Guidelines for Certification of Construction Project Inspectors and Contracting Officer's Representatives

BLM Manual Section 9103 Appendix 1 Rev. 5/1/2006

Purpose

This appendix sets forth the guidelines to certify Contracting Officer's Representatives and Project Inspectors (COR/PI) for construction contracts and establishes uniform a BLM-wide level of education, training, and work experience required to perform inspection and contract administration.

Implementation

COR/PI's that were certified prior to the issue date of this direction shall be recertified to continue to perform duties commensurate with their previously demonstrated areas of proficiency.

> Within one year, those individuals shall comply with the safety training direction set forth in this document.
>
> Within two years, those individuals shall comply with the other training direction set forth in this document.
>
> Prior to advancement to a higher certification level or advancement from a PI to a COR, those individuals shall comply with the education, training, and work experience direction set forth in this document.

Any new COR/PI shall comply with the direction set forth in this document.

These guidelines supplement and comply with the COR certification requirements contained in the Department of Interior Acquisition Regulations (DIAR) and BLM Acquisition Manual. To be certified as eligible to serve as a COR, the DIAR 1401.670 requires the candidate to complete:

> a. 40 hours training in general contracting, including major emphasis on contract administration topics, no more than 6 years prior to certification; and
>
> b. Completion of 40 hours additional training every 2 years in order to keep current with changes in procurement regulations and best practices or to develop additional expertise in relevant contracting topics.

Certification Process

COR/PI certification is valid for three years from the date of approval.

STEP 1 - Each COR/PI candidate documents relevant education, training, and contract work experience on the Education, Training, and Contract Work Experience Summary (ETWES) Form and submits the form through their supervisor, to the District/Field Office Engineering Program Lead, (State Office staff submit to the State Engineer). The candidate is responsible for updating the ETWES Form to show current experience and training accomplishments.

STEP 2 - The District/Field Office Engineering Program Lead reviews the ETWES Form and past COR/PI performance, recommends by signature that the employee be certified at the appropriate COR/PI level, and submits the ETWES Form to the State Engineer.

STEP 3 - The State Engineer reviews the ETWES Form and past COR/PI performance, either approves the certification by signature or documents specific reasons for disapproval, and then notifies the District/Field Office Engineering Program Lead, who notifies the employee's supervisor. For COR certifications, the State Engineer notifies the State Procurement Analyst to ensure that individual's COR certification information is entered into the BLM Web-based COR certification monitoring system as required by BLM Manual 1510-1.670.2.

Designation of COR/PI

COR/PI certification does not constitute automatic suitability for assignment to specific projects.

The State Engineer or other formally delegated authority is responsible for determining project classification and for recommending a COR/PI in writing to the Contracting Officer on every construction project. The recommendation must be based on a thorough assessment of each candidate's ability to successfully perform in the capacity of COR/PI on the project. The individual's education, training, and work experience shall be relevant to the type of project work to be performed. Formal education and training classes must be successfully completed (ie. credits received) and documentation submitted prior to certification approval.

If the Contracting Officer (CO) concurs with the recommendation, the CO issues a letter designating the individual as a COR/ PI on the project and listing the principle responsibilities and limitations of authority. If the CO does not concur with the recommendation, written documentation will be issued to the State Engineer detailing the specific reasons for rejection and requesting another individual be recommended.

COR/PI CERTIFICATION LEVELS	
PROJECT CLASSIFICATION	**TYPICAL PROJECTS**
Level I - Projects that are not complex and have minimal effect on public health or safety.	Fences, landscaping, non-sewage irrigation systems, culverts 36 inches in diameter or less, catchments, signs, cattle guards (non-concrete).
Level II - Projects that are not complex and moderately affect public health or safety.	Cattle guards (w/concrete), well drilling & equipping, local & resource functional class roads, vault toilets, guardrails, parking lots, boat ramps/docks, livestock/wildlife water systems, trails, utility lines (other than potable water & sanitary sewers), storm water systems, drainage structures with an open area that totals less than 35 square feet, kiosks, retaining walls 4 feet high or less, minor and low hazard dams (See BLM Manual 9177.21), levees/berms, concrete sidewalks and flatwork.
Level III - Projects that are complex and have a major impact on public health or safety.	Arterial and Collector functional class roads, potable water systems, well plugging, septic/sanitary sewer systems, HVAC systems, major culverts (drainage structures with an open area that totals 35 square feet or greater), restrooms w/flush toilets or showers, well drilling & equipping, pre-engineered/modular buildings, electric systems, small low hazard dams (See BLM Manual 9177.21), retaining walls 4 to 15 feet high, portable bridges (not a permanent installation), pedestrian bridges 30 feet & less in length, fish ladders, blasting, fire protection systems.
Level IV - Projects that are highly complex and have substantial impact on public health or safety.	Intermediate/Large and low/significant/high hazard dams (See BLM Manual 9177.21), visitor contact stations and interpretive centers over 1,000 square feet, quarters (non-modular) buildings, fire guard stations with or without barracks, office complexes, retaining walls higher than 15 feet, vehicular bridges, pedestrian bridges greater than 30 feet in length.

