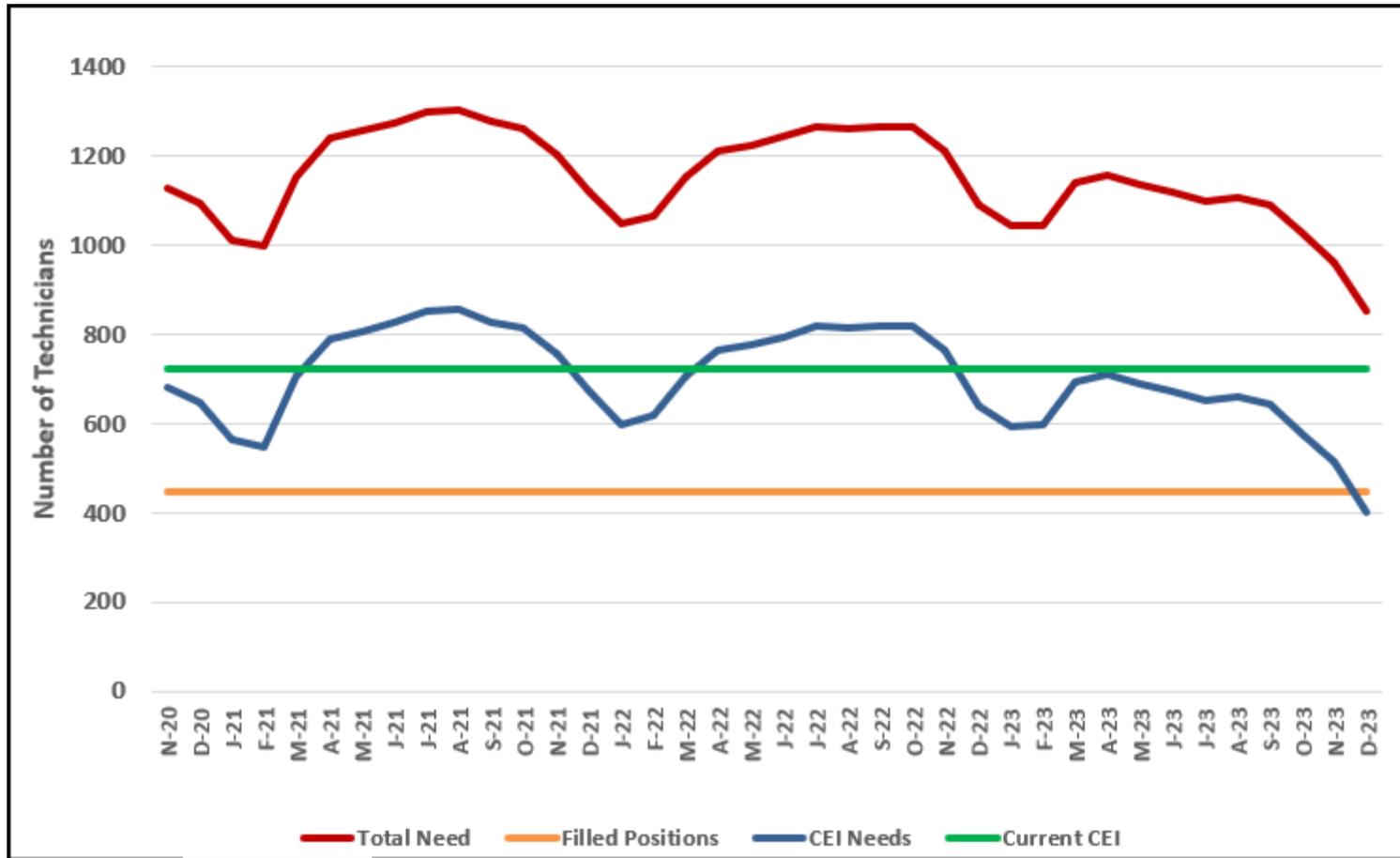
# Division Workload

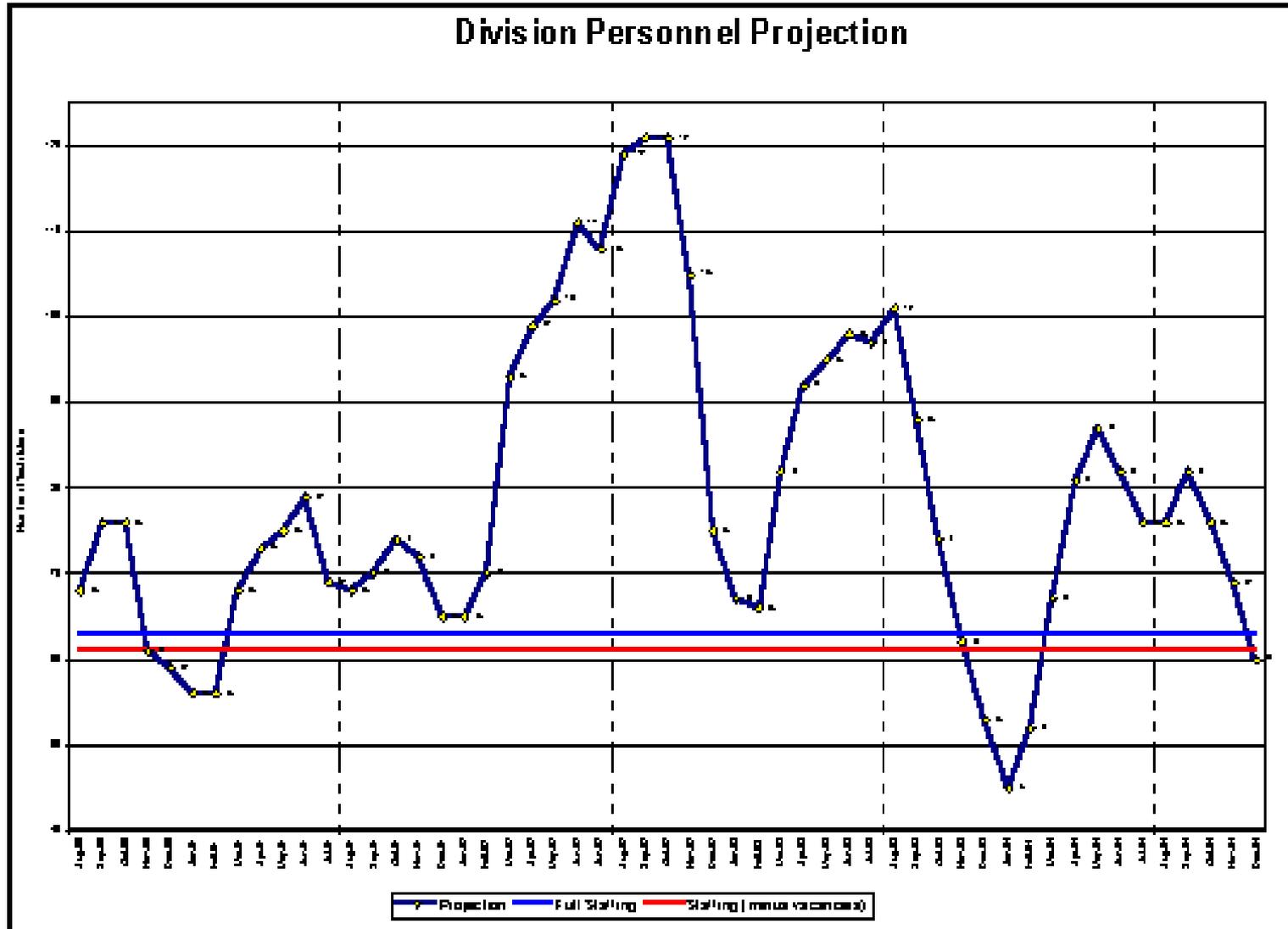
TIP Number	Contract Amount	Availability Date	Completion Date	Max Staffing	N-20	D-20	J-21	F-21	M-21	A-21	M-21	J-21	J-21	A-21	S-21	O-21	N-21	D-21	J-22	F-22	M-22	A-22	M-22	J-22	J-22	
U-2519CA	100,661,097.00	8/9/16	10/17/22	15	15	15	15	15	15	15	15	15	15	15	15	15	15	13	12	11	9	9	9	8	7	
W-5206U	4,295,085.27	11/30/20	11/30/20	1	1																					
W-5601CC	515,244.25	8/9/17	4/30/21	1			1	1	1																	
	3,746,425.11	2/20/19	6/30/21	2					2	2	1															
R-5749	9,398,677.98	3/14/18	2/25/21	1			1																			
W-5601EV	9,024,132.40	9/21/18	11/28/21	2			2	2	2	2	2	2	2	2	2	2	2									
B-6004	2,745,918.00	2/19/19	8/1/21	2	2	2	2	2	2	2	2	2	2	2												
	4,167,026.04	1/3/17	1/15/21	1	1	1	1																			
U-5925	4,989,946.82	3/14/18	12/31/20	1	1	1																				
U-2519AA	129,749,000.00	2/7/18	7/15/23	23	23	23	23	23	23	23	23	23	23	23	23	22	21	20	19	19	18	18	18	18	18	
B-4491	16,537,010.64	4/18/18	3/31/21	1	1	1	1	1	1																	
I-5850B	11,897,342.79	11/19/18	6/30/21	3	3	2					3	3														
I-5938B	11,955,472.98	11/19/18	7/30/21	2	2	2			2	2	2	2	2													
Resurfacing	3,640,904.03	3/5/19	6/30/21	1	1	1			1	1	1	1														
Resurfacing	3,980,434.16	3/5/19	6/30/21	1	1	1			1	1	1	1														
Resurfacing	4,049,284.98	3/5/19	6/30/21	1	1	1			1	1	1	1														
				Surveying		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
				Resurfacing:																						
				Office Tech.		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	
				Divison POC:																						

# Division Workload

## Statewide Workload

### 3 Year Work Plan





# Types of CEI Agreements

- Statewide On – Call