PROJECT INSPECTOR CERTIFICATION GUIDELINES

LEVEL	EDUCATION	TRAINING[1] / COURSEWORK[2]	CONTRACT EXPERIENCE
PI - I	High school diploma or equivalent.	Contract Administration for PI - 24 hour initial class and 8 hour PI Refresher class every 3 years. 24 hours OSHA construction training. 8 hours safety refresher class every 3 years. Successful completion of the following engineering training or comparable experience. - Surveying Fundamentals 40 hrs - Interpreting Construction Specifications & Drawings 24 hrs	Assist a PI for the duration of one construction contract.
PI - II	A two year Associates of Applied Sciences degree in civil engineering technology (or other architectural - engineering discipline directly applicable to the type of work), or completed the first two years of civil engineering studies at an accredited four year university, or training/course work equivalent (in lieu of the above education see Equivalency Table, part 7).	Same as PI Level 1 Technical training commensurate with the type of project work to be performed.	Assist a PI for the duration of two Level II, III, or IV construction contracts.
PI - III	Same as PI Level II.	Same as PI Level II plus successful completion of the following training or comparable experience.	Assist a PI for the duration of one Level III or IV construction contract and perform successfully as a Level II PI on three construction contracts.

PI - IV	Same as PI Level II.	Same as PI Level III plus successful completion of the following training or comparable experience.	Perform successfully as a Level III PI on three construction contracts.

CONTRACTING OFFICER'S REPRESENTATIVE CERTIFICATION GUIDELINES [3]			
LEVEL	**EDUCATION**	**TRAINING[4] / COURSEWORK[5]**	**WORK EXPERIENCE**
COR - I	High school diploma or equivalent.	Construction Contract Administration for COR - 40 hour initial training and 40 hour COR training every 2 years. 24 hours OSHA Construction Safety training and 8 hours Safety Refresher class every 3 years.	Perform successfully as a PI on three construction contracts.
COR - II	A two year Associates of Applied Sciences degree in civil engineering technology (or other architectural - engineering discipline directly applicable to the type of work), or completed the first two years of civil engineering studies at an accredited four year university, or training/course work equivalent (in lieu of the above education see Equivalency Table, part 7).	Same as COR Level I.	Perform successfully on three construction contracts as a Level II, III, or IV PI.
COR - III	Same as COR Level II.	Same as COR Level I.	Perform successfully on three construction contracts as a Level III or IV PI and on three construction contracts as a Level II COR.
COR - IV	Professional registered [6] Architect or Engineer, with a four year degree (bachelors or higher) in architectural or engineering discipline directly applicable to the type of work from an accredited university.	Same as COR Level I.	Perform successfully on three construction contracts as a Level III COR.

Part 1 _____ **Employee Name**	_____ **Office**	_____ **State**	**Was the employee certified as PI or COR prior to March 3, 2005?** _____**Yes**	_____**No**
Recommended for Category: Enter an X in the appropriate boxes.	**Level I**	**Level II**	**Level III**	**Level IV**
Project Inspector				
Contracting Officer's Representative				
Notes: State Office Use Only.				