  - Short term work (3 – 12 months)
  - Specific short-term duration or multiple projects
- Project Specific Agreements
  - 2 to 4 year duration
  - A project or group of projects

# On-Call CEI

- Selection Process
- Agreement Approval and Execution
- Task Order

# On-Call CEI

- Selection Process
  - Advertisement
  - Selection Meeting
- Agreement Approval and Execution
  - 2-year contract (1 year extension optional)
  - Maximum Dollar amount
  - Board of Transportation approval
  - Agreement execution

# On-Call CEI

- Task Orders
  - Division negotiates the Task Order
    - Number and Levels of Technicians
    - Duration
    - Division negotiates cost estimate
    - Creates PO in SAP
    - Issues NTP
    - Notifies PSMU the PO is ready for approval

# Project Specific CEI

- Advertisement
- Selection Process
- Contract Development / Cost Negotiation
- Agreement Approval and Execution

# Project Specific

- Advertisement
  - Project(s) information
    - Project description
    - Location
    - Duration
  - Technicians
    - Level ( Engineering Technician I-V)
    - Type (Roadway, structure, Erosion Control, etc.)
    - Number

# Project Specific

- Selection Process
  - Selection Committee
  - Letter of Interest
  - Short List Meeting
  - Interviews (Optional)

# Contract Development

- Staffing
  - Estimated schedule
  - Night Work
- Direct Cost
  - Field Office
  - Vehicles
  - Testing / Inspection Equipment

# Contract Development Vehicle Equipment

Each project vehicle shall come equipped with the following:

- Truck toolbox or camper shell
- Light Bar and 4-way strobe lights
- Fire extinguisher
- First aid kit
- Water Cooler

Equipment above is considered incidental to the monthly vehicle rate and no separate payment will be made.

# Contract Development/Negotiations

## Basic Personal Inspection Equipment

Each technician shall come equipped with the following:

Calculator	Safety Toed shoes
Chase Air Indicator	Four-foot level
Clipboard	Flat shovel
Engineer's scales	100-foot tape with case
Flashlight	Digital asphalt thermometer
Folding ruler	Concrete thermometer
Safety Goggles	Miscellaneous office supplies
Safety vest	iPad/Tablet/Laptop (with data service)
Hard hat	

These items are considered incidental to the contract

# Contract Development

## Project Inspection / Testing Equipment

- Concrete Air Pots
- Density Testing Equipment
- Nuclear Gauges
  - NCDOT Loaner Gauges
  - PEF Provided Gauges



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

ROY COOPER  
GOVERNOR

JAMES H. TROGDON, III  
SECRETARY

May 13, 2019

MEMORANDUAM TO: Prequalified Private Engineering Firms  
FROM: M. L. Sylvester, PE   
State construction Engineer  
SUBJECT: Reimbursement for Private Engineering Firm Furnished  
Nuclear Gauge

The NCDOT Materials and Tests Unit (M & T) has a program that allows Private Engineering Firms (PEF) to use NCDOT nuclear gauges for work assigned through Construction Engineering and Inspection (CEI) Project Specific Agreements and Statewide On-Call Task Orders. This program gives the PEF's an opportunity to provide the nuclear testing without being required to purchase or rent nuclear gauges from a third party. Firms that use the NCDOT nuclear gauges will be reimbursed for the Yearly NCDENR License Fee, Leak Test, Calibration and Lubrication and Quarterly Badge Test. The firms are required to provide secure storage, separate from other NCDOT nuclear gauges. PEF's may request to use a NCDOT nuclear gauge by completing a Private Engineering Request to Utilize NCDOT Nuclear Gauge Form. The form can be obtained by contracting Jim Sawyer at 919-323-4170 4170 ([jsawyer@ncdot.gov](mailto:jsawyer@ncdot.gov)).

PEF's may elect to provide gauges to perform the nuclear testing required as part of their construction engineering and inspection services. The Department has established a reimbursement rate of \$400.00 per month for nuclear gauges provided by the firms. The monthly reimbursement rate includes the following costs:

- Rental of nuclear gauge
- Yearly NCDENR License Fee
- Leak Test, Calibration, Cleaning and Lubrication
- Quarterly Badge Test
- Mounted Transport Box
- Secure storage

PEF's that elect to provide the nuclear gauge should enter information on the "Nuclear Gauge" line on the Direct Expenses on the cost estimate. The other lines pertaining to nuclear gauges will remain blank.

# Nuclear Gauges

## NCDOT Provided vs. PEF Provided

- Allowable direct cost

<b>Invoice Items</b>	<b>NCDOT Provide Nuclear Gauge</b>	<b>PEF Provided Nuclear Gauge</b>
Monthly Reimbursement (\$400.00)		X
Yearly NCDENR License Fees	X	
Leak Test, Calibration and Lubrication	X	
Quarterly Badges	X	
Mounted Transport Box	X	

# Agreement Approval and Execution

- Contract Execution
  - Cost Estimate generated
  - Pre-Award Audit - Office Of Inspector General
  - PSUM prepares for Board of Transportation Approval
  - PSMU prepares Agreement for execution

# Questions

# Contract Administration

- Staffing
- Direct Cost
- Project Manager Visits
- Invoices
- Evaluations
- Monitoring Expenditures
- Supplementals
- Closing Purchase Orders

# Contract Administration Staffing

- Reimbursable Rates/Salaries
  - Technician Ranges
  - Engineers Salary Rates
  - Increase in Reimbursable Rates
    - By letter from the State Construction Engineer
    - CEI Employee fills a vacant higher-level position
    - New Task Order / Project Specific\*

# Contract Administration

## Staffing - Training and Certifications

### ■ Training Classes

- Not Reimbursable – Class cost, travel, time
- CEI replacement during training
  - Replacement technician not always required
  - Firm must notify Contract Administrator of scheduled training
  - Firm allowed to provide equivalent, qualified person for critical operations
  - Depart will reimburse at the original technician's rate

# Contract Administration Staffing - Training and Certifications

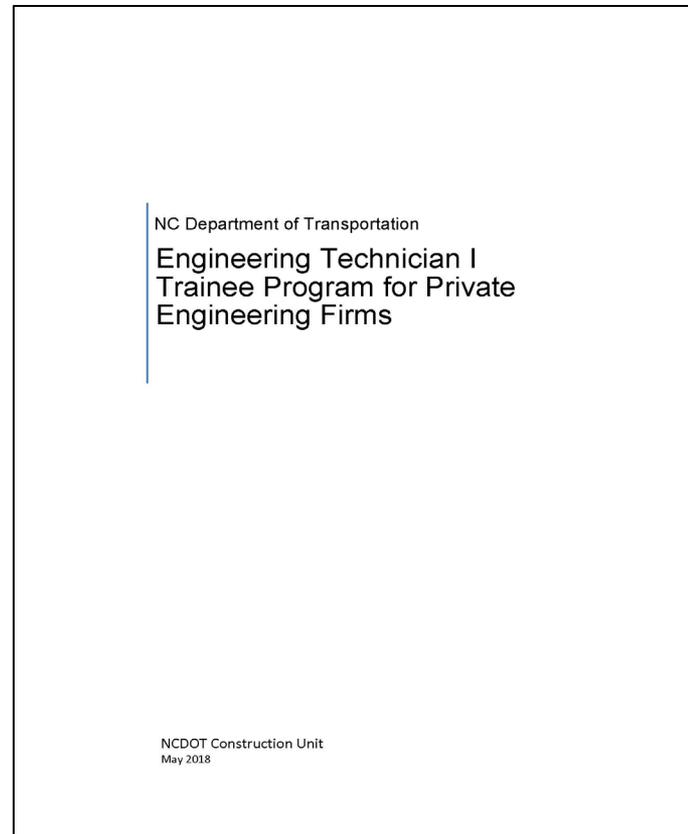
- Technician Certifications
  - Reciprocity
    - Materials and Tests allows individual provisional certifications
    - Pass certification course within provisional certification expiration date
  - Materials and Test web site for scheduling training