Part 2	**Print Name and Title**	**Signature**	**Date**
Reviewed by Field Office Engineering Program Lead			
Approved by State Engineer			

Category	**Requirement**	**EDUCATION - Part 3**		
PI - I and COR - I	High School Diploma or Equivalent - Enter Year in the box at right.			
PI - II, III, IV and COR - II, III	Two Year A-E or Civil Technology Degree. If training/course work equivalent, so indicate and fill out Course Work Equivalent , **Part 7,** or Education Equivalency Table, **Part 8** of this Form.	**Type of Degree and Field of Study**	**School Name**	**Year**
COR - IV	Architect or Engineering Degree; Bachelors or higher from an accredited university.			
	Professional Registration - Required only in OR/WA for consistency with engineering delegation of authority.	**Type**	**State**	**Year**

Category	Requirement	TRAINING - Part 4		
PI - I, II, III, IV	24 Hours PI Contract Administration with 8 Hour PI Refresher Every 3 Years.	**Vendor**	**Course Name and Hours**	**Date**
COR - I, II, III, IV	40 Hours COR Contract Administration with 40 Hour COR Refresher Every 2 Years.			
PI - I, II, III, IV and COR - I, II, III, IV	24 Hours OSHA Construction with 8 Hour Safety Refresher Every 3 Years.			
	40 Hours Surveying Fundamentals or comparable experience.			
	24 Hours Interpreting Construction Specifications and Drawings or comparable experience.			
PI - II, III, IV and COR - I, II, III, IV	**Technical training commensurate with the type of project work to be performed.** The training categories listed below are not an exhaustive list. Completion of training in these categories may be required prior to being **assigned** as a PI or COR on a project, but are not required for **certification.**			
	Training Category	**Vendor**	**Course Name and Hours**	**Date**
	NEPA Process and Compliance			
	Traffic Control Plans and Methods			
	Quality Control/ Quality Assurance Processes: Sampling, Testing, Inspections, Specialist Consultation.			
	Contract Documentation: Time/Equipment, Shop Drawing Review, Submittal Review, Correspondence.			
	Cost Estimating			
	Technical training commensurate with the type of project work to be performed. (Part 4 Continued)			

Training Category	Vendor	Course Name and Hours	Date
Hazardous Materials - Spill Prevention Plans, Removal of Asbestos and Lead, Similar Materials.			
Landscape Architecture Fundamentals			
Universal Accessibility (ADA)			
Fences			
Land Treatments (Spray, Seed, Etc.)			
Erosion Control Mats, Hydro Seeding, Mulch, Tackifiers			
Road Maintenance (Blade Surface, Pull Ditch, Brushing)			
In-Stream Culverts			
Water Well Drilling			
Well Plugging			
Livestock Water Systems			
Potable Water Systems			
Sanitary Disposal Systems			
Underground Utilities			
Earthwork: Excavation/Embankment Methods, Soil Classification, Compaction, Sampling and Testing			
Asphalt and Seal Coat Inspection			
Geotextiles and Fabrics			
Retaining Walls			
Rock Anchors			
Blasting / Hydro Hammers, High Pressure Water Demolition			
Horizontal Drilling/ Jacking Sleeves/ Tunneling.			
Dam Construction			
Reinforced Concrete Inspection (Precast and Cast in Place)			
Technical training commensurate with the type of project work to be performed. (Part 4 Continued)			
Training Category	**Vendor**	**Course Name and Hours**	**Date**

	Driven Piles and Other Deep Foundation Systems			
	Masonry - Stone, Block, Brick			
	Concrete/ Masonry - Sand Blasting, Water Repellants, Water Proofing, Joint Fillers, Other Surface Treatments			
	Wood: Light and Heavy Timber Framing, Grading Standards, Pressure Treatment, Connections, Trusses, Glue Laminated Beams, Sheet Products			
	Wood Finishes - Painting Staining			
	Metals: Welding, Bolting, Galvanizing, Preparation and Painting			
	Insulation, Vapor Barriers, Roofing, Caulking and Sealants			
	Interior Treatments and Finishes.			
	Door Hardware			
	Piping Systems Uniform Plumbing Code and Uniform Mechanical Code.			
	Fire Sprinklers, Uniform Fire Code.			
	Uniform Building Code and Life Safety Code			
	HVAC Systems			
	Electrical Systems - Power, Lights, Signal, Data systems.			
	National Electrical Code			
	Photo Voltaic Systems			
	Bridges			
	Other:			

Category	Requirement	**CONTRACT WORK EXPERIENCE - Part 5** Classify Projects According to the Table for COR/PI Certification Levels			
PI - I	Assist a PI for the duration of one construction contract.	**Contract Name**	**Type of Work** (e.g., Fence, 60" Culvert, Replace Roof)	**Level** (I, II, III, or IV)	**Year**
PI - II	Assist a PI for the duration of two Level II, III, or IV construction contracts. Prior experience as a Level I PI is **not** required.				
PI - III	Assist a PI for the duration of one Level III, or IV construction contract.				
	Perform successfully as a Level II PI on three construction contracts.				
PI - IV	Perform successfully as a Level III PI on three construction contracts.				