<https://connect.ncdot.gov/resources/Materials/Pages/default.aspx>

# PEF Engineering Technician I Trainee Program

- Trainee Program Launched in May 2018
- 24 Month Program
  - Self Study and Safety Courses
  - Certification Courses
  - On the Job Training
- Administered by the State Construction Engineer
  - Contact: Sherell Williams

# Guidelines for NCDOT PEF Engineering Technician I Trainee Program



<https://connect.ncdot.gov/projects/construction/Pages/Construction-Memorandums.aspx>

# PEF Engineering Technician I Trainee Program Process

- PEF secures an assignment in NCDOT office
- PEF submits registration request to State Construction Engineer (Sherell Williams)
- Technician completes Level I and Level II of program
- PEF submits request for promotion to next Level to State Construction Engineer

# PEF Trainee Progress Tracking Form

Engineering Technician I Trainee Program - PEF Trainee Progress Tracking Form								
<p>Note: The order of courses may change at the discretion of the NCDOT Contract Administrator, depending on project needs.</p>								
Trainee Name: <input type="text"/>			Personnel No. or Last 4 SSN: <input type="text"/>					
New Hire Date: <input type="text"/>								
Trainee Level	Course	Referenc #	Course Type	Begin Date	Target Completion Date	Actual Completion Date	Test Score	Certification Obtained
1	Safety	SSC076	Self Study					Not Applicable
	OSHA Construction 10-HR	*	On-line or Instructor					
	Construction Mathematics	SSC014	Self Study					Not Applicable
	Highway Plan Reading	SSC030	Self Study					Not Applicable
	Basic Highway Inspection	SSC050	Self Study					Not Applicable
	Beginning Construction Stakeout	SSC140	Self Study					Not Applicable
	Basic Highway Engineering	SSC070	Self Study					Not Applicable
	Introduction to Asphalt Pavements**	CON250	On-line					Not Applicable
	Conventional Density	MAT230	Instructor					
	Aggregate Base Course Sampling	MAT210	Instructor					
2	Borrow Pit Sampling	MAT410	Instructor					
	Basic Highway Engineering II	SSC071	Self Study					Not Applicable
	Structure Inspection	SSC060	Self Study					Not Applicable
	Nuclear Safety and Hazardous Materials	*	On-line or Instructor					
	Materials	MAT370	Instructor					
	Erosion and Sediment Control, Level 1	***	Instructor					
	Concrete Field Technician - ACI		Instructor					
Concrete Field Technician - NCDOT		Instructor						
QMS Asphalt Roadway Technician**	MAT535	On-line or Instructor						
<p>* Private Engineering Firm personnel must take this course through privately offered resources. For the OSHA Construction 10-hour course, a course completion card is required.                  ** On-line asphalt training classes are offered through Stanly Community College.                  *** The Erosion and Sediment Control classes are offered through NC State University.</p>								
<b>Level I Completion:</b>			Date Complete: <input type="text"/>					
<p>Private Engineering Firm Project Manager:</p> <p>I attest that the Trainee listed herein has completed the required coursework, on the job training, and certifications to advance to the next level.</p>								
			Signature: <input type="text"/>			Date: <input type="text"/>		
			Printed Name: <input type="text"/>					
<b>Construction Unit:</b>			Approved by: <input type="text"/>			Date: <input type="text"/>		
<b>Level II Completion</b>			Date Complete: <input type="text"/>					
<p>Private Engineering Firm Project Manager:</p> <p>I attest that the Trainee listed herein has completed the required coursework, on the job training, and certifications to advance to the next level.</p>								
			Signature: <input type="text"/>			Date: <input type="text"/>		
			Printed Name: <input type="text"/>					
<b>Construction Unit:</b>			Approved by: <input type="text"/>			Date: <input type="text"/>		
<p><b>Instructions:</b>                  The PEF Project Manager reviews this form with the Trainee at the beginning of the Training Program and establishes a timeline to complete their coursework and receive on-the-job training and applicable certifications. The PEF Project Manager updates the form as the Trainee progresses through the Training Program. Upon completion of the required coursework for each Level, the PEF Project Manager submits this form and the letter of recommendation from a NCDOT employee at a Technician Advanced level or above to the State Construction Engineer for approval to advance the Trainee to the next level. The PEF Project Manager copies the NCDOT Division Contract Administrator.</p>								

# Statement of Understanding (CT-002P)

Engineering Technician I Trainee Program  
for Private Engineering Firms



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Trainee Enrollment Form / Statement of Understanding

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Employee

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Name:

This is to acknowledge that I understand I am enrolled in the Engineering Technician I Trainee Program, and that I have been provided a copy of the appropriate schedule of training. I understand that completion of the training requirements as specified in the training program and in accordance with the training schedule is a part of my job responsibilities, and failure to complete the specified training may be grounds for my dismissal from NCDOT projects.

Signature:

Date:

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Private Engineering Firm Project Manager

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I certify that I have provided the above named employee with a copy of the Engineering Technician I Trainee Program along with a schedule for completing the specified training. I have explained the program to the employee and answered the employee's questions regarding the requirements of this program.

Signature:

Date:

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NCDOT Project Assignment Information

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Primary Assignment Location:  
Division:  
Office:  
Project:

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Instructions

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The Private Engineering Firm Trainee and Project Manager sign the form. The Project Manager indicates on the form the Division and the primary NCDOT Office location of the Trainee's assignment. A copy of the completed form should be forwarded to the State Construction Engineer upon the Trainee's enrollment into the training program.

CT-002P 5/2018

# Documentation for Registration

**Engineering Technician I Trainee Program - PEF Trainee Progress Tracking Form**

NOTE: The order of courses may change at the discretion of the NCDOT Construction Services, depending on project needs.

Trainee Name: \_\_\_\_\_ Personnel No. or LEI # 000: \_\_\_\_\_

New Hire Date: \_\_\_\_\_

Trainee Level	Course	Course Reference Number	Course Type	Begin Date	Target Completion Date	Actual Completion Date	Test Score	Certification Expiration
1	Math	000-076	Self Study					06/30/2018
	Classroom Introduction to CEI	000-078	Self Study					06/30/2018
	Construction Mathematics	000-079	Self Study					06/30/2018
	Engineering Plan Reading	000-080	Self Study					06/30/2018
	Basic Safety Requirements	000-081	Self Study					06/30/2018
	Regulatory Construction Materials	000-082	Self Study					06/30/2018
	Basic Training Experience I	000-083	Self Study					06/30/2018
	Introduction to English Grammar	000-084	Classroom					06/30/2018
	Stress and Conflict Control - Level 1	000-085	Classroom					06/30/2018
	Construction Safety	000-086	Classroom					06/30/2018
2	Advanced Basic Construction Supervision	000-087	Classroom					06/30/2018
	Math II Self Study	000-088	Self Study					06/30/2018
	Basic Training Experience II	000-089	Self Study					06/30/2018
	Stress and Conflict Control - Level 2	000-090	Classroom					06/30/2018
	Advanced Safety and Hazardous Materials	000-091	Self Study					06/30/2018
	Advanced Safety Training - Stress Training and Fall Protection	000-092	Classroom					06/30/2018
	Stress and Conflict Control - Level 3	000-093	Classroom					06/30/2018
	Construction Materials - ASH	000-094	Classroom					06/30/2018
	Construction Materials - OSHA	000-095	Classroom					06/30/2018
	OSHA 10 Safety Requirements	000-096	Self Study					06/30/2018

PEF Trainee Progress Tracking Form (CT-001P) is a confidential document. It is not to be distributed outside of the NCDOT Construction Services. It is not to be used for any other purpose.

PEF Trainee Progress Tracking Form (CT-001P) is a confidential document. It is not to be distributed outside of the NCDOT Construction Services. It is not to be used for any other purpose.

**Level 1 Completion:**  
 Private Engineering Firm Project Manager: \_\_\_\_\_ Date Complete: \_\_\_\_\_  
 I attest that the Trainee listed herein has completed the required coursework, on the job training, and certifications to advance to the next level.  
 Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
 Print Name: \_\_\_\_\_

**Level 2 Completion:**  
 Private Engineering Firm Project Manager: \_\_\_\_\_ Date Complete: \_\_\_\_\_  
 I attest that the Trainee listed herein has completed the required coursework, on the job training, and certifications to advance to the next level.  
 Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
 Print Name: \_\_\_\_\_

**Level 3 Completion:**  
 Private Engineering Firm Project Manager: \_\_\_\_\_ Date Complete: \_\_\_\_\_  
 I attest that the Trainee listed herein has completed the required coursework, on the job training, and certifications to advance to the next level.  
 Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
 Print Name: \_\_\_\_\_

**Instructions:**  
 The PEF Project Manager reviews this form with the Trainee at the beginning of the Training Program and establishes a schedule to complete their coursework and return on the job training and applicable certification. The PEF Project Manager updates the form as the Trainee progresses through the Training Program. Upon completion of the required coursework for each level, the PEF Project Manager assigns the Trainee to the next level. A copy of the completed form should be forwarded to the State Construction Engineer for approval to advance the Trainee to the next level. The PEF Project Manager signs the NCDOT Project Contract Addendum.

CT-001P 6/6/2018

## Trainee Progress Tracking Form (CT-001P)

- Complete Target Completion Dates

**Engineering Technician I Trainee Program for Private Engineering Firms**

**Trainee Enrollment Form / Statement of Understanding**

Employee: \_\_\_\_\_

Name: \_\_\_\_\_

This is to acknowledge that I understand I am enrolled in the Engineering Technician I Trainee Program and that I have been provided a copy of the appropriate schedule of training. I understand that completion of the training requirements as specified in the training program and in accordance with the training schedule is a part of my job responsibilities, and failure to complete the specified training may be grounds for my dismissal from NCDOT projects.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Private Engineering Firm Project Manager: \_\_\_\_\_

I certify that I have provided the above named employee with a copy of the Engineering Technician I Trainee Program along with a schedule for completing the specified training. I have explained the program to the employee and answered the employee's questions regarding the requirements of this program.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

NCDOT Project Assignment Information

Primary Assignment Location: \_\_\_\_\_

Division: \_\_\_\_\_

Office: \_\_\_\_\_

Project: \_\_\_\_\_

Instructions

The Private Engineering Firm Trainee and Project Manager sign the form. The Project Manager indicates on the form the Division and the primary NCDOT Office location of the Trainee's assignment. A copy of the completed form should be forwarded to the State Construction Engineer upon the Trainee's enrollment into the training program.

CT-002P 5/2/2018

## Statement of Understanding (CT-002P)

- Complete Assignment Information

# Documentation for Promotion

**Engineering Technician I Trainee Program - PEF Trainee Progress Tracking Form**  
Note: The user of this form may change at the discretion of the NCDOT Central Administrator, depending on project needs.