Category	Requirement	CONTRACT WORK EXPERIENCE - Part 6 Classify Projects According to the Table for COR/PI Certification Levels			
COR - I	Perform successfully as a PI on three construction contracts. See Note 1.	**Contract Name**	**Type of Work** (e.g., Fence, 60" Culvert, Replace Roof)	**Level** (I, II, III, or IV)	**Year**
COR - II	Perform successfully on three construction contracts as a Level II, III, or IV PI. Prior experience as a Level I COR is **not** required. See Note 1.				
COR - III	Perform successfully on three construction contracts as a Level III, or IV PI. See Note 1.				
	Perform successfully on three construction contracts as a Level II COR.				
COR - IV	Perform successfully on three construction contracts as a Level III COR.				
Note 1. Applicable PI experience from prior PI certification may be used to fulfill this requirement.					

[1] See 2-YR Education Equivalency Document for required Training/Coursework.
[2] Specify the titles (names) of training and coursework that is substituted for the education requirements. Required for every entry.
[3] Only required when justifying equivalent experience for training/coursework.
[4] 1 Quarter/Term credit = 10 contact classroom (cc) hours, 1 Semester credit = 15 contact classroom (cc) hours
1 Actual training hour = 1 contact classroom (CC), 1 contact classroom (cc) hour = 6 work experience hours (On-the-Job Training)
[5] 60 contact classroom hours is the maximum allowed experience substitution for any one equivalent course. 120 contact classroom hours is the maximum allowed for any one subject matter.

2-YR EDUCATION EQUIVALENCY DOCUMENT

EDUCATION	TRAINING[i] / COURSEWORK EQUIVALENT[ii]	EQUIVALENT WORK EXPERIENCE IN LIEU OF TRAINING/COURSEWORK[iii]
A two year Associates of Applied Sciences degree in civil engineering technology (or other architectural – engineering discipline directly applicable to the type of work), or completed the first two years of civil engineering studies at an accredited four year university.	• English (60 total required contact classroom hours) - Technical Writing - Speech (Oral Communication) - Composition	Writing specs, IM's, IB's, reports, NEPA documents, conducting presentations, etc…. 60 cc hrs = 360 work experience hours
	• Surveying (90 total required contact classroom hours) - Plane Surveying - Route Surveying - Construction Surveying - Mapping and Platting	Performing Land Line surveys, Route Surveys, or site surveys as instrument person and Lead Rod man. Converting survey notes. 90 cc hrs = 40 work experience hrs.
	• Mathematics (120 total required contact classroom) hours) - Algebra - Geometry - Trigonometry - Calculus - Statistics	Calculating cost estimates, performing quantity takeoffs, breaking down survey notes, design calculations, etc. 120 cc hrs = 720 work experience hrs
	• CAD/Drafting (90 total required contact classroom)	Actual CAD/drawing experience 90 cc hrs = 540 work experience hrs
	• Soils/Construction Materials or Materials Technology (60 total required contact classroom hours)	Performing tests and taking samples either in lab or in field for concrete, soils, aggregates, and asphalt. 60 cc hrs = 360 work experience hrs
	• Strength of Materials (40 total required contact classroom hours)	Typically only course work.
	• Statics (40 total required contact classroom hours)	Typically only course work.
	• Applied Physics/Chemistry (60 total required contact classroom hours)	Typically only course work.

EDUCATION	TRAINING[i] / COURSEWORK EQUIVALENT[ii]	EQUIVALENT WORK EXPERIENCE IN LIEU OF TRAINING/COURSEWORK[iii]
	• Technical (Engineering) Classes (Minimum of 150 total required contact classroom hours); Training or coursework must include the following subjects. Substitute subjects must be approved. 120 contact classroom hours is the maximum allowed for any one subject matter. - Reinforced Concrete - Hydrology/Hydraulics - Road Design - Highway/Transportation Engineering - Structural Design - Structural Analysis - Environmental Engineering - Advanced Surveying and Mapping - Water Supply - Wastewater Treatment - Construction Codes - Fluid Mechanics - Structural Steel - Masonry - Wood Design - Electrical Basics - Mechanical Basics - Cost Estimating - Dams - Plumbing Basics - Storm Water/Sewer Design - Pavement Design	Experience commensurate with the education/training that is being substituted. Example is work experience as an apprentice/journeyman electrician, Plumber, or HVAC Tech. 20 cc hrs = 120 work experience hrs that can qualify for electrical and mechanical education. Wastewater treatment operator could substitute experience for contact classroom hours for wastewater treatment.
	• Other engineering related training or elective coursework (270 total required contact classroom hours). 120 contact classroom hours is the maximum allowed for any one subject matter. - Includes subjects listed above for technical	Experience commensurate with the education/training that is being substituted. Example is work experience as a project manager on projects. 60 cc hrs = 360 work experience hrs that can qualify for Project Management.

EDUCATION	TRAINING[i] / COURSEWORK EQUIVALENT[ii]	EQUIVALENT WORK EXPERIENCE IN LIEU OF TRAINING/COURSEWORK[iii]
	engineering training. - Includes any engineering related training, as well as and science classes (i.e., Engineering Problem Solving, Contract Specifications, GIS ArcView, Utility Design and Construction, Bridge Inspections, OSHA Safety Training, Economics, Geology, Geomorphology, Project Management). - Maximum of 80 contract hours can be Substituted for general electives such as Arts and Humanities, Social Science, and History (i.e., psychology, sociology, world civilizations, etc.)	

Contact Hour Conversions

1 Quarter/term credit = 10 contact classroom (cc) hours
1 Semester credit = 15 contact classroom (cc) hours
1 Actual training hour = 1 contact classroom (cc) hours
1 Contact classroom (cc) hours = 6 work experience hours (On-the-Job Training)

2-YR EDUCATION EQUIVALENCY JUSTIFICATION DOCUMENT

Name of Employee _____

Training/Coursework Equivalent	Required Classroom Contact Hours	Date of Activity	Organization Name/Location	Title of Training/Coursework	Description of Experience	Course Credit QTR (Q)/Semester(S) or Actual CC Training Hours(T) or Work Hours(W)	Earned Contact Classroom Hours
English							
Total Required Contact Classroom Hours	60				Total Classroom Contact Hours		
Surveying							
Total Required Contact Classroom Hours	90				Total Classroom Contact Hours		
Mathematics							
Total Required Contact Classroom Hours	120				Total Classroom Contact Hours		
CAD/Drafting							
Total Required Contact Classroom Hours	90				Total Classroom Contact Hours		

Training/Coursework Equivalent	Required Classroom Contact Hours	Date of Activity	Organization Name/Location	Title of Training/Coursework	Description of Experience[3]	Course Credit QTR (Q)/Semester(S) or Actual CC Training Hours(T) or Work Hours(W)	Earned Contact Classroom Hours
Soils/Construction Materials or Materials Technology							
Total Required Contact Classroom Hours	60				Total Classroom Contact Hours		
Strength of Materials							
Total Required Contact Classroom Hours	40				Total Classroom Contact Hours		
Statics							
Total Required Contact Classroom Hours	40				Total Classroom Contact Hours		
Applied Physics/Chemistry							
Total Required Contact Classroom Hours	60				Total Classroom Contact Hours		

Training/Coursework Equivalent	Required Classroom Contact Hours	Date of Activity	Organization Name/Location	Title of Training/Coursework	Description of Experience[3]	Course Credit QTR (Q)/Semester(S) or Actual CC Training Hours(T) or Work Hours(W)	Earned Contact Classroom Hours
Technical (Engineering) Classes							
Total Required Contact Classroom Hours	150				Total Classroom Contact Hours		
Other Engineering Related Training or Elective Coursework. Maximum 80 contact hours can be substituted for general electives.							
Total Required Contact Classroom Hours	270				Total Classroom Contact Hours		
Grand Total Required Classroom Contact Hours	980				**Grand Total Classroom Contact Hours**		

The information listed above is true and correct and the incumbent has met all educational requirements for education Equivalency for two year Associates of Applied Sciences degree in Civil Engineering Technology. Certificates are attached for all training (non-college course work) listed above.