**Trainee Name:** \_\_\_\_\_ **Personal No. or LHM #:** \_\_\_\_\_

Trainee Level	Course	Course Number	Course Type	Sign Date	Target Completion Date	Actual Completion Date	Test Score	Completion Status
1	Office Construction for PE	100001	Self Study					100/100(100%)
	Construction Mathematics	100002	Self Study					100/100(100%)
	Planning Plan Reading	100003	Self Study					100/100(100%)
	Basic Surveying Principles	100004	Self Study					100/100(100%)
	Planning, Construction Estimation	100005	Self Study					100/100(100%)
	Basic Highway Engineering	100006	Self Study					100/100(100%)
	Introduction to Survey Principles	100007	Self Study					100/100(100%)
	Process and Methods Control Level I	100008	Self Study					100/100(100%)
	Construction Safety	100009	Self Study					100/100(100%)
	Supervisory Basic Control (SBC) Estimation	100010	Self Study					100/100(100%)
2	Process and Methods Control Level II	100011	Self Study					100/100(100%)
	Structural Inspection	100012	Self Study					100/100(100%)
	Process and Methods Control Level II	100013	Self Study					100/100(100%)
	Process and Methods Control Level II	100014	Self Study					100/100(100%)
	Process and Methods Control Level II	100015	Self Study					100/100(100%)
	Process and Methods Control Level II	100016	Self Study					100/100(100%)
	Process and Methods Control Level II	100017	Self Study					100/100(100%)
	Process and Methods Control Level II	100018	Self Study					100/100(100%)
	Process and Methods Control Level II	100019	Self Study					100/100(100%)
	Process and Methods Control Level II	100020	Self Study					100/100(100%)

**Level I Completion:** \_\_\_\_\_ Date Complete: \_\_\_\_\_  
 Performed by: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
 Construction Unit: \_\_\_\_\_ Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

**Level II Completion:** \_\_\_\_\_ Date Complete: \_\_\_\_\_  
 Performed by: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
 Construction Unit: \_\_\_\_\_ Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

PEF Project Manager: \_\_\_\_\_  
 The PEI Project Manager must sign this form with the Trainee at the beginning of the Training Program and establish a timeline to complete their coursework, and return on the job training and applicable contributions. The PEI Project Manager updates this form as the Trainee progresses through the Training Program. Upon completion of the required coursework for each level, the PEI Project Manager submits this form and the other information from a NCDOT employee at a Technician Advance level or above to the State Construction Engineer for approval to advance the Trainee to the next level. The PEI Project Manager reports to the NCDOT Central Administrator.

## Trainee Progress Tracking Form (CT-001P)

- Complete Actual Completion Dates
- Complete Level I or Level II Section as applicable

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

**ROY COOPER**  
GOVERNOR

**J. ERIC BOYETTE**  
SECRETARY

May 6, 2020

Mr. J. A. Engineer, PE  
State Construction Engineer  
320 Construction Court  
Capital, NC 27278

Mr. State Construction Engineer:

I am writing to express my support for Jon T. Rainey to move to the next level of the Engineering Technician I Training Program. Jon has been employed in my office for a year and has proven to be a hard worker, a fast learner and is growing his skills as a Technician. He has worked on several operations on different site projects and adapts well to every situation. His willingness to learn and work has earned him a great reputation within our office. Jon can be on his own with operations and testing duties and needs little supervision. He always has a positive attitude and is willing to help with any task. Jon has gained respect with both the Engineers and the Technicians in our office.

If you have any further questions, please call me at 555-555-5555.

Sincerely,

Resident Engineer

MAILING ADDRESS: Telephone: (919) 555-0101      LOCATION: 222 GREEN ENGINEER COURT  
 NC DEPARTMENT OF TRANSPORTATION      Fax: (919) 555-1224      GREENVILLE, NC 27601  
 320 CONSTRUCTION COURT      Customer Service: 1-877-388-6068      GREENVILLE, NC 27601  
 100 N. HALL, MEREDITH CENTER      Website: www.ncdot.gov

## Letter of Recommendation from Resident Engineer

# Contract Administration

## Direct Costs

- Office Space
- Vehicles
- Inspection/Testing Equipment
- Project Manager Visits

# Contract Administration

## Direct Costs - Vehicles

- Vehicle Base Rates
  - Vehicle Rates reviewed every 2 years
  - Adjust with the Maximum Allowable Non-Salary Direct Costs
- Gas Price Review (Semi- annually)
  - Semi- Annual review
- Maximum Allowable Non-Salary Direct Costs
  - Vehicle Rates
  - Gas reimbursement per mile

  
 STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION

ROY COOPER  
GOVERNOR
J. ERIC BOYETTE  
SECRETARY

January 12, 2021

**MAXIMUM ALLOWABLE NON-SALARY DIRECT COSTS**

CONSULTANTS ARE LIMITED TO THE LOWER OF THEIR ACTUAL RATES OR THE RATES IMPOSED BELOW

<b>Reproduction:</b>			
Copies (B&W)	\$ 0.09		Vellums
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Bond	\$ 0.42		Bond
<b>Computer:</b>			<b>Other:</b>
CADD	\$ -		Film & Development
	recovered through overhead		\$ 20.00 per roll
<b>Mileage:</b>			<b>CEI/Technician-type contracts:</b>
Sedan	\$ 0.560	per mile	2-WD Truck
Carryall	\$ 0.580	per mile	4-WD Truck
Car Rental	\$ 45.00	per day	2-WD Truck gas reimbursement
Gas for car rental	\$ 0.20	per mile	4-WD Truck gas reimbursement
			Phones, computers, iPads, Data Plans, Wi-Fi, etc.,
			recovered through overhead
<b>Subsistence:</b>			<b>Hotel reimbursement rates for actual costs not to exceed:</b>
	<u>In-State</u>	<u>Out-State</u>	\$ 75.10 per day plus tax for <u>in</u> state
Breakfast	\$ 8.60	\$ 8.60	\$ 88.70 per day plus tax for <u>out</u> of state
Lunch	\$ 11.30	\$ 11.30	\$ 80.00 per day
Dinner	\$ 19.50	\$ 22.20	for hotel will be proposed for ALL NCDOT proposals.
Lodging	\$ 75.10	\$ 88.70	
	<u>\$ 114.50</u>	<u>\$ 130.80</u>	

\* Subsistence is an allowance related to lodging and meals (including gratuities).  
 \* Payment of sales tax, lodging tax, local tax or service fees applied to the cost of lodging is allowed in addition to the lodging rate and is to be paid as a lodging expense.  
 \* Reimbursement of actual costs of overnight lodging, whether in-state or out-of-state, must be documented by a receipt of actual lodging expenses from a commercial establishment.  
 \* Out of State travel status only applicable when performing contracted services for NCDOT & requires travel outside of NC. Travel status begins when employee(s) leaves the state and remains in effect until returning to the state.  
 \* All subsistence rates comply with NC GS 138-6, the NC Office of State Budget & Management Budget Manual and the NCDOT Travel Policy and Reimbursement Procedures.

- <https://connect.ncdot.gov/business/consultants/Pages/Guidelines-Forms.aspx>

# Contract Administration

## Direct Costs – Vehicle Mileage

- Project Miles
  - Begin and end at designated location (RE or Field Office or Project)
  - PEF personnel submit vehicle mileage logs
- No reimbursement for commuting miles

# Contract Administration

## Project Manger Visits

- Project Specific Agreements
  - Prime Consultant – 8 hours quarterly
  - Subconsultants – 8 hours semi-annually
- Statewide On – Call
  - Number of PM Visits based on Number of Technicians/Engineers on Task Orders
  - Applies to Prime Consultant and Subconsultants

# Statewide On-Call Project Manager Visits

<b>Number of Technicians per Task Order</b>	<b>Number of Billable Project Manager Visits Hours per Quarter (Prime Consultant and Subconsultants)</b>
1-8	8
9-16	16
17 or more	24

# Contract Administration Project Manager Visits

- Review Technician Project Records
- Ensure Compliance with NCDOT Policy and procedures
- Coordination / Communication with NCDOT Staff

# Project Manager Visit

## Suggested Review Items

- Project diary entries
- Pay Record entries
- Earthwork calculations
- Ticket book review
- Materials Received Reports
- Minimum sampling guidelines
- Technician Certifications and upcoming training
- Force Account Records
- As-built plans
- Subcontract Agreements
- Supplemental Agreements
- Erosion Control/permits and NPDES documentation
- Special Items of work
- Project Staffing

# Contract Administration Project Manager Visits

- Signed Timesheets
- Reimbursements
  - PM's Time - Labor
  - Milage – Direct Cost
    - Mileage from PM's assigned office

# Contract Administration

## Invoices

- Invoice Frequency
- Invoice Review
- Invoice Cover Sheet
- Monitor Expenditures
- Supplemental Agreements

# Contract Administration

## Invoices – Invoice Review

- Total Invoice amount – breakdown by WBS Element
- Summary of Labor Cost
  - Technicians, Engineers and Project Managers
  - Overtime and Shift Differential
  - Overhead, Fees and FCC
- Summary of Direct Expenses
- Back-up documentation
  - Timesheets
  - Receipts
  - Bills/invoices





# Invoice Form

## Contact and General Invoice Information

*Company Letterhead / Name & Address Goes Here*

### North Carolina Department of Transportation Invoice Form - Cost Plus

NCDOT LSC No.   
NCDOT Purchase Order/Task Order No.

*Contact Information:*

<b>Firm Name</b>		<b>NCDOT Client Name</b>	
<b>Firm Remittance Address</b>		<b>NCDOT Client Address</b>	
<b>Firm Contact Information (Name, Email and Phone)</b>		<b>NCDOT Client Contact Information</b>	
<b>Firm Vendor No.</b>			
<b>Firm Tax ID No.</b>			

*Project Information (For Project Specific Assignments):*

<b>Invoice Information:</b>		<b>TIP Number</b>	
<b>Partial Billing</b> <input type="radio"/>	<b>Final Billing</b> <input type="radio"/>	<b>WBS Number</b>	
<b>Firm's Invoice No. (DOT Reference)</b>		<b>Federal Aid Number (if applicable)</b>	
<b>Date of Invoice</b>		<b>County</b>	
<b>Invoice Period Covered</b>		<b>Project Description</b>	

*Applicable Rates:*

<b>Home Office Overhead</b>		<b>Home FCCM</b>	
<b>Field Office Overhead</b>		<b>Field FCCM</b>	
<b>Operating Margin (Fee Amount)</b>			



# Invoice Cover Sheet

## Certification and Approval

<p><b>FIRM:</b> I hereby certify that the amount billed is true and correct to the best of my knowledge and that payment has not been received.</p> <p>Signature: _____ Printed Name: _____ Date: _____</p>	<p><b>NCDOT Approval (NCDOT Use Only):</b> Invoice Document No. (SAP) _____</p> <p>Approved By**: _____ Printed Name: _____ Date: _____</p> <p><i>**Invoice must be approved by an employee of NCDOT.</i></p>
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*Submit: Invoice Form, DBE-IS form, supporting documentation for labor and direct costs.*  
*Note: Invoices are scanned into the NCDOT Fiscal Accounting System. Please do not highlight or shade any figures.*

# Contract Administration Supplementals

- On-Call Supplementals
  - Task Order
    - Does not need Board of Transportation Approval
    - PEF/Division determines additional funding is needed to complete Task Order
    - PEF submits a cost estimate for remaining work Division
    - Division will add supplemental amount to PO and follow approval procedures
  - Limited Service Contract (LSC)
    - Needs Board of Transportation approval
    - PEF contacts the Construction Unit
    - PSMU places Item on Board Agenda