Recommending Official _____ Date _____
District Engineer or Manager Responsible for Engineering Function

Approving Official _____ Date _____
State Engineer

[1] See 2-YR Education Equivalency Document for required Training/Coursework.
[2] Specify the titles (names) of training and coursework that is substituted for the education requirements. Required for every entry.
[3] Only required when justifying equivalent experience for training/coursework.
[4] 1 Quarter/Term credit = 10 contact classroom (cc) hours
1 Semester credit = 15 contact classroom (cc) hours

1 Actual training hour = 1 contact classroom (CC)
1 contact classroom (cc) hour = 6 work experience hours (On-the-Job Training)
[5] 60 contact classroom hours is the maximum allowed experience substitution for any one equivalent course.
120 contact classroom hours is the maximum allowed for any one subject matter.

2-YR EDUCATION EQUIVALENCY JUSTIFICATION DOCUMENT (Example of Completed Form)

Name of Employee_____Bob Smith_____

Training/Coursework Equivalent[iv]	Required Classroom Contact Hours	Date of Activity	Organization Name/Location	Title of Training/Coursework[v]	Description of Experience[vi]	Course Credit QTR (Q)/Semester(S) or Actual CC Training Hours(T) or Work Hours(W)[vii]	Earned Contact Classroom Hours[5]
English		9/1999 – 12/1999	Smith Community College, Seattle, WA	English Composition 1		3 (Q)	30
		1/2000 – 3/2000	Smith Community College, Seattle, WA	English Composition 2		3 (Q)	30
Total Required Contact Classroom Hours	60				Total Classroom Contact Hours		60
Surveying		9/1999 – 1/2000	Smith Community College, Seattle, WA	Surveying 1, included Plane, Route and Construction Surveying	Worked as a lead surveyor. I operated a theodolite, electronic distance measuring unit, Total Station and transit. Set road layout stakes, including slope, grade and centerline.	5 (Q)	50
		3/1996 – 9/1997	Parkway Engineering Firm, Boise, ID	Construction Surveying		360 (W)	60
		3/1996 – 9/1997	Parkway Engineering Firm, Boise, ID	Mapping and Platting	Performed land line surveys including mapping and platting.	180 (W)	30
Total Required Contact Classroom Hours	90				Total Classroom Contact Hours		140
Mathematics		3/1996 – 9/1998	Parkway Engineering Firm, Boise, ID	Trigonometry, Algebra, Geometry	Performed engineering calculations for slope stakes, road design and property line locations.	360 (W)	60
		9/1999 – 12/1999	Smith Community College, Seattle, WA	College Algebra		4 (Q)	40
		3/2000 – 6/2000	Smith Community College, Seattle, WA	Calculus 1		4 (Q)	40
Total Required Contact Classroom Hours	120				Total Classroom Contact Hours		140

Training/Coursework Equivalent[1]	Required Classroom Contact Hours	Date of Activity	Organization Name/Location	Title of Training/Coursework[2]	Description of Experience[3]	Course Credit QTR (Q)/Semester(S) or Actual CC Training Hours(T) or Work Hours(W)[4]	Earned Contact Classroom Hours[5]
CAD/Drafting		6/1995 – 9/1995	Oregon State University, Corvallis, OR	Computer Aided Drafting 1		3 (Q)	30
		9/2001– 2/2002	Smith Community College, Seattle, WA	Computer Aided Drafting 2		3 (Q)	30
		3/1996 – 9/1998	Parkway Engineering Firm, Boise, ID	CAD/Drafting	Developed computer aided drawings for road projects and property subdivisions.	360 (W)	60
Total Required Contact Classroom Hours	90				Total Classroom Contact Hours		120
Soils/Construction Materials or Materials Technology		3/1990 – 3/1994	US Army, Fort Benning, GA	Soils Lab	Worked as a lab technician in the Fort Benning Materials Lab. Performed soil compaction and moisture density and sieve analysis testing.	360 (W)	60
		3/1990 – 3/1994	US Army, Fort Benning, GA	Soils	Performed AASTO tests on concrete, asphalt, and soils for runways/roads and buildings.	360 (W)	60
Total Required Contact Classroom Hours	60				Total Classroom Contact Hours		120
Strength of Materials		1/2005 – 3/2005	Douglas Community College, Roseburg, OR	Strength of Materials		4 (Q)	40
Total Required Contact Classroom Hours	40				Total Classroom Contact Hours		40
Statics		1/2006-3/2006	Douglas Community College, Roseburg, OR	Statics		4 (Q)	40
Total Required Contact Classroom Hours	40				Total Classroom Contact Hours		40
Applied Physics/Chemistry		1/1999-3/1999	Smith Community College, Seattle, WA	Chemistry		4 (Q)	40