# Contract Administration Supplementals

- Project Specific
  - Needs Board of Transportation approval
  - PEF/Division determines additional funding needed to complete Purchase Order
  - PEF submits cost estimate
  - Review and approval process through Division, CU, PSMU and OIG
  - PSMU places Item on Board Agenda
  - PSMU updates Supplemental amount and issues NTP

# Contract Administration Evaluations

- Provides feedback to the firm regarding performance
- It's important to provide feedback during the contract to correct any performance concerns
- Used in future selections

**N. C. DEPARTMENT OF TRANSPORTATION**

**Evaluation of Private Engineering Firm for Construction, Engineering, and Inspection**

PEF Contract: \_\_\_\_\_ Firm Name: \_\_\_\_\_  
 Task Order #: \_\_\_\_\_ WBS #: \_\_\_\_\_ Division: \_\_\_\_\_ County: \_\_\_\_\_  
 Construction Contract: \_\_\_\_\_ TIP #: \_\_\_\_\_ Contractor: \_\_\_\_\_  
 Rating Period: From: \_\_\_\_\_ To: \_\_\_\_\_

Rate 1 through 10 (1 - Unacceptable, 2 - Very poor, 3 - Poor, 4 - Needs improvement, 5 - Marginal, 6 - Acceptable, 7 - Expected, 8 - Very good, 9 - Outstanding, 10 - Perfect) and explain.

1. Provides adequate inspection (oversight of work/sampling and testing) to assure conformity with plans, specifications, and contract provisions. \_\_\_\_\_
  2. Provides technical and administrative personnel in appropriate numbers and at proper times. Inspection staff possesses the necessary certifications to perform the work. Certifications are kept current. \_\_\_\_\_
  3. Personnel are familiar with and adhere to standard practices and procedures of the Department. \_\_\_\_\_
  4. Maintains close coordination with the Department and the Contractor. \_\_\_\_\_
  5. Keeps detailed and accurate records of Contractor's daily operations and significant events. Utilizes current NCDOT forms to provide written project documentation. Submits records in accordance with established procedures. \_\_\_\_\_
  6. Remains current with Department construction and materials resource manuals (i.e. Construction Manual, Minimum Sampling Guide, QMS Manual, etc.). \_\_\_\_\_
  7. Provides Contractors with timely interpretations of plans, specifications, and contract provisions. \_\_\_\_\_
- Average Rating:** \_\_\_\_\_

Other comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

_____ Rated By	_____ Title	_____ Date
_____ Firm Representative	_____ Title	_____ Date

cc: Professional Services Management Unit Manager  
 State Construction Engineer

**N. C. DEPARTMENT OF TRANSPORTATION**

**Evaluation of Private Engineering Firm for Construction, Engineering, and Inspection**

**Procedures**

Private Engineering Firms providing services to the North Carolina Department of Transportation should be evaluated during their contract/task order assignment. Evaluations should provide feedback to the firm as to their performance on the project(s) for which they are providing services. The evaluation form should be completed by the NCDOT Engineer in charge of the work/Project Manager or his/her designee.

The frequency of evaluations is dependent on the length of the contract/task order:

- For contracts/task orders with a duration greater than one year, an initial evaluation should be performed at 90 days into the contract/task order, then once every six months thereafter. A final evaluation should be performed at the end of the contract/task order, incorporating the preparation of the final estimate, if included in the firm's assigned tasks.
- For contracts/task orders with a duration from six months to one year, an initial evaluation should be performed at 30 days into the contract/task order, then once every six months. A final evaluation should be performed at the end of the contract/task order, incorporating the preparation of the final estimate, if included in the firm's assigned tasks.
- For contracts/task orders with a duration of less than six months, an initial evaluation should be performed at 30 days into the contract/task order. A final evaluation should be performed at the end of the contract/task order, incorporating the preparation of the final estimate, if included in the firm's assigned tasks.

When completing the form, if additional space than that provided on the form is needed to provide comments and examples, attach additional pages to the form. If areas of improvement are noted, provide specific examples and information to convey noted concerns and where improvements are needed.

Upon completion of the evaluation form, the form should be signed by the Firm's Project Manager and by the NCDOT representative completing the form. Copies of the signed forms should be sent to the Professional Services Management Unit Manager and the State Construction Engineer.

For firms receiving an evaluation rating of "5 - Marginal" or less on any criteria, a meeting will be scheduled between the firm, the evaluator, and a representative of the Construction Unit to discuss the deficiencies noted and to outline process improvements to correct the area(s) of concern. The Professional Services Management Unit should be invited to the meeting, if the Private Engineering Firm disputes their rating. The Resident Engineer will be responsible for scheduling this meeting. Written documentation including a detailed explanation outlining the performance issue and necessary corrective measures should be provided.

Private Engineering Firms, who disagree with the evaluation or wish to provide additional information regarding the evaluation, may submit this information jointly to the NCDOT Engineer in responsible charge of the work/Project Manager, the Professional Services Management Unit and the State Construction Engineer.

# Contract Administration Evaluations

## Evaluation Frequencies

Duration	Initial	Frequency	Final
< 6 months	30 days	NA	End of PO
6 months - 1 Year	30 days	6 months	End of PO
> 1 year	90 days	6 months	End of PO

# Contract Administration

## Closing Purchase Orders

- Submit Final Invoices
  - On-Call Purchase Orders
    - Remaining funding returns to LSC Contracting Authority
  - Project Specific
    - Salvage values deducted
    - Return Nuclear Gauges

# Contract Administration

## Closing Purchase Orders

- Closing Purchase Orders
  - Enter Final Invoice – Check final invoice box
  - Use Transaction ME22N
    - Lock line items
    - Close PO in the Header Section

# Questions