		9/2005-12/2005	Douglas Community College, Roseburg, OR	Physical Science		4 (Q)	40
Total Required Contact Classroom Hours	60				Total Classroom Contact Hours		80

Training/Coursework Equivalent[1]	Required Classroom Contact Hours	Date of Activity	Organization Name/Location	Title of Training/Coursework[2]	Description of Experience[3]	Course Credit QTR (Q)/Semester(S) or Actual CC Training Hours(T) or Work Hours(W)[4]	Earned Contact Classroom Hours[5]
Technical (Engineering) Classes		1/2004	BLM, Roseburg, OR	9100-1 – Basic Construction Inspection		40 (T)	40
		1/2005	BLM, Roseburg, OR	9100-2 – Intermediate Construction Inspection		40 (T)	40
		3/2005	International Conference of Building Officials (ICBO) classes-Roseburg, OR	- Load Path and Continuity in Engineered Wood-frame Buildings		20 (T)	20
		8/2005	International Conference of Building Officials (ICBO) classes-Roseburg, OR	Openings in Fire-Resistive Barriers		20 (T)	20
		11/2005	International Conference of Building Officials (ICBO) classes-Roseburg, OR	- Americans with Disabilities Act Construction		20 (T)	20
		2/2006	International Conference of Building Officials (ICBO) classes-Roseburg, OR	- UBC Earthquake Regulations		20 (T)	20
Total Required Contact Classroom Hours	150				Total Classroom Contact Hours		160
Other Engineering Related Training or Elective Coursework. Maximum 80 contact hours can be substituted for general electives.		9/1999 – 2/2001	Smith Community College, Seattle, WA	Economics		3 (Q)	30
		6/2000 – 8/2000	Smith Community College, Seattle, WA	Humanities		3 (Q)	30
		3/1990 – 3/1994	US Army	Electrical Basics	Worked at various locations during my military period constructing electronic surveillance structures including the installation of electrical and mechanical components.	360 (W)	60
		3/1990-3/1994	US Army	Mechanical Basics		360 (W)	60
		3/1996	Parkway Engineering Firm, Boise, ID	Compaction testing with nuclear gauge		16 (T)	16
		6/1996	Parkway Engineering Firm, Boise, ID	Supervision		40 (T)	40

		9/1997	Parkway Engineering Firm, Boise, ID	Scaffold Construction		24 (T)	24
		11/1997	Parkway Engineering Firm, Boise, ID	Formwork Design		16 (T)	16
		3/1998	Parkway Engineering Firm, Boise, ID	OSHA		40 (T)	40

Training/Coursework Equivalent[1]	Required Classroom Contact Hours	Date of Activity	Organization Name/Location	Title of Training/Coursework[2]	Description of Experience[3]	Course Credit QTR (Q)/Semester(S) or Actual CC Training Hours(T) or Work Hours(W)[4]	Earned Contact Classroom Hours[5]
Other Engineering Related Training or Elective Coursework. Maximum 80 contact hours can be substituted for general electives. (Continued)		1/1995 – 1/1996	Shockey Home Builders, Omaha, Nebraska	Cost Estimating	Worked for Shockey Home Builders as a cost estimator. In addition to being involved in all aspects of cost estimating for housing construction. Developed cost proposals for owners and coordinated/prepared/negotiated estimates for modifications during construction.	120 (W)	20
Total Required Contact Classroom Hours	270				Total Classroom Contact Hours		336
Grand Total Required Classroom Contact Hours	980				**Grand Total Classroom Contact Hours**		1236

The information listed above is true and correct and the incumbent has met all educational requirements for education
Equivalency for two year Associates of Applied Sciences degree in Civil Engineering Technology. Certificates are attached for all training (non-college coursework) listed above.

Recommending Official _____Signature_____ Date _____
District Engineer or Manager Responsible for Engineering Function

Approving Official _____Signature_____ Date _____
State Engineer

[1] See 2-YR Education Equivalency Document for required Training/Coursework.
[2] Specify the titles (names) of training and coursework that is substituted for the education requirements. Required for every entry.
[3] Only required when justifying equivalent experience for training/coursework.
[4] 1 Quarter/Term credit = 10 contact classroom (cc) hours
1 Semester credit = 15 contact classroom (cc) hours
1 Actual training hour = 1 contact classroom (CC)
1 contact classroom (cc) hour = 6 work experience hours (On-the-Job Training)
[5] 60 contact classroom hours is the maximum allowed experience substitution for any one equivalent course.
120 contact classroom hours is the maximum allowed for any one subject matter.

TRAINING/COURSEWORK DEFINITIONS

Mathematics
Knowledge to apply the basic principles of algebra, geometry, and trigonometry to solve a variety of practical problems encountered in engineering activities.

Technical Writing/ Composition
Uses correct English grammar, punctuation, and spelling to communicate in writing the activities, conversations, and deviations from specifications and drawings, which occur during the course of the day on a construction project. Translate observations into accurate and objective written descriptions. Written reports to document issues related to projects.

Oral Communication
Makes detailed observations and translates those observations into accurate and objective oral communications with appropriate staff. Interact easily with a variety of personalities. Present a calm and professional bearing under stress.

CAD/Drafting
Know basic drafting principles and Computer Aided Design techniques and apply them to architectural and engineering drawings. Understand drafting standards for drawings used in construction of facilities.

Soils/Construction Materials or Materials Technology
Demonstrate familiarity with at least one soil classification system (AASHTO or USCS) and ability to classify soils in the field. Have a basic knowledge of soil index properties and how they affect soil behavior in typical construction projects. Have an understanding of how moisture affects soil strength. Possess a working knowledge of compaction techniques and materials sampling and testing methods and procedures for soils and aggregates. Understand construction materials and their strength properties to support structures.

Plane Surveying/Route Surveying/Basic Construction Surveying
Know concepts of surveying for landlines, roads, structures, quarries, and construction sites using appropriate techniques and equipment. Understand horizontal and vertical control methods including measurements, bearings, angles and calculations for horizontal and vertical curves. Demonstrate a working knowledge of survey instruments and methods for surveying landlines, roads, structures, quarries, and construction sites. Be able to determine the maximum cut and fill slope angles typical of road construction or maintenance applications.

Statics/Strength of Materials
Understand the fundamental concepts of mechanics related to forces acting on structures. Have

basic knowledge to determine the dimensions necessary to ensure sufficient strength of the various parts.

Applied Physics
Application of fundamental principles, concepts, and applications of work, energy and power related to engineering activities. Apply post-high-school knowledge covering mechanics of measurement, structure of matter, heat energy, heat engines, sound, light and nuclear physics using the basic laws of Physics.

Chemistry
Understand the composition and related properties and reactions of substances (matter) used in engineering applications.

Fluid Mechanics, Hydrology, or Hydraulics
Knowledge of flow in closed conduits, including pressure loss, flow measurement, pipe sizing, and pump selection. Demonstrate an ability to analyze open channel flow. Knowledge of open channel formulas to calculate flows in open drainage channels.

Reinforced Concrete
Demonstrate basic knowledge of the materials and properties of concrete mixes. Recognize proper rebar sizing and placement within concrete forms. Apply visible and applicable testing methods to determine consistency and strength of a concrete mix. Knowledgeable of current American Concrete Institute, Portland Cement Association, and Concrete Reinforcing Steel Institute codes and references.

Steel or Wood Design
Understand the basic properties and limitations of steel or wood structures. Possess basic knowledge of the fundamental theories necessary for the design of steel or wood structures and connections.

Electrical/Mechanical Basics
Basic knowledge of fundamental principles of electricity and mechanical systems applied to structures. Apply appropriate electrical and mechanical code compliance in facilities or components being inspected.

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[i] Training includes classes conducted by any reputable source (Federal, state, private industry, etc.). Certificate is required for proof of attending.
[ii] Coursework includes any college level course completed and passed.
[iii] 60 contact classroom hours is the maximum allowed experience substitution for any one equivalent course